

# *Our Word as Truth*

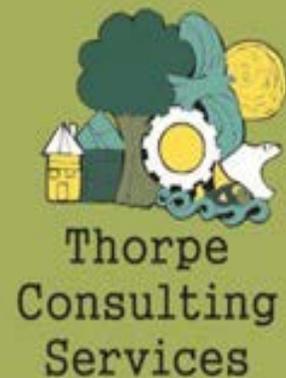
***Report of the 2021  
Diavik Diamond Mine  
Aquatic Effects Monitoring Traditional Knowledge Program***

Kathy Arden, Albert Boucher, Sarazine Basil, Lena Drygeese, Doris (Terri) Enzoe, Gloria Enzoe, Marie Adele Football, Nancy Kadlun, Jack Kaniak, Kelsey Martin, Vikki Niptanatiak, Peter D. Sangris and Ted Tsetta with Joanne Barnaby, Sarah Ravensbergen, Natasha Thorpe and contributions from DDMI personnel

December 2021 (Updated June 2022, V4.0)



Joanne Barnaby Consulting



## Disclaimer

This document does not represent the results of community consultation. It is subject to the “No Prejudice” clauses of Article II, Section 2.1 of the *Environmental Agreement for the Diavik Diamond Project*. The document represents the work of the Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) participants and does not necessarily reflect the views of any Party to the *Environmental Agreement*.

### **Suggested Citation:**

Thorpe Consulting Services Ltd. and Joanne Barnaby Consulting. 2022. *Our Word as Truth: Report of the Diavik Diamond Mine Aquatic Effects Monitoring Traditional Knowledge Program*. Prepared by Joanne Barnaby, Sarah Ravensbergen and Natasha Thorpe with support from Diavik Diamond Mines (2012) Inc. (DDMI). Vancouver, BC. V.4.0

### **Cover Photo:**

Back (L to R): Doris Enzoe, Gord Cumming, Gloria Enzoe, Monica Redmond, Kelsey Martin, Sarah Ravensbergen, Vikki Niptanatiak, Ted Tsetta, Joanne Barnaby, Marie Adele Football, Myra Berrub, Sadetlo Scott

Front (L to R): Kathy Arden, Lena Drygeese, Nancy Kadlun, Jack Kaniak, Peter D. Sangris, Sarazine Basil, Albert Boucher

## Dedication

*To all the ancestors who have gone before us, whose teachings continue to serve us.*

## Acknowledgements

The Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study initiative—including this report, the accompanying video documentary, short and vignettes as well as the learning and sharing processes throughout—would not be possible without community members willing to continue their role as guardians of the fish, water, land and environment around Lac de Gras.

We would like to acknowledge the words, advice, teachings, spirit, curiosity, respect, willingness, and enthusiasm demonstrated by the Elders, youth, and interpreters at the 2021 AEMP TK Study: Kathy Arden, Albert Boucher, Sarazine Basil, Lena Drygeese, Doris (Terri) Enzoe, Gloria Enzoe, Marie Adele Football, Nancy Kadlun, Jack Kaniak, Kelsey Martin, Vikki Niptanatiak, Peter D. Sangris, and Ted Tsetta. Thank you to Agnes Allen, Gerome Basil, Beezoe Football, Charlie Football, Victor Mercredi, Therese Sangris, Mark Taletok and Zhanayii Drygeese who participated in the June AEMP TK Study Planning Session, but were unable to attend the camp in August.

DDMI continues to provide generous logistical and financial support to community members to ensure their participation. We gratefully acknowledge those who continue to work alongside participants in ways that enhance a cross-cultural, cross-generational and cross-disciplinary approach. This includes, but is not limited to, Myra Berrub, Nicole Goodman, Kyla Gray, Gord Macdonald, Mark Nelson, and Kofi Boa-Antwi.

Thank you to the aRTLeSS Collective film-makers Jay Bulckaert, Keith Robertson, Pablo Saravanja and Sadetfo Scott for your commitment, endless patience, unique perspectives, and thoughtful approaches.

Quana! Koana! Masicho! Mársicho! Masi! Masi cho. Thank you!

*All the people that attended the camp, we witnessed with our own eyes. We talked with all the people that attended the camp, and we don't talk with lies. We talked honestly of what we had seen and that's how we share our information. [Marie Adele Football]*

## Executive Summary

This report brings together results from Traditional Knowledge (TK) and scientific knowledge relating to fish, water, vegetation and overall environmental health during a camp held near the Diavik Diamond Mine at Lac de Gras, NWT during the summer of 2021. These efforts were part of the Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study / Camp established by Diavik Diamond Mines (2012) Inc. (DDMI) with five Indigenous parties to their Environmental Agreement: Kitikmeot Inuit Association; Łutsel K'e Dene First Nation; North Slave Métis Alliance; Tłı̨çhǫ Government; and Yellowknives Dene First Nation. The companion deliverable to this report is a video documentary entitled *This Land of Mine* which was filmed and produced by aRTLeSS Collective (<https://vimeo.com/725374053>). At the time of writing, this video documentary was not approved for distribution by participants that asked that the final version include more community concerns expressed during the camp. Copies of the video documentary were shared to participants via a password protected link and DDMI committed to addressing participant direction before it is released. It is important to consider both this report and the companion video documentary to realize a more fulsome understanding of the AEMP, particularly given that the video documentary has always been more accessible than the report as a community deliverable. Regardless, the combination of this report and the video documentary provide a legacy for participants and the tools to share results with their communities: together they are a means of tracking aquatic health of Lac de Gras over time through two ways of knowing.

The primary objective of the 2021 camp remained the same as the 2012, 2015 and 2018 programs; specifically, to facilitate a two-way flow of information, resources, and knowledge between TK holders and scientists regarding the health of fish and water in Lac de Gras. A secondary objective was to meet regulatory requirements for monitoring aquatic environmental health from a TK perspective. As in the past, key components of the AEMP TK Program continue to be:

1. Communications and Engagement
2. Watching Fish: Fish Palatability and Texture Studies
3. Watching Water: Water Quality and Quantity Studies
4. Elder Interviews and Teachings
5. Excursions (Trips)
6. Documentaries

Following a Planning Session held in June 2021, Elders, youth and scientists gathered at the community camp near the Diavik Mine for a total of ten days with five days focused on the AEMP TK program and three and a half days focused on the work of the TK Panel plus one day weathered. TK Panel members focused on vegetation with two excursions to nearby locations to observe and share their knowledge; detailed results are documented in the TK Panel Session

#13 Report.<sup>1</sup> The camp took place between July 31 to August 9, 2021. A total of 19 lake trout were caught from four locations, with a detailed inspection of 12 by community members (a total of 52 TK fish inspection forms were completed).

While the group expressed gratitude for being out on the land watching, overall, they were largely dissatisfied with the results of their fish observations. Unlike in previous years, these concerns resulted in their general unwillingness to taste the fish to complete the fish palatability and texture studies. Participants, especially those who had attended several previous camps, noted several distinct changes in overall external and internal fish health, and fish habitat. Elders and youth were particularly concerned about:

- An increase in the number of fish with parasites / cysts, and an increase in parasites/cysts per fish;
- A change in fish shape (disproportionately large heads and thin, small bodies), differing from what Elders would expect for large lake trout;
- A change in stomach contents (a decrease in small fish and food generally in fish stomachs; an increase in bugs in stomach contents; a decrease in diversity of food in fish stomachs);
- A change in shoreline habitat (increase in algal abundance); and
- The absence of minnows.

Of the TK fish inspection forms completed, 37 respondents stated that they “would not eat this fish”; 10 respondents stated they “would eat this fish”; and four respondents stated they “would eat this fish, but not enjoy.” At least one group declared that they would eat four (of 12) of the lake trout for which the TK forms were filled out, but there were no fish examined that all groups agreed they would eat. The 2018 AEMP TK Program report notes that compared to previous years (2012, 2015), participants suggested that the number of fish with cysts and worms (parasites) appeared to have increased (TCS 2019). During the 2021 camp, participants felt that the number of fish with parasites appeared to have increased still further, to the point where participants were unwilling to taste fish. As in 2018, while some people recognized that cysts and parasites occur naturally and are present in fish within their communities, they were clear in their assessment that this was “beyond normal” (as were changes in fish shape and stomach contents). They expressed interest in trying to understand why lake trout in Lac de Gras seem to have more parasites than expected.

Fish observation results also affected participants perceptions of the water in Lac de Gras. This led some participants to state their unwillingness to fully complete water tasting (tea tests), as done in previous years. Six participants tasted tea or boiled water from one location; no participants were comfortable drinking unboiled water. “Good tea” and “average tea” were

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<sup>1</sup> All TK Panel reports are posted on the Environmental Monitoring Agency Board ([www.emab.ca](http://www.emab.ca)).

recorded by all participants willing to sample water. Other water quality observations shared by participants was that water appeared darker in colour than at previous camps.

As in previous years, semi-directed interviews provided an opportunity for Elders and youth to elaborate on their insights around healthy fish and water in Lac de Gras. Key themes explored by participants in interviews, as well as through storytelling, group discussions, teachings, reflections, and observations, included:

- Cultural use of Lac de Gras (before/after mines);
- Land connection and intergenerational knowledge (relationships);
- Meaningful contribution to the monitoring or “watching” conversation;
- Joy of the land, the connection and community health;
- Collaborative approaches to monitoring and the value of TK;
- Indigenous guardians, observers and caretakers of the land; and
- Diversity of care for the caribou and the land, and hope for the return of the caribou.

As Diavik moves towards closure, collaborative, long term, holistic monitoring programs that account for past AEMP findings (both scientific and TK-based) remain a priority for community members. It is critically important to participants that Elders be able to pass on to youth important teachings out on the land. The cumulative effects of dust and other impacts to the land and water should be understood together, not as separate component pieces in a monitoring program. As in past camps, concerns about mining and environmental change continued to be shared. People asserted their continued interest in formally reclaiming their traditional roles and responsibilities as guardians of the land and advancing community-based monitoring initiatives across their territories. The AEMP TK Program provides one vehicle to assist people in this guardianship role.

In conclusion, results from scientific analyses of both the fish inspection and water tests support observations made by TK holders that the present status of the fish and water in Lac de Gras is controversial. Participants acknowledged Diavik’s efforts to continue support for Elder and youth participation in the AEMP together with scientists and would like to increase the frequency of this program as Diavik prepares for closure. It is hoped that a more extensive study in collaboration with DDMI can take place as soon as possible; and that community members continue to support their role as guardians by watching and monitoring long into the future after the mine is closed.

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## Author Biographies

### Katherine E. Arden



(Born in Yellowknife, NT)

I grew up in Yellowknife, NT, Vancouver, BC, and many other places. I live in Yellowknife, NT, now. I was adopted by aunt and uncle, Denise and D'Arcy Arden. Biological parents were Georgina and Albert Mercredi. Cree, Chipewyan, South Slavey, Gwich'in, French descent (biological side). D'Arcy, my father, was a hunter, trapper, prospector, businessman. Denise was a homemaker. I was taught at an early age about hunting, fishing, gathering berries, and learned later in life about trapping.

Many things have been affected by this mining project: caribou migration and food sources, grizzly bear dens, fish and water health, vegetation. Even people / families have been affected by this mine, some positive and some negative. It is important that I listen to the Elders and people using this land so I can carry forward their concerns and knowledge to the upcoming youth. They need to know and understand the greatness of this land, what it can give

you to sustain a life gathering from the land. [I love my land, my water, my fish, because...] it has sustained our ancestors, today's Elders, and upcoming generations. It is important to fight for sustainability of water, fish, animals, vegetation, air. They cannot fight for themselves, but we can...

[Other things I would like to talk about...] how important it is to listen to the Elders knowledge of this land, so we can tell Diavik and mining companies what needs to be done to keep everything healthy and bring them back to some assemblance of what it was before.

### Albert Boucher



(Born at Artillery Lake, NT)

Where I grew up and where I live now: Łutsel K'e River.

My late father was a trapper and raised us up. My mother was at home looking after us. At 10 years of age, I started trapping. My father was my teacher.

What's important for me is wildlife we survive off, and water is very important. We have to make sure our land and wildlife are not affected.

[I love my land, my water, my fish, because] we survive off water and fish. Before the mine was developed, we had meetings with other communities, and the Elders have passed on monitoring water and fish. I was in a meeting, we went into a chopper to look at the land. We recommended to the mine people to make sure not to affect the water and fish. The community people have to go on mine visits. Our fish is not healthy anymore, they have parasites in the stomach and no food.

### Sarazine Boucher



(Born in Fort Fitzgerald, AB)

I grew up in Łutsel K'e with my grandparents and still live in Łutsel K'e. I have a large family who all grew up in Łutsel K'e, but my children don't all live there. They moved because of no employment, after university.

care of the land, water, animals, as they had done in the past. [I love my land, my water, my fish, because...] it takes care of us.

## Lena Drygeese



(Born in Yellowknife, NT)

I was raised in Dettah, where I returned after living and working elsewhere. I come from a large family. Most of the boys / men are traditional land users. The young ones are being taught TK along with education.

Future generations will know how much we love our land, just like our ancestors did. Nature is so healing. [I love my land, my water, my fish, because...] all peoples could live a healthy lifestyle and continue the culture, TK, and modern activities that youth are taught today.

## Doris Enzoe



I grew up in the barrenlands, traveling out on the land with my parents all my life, until today. I still live on the land. I have four kids, hard to talk about my family right now.

We need to monitor the land / water / plants, and what is important to our people. The fish are not healthy anymore, we can see it, and the water is darker by the mine site.

[Other things I would like to talk about...] caribou; plants; fish – more, water; what are they doing for us now; I would like to see on black and white.

## **Gloria Enzoe**



Where I grew up and where I live now: Raised in my homelands of Łutsel K'e Dene Traditional Territory.

My late parents are Liza Enzoe and Billy Enzoe. They raised me in a home of Traditional Knowledge, where we traveled the lands, worked hard on the land, and prayed often. Their teachings now live within me. Now those teachings are passed on to my boys and future generations.

[Our work at the Aquatic Effects Monitoring Camp will be/is important because] our words are truth. It's our Traditional Knowledge. Our observations are a living knowledge. When we see the water, and we see change and express our concern, it's because we see it. [A] change example: like you see heat in air, that's what we see in the

water, this is how I could explain it so you kind of understand. Think of the fish food. What does this mean? No minnows being eaten, algae, plankton health, how all these are connected together.

[I love my land, my water, my fish, because] it's my home. It's like my mom and dad, my grandparents. My love for them is never ending. I am of the caribou people, the land is my life, there for my children's future. It's so important, it is my job to protect my children and their future.

What is really important is that Traditional Knowledge is truth, it's our ancestors living through us. It is equal to science, if not greater. We are real people with real understanding of our homelands, it's people's way of living.

## Marie Adele Football



(Born in Behchokò (Fort Rae), NT)

I grew up in Rayrock and my family moved to Behchokò. We moved to Wekweètì, that's where I live now. I have two boys of my own. I adopted four: two boys and two girls. Right now I have six children, and I have 13 grandchildren, and three great-grandchildren. My boys learn from their uncle and their dad how to hunt and work on the land.

All our life we have been living on fish, and water is very important. It gives life to the plants, animals, especially the fish in the water. We live off the land to continue our cultural and traditional way of life, to pass it on to our children. They too pass it on to their children, teach them everything they know. The land provides food for us: caribou, moose, ducks, rabbit, all the animals. Plants: we make traditional medicine with the plants and berries (blueberries and cranberries). We will not survive without water at all. That's why we have to take great care of it. Our Elders loved to eat fish – without it we are not healthy or happy. They were raised with fish.

This is my first time coming to this AEMP camp, my first time being this far on the barrenlands. I love it, just looking around at the land, the lakes, the surroundings. Monitoring water, fish, and plants – I love testing and sampling the fish, I learn if it's sick or what's in the stomach. Just being here on our great ancestors' land makes me feel happy, and feel great to be in their shoes (moccasins). To the staff that are doing their work monitoring land, fish, and plants, a big masì cho, so much. Keep on doing this for the love of our future land, grandkids, and great grandkids. Masì cho.<sup>2</sup>

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<sup>2</sup> Interview transcript was verified in person with Sarah Ravensbergen, June 6, 2022 (Yellowknife, NT). Joanne Barnaby also confirmed in person with Marie Adele on June 6, 2022 (in Yellowknife, NT) that she was satisfied with her interview being included in the report, and okay with the song being included in V13.0 of the video documentary.

## Nancy Kadlun



(Born in Katimanik (Arctic Sound), NU)

I grew up in Umingmaktok/Umingmaqtuuq (Bay Chimo) and I live in Kugluktuk/Qurluqtuq now. I was at the camp three years ago. It is good to be back and learn more, especially about removing otoliths from fish.

I love coming to the camp so my grandchildren and others will learn from what we do here. For example, so they know in the future how important the air, water and land are to our lives and that it must be preserved, because we cannot live healthily without clean water. Animals need clean land as well. We live off animals. Berries grow on clean land. Without us elders coming here we would not know whether the land, water, fish and animals will be healthy in the future. Since we are surrounded by mines, we would like to constantly teach the young people so that our future is as healthy as today. Thanks to Diavik for this opportunity.

## Jack Kaniak



(Born in Hiukitak River/Hiuqqittaaq, NU)

I grew up mainly in Bathurst Inlet (Kingauk/Qingak) area, but traveled extensively inland. Kugluktuk, NU, is where I live now. [Our work at the AEMP camp is important because...] It will produce document(s) that pass along information in terms of culture, land, air, and water by local and regional Indigenous Peoples that intimately know the whole environment. [I love my land, my water, my fish, because...] That's where I was born and raised.

[Other things I would like to talk about...] Diavik is to meet with communities regarding closure and monitoring afterwards, extensively, to make sure each community is aware and can participate in closure and monitoring opportunities afterwards.

### **Kelsey Martin<sup>3</sup>**

### **Vikki Niptanatiak**



I grew up in Kugluktuk and I am splitting my time between Kugluktuk and Iqaluit in my fourth year of a Bachelor of Education.

I want to tell you about my family. My family are inland people who traditionally lived near Contwoyto Lake and came into what was known as Coppermine settlement in the early 70's. I have nine siblings and I am an auntie to a number of nieces and nephews. When growing up, my family spent many weeks at Aptalok (east of Kugluktuk) camping, fishing, hunting.

Our work at the Aquatic Effects Monitoring Camp will be/is important because to ensure sustainability of the environment, it's important to make sure wildlife, fish, and Nuna (land) are maintained. I love my land, my water, my fish because they are essential to Inuit culture and my identity as Inuk.

Other things I would like to talk about are the importance of listening to Elders and valuing their knowledge and experiences. I think it is important, as a participant, that the contributions of the TK Panel are more than just words on a piece of paper. These contributions should be valued and translated into actions, decisions and how we think about Diavik.

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<sup>3</sup> As Kelsey Martin did not participate in the verification sessions, TCS was not able to verify information he provided during the process. Unfortunately, his interview transcript had to be removed.

## Peter D. Sangris



(Born in Dettah (T'e?ehdaa))

I grew up in Matonabee Bay and the area. I live at Dettah, in the Seniors Home. My mother raised me and my step-father Alphonse Tobie taught me skills as a young boy. On my two older brother's side, they have a large family, so in total there might be over 500 – a very large family. I had five sons and four daughters. Three sons passed away. On my older sister's side, she has eight children and has grand-children too. I love my land, my water, my fish, because everything survives when they are taken care of in a caring manner.<sup>4</sup>

## Ted Tsetta



(Born in Yellowknife, NT)

I grew up in Yellowknife and I live there now. My family is the Tsetta and Charlo families. [Our work at the AEMP camp will be / is important because...] our ancestors used this land to hunt, fish, and live. Even battles and wars! [I love my land, my water, my fish, because...] Our ancestors used it, and we use it for hunting, fishing, for survival, for other uses too. [Other things I would like to talk about...] caribou and plants, vegetation! Long term monitoring.

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<sup>4</sup> The interview transcript was reviewed and minor changes were made in the week of June 6, 2022, with Peter D. Sangris and Lena Drygeese in Yellowknife, NT, and an updated June informed consent form was signed (verified by telephone between Lena Drygeese and Sarah Ravensbergen, June 20 and 27, 2022). Both the transcript and consent form were passed on to the new facilitation team at the June verification session, however, TCS was not able to obtain a copy. Unfortunately, his interview transcript had to be removed.

### **Joanne Barnaby**



Based in Hay River, Ms. Barnaby builds on over 45 years of experience working with northern, national and Aboriginal governments, providing both leadership and facilitation services. Ms. Barnaby served as an Advisor on TK to the Canadian Delegation on the United Nations Biodiversity Convention. She also served two terms on the Board of the Science Institute of the NWT and was the founding Executive Director of the Dene Cultural Institute, working to bring TK systems forward in a modern-day context. She works with scientists and Elders to build working relationships and explore how TK and science-based knowledge systems could be used together effectively.

### **Sarah Ravensbergen**



Sarah Ravensbergen is based in B.C. and works mostly in the Arctic and western Canada with Natasha Thorpe and Joanne Barnaby on land use projects that blend Indigenous Knowledge and science to improve planning and decision-making (i.e., Traditional Knowledge and Use Studies, guardianship programs, Species at Risk studies, conservation planning, water, fish, caribou, and vegetation monitoring programs). She is passionate about research that supports the rights of Indigenous Nations, and loves being out on the land learning from people.

## Natasha Thorpe



Natasha Thorpe specializes in integrating Indigenous Knowledge and western science in a resource management context. Natasha works primarily in Arctic and western Canada in the fields of weaving knowledge environmental assessment, environmental change, capacity-building, and engagement. Thorpe Consulting Services works has worked with Indigenous groups and mining companies to interweave Indigenous Knowledge into mine monitoring and closure planning in both meaningful and practical ways: the Aquatic Effects Monitoring Program represents one of these successes. Natasha feels blessed to work alongside one of her mentors, Joanne, and tries hard to absorb all the rich lessons shared by scientists, Elders and other knowledge holders. Natasha enjoys working with youth and is happiest spending time with her two children and partner. Ms. Thorpe holds an MRM (Resource Management) from Simon Fraser University, and has studied Indigenous Knowledge systems under the guidance of many Elders for over 20 years.

## Myra Berrub



I moved to the North in 2003 and spent many years working with communities, focused on integrating renewable and emerging energy into remote isolated infrastructure projects. In 2019, I joined Diavik's Communities and Social Performance Team to understand, prepare and mitigate affected Indigenous communities from impacts from the closing of the Diavik mine, planned for 2025. I am honoured to be working alongside communities to co-design ways of integrating traditional knowledge and western science best practices into mine closure. I am a Professional Engineer with a Masters in Bio Systems Engineering from the University of Manitoba. Above all else, my time is dedicated to raising my two precious and precocious children.

## **Gord Cumming**



My name is Gordon Cumming. I was born in Yellowknife and raised in Fort Smith, NT, though I currently reside in Yellowknife. My family and I are members of the NWT Métis Nation, and my family have been in the north for many generations. I have a Bachelors degree in geography with a focus on environmental science and mapping from the University of Victoria. I work at Diavik Diamond Mine as Environmental Coordinator where I help to organize and implement environmental monitoring programs on site and on the water and tundra in the area. I have gained significant experience on the land monitoring water, wildlife, vegetation and air near site through hands-on work. I have been with

Diavik for three years, where I have worked with community members supporting TK Panels and community visits. This is my first TK camp at Lac de Gras. I enjoyed getting to know all the participants and loved working collaboratively with everyone to blend TK and science. I will remember this camp and the people who participated in it very fondly, as we had a lot of fun together, and I look forward to our next opportunity to work together and make memories.

## **Monica Redmond**



Monica Redmond (BSc, BIT) is an intermediate Fisheries Biologist based out of Victoria, BC, since November 2020. She has been with Golder (based out of Yellowknife, NT) since January 2018 and has a strong knowledge of fish species within the NT. Monica originates from Vancouver Island, BC, and specializes in Pacific Salmon and coastal ecosystems, and spends time supporting the BC forestry industry. Monica has experience in mining, pipeline, and forestry industries and working closely with northern Indigenous groups, and has been in consulting for six years.

## Jay Bulckaert



Jay Bulckaert is one-half of aRTLeSS Collective ([www.artlesscollective.com](http://www.artlesscollective.com)) along with Pablo Saravanja. aRTLeSS Collective is a Yellowknife-based film and media production studio that is worked on many of the North's highest-profile clients and projects, Red Snow, The Sun at Midnight, Arctic Air, Ice Pilots NWT, Dene: A Journey and many more. With the power of their company, aRTLeSS Collective dreamed up and launched the Dead North Film Festival in 2012 and together they have dedicated their careers towards a vision for community-minded filmmaking that now includes wonderful collaborators like Sadetlo Scott. Their new virtual production studio, HyperArctika, is currently being developed which will usher in a whole new era of filmmaking across the North.

## Sadetlo Scott



Sadetlo Scott is a Tłıchq filmmaker, based and raised in Sòmbak'è, Northwest Territories. She creates films inspired by her Tłıchq culture and love of the land.

## Abbreviations and Acronyms

AEMP	Aquatic Effects Monitoring Program
DDMI / Diavik	Diavik Diamond Mines (2012) Inc.
DFO	Department of Fisheries and Oceans
EMAB	Environmental Monitoring Advisory Board
IK	Indigenous Knowledge
IQ	Inuit Qaujimagatuqangit
KIA	Kitikmeot Inuit Association
LDG	Lac de Gras
LKDFN	Łutsel K'e Dene First Nation
NSMA	North Slave Métis Alliance
TG or Tłı̄çhọ	Tłı̄çhọ Government
TK	Traditional Knowledge
YKDFN	Yellowknives Dene First Nation

# 1 Introduction

## 1.1 Background

The Diavik Diamond Mine (Diavik) operates on Ek'a Tua / ɔek'atì / Emakyuak / Imaryuaq / Ek'atì / Lac de Gras, approximately 300 km northeast of Yellowknife, Northwest Territories. For generations, Indigenous peoples have used this area for gathering, fishing, hunting, camping, travelling, and more, as shown in Figure 1.

During the Environmental Assessment for the mine, and documented in the Comprehensive Study Report, Indigenous groups expressed concern that in-lake mining activities may adversely affect fish in Lac de Gras. In response, and as per subsection 35(2) 9 of the *Fisheries Act*, Diavik, in cooperation with Fisheries and Oceans Canada (DFO) and the five affected Indigenous organizations [(Kitikmeot Inuit Association (KIA), Łutsel K'e Dene First Nation (LKDFN), North Slave Métis Alliance (NSMA), Tłı̨chǫ Government (TG or Tłı̨chǫ), and Yellowknives Dene First Nation (YKDFN)], developed a fish palatability and texture study to be carried out regularly on Lac de Gras according to both Traditional Knowledge (TK) and scientific knowledge.<sup>5</sup> This became the foundation for the Aquatic Effects Monitoring Program (AEMP) TK Study.

A baseline palatability study was initiated in August 2002 to assist in detecting changes in the quality of the fish and to provide data for future comparison (DDMI 1998). This study involved catching, processing, tasting, assessing, and testing fish by the Indigenous groups whose traditional territories include Lac de Gras. In addition to this work carried out by community members, scientific analyses were conducted to evaluate sediment and water quality while fish samples were taken to monitor fish populations and indices of fish health. In 2012, the methods were redesigned and expanded to include more discussion, consideration, documentation, and integration of Traditional Knowledge (TK) as well as community consultation and engagement. The study was conducted each year between 2002 and 2007, and then every three years from 2009 through 2018. This work has been led by Hatfield Consultants Ltd. (DDMI 2003), the Environmental Monitoring Advisory Board (EMAB 2005; 2006; 2007), Golder Associates Ltd. (Golder 2009), and Thorpe Consulting Services (TCS 2013; TCS 2015; TCS 2019; TCS 2022) on behalf of DDMI.

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<sup>5</sup> There are many different terms used to describe Indigenous worldviews, including 'Traditional Knowledge', 'Indigenous Knowledge', 'Traditional Ecological Knowledge', and more. Despite nuances across different terms, researchers and governments often use such terms interchangeably. For the purposes of this report, we use the term 'Traditional Knowledge' to encompass all Indigenous ways of knowing across the communities involved as this is more typical in the North; however, each Indigenous community and culture-language group have their own way of referring to their body of knowledge.



Figure 1 Map of Diavik Diamond Mine and Indigenous Communities (provided by DDMI)

Communities have contributed to aquatic monitoring through:

- *Fish Palatability and Texture Studies* (2002, 2003, 2004, 2005, 2006, 2007, 2009, 2012, 2015, 2018, 2021);
- *Water Quality Studies* (2004, 2005, 2006); and
- Three film documentaries have been produced:
  - *5 Days, 2 Ways, 1 Camp (Roaming Pictures et al. 2013: <https://vimeo.com/62748395>)*
  - *We Fish Today for Fish Tomorrow (aRTLeSS Collective 2015: <https://vimeo.com/150298226>)*
  - *Our Youth, Our Future: Watching Fish and Water near the Diavik Diamond Mine (aRTLeSS Collective 2018: <https://vimeo.com/322890065>).*

While the objectives remain the same, the program continues to evolve and adapt to lessons learned from previous years, responding to community feedback.

## 1.2 Objectives and Scope

The primary objective of the AEMP TK Study is to facilitate a two-way flow of information, resources, and understandings between TK holders from the five affected organizations and scientists regarding the health of fish and water in Lac de Gras.

While there are multiple documented scientific indicators for fish health (e.g., mercury levels in tissue) and water quality (e.g., pH, dissolved oxygen, conductivity and total suspended solids), it is not surprising that an analogue from a TK perspective (e.g., presence/absence of cysts in fish, water that is “good for tea”) is not as well documented. Accordingly, the AEMP TK Program provides a unique forum where TK plays a central role in strengthening the current monitoring program and better preparing DDMI, communities and others for managing resources during operations, closure and post-closure. Further, the AEMP TK Program format and results can be used for current and future guardianship programs led by Indigenous communities.

The scope of work in 2021 generally followed that of 2012, 2015 and 2018:

1. Planning Session held in Dettah, NT (Chief Drygeese Centre) June 23-25, 2021, where participants reviewed the 2018 video, evaluation results and recommendations, TK fish inspection forms and TK water quality forms (*‘TK fish form’* and *‘TK water form’*) and fish processing procedures, and planned details for the upcoming camp.
2. AEMP TK Camp held at Lac de Gras from July 31-August 5, 2021.
3. Post-camp Verification Sessions held in Yellowknife. The first session was held on December 14-16, 2021,<sup>6</sup> to review a first draft of this report (V2.0), provide input into the report, and to make recommendations for improvements for 2024. A

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<sup>6</sup> The Yellowknives Dene First Nation did not participate in the December 2021 post-camp Verification Session, but they did participate in June 2022.

revised copy of this report was circulated to each group two weeks before a second session was held on June 6, 2022. During the second session, the revised copy of this report was reviewed (V3.0) and the draft video documentary (V13.0) was introduced.

As in 2012, 2015, and 2018, the companion deliverable to this report is a video documentary entitled *This Land of Mine* (aRTLeSS Collective 2022). Camp participants and report authors advise that it is important to consider this report in conjunction with the video documentary and vice versa so that the “whole story” can be told. Photo collages and quotes from the planning and camp activities have been inserted throughout the report to illustrate key activities, interactions, concepts, and themes.

### 1.3 Report Outline

This report contains eight sections:

- Section 1—Introduction
- Section 2—Approach and Methods
- Section 3—Results from the 2021 AEMP TK Program
- Section 4—Lessons
- Section 5—Storytelling, Indigenous Knowledge, and Reflections
- Section 6—Evaluation and Recommendations
- Section 7—Closing
- Section 8—References

Eleven appendices are included with the full version of this report:

- Appendix A—Signed Informed Consent Forms
- Appendix B—Planning Session Materials
- Appendix C—Daily Camp Schedule
- Appendix D—Daily Camp Notes and Evaluations
- Appendix E—Interview Questions and Transcripts
- Appendix F—Completed TK Fish Inspection Forms
- Appendix G—Scientific Fish Testing Results (including parasite data)
- Appendix H—Completed TK Water Quality Forms
- Appendix I—Scientific Water Testing Results
- Appendix J—Verification Sessions Materials
- Appendix K—Fish Species and Parts in Different Dialects

## 2 Approach and Methods

### 2.1 Key Components and Phases of the AEMP TK Program

The AEMP TK Program is grounded in a community-driven approach based on direction from Elders and TK holders and is meant to be an opportunity for community members to “see with their own eyes” the health of the fish and the water at Lac de Gras. Key components of the AEMP TK Program approach (Figure 2) are:

1. Communications and Engagement
2. Watching Fish: Fish Palatability and Texture Studies
3. Watching Water: Water Quality and Quantity Studies
4. Elder Interviews and Teachings
5. Excursions (Trips)
6. Documentaries



Figure 2 Key Components of the AEMP TK Program

Capacity-building, communications, and engagement continue to be critical and thus both infused and surrounded all phases of the AEMP TK Program. Watching fish and watching water are at the core of the program. Participant interviews, excursions, and a video documentary explore overall fish and water health as well as key topics of interest to participants.

The AEMP TK Program uses the following tools to realize the objective of a two-way flow of information, resources, and understandings between TK holders and scientists:

1. Create gathering times and places between community members, scientists and DDMI, particularly around mining and environmental issues;
2. Provide engagement and capacity building opportunities for communities;
3. Foster community involvement in, and understanding of, DDMI's monitoring programs;
4. Record relevant Indigenous cultural and language references, customs and stories;
5. Facilitate cross-generational (e.g. Elder-youth), cross-cultural and cross-discipline exchange;
6. Collect, record, discuss and verify shared TK;
7. Collect information and data in a standardized way such that they are comparable across years;
8. Include TK interviews relating to both water and fish, nested within a broad Indigenous worldview; and
9. Identify and monitor indicators of water quality and fish health from a TK perspective.

This combination of approaches and methods - grounded in different worldviews - is critical to respecting and validating TK of the land, and supporting a rich, detailed, and nuanced understanding of environmental conditions and changes at Lac de Gras. While participants continue to be strongly supportive of the science portion of the AEMP, TK offers insights that span generations and highlight the interconnectivity of all ecosystem components (e.g., participants do not understand fish health as a separate component from water quality).<sup>7</sup> As discussed in the following sections, Indigenous peoples draw from their wisdom and experience to guide understandings of the land, all its components, and environmental change; rather than written documentation or examination of isolated ecosystem components. Indigenous peoples often explore environmental change through individual observations and senses, followed by discussing, verifying, and coming to conclusions as a group (thus the participant feedback that

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<sup>7</sup> For example, Mi'kmaq Elder Albert Marshall's concept of "Two-Eyed Seeing" (Bartlett et al., 2012) lays a framework for interweaving insights from both scientific knowledge and IK. Robin Wall Kimmerer (2015) builds on this foundation in her thoughtful reflections in *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*.

TK fish and water forms completed by individual groups cannot be the only method used at camp to document TK – see Section 6.0).

This approach is modeled after the traditional monitoring and management approach, practiced for thousands of years, whereby hunters and gatherers would report on their observations after individual outings. These reports were made regularly to Elders, women and other harvesters where they were discussed to collaboratively assess conditions and determine if changes to activities or plans should be made. These discussions were then shared on a larger scale when annual gatherings were held and strategic decisions were made, for example, to give areas a rest from active harvesting.

Ensuring that the science and social science approaches and methods used are as robust as possible [e.g., relying on different sources of information to enhance the credibility and accuracy of results, or ‘data triangulation’ (Yin, 2014)], and recognizing that local perceptions count on equal footing with other “data” and are critical to environmental governance and decision-making (Bennett, 2016) are also critical to the success of AEMP approaches and methods. While it can be a difficult task to interweave TK and science, providing a space for respectful exchange, discussion, and validation of TK is critically important for the AEMP TK Program to achieve the stated objectives and maintain credibility.

## 2.2 Approaches and Methods for the 2021 AEMP TK Program

The AEMP TK Program followed the components and phases of previous years described above, with some key changes: COVID-19, as well as the results of participants’ observations from watching fish and water, resulted in adjustments to approaches and methods at the 2021 camp. Table 1 provides an overview of activities and outcomes from the 2021 program, while Table 2 summarizes key changes to approaches and methods.

### 2.2.1 Planning Session

The June 23-25, 2021 AEMP TK Camp Planning Session took place at the Chief Drygeese Centre in Dettah. As in previous years, the Planning Session allowed participants to meet before the camp, review information and findings of previous camps, review past camp evaluation results and make recommendations accordingly, and share thoughts about the upcoming camp agenda, activities, logistics, and lessons to teach (Table 1). The Planning Session agenda, notes and presentations are included in Appendix B.

At the session, Joanne Barnaby, Sarah Ravensbergen and Natasha Thorpe presented an overview of the DDMI AEMP TK Program, fish sampling and tasting, participant recommendations (2015, 2018), and AEMP lesson-planning from 2015, 2018 (Appendix B).<sup>8</sup> Myra Berrub and Gord Cumming presented information on current DDMI wildlife and

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<sup>8</sup> Joanne Barnaby attended the Planning Session in person; due to COVID-19 restrictions, Sarah Ravensbergen and Natasha Thorpe attended the session remotely by Microsoft Teams.

vegetation sampling programs (Appendix B). The group reviewed documents, including informed consent and medical forms, maps of Lac de Gras and previous AEMP sampling locations, and practiced filling out the TK fish forms developed in previous years. Nancy Kadlun demonstrated a fish inspection session, cutting up a fish and showing the group how to fill out the TK fish form (Appendix F); participants discussed the health of the fish (colour, texture). Key themes and outcomes discussed throughout the workshop are detailed in Section 3.1.

### 2.2.2 AEMP TK Camp

The 2021 AEMP TK Camp took place July 31 to August 5, 2021, at Lac de Gras (Figure 3). While two Elders, one youth, and one translator were invited from each group, the total attending the camp was eight Elders and three youth, and two translators (Table 1). As in previous years, the day-to-day schedule of the camp (Appendix C) was modified according to weather; the group met each morning and evening to check the weather, look at maps, and adjust plans. Due to high winds, no trips to the Narrows were taken, although this remains a high priority. Daily notes and evaluations are provided in Appendix D; interview questions and transcripts can be found in Appendix E.

Minor changes to TK fish and water forms were made by facilitators for the 2021 camp, based on feedback from participants in 2018; recommendations for further changes suggested in 2021 are described in Section 6.0. Changes include: 1) revising the layout of the forms to a Powerpoint slide with big text and colour, so the form is easier to read and complete; 2) the option to note that gills are “dark red” on the 2018 form was changed to “wine”; 3) the colour scale of water on TK water forms was adjusted from “blackish / blue, green, or blue”, to “murky / yellow, green, or blue”.

At the 2021 AEMP TK Program, communications and engagement protocols were adhered to, consistent with previous camp approaches and methods (e.g., capacity building and collaboration, respect for Indigenous practices and protocols and intellectual property rights, ethical research protocols, youth training). TK fish inspection forms, TK water quality forms, and scientific fish and water testing, were completed as per the standard AEMP TK practice. However, no fish palatability and texture studies were completed, and a limited number of TK water quality forms and tea tests were completed. Higher than expected levels of parasites found in fish resulted in participants being unwilling to taste the fish, and some participants were unwilling to taste water. Table 2 summarizes these changes, which are discussed further in Section 3.0.

Table 1 2021 AEMP TK Program Activities, Data, Purpose and Outcomes

AEMP TK Program Phase 2021	Purpose	Participants	Data / Information	Outcome (s)
Planning Session for AEMP TK Camp (Yellowknife): June 23-25, 2021	<ul style="list-style-type: none"> <li>Review what happened in 2018 AEMP TK Camp</li> <li>Plan for camp in July / August 2021</li> <li>Practice processing fish and filling out TK Fish Inspection Form</li> </ul>	<ul style="list-style-type: none"> <li>LKDFN: Sarazine Basil, Albert Boucher, Doris (Terri) Enzoe, Gerome Basil</li> <li>NSMA: Kathy Arden, Victor Mercredi</li> <li>KIA: Nancy Kadlun, Mark Taletok, Agnes Allen</li> <li>TG: Charlie Football, Marie Adele Football, Beezoe Football</li> <li>YKDFN: Peter D. Sangris, Therese Sangris, Lena Drygeese, Zhanaie</li> </ul> DDMI: Myra Berrub, Gord Cumming Facilitators: Joanne Barnaby (in person), Natasha Thorpe, Sarah Ravensbergen (online)	<ul style="list-style-type: none"> <li>Signed Informed Consent Forms (Appendix A)</li> <li>Planning session agenda, notes and presentations (Appendix B)</li> </ul>	<ul style="list-style-type: none"> <li>Agreed on priorities and activities for 2021 AEMP TK Camp</li> <li>Reviewed methodology</li> <li>Practiced documenting information on TK inspection forms</li> <li>Addressed initial questions and concerns</li> <li>Reviewed 2018 suggestions and evaluations forms</li> </ul>
AEMP TK Camp (Lac de Gras): July 31-August 5, 2021	<ul style="list-style-type: none"> <li>Collection of TK and scientific data on health of fish and water</li> <li>Elder-youth connection and knowledge exchange</li> <li>Intercultural experience and exchange (including ceremonies, and storytelling)</li> <li>Teach youth important lessons</li> </ul>	<ul style="list-style-type: none"> <li>LKDFN: Sarazine Basil, Albert Boucher, Doris (Terri) Enzoe, Gloria Enzoe</li> <li>NSMA: Kathy Arden</li> <li>KIA: Nancy Kadlun, Jack Kaniak, Vikki Niptanatiak</li> <li>TG: Marie Adele Football</li> <li>YKDFN: Peter D. Sangris, Ted Tsetta, Lena Drygeese, Kelsey Martin</li> </ul> DDMI: Myra Berrub, Gord Cumming Facilitators: Joanne Barnaby, Sarah Ravensbergen Fisheries Biologist: Monica Redmond Artless: Jay Bulckaert, Sadedto Scott Onsite camp support: Byron Robinson, Robert Sayine, Shaun Wilson Offsite camp support: Nicole Goodman, Brett Potter, Brennan Debassige, Waylon Simba, Dalynn Taylor *Agnes Allen, Mark Taletok, Gerome Basil, Victor Mercredi, Charlie Football, Beezoe Football, Therese Sangris, and Zhanaie attended the planning session but were not able to attend the camp	<ul style="list-style-type: none"> <li>Daily camp schedule (Appendix C)</li> <li>Daily camp notes and evaluations (Appendix D)</li> <li>Interview questions and transcripts (Appendix E)</li> <li>Completed TK fish inspection forms (Appendix F)</li> <li>Scientific fish testing results (Appendix G)</li> <li>Completed TK water quality forms (Appendix H)</li> <li>Scientific water testing results (Appendix I)</li> </ul>	<ul style="list-style-type: none"> <li>Completed TK fish inspection and water quality forms; scientific fish and water analysis</li> <li>Provided comments and observations as part of tea test</li> <li>Shared stories and cultural experiences</li> <li>Taught lessons to youth, in knot tying, bannock making, fish filleting and different tools / techniques</li> <li>Video documentary, individual interviews, photo collages</li> </ul> *As described in Section 2.2 and Table 2, some fish and water methods used in previous years were not completed at the 2021 AEMP TK Camp
Verification Session and Finalization Meetings (Yellowknife): December 14-16, 2021 and June 6, 2022	<ul style="list-style-type: none"> <li>Present and seek feedback from groups to support finalization of report and notes</li> <li>Gather evaluative feedback to plan for 2024 activities</li> <li>Review and discuss DDMI information requests 2021 AEMP recommendations</li> </ul>	LKDFN: Albert Boucher, Doris (Terri) Enzoe, Gloria Enzoe (December 2021 and June 2022) NSMA: Kathy Arden (December 2021 and June 2022) KIA: Nancy Kadlun, Jack Kaniak (December 2021 and June 2022), Vikki Niptanatiak (June 2022) TG: Marie Adele Football (December 2021 and June 2022) YKDFN: Peter D. Sangris, Ted Tsetta (June 2022) Interpreters: Sarazine Basil (December 2021 and June 2022), Bertha Catholique (LKDFN), Lena Drygeese, Mary Rose Sundberg (YKDFN) (June 2022) DDMI: Myra Berrub, Kofi Boa-Antwi (online), Gord Macdonald (online) (December 2021 and June 2022), Cherish Winsor (June 2022), Gordon Cumming, Amanda Annand, Kyla Gray, Nicole Goodman (December 2021) Golder: Rainie Sharpe (December 2021) Facilitators: Joanne Barnaby, Sarah Ravensbergen (December 2021 and June 2022 in person), Natasha Thorpe (December 2021 online, June 2022 in person) Artless: Jay Bulckaert, Pablo Saravanja (December 2021)	<ul style="list-style-type: none"> <li>Verification session agenda, notes, presentations and verification forms (Appendix J)</li> </ul>	<ul style="list-style-type: none"> <li>Viewed and approved video documentary and report</li> <li>Documented questions, comments, and revisions of results</li> <li>Corrected, verified, and finalized TK contributions</li> <li>Completed all 2021 fish and water studies and evaluation process</li> <li>Prepared recommendations for future AEMP activities based on evaluations and recommendations</li> <li>Discussed AEMP information requests and recommendations</li> </ul>

Table 2 AEMP TK Program Approaches and Methods

Key Component of AEMP TK Program	Approach / Method	Description	2021 Comments
Communications and Engagement <i>(see Section 2.0)</i> *key throughout all components and phases of AEMP TK Program	Capacity building and collaboration; youth training and capacity building	<ul style="list-style-type: none"> <li>Indigenous practices and protocols, respect, capacity building, collaboration, teaching between Elders and youth</li> <li>Capacity building focuses on TK research methods (e.g., interviewing and notetaking skills), scientific sampling methods for fish (e.g., tissues, fork length, weight, sex), and water quality sampling (e.g. use of different equipment, sampling methods)</li> </ul>	<ul style="list-style-type: none"> <li>No changes to approaches and methods from 2018</li> <li>COVID-19 presented logistical / organizational challenges for camp planning and engagement</li> </ul>
	Respect for Indigenous practices and protocols and intellectual property rights	<ul style="list-style-type: none"> <li>Care is given to documenting and communicating TK according to standard and accepted protocols surrounding intellectual property rights and TK protocols specific to the five Indigenous groups</li> <li>Protocols around respect (e.g. feeding the fire and paying the water) are taught by Elders and followed by participants</li> <li>Elders encouraged youth and all people who attended camp to take a few moments to honour one another and the land wherever possible</li> </ul>	<ul style="list-style-type: none"> <li>No changes to approaches and methods from 2018</li> </ul>
	Ethical research protocols (e.g. Informed Consent, First Nations Principles of OCAP <sup>9</sup> )	<ul style="list-style-type: none"> <li>Ethical research protocols apply to all phases of the AEMP TK Program; prior to participating in any activities, activities and their context are discussed as a group</li> <li>Wherever needed or requested, translations of all material, written and verbal, are provided</li> <li>Participants read the Informed Consent Form (or have it read to them), and have questions or concerns addressed before signing (Appendix A)</li> <li>Discussions and activities are recorded using a hand-held audio recorder, and using written note-taking; audio was transcribed and included in daily notes (Appendix D) and used to ensure that the facilitators accurately interpreted key themes, thoughts, discussions, of the group</li> <li>Evaluation forms at the Planning Session, camp, and Verification Session, ensure feedback is captured at several stages</li> <li>Material stored on a computer is stored in a safe and secure password protected manner; written notes are saved in a secure location</li> <li>Individual and group evaluation and verification of daily notes, reports, and photos, takes place before any material finalized / released</li> </ul>	<ul style="list-style-type: none"> <li>Minor changes to approaches and methods from 2018</li> <li>Revisions to Informed Consent Form discussed (not finalized)</li> <li>Verification of daily notes was completed at the Verification Session rather than at the camp itself</li> <li>Finalization of information requests and key recommendations was discussed at length as a group and completed to as full an extent as possible so that DDMI could respond before the verification meeting.</li> <li>Group discussions on recommendations were documented at camp on large flipchart paper, with changes made throughout as they are discussed (Figure 12)</li> </ul>
Watching Fish <i>(See Section 2.2.2.1, 3.2.1)</i>	TK Fish Inspection Forms (or 'TK Fish Field Form' or 'TK Fish Form')	<ul style="list-style-type: none"> <li>Participants continued to test and refine TK indicators for healthy fish, based on forms that were developed for the 2012 program</li> <li>Youth record Elders external and internal observations and teachings of fish (e.g. size, gills, firmness, skin, tissue, stomach, organs, deformities, odour) (Appendix F)</li> <li>Fish are caught by nets, rod and reel; location, timing, number of fish, etc. depend on participant decisions, weather, external factors</li> </ul>	<ul style="list-style-type: none"> <li>Given a lack of youth, facilitators / DDMI staff / aRTLeSS recorded answers on TK fish forms for some Elders and groups where needed</li> <li>Recommendations for changes to TK fish inspection and water quality forms discussed in Section 6.0</li> </ul>
	Fish Palatability and Texture Study	<ul style="list-style-type: none"> <li>Started in 2002, designed to document TK of fish by preparing fish in different ways and having community members taste them (TK methods revised in 2012)</li> </ul>	<ul style="list-style-type: none"> <li>Not completed at 2021 camp; after observing fish caught, participants were not comfortable consuming</li> </ul>
	Scientific Fish Testing	<ul style="list-style-type: none"> <li>Species, fork length, total length, weight, life history, sex, stomach contents, parasites, condition, documented for each fish</li> </ul>	<ul style="list-style-type: none"> <li>Parasite analysis sent at the request of participants (Appendix G)</li> </ul>
Watching Water <i>(See Section 2.2.2.2, 3.2.2)</i>	Water Quality Tasting: TK Water Quality Form (or 'TK Water Field Form' or 'TK Water Form') and Tea Test	<ul style="list-style-type: none"> <li>Participants continued to test and refine TK indicators healthy water, based on forms that were developed for the 2012 program -Youth record Elders' observations of water quality in the lake; community members taste cold water, boiled water and tea from three different depths at different sites in the lake while youth record observations and teachings (Appendix H)</li> </ul>	<ul style="list-style-type: none"> <li>Many participants were not comfortable drinking cold (unboiled) water</li> <li>Recommendations for changes to TK fish inspection and water quality forms discussed in Section 6.0</li> </ul>
	Water Quantity Studies		

<sup>9</sup> <https://fnigc.ca/ocap-training/>

Key Component of AEMP TK Program	Approach / Method	Description	2021 Comments
	Scientific Water Testing	<ul style="list-style-type: none"> <li>Temperature, dissolved oxygen, turbidity, conductivity and pH, metals, nutrients, ammonia, mercury, perchlorates, nutrients, chlorophyll a, phytoplankton, zooplankton, at many different depths of the water column</li> <li>DDMI staff demonstrate water testing methods to youth and encourage their participation</li> </ul>	<ul style="list-style-type: none"> <li>No changes to approaches and methods from 2018</li> </ul>
Video documentary, Interviews and Teachings, Excursions / Trips (See Section 2.2.2.3, 4.0, 5.0)	Video documentary	<ul style="list-style-type: none"> <li>The video documentary is a better way than this report for participants to interact with and share the results of the camp; many aspects of monitoring and camp life are captured</li> <li>Participants view and approve film following the camp</li> </ul>	
	Interviews and Teachings	<ul style="list-style-type: none"> <li>Semi-directed interview process (Huntington 2000) allows for a deeper discussion of participants experiences, observations, teachings of watching fish and water</li> </ul>	<ul style="list-style-type: none"> <li>Minor changes to approaches and methods from 2018</li> <li>aRTLeSS Collective was responsible for organizing interviews; interview guide was based on 2018 questions but shortened and adapted by Sadetlo Scott, Sarah Ravensbergen and Joanne Barnaby, and agreed on by DDMI staff (Appendix E)</li> <li>All transcripts were shared with TCS and results included throughout report with a focus on Section 5.0</li> <li>Interviews with NNSL were completed over the camp satellite phone with Ted and Nancy; there were numerous attempts for an interview with CKLB, planned in Tł̄chq̄ with Marie Adele but issues with the satellite phone connection prevented this</li> </ul>
	Excursions / Trips	<ul style="list-style-type: none"> <li>A key highlight of previous camps has been an excursion to the Narrows where Lac du Sauvage flows into Lac de Gras (a well-known archaeological and traditional use site, and important caribou crossing)</li> </ul>	<ul style="list-style-type: none"> <li>A trip to the Narrows remained a high priority for participants, but was not possible due to inclement wind and weather (however, as the TK Panel was combined with the AEMP, trips to watch vegetation close to the camp in sheltered areas were taken)</li> </ul>

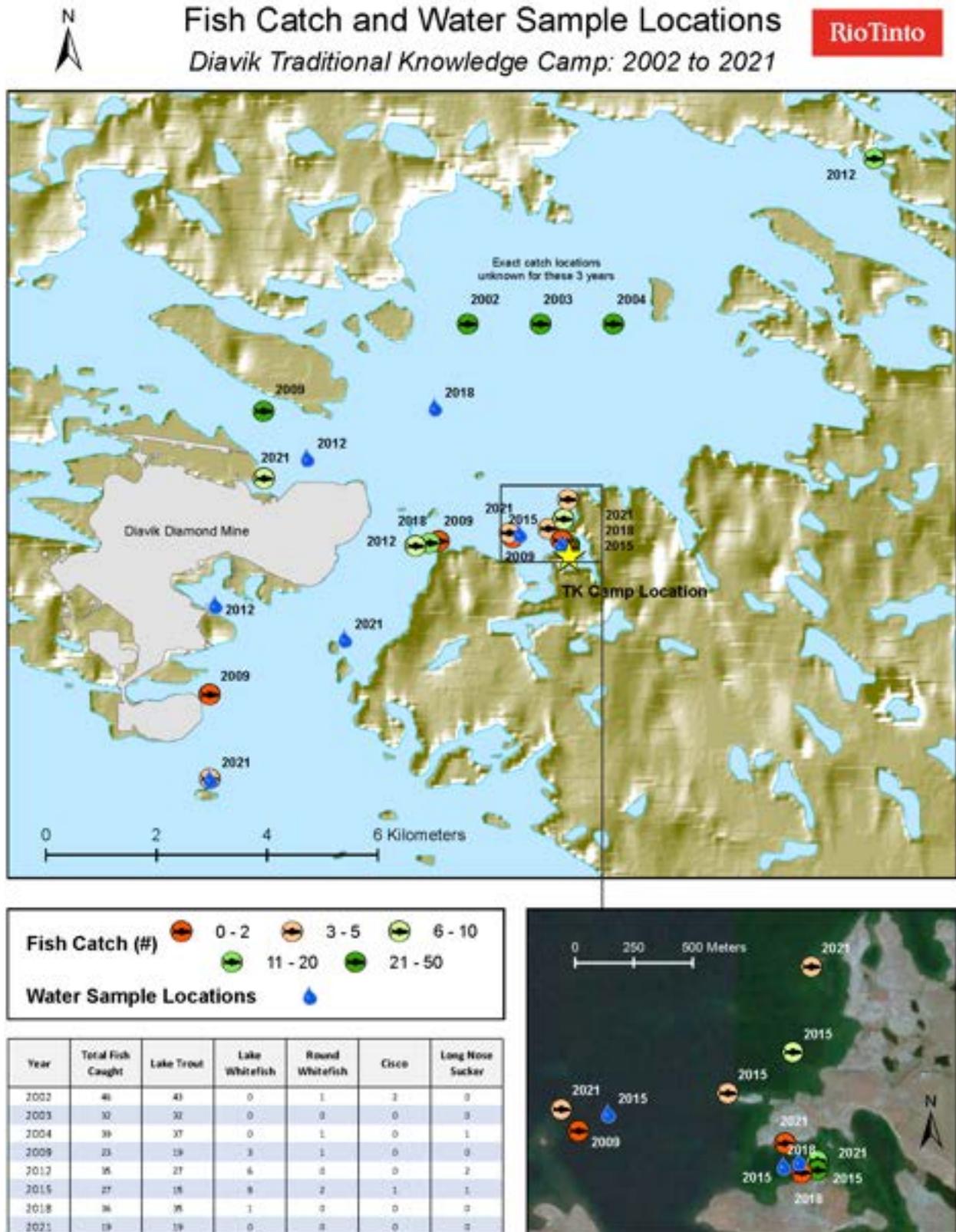


Figure 3 DDMI AEMP TK Camp Fish Catch and Water Sample Locations



Figure 4 Camp Life Photo Collage

### 2.2.2.1 Approaches and Methods for Watching Fish

As in previous years, the TK component of the camp focused on Indigenous understandings of fish health (e.g. girth, colour of the gills, firmness, presence of deformities, cysts or parasites, etc.); the TK fish forms documented these understanding with one form filled out for each fish, by each group. Additional discussion and observation, pictures, and video documentary, were important in capturing critical insight into the fish that were caught. Knowing if fish are healthy is a complex process that cannot necessarily be broken down and captured by a series of separate indicators, which is the more reductionist approach common in western science. This is demonstrated by one of the most common responses from participants when asked how they know when a fish is healthy or unhealthy: “by looking at it, feeling”, “just by looking at it” (i.e., the knowledge is intuitive, based on extensive experience).

Participants discussed fish net locations while consulting a map and inquiring about how sample locations were selected in the past. Elders agreed they want to sample close to the mine on either side of the pits, as this has not been possible at previous TK camps (at least on the north side of the pits, due to weather and wind constraints). Gord confirmed there would be no blasting August 1, so it would be possible for community members to fish close to the mine this year. To take advantage of this, Elders agreed that they wanted to set one net in each of those places (two total) on the second day, and leave them in for three hours before checking them. Many people wanted to go in the boats and so it was agreed that three boats would go out, one to each fish site, and then the third would be a watching boat. On the map, sites are numbered by priority – people also want to test sites close to the mine, and far away for comparison.

*[Sarah: Why do you want to set nets here, near the mine?] To see if they [fish] are affected from the mine, from near the mine site, to see how fish are in North Inlet dike, if they are different than fish in other areas ... because we need to see all the fish in the lake where the mine is ... we set the net here because there are little lakes in there, behind where it's blocked. The water drains and it's not healthy water, it's always on my mind. If anything is in the water, we want to see. I have been trying to put nets here for so long. [Doris (Terri) Enzoe]*

*That's the reason I suggested they have nets there in the winter, so we can see the difference in the winter. In the summer when all these bugs go in the water, and all the fish are eating, we want to know what they eat in the winter also, what is in the water. [Albert Boucher]*

Elders observed the fish at the catch locations and at camp once on shore, individually and as a group, sharing their insights in their language (Appendix K) with youth and facilitators, and documenting answers. Indicators of healthy fish according to TK were documented using the TK fish inspection form (Appendix F). Fish were passed around to the group so that all individuals

could closely examine the fish and answer the question, “what can you tell me about this fish?” After scientific observations (i.e. weight, fork length, species, sex) were recorded, an Elder cut up the fish while the group watched and recorded their observations within their group. As there were not enough youth to record for every group, facilitators / DDMI staff / aRTLeSS Collective stepped in where needed. Further scientific data collection (e.g., life history, age structure, stomach content) was completed after participants were finished recording their TK.

### Setting and Retrieving Nets

Gill nets and rod angling were used to catch fish at four locations on Lac de Gras over three days (see Section 3.2 for details of locations). Gill nets were 50 m long and three and a half inches in size and were set in the water for short durations (two to four hours) to reduce stress on any fish caught. Any fish caught in the nets that were active and fighting were deemed healthy enough for release and were returned to the lake.

### Processing Fish

Youth, Elders, and the fisheries biologist (Monica Redmond) processed the fish on a sterile table as they were caught. In order to evaluate fish texture, questions were posed to Elders during the processing that related to TK indicators of body condition such as size, morphology, robustness, and other variables. Examples of fish tissue and fish organs were displayed on a tray so that all participants could get a close look at the tissues.

Scientific records of species, fork length, total length, weight, life history, sex, stomach contents, parasites, condition, etc. were documented for each fish. Together, this joint process formed part of the TK, capacity-building and training components of the program. Elders commented on the shape, girth, scales, fat content, eggs or milt, organs (e.g., heart, liver, kidney, pipe, etc.) as well as the presence or absence of parasites, cysts or worms.

Monica Redmond demonstrated how to collect scientific indicators of fish health, how to take tissue samples for metals testing and otoliths (a bone used to age fish) and provided insight on fish biology and the capacity of fish to evolve to live with some parasites. Several participants processed fish for the group. As Nancy Kadlun had extensive experience collecting otoliths from the 2018 camp, she helped process the fish samples after the TK fish forms were filled out as well.

As in previous years, Elders and youth worked beside the fisheries biologist to assess, clean and prepare multiple fish for comparison purposes in preparation for palatability and texture analysis. Participants expressed concerns over the health of the fish, and the number of parasites discovered, and were not comfortable eating the fish. The community members chose not to formally test any of the fish for taste as a group due to the presence of parasites. Out of a total 19 fish caught and processed (all lake trout), DDMI formally submitted 12 lake trout tissue samples for metal concentration analysis and 10 otoliths for aging.



Figure 5 Fish Sampling Photo Collage

One fish (LKTR03) had very few parasites and was used by Nancy Kadlun to show how to prepare fish fillets for drying. Nancy Kadlun cut the fish in front of the group, demonstrating the slicing technique she uses for making dry fish. This lake trout was hung on the drying rack over the fire. It was the only fish that was processed for consumption at the camp. TK fish forms were completed for the dissection, but no TK fish forms were completed for taste, as it was not designated for palatability testing by the entire group. Tissue samples were taken for metals analysis, and otoliths collected for aging (discussed further in Section 3.0).

### Tasting Fish

Fish Palatability and Texture Studies have been completed since 2002; they were designed to document TK of fish by preparing fish in different ways and having community members taste them. At past camps, during fish inspections, around the evening fire at the camp, and during interviews, the Elders provided input on fish preparation and consumption, including tools, methods of drying and cooking, stories and medicinal uses (e.g., dryfish hung over a low burning fire). Participants usually taste a total of four fish, prepared by baking, boiling, frying, and grilling. As with the TK fish and water forms, Elders observations and teachings are recorded for each tasting; an effort is made to keep cooking methods consistent between camps (e.g., using only Tenderflake lard to pan fry fish) so that information can be compared between years. As noted above, Fish Palatability and Texture Studies were not completed at this camp.

#### *2.2.2.2 Approaches and Methods for Watching Water*

### Water Quality Testing Methods

Lessons were given to youth and Elders on the various water quality sampling techniques that Diavik uses to monitor water quality in Lac de Gras. Some water sampling techniques were only discussed, due to the limited time available for sampling. Diavik Environmental Coordinator Gordon Cumming led capacity building lessons on scientific water quality sampling techniques. Youth participants Vikki Niptanatiak and Kelsey Martin collected scientific water samples at one location in the lake with coaching from Gord.

An overview of the Diavik AEMP Program, which is the main monitoring program for identifying changes to water quality in Lac de Gras, was provided by Gord. He described the process of preparing sampling equipment for water, plankton, and sediment collection and explained that the AEMP Program occurs twice per year every year. In the winter, water is collected beneath lake ice by auguring a hole, and during late summer samples are collected by boat. On average, it takes environmental technicians two weeks to sample all the sites.

At each AEMP water quality sampling location, DDMI environmental technicians collect and record depth profile measurements: temperature, dissolved oxygen, turbidity (cloudiness of water), conductivity (water's ability to conduct electricity), and pH (acidity) electronically with a

YSI and on field sheets. Water samples are collected from three depths (top 2 m, middle, and 1 m off the bottom) using a Beta Bottle. The samples are sent to external labs to analysis for chemicals and nutrients.

A Depth-Integrated sampler is used to collect a composite (mixed) sample of lake water from the top 10 m of the water column. As it is pulled up, it collects water continuously until it reaches the surface. This is used to sample nutrients and phytoplankton (very small plants that live in the water column) species in the sunlit zone of the water column.

A Secchi Disk is used to measure the depth at which light (i.e., the sun's rays) penetrates the lake. The depth the Secchi Disk can be seen depends greatly on the light conditions of the day. This is the depth at which algae and phytoplankton exist.

A Zooplankton Net is dropped to one meter off the bottom of the lake and is pulled up slowly to collect zooplankton (very small animals that live in the water column).

Every 3 years, a "comprehensive" AEMP is completed with extra sampling locations, and more sampling equipment for collecting lake bottom sediment and benthic invertebrates.

In the summer during a comprehensive year, a sediment corer is used to collect top layer sediment samples from the bottom of the lake. Samples are sent to a lab to analyze metal and chemical content.

In the summer during a comprehensive year, benthic invertebrates are collected from the lake bottom using an Ekman Grab. The lab analyzes the types and numbers of benthic invertebrates, or benthics, which are bugs/organisms that live in or on the bottom sediments of a lake or river and are an important source of food for fish. Table 3 summarizes sample types water sampling methods and equipment.

### **Water Quality Sampling Locations**

Participants discussed water quality sampling locations while consulting a map of sample locations from previous camps. Participants expressed interest in sampling water near the A21 pit, as this had not been possible in the past (due to several factors, including inclement weather and safety concerns with frequent blasting). This location is also down-current of the Diavik diffusers. Participants wanted to see this sampling done with their own eyes where they expected to see an influence from treated water effluent from the mine.

Participants collected water samples for scientific monitoring and taste testing near the A21 pit (TK1), however the water that was collected for taste testing was discarded back at the camp in error and a secondary sample at the same location could not be taken the same day due to high winds. The following day, high winds continued to prevent sampling at the same location so the water for taste testing was collected at a location 3.5 km to the northeast of the A21 pit (TK2).

This location was still down current of the diffusers and was determined with consensus to be the best compromise given the weather conditions.

*Table 3 Annual AEMP Program Water Quality, Plankton, Benthic Invertebrate and Sediment Sampling Methods / Types*

<b>Sample Type</b>	<b>Sample Method</b>	<b>Equipment</b>
Water Quality	Water samples collected from top (2 m) middle and bottom (1 m off bottom) of water column. Samples collected by youth participants at 2021 TK Camp.	Beta Bottle
Nutrients Chlorophyll <i>a</i> Phytoplankton Species (Taxonomy)	Composite (mixed) water sample from top 10m of water column (depth where sunlight reaches). Sampling technique discussed, not demonstrated at 2021 TK Camp.	Depth Integrated Sampler
Zooplankton – quantity (biomass) and species (taxonomy)	1m off the lake bottom to surface. Duplicate samples, composite (mixed) of 3 tows; sampling technique discussed, not demonstrated at 2021 TK Camp.	Plankton net
Benthic Invertebrates (bugs in sediment)	1 Composite of 6 grabs. Sampling technique discussed, not demonstrated at 2021 TK Camp.	Ekman
Sediment Samples (Lake Bottom)	1 composite of 3 sediment cores using the top 1cm of each core. Sampling technique discussed, not demonstrated at 2021 TK Camp.	Sediment Corer



Figure 6 Working Together Photo Collage

## Water Quality Tasting

The TK component of water quality focused on a range of measures from taste, colour, clarity, temperature, and shoreline/reef characteristics to traditional means of measuring water quality such as smell or the presence of surface film. Indicators of healthy water according to TK were documented using the Water Quality Form (Appendix H).

As in the previous section, some participants did not want to drink water after seeing fish with parasites; those that were comfortable tasting the water did so according to the 2015 / 2018 methods, with some changes (participant recommendations on how to improve water quality tasting are included in Section 6.0). Participants tasted boiled water (straight from the lake, boiled in a pot over the fire, then cooled) and tea (straight from the lake, boiled into tea with Red Rose tea). No participants were comfortable testing cold water straight from the lake, as they had in previous years.

Water was tasted from three depths, with a youth (or facilitator / staff if needed) recording participant observations on the TK water quality Forms. Tea was made from water collected from one water quality testing site visited by camp participants. A pot of water from the sampling site was heated on the fire with two Red Rose tea bags (the same brand as used in previous years). The tea was evaluated using the TK water quality Form (Appendix H) and questions based on TK indicators for water quality. The questions asked included:

1. How does the tea/water taste?
2. How is the clarity?
3. How is the after taste?
4. Is there a residue?

The camp participants gathered inside in the meeting tent and cups of tea and water were ladled for each camp participant, one sample at a time. New cups were provided for each sample. Youth and researchers documented the observations of Elders from each Indigenous group for each sample (Appendix H).

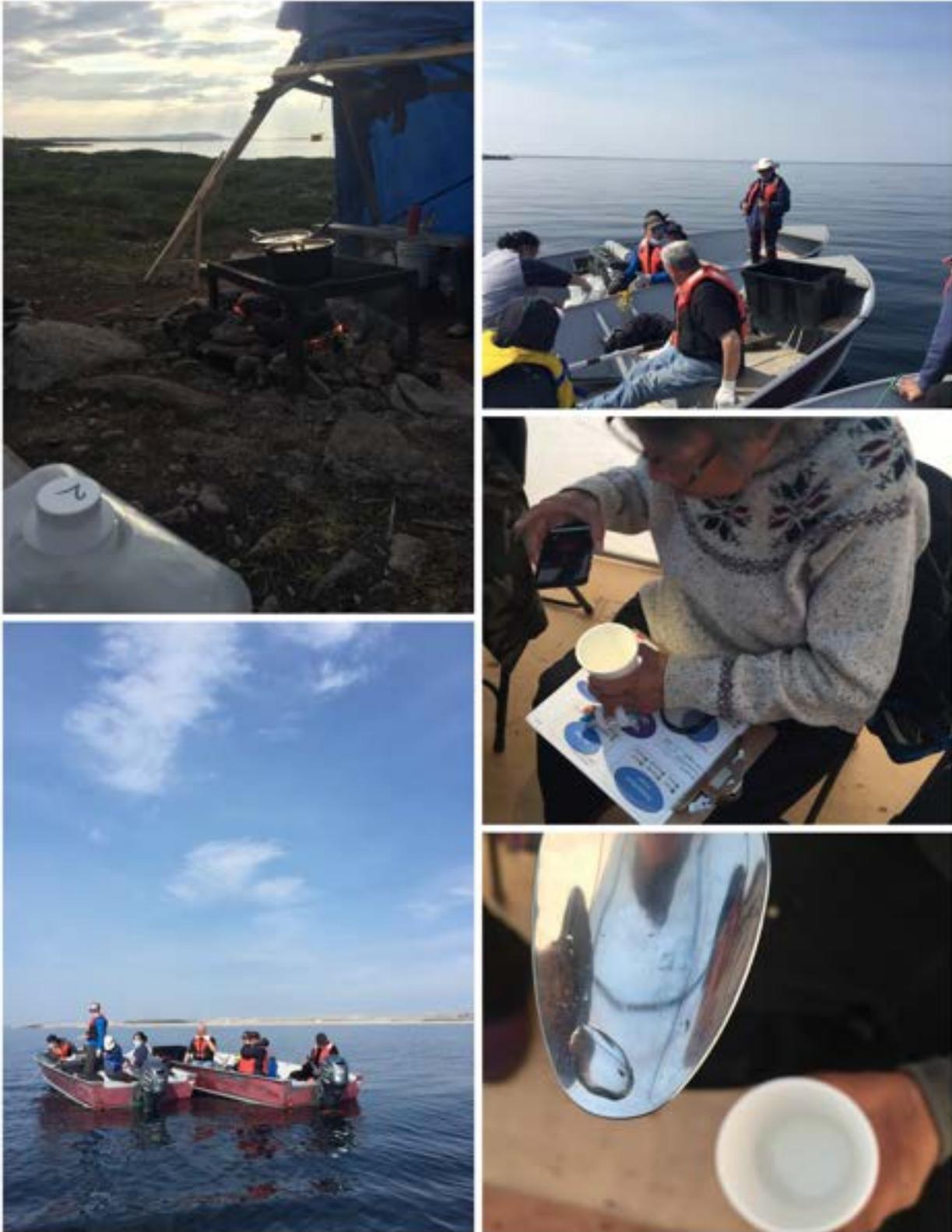


Figure 7 Water Quality Sampling and Tasting Photo Collage

### *2.2.2.3 Video Documentary, Interviews and Teachings, Excursions / Trips*

While DDMI is required to produce multiple reports to satisfy regulatory requirements (e.g., annual AEMP and wildlife monitoring reports), feedback from Indigenous groups has long been that written reports are not the best way to provide information to Indigenous communities grounded in oral tradition. aRTLeSS Collective, local experts in video documentary making, took footage including techniques used for sampling fish and water, Elder interviews, storytelling, traditional fish processing and preparation, youth reflections and more. Youth were invited to learn about shooting video documentary while in the field, but unlike previous years, they were not formally trained in video documentary making. Ultimately, several vignettes, a short film, and a long film detailing the camp were produced. However, unlike in previous years, these were not approved by community members of DDMI<sup>10</sup> for distribution at the time of writing. Importantly, a Tłıchq filmmaker, Sadetłı Scott, led filming and post-production in collaboration with Jay Bulckaert and Keith Robertson.

Throughout the AEMP TK Camp, individuals from each Indigenous group were invited to participate in an individual interview to share whatever they wanted, over and above the video documentary documentation that occurred during the fisheries and water work. Interview questions were refined with Sadetłı and the facilitators, and carried out by Sadetłı and Sarah. This approach was intended to honour the expansive nature of Indigenous Knowledge such that people could place their discussions around fish and water within a broader framework.

A semi-directed interview approach was used, and interviews with 10 participants, Joanne Barnaby (facilitator), and Monica Redmond (the fisheries biologist) took place. Audio and video documentary recordings as well as interview transcripts were backed-up nightly. Video documentary recordings were transcribed professionally. As in previous years, once verified and finalized, transcripts (Appendix E) and raw footage were provided to each Indigenous organization. With permission from interviewees, excerpts from the interviews relevant to fish and water have been inserted into the report to provide additional information and insight into key themes and issues related to aquatic effects monitoring; interviews explored topics demonstrated to be of key interest by participants at camp. As well as fish and water observations, interviews explored participants' hopes for long-term monitoring, guardianship programs, and closure planning (Appendix E).

As at previous camps, participants expressed a strong desire to return to the Narrows where Lac du Sauvage flows into Lac de Gras, as they did in 2018. The Narrows is a well-known archaeological and traditional use site, primarily as it is an important caribou crossing. Participants frequently discussed the desire to see the Narrows and sample/watch fish, water, and vegetation there to compare their results with findings from samples taken close to the

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<sup>10</sup> Thirteen versions of the video documentary were produced for DDMI before it was reviewed by participants during the June 6, 2022 Verification Session. During the first screening, participants requested edits such that it better reflected their concerns about fish and water. DDMI committed to making these changes before release.

mine. As in 2012 and 2015, poor weather conditions did not permit a trip to the Narrows in 2021 like in 2018.

## Evaluation / Closing

An important part of the AEMP TK Camp process is to ensure participants' observations, experiences, words, etc. are captured in the way they were intended. An evaluative process for the AEMP TK camp consisted of discussing and confirming observations, recommendations, and experiences throughout the camp, as well as a closing circle comment session. A closing circle and discussion of reflections (Sections 5.0, 6.0), and a hard copy evaluation form (Section 6.0), were also completed by participants after the Planning Session, camp, and Verification Session. While people were still sitting around the fire, they shared particularly heartfelt and relevant recommendations and comments. This feedback combines with input from previous camps to direct the nature, quality, and content of future initiatives through collaborative adaptive management.

### 2.2.3 Verification Sessions

Most participants reviewed and verified the daily notes, author biographies, interview notes, draft of this report (V2.0), and photo collages from the AEMP TK Camp at the December 14-16, 2021 Verification Session held at the Explorer Hotel.<sup>11</sup> The purpose of the Verification Session was to bring together participants after the camp to reflect on their experiences, and to review and finalize the draft report (V2.0). However, consent to screen the draft video-documentary was not provided by DDMI. Joanne Barnaby led facilitation in-person while Natasha Thorpe participated online. Sarah Ravensbergen provided an overview of this report by Sections. Key camp themes and outcomes were discussed by the group, and minor edits to the report were requested by camp participants. Scientific water quality and fish testing results from camp were presented by Gord Cumming (Appendix G, I) and discussed by the group. Kofi Boa-Antwi presented DDMI responses to the AEMP Formal Participant Recommendations from the AEMP TK Study (Table 17), while Rainie Sharpe addressed the information request for details of parasite and cysts found at the camp (all DDMI and Golder presentations are included in Appendix J). Preliminary results of parasite testing were shared and discussed by the group; final lab results were released in March 2022 and are included in Appendix G. The group decided on the report title and dedication, expressed the desire to view and comment on the video-documentary, and re-affirmed desires to investigate and understand the nature of the changes to fish and water that were observed at the 2021 camp.

A second Verification Session was held on June 6, 2022 and took place at the Tree of Peace to review the updated version of the report (V3.0) and to screen the video documentary (V13.0) for the first time. Further attempts were made to finalize outstanding verifications of notes,

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<sup>11</sup> As time did not allow everybody to verify notes given their length, some of these have been included in draft form in Appendix D.

forms, etc. Sarah provided an overview of report revisions made in accordance with participant direction. Joanne Barnaby and Natasha Thorpe co-facilitated in-person. Myra Berrub and Charity Winsor (Corporate Relations) attended in-person while Kofi Boa-Antwi and Gord McDonald were available online.

Key themes and outcomes discussed throughout the Verification Sessions are detailed in Section 3.3 and Appendix J. Appendix J includes both meeting agendas and detailed notes from both Verification Sessions.

## 3 Results from the 2021 AEMP TK Program

### 3.1 Results from the Planning Session

During the Planning Session, participants expressed their satisfaction with the approach taken in 2018 and recommended that the 2021 program follow a similar format. COVID-19 presented some logistical and organizational challenges for camp planning (e.g., organizing pre-camp and on-site COVID-19 swabs). Community members discussed their recommendations for the following (Table 4):

- 2021 camp practices and protocols;
- Communications and engagement;
- 2021 AEMP TK camp approaches and methods;
- AEMP TK Program general monitoring considerations and closure concerns; and
- Recommendations for camp logistics and health and safety.

Table 4 Planning Session Results

Discussion Theme	Recommendation for 2021 AEMP TK Program
Camp practices and protocols	<ul style="list-style-type: none"> <li>• Paying the land and water when you travel, as soon as you step on the land, and throughout the time at camp, is very important</li> <li>• Be respectful: Elders and youth should take the time to listen, learn, share stories and teachings between each other, especially so youth can learn</li> <li>• Albert Boucher emphasized that there are many mines on their land (this is why they want to monitor and want the youth to learn); Elders have been watching the land, including fish and water, for a long time, and they know all the lakes and water</li> </ul> <p><i>We need to keep each other informed and share. We know how to do things on the land. We need youth who want to learn. Our ancestors travelled by the stars on the barrenlands sometimes. ... You have to watch the landscape and the sky and know your land when you travel, this is how you learn and teach youth. You have to sit with Elders and listen, and watch and learn; this is how TK is passed on. [Charlie Football]</i></p> <p><i>It's 5 or 6 days we're going to be out there, and we have to teach them our traditional ways in 5 or 6 days. We would tell them but they will learn. It's good to stay out there on the land. In the meantime you can look at the land and we knew what was there before the mine started. Now we can visually see it again. Our Elders told us in the past to really respect the land, and the ancestors respect the land no matter where we are. The animals, caribou, water, respect the water, the fish. When you go out on the land to the lake, we pay the water out of respect, we are thankful we have water. In the winter, you either take a branch from the land and leave a small one to mark your road, or pay with tobacco. When we don't see the land for a long time, we still pay it-thanksgiving, that we are able to travel on it again. That's the Dene way we were taught. Now we are going to the camp and we have to treat the children in the soft way, not to say you have to do it, but show them what you have to do. [Albert Boucher]</i></p>
Communications and engagement	<ul style="list-style-type: none"> <li>• Monitoring results (both science and TK) from previous AEMP camps should be shared and discussed with participants at the upcoming camp; it is important for DDMI to listen and respond to community input</li> <li>• Participants will expect to see both sets of results going forward, and for results to be shared consistently with appropriate community departments as well as individuals</li> </ul> <p><i>Since the camp was established, all these things have been written down, but today do we see anything different? They should send emails or reports to people. ... August Enzoë will give me a binder to check, and pull everything that was said. How is it different than 2003, the plants, the fish, the water? DDMI is doing all this testing but they don't share the results. It's important to talk face to face about these things. [Doris (Terri) Enzoë]</i></p>
2021 AEMP TK Camp Approaches and Methods	<ul style="list-style-type: none"> <li>• Participants requested that DDMI determine how close to the mine sampling can occur; some participants are concerned about, and would like to monitor (e.g. the North Inlet)</li> <li>• Sampling close to shore and as close to the mine as possible is important</li> </ul>

Discussion Theme	Recommendation for 2021 AEMP TK Program
	<ul style="list-style-type: none"> <li>• Several participants noted they would like to sample at the Coppermine River, to compare places close and far to the mine site; participants discussed how sediment close to the mine affects the water and the fish there, but farther away, the water is good</li> <li>• It is important to cook fish in different ways while we are out there, to see if it is healthy</li> </ul> <p><i>It's important to look at the plants and fish close to shore. The bears eat all summer and get fat, hibernate. Willows, grass, all the vegetation around the mine that grows should be watched. Sometimes places where they throw out grey water from the mine, the grass doesn't grow because there's stuff in the water. And the birds and ducks, fish, bugs, they are in the grass, and eat the grass, and eat what is in the grass. Fish eat in the grass in the water. Flies fall into the water, and fish eat those [so anything in the water goes through the ecosystem]. I one time saw ants in fish stomachs, they blew off the island [Diavik], and fish eat it. And fish don't stay in one place, they travel around, and people get sick from fish. ... There are changes to the water but they [DDMI] don't tell us what they are. ... We should go as far as we can toward the mine to watch things, berries, blueberries. I am Dene and travel on the land, I know contamination. We should go by boat, travel, and look on the shore, and show kids what to look for. We have to know what to look for when we go out. ... Scientists come and that's good, but we are acting like scientists too when we are out there, because we know the land and lie on it. We know if it will be a good or warm summer or if the berries will be edible. [Albert Boucher]</i></p> <p><i>With blasting, dust travels, you see the black dust on your shoes and on the grass, willows, it contaminates things. We should go as far as we can toward the mine to watch things, berries, blueberries. I am Dene and travel on the land, I know contamination. We should go by boat, travel, and look on the shore, and show kids what to look for. We have to know what to look for when we go out. Scientists come and that's good, but we are acting like scientists too when we are out there, because we know the land and lie on it. [Albert Boucher]</i></p> <p><i>There is a correct way to do things. We should go by boat places to place and check berries in certain areas. Southwest of the mine area and island, we should check fish there. You have to check different places. Water has a different smell close to the mine because of blasting, so fish wouldn't go there. [Albert Boucher]</i></p> <p><i>We should compare Coppermine areas with other areas, maybe three different areas, and near the camp. ... there's a rapids at Coppermine, if weather is good, we should set nets there, close to the mine site and the Narrows. [Peter D. Sangris]</i></p>
<p>AEMP TK Program general monitoring considerations and closure concerns</p>	<ul style="list-style-type: none"> <li>• Discussions of climate change and how permafrost melt might affect closure plans should be included in all monitoring discussions</li> <li>• Participants would like to understand more about DDMI's closure plans re: PKC containment (this information is still being circulated within communities and several participants expressed a desire to learn / understand more); several participants expressed concern that they do not feel they have all the information with regards to DDMI's closure plans (e.g. flooding the pit lakes)</li> <li>• Charlie Football emphasized that no equipment should be left by Diavik in the pits or at the mine; at Snare Lake, north of MacKay Lake, north of Wekweèti, they have been experiencing strong wind and changes to weather and climate</li> <li>• Several participants expressed concern about chemicals on site, and any hazardous materials left on site after closure, the importance of having all information available about mine operations and closure, and the importance of having community members watching / monitoring the site after closure</li> </ul>

Discussion Theme	Recommendation for 2021 AEMP TK Program
	<ul style="list-style-type: none"> <li>• A historic map of the area where DDMI operates was requested</li> <li>• Closure planning and operations should be done carefully and properly</li> </ul> <p><i>The land is not visually the same but still if you want to make it beautiful like when they first started, the only way they can do it is by filling it up. Then in the future we would be proud of how we reclaimed the land, that there was a mine there and it is beautiful now. We are here to give advice and see what is done, that it is done the proper way. There are a lot of Elders still here, lots of people that use the land. We want to keep our land as it was before mining came. Once we get out there on the land, I will tell stories again and tell how it has evolved this way, and youth will learn this way. That's our culture. [Albert Boucher]</i></p>
<p>Recommendations for camp logistics and health and safety</p>	<ul style="list-style-type: none"> <li>• All documents we need to print should be done so before we get to camp</li> <li>• Books on plants should be brought to the upcoming camp</li> <li>• A plan should be made for how to approach work with many interpreters, and all equipment must be tested and issues ironed out before we get to camp</li> <li>• Spare time, especially in the evening, for Elders to tell stories, should be incorporated into the schedule, and there should be a clear understanding of use of phones, technology while out at camp</li> <li>• DDMI should clarify whether COVID-19 tests can be done within communities before people fly, to help solve issue of people potentially being turned away in Yellowknife.</li> <li>• DDMI should check the length of knives that people are allowed to bring, and make sure lighters are allowed, as some participants would like to bring their hunting knives (over 6 inches long)</li> <li>• Myra confirmed that DDMI will pay for any extra / overweight baggage and that knives and axes will be brought out; Joanne confirmed that untreated wood has already been brought out for fires, as in previous years</li> <li>• Albert Boucher noted that grizzly bears can be aggressive and unpredictable, and we should make sure all safety precautions possible are taken. DDMI discussed the bear fence around the camp</li> </ul>

Community members also discussed what they would like to learn and teach at camp:

- Knots: Kathy Arden might bring a book on knots and would like to teach people.
- Respect: Albert Boucher would like to support with teaching the young people how to show respect on the land, practicing gift offerings (e.g., tobacco, feeding the fire).
- Respect: Gerome Basil would like to learn about paying respect to the land.
- Plants and Fish: Doris (Terri) Enzoe would like to teach about plants, and make sure the youth know how to do the fish sampling:

*“For me I want to teach the young people, we have all kinds of plants that can even be used for survival if you don’t have any food. We wouldn’t mind giving out plant books about how we can make medicine and food you can take. Those are the things I want to see. The other thing I was thinking about, it’s only once a week every three years. If we teach our young people how to do the sampling and fix the fish, give them a knife.” She would like to make sure there is time for stories and sharing, without phones or computers.*

- Gathering: Nancy Kadlun: “If we could gather every night after supper and talk to the youth and make time for that, it would be so great.”
- Traditional Ways: Mark Taletok would like to teach about traditional ways of being out on the land, and will bring something from home to help.
- Navigation: Zhanaie stated that:

*“First what I would like to learn is how to navigate, how to watch and know the land and travel on it. How to tell what direction you are going in by the trees and the sun. The second one is that it is hard to start a fire in wet and dry conditions with the resources we have - stuff from the land. And different ways of how to build a shelter, and all the basic communication in all languages; ‘thank you, hello, animals, weather, plants, land’. Lastly, if we find animals, it would be great to learn how to identify them, the prints / tracks, and direction of travel.”*

- Cultural Stories: Marie Adele commented that:

*“I would like to teach legends, stories, in the evening I would like to tell them about legends and stories, and also to teach the youth that it’s very important, if it’s your first time on the land and water, you have to pay respect and pay the water and the land.” She would also like to teach about plants and medicines. ... “I want to pick berries, blueberries, collect medicines, and check the land. We should let each other know what we are picking, what it’s used for, and share. I want to go to a hill and look, and sit and talk and teach and share everything with others. I want to get informed, to see for myself.”*

- Beezoe would like to learn about trapping, snaring, and TK medicine (and all the things that Marie Adele listed as well).
- Learning by Doing: Charlie Football noted that showing people, especially youth, about the land and cultural activities through hands on, practical experience, is important.
- Respect and Safety: Peter D. Sangris noted it is very important to listen to the Elders, bring proper safety equipment, respect the water, and carefully sharpen axes and knives. Teaching people how to safely carry and care for guns and equipment is important; he will bring something to sharpen axes and knives out at camp.
- Food Preparation: Therese commented that it is important to listen and learn from others, as she did from her family, and she would like to teach others to make dry fish.
- Listening: Community members emphasized that it is important to respectfully listen and learn from one another at camp.

### 3.2 Results from Watching Fish and Water at Camp

This section shares some of the teachings provided by participants during the AEMP TK Camp, presented alongside results from the scientific fish and water sampling. As discussed in Section 2.0 and summarized in Table 2, the array of approaches and methods grounded in different worldviews provides a unique and detailed understanding of environmental conditions at Lac de Gras. Results from group discussions and gatherings, daily notes, Elder teachings, TK fish and water forms, and scientific studies, are presented:

- Section 3.2.1 describes participant observations of fish and fish habitat (overall fish health, external and internal observations) and fish tissue laboratory analysis (including age, mercury, and parasite and cyst analysis); and
- Section 3.2.2 shares participant's observations of water (water quality and taste / tea tests) and water quality scientific testing results.

While the group expressed gratitude for being out on the land watching, participants were largely unhappy with what they saw in the fish caught and resulted in an unwillingness to complete the fish palatability and texture studies completed in previous years. Fish observation results also affected participants perceptions of the water in Lac de Gras and affected some participants in their decisions to complete water tasting (tea tests) (discussed further in Section 3.2.2):

*The first time I came here, 2015, there was a lot of healthy fish. Every day we had fish heads, cooking it in the fire, on their own, in the kitchen, cooking anything we want. And this year there was so many cysts. This year, we are not seeing anything inside the fish (stomachs). That's hard. ... Then, there was so much white stuff on their body, all the way down the fillet to the tail. I notice we are*

*not eating fish. The first time I came here we were all eating fish because the fish was healthy. Just six years, only six years [since this change]. [Nancy Kadlun]*

*There were little bugs in the stomach, and also the sand from the bottom of the lake, and the fish were skinny and very unhealthy. We know the fish are contaminated because of the mine, because whatever falls into the lake, the fish will eat. When I'm talking about something, I look at it with my own eyes. I don't make up stories... I know if a fish is unhealthy, I've been living on this land and I know if a fish is healthy just by looking at it, because that's how I survived, is using fish. We used to have fat jumbo whitefish but now when you go over there the whitefish is really tiny and it's not healthy as it used to be. It's really skinny. In the meat you could see those parasites as well. If I didn't see that, I wouldn't talk about it, but I'm talking about what I saw. That's what's happening. The water is also getting contaminated. It's not as clear as it used to be. The land is also contaminated. Now the fish is getting contaminated... We keep stressing to environment people, but they don't listen. [Albert Boucher]*

Participant observations of change since the 2018 AEMP TK Camp resulted in a series of formal information requests and recommendations to Diavik (Section 6.0). Participants expressed the importance of watching fish well before the next AEMP TK Camp and suggested that camps be held every year until closure. Participants also requested that Diavik allow two fish to be cut up and analyzed at the Verification Session to see if there are any changes since the summer (specifically to see the shape and stomach contents of fish – if the fish have bugs in their stomach or have any fat on them):

*It would be really good if we can see if there is anything in their stomach in a month or two. If you get fish nets or fishing with a rod, you don't even have to put nets out, just try to catch a couple of fish and see. [Nancy Kadlun]*

They spoke to the importance of accessing, analyzing, and discussing all previous scientific and TK monitoring results from the AEMP TK Program to date, to help determine when changes might have begun, and what larger ecosystem effects of such changes might be experienced (e.g., on caribou and the food chain). Participants expressed a strong desire to understand the nature of the changes, why they are happening, and to ensure that quick action is taken to support healthy fish and water as Diavik moves towards closure and post-closure.

### 3.2.1 Watching Fish and Fish Habitat

The four nets set caught 13 fish all together, and nine additional fish were caught by angling from boats and from the camp shoreline (Table 5, 6), for a total of 28 fish caught between gill netting and rod angling; of these, 19 were brought back to camp and processed (Tables 7-10). All fish caught were lake trout (*Salvelinus namaycush*); unlike previous years, no whitefish were caught (TCS 2019). Participants gave a cursory review of all fish, and a more detailed inspection

of 12 fish; a total of 52 TK fish forms were filled out, with a TK fish form filled out by each group for each fish (KIA completed 10 forms, LKDFN 14, NSMA nine, TG nine and YKDFN 10). Table 7 summarizes knowledge holders' key observations of fish size, gills, firmness and tissue. Table 8 summarizes all external observations from TK fish inspections, while Table 9 shows all internal observations. Scientific fish sample results are shown in Table 10 (see also Appendices F and G).

Table 5 Net Setting and Retrieval

Set/Retrieve	Date (Time)	Location	Participants	Details
Net Set 1	Aug 1 (10:40am)	NAD 83 UTM zone 12W 535584E, 7153547N extending from toe of airport peninsula out into the Diffuser Bay, directly across from water treatment plant	<ul style="list-style-type: none"> <li>Net Setting Boat: Gord (recorder), Peter (net setter), Kelsey (net setter), Jack (driver), Nancy</li> <li>Observer Boat: Albert (driver), Sarazine, Jay, Myra</li> <li>Observer / Angling Boat: Sarah, Doris (Terri) (driver), Gloria, Marie Adele, Sadetlo</li> </ul>	Net extended from near shore (3m depth) to deeper water ~10m deep
Net Retrieval 1	Aug 1 (2:45pm)	NAD 83 UTM zone 12W 535584E, 7153547N extending from toe of airport peninsula out into the Diffuser bay, directly across from water treatment plant	<ul style="list-style-type: none"> <li>Gord (recorder), Peter (net setter), Kelsey (net setter), Jack (driver), Nancy</li> </ul>	6 Lake Trout kept for analysis, 2 were healthy enough to be released, 8 fish were caught in total Angling was also done at this location while the net was being set
Net Set 2	Aug 1 (11:11am)	NAD 83 UTM zone 12W 541082E, 7153175N, set near a string of islands extending out from shore in deeper water, north of TK camp	<ul style="list-style-type: none"> <li>Net Setting Boat: Sarah (recorder, Doris (driver), Gloria (net setter), Marie Adele, Sadetlo</li> <li>Observer Boat: Gord, Peter, Kelsey, Jack (driver), Nancy</li> <li>Observer Boat: Albert (driver), Sarazine, Jay, Myra</li> </ul>	Net set in deep, cold water, unknown depth approximately 100m offshore
Net Retrieval 2	Aug 1 (2:00pm)	NAD 83 UTM zone 12W 541082E, 7153175N, set near a string of islands extending out from shore in deeper water, north of TK camp	<ul style="list-style-type: none"> <li>Sarah (recorder, Doris (driver), Gloria (net setter), Marie Adele, Sadetlo</li> </ul>	4 Lake Trout caught in net, 3 were kept and 1 fish was released
Net Set 3	Aug 2 (11:12am)	NAD 83 UTM zone 12W 534610E, 7148111N near island south of A21, extending north from shallow to	<ul style="list-style-type: none"> <li>Net Setting Boat: Ted (driver), Jack (net setter), Nancy, and Lena</li> <li>Observer / Angling Boat: Doris, Marie Adele, Sarah, Myra (driver)</li> </ul>	This location is where the water samples were collected for chemical analysis at

Set/Retrieve	Date (Time)	Location	Participants	Details
		deeper water. Water samples collected nearby	<ul style="list-style-type: none"> <li>Observer Boat / Water Sampling Boat: Gord (driver), Kelsey, Vikki, Kathy</li> </ul>	Bureau Veritas labs in Edmonton
Net Retrieval 3	Aug 2 (1:12pm)	NAD 83 UTM zone 12W 534610E, 7148111N near island south of A21, extending north from shallow to deeper water. Water samples collected nearby	<ul style="list-style-type: none"> <li>Ted (driver), Jack (net setter), Nancy, and Lena</li> </ul>	0 fish were caught in this net. Angling was done nearby
Net Set 4	Aug 5 (10:41am)	NAD 83 UTM zone 12W 540018E, 7152570N extending north from small boulder mound sticking out of water between mine and camp	<ul style="list-style-type: none"> <li>Kelsey, Marie Adele, Myra, Gord</li> </ul>	Angling was done by boat and shore near another island to the north
Net Retrieval 4	Aug 5 (12:03pm)	NAD 83 UTM zone 12W 540018E, 7152570N extending north from small boulder mound sticking out of water between mine and camp	<ul style="list-style-type: none"> <li>Kelsey, Marie Adele, Myra, Gord</li> </ul>	1 Lake Trout caught in net

Table 6 Rod Angling Catch

Rod effort	Date (time)	Location	Description
1	Jul 31 (6:00pm)	NAD 83 UTM zone 12W 541071E 7152194N Off of camp dock	1 Lake Trout caught
2	Aug 1 (12:00pm)	NAD 83 UTM zone 12W 535584E 7153547N In bay near diffusers, same location as net set #1	1 Lake Trout caught
3	Aug 2 (11:30am)	NAD 83 UTM zone 12W 534610E 7148111N on north side of small island south of A21 pit	3 Lake Trout caught, 2 others hooked but escaped
4	Aug 3 (11:44am)	NAD 83 UTM zone 12W 541970E 7152424N On north side of TK camp inlet	2 Lake Trout caught, 1 other hooked but escaped
5	Aug 4 (3:30pm)	NAD 83 UTM zone 12W 541970E 7152424N On north side of TK camp inlet	0 Lake Trout caught, 2 observed
6	Aug 5 (11:50am)	NAD 83 UTM zone 12W 539468E 7153498N On large island in middle of the lake, Northwest of TK camp	2 Lake Trout caught, 1 other observed

As detailed in previous AEMP reports (e.g., TCS 2019) and in Section 2.0, participants described and demonstrated that it is a combination of indicators and tactile-visual observations of internal and external conditions of the fish (tissue consistency, vibrancy of tissue colour, fat content, colour of the gills, liver, heart, kidney, stomach contents etc.) that help them to determine whether fish are healthy. Answers to the question, “how do people know if fish are good?” focused on:

- *“Flesh - firm and good colour; gill - pink, wine; no odour; liver / kidney / heart - good colour / size”*
- *“The texture and colour of the fish; the outside of the stomach, if any parasites or cysts”*
- *“The size weight & texture and colour of the scales”*
- *“The fish scales, colour; big head, skinny body”*
- *“Observation, smell, parasites on stomach; when you touch the fish on the outside and its soft, its sick; it's not fatty, only eating bugs”*
- *“Eyes, gills; Look at size of head, body, color, fins”*
- *“When it's a good size/fat; the color of the scale”*
- *“We want to look at its gills to see if it has got anything in its gills, any bugs. It looks good. We want to look in its guts.”*
- *“For the tissue and meat: good colour; not too soft; no cysts; edible”*
- *“Overall, the appearance of the fish”*
- *“Head and body are uniform; flesh good colour”*
- *“By the texture and colour of the body”*

Participants, especially those who had attended several previous camps, noted several distinct changes in overall external and internal fish health, and fish habitat. Elders and youth were particularly concerned about:

- An increase in the number of fish with the presence of parasites / cysts, and an increase in the prevalence of parasites / cysts within each fish;
- Change in fish shape (disproportionately large heads and thin / small bodies, for what Elders would expect for a large lake trout);
- Change in stomach contents (decrease in small fish and food generally in fish stomachs, increase in bugs in stomach contents, decrease in diversity of food in fish stomachs); and
- Change in shoreline habitat (increase in algae) and the absence of minnows and sticklebacks (number and type of species).

Detailed observations of these changes, and all external and internal surveys are described below.

Table 7 Summary of Fish Size, Gills, Firmness and Tissue Observations

<b>Number of Responses from 2021 TK Fish Inspection Forms</b>
<b>Fish Size</b>
32 forms recorded fish as “skinny”
2 forms recorded fish as “skinny / average”
15 forms recorded fish as “average”
0 forms recorded fish as “fat”
<b>Total: 49 responses received for 12 fish</b>
<b>Gills</b>
5 forms recorded gills as “dark red”
4 forms recorded gills as “dark red / red”
15 forms recorded gills as “red”
5 forms recorded gills as “red / pink”
21 forms recorded gills as “pink”
2 forms recorded gills “pink / white” White
0 forms recorded gills as “white”
<b>Total: 52 responses received for 12 fish</b>
<b>Firmness</b>
23 forms recorded firmness as “typical rebound”
9 forms recorded firmness as “slow rebound”
4 forms recorded firmness as “stays indented”
<b>Total: 36 responses received for 12 fish</b>
<b>Tissue</b>
9 forms recorded tissue as “too soft”
4 forms recorded tissue as “too soft / typical”
19 forms recorded tissue as “typical”
1 form recorded tissue as “typical / too firm”
6 forms recorded tissue as “too firm”
<b>Total: 39 responses received for 12 fish</b>

Table 8 TK Fish Inspections: External Observations

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Size / Girth Rating	Gills Rating	Firmness Rating	Deformities	Shape	Skin / Scales	What can you teach us about the outside of this fish? Is there anything unusual about this fish?	Other / Comments	Overall Preference
August 1, 2021	LKTR02	Lake Trout	KIA	Skinny (1)	Red (2)	Typical rebound (1)	blank	blank	blank	blank	Skinny female fish; gills enlarged	Would not eat this fish (3)
August 1, 2021	LKTR02	Lake Trout	LKDFN	Skinny (1)	Wine (dark red), Red (1.5)	blank	Yes	blank	blank	blank	Skinny from looking inside; dark red; enlarged; flesh firm; [re: firmness, do not want to answer this as 'typical' not right word]; caught near the mine; early stage female	Would not eat this fish (3)
August 1, 2021	LKTR02	Lake Trout	NSMA	Skinny (1)	Wine (dark red) (1)	Typical rebound (1)	Fins orange	Skinny	Good	Skinny; good	Because head is big; eyes good, no external parasites; female; no [would not eat this fish because] orange parasites	Would not eat this fish (3)
August 1, 2021	LKTR02	Lake Trout	YKDFN	Skinny (1)	Red (2)	Typical rebound (1)	Big head	Skinny body	blank	blank	Skinny body, big head; dark red; [some white also indicated], female trout	Would not eat this fish (3)
August 1, 2021	LKTR03	Lake Trout	LKDFN	Average (2)	Red (2)	Stays indented (3)	Heart	blank	No deformities	No deformities	blank	Would eat this fish (1)
August 1, 2021	LKTR04	Lake Trout	LKDFN	Skinny (1)	Pink (3)	blank	blank	blank	Good	blank	Good; bump on right flank, maybe attacked or old wound/scar; tissue parasites	Would not eat this fish (3)
August 1, 2021	LKTR05	Lake Trout	KIA	Skinny (1)	Wine (dark red) (1)	Slow rebound (2)	blank	blank	They are fine	They are fine	Gills are enlarged; red / wine gills, enlarged; meat is soft; no cyst on the meat	Would not eat this fish (3)
August 1, 2021	LKTR05	Lake Trout	LKDFN	Skinny (1)	Red (2)	blank	Big, skinny body	Poor, skinny	Good	blank	Big gills enlarged, for a reason; finer gills are good; white spots behind gills; flesh good; Doris and Sarazine [would not eat this fish] because it is from this lake, but Albert might	Would eat this fish, but not enjoy (2)
August 1, 2021	LKTR05	Lake Trout	NSMA	Skinny (1)	Wine (dark red), Red (1.5)	Slow rebound (2)	Wound on mouth	Looks good	Spots behind gills	blank	Semi-firm [flesh]; good colour; enlarged gills	Would not eat this fish (3)
August 1, 2021	LKTR05	Lake Trout	TG	Skinny (1)	Red (2)	blank	blank	blank	White spots	blank	Large head, narrow body, wounds on mouth, no wounds on body; enlarged gills; meat is soft; immature female; [Would not eat this fish because] not edible because of white and yellow spots	Would eat this fish (1)
August 1, 2021	LKTR05	Lake Trout	YKDFN	Skinny (1)	Wine (dark red), Red (1.5)	Slow rebound (2)	blank	Big head, narrow body	White spot on scales on left side	Big head, narrow body; White spot on scales on left side	Skinny fish, narrow; enlarged gills; soft meat; wounds on mouth	Would not eat this fish (3)
August 1, 2021	LKTR06	Lake Trout	KIA	Average (2)	Pink (3)	blank	blank	Big	Good	Looks healthier, scales is good	Looks healthy	Would eat this fish (1)
August 1, 2021	LKTR06	Lake Trout	LKDFN	Average (2)	Pink (3)	blank	blank	Okay	Okay	blank	Firm	Would not eat this fish (3)
August 1, 2021	LKTR06	Lake Trout	NSMA	Average (2)	Pink (3)	Typical rebound (1)	None	Nice shape	Good shape	None; firm, scales look good, head and body proportional	Has eggs; mouth healthy	Would eat this fish (1)
August 1, 2021	LKTR06	Lake Trout	TG	Average (2)	Pink (3)	blank	No	Big and healthy	blank	blank	Hard / firm; big; looks healthy	Would eat this fish (1)

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Size / Girth Rating	Gills Rating	Firmness Rating	Deformities	Shape	Skin / Scales	What can you teach us about the outside of this fish? Is there anything unusual about this fish?	Other / Comments	Overall Preference
August 1, 2021	LKTR06	Lake Trout	YKDFN	Average (2)	Pink, White (3.5)	Stays indented (3)	Nothing	The body and head look good	The scales look good	The fish looks average and healthy; the texture of the body was firm; the scales was good, the colour looks good	The fish looks average, not too skinny, not too big; pinkish white [gills]; the fish feels hard; [Would eat this fish] and enjoy it!	Would eat this fish (1)
August 1, 2021	LKTR07	Lake Trout	KIA	Average (2)	Pink (3)	Typical rebound (1)	<i>blank</i>	Good, firm	Good colours	Mouth is purple-ish colour; skin is healthy looking, firm meat	Big gills; firm and hard; mouth is clean; purple inside mouth	Would eat this fish (1)
August 1, 2021	LKTR07	Lake Trout	LKDFN	Average (2)	Red (2)	<i>blank</i>	Red mark on skin	Good, little skinny	Good	<i>blank</i>	Firm; [Would eat this fish] if I was hungry; [Albert would eat fish from lake, but Sarazine and Gloria would not eat any, because it is from this location and do not trust the mine]	Would eat this fish, but not enjoy (2)
August 1, 2021	LKTR07	Lake Trout	NSMA	Average (2)	Red, Pink (2.5)	Typical rebound (1)	None	Good	Marred from sitting	<i>blank</i>	Mouth purple on right side	Would eat this fish (1)
August 1, 2021	LKTR07	Lake Trout	TG	<i>blank</i>	Pink (3)	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	Healthy; big; firm and hard	Would eat this fish (1)
August 1, 2021	LKTR07	Lake Trout	YKDFN	Skinny, Average (1.5)	Red, Pink (2.5)	Typical rebound (1)	<i>blank</i>	Shape of head and body look average	The colours are good	<i>blank</i>	Between fat and skinny; [Would eat this fish] if I was really hungry	Would eat this fish, but not enjoy (2)
August 2, 2021	LKTR15	Lake Trout	KIA	Skinny (1)	Red (2)	Slow rebound (2)	<i>blank</i>	Skinny	Right scale of fish	Parasites on the meat; skinny fish	Looks good on the gills; male fish; it is not healthy because they are all eating bugs; meat is not [good] texture and is a skinny fish	Would not eat this fish (3)
August 2, 2021	LKTR15	Lake Trout	LKDFN	Average (2)	Pink (3)	<i>blank</i>	<i>blank</i>	Good	Dried out, still normal, pinkish light colour	<i>blank</i>	Average weight, skinny tail; was out of water for awhile after catching; yellowish skin; skin / tissue, parasites found; [Would not eat this fish and] would not give to dogs either	Would not eat this fish (3)
August 2, 2021	LKTR15	Lake Trout	LKDFN	Skinny (1)	Red (2)	Typical rebound (1)	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	Male; skinny, but not healthy looking	Would not eat this fish (3)
August 2, 2021	LKTR15	Lake Trout	NSMA	Skinny (1)	Pink (3)	Typical rebound (1)	None	Good	Patches, white	Nice colour	Pâté-ish; male fish; caught at A21 pit; no [would not eat this fish because] not healthy looking for me	<i>blank</i>
August 2, 2021	LKTR15	Lake Trout	TG	Skinny (1)	Red (2)	Slow rebound (2)	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	Too skinny; [would not eat this fish] because of all the parasites	Would not eat this fish (3)
August 2, 2021	LKTR15	Lake Trout	YKDFN	Skinny (1)	Red, Pink (2.5)	Slow rebound (2)	<i>blank</i>	Kind of big head, skinny body	Dark coloured scales	It has a big head and skinny body; dark coloured scales	Skinny fish, doesn't seem to be eating healthy; reddish pink	Would not eat this fish (3)
August 2, 2021	LKTR16	Lake Trout	KIA	Average (2)	Red (2)	<i>blank</i>	<i>blank</i>	<i>blank</i>	Dried out, cooks okay	A lot of parasites and cysts in meat, liver; lean mouth, skin looks good	Young average fish; lean mouth	Would not eat this fish (3)
August 2, 2021	LKTR16	Lake Trout	LKDFN	Skinny (1)	Pink (3)	Slow rebound (2)	<i>blank</i>	Skinny	<i>blank</i>	<i>blank</i>	[Would not eat this fish because] No I would not eat it, no[t] healthy	Would not eat this fish (3)

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Size / Girth Rating	Gills Rating	Firmness Rating	Deformities	Shape	Skin / Scales	What can you teach us about the outside of this fish? Is there anything unusual about this fish?	Other / Comments	Overall Preference
August 2, 2021	LKTR16	Lake Trout	LKDFN	Skinny (1)	Pink (3)	blank	blank	Good	Good, pinkish colour	blank	Parasites	Would not eat this fish (3)
August 2, 2021	LKTR16	Lake Trout	NSMA	Skinny (1)	Pink (3)	Typical rebound (1)	None	Good	Good	Hasn't been eating good food	Pale	Would not eat this fish (3)
August 2, 2021	LKTR16	Lake Trout	TG	Skinny (1)	Pink (3)	Slow rebound (2)	blank	blank	blank	blank		Would not eat this fish (3)
August 2, 2021	LKTR16	Lake Trout	YKDFN	Skinny (1)	Red, Pink (2.5)	Slow rebound (2)	blank	Skinny	Pale to medium	The fish looks skinny & pale; skinny fish & pale, doesn't look to healthy not eating right	Skinny fish; reddish pink [gills]	Would not eat this fish (3)
August 3, 2021	LKTR18	Lake Trout	KIA	Skinny (1)	Red (2)	Typical rebound (1)	blank	Skinny	Scales looks okay	Just like the others, only eating bugs; mouth looks clean, scales looks good, a skinny fish	Male fish; healthy clean mouth; firm meat, colour is light (meat)	Would not eat this fish (3)
August 3, 2021	LKTR18	Lake Trout	LKDFN	Skinny (1)	Pink (3)	Typical rebound (1)	Big head	blank	blank	blank	Pink [gills]; the fish is unhealthy	Would not eat this fish (3)
August 3, 2021	LKTR18	Lake Trout	NSMA	Skinny (1)	Wine (dark red) (1)	Typical rebound (1)	blank	Big head	Ok	blank	Small body	Would not eat this fish (3)
August 3, 2021	LKTR18	Lake Trout	TG	Skinny (1)	Pink (3)	Typical rebound (1)	blank	blank	blank	blank	Male	Would not eat this fish (3)
August 3, 2021	LKTR18	Lake Trout	YKDFN	Skinny (1)	Red (2)	Typical rebound (1)	blank	Skinny	Ok	blank	Big head, skinny body	Would not eat this fish (3)
August 3, 2021	LKTR19	Lake Trout	KIA	Average (2)	Red (2)	Typical rebound (1)	blank	blank	Colour okay	Empty stomach + small size for the other fish we've been getting	Looks healthy; firm; [would not eat this fish because] thought it was okay externally but internal NO	Would not eat this fish (3)
August 3, 2021	LKTR19	Lake Trout	LKDFN	Skinny (1)	Pink (3)	blank	blank	blank	blank	Lots of parasites on the fish	Too much parasites on the small lake trout	Would not eat this fish (3)
August 3, 2021	LKTR19	Lake Trout	TG	Skinny (1)	Pink (3)	Typical rebound (1)	blank	blank	blank	Too many cysts - stomach, guts, liver		Would not eat this fish (3)
August 3, 2021	LKTR19	Lake Trout	YKDFN	Average (2)	Red, Pink (2.5)	Stays indented (3)	blank	Very skinny	Look good not damaged	The fish is small and very skinny; It looks very skinny like it was starving	Reddish pink; looked healthy on the outside; skinny head, skinny body	Would not eat this fish (3)
August 5, 2021	LKTR20	Lake Trout	KIA	Skinny (1)	Wine (dark red) (1)	blank	blank	blank	Skin looks good	It is like the 19 other fish has cyst and bugs in stomach; skin looks good, meat is soft and soft mouth; skinny big head; brown/white leach on body	Clean mouth; skin looks good meat is soft; female fish	Would not eat this fish (3)
August 5, 2021	LKTR20	Lake Trout	LKDFN	Skinny (1)	Red (2)	Typical rebound (1)	blank	blank	It look good on the skin	Underweight		Would not eat this fish (3)

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Size / Girth Rating	Gills Rating	Firmness Rating	Deformities	Shape	Skin / Scales	What can you teach us about the outside of this fish? Is there anything unusual about this fish?	Other / Comments	Overall Preference
August 5, 2021	LKTR20	Lake Trout	NSMA	Skinny (1)	Wine (dark red) (1)	Typical rebound (1)	None	Skinny	Ok	Looks like it is lacking nutrition; outside looks good - dark color	[Would not eat this fish because] parasites	Would not eat this fish (3)
August 5, 2021	LKTR20	Lake Trout	TG	blank	Red (2)	blank	blank	blank	blank	blank		Would not eat this fish (3)
August 5, 2021	LKTR20	Lake Trout	YKDFN	Average (2)	Wine (dark red), Red (1.5)	Typical rebound (1)	blank	Big head skinny body	Dark color	A red leach on near its anus; the scales look good (dark color) but the texture of the fish too soft and skinny	Big head skinny body; male trout; dark red gills; kinda firm but soft; [would not eat this fish because] not a healthy fish	Would not eat this fish (3)
August 5, 2021	LKTR21	Lake Trout	KIA	Skinny (1)	Pink (3)	blank	blank	Skinny	Looks good	Stomach was empty; mouth is clean/healthy, dark green skin, hard firm fish	Underweight; [can tell if it's unhealthy] just by looking at it, size of the weight/skinny; yellowish colour but firm meat; [would eat this fish, but not enjoy because] if I am hungry, I would [eat] it	Would eat this fish, but not enjoy (2)
August 5, 2021	LKTR21	Lake Trout	LKDFN	Skinny (1)	Pink (3)	Typical rebound (1)	blank	blank	blank	Dark back	Head too big for body; too skinny	Would eat this fish (1)
August 5, 2021	LKTR21	Lake Trout	NSMA	Skinny, Average (1.5)	Pink (3)	Typical rebound (1)	None	Good	Good	No; looks good	Caught [off] reef close to TK camp	Would not eat this fish (3)
August 5, 2021	LKTR21	Lake Trout	TG	blank	Pink (3)	Typical rebound (1)	blank	blank	blank	blank		Would not eat this fish (3)
August 5, 2021	LKTR21	Lake Trout	YKDFN	Average (2)	Pink, White (3.5)	Stays indented (3)	blank	Big head kind of skinny body	Dark scale color	It has a big head; it looks healthy on the outside but in the inside it doesn't look to good, it was starving, not healthy	Big head, kind of big body; pinkish pale white gills; [would not eat this fish because] too gross	Would not eat this fish (3)

Total # Forms Completed: 52 (for 12 fish)

NOTES:

<sup>1</sup> Where boxes on form not filled out, blank is recorded in the table

Blank forms: TG did not fill out a form for LKTR2; NSMA for LKTR19

Form for LKTR3, 4, only filled out by LKDFN, no other groups. These were caught in net #2 on day 2 and processed by LKDFN only as rest of the group was still out checking nets, and Gloria wanted to ask Albert questions

LKDFN filled out two separate forms for LKTR 15 and 16

Anything in square brackets [] has been added by researcher to clarify comments made by participants

Table 9 TK Fish Inspections: Internal Observations—Part 1

Date	Fish # <sup>1</sup>	Indigenous Group	Tissue Rating	Intestine Colour	Stomach / Intestine Contents	Worms	Parasites / Cysts	Tissue Deformity	Stomach Deformity	Deformity Comments / Notes
August 1, 2021	LKTR02	KIA	Too Soft (1)	blank	blank	blank	Yes	Yes	blank	blank
August 1, 2021	LKTR02	LKDFN	blank	Red	blank	blank	Yes	Yes	blank	blank
August 1, 2021	LKTR02	NSMA	Typical (2)	Colour is good	Contents are bugs	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR02	YKDFN	Typical (2)	Pink / red	blank	Yes	Yes	Yes	blank	blank
August 1, 2021	LKTR03	LKDFN	blank	blank	blank	blank	Yes	Yes	Stomach cysts	blank
August 1, 2021	LKTR04	LKDFN	blank	Dark colour (spleen, gall bladder)	Contents are stickleback and fly (hungry)	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR05	KIA	blank	Colour is coffee-like	blank	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR05	LKDFN	blank	Colour shows spots, yellow and white; underweight for its size, female fish	blank	blank	Yes	Yes	Yes, small bugs	blank
August 1, 2021	LKTR05	NSMA	Too Soft (1)	Yellow spots	Bugs	blank	Yes	No	Yes	blank
August 1, 2021	LKTR05	TG	blank	Parasites in guts and stomach; white spots, yellow spots	Lots of bugs; small amount of bugs	blank	Yes	Yes	blank	blank
August 1, 2021	LKTR05	YKDFN	Too Soft (1)	Colour is coffee like	blank	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR06	KIA	Too Firm (3)	Normal	Fish. Normal blood colour.	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR06	LKDFN	Typical (2)	Parasites, stomach	blank	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR06	NSMA	Typical (2)	Red/orange, good	Fish	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR06	TG	blank	Looks healthy [tissue]	Fish, so healthy because eating fish; a few cysts, white	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR06	YKDFN	Typical (2)	Normal colour	blank	blank	Yes	Yes	blank	[no deformities]
August 1, 2021	LKTR07	KIA	blank	Normal colour	Bugs	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR07	LKDFN	Typical (2)	Cysts inside	blank	blank	Yes	Yes	Yes	blank
August 1, 2021	LKTR07	NSMA	Typical (2)	Good	Insects	blank	Yes	Yes	blank	1 liver, 1 kidney [parasites]; stomach good
August 1, 2021	LKTR07	TG	Typical (2)	Guts are healthy	Full of insects	blank	Yes	Yes	blank	blank
August 1, 2021	LKTR07	YKDFN	Typical (2)	Normal pink	blank	blank	Yes	Yes	blank	blank
August 2, 2021	LKTR15	KIA	blank	Dark red, not normal colour (hungry)	Bugs	blank	Yes	Yes	blank	blank
August 2, 2021	LKTR15	LKDFN	Too Soft (1)	Not healthy	Bugs; stomach parasites.	blank	Yes	Yes	Yes	Parasites on liver, heart, stomach, tissue / flesh
August 2, 2021	LKTR15	LKDFN	Typical (2)	Dark red	Bugs	Yes	Yes	Yes	Yes	blank
August 2, 2021	LKTR15	NSMA	Too Soft, Typical (1.5)	Good	Bugs	blank	Yes	Yes	Yes	Cysts x 2 on tissue, stomach cysts
August 2, 2021	LKTR15	TG	Typical (2)	blank	Lots of bugs	blank	Yes	Yes	blank	blank
August 2, 2021	LKTR15	YKDFN	Too Soft (1)	Dirty red; the intestines in the fish didn't look normal	blank	blank	Yes	Yes	Yes	Cyst on the liver and guts and cyst or parasites on the meat / flesh

Date	Fish # <sup>1</sup>	Indigenous Group	Tissue Rating	Intestine Colour	Stomach / Intestine Contents	Worms	Parasites / Cysts	Tissue Deformity	Stomach Deformity	Deformity Comments / Notes
August 2, 2021	LKTR16	KIA	<i>blank</i>	White-ish	Bugs	Yes	Yes	Yes	Yes	[Parasites in] liver, meat; "I am very disgusted and sick because they are not eating different nutrients and not healthy. What are they eating? I am so grossed out. THEY NEED TO EAT!! NOT JUST BUGS!!" -Nancy; tapeworm in the cyst
August 2, 2021	LKTR16	LKDFN	Too Soft (1)	Oranges	Bugs	<i>blank</i>	Yes	Yes	<i>blank</i>	<i>blank</i>
August 2, 2021	LKTR16	LKDFN	Too Soft (1)	Normal	Bugs only; parasites found	<i>blank</i>	Yes	Yes	Yes	[Parasites in] tissue/flesh heart, stomach, liver
August 2, 2021	LKTR16	NSMA	Too Soft, Typical (1.5)	Pink	Bugs	<i>blank</i>	Yes	Yes	Yes	Tissue: cysts, lots; stomach: cysts; 2 kinds - white and orange
August 2, 2021	LKTR16	TG	Typical (2)	<i>blank</i>	Bugs - stomach	<i>blank</i>	Yes	Yes	Yes	[Parasites] All over
August 2, 2021	LKTR16	YKDFN	Too Soft (1)	Dark red	The intestines of the fish doesn't look healthy	<i>blank</i>	Yes	Yes	Yes	The outside of the stomach has a lot of parasites & on the flesh/meat
August 3, 2021	LKTR18	KIA	<i>blank</i>	Coffee alike	Bugs	<i>blank</i>	Yes	Yes	Yes	<i>blank</i>
August 3, 2021	LKTR18	LKDFN	Too Firm (3)	<i>blank</i>	Bugs		Yes	Yes	<i>blank</i>	<i>blank</i>
August 3, 2021	LKTR18	NSMA	Too Soft, Typical (1.5)	Pinkish	Bugs & cysts	<i>blank</i>	Yes	Yes	Yes	2 cysts in tissue, orange colour; 1 cyst in stomach
August 3, 2021	LKTR18	TG	Too Firm (3)	<i>blank</i>	Bugs; guts - parasites (one cyst on stomach)	<i>blank</i>	Yes	Yes	Yes	<i>blank</i>
August 3, 2021	LKTR18	YKDFN	Typical, Too Firm (2.5)	Pale stomach colour	Bugs	<i>blank</i>	Yes	Yes	Yes	Insects/bugs, there's no food, 1 cysts
August 3, 2021	LKTR19	KIA	Typical (2)	Right colour [orange]	Empty - only small insects, no food, just like other fish	<i>blank</i>	Yes	Yes	Yes	All insides - liver, etc.; cysts in stomach cavity
August 3, 2021	LKTR19	LKDFN	Too Firm (3)	<i>blank</i>	Bugs, lots parasites	<i>blank</i>	Yes	Yes	Yes	<i>blank</i>
August 3, 2021	LKTR19	TG	Too Firm (3)	<i>blank</i>	Very little bugs	<i>blank</i>	Yes	Yes	Yes	<i>blank</i>
August 3, 2021	LKTR19	YKDFN	Typical (2)	Intestines look pale pink; colour of meat looks good but lots of cysts on the meat	<i>blank</i>	<i>blank</i>	Yes	Yes	Yes	Parasites on the stomach & flesh
August 5, 2021	LKTR20	KIA	Typical (2)	Red; looks okay	Bugs	<i>blank</i>	Yes	Yes	Yes	<i>blank</i>
August 5, 2021	LKTR20	LKDFN	Typical (2)	<i>blank</i>	Bugs	<i>blank</i>	Yes	Yes	Yes	<i>blank</i>
August 5, 2021	LKTR20	NSMA	Typical (2)	Pinkish	Bugs & cysts	Yes [1 tape]	Yes	Yes - cyst	Yes - cyst	<i>blank</i>
August 5, 2021	LKTR20	TG	Too Firm (3)	<i>blank</i>	Only bugs	Yes	Yes	Yes - worms	Yes - parasites	A few parasites outside [stomach] one inside
August 5, 2021	LKTR20	YKDFN	Too Soft (1)	Pinkish yellow	Not a healthy fish, look[ed] like it was starving	Yes	Yes	Yes	Yes	It has parasites in the stomach & on the liver on the meat & a tape worm, 2 inches
August 5, 2021	LKTR21	KIA	<i>blank</i>	Coffee	Empty	<i>blank</i>	Yes	Yes	Yes	Heart [full of parasites]
August 5, 2021	LKTR21	LKDFN	Typical (2)	Normal	Bugs only	<i>blank</i>	Yes	Colour is too light	<i>blank</i>	<i>blank</i>

Date	Fish # <sup>1</sup>	Indigenous Group	Tissue Rating	Intestine Colour	Stomach / Intestine Contents	Worms	Parasites / Cysts	Tissue Deformity	Stomach Deformity	Deformity Comments / Notes
August 5, 2021	LKTR21	NSMA	Typical (2)	Okay - pink	Few bugs - one alive	<i>blank</i>	Yes	Yes - cysts, tape worm	Cysts - 3	<i>blank</i>
August 5, 2021	LKTR21	TG	<i>blank</i>	<i>blank</i>	A few bugs	Yes	Yes	Yes	Yes - 7 cysts	<i>blank</i>
August 5, 2021	LKTR21	YKDFN	Too Soft, Typical (1.5)	Pinkish white	<i>blank</i>	Yes	Yes	Yes	Yes	Parasites in the guts/stomach; tapeworms & cyst in the flesh

Total # Forms Completed: 52 (for 12 fish)

NOTES:  
 1 Where boxes on form not filled out, blank is recorded in the table  
 Blank forms: TG did not fill out a form for LKTR2; NSMA for LKTR19  
 Form for LKTR3, 4, only filled out by LKDFN, no other groups. These were caught in net #2 on day 2 and processed by LKDFN only as rest of the group was still out checking nets, and Gloria wanted to ask Albert questions.  
 LKDFN filled out two separate forms for LKTR 15 and 16  
 Anything in square brackets [] has been added by researcher to clarify comments made by participants

Table 9 TK Fish Inspections: Internal Observations—Part 2

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Heart	Liver	Kidney	Eggs / Milt	Odour	What can you teach us about the insides of this fish? Is there anything unusual about this fish?	Other / Comments
August 1, 2021	LKTR02	Lake Trout	KIA	Enlarged	Coffee coloured	blank	blank	blank	Stomach full of bugs; cyst, diephbellum	Gall bladder large
August 1, 2021	LKTR02	Lake Trout	LKDFN	Bad; white cysts	Too small, narrow	Too small	None	None	Stomach 25% full; [organs] were too small for the size of the fish; orange cysts and more colours, yellow; can be bad for humans and dogs	Gall bladder dark
August 1, 2021	LKTR02	Lake Trout	NSMA	Okay	Cysts	blank	Female, will not spawn this year	Okay	If cysts are orange, do not eat or feed to your dogs, cook before giving to animals; if cysts are white, okay to eat; cysts; otolith removed	Diavik, caught close to mine; cysts on stomach; liver, cysts, too small for size of fish, discoloured (coffee coloured); heart enlarged, gall bladder very dark green
August 1, 2021	LKTR02	Lake Trout	YKDFN	Cyst	Liver is small, cyst on liver	Looks fine	Nothing	Smells like fish	The heart was deformed; gills are enlarged; gall bladder is really black; 85% full with bugs in the stomach	blank
August 1, 2021	LKTR03	Lake Trout	LKDFN	Okay	Healthy, same colour	Looks okay, narrow	Eggs good, late stage female	blank	blank	blank
August 1, 2021	LKTR04	Lake Trout	LKDFN	Cysts founds	Parasite found	blank	blank	blank	blank	Parasite found in P.C. [pyloric ceca]; stomach parasites found; gall bladder a little dark, spleen a little dark, heart cysts found
August 1, 2021	LKTR05	Lake Trout	KIA	Small	Small	blank	blank	No difference	Bugs in the stomach; empty stomach; parasites on stomach; yellow spots on stomach; bugs in stomach, empty stomach; fish underweight; big head, small body	blank
August 1, 2021	LKTR05	Lake Trout	LKDFN	Small	Healthy colour and small	blank	blank	blank	blank	Yellow spots inside
August 1, 2021	LKTR05	Lake Trout	NSMA	Small	Small, coffee colour, parasites	blank	None	None	Parasites - yellow spots; North Inlet, dike; underweight, maybe not enough food	Yellow spots [on stomach]; no cysts [in tissue]
August 1, 2021	LKTR05	Lake Trout	TG	Small	Small, coffee colour	blank	blank	blank	blank	Good colour [tissue]
August 1, 2021	LKTR05	Lake Trout	YKDFN	The heart is small	Small liver, coffee coloured	blank	No eggs	blank	Big head, narrow body, the fish is underweight for the size	White spots and yellow spots on guts
August 1, 2021	LKTR06	Lake Trout	KIA	Good	Healthy, big	blank	Fish eggs	Good smell	It is healthy, no bugs in stomach, had fish eggs	A few cysts on stomach
August 1, 2021	LKTR06	Lake Trout	LKDFN	Normal, good	Good	blank	Healthy	blank	blank	Gall bladder good (dark)
August 1, 2021	LKTR06	Lake Trout	NSMA	Normal	Healthy	Good	Yes	Good	Is eating other fish, keeps it healthy	White cysts [on stomach]
August 1, 2021	LKTR06	Lake Trout	TG	Big, normal	Healthy, big (bigger when becoming fat)	blank	Healthy	blank	blank	Blood healthy
August 1, 2021	LKTR06	Lake Trout	YKDFN	Normal	The liver is good	blank	Are good	Smells like fish	Fish eggs look healthy; the fish looks healthy; the colour looks good	The outside of the stomach is good, just found a few cysts; overall the fish looks healthy and was eating good

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Heart	Liver	Kidney	Eggs / Milt	Odour	What can you teach us about the insides of this fish? Is there anything unusual about this fish?	Other / Comments
August 1, 2021	LKTR07	Lake Trout	KIA	Good, small, little cyst	Healthy, but small cyst	<i>blank</i>	No eggs, male fish	Healthy	Insects in stomach, fish is skinny; purple around the gill; insects in stomach	<i>blank</i>
August 1, 2021	LKTR07	Lake Trout	LKDFN	Small for fish	Cysts	<i>blank</i>	Sperm good	<i>blank</i>	<i>blank</i>	<i>blank</i>
August 1, 2021	LKTR07	Lake Trout	NSMA	Good	Healthy, 1 parasite	Healthy, small [parasites]	None - male	Good - 1 parasite	Pipe is healthy	<i>blank</i>
August 1, 2021	LKTR07	Lake Trout	TG	Small but good	Small but healthy	<i>blank</i>	<i>blank</i>	None (good)	<i>blank</i>	Firm [tissue]; inside of mouth, healthy but one spot is pink
August 1, 2021	LKTR07	Lake Trout	YKDFN	Small but little cyst	Looks small but has cyst on liver	<i>blank</i>	No eggs	Smells normal	The fish is skinny; in the stomach of the fish is full of insects inside; cysts on outside of the stomach; a lot of insects in the stomach	<i>blank</i>
August 2, 2021	LKTR15	Lake Trout	KIA	Small	Coffee like, white spots / yellow	<i>blank</i>	Male fish	Good	Bugs in stomach; heart is small; coffee-like liver and white spots; one cyst on stomach; small liver, heart; meat texture is soft and yellow	<i>blank</i>
August 2, 2021	LKTR15	Lake Trout	LKDFN	Covered in parasites	Parasite	Doesn't look good	Too skinny, gonads; colour is not good	<i>blank</i>	Needs nutrients from different kinds of things - not necessarily a bad thing [bugs only in stomach];	Not a healthy fish; orange / yellow colour [tissue]; not necessarily an indicator of a bad thing; maybe a surface fish, which is why it's light in colour
August 2, 2021	LKTR15	Lake Trout	LKDFN	The heart is not healthy by looking at it	White spot on it	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	Few white spots on the meat part [tissue]
August 2, 2021	LKTR15	Lake Trout	NSMA	Cysts	Cysts	<i>blank</i>	None	Okay	Probably having a hard time catching smaller fish - on skinny side!	<i>blank</i>
August 2, 2021	LKTR15	Lake Trout	TG	Parasites	White parasites	<i>blank</i>	None	Good	<i>blank</i>	Parasites, a few [tissue]
August 2, 2021	LKTR15	Lake Trout	YKDFN	Small heart	Coffee like colour with cyst	<i>blank</i>	No eggs	<i>blank</i>	In the stomach nothing but insects, looks like it was starving; the fish is not eating right and doesn't look healthy; the meat is too soft; not as normal as Great Slave Lake fish	Not right colour; meat looks yellow
August 2, 2021	LKTR16	Lake Trout	KIA	Small, not normal	Big and normal and full of parasites	<i>blank</i>	Has eggs	Smell is good	Meat is firm but has a cyst; liver is big but has a lot of parasites in heart; full of bugs; tape worm in cyst; a lot of parasites and cysts and bugs in stomach	Has a lot of parasites and cysts all over kidney, meat, stomach, full of bugs in stomach
August 2, 2021	LKTR16	Lake Trout	LKDFN	The heart is small	<i>blank</i>	<i>blank</i>	[Has] eggs	<i>blank</i>	Not healthy by looking at it	<i>blank</i>
August 2, 2021	LKTR16	Lake Trout	LKDFN	Not normal, too small [parasites]	Parasites, colour good	<i>blank</i>	Has eggs, no good - too much blood / too small	Good	<i>blank</i>	Bladder - parasites; lots of parasites found (both sides of fish) [in tissue]
August 2, 2021	LKTR16	Lake Trout	NSMA	Small	Parasites - lots	<i>blank</i>	Yes	Okay	Been infested with parasites since born; very parasite-y	<i>blank</i>

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Heart	Liver	Kidney	Eggs / Milt	Odour	What can you teach us about the insides of this fish? Is there anything unusual about this fish?	Other / Comments
August 2, 2021	LKTR16	Lake Trout	TG	Small	Normal, big; lots of parasites	<i>blank</i>	Yes	Good	Lots of parasites even though appears healthy externally	A lot parasites [tissue]
August 2, 2021	LKTR16	Lake Trout	YKDFN	The heart is too small	Liver is too big with lots of parasites	<i>blank</i>	A few little eggs	<i>blank</i>	The inside have cyst on the flesh meat; the meat looks yellow; the fish does not look healthy, not eating right	The meat looks too yellow [tissue]
August 3, 2021	LKTR18	Lake Trout	KIA	Small	Small	<i>blank</i>	Male fish	Strong	Cyst on gut; small heart/liver; coffee-looking - not eating right; not eating any fish, only bugs	Parasite on the meat tissue and ribs; fish looks healthy on inside - right colour but bugs in stomach; no nutritional value.
August 3, 2021	LKTR18	Lake Trout	LKDFN	Small heart	Light brown	<i>blank</i>	Mo eggs	Healthy	Too much bugs	<i>blank</i>
August 3, 2021	LKTR18	Lake Trout	NSMA	Bit small	Light brown - coffee colour	<i>blank</i>	N/a, male	Okay	<i>blank</i>	<i>blank</i>
August 3, 2021	LKTR18	Lake Trout	TG	Small	Coffee colour / light brown	<i>blank</i>	<i>blank</i>	Healthy	<i>blank</i>	2 cysts [tissue]
August 3, 2021	LKTR18	Lake Trout	YKDFN	Small	Light brown	<i>blank</i>	No eggs	Strong odour	Cysts on guts; no food in stomach; same bugs - like in stomach; looks healthy on outside but the inside has no food in stomach	2 cysts on midsection of fish [tissue]
August 3, 2021	LKTR19	Lake Trout	KIA	Tiny cysts on heart; right colour	Dark brown but right colour, too small; parasites	Right colour but dark	<i>blank</i>	not strong odour	Usually should have a big health liver, but this one not	BUT CYSTS EVERYWHERE; orange, right colour, but cysts throughout all tissue; usually fish with eggs would be large, not this one
August 3, 2021	LKTR19	Lake Trout	LKDFN	Okay	Parasites lots	Dark	Yes	<i>blank</i>	Unhealthy fish	<i>blank</i>
August 3, 2021	LKTR19	Lake Trout	TG	A few cysts	One cyst	<i>blank</i>	Yes	None	It has a lot of cysts on the meat	Too many cysts, both sides [tissue]
August 3, 2021	LKTR19	Lake Trout	YKDFN	Small heart	One cysts on the liver	<i>blank</i>	Looks good	<i>blank</i>	The meat color looks good but inside of the flesh has lots of cyst; lots of cyst in the stomach and on the flesh	<i>blank</i>
August 5, 2021	LKTR20	Lake Trout	KIA	Good heart, had cyst	Small cyst, coffee like	<i>blank</i>	Male fish	None	No fish in stomach only bugs, had little eggs; small liver, had cysts; had cyst on meat; skinny big head, had eggs but only bugs in stomach	This Lake Trout has cyst and only eating bugs for nutrients
August 5, 2021	LKTR20	Lake Trout	LKDFN	Good	Parasites	<i>blank</i>	<i>blank</i>	<i>blank</i>	Lots of bugs in stomach parts	This lake no food the fish and they lots of bugs
August 5, 2021	LKTR20	Lake Trout	NSMA	Still pumping - few cysts	Small spots	good	None - male	Good	Looks healthy, even though skinny, one cyst on stomach & small spot on liver	<i>blank</i>
August 5, 2021	LKTR20	Lake Trout	TG	Heart cysts	Small dot x2	<i>blank</i>	<i>blank</i>	None	<i>blank</i>	<i>blank</i>
August 5, 2021	LKTR20	Lake Trout	YKDFN	Normal size heart and it has a in the inside	Brownish colour with cyst	<i>blank</i>	No eggs	Smells like rotten in the guts. Nothing but bugs in the stomach	It has a cyst on the liver & stomach; inside its stomach its only feeding on insects; looks like it's starving	The flesh of the meat is too soft & the color of the meat is to light
August 5, 2021	LKTR21	Lake Trout	KIA	Normal heart, full of parasites	Coffee color, liver looks good	<i>blank</i>	Has eggs	Normal	Has fish eggs; empty stomach, 6 bottom insects; yellowish meat colour; worms on meat; empty stomach	Yellowish colour but firm meat
August 5, 2021	LKTR21	Lake Trout	LKDFN	Full of parasites	Coffee colour	Good	Small	Normal	Only bugs in stomach	<i>blank</i>
August 5, 2021	LKTR21	Lake Trout	NSMA	Good	Pale	Dark red	Yes	Okay	Looks healthy - on skinny side!	<i>blank</i>

Date	Fish # <sup>1</sup>	Fish Species	Indigenous Group	Heart	Liver	Kidney	Eggs / Milt	Odour	What can you teach us about the insides of this fish? Is there anything unusual about this fish?	Other / Comments
August 5, 2021	LKTR21	Lake Trout	TG	Heart cysts all around	No puss; coffee colour	<i>blank</i>	Yes - looks good	Okay/good	Fish should be eating small fish	Hard [flesh]! Wow! Tough meat, good meat
August 5, 2021	LKTR21	Lake Trout	YKDFN	Small heart	Brownish coffee like color	Little dark color	Really small few eggs	Smells like it was rotten in the inside	It has cyst in the stomach; female trout; the fish was a female trout had little eggs and a few bugs in the stomach looks like it was starving	Light colour meat with a lot of tape worms & cysts; the meat is too soft
Total # Forms Completed: 52 (for 12 fish)										

### 3.2.1.1 Fish Inspection: External Observations

#### What can you teach us about the outside of this fish? Is there anything unusual about this fish?

As described above and in Section 2.0, Elders touched, felt, smelled, and otherwise carefully examined the fish during processing. They discussed and taught youth within and between groups what they saw and how they knew that the fish were healthy or unhealthy. Overall, participants were generally satisfied with fish gills, firmness, and skin / scales of fish, but dissatisfied with fish size / girth, shape, presence of cysts and parasites and deformities:

*[LKTR20] It is like the 19 other fish has cyst and bugs in stomach; skin looks good, meat is soft and soft mouth; skinny, big head; brown/white leach on body [KIA]*

*[LKTR19] Reddish pink [gills]; looked healthy on the outside; skinny head, skinny body [YKDFN]*

#### Size (Girth Rating) and Shape

Participants discussed the importance of healthy fish having fat on them, and being relatively proportional as recorded at the 2015 and 2018 AEMP TK camps. In 2018, participants noted that if the head is too big compared to the body, the fish is considered as starving and unhealthy (TCS 2019). Knowledge holders at the 2021 camp also emphasized that the shape of fish is an important indicator of health:

*Only thing that is healthy is have a little bit of fat. Too skinny, that means they are not really healthy. [Albert Boucher]*

*[How do people tell when a fish is healthy or unhealthy?] Fish head bigger than body. [LKDFN]*

The most common observation related to shape and size recorded by participants in 2021 was that fish heads were disproportionately large compared to the body. Participants noted that fish need to eat more / bulk up at this time of year, before the beginning of winter. Knowledge holders emphasized that many fish caught (nine of the 12 fish for which TK fish forms were recorded) were too skinny, compared to what participants would expect from an adult lake trout at the same time during this season, and had heads that were too big in proportion to their body size. Further, most knowledge holders recorded fish as skinny on TK fish forms with the most common descriptive words used as: “skinny”, “very skinny”, “poor”, “big head”, “big head, narrow body” (Table 7):

*There's no fat on the fish-only bugs in the stomach. [Peter D. Sangris]*

*But for the fish they're, they're hungry. They have no food in their stomach, except they have bugs, which I don't normally see.” [Nancy Kadlun]*

This large head to small body phenomenon has been recorded only once before: the 2018 AEMP TK Program report notes that:

*In 2012, one lake trout in particular has a disproportionately large-sized head compared to its body which prompted a discussion about size ... all of the fish caught in 2018 were said to have good size as well as relative proportionality (TCS, 2019: 34).*

In 2018, for eight of the 12 fish that TK fish forms were filled out, participants noted that the size was average, with descriptive words such as “good”, “big”, “nice”, “healthy”, “okay”, or “average” being used. However, in 2021, no fish were recorded or observed to be fat.

### Gills Rating

Some participants noted that finer, darker (pink or red, rather than white) gills are indicative of healthy fish. Most knowledge holders described the gills of the fish caught as red or pink (Table 7). Some groups noted that two fish had enlarged gills (LKTR02, LKTR05), and one fish (LKTR05) had white spots behind the gills.

### Firmness Rating

Participants discussed how healthy fish have firmer meat. Most knowledge holders felt that fish firmness was typical, with over half of responses on TK fish inspection forms stating that the fish has “typical rebound”. Some participants also felt that fish has “slow rebound” (Table 7).

### Skin / Scales

Participants noted that the texture, skin and scales, combined with the firmness of flesh, help to tell people if a fish is healthy and good to eat. The skin and scales of fish caught at camp were generally described as “good” (18 responses), “okay” or “fine” (seven responses) to describe the fish skin and scales upon initial inspection. Some participants recorded white spots on the outside (four responses), while others described the skin / scales as “dark coloured” (three responses) or “dried out” (three responses). Participants noted that the skin is tasty for people to eat, and that the colour of fish depends on many different factors, including whether they are in deep or shallow water, how long they have been left out of the water, etc.

### Deformities

Participants noted on TK fish forms that LKTR02, LKTR03, LKTR05, LKTR07, LKTR18 showed signs of external deformities. The most common external deformity discussed among participants was shape (“big head, skinny body”) and enlarged gills (described above). Other deformities noted include one fish with “orange fins” (LKTR02), “wound on mouth” (LKTR05), and “red mark on skin” (LKTR07), “mouth purple on right side” (LKTR07).

### 3.2.1.2 Fish Inspection: Internal Observations

After fish were examined on the table and passed around on a tray for closer inspection by each group, an Elder cut open the fish, using the techniques taught to them, and displayed the organs for everybody to see. Internal observations of the lake trout focused on parasites and lack of food found in fish stomachs. On several occasions, participants were excited about fish when they first caught them by rod and reel, or from nets, expressing that even if thin, the exterior of this fish (skin, scales, gills) meant that they might be healthy inside, and would be good for eating:

*Looks healthy! I don't want any samples taken from that, I want to split it in half an cook it right on the fire. ... I will eat fish from this lake if it's healthy. The first one looks good, the second one is okay, but I won't know unless I open them. I want to cook the second one and I don't want any samples taken. [Doris (Terri) Enzoe]*

However, after carrying out an internal fish inspection (e.g., of the same fish described above), participants decided they would not eat the fish, or would eat the fish if they were hungry but would not enjoy it, expressing that the amount of parasites within tissue and on fish organs made the fish inedible (see Section 3.2.1.3). For example, of LKTR16, TG commented “Lots of parasites even though appears healthy externally.”

Participants were generally satisfied with the colour of fish tissue and organs, but expressed that, in some fish, the organs were smaller than expected given the overall size of the fish. Participants noted many instances where organ colour looked as expected, but yet the tissue and organs were covered in parasites:

*[LKTR21] Underweight; [can tell if it's unhealthy] just by looking at it, size of the weight/skinny; yellowish colour but firm meat; [would eat this fish, but not enjoy because] if I am hungry, I would [eat] it ... Normal heart, full of parasites. [KIA]*

*[LKTR16] Meat is firm but has a cyst; liver is big but has a lot of parasites in heart; full of bugs; tape worm in cyst; a lot of parasites and cysts and bugs in stomach. [KIA]*

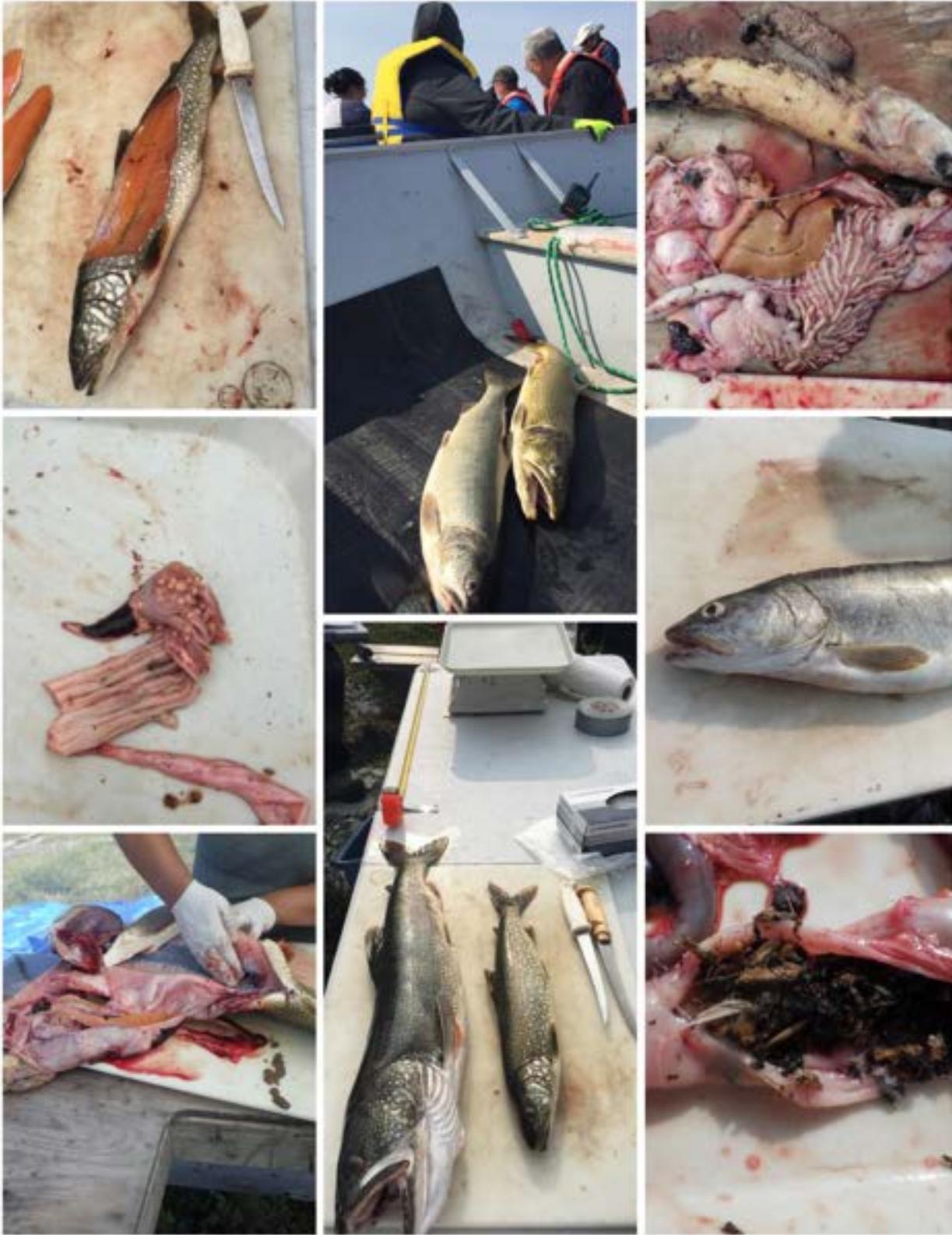


Figure 8 Internal Fish Inspection Photo Collage

## What can you teach us about the insides of this fish? Is there anything unusual about this fish?

Participant observations and teachings about anything unusual on the insides of lake trout caught centered around the following key environmental changes.

- Stomach and intestines being empty, with no smaller fish, or filled / partially filled with bugs is unusual, and is a sign that fish are unhealthy, lacking nutrition, and are behaving differently from a lack of food (feeding on bugs at both the top and water column to get as much food as possible):
  - LKTR15: *“Needs nutrients from different kinds of things...” [LKDFN]*
  - LKTR15: *“Probably having a hard time catching smaller fish - on skinny side!” [NSMA]*
  - LKTR15: *“In the stomach nothing but insects, looks like it was starving; the fish is not eating right and doesn't look healthy; the meat is too soft; not as normal as Great Slave Lake fish” [YKDFN]*
  - LKTR16: *“[Parasites in] liver, meat; “I am very disgusted and sick because they are not eating different nutrients and not healthy. What are they eating? I am so grossed out. THEY NEED TO EAT!! NOT JUST BUGS!!!” [KIA]*
  - LKTR18: *“Cysts on guts; no food in stomach; same bugs - like in stomach; looks healthy on outside but the inside has no food in stomach” [YKDFN]*
  - LKTR19: *“Empty - only small insects, no food, just like other fish [here]” [KIA]*
  - LKTR20: *“No fish in stomach only bugs, had little eggs; small liver, had cysts; had cyst on meat; skinny big head, had eggs but only bugs in stomach” [KIA]*
  - LKTR20: *“Skinny, not heavy for a big fish. Stomach contents: overall, flesh looked good, but too skinny. Organs are okay, but not enough food. ... The fish are feeding on top and bottom – the dark stuff, flies, are from the top, and the food at the bottom is bugs ...they are trying to get any food.” [LKDFN]*
  - LKTR21: *“Fish should be eating small fish” [TG]*
  - LKTR21: *“Almost no food in the stomach, it's starving. Only 6 or 7 bugs in the stomach of LKTR 21” [LKDFN]*
  - LKTR21: *“Pitiful. Starving fish, too skinny” [YKDFN]*
- It is unusual to see the number of cysts internally (high numbers within fish than expected, higher number of fish with the presence of cysts than expected):
  - LKTR16: *“Been infested with parasites since born; very parasite-y” [NSMA]*
  - LKTR19: *“Meat colour looks good but inside of the flesh has lots of cyst; lots of cyst in the stomach and on the flesh” [YKDFN]*
- In some cases, organs too small for the size of the fish:
  - LKTR05: *“Heart is small; coffee-like liver and white spots; one cyst on stomach; small liver, heart; meat texture is soft and yellow” [YKDFN]*
  - LKTR18: *“Cyst on gut; small heart/liver; coffee-looking - not eating right; not eating any fish, only bugs” [KIA]*
  - LKTR19: *“Usually should have a big healthy liver, but this one not” [KIA]*

- In some cases, colour of tissue and organs different than expected:
  - LKTR02: “The heart was deformed; Gills are enlarged; gall bladder is really black” [YKDFN]
  - LKTR15: “Not right colour. Meat looks yellow.” [YKDFN]
  - LKTR02: “Cysts on stomach; liver, cysts, too small for size of fish, discoloured (coffee coloured); heart enlarged, gall bladder very dark green” [NSMA]

### Tissue Rating

Most knowledge holders described the fish tissue as ‘typical’ firmness, with about half of the responses on TK fish forms noting fish tissue had typical rebound. About one third of responses indicated they felt the tissue was too soft or between too soft and typical, and some felt the tissue was too firm (Table 7). Firmness of tissue is one way that Elders noted you can tell fish are healthy.

### Stomach and Intestines

Participants recorded the stomach and intestine colour of many fish as “good / healthy / normal / okay / pink” (e.g., LKTR07, LKTR21). In some cases, participants recorded the colour as “coffee-coloured” (e.g., LKTR05), or “pink-ish white / pinkish yellow / pale / spotted yellow and white” (e.g., LKTR05, LKTR20), or “dark red / dirty red” (e.g., LKTR15). Elders noted that “normal – pink” is a healthy colour for stomach and intestines, but dark red colour is not a normal colour and indicates an unhealthy fish.

Most participants were disturbed by their observations of fish stomach and intestine contents. Only one fish (LKTR06) of all fish caught at camp was observed to have small fish in its stomach, however, participants mostly found stomachs with very little content; what little material found was largely bugs (flies, sticklebacks). The most common terms used to describe observations were “lots of bugs”, “full of insects”, “bugs; stomach parasites”, “bugs and cysts”, “only bugs”, “few bugs”, “empty”:

*[Sarah: What do you think of the fish?] This fish disgusts me. I am sad because the fish is starving. Take it away from me. [Nancy Kadlun]*

*Six years ago, I was here the first time, all the fish had little fish [in their stomachs]. Three years ago, more fish with parasites, a few bugs. This year, no baby fish of any kind. I want to come in September to see what the fish are eating. This year, only bugs and only one with fish spines. ...this is our land. ... seems like the fish are starving, all the small fish are leaving. The fish are starving. [Nancy Kadlun]*

These findings stand in contrast to 2018 observations, which report that “Partially digested fish were found in all four of the fish intestines and stomach” (TCS, 2019: 29). Participants continually emphasized that bugs found in the stomachs of fish mean that fish are not able to feed on food on which they normally survive for a healthy diet:

*It's because they've got no food in the water, that's why they are eating bugs.  
[Doris (Terri) Enzo]*

*It's true, the fish have changed, I've seen it with my own eyes... this lake, we haven't been to all different places on the lake, but I'm sure it's not that one area where the fish is bad, it's probably all over the lake. Every year, as the fish spawn, and you get more and more fish, maybe there will be less food for them, as they fish, and the population gets larger. If the food was available for the fish, the trout would have been really fat, and not have an empty stomach. When we open the stomach and guts and we checked it, there was hardly any food in the stomach, except for bugs. Even one trout that we saw in this lake, and in the other lakes, they live as long as 40 years. Even when female fish have eggs, the eggs are a big tube, sometimes about 250 000 eggs and in those two tubes. Sometimes out of the 250 000 eggs, sometimes maybe seven or eight survive, maybe more or maybe less. Other animals eat those fish eggs too, like ducks and seagulls, and other mammals in the water, other fish too. In this lake here, there's probably millions and millions of eggs to be spawned, and then out of those eggs, maybe it's going to thousands that live. But then if there are too many fish in the lake and not enough food for them to eat, they will look like the ones we've seen, when you cut their stomachs open. I had a summer job with DFO before, four summers in a row, I saw how they did their paperwork and cutting and measuring and all the things we did. I know about that kind of job. I also looked at all these things they did, and this is the first time I've seen fish like this that is cut open and there's only bugs in there. This is the first time. [Peter D. Sangris]*

## Worms

The presence of worms was recorded in five of the fish were observed (LKTR02, LKTR15, LKTR16, LKTR 20, LKTR21).

## Tumours

No tumours were observed in fish caught at the 2021 camp.

## Parasites / Cysts

Participants were dissatisfied with the number of fish caught that showed parasites (100%) and the number of fish with high levels of parasites within the tissues and flesh, as detailed above. Elders discussed how when they examine the presence, prevalence, and type of parasites, they are comparing levels to pre-contact, when there were no parasites in the lake, and to previous camps, when there were fewer cysts found. Participants acknowledged that parasite presence in the lakes is complex and likely linked to several factors. Several knowledge holders note they believe it a warming climate is an important factor causing an increase in parasites:

*Our TK says from previous [years] -from how we used to be when we were kids growing up, we didn't see much of that kind. We hardly, rarely have seen cysts or parasites on our fish. When the water starts getting warmer, that's when we got an increase. But at the same time, you have to think about other factors that come into play, so for me my main concern would be the metals that are in the fish, the area of the fish, how much of these we get out of this lake. [Gloria Enzoe]*

In addition to impacts on fish and human health, participants were concerned about the impacts of parasites / cysts up the food chain:

*[Sarah: Yesterday you talked about your concern for effects throughout the food chain?] Yes! And I want to know ... what are the [fish] eating that makes the parasite population grow? What makes them grow? If they are eating something from the mine that is causing that, we need to know. [Jack Kaniak]*

## Internal Deformities

All but one TK fish form filled out recorded tissue deformity (51/52 forms); however, participants were referring largely to parasites / cysts found (described above). Participants recorded stomach deformities in the same way. Other deformities noted by participants included cysts found on the head, small organs, or organs that are a different colour than expected (described above).

## Liver

Participants generally described the livers of fish as a healthy size and colour (e.g., LKTR03, LKTR06, LKTR07, LKTR16, LKTR19), but with many parasites on them (e.g., LKTR16). Some participants noted livers that were too small for the size of the fish (LKTR05, LKTR18, LKTR20); other knowledge holder noted the colour as “dark brown”, “light brown”, and “coffee-coloured”, noting that dark brown is a healthy colour.

## Kidney

The kidneys of fish caught at camp were generally said to have a good colour, if slightly darker than expected (LKTR19, LKTR21). Some participants reported that the kidneys looked fairly healthy, but small for the size of the fish (LKTR02, LKTR07), and had parasites.

## Eggs and Milt

Some fish (e.g., LKTR06, LKTR21) were reported to be females with eggs that Elders described as “good” and “healthy”. Participants noted that one fish (LKTR21) should have developed eggs by this time of year, but looked unhealthy and hadn’t done so; LKDFN noted that LKTR16 “has eggs, no good - too much blood / too small.”

## Odour

LKTR02, LKTR06, LKTR07, LKTR15, LKTR16, LKTR18, LKTR21 were recorded as smelling “good”, “healthy”, “normal” by many participants. However, some participants felt that LKTR18, LKTR20, LKTR21 had a “strong” or “rotten” odour.

### *3.2.1.3 Overall Preference*

The most common response for ‘overall preference’ recorded on TK fish forms was “would not eat this fish”. Of the 51 TK fish forms / responses received for 12 lake trout, 37 responses stated they “would not eat this fish”; 10 responses stated they “would eat this fish”, and four responses stated they “would eat this fish, but not enjoy”. At least one or more groups stated they would eat four (of 12) of the lake trout for which TK fish forms were filled out (LKTR05, LKTR06, LKTR07, and LKTR21). There were no fish examined that all groups agreed they would eat. LKTR06 and LKTR07 were the fish that groups overall agreed were the most likely to be eaten, although opinions still varied. For example, for LKTR06, one group reported “would not eat”, while another recorded “[Would eat this fish] and enjoy it!”; one group reported for LKTR07 that they “[would eat this fish but not enjoy] if I was really hungry”. One caught fish which was not formally evaluated was prepared and dried over the fire and eaten by several participants over the course of the camp.

Table 10 Scientific Fish Sample Results

Fish #	Species	Length (mm)	Weight (kg)	Sex	Stage	Age	Mercury EPA245.7 (mg/Kg)	Mercury EPA 6020lb R2 m (mg/Kg)	Stomach Contents	Stomach % Full	Condition	Comments
LKTR01	LKTR	NC	NC	F	NC				NC	NC	NC	NC
LKTR02	LKTR	885	4.705	F	Resting	26	0.332	0.385	Bugs	25	Fair, skinny, some cysts in stomach	Dark gall bladder
LKTR03	LKTR	906	6.185	F	NC	30	0.545	0.611	LKTR	100	Good, very few stomach cysts	-
LKTR04	LKTR	705	3.500	M	NC				Bugs	25	Good, mod. Parasites in stomach, cysts in heart and liver	Coffee coloured liver
LKTR05	LKTR	888	4.805	F	Resting	26	0.297	0.346	Bugs	NC	Skinny, few parasites in stomach,	Coffee coloured liver
LKTR06	LKTR	945	7.270	F	Late Stage	25	0.358	0.427	NNST	25	Good, some parasites in stomach and liver	Coffee coloured liver
LKTR07	LKTR	756	3.865	M	Late Stage	21	0.204	0.239	Bugs	100	Good, some parasites in stomach and heart	-
LKTR08	LKTR	715	2.380	M	Early Stage		0.153	0.18	Bugs	100	External good, moderate stomach and intestine parasites	Coffee coloured liver
LKTR09	LKTR	740	2.745	M	Resting	17	0.259	0.308	Bugs	50	Good external, moderate stomach parasites	-
LKTR10	LKTR	578	1.555	F	Late Stage				Bugs	100	Good external, moderate stomach parasites, some worms on heart	-
LKTR11	LKTR	673	2.140	F	Late Stage	16	0.226	0.266	Bugs	100	Good external, many parasites in stomach, heart, intestines	-
LKTR12	LKTR	735	2.850	M	Resting				Bugs	75	Poor, skinny, many parasites in stomach, muscle, intestines, right gills eroded.	Right gills eroded, first gill eroded significantly, eroded gill plate, gill parasites, skinny fish
LKTR13	LKTR	510	1.100	M	Immature				Bugs	100	Many parasites in stomach, intestines, liver	-
LKTR14	LKTR	952	5.340	F	NC		0.527	0.623	NA	0	Moderate stomach parasites	Coffee coloured liver
LKTR15	LKTR	695	2.370	M	Resting	20	0.336	0.395	Bugs	100	Good external, skinny, moderate-high amounts of parasites in stomach, intestines, muscle, heart	Coffee coloured liver
LKTR16	LKTR	654	2.375	F	Early Stage	17	0.161	0.195	Bugs	100	Good external, skinny, moderate high amounts of parasites in stomach, liver, muscle, intestines, liver	-
LKTR17	LKTR	NC	NC	NC	NC				NC	NC	Good external, moderate-high parasites	Not available for Science, in too poor shape for Camp consumption as planned.
LKTR18	LKTR	775	3.065	M	Resting				Bugs	25	Good external, skinny, few parasites in muscle and stomach	Coffee coloured liver
LKTR19	LKTR	495	0.865	F	Late Stage	12	0.0794	0.134	Bugs	10	Great external, healthy-looking, meaty, high amounts of parasites	-

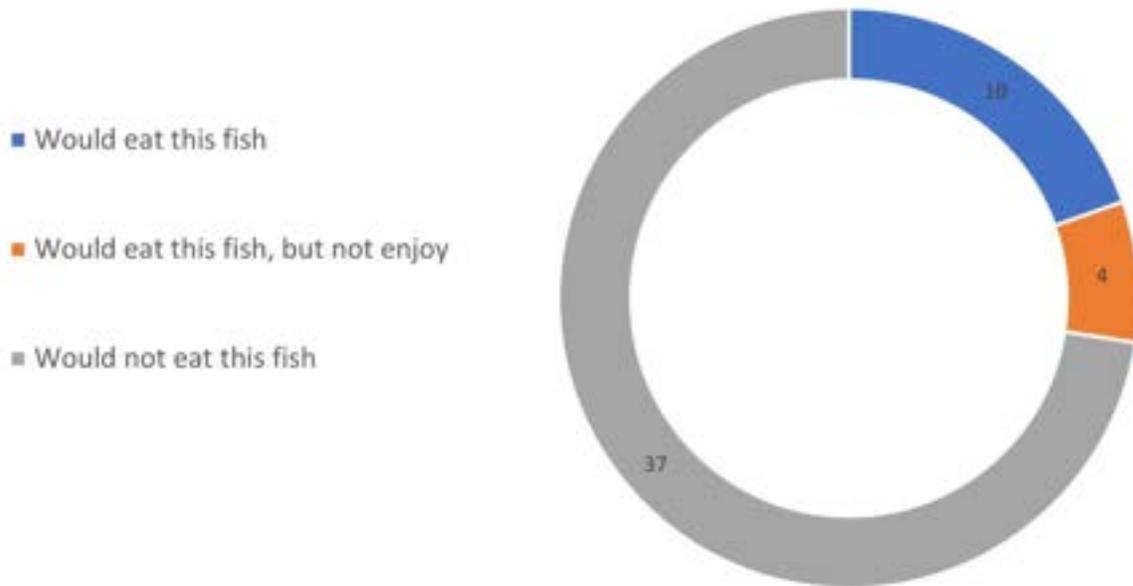


Figure 9 Overall Preference for Fish Caught at 2021 AEMP TK Camp (based on 12 lake trout)

Although LKTR03, LKTR06 and LKTR07 were potential candidates for the fish palatability test, they were caught on August 1 (the first full day at camp). Given the schedule and busyness of the day (day two is when participants set the first nets and are still practicing filling out TK fish forms) and the fact that the 2018 results showed no indication that there would be an issue catching fish that people would want to consume on days three, four, and five, palatability tests were not completed. LKTR03 was made into dry fish by Nancy Kadlun, but was not consumed by participants at camp.

Participants generally agreed that if there are some / a small number of cysts found in fish tissue (e.g., if they are white, small), they will cut them out of the tissue / meat and still consume the flesh:

*...the trappers inland, they set nets and some have parasites in there. ... but if there is just one little puss on it, we cut it out and we eat it. But it's beside the mine, some are saying we should eat the fish here, he's seen it and there's lots of parasites there and it's not only one kind. The water, sometimes there is underground water flow and if anything gets in there it goes in the water. ...it gets contaminated. We should have fish tasting here, ...even the fish tasting, I think we shouldn't do it. Maybe just a taste. It might taste oily, or you don't know. ... We should just taste it [the fish samples] not swallow it. Not fill your belly. [Albert Boucher]*

As more fish were caught with similar trends (i.e., fish that looked too skinny, with too many parasites, and empty stomachs), participant opinions of not consuming fish solidified. The level / colour (orange) of parasites found in fish caught at camp was such that participants did not want to eat the flesh. That no community members wanted to do taste tests on the fish at this year's camp is indicative of a change from previous years; while parasites have been found in fish before, Elders note the sheer number of fish with many parasites is not a common occurrence for them either at the camp or in lakes closer to their communities. Some fish (e.g., LKTR15, LKTR18, LKTR19) had so many parasites that participants stated they were "grossed out", or would not feed fish with this number of parasites to their dogs; participants requested that these fish be burned on the fire.

*I love fish. I grew up eating fish and my nickname is [anonymous] and I got that from my grandmother because I would eat fish right to the bones so they named me [anonymous] and I've been eating fish all my life and I really love fish. I see parasites and worms and stuff in that fish, and that really made me kind of mad. And now fish is really important to us and I wouldn't eat fish up here, no way. I would, but it's sad to see worms and bugs inside the fish and they're not eating healthy. They're skinny, they have big heads and skinny bodies. [Anonymous]*

*Elders came to do fish testing here, with Elders and youth that came here and they said the fish was good [at previous AEMP camps]. They consumed all the fish they cooked at it was good. Now I look at it and the fish was not very good. The way I look at it, the fish is not very good and not good for humans to eat. [Albert Boucher]*

*Water is life. And what I seen in the last couple of days, it is quite sad. You don't usually see that much parasites. And I see it when I hunt here. I see it in caribou now, too. So, it's not only the fish. It could be in other animals we eat, it could be hare and the caribou and ptarmigans, it could be in all animals here. So, I'm kind of worried in that sense because if it's in the fish, could be in the food chain now. Because of certain things that they eat, and we're not sure yet and hope they will find out what causes parasite to go into a fish and caribou. And hopefully, we can find some kind of a solution to minimize what's going on there. And we don't, we're not sure yet. [Anonymous]*

*[LKTR21] No more eating fish from this lake [Lac de Gras]. [Peter D. Sangris]*

*When I was young, there were so many fish and no parasites. Now when I eat fish, I get dry lips. [Doris (Terri) Enzoe]*

#### *3.2.1.4 Summary of Fish Tissue Laboratory Analysis*

A total of 17 fish were assessed for fish health during the 2021 TK camp. Of these 17 fish, information on 10 fish was collected to determine the age of each fish. The ages of the Lake trout captured in 2021 were between 12 to 30 years old. Fish weights were between 865 to 7,270 grams and the lengths of these fish were between 495 to 952 millimeters (Figure 10). Nine of the Lake trout assessed were female fish, and eight were males. The fish collected were mostly adult fish. Most of these fish only had bugs in their stomachs. In addition to collection of information on the weight and length of the Lake trout captured, information on their organs, including weight and size was also collected. The condition of the organs, such as size and weight, were generally similar between male and female fish but were different in some cases.

Lake trout are the species typically tested for metal content and tasted by community participants because they are at the top of the food chain in Lac de Gras. As such, their potential for accumulating some metals, such as mercury, is the greatest and makes them the best species to test.

DDMI sends a subset (10 fish minimum) of the fish captured during the AEMP TK program to external laboratories for scientific analysis. The ten fish minimum is a requirement of the approved AEMP Design Plan for the collection of data at the AEMP TK program. In 2021, of the 19 fish processed, 12 individual fish tissue samples were analyzed for metals analysis, and of those, 10 were also analyzed for age using the fish otoliths. The otolith is an ear bone from the fish that develops rings, like trees, as the fish ages and because of this it is commonly used to determine age by counting the numbers of rings. A single year is represented as a ring in the otolith bone. A fish tissue and otolith sample were collected from the single fish that was processed for consumption at the camp. The biological data for each of the fish sampled for science are outlined in Table 10 and a copy of the full metals analysis is presented in Appendix G.

#### *Age*

Ten individual fish otoliths were analyzed to determine fish age (Figure 10). The oldest fish was 30 years old (LKTR03) and was noted being very healthy, with minimal parasites, good girth, with a large whitefish in its stomach and was also chosen by participants to make into dry fish to eat. The youngest fish was 12 years old (LKTR19) and was also the shortest (495mm) and lightest (0.865g). Of the 10 fish analyzed for age, the average age was 21 with nine out of the 10 fish being older than 15 years old. The oldest fish were typically the heaviest and had the highest levels of mercury which makes sense as they have had the longest amount of exposure given the span of their lifetime.



*Figure 10 Microscopic Image of an Otolith from a Lake Trout (LKTR02)*

### Mercury

Mercury is found naturally in the environment but also can be introduced from human activity and industrial processes. Increased levels have been noted in the past in small fish in Lac de Gras (DDMI 2007), as well as in other lakes within the NWT.<sup>12</sup> Mercury levels in Lac de Gras fish occur naturally as the effluent from the Diavik Diamond Mine is not a source of mercury input into the lake.<sup>13</sup>

Mercury levels are used as one of the main health indicators for the fish palatability study because they will bioaccumulate (increase in amount over time) within both fish and humans through the food web. Additionally, Lake trout are at the top of the food chain in the lake and typically will show increased levels compared to different fish species in the lake because of bioaccumulation. Figure 11 displays a comparison of fish age, size and mercury level for the fish analyzed from the camp. A copy of the complete lab results for each fish analyzed is presented in Appendix G.

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<sup>12</sup> <http://www.hss.gov.nt.ca/health/>

<sup>13</sup> The source for this information comes from the effluent raw data for stations 1645-18 and 1645-18B.

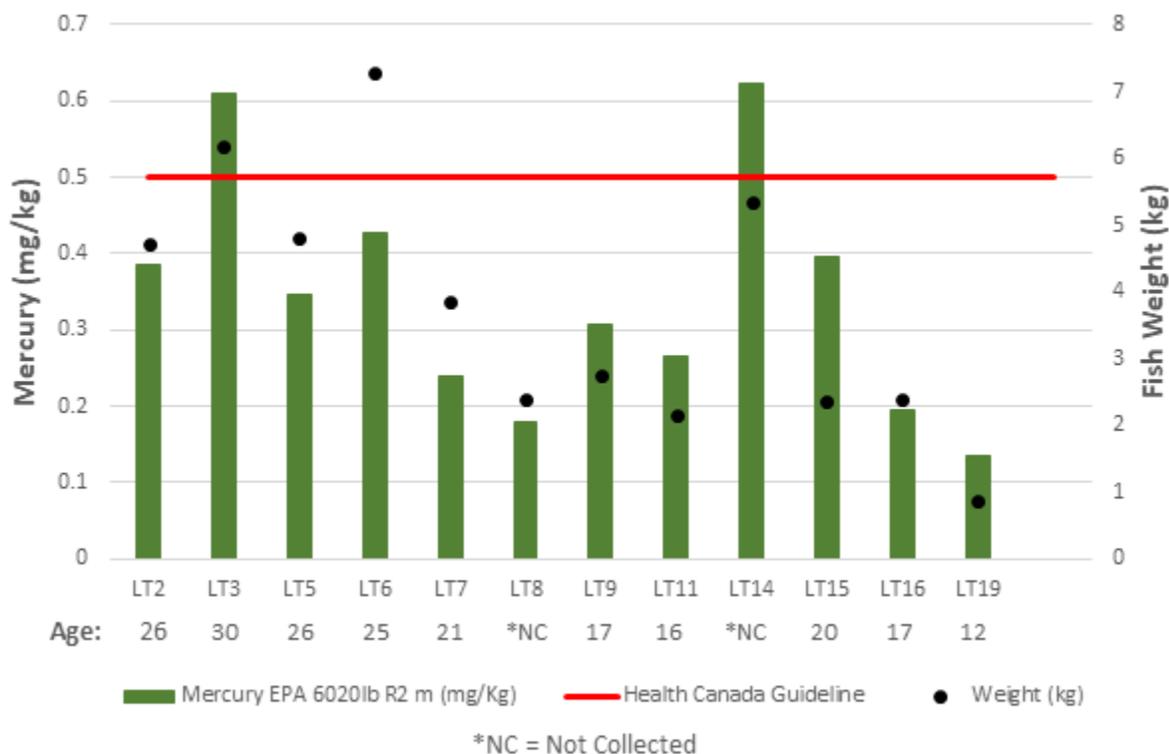


Figure 11 Mercury (Hg) Levels for Fish based on Age and Weight (2021)

The mercury results show that 2 of the fish sampled (LKTR03 and LKTR14) had mercury concentrations slightly higher (less than 0.1 micrograms higher) than the Health Canada guideline for fish consumption and both fish were on the heavier side at over 6 kgs each. LKTR03 was determined to be 30 years old, however, the otoliths for LKTR14 were not successfully collected and the exact age of the fish is unknown. LKTR14 was of comparable size to LKTR03, also a female, and had similar mercury concentrations so it can be speculated it was of similar age (i.e. 30).

### Parasites and Cysts

Parasites have the capacity to affect fish health in large numbers. Some community members commented that in their home communities, they would choose not to eat fish that had parasites in their bodies. These fish would typically be fed to dogs, disposed, or burned. As parasites are seen by community members as indicators of fish health, it is important to document them.

In 2021, community members identified an increase in the number of parasites in the dissected fish. Due to the number of parasites found in the fish, and at the request of community members, biologist Monica Redmond collected samples of the different types of parasites for

taxonomic analysis. Towards the end of the camp, it was decided by DDMI and Golder Associates (DDMI fish consultants) that some representative samples of parasites found in the fish caught would be collected, preserved, and shipped to a laboratory, Biologica Environmental Services, Ltd. (Biologica) in Victoria, BC, to determine the identity of the parasites found in the sampled fish (Appendix G). The data associated with the fish health portion of the camp, including parasite field identifications, were compiled by Golder Associates.

Parasites were observed in or on at least one organ (i.e., the gill, stomach, heart, muscle, liver) or within the body cavity of most Lake Trout captured in 2021. Following the 2021 TK camp, Biologica identified each parasite sample collected to the best achievable level (e.g., genus or species). Based on the parasite identification work by Biologica, the main parasites observed in the fish collected from the 2021 TK camp, organized by location in the body they were observed, are as follows:

- Gill – *Salmincola edwardsii*, which are small crustaceans, with a crab-like appearance.
- Stomach – *Dipyllobothrium*, which are orange-coloured cysts that are lumpy in appearance, and *Raphidascaris acus*, which are silver-coloured cysts that are round in appearance.
- Heart – *Ichthyocotylurus*, which are tiny, white-coloured cysts, which were observed in high numbers clustered together on the heart.
- Muscle – *Triaenophorus*, which are large and short, white-coloured worms observed in the muscle tissue.
- Body Cavity – Nematodes, which were observed as long skinny, round worms within the body cavity.
- Liver – Cysts and short, skinny round worms were observed in the liver tissue, and *Dipyllobothrium* were identified by Biologica from liver samples.

All parasite identifications by Biologica in the laboratory confirmed the parasite identifications conducted by Golder staff in the field during the 2021 TK camp.

DDMI analyzed the prevalence of parasites in previous TK camps, and found there were several years since 2002 where parasite prevalence was comparable to 2021. In particular, 2009 had the same number of fish caught, and the same parasite prevalence. One hundred percent of fish analyzed in both years had parasites documented. The results of this analysis are presented in Table 11 below.

Table 11 History of Cysts / Parasites in Fish Collected for the AEMP TK Program

Year	# Fish Inspected	# Fish with Cysts	Percentage
2002	15	10	67
2003	12	8	67
2005	41	28	68
2009	19	19	100
2012	12	10	83
2015	8	7	88
2018	22	7	32
2021	19	19	100
Average	19	14	74

It is important to highlight that the parasites encountered at the camp, or in northern waters, are not detrimental to human health and the presence of parasites in Lake trout in Lac de Gras has been observed for years both pre and post development.

DFO describes the occurrence and types of organisms that may be found in fish in their brochure “Common Parasites, Diseases and Injuries of Freshwater Fishes in the Northwest Territories and Nunavut.”<sup>14</sup>

### 3.2.2 Watching Water

Indigenous peoples generally understand water as the source of all life; participants watched the water constantly while at camp, when on shore at camp, fishing off the shore / dock, or out in boats. Participants expressed that the water in Lac de Gras is critically important to them, not least as a source of drinking water:

*The water is really important. Not only to me, but to other people, our people, and water is life and we want it clean and fresh and we want it healthy for other generations to come. ... It's a lot of knowledge, it's good to learn. The fish is getting sick, and if the water is not healthy, the fish is not healthy. It's good to learn. I wouldn't eat the fish, no way I would eat the fish. I used to think about it, I'm not going to eat fish here, no way. [Anonymous]*

*...when we see how much is on there, it's telling us something. The water goes to Kugluktuk. What's going to happen to all the water, you see. I am very sad to see hungry fish, how it's going to be there, because that's our only water. We have to*

<sup>14</sup> <https://waves-vagues.dfo-mpo.gc.ca/Library/232932.pdf>.

*do it quickly. Three times I came here, every three years, and I see big changes, for our fish. How is it going to be next time? [Nancy Kadlun]*

Knowledge holders discussed indicators of healthy water, including being able to stick your cup in and drink water straight from the lake, clarity, temperature, presence / absence of bugs, location (e.g., water from deeper areas or the middle of the lake is preferred). Unlike scientific studies that commonly examine water in a series of components and separate indicators/thresholds, participants emphasized that they think about water as intrinsically linked to health of species and many components of the ecosystem: water is said to be alive and, in some cases, to have legal personhood.<sup>15</sup> As such, the perceptions of fish being unhealthy affected how participants felt about the water at Lac de Gras, as well as impacts on the food chain:

*If the fish is not healthy, the water is not healthy. [Anonymous]*

*I'm really concerned for the fish: all I'm seeing is bugs in their stomach. This time of year, they should be full of fish. I'm concerned about the water and the fish. I want to know if baby fish moved away. I want to see in one month if the fish have bugs in their stomach. We all know the fish should be fat at the beginning of August but there's nothing in their stomach, so I'm concerned about the water. [Nancy Kadlun]*

*More parasites in the fish show that the water isn't healthy. Ants in the stomach content mean the fish are eating whatever they can. That's why the fish aren't healthy, full of blood and it's pitiful, this is our livelihood. Big loss to our food chain and to our thoughts. [Sarazine Basil]*

*We can't say the water is very good because it's not feeding the fish. I'd like to have a really good study so that you can look at fish parasites, but the way they're doing the science now is not good, it's not satisfying. [Albert Boucher]*

*This country is really important for us in the barrenlands, not only me. The Yellowknife, Fort Rae, all this side of people, they sharing, they use this land here for the caribou, trapping before, hunting. They're still doing that. Still doing that. But only thing, only water and the fish, it's not the same. I don't think anybody, they're going to eat fish from this lake. Maybe the next 10, 20 years, even the water, nobody will drink water here. [Albert Boucher]*

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<sup>15</sup> <https://ijc.org/en/i-am-river-river-me-legal-personhood-waters>

### 3.2.2.1 Water Quality and Taste Testing

Six people tasted water from TK2, at three depths (Table 12), and 12 TK water forms were completed by KIA, NSMA, TG and YKDFN.<sup>16</sup> While water was collected at another location (TK1) with the intention of being tasted, the water was discarded once back at camp in error, and a secondary sample at the same location could not be taken due to high winds (Section 2.2.2.2). Knowledge holders described the water at both TK1 and TK2 as dark blue and deep, and somewhat cold. As described in Section 2.0, while some participants tasted tea or boiled water; no participants were comfortable drinking unboiled water as they had in previous camps. Elders and youth from KIA tasted boiled water only; one Elder from NSMA tasted boiled water and tea; one Elder from TG tasted tea only; and one youth from YKDFN tasted boiled water and tea. Table 13 summarizes the results. “Good tea” was recorded by KIA, NSMA, and YKDFN for sample TK2-2 (recorded on TK forms as 1-1) (two meters), and “average tea” was recorded by all groups for all samples from TK2-6 (1-2) and 1-3 (TK2-11) (six and 11 meters respectively).

Because a fire kettle was not available, some participants noted the taste of smoke in the water boiled on the fire. Participants also noted that in coming years, water samples should not be left in plastic containers as this affects the taste of the water.

Table 12 Water Quality Sampling Sites

Site	Date (Time)	Location	Participants	Details
TK1 (-2 m, -5 m, and -8 m) (chemical analysis sampling)	August 2 (12:35)	Near Island south of A21 NAD 83 UTM zone 12 534578mE, 7148100mN	<ul style="list-style-type: none"> <li>Water Sampling Boat: Gord (driver), Kelsey, Vikki, Kathy</li> <li>Observer Boat: Ted (driver), Jack (netsetter), Nancy, and Lena</li> <li>Observer Boat: Doris, Marie Adele, Sarah, Myra (driver)</li> </ul>	3 samples taken at 2m, 5m, and 10m depth, maximum depth of water was 10.5m
TK2 (-2 m, -6 m, -11 m) (Taste testing)	August 3 (??)	Near Island Southeast of A418 pit	<ul style="list-style-type: none"> <li>Vikki, Kelsey, Marie Adele, Myra, Jack, Nancy</li> </ul>	Samples taken at 2m depth, 6m depth and 11m depth. Maximum depth of water at this site was 13m

<sup>16</sup> As LKDFN participants had to leave the camp earlier due to a family emergency, they did not taste any water.

Given that water was sampled from only one location, not all participants tasted all types of samples as per the methods described in Section 2.0, Elders from YKDFN did not feel comfortable tasting any samples of water, the information recorded on TK water forms is difficult to compare to 2018. Of those answers recorded on forms, most participants noted that water at all sample depths was “cold”, although “average” / “warm” was recorded for three forms (two at six meters and one at 11 meters). “Cannot see your hand in the water” and “can see your hand a little” were the most common responses for clarity, with the most common response for movement being “some movement”. The most common response for the colour of the water was “blue”, with three responses recording “blue / green”.

Other water quality observations shared by participants at camp was that water appears darker in colour than at previous camps:

*In 2018, we have been here, Nancy [Kadlun] and I, we have seen changes. And the water is a darker colour. [Doris (Terri) Enzo]*

*And for me, why it's really important for me to be here, I really wanted to see how things are not the same now, like since the mine started until today. I really like to monitor things and see with my own eyes how things are changing. The thing I've seen is the fish are not the same anymore. And the water, it used to be just clear. Like you could see the bottom of the lake, now it's dark... [Doris (Terri) Enzo]*

*The water in the middle of the lake looks really dark. The closer you get to land, the more you see, but it's not as clear as barrenland water usually is. When you get to the shore you can still see what's in the water, but it's not as clear as it used to be. [Jack Kaniak]*

*The lake, the boat ride, Terri's right, it's dark, black. In my community when you go for a boat ride, you can see right now, you can see whitefish. But here I tried to look in the water but it was too dark to see anything. The only time I see the fish is when they come up to grab a little insect or something on the lake. [Marie Adele Football]*

*Water was, we used to drink water right when we were hunting. Now what I see with that fish? I cannot drink water here no more. I've been coming up since 1976 with Elders to hunt caribou. We used to drink water, make tea. But what I seen today, water is dark and that's just not comfortable for me. So, I'd like to teach my son how to hunt here, but I got to be extra careful. Very careful. Yeah, because I don't want them to get sick either. [Anonymous]*

Knowledge holders also noticed a change in shoreline habitat (change in vegetation, increase in algal abundance) and the absence of minnows and sticklebacks:

*If you look at the shore by the boats [right by the AEMP camp, near the dock] you can see that green slimy stuff, that's unhealthy [algae]. There should be lots of little fish swimming around there, but there's really nothing. ... There is no oxygen in the water and you see all that green stuff. [Nancy Kadlun]*

*[Gestures to shoreline]"It's not healthy, the shore-there should be small minnows" [Sarah: how do you know it's not healthy? The algae?] Yes. [Nancy Kadlun]*

*Yesterday we were talking about the diet of the fish they're eating, everyone was sitting here, I walked on the island, the whole island looking at the shore to see if there are any minnows or sticklebacks along the shore in the reeds. Sad to say, never saw one. ...something is going on here, they should be showing up on the shore, we should be able to see them. ... that bottom for the fish, it tells me that the fish are starving. When you have insects on the bottom of the bay [they eat that] ...like everybody else is saying, they should have some kind of small fish. We should be able to see birds, other food for the fish. In the wintertime and summertime, there's great big difference between summer and winter. In winter it's covered with ice and there's hardly anything down there. [Jack Kaniak]*

While some participants felt that the presence of small bugs in the saple water was natural and normal, others felt that there were too many small bugs:

*Can't drink it, there will be small bugs in you ... the bugs are playing baseball down there, one eyed champion at baseball. [Peter D. Sangris]*

*To me it tastes good, not flat [sample TK2-6 (1-2), cold water]. The other hot one tasted flat, that's probably because of boiling. And there are five specks, that could have been bugs. Clear water, good, not flat. There are six live bugs, very tiny. Very, very tiny red bugs. Cute bugs in the water. ... I would be curious to know what they are, because I think they're natural to water. I remember my dad getting pails of water and there were beetles, like a soft backed beetle... we still drank the water, fill it up from the lake when you're camping, boil it up and make tea. If you're thirsty I remember being in the boat and you just stick your cup out and splash in water, and Great Slave Lake water always tastes so good. It's got a bit of a sweet taste on your palate, you know you're drinking water from there. [Sarah: Would you scoop your cup like that from this lake?] Probably. Because if you're moving like that in the boat you're churning up water, the side, we were taking it from different levels ... the two meter had it as well [bugs], their bugs*

*were different though. These are just the red ones, the other ones had the see-through, they almost looked like a larval stage. It would be nice to know. Have to ask the water guys and see if they have pictures of different bugs in the water. Those little guys too, I've seen them in the water. [Kathy Arden]*

*In 2020 it was noted there was increased nutrients, and more small plants and bugs in the water. That's what we noticed yesterday, more small bugs and plants in the one and two metre samples of water, so it's fitting that we saw that [and can compare this to the data that Diavik collected on this in 2020]. [Kathy Arden]*

Participants expressed concern about the effects of dust, silt, and re-filtrated water on Lac de Gras:

*This isn't the first time I've been [to the AEMP TK Program], I've been in the past for some of the other programs. Doris [(Terri) Enzoe) was saying it's darker today, but this time ...if we made tea from the lake... it was nice for water for tea. Right now if I made my own tea it would be dark. When we started coming here, the water was better than all the lakes I've seen because it is a huge lake. Today, now it is darker and more dust, and there is a way to have the dust coming into this whole place. Now these people say it is costing us too much money. ... This place is special to us. You shouldn't say anything about the cost, there's a way to stop the dust. [Nancy Kadlun]*

*Right now seeing the fish are so hungry, I guess the water is already affected from no oxygen, because rock dust is so heavy, for so many years it has been running, every day I don't know how much dust goes under that lake. The longer the dust comes up and there's no oxygen in the water, that's why it makes all the things... I would really like to know why our fish are so hungry. There's no oxygen in the water from the dust. First time we came here it was clear, for 3 days we were here looking at that area over here and Ekati, that dust is constantly high. When it comes down onto the water, there is no more oxygen coming up from underneath. If there was a way to clean the bottom! It's really hard for fish to live in there. [Nancy Kadlun]*

*Elders have to understand that when scientists / Diavik say there are high nutrients in the water, that means it's silty. They bring up salt [stir up salt in the water], then put water into the treatment plant and back through, and this water is high in silt [and then that gets put back into the lake]. Winter/ice monitoring: it starts as slush and then starts freezing. At that time of year, it's very windy, can't test that. Once it is built, the wind keeps blowing it off, if you have wind coming down. We have to think about this too. Spring runoff is important too, but have to think about how this would work. I don't agree with testing snow once per*

*year; [you] have to remember that's from our / my knowledge, that's my survival mode and part of it is me feeding myself. As for once one test per year, I don't agree with it. When they tell you that [that the water is silty], that means they can't keep up to it with their pumps. [Gloria Enzo]*

*All these lakes over the North, they are not all the same water type. Different minerals, different things are in the water. Some have even salt in there, according to the bottom of the lake, the soil, water is in the water, whatever is growing along the shores. All that affects the quality of the water. Sometimes they have salt in there even though its' not near an ocean. Some of the little ponds have salt on them. From those little lakes, they have streams that go to bigger lakes. There could be streams coming from all others, so it could be from little lakes, plus the mining... We also have to consider the community for where our friends are from, up the river that goes to the ocean. That water flows from this lake [Lac de Gras] here, that water also affects Kugluktuk, and there's an area called Bloody Fall;, if you go up to Bloody Falls, people take fresh water from there to take back to their community. [Peter D. Sangris]*

Camp participants considered water quality as part of the entire ecosystem wherein water is the common thread and considered both alive and the main source of life. According to indicators grounded primarily in TK, water quality was questionable by virtue of observing water clarity; vegetation; fish health and activity; and taste. Unlike the 2018 AEMP TK camp, participants stated they have concerns regarding the water in Lac de Gras at this time.

*There is clear water by the Narrows. We should be concerned about water right by the mine, we should focus on that. ...these people up there [Nunavummiut along the Coppermine River] are drinking the water, so we have to really test it good. [Peter D. Sangris]*

Table 13 TK Water Quality Ratings and Tea Test Results

Date	Sample # <sup>1</sup>	Indigenous Group	Depth	Temperature	Clarity	Movement	Colour	Tea Test <sup>2</sup>	Other / Comments
August 6, 2021	TK2-2 (labelled on TK water form as 1-1)	KIA	2m	Cold (3)	Cannot see your hand in the water (1)	Some (2)	Blue (3)	Good Tea (3)	[Do not drink tea, so tasted boiled water instead; spat out the water after one taste as did not want to swallow it]; plain [water]; clear; can only taste smoke; clear water and taste smoke; don't drink caffeinated tea
August 5, 2021	TK2-2 (labelled on TK water form as 1-1)	NSMA	2m	Cold (3)	<i>blank</i>	Some (2)	Blue, Green (2.5)	Good Tea (3)	Boiled water: taste boiled; regular water: good; Deep water, cannot see bottom
August 7, 2021	TK2-2 (labelled on TK water form as 1-1)	TG	2m	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	Average Tea (2)	[Did not want to taste unboiled water]; [boiled water is] lukewarm to taste, looks yellowish in the paper cup, taste smooth and oily all the way down my throat; just like the water in my mouth is oily
August 6, 2021	TK2-2 (labelled on TK water form as 1-1)	YKDFN	2m	Cold (3)	Murky (2)	Some (2)	<i>blank</i>	Good Tea (3)	[Anonymous tasted tea, but Peter did not want to taste any water, boiled or not - he observed water instead]; Anonymous: usually would get spring water from hill, not where beaver dam, e.g., looking for natural spring water; tastes like tea, Red Rose; tastes clear, tastes okay; when first tasted boiled water, tasted stale; Dark, deep water, dark blue; [movement] calm; [clarity] dark, but could see hand
August 7, 2021	TK2-6 (labelled on TK water form as 1-2)	KIA	6m	Average, Warm (1.5)	See a little (2)	Some (2)	Blue (3)	<i>blank</i>	[Do not drink tea, so tasted boiled water instead; spat out the water after one taste as did not want to swallow it]; it taste good, I saw a little something but otherwise it taste good; in the middle you can almost taste like it is thick, mud, clear water from the bottom; what we did the last time, we did twice in a row to taste the difference; I would suggest that we do all water samples together instead of waiting until the next day; don't drink caffeinated tea; it is about the same as warm water; it's good, ever notice any difference
August 7, 2021	TK2-6 (labelled on TK water form as 1-2)	NSMA	6m	Cold (3)	<i>blank</i>	Some (2)	Blue, Green (2.5)	Average Tea (2)	Hot clear water: tasted flat, specks = 5, could be dead bugs; cold clear water: good, not flat, 6 live bugs, very tiny red bugs, cute; too deep to see the bottom
August 7, 2021	TK2-6 (labelled on TK water form as 1-2)	TG	6m	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	<i>blank</i>	[Did not want to taste unboiled water]; boiled water: tastes hot, doesn't tell you much, no flavour, tastes lukewarm, greasy; cold, not boiled [observations only]: some small red bugs, it's the same as in my hometown, that's why we filter it (thin cloth)
August 7, 2021	TK2-6 (labelled on TK water form as 1-2)	YKDFN	6m	Cold, Average (2.5)	Cannot see your hand in the water (1)	Some (2)	Blue (3)	Average Tea (2)	[Anonymous tasted tea, but Peter did not want to taste any water, boiled or not - he observed water instead]; water tasting from 6m water near Diavik, 6m below from surface; little dead boiled bugs at bottom of cup or little specks of dirt; Peter: six specks of dirt or bugs; Anonymous: water boiled water tasted kind of stale / flat; overall still tastes like water; Anonymous: it tastes like tea but kind of stale; tasted cold water not boiled, tasted like normal water, found only two bugs; normal colour water, from 6m below; [movement] some / running, some movement, water from waves; [clarity] got water near island near Diavik, 6m below surface, dark blue, cannot see hand in water
August 7, 2021	TK2-11 (labelled on TK water form as 1-3)	KIA	11m	Cold, Warm (2)	See a little (2)	Some (2)	Blue (3)	<i>blank</i>	[Do not drink tea, so tasted boiled water instead; spat out the water after one taste as did not want to swallow it]; this one taste like muddy and dries up your tongue because of the sand; it also feels like it makes your mouth dry; it tastes earthy; cold water; I can taste like a fishy bottom, kind of fishy; don't drink caffeinated tea
August 7, 2021	TK2-11 (labelled on TK water form as 1-3)	NSMA	11m	Cold (3)	<i>blank</i>	Some (2)	Blue, Green (2.5)	Average Tea (2)	Across from A21; Smokey; hot clear water: smoked water; cold, clear water: good, normal. No bugs. Too deep to see bottom

Date	Sample # <sup>1</sup>	Indigenous Group	Depth	Temperature	Clarity	Movement	Colour	Tea Test <sup>2</sup>	Other / Comments
August 7, 2021	TK2-11 (labelled on TK water form as 1-3)	TG	11m	blank	blank	blank	blank	blank	[Did not want to taste unboiled water]; boiled: same as the 2m water; not boiled [observations only] one small red bug (same as in our community, colour, lots clear)
August 7, 2021	TK2-11 (labelled on TK water form as 1-3)	YKDFN	11m	Cold (3)	Cannot see your hand in the water (1)	Still, Some (1.5)	Blue (3)	Average Tea (2)	[Anonymous tasted tea, but Peter did not want to taste any water, boiled or not - he observed water instead]; few boiled bugs or dirt at bottom of cup; Peter counted 13; Anonymous tasted cold water not boiled for this one sample only; only found one bug, tastes like normal tap water; 11m below surface; cold water from 11m below surface, little specks of dirt, about 13; Anonymous: taste like smoke tea, water over the fire, overall it tastes like tea; water taste like boiled smoke water; dark blue water but in cup it looks clear with little specks of dirt; [movement] still water / some movement; [clarity] from 11m, got water near Diavik island
Total # Forms Completed: 12 (for 3 samples at 1 location)									
NOTE: <sup>1</sup> Not all participants comfortable drinking water (boiled or unboiled); LKDFN did not participate									

### 3.2.2.2 Water Quality Scientific Testing Results

Table 14 shows the results of the water quality sampling done at TK1 in relation to Diavik’s water license requirements and CCME drinking water quality guidelines.

Table 14 Scientific Water Quality Sampling Data

Parameter	Units	TK1-2	TK1-5	TK1-8	CCME Drinking Water Guideline	Diavik Water License Requirement
Depth	m	2	5	8	-	-
Total Aluminum (Al)	mg/L	0.00834	0.00761	0.00876	n/a	1.5
Total Ammonia (N)	mg/L	0.013	0.019	0.022	0.2	6
Total Arsenic (As)	mg/L	0.000196	0.00021	0.000181	0.01	0.05
Total Cadmium (Cd)	mg/L	<0.000005	<0.000005	<0.000005	1	0.02
Total Chromium (Cr)	mg/L	<0.00005	<0.00005	<0.00005	0.005	0.0015
Total Copper (Cu)	mg/L	0.00067	0.00055	0.000595	0.05	0.02
Total Lead (Pb)	mg/L	0.0000062	<0.000005	0.0000073	0.01	0.01
Total Nickel (Ni)	mg/L	0.00133	0.000868	0.00113	5	0.01
Total Zinc (Zn)	mg/L	0.00162	<0.0001	<0.0001	n/a	0.05
Total Nitrite (N)	mg/L	0.0019	0.0012	<0.0010	3.2	1
Total Suspended Solids	mg/L	1.5	1.4	1.5	n/a	15
Total Dissolved Solids	mg/L	23.6	18.4	17.6	500	n/a
Turbidity	NTU	0.27	0.36	0.28	0.1-1.0	10
pH	pH	6.05	6.15	6.16	6.5-8.5	6.0-8.4



Figure 12 Camp Lessons and Teachings Photo Collage

The scientific results in Table 14 show that the water quality in Lac de Gras remains good because samples taken had levels less than those required by the Diavik water licence and were much lower than the Canadian Drinking Water Standards. Chemistry analysis shows that the water samples collected at the 2021 camp are similar to values from the 2018 AEMP TK Camp and support the conclusion that the water is still good in Lac de Gras according to scientific testing. However, they do not support the TK observations made during the 2021 AEMP TK camp. Further scientific/TK analysis is necessary to resolve this apparent contradiction concerning water and fish health in Lac de Gras and the surrounding area.

### 3.3 Results from Verification Sessions

Unlike previous years (i.e. 2012 onwards), two Verification Sessions were held subsequent to the camp. The daily notes, author biographies, first draft of this report, and photo collages from the AEMP TK Camp were reviewed and verified by most camp participants at first Verification Session held between December 14-16, 2021. Unlike in previous years where the video focused on simply recording activities of the camp, 2021 was more of a video documentary that tackled two sides of controversial issues and included footage from follow-up meetings with fisheries biologists and parasitologists. Accordingly, there were 13 versions of the video documentary instead of the more typical two or three. Also unlike previous years, a draft version was not shown to participants during this first session.

A second Verification Session was held on June 6, 2022 to review a second draft of this report; and to screen the thirteenth version of the video documentary draft for the first time. Participants from all groups except the YKDFN spent most of the session morning expressing frustration in recent changes in facilitators

*I wanted to express my feelings. The last time we had a meeting was December 2021, at the Explorer. Some of the people did not make it to the meeting time. There were people missing from the community. We as a group that sit around the table should have been notified [that the facilitators were changed], because we have a say. We have been there since it started. Without even telling us, they changed the workers. They just let go these people that are sitting beside me, without telling those that are working around the table. If we would have finished all the work we are doing, it would have been okay. But we didn't finish. In the back of my mind, I'm thinking now that the other people are there facilitating, we have to repeat ourselves. These people [Joanne, Natasha, Sarah] we worked with a long time. We don't have to repeat ourselves... This is about my land, animals, water, and fish. I can't sit back. I hope this doesn't happen again for the next time. I hope it's on record, that somebody is hearing me, because I don't think it's right. . . . I'm not happy. The people that are working with us knew everything about our background, because they have been there*

*for a while. If we ask questions, they understand. But with the new people, I don't think so. ... [Doris Enzoë]*

*Never once in all the years we worked together have you ever, ever, not once...put words in our mouth. You always made sure that what we had to say came from our heart, how we saw things, how we felt about things that went on at Diavik mine. You've taken us down many roads on TK, water, bugs, air, fish, animals, and how it's going to be affected, how these animals and these plants are going to be affected by the mine after they leave. They always let us observe things, never said, have you seen this or that, it came from us. And I thank you for that and the many years working with us, encouraging us to speak and say what we want.[Kathy Arden]*

*The TK Panel right from the start has been working with Natasha and Joanne and their team. They got to know each other over all these years, and they know the land, the people, they have videos of the land. All of a sudden there is a change mid-stream, towards the end of the mine life. That's of great concern to myself and other groups. Why the sudden change? When it's the final stage of the mine's life, when they change who is doing work mid-stream, there will be changes. The results may be different from different consultants. We don't even know who the new consultants are, we have concerns about that. Feels like we have to restart again. [Jack Kaniak]*

*I was shocked to hear these ladies are getting let go, without us even having a meeting. If they were going to be let go, we could have heard from Diavik and said, could we meet and talk about it. We never heard anything and we were shocked. [Nancy Kaniak]*

Participants continued to highlight their concerns about water and fish:

*We know the water is bad and the fish is really skinny. We think about all the things we have seen in the past... We always have to talk about it and say something about it because of future generations. The way the water looks beside Diavik mine, the water that flows to the Coppermine River-I am sure that the people living at the end of the outflow, they are not happy with what they saw. The way we looked at the fish and the guts, the stomach of the fish was just empty, there was no food for the fish. [Peter D. Sangris]*

*During that session of the TK camp, like everybody else was saying, there was changes being noticed... Diavik keeps saying there are not changes, which is very concerning, because we are people that live on this land forever, for thousands of years. They live off the land, the water. That's their store, everything is out there.*

*They know when the changes are occurring. You don't need scientific papers to notice what is happening. They know that because they lived there all their life. . . . Back in the exploration days for Diavik, the water was very clear. I keep saying this, you could see right to the bottom, 60ft or more. Now the whole thing is dark. It's hard to see the bottom until you're about 5ft from the shore. It seems like the water has changed so much. This is very concerning because a lot of the fish are not edible anymore and the water is not drinkable anymore. [Jack Kaniak]*

The remainder of the session was spent reviewing and commenting on the video-documentary. In general, participants were thrilled with the quality and elements of the footage and the way in which the film had been sewn together. However, they felt it did not reflect their impressions of the 2021 camp or that they could go back to their communities and demonstrate the work they are doing. Key comments on the video documentary included, but are not limited to, the following:

- recommendations proposed by camp participants should be listed at the end of the video-documentary;
- the length is too short;
- the story is not complete (i.e., doesn't capture the "meat of the issues" or "hard parts" and "only shows the fun and feel good parts"; "my feelings aren't shown"; "you don't see what I am trying to say");
- many key issues were "gleaned over" (i.e., concerns about fish health and water quality);
- the messaging is not what participants felt they contributed (i.e., "I need to show my work back to the community and be proud of what I am doing" or that my work is valuable);
- interview footage isn't included;
- drone footage of the entire campsite could be added;
- more fish pictures should be included;
- concerns around dust or decreased oxygen in the water aren't included;
- the effect of weather days are missing; and
- the appearance that science is stronger, more powerful or valid than TK must be reconsidered: TK must be respected, taken seriously and not over-shadowed.

In the words of participants:

*It's very good, but it doesn't capture what people are saying and what is happening. The hard issues, like people are saying, should be included in those discussions on the video...[Jack Kaniak]*

*There should be more about the fish [in the video]. You've got to have both sides of the picture. ...I don't agree with it. [Anonymous]*

*The video clips: there are a lot of portions of it that are not in the video. We talked a lot about fish with parasites. In the video, it makes it look really nice - you see the land, the people talking - but you don't see what we are trying to say. It makes it look good for the people, Diavik. Us, we are observant people so watching the video, we see our people and it makes us happy. But in a western way of understanding, the thing we are trying to address is the harm that mining industry does to our land. We talked about the importance of the mine closing, how important it is for us to make sure that it's closing right. We are worried about fish because we are fish eaters, and water because we drink the water. I'm sure Diavik doesn't want to agree. We addressed a lot of issues at this camp, and at the meeting in December [2021], but you don't see that reflected in the video, those hard topics in the video. When scientists say about the fish results and they are talking about why they don't see any changes from previous years, they are assuring you they will continue to look at the water and look at the fish, but yet they are not talking about the true concerns TK members have: too many parasites, warmer water levels, the fish doesn't have enough food in those waters, the amount of fish caught from previous years went down [Terri Enzoe]*

*When you have [scientists] talking about the fish health and data, I can easily say I don't agree with that footage and that it should be deleted. If we are talking about mutual respect: science is not stronger than TK. If you are trying to capture where science is more than TK, that one clip, I can't agree with that. This video, if that's the case, then you need to have where you have that clip of your scientists, and then put right next to it a clip of your Elder ...Those clips that you didn't put into the video. They need to be respected. It can't be one more than the other, especially when it comes to science. If you are taking TK and saying-you can't have science overrunning TK, it can't be like that. That means there is no respect.. . .Those clips need to be side to side, it can't be one over the other. I know that's not going to be approved, but it needs to be approved. ...However we decide to move forward, other people are watching. You are being watched, and we are being watched, and a bigger audience is watching. This is not a game, it's our livelihood here too. We all represent our people. It's important to capture it right. [Doris Enzoe]*

In response, DDMI (corporate relations) committed to making edits to the video-documentary before release. In the meantime, as in previous years, the raw footage for community archives will be delivered.

As time did not allow everybody to verify daily notes given their length, some of these have been included in draft form in Appendix D. Finally, participants approved the final version of the report at the end of the second session, nodding heads in approval, and signing forms that they have reviewed the report and video-documentary (Appendix D).

## 4 Lessons

Elders provided lessons throughout the camp to youth and community members both formally and informally, as described further in Section 5.0. Lessons were as follows (Figure 12):

- Marie Adele Football: singing night
- Kathy Arden: knot tying
- Nancy Kadlun: bannock making
- Albert Boucher, Nancy Kadlun, Kathy Arden, Ted, others: fish filleting and making different tools / techniques

## 5 Storytelling, Indigenous Knowledge, and Reflections

The camp and spending time on the land together provided an opportunity for participants to practice laws, customs, traditional ways and protocols that relate to respecting and caring for one another both within and between cultural groups and generations. Storytelling around the fire, spending time in the boats and on the tundra, teaching youth traditional rules around caring for fish, water, and the land, praying around the fire, feeding the land and water, caring for Elders, and many more moments, were an integral part of the camp experience that can't be quantified.

While participants expressed grief and sadness at camp, they also continually showed and discussed their joy and love of being out on the land and sharing the experience with others just like their ancestors; the Elders reminded everyone that lightness and laughter are needed alongside heaviness, to be able to move forward and do important work. For example, Peter D. Sangris shared stories of his dog racing championship days and talked about how looking out the window from the plane reminded him of stories his mom told when his family would travel on the land from Contwoyto / Courageous Lake to Great Slave Lake; his mom worked very hard out on the land.

Gloria Enzoe shared that she was both very sad and happy to be at the camp, and spoke about how she misses the caribou, and the way things were before the mine (“the land misses the caribou”). Ted and Lena Drygeese discussed the Yellowknives Dene journey in 1996, when YKDFN members travelled from Yellowknife to Ekati to map story sites, graves, burials, places names, and other important sites. Everybody shared stories of themselves and their ancestors being in the area, and that being out on the land brought sadness in terms of change, but immense happiness as well. The following themes were discussed throughout the camp:

**Cultural use of Lac de Gras (before / after mines):** Since time immemorial people have lived in the Lac de Gras area. Hunting, fishing, water and land play an integral part of who people are (i.e. cultural identity) and why the area holds so much value to them. This is an important aspect of why participation by members of LKDFN, KIA, NSMA, TG, and YKDFN in the AEMP continues to be so meaningful:

*This is our land, and our ancestors, our forefathers have been here before us and we are just walking on the trails that they have walked on before us. [Peter D. Sangris]*

*Lac de Gras, I've been here. This is maybe my seventh time here, but in the TK Camp, this is my third time. [Nancy Kadlun]*

*Well, this is our traditional ground, this is our hunting ground, and we've been here for thousands of years. We survive on caribou and on the land, the water. Everything about the land is really important to us. [Anonymous]*

*We respect this area a lot and we have been finding arrowheads, we found birch bark canoes. We collected them and we brought them home with us, from our ancestors. How they survived for hundreds of hundreds of years. Willideh traditional territory, they would share with others, our neighbours to the west and to the east. And it's quite unique because I've been coming up here since 1976 with the elders to hunt caribou and they still come. And every time I get an opportunity to come in barrenlands, I hardly ever say no, it's home to me. [Anonymous]*

**Land connection and intergenerational knowledge (relationships):** A critical component of the land is the meaningful relationships that it builds: it provides people the opportunity to connect with themselves, the land and one another. From Elders to youth, the land provides an opportunity for intergenerational knowledge sharing, something that was evident at the AEMP. Connection to land and water strengthens and fosters health in people and communities:

*It's very important for youth and Elders to get to put in their input on this kind of workplace or the camp site that's involved in the affected communities because Elders have so much knowledge that, just even listening this whole week, listening to them talk about the water, the land, and it, they have a lot of knowledge of the things I didn't know about. So then to hear them talk about how important it is and for them to pass it down to the youth that would keep it going from generation to generation. And that would, that's very important. I mean, I want my kids to know about what's going on and what you see in the water or the land. It's very important. [Vikki Niptanatiak]*

*To be involved in this work for the youth and the Elders is to take care of our land, to make sure there's no more damage for the youth and, maybe in the future, for their great, great grandchild. Then, they'll teach their children how to take care of their land and learn from the Elders. Like when the Elders tell them stories about this, then maybe they'll listen and pick it up, and them, too, can continue on taking care of their land... [Marie Adele Football]*

*You always hear Elders say that: to live good and healthy. We want that for our young people because when they live good and healthy, we have healthy community and healthy mindset. Part of the teachings we grew up with is going out on the land, youth participating, being there, observing. If we take that away from young people, they kind of get lost a little bit and they struggle. Especially with the changes that have occurred, for the young people. They really, really need to be part of these kinds of things. [Gloria Enzoe]*

**Meaningful contribution to the monitoring or “watching” conversation:** The community members involved in the AEMP TK Camp hold valuable knowledge. They have been selected by their communities as knowledge holders to participate in the AEMP TK Camp. Accordingly, Indigenous individuals of all ages hold valuable knowledge that should be respected; people have lived experience and have been involved in discussions about long-term monitoring with other resource projects. They are active stewards in their territories and are both developing and participating in many guardians programs around wildlife, water and more. They know what to look for and what to ask:

*You see old people get together, they talk about weather, they talk about spirituality, they talk about all kinds of things. When I sit amongst them and I hear, and I listen, it just puts me in awe. The amount of knowledge that I've just heard that I was part of, that was shared with me, that is instilled in me, would be the same for young people. To share stories with them for them to hear and to listen, and to feel. It's our livelihood. They're our livelihood. [Gloria Enzoe]*

**Joy of the land, the connection and community health:** Many of the camp participants described how being on the land brought joy and how they felt a strong connection between land and health:

*This spot is really important because this is where the caribou migrate. They pass through, and then they go back down to our community or to Whatì or Gamètì. And as the Aboriginal people [Tłı̨chq] we live on caribou meat. Like that's our food. There's all over the world, people have their own food, when they go someplace and if it's not available, if it's not there, then they're craving. That's how it is with our people. It's the caribou meat that they've been living on for such a long time. And it's their healthy food. So...when the caribou come, there was no waste, even the guts and all that stuff inside the caribou stomach, it was just like a dessert for the Elders and also the youth. And also they have the caribou blood, that's what they were having [to be] healthy. [Marie Adele Football]*

*There are many areas that are very, very important. We have family areas, but we also have community areas that we go together, for example, when I think about all these areas I think about all the times I've shared, not only with my family, but with other family members, and the joy that they had, and the stories that they would tell. I gained a lot of knowledge, understanding how our world works here. We go out on the land, but we go out on the land looking at the sky and looking at the land, and determining where we're going to go that time, where there's going to be good fish, where there's going to be good berries, where there's going to be abundance of caribou. When I was young I didn't have to go very far for caribou. I just had to look out my window. I remember when my two boys were young, very young, there was caribou in the ice and my dad was like, 'Hey, we got to go get those two caribou' and he wanted the boys to go with him. At first I was a little bit worried they were small and stuff, he was like, 'No, dress them up. It's not far' he said. So, he took them. Just to see them to be together like that and then to go get two caribou, it's a joy. A mother's joy. Imagine what my mom felt too to see her grandchildren, it's like a blessing. [Gloria Enzoe]*

**Collaborative approaches to monitoring and the value of TK:** Indigenous nations have always observed and shared their knowledge of the land. They've extended that knowledge to the AEMP and TK Panel. For them, traditional ways of knowing have long been a matter of survival.

*It's like survival mode for us, and then right away we're coming up with plans in our heads individually. That's when we need to come together and make sure that things are happening right, and being respected. Being heard. That is so important. Everybody fights for their rights. I want our rights to be recognized here and our word to be taken as truth, and to be told that we can do the right monitoring without budget cuts. [Gloria Enzoe]*

*We're supposed to work together. [Albert Boucher]*

*We would like it to be monitored for a long time because this dust and all that activity that's going on, it won't settle right away. It's not going to be-I don't know how long it might be, but all the stuff that's coming from there, it's not going to settle that fast. [Nancy Kadlun]*

*Well, in the future, I would like to see the mines working with the people and monitoring the land and the water and the fish. Not only the water and the fish, but also the caribou and other animals. [Anonymous]*

*It's not the end of mines for us because we're in a really rich country. And there's so much. Everything that people want from our area. There's never ending diamonds, gold and whatever. So the mines won't stop for, for life I bet. But we would like our land to be clean as possible because in the future, if we don't take care of it, it's going to be all like no animals left for our future. Which you can see today starting already. Yeah, absolutely. We don't want it to get any worse. [Nancy Kadlun]*

**Indigenous guardians, observers and caretakers of the land:** Indigenous people have always observed and tracked their knowledge of land and water. As community members at the AEMP have shown us, people can see the changes and know when health is being compromised:

*He said before the mine activity in this area, this was a very important lake for our people because this is where they went caribou hunting and the water was very clean, there was lots of fish in the lake, so you could set the net or get fish from this lake and you can just eat it, cook it and eat it. Everything was so fresh. But since the mine started, things are deteriorating slowly, we see that. And we see that, good example of that by the cutting open at the trout and the way that the trout looked, it was really skinny and the stomach, and we looked at everything. When we cut the fish open, we looked at the guts, we'll look at the eggs and liver that had white cysts on it and all that, the fish look really skinny. [Peter D. Sangris, Lena Drygeese]*

*When we talk about things, we know what we are talking about, because we know our land and what is on our land. This is our livelihood, we know what goes on anywhere, the animals, the land... [Albert Boucher]*

In many cases, there is frustration that this knowledge hasn't been considered equal to scientific knowledge:

*We need to be able to have things tested because we could see things, observe, but at the same time we don't know how high the pollution is in the plants or in the fish. But we're observant people. Very observant. We see change in whether how water flows... So, we understand runoff. We understand rain, we understand wind, we understand all those things. So, when you have our people out here and they're observing all of that, we know what scientists tell you. We're going to tell you before even the scientists tell you. It's not because we went to school. It's because we live off the land and we see change. Dene people are the professors of this area. They're the biologists of this area. They're the historians of this area. They're going to be the ones who tell you when they see it happen before the biologists, before the people that went to school to do all these things and become educated and get degrees. We tell you before they even tell you. Then they wonder how you know. [Gloria Enzo]*

**Diversity of care for the caribou and the land and hope for the return of the caribou:** There are many ways that Indigenous peoples care for their land, water, animals, and plants. Some of this was displayed at the AEMP. Not only was their care shown through the practices and protocols of showing respect for the land, but also through the long-term care and observation of changes. Work and commitment from all parties are needed to see the return of the caribou. Many participants explained that seeing the caribou again would be an indicator of health in the region:

*Oh I'd love to see the caribou back around here. All the animals, the ground squirrels. Yeah. And you don't see much rabbits around here too. So I would love to see all the animals being able to come back home." [Vikki Niptanatiak]*

*So, when you're travelling up here, we always pay the land, the water, and we feed the fire. That we did the other day and have a ceremony and then ask for guidance, ask for protection, and a safe journey home. We always do that, very personal. [Anonymous]*

*I really care, especially my water, because if we didn't have water, how are we going to live? If we didn't have our food because we eat fish, we're fish people, caribou people. You know, all of the berries that we pick, it's never all store-bought food. We all live off land. So I really care about those things. And I really watch. [Doris (Terri) Enzo]*

*I've been to other camps like Snap Lake where we did fish tasting to check the health of the fish. And here I was very surprised to see the parasites in the fish. I think out of 21 fish that we got, there was only one good fish. And we had an opportunity also to open up those little pustules that are on the fish and see the parasites that are inside. I'd never seen that before. Always thought that fish were always healthy, and apparently, it's a big change from last year. When the other members of the traditional knowledge panel came here, they said that there's a big, big difference in the fish this year. So it's a big concern what's going on with the water, and there's other animals that drink that water. So they're concerned about that. The caribou coming through here. [Kathy Arden]*

As Diavik moves towards closure, collaborative, long term, holistic monitoring / watching programs that take into account past AEMP findings (both scientific and TK-based) remain a priority for community members. Cumulative effects to the land should be understood all together, not as component pieces in a monitoring program:

*I think it would be important to develop a program where all the history is gathered and present it in a way that - present it in the communities. A 2-week program where you learn the history throughout the environmental monitoring programs set out at Diavik. To help gain proper knowledge that needs to be known, which you probably have, the dialogue at these camps. It's not only good for the dialogue but it's good to incorporate young people at these workshops and it should be in our communities. [Gloria Enzo]*

*...I talked to my friends at Kugluktuk [Nancy Kadlun, Jack Kaniak], the water runs right to their community. This report from this week's study should be given out to the communities, and let people know that there's a lot of parasites in these fish, let hunters know. There should be further study on caribou, plants, us hunters and trappers, we see everything. There should be ptarmigan there, we should have caribou there... we don't have time to look at all the stomachs and see if there are parasites. When you say TK study, that includes everything, not only fish but all animals that they survive on, and plants. Everything is included in that, in that report, it has to go to Chief and Council. People have to know what's going on. It's serious, I have seen a lot of different mines operate, and fish are getting to where it's unhealthy. If the fish is not healthy, the water is not healthy. [Anonymous]*

*We've been here since Saturday morning, it was a calm day that day, Sunday, and Monday the same. Calm and hot days, but windy on there. If you look at the mine site, sometimes you can't hardly see it because of the dust. Dust all over the place, you can see it. So lot of dust right now, you can see it coming from the road, pits, everything, sometimes it's so bad you can hardly see the island, it's spreading all over the place. Today and yesterday we have wind and now its all clear, the whole area is clear because the wind blow it all away. The first thing I noticed was the birds, since we came here, all the dust is gone, but suddenly there is birds. So how many years has this dust been going in the lake, since 2003. It's been all those years the dust goes into the lake. Diavik tells us that it doesn't affect, but we all know it's affecting the system, the land, water, air, all of it. When I came and looked at it, if I didn't come here I would have believed Diavik if they say it's fine. ...but seeing it now, it's a great time difference. I'm not going to believe Diavik anymore because of what I've seen. I believe it's killing all the wildlife on the lake, all the dust from all those years. Doris [(Terri) Enzo]] said she noticed changes in the lake [Lac de Gras]; its' getting darker, and now it's getting worse. I'd like to know how all those dust programs, how many times a year, what is the outcome of what you are thinking. [Jack Kaniak]*

*Sometimes it's hard to get to the bottom of anything when we don't have the resources to do it our own self. Listening to somebody saying this, it's okay, it's good, but we know it's not good, especially for the fish and the food chain. There used to be ducks and seagulls and ravens, I have seen two ravens since I been here, I never saw no ducks, if there is any. And also the seagulls are very scarce, hardly any seagulls. We have seen a lot of geese migrating past here, pretty much every day there is geese and eggs and all that. I don't think there is any here, it's like the animals abandoned the land, so we know something is bad. ...I live on the land all my life, I'm an Elder but my home is the land, I'd rather be out there than in the city or anywhere. ... Now the land is there but there's no animals there. Jack [Kaniak] said he walked all the way on the shore and small fish and water, there are always little fish on the water, and there's always sand pipers and water birds. I don't see any here. What are we doing, talking our heads off, it's prevention of the food chain for ourselves, for the animals. Sometimes it seems like it's useless to go to places ...to me there is no respect for myself and the people, the Elders that are here. And also for the land, for the water, animals, all for a little piece of rock. Sometimes I think we shouldn't have said yes to the mine, but everything was good, very good. I didn't think it would come to the point where we are. ...we can't even consume fish from here as we've seen it. [Sarazine Basil]*



Figure 13 Women on the Land Photo Collage

## 6 Evaluation and Recommendations

On the final day of the AEMP TK Camp, a closing circle was held, and participants filled out evaluation forms (Appendix D contains an example). Any results from the evaluations of the Planning Session and Verification Sessions are included in Appendix J, while results from the TK camp are detailed below (Table 15).

Over the years, results from the evaluation process feed into recommendations tracking so that each future event can be improved. Table 16 summarizes the recommendations made in relation to the AEMP TK Program since 2012 when TCS began facilitation. A response to each recommendation is provided by DDMI, where applicable. Many of the recommendations made by community participants to date have been achievable and supported by DDMI and facilitators (i.e., TCS and Joanne Barnaby Consulting). Through time, the purpose of this table will be to continue to expand and track recommendations, responses, and any resulting changes in a transparent way. Table 17 shows the formal recommendations made at the 2021 AEMP TK Camp.

Table 15 AEMP TK Camp Evaluation

Diavik 2021 AEMP and TK Panel #13 Evaluation							
	Very Good	Good	Neither Good nor Poor	Poor	Very Poor	Total Responses	Comments
1. How would you rate the camp for working together?	5	6	1	0	0	12	"Not enough time during day to discuss where improvements could be made"
2. How would you rate the camp for Elder-youth teaching opportunities?	5	4	1	1	0	11	[1 response: both good and neither good nor poor checked - entered here as neither good nor poor]; [1 response missing] > "I don't know what to say about this part because we didn't have a youth with us. But the person who came with us knows what to do."
3. How would you rate the respect among participants?	5	7	0	0	0	12	
4. How would you rate Elder care and attention?	8	4	0	0	0	12	
5. How would you rate the documentation of TK?	2	8	1	0	0	11	"Received no copies of "Recommendations" re: TK made at this camp"; [1 response missing]
6. How would you rate the venue and food for the camp?	7	3	2	0	0	12	[1 response: both good and neither good nor poor checked - entered here as neither good nor poor] > "Location is poor, especially for Elders. Food was very good, thanks to the Cook."
7. How would you rate the logistics for the camp? (e.g. hotel, travel, honoraria?)	3	4	1	2	1	11	[1 response: both good and poor checked, entered here as 'neither good nor poor'] > "raise honoraria"; "*Honoraria should be upped to \$400 or \$500 per participant."; [1 response missing]; "Lack of clarity re: honoraria, expenses"
8. How would you rate the camp for safety?	5	7	0	0	0	12	
9. Overall, how would you rate the camp?	5	4	2	0	0	11	[1 response missing]; "Too much rocks for elders"; "Spots, too much rocks, elders";
	Too much time / Too many opportunities	Enough time / Enough opportunities	Too little time / Too few opportunities	Total Responses	Comments		
10. How would you rate the opportunities for you to communicate among participants?	0	9	2	11	Participants should get together to discuss TK by themselves and relate to facilitators later; [1 response missing]> "More things are coming out of TK what we see from past years."		
11. How would you rate the filming process?	2	8	2	12			
12. What were the strengths of the camp? What did you enjoy about the camp?							
"1) Eat, sleep and being taken care of (elders) 2) Friendly towards each other"							
"I really enjoy the open space and see as far as I can, and fishing, hiking. I learn about testing fish to see if it's sick or has enough food in the stomach."							
"*Loved the scenery! Loved the "smell" of the land! *Everyone looked out for each other. *Telling jokes, laughing and keeping each [other] positive, even when weather was lousy. *One camp-worker very helpful with needs of participants at their cabin."							
"Camping and visiting members from other communities"							
"Meeting new people and seeing old friends, since Covid started miss see[ing] people!"							
"Elders knowledge about the land and animals. Changes to caribou and fish."							
"I am not worried about camp. I am worried about what has to be done. I enjoyed being out on the land."							
"Strengths of the camp were having Elders who were so eager to teach about the water, fish and land and hearing the stories. I am so amazing of how much knowledge each Elder told stories [of]. And their passion and love for the land."							
"Each EA participant is at site and participating, it's on land that do not have development impacts like roads, vehicles and so on."							
"Joking, singing, boat trips"							

13. How could the camp be improved?
"Move campsite to a better level ground for elders to get around. Improve shower areas and provide sinks/mirrors to brush teeth etc. Give us pictures to look at from past camps."
"Make a good path for elders to walk, try to remove rocks. Always remember to pray for our land, water and our family that are home to be safe until we go home to see them again (morning or after supper)."
"*Better location. *More time for participants to hold group discussions, without the facilitators. Will have more open discussions re: TK in our own regions and to see how we can make recommendations upon agreement with each other. *Have basins; water; toilet stuff in cabins. *Have photos of past camp participants and their recommendations handy."
"More thought through - meeting area <u>vs.</u> kitchen area. Warmth for our elders. Have [water?] participant[s]."
"Very good"
"Building for meeting! Or two tent frame, enough to hold 30 people."
"When sampling taste testing water, I recommend to finish the day they pick up water instead of waiting for the next day."
"This is my first camp, and I've learned so much and it makes me proud to be an aboriginal person. Overall I thought this camp was amazing. We can't really do anything about mother nature. I want to thank KIA, TK Panel, Diavik, the facilitators, Elders, for such an amazing opportunity. If I had a choice, I would certainly participate again!"
"1) Need meeting place, eating place. 2) Cook's helper! 3) Interpreter work place, i.e. box or other to keep interpreter vocal[s] interfering with others talking."
"Better paths"

Table 16 Participant Suggestions and Recommendations and Responses for the AEMP TK Study (2012-2021)

Recommendation	Source	Response
<b>Participation</b>		
Many elders have participated in the camp multiple times. Recommendations for other TK experts were put forth (see Appendix 8).	2018 Verification Session	No response required.
Additional youth from each group of people. Two youth from each: one girl and one boy.	2018 AEMP TK Camp; 2018 Verification Session; 2021 AEMP TK Camp	The number of beds is limited based on the size of the camp and Diavik does not plan to expand the camp. It is important that available beds are filled, whether that be with elders or youth. In each year, there are one or more participants who are unable to attend at the last minute. We would first encourage communities to identify alternate participants and have them undergo security clearance in advance, before any discussions about increasing numbers would occur.
Longer camp. Four days is too short. Having 5 days at camp would be best to not feel so rushed and to have room for bad weather.	2018 AEMP TK Camp; 2018 Verification Session	Flight schedules to and from site determine the schedule for the camp. This is the first year where bad weather limited camp activities for an extended period of time. Diavik's preference is to continue with four days.
Community members who do TK research should come to document the information and help train youth.	2018 Verification Session	As noted above, space is limited at the camp. A possible alternative is to have a TK researcher provide a day of training for the youth in their home community in advance of the camp.
Have the camp more frequently so I can come back sooner!	2018 AEMP TK Camp	The DFO authorization requires the program to be conducted every 5 years, however DDMI has committed to the 3-year schedule for the AEMP TK Program, which is conducted at the same frequency as the 'comprehensive program' for the scientific sampling under the AEMP.
We need to use the camp as an opportunity to strengthen the spiritual understanding of the youth to counter drug and alcohol problems.	2018 Planning Session; multiple participants	No response required.
Important to reach out to youth throughout the communities to advertise the opportunity for the AEMP camp, not only go through community organizations. Revisit ways to engage youth again before 2021.	2018 Verification Session	Diavik works with the community organization, who in turns decides how to advertise in the most effective way for their community.
Have more young people involved in the camp. It would be better to have more than 3 youth, at least 1 per community group. And maybe communities should choose different young people each time so that more people have a chance to experience this.	2015 Verification Session; multiple participants	Funding is provided and multiple requests made to community organizations for youth involvement. Possible options to improve this for 2018 include: involving Elders in recruitment, notifying youth of opportunity prior to spring break, showing the video to help them know what they'd be doing, identify alternate youth and have them complete security screening in advance.
Request people who can drum to attend the next camp.	2015 AEMP TK Camp; Bertha Catholique, LKDFN	DDMI can include this in the invitations that are sent to community organizations, but the decision on who attends rests with each organization.
Should have one male and one female from each community. Every time we go to the camp, we need to bring the youth. Best to choose someone who interacts with their Elders in their communities.  When we think about young people, it is good to have girls and boys. It is good to have some Elder camp participants that return year after year.	2015 May Planning Session; multiple participants	Requests for participants sent to each community organization requested 1 male, 1 female and 1 youth (male or female); as well as 1 interpreter, if required. Invitations informed them who attended in 2012, and also encouraged some participation by TK Panel members (due to their familiarity with the site and this program). It was then the community organizations decision whom to send.
<b>Camp Rules</b>		
It is important to feed the fire, pay our respects to the water. This is personal and not everyone may want to do this, but we should honour this for those that do.	2015 AEMP TK Camp; Modeste Sangris, YKDFN	These requests were included in the camp plans.
Have youth stay in same tents as Elders. We don't want the kids to bring any games, headphones, radio or anything.	2015 May Planning Session; August Enzoe, LKDFN	Arrangements were made to accommodate this request at the camp and youth were notified of the Elder's direction not to bring games, etc. during videography training before the camp.
<b>Methods</b>		
Each delegation should meet before the joint planning meetings, so they can reach consensus, if possible, at the planning session with Diavik. Try it out for the next camp, then discuss in the verification meeting to determine if that worked.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.

Recommendation	Source	Response
Do sediment sampling every year – since the mine started there is more sediment.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
Test sediment and fish at the Narrows and Lac du Sauvage.	2021 AEMP TK Camp; Albert Boucher, LKDFN	Diavik will respond prior to the next camp.
Do fish tasting in all seasons.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
Develop visual summaries of all annual data sets with quotes so that it easy to compare year to year.	2021 AEMP TK Camp; Gloria Enzoe Shearing, LKDFN	Diavik will respond prior to the next camp.
Set nets in the winter, and at different times of year.	2021 AEMP TK Camp; Albert Boucher, LKDFN	Diavik will respond prior to the next camp.
Watch water and fish in the winter by ice fishing; ice collection; testing contents of contaminants in ice cores; and testing the overflow on the ice.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
Collect snow and analyze that too. Needs to be done more often.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
Recycled water from processing plant should be compared to lake water. All results should be shared with communities (ensuring AEMP and TK panel participants get the results).	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
More effective ways of reviewing reports with the consultants should be developed.	2021 AEMP TK Camp; Doris (Terri) Enzoe, LKDFN	Diavik will respond prior to the next camp.
Directed to YKDFN: We [YKDFN delegation] represent 1700 members, our membership is growing. We should have a committee like with Giant Mine Committee with 2 youth, 2 Elders, and a translator, to talk about important subjects. We should put a committee together to work with leadership to have additional new members on the TK Panel too. 2 youth, 2 Elders 2 hunters, and a translator	2021 AEMP TK Camp; Ted Tsetta, YKDFN	Diavik will respond prior to the next camp.
Have TK forms interpreted in the Indigenous languages.	2021 AEMP TK Camp; Sarazine Boucher, LKDFN	Diavik will respond prior to the next camp.
Roles need to be very clearly delineated for all members of team – disorganization in planning shows clearly and makes community members wary / not as happy to be there. Hurts the data collection.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
We should have kept the [water] samples [to see the colours] – to be able to compare to now.	2021 AEMP TK Camp; Albert Boucher, LKDFN	Diavik will respond prior to the next camp.
Develop an information/educational program where all the history is gathered and presented in a way that is understood in the communities. A 2-week program where you learn the history throughout the environmental monitoring programs set out at Diavik to help gain proper knowledge that communities need to know These programs must incorporate young people and held on the land.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
If we're seeing the effects of unhealthy fish, unhealthy water, we shouldn't be saying yes for a water license to Diavik	2021 AEMP TK Camp; Gloria Enzoe Shearing, LKDFN	Diavik will respond prior to the next camp.
Serious consideration of the negative impacts of open pit mines should be considered by all Regulators.	2021 AEMP TK Camp; Ted Tsetta, YKDFN	Diavik will respond prior to the next camp.
Look at all the streams that are running into the lake too, all the water on the land, when the wind comes up, everything falls in the water and then it goes downstream.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
Would like to know what the fish are eating that makes the parasite population grow. If they are eating something from the mine that is causing that, we need to know.	2021 AEMP TK Camp, Jack Kaniak, KIA	Diavik will respond prior to the next camp.
Should set a net at the end of the lake to see what the fish they are eating.).	2021 AEMP TK Camp; Ted Tsetta, YKDFN,	Diavik will respond prior to the next camp.
When the thaw happens, you have a layer of water on top of the ice that should be tested.	2021 AEMP TK Camp; Gloria Enzoe Shearing, LKDFN	Diavik will respond prior to the next camp.

Recommendation	Source	Response
Want to know once the fish is infected with parasites, or cysts, how does it degrade the fish throughout time, the health of the fish? And how does it suck life out of it, killing it. What's their life span then?	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
Recommend that they do the fish testing yearly.	2021 AEMP TK Camp	Diavik will respond prior to the next camp.
TK Fish Inspection Form: the term "typical" describing firmness of fish should be changed. The term "typical" is not a good word choice and doesn't reflect how people think about this	2021 AEMP TK Camp; Gloria Enzoe Shearing, LKDFN	Diavik will respond prior to the next camp.
TK Water Quality Form (TK water form): the "movement" section of the TK water form doesn't make sense: water is always moving around, the movement is very important, this should be more clear.	2021 AEMP TK Camp; Albert Boucher, LKDFN	Diavik will respond prior to the next camp.
Bring a kettle for the fire to make tea with next time. Don't leave water samples overnight in plastic or do taste testing split between days.	2021 AEMP TK Camp; Nancy Kadlun, KIA	Diavik will respond prior to the next camp.
Request for previous mercury graphs.	2021 December Verification Session; Doris Terri Enzoe, LKDFN	Diavik will respond prior to the next camp.
Request for raw video-documentary footage to be released to LKDFN.	2021 December Verification Session; Gloria Enzoe, LKDFN	Diavik will respond prior to the next camp.
Request to see/examine a fish in the winter season (to check fish health compared to 2021 camp).	2021 December Verification Session; Gloria Enzoe, LKDFN	Diavik will respond prior to the next camp.
Request for two interpreters for LKDFN, to be present at meetings.	2021 December Verification Session; Albert Boucher, LKDFN	Diavik will respond prior to the next camp.
Request to set nets four times per year in Lac de Gras, one time in each season, to check fish health.	2021 December Verification Session; Doris Terri Enzoe, LKDFN	Diavik will respond prior to the next camp.
Check fish health in other areas of the lake, not just close to the AEMP camp.	2021 December Verification Session; Albert Boucher, LKDFN	Diavik will respond prior to the next camp.
Request to see the AEMP program schedule, to check frequency of monitoring throughout year.	2021 December Verification Session; Gloria Enzoe, LKDFN	Diavik will respond prior to the next camp.
Can we get a breakdown of what those hosts are and what is driving the parasites in Lac de Gras? Here they are talking about different hosts, can we get some specifics on that?	2021 June Verification Session; Jack Kaniak, KIA	Diavik will respond prior to the next camp.
Have we seen birds with parasites? You said that they poop in the water and the fish eats it, it's like a food chain, goes on and on, so we are blaming the birds now. So I just want to know what kind of birds you are talking about ?	2021 June Verification Session; Ted Tsetta, YKDFN	Diavik will respond prior to the next camp.
Request to see sample of sediment from the lake bottom, including organisms living in there.	2021 June Verification Session; Nancy Kadlun	Diavik will respond prior to the next camp.
Request to understand how long it takes/what the process is to change facilitators.	2021 June Verification Session; Jack Kaniak, KIA; Doris Terri Enzoe, LKDFN	Diavik will respond prior to the next camp.
Have formal AEMP recommendations from 2021 included in the video-documentary	2021 June Verification Session; Gloria Enzoe, LKDFN	Diavik will respond prior to the next camp.
Plan TK Methods training session before going into the field so that youth are better trained to interview and work with the Elders. Involve more community TK researchers so that they can work with youth in their communities beforehand.	2018 Verification Session	As noted previously, space is limited at the camp for TK researchers to attend. However, it may be possible to have a TK researcher provide a day of training for the youth in their home community in advance of the camp.

Recommendation	Source	Response
Encourage feedback from Diavik about how the AEMP is working. We haven't heard back from Diavik on what we're doing, how we're doing. But it seems to me that we can have more feedback on how they're using the information, maybe we can learn more that way.	2018 Verification Session	This could be added to the agenda for the camp or the Verification Session, depending upon availability of appropriate Diavik staff.
Take water samples closer to the mine on the way to camp so weather does not preclude going back to sample.	2018 Verification Session	This is a good suggestion and can be added to the camp agenda for 2021.
The camp should be 5 days long with 2 days for travel.	2018 Verification Session	Flight schedules to and from site determine the duration of the camp. This is the first year where bad weather limited camp activities for an extended period of time. Diavik's preference is to continue with four days and allow for 1 day of travel before/after the camp for out-of-town participants.
Insert field to record weather on field forms.	2018 Verification Session	This is a good suggestion and can be added to the camp field forms for 2021.
What we should do is put the important parts of interviews with elders in videos so that young people can watch them.	2018 Verification Session	The videos produced to share in a public forum are intended to be a summary of the camp purpose, activities and findings. All of the raw footage from the camp, including TK interviews, is provided to each community organization for use as they see fit.
Re-visit format of field forms.	2018 Verification Session	This is a good suggestion and can be added to the Planning Session agenda for 2021.
Even though the reports are long, it is important to have the information there for people to look up.	2018 Verification Session	Acknowledged.
Lots of people don't read reports, so the video and sharing the raw footage becomes more important.	2018 Verification Session	Acknowledged.
Use more visuals, including photographs, of the camp	2018 Planning Session; multiple participants	Photo collages were compiled for the 2018 report.
Catch and test fish from the Narrows.	2018 Verification Session	This was articulated before the camp and the possibility to catch fish at the Narrows was discussed. Two fish were caught at the Narrows (in 2018) but they were released.
Camp participants need to introduce the videos to local teachers, principals and to make it available to youth.	2018 Verification Session	This recommendation is not directed to Diavik.
Consider testing berries, plants and animals (e.g., caribou) and more as part of the environmental testing.	2018 Verification Session	Participants are able to collect berries and plants to taste throughout the camp, and their observations can be recorded through interviews or group discussions. Diavik is not supportive of caribou tasting due to the current hunting restrictions and decline in the herd.
Better time management and planning in some areas.	2018 Verification Session	Discussion of this for the camp can be added to the agenda for the 2021 Planning Session.
Continue using drone footage in videos.	2018 Verification Session	Acknowledged.
Make the video a bit longer.	2018 Verification Session	In response, edits were made to the video to make it slightly longer and have more Indigenous language sections.
More speaking in Indigenous languages and recording this as part of the video.	2018 Verification Session	Participants are always welcome and encouraged to speak in their own language, and interpretation assistance is made available as required. If such footage is included in the publicly shared video, translation would be required for subtitles.
Focus more on the TK ways rather than the scientific sampling.	2018 Verification Session	Diavik relies on the community participants and program facilitators to guide the content and direction of the program, most notably in relation to TK. This is discussed during the Planning Session meeting that is held in advance of the camp.
More frequent monitoring of fish (e.g., sampling, tasting) including during winters and once each year instead of just once every three years.	2018 Verification Session; Wayne Langenhan, Interview, 2018	The DFO authorization requires the program to be conducted every 5 years. DDMI is committed to the 3- year schedule for the AEMP TK Program, which is conducted at the same frequency as the 'comprehensive program' for the scientific sampling under the AEMP.
Most people know whitefish better than trout because that is what they eat on a steady basis. It makes it hard to do a taste test on trout.	2018 Verification Session; Wayne Langenhan, Interview, 2018	Taste tests for trout in Lac de Gras should continue as it was selected for testing since 2002, due to it being the top of the food chain in the lake. Participants are always welcome to add additional tasting fish, as has been done in previous years, in order to include fish more familiar, or of interest to them.

Recommendation	Source	Response
Air the video on APTN or North Beat and improve communication of results back to the community and participants.	2015 Verification Session; August Enzoe, LKDFN; Bobby Algona, KIA	Once the final video is complete, DDMI will determine their preferred avenues for sharing the film. This request will be shared with them. Each community organization and camp participant receive a copy of the report and video to use/distribute as they see fit within their own organizations. Camp participants are encouraged to work with their organization to provide ideas on how best to share this information in their home community/communities.
Conduct a second spring monitoring session in March to sample water during runoff season. Have people explain how to sample and what goes into the water.	2015 Verification Session; Modeste Sangris & Philip Liske, YKDFN	Diavik would not be prepared to open and operate the TK Camp in winter or early spring and runoff does not usually happen until May. DDMI is planning a TK Panel session at the mine in May/May 2016 & this is the preferred group to be involved with this type of work.
Use plain, cold water from LDG for TK water quality tests & tasting, rather than tea. It would be best to also boil some water in a pot over the fire to see if any sediments or film result from boiling. If anyone wants to try tea, they can always make some.	2015 Verification Session; multiple participants	This method will be used for 2018, as all participants agreed that this is a preferred approach.
Include some 'land' studies in future studies for this program, e.g., plants or shoreline vegetation and any dust on the plants	2015 Verification Session; Bobby Algona, KIA	Many Elders and youth currently pick berries during the camp and evaluate vegetation in this way. Diavik also includes TK evaluations of dust on vegetation in their lichen study. Further discussion with community members on the method and goals for this component would be required prior to adding on to the existing program.
Consider doing a similar program for caribou – harvest an animal, look at it, cook it and taste it – in mid-September.	2015 AEMP TK Camp; Modeste Sangris, YKDFN	Diavik would not support a camp that requires harvesting caribou. Given the status of the herd and current hunting bans, this would not be supported.
Plan for a boat trip all the way around East Island during the next camp. Participants want to see the entire island with their own eyes to determine if there are any impacts from mining.	2015 AEMP TK Camp; Philip Liske and Modeste Sangris, YKDFN; Anonymous	DDMI will evaluate this recommendation and determine if there is a way to do this in a manner that is considered safe for DDMI. Diavik understands the communities' interest in doing this and will work to incorporate this into the schedule for 2018, but weather will play a part in this decision.
Take water samples from the same two locations as was done in 2012 (near the diffuser and water intake).	2015 AEMP TK Camp; Modeste Sangris, YKDFN; Bobby Algona, KIA	All participants agreed to this approach. However, weather did not cooperate in 2015 so water samples were taken from areas where fishnets were set. Confirm preferred approach for 2018 camp during the Planning Session.
Should take a water sample of treated water (from the camp) and one from Lac de Gras (untreated) and you'll see that the tea tastes the same, but it will be a different colour.	2015 May Planning Session; August Enzoe, LKDFN	A comparative sample of treated water was not taken to make tea; only non-treated Lac de Gras water was used for tea. This was an oversight.
I don't drink tea. Can we make coffee too? I don't drink tea or coffee. How would I know whether it is good or not? I'd rather sample it by drinking it plain.	2015 May Planning Session; multiple participants	Some people who don't drink tea responded to the relevant questions that could be answered with testing only plain water.
Provide a drying rack to make dry fish. Elders can also demonstrate fish cutting techniques for dry fish.	2012 AEMP TK Camp	A drying rack was made for the 2015 camp and a separate fire pit was set up for it.
Develop a curriculum for the video to be used in schools for students to learn about.	2012 AEMP TK Camp	This is outside of DDMI's scope. Participants can recommend this to, or work with the schools in their communities to achieve this.
Translate the film or add subtitles for each language (e.g., Chipewyan, Dogrib, Inuinnaqtun).	2012 AEMP TK Camp	This is not possible with the budget available for this program.
<b>Lessons</b>		
Teach one another how to make fish nets the old way (e.g., root nets)	2018 Verification Session	This recommendation is not directed to Diavik.
Schedule and plan teaching sessions for youth in a more organized and structured manner to ensure that all topics identified for that year are included.	2015 Verification Session; Anonymous	There is benefit to providing a loose schedule of events and then letting camp participants determine how to structure the days at the morning and evening Planning Sessions, but there is also a risk that some plans change or are missed. The facilitators plan to work with community participants to determine a preferred approach for the 2018 program at the next Planning Session.
Conduct the AEMP TK Program every 2 years instead of every 3 years, as there is too much time in between studies.	2015 Verification Session; Anonymous	Diavik prefers to keep the AEMP TK Program in alignment with the schedule submitted and approved by the WLWB for all AEMP sampling programs. Given that results from the 2012 and 2015 TK studies were similar, there are no plans to increase the frequency of this program.

Recommendation	Source	Response
We eat the fish heads, they're really tasty. There are lots of stories on the head bones. We should come prepared with fish & water stories.	2015 May Planning Session; Mona Tiktalek, KIA	An opportunity to share fish head stories was organized during the camp.
We have to show how to start a u-shaped fire.	2015 May Planning Session; Mona Tiktalek, KIA	Unfortunately, the individual who recommended this lesson was unable to attend the camp.
Teach youth about cutting up fish, and how to cook and dry it. And how to tell if it is healthy. Help the cook make bannock and help cook fish.	2015 May Planning Session; multiple participants	All communities did this repeatedly, and many participants commented that it was interesting to learn each other's techniques. Bannock was made and participants cooked fish.
Teach how to look at the landscape on a walk. Try to organize a walk for those Elders that can walk a while.	2015 May Planning Session; Adrian D'Hont, NSMA	This was not organized at the camp but can be included in future studies.
Send a group to the mine site itself, rather than just focusing on fish and water. We want to know what they do at the mine to prevent bad things happening to fish and water.	2015 May Planning Session; Modeste Sangris, YKDFN	DDMI employees visited the camp to explain the different monitoring programs that are done for the land, water and animals. We did briefly visit the mine site, but unfortunately it was not possible to go for a site tour.
Teach survival skills and on-the-land safety knowledge (e.g., knife and knife sharpening skills, how to tie different knots)	2015 May Planning Session; Philip Liske, YKDFN	Some participants brought sharpening tools and youth were shown how to sharpen knives and ulus. Some youth were taught how to drive outboard motors. Knot tying was missed, but this can be included in future studies.
Teach how people used to travel on the barrens in the past. We travel differently on the land now.	2015 May Planning Session; Madelaine Drybones, LKDFN	Many stories were shared about past trips and methods of travel on the barrens.
Teach how people preserve fish. When you're out there on the tundra, you have to preserve the fish.	2015 May Planning Session; Philip Liske, YKDFN	Many stories were shared about fish preservation techniques: stick fish, drying, packing, storing fish underground and in canvas, pound meat, dog food, bait/lures.
Share stories about the land, plants, berries, fish and wildlife. Storytelling and traditional games around the fire at night.	2015 May Planning Session; James Rabesca, Tljchq	Many stories were shared on these topics. A plant discussion was held in one of the tents, and many stories were shared around the fire throughout the day, as well as during berry picking. No traditional games were played in 2015, but these can be incorporated into the 2018 program.
<b>Safety</b>		
Fold out chairs would be nice for the Elders at the fish table; there was a lot of time standing down there.	2015 AEMP TK Camp; Chelsea Adjun, KIA	Some fold out chairs and benches were moved between the camp and the fish processing table, as needed to make Elders more comfortable.
Don't eat food from plastic bags in summer because it gets too hot. It gets smelly. When they cut the fish up and collect the stuff for testing, do they put it in a plastic bag? Does it spoil before they do the test?	2015 May Planning Session; Mona Tiktalek, KIA	Any fish that were put into plastic bags for storage prior to eating or testing were immediately placed into a cooler, fridge or freezer to preserve them. The concern with food in plastic bags is if it gets too warm/too much sun.
Fold out chairs for interviews may be nice. Easier than sitting on the ground for many Elders.	2015 May Planning Session; Anonymous	Some fold out chairs were provided for interviews.
Use two receivers/whisper kits for translation to improve reception, communication and sharing.	2015 May Planning Session; multiple participants	This was arranged and worked better than the 2012 system.
<b>Supplies / Camp Logistics</b>		
A larger kitchen tent.	2018 Verification Session	Should the kitchen tent or platform require repair or upgrades, DDMI would investigate the possibility of a new and/or larger kitchen tent at that time.
More benches for around the fire. These could be shorter to be more maneuverable.	2018 Verification Session	DDMI prefers to maintain a mix of benches and chairs, as different participants prefer different seating options.
Arts and craft supplies for more activities on the land. For example, sewing together and teaching one another from different areas.	2018 Verification Session	Participants are welcome to bring any arts and crafts that they wish to do or share with them. Alternatively, if they raise a request at the Planning Session in advance of the camp, it may be possible to procure and supply necessary items for teaching and sharing crafts.
Firewood should be a combination of wood including spruce and birch. Fish tasting would be better with dry wood.	2018 Planning Session; 2018 Verification Session	Acknowledged. Diavik will explore options for obtaining this wood in advance of the next camp.

Recommendation	Source	Response
More copies of the DFO pamphlet on parasites should be available.	2018 Verification Session	Acknowledged. DDMI tried to obtain additional copies in advance of the camp, but DFO did not have any available. We will try for this in 2021. Diavik also tries to have a DFO staff attend part or all of the camp to assist with sharing science information on fish; unfortunately no one was available to attend in 2018.
Improve the pathway to the tents.	2018 AEMP TK Camp	Diavik has tried to minimize disturbance at the camp, but we recognize that some access paths are not as safe as they could be. We will raise this with the camp contractor in advance of the 2021 camp.
Better fishing rods with stronger line.	2018 AEMP TK Camp	Diavik can supply stronger line and will determine the suitability and number of rods in advance of the 2021 camp.
Nets should be 5-6" mesh size for average and decent size fish	2018 AEMP TK Camp	New nets were provided in 2018.
Need a new kitchen. We need a better meeting tent next time with a conference space, separate from the kitchen.	2018 AEMP TK Camp; 2021 AEMP TK Camp	Should the kitchen tent or platform require repair or upgrades, DDMI would investigate the possibility of a new and/or larger kitchen tent at that time.
Serve more traditional food at camp and Planning Session; Some options would be moose, caribou, rabbit, fish, muktuuq, drymeat.	2018 Verification Session	Diavik is limited to following the health and safety rules of the mine and suppliers. It is very difficult to obtain traditional foods through these channels. Participants are welcome to bring their own dry fish or meat, and fish caught in Lac de Gras can be consumed at any time.
It would be nice if we can phone home once.	2018 AEMP TK Camp	Diavik will investigate options for this as technology advances leading up to the 2021 camp.
New drums. Need at least 3 drums at camp.	2018 AEMP TK Camp; 2018 Verification	Diavik will check the existing supply of drums at the mine prior to the 2021 camp to determine if they are suitable for use.
Provide a better processing table. The current one is too high and too awkward. Cut legs so that it is shorter.	2018 AEMP TK Camp; 2018 Verification Session	Diavik can request the camp contractor to complete this task during camp set up in 2021.
First week of the month is a new moon, is when it always gets stormy / windy (exact timing of this camp – so maybe camp shouldn't be planned for this exact time again).	2021 AEMP TK Camp; Jack Kaniak, KIA	Diavik will respond prior to the next camp.
When processing the fish, the following items would be helpful: clipboards, cheesecloth and a blank fish diagram for filling in fish parts in different languages.	2012 AEMP TK Camp	These were all provided for the 2015 camp.
Wood stoves in tents.	2012 AEMP TK Camp	Oil stoves are in the tents and are more practical for use at the camp, due to limited wood supply.
Separate showers and outhouses for men and women.	2012 AEMP TK Camp	Separate outhouses were provided for men and women. Showers are in the same building but have private dressing areas.
Allow participants to bring country food.	2012 AEMP TK Camp	In May, DDMI explained that country food could not be brought from outside, due to health code requirements, and that NWT caribou is not available to purchase commercially. Fish caught from the lake was used for chowder and also cooked on the fire for individual consumption.
A building to meet in during windy or rainy days, or for interviews.	2012 AEMP TK Camp	The kitchen tent and some spare accommodation tents were used for this purpose during the 2015 camp.
Participants bring campfire wood from their community (to avoid using commercial industrial wood).	2012 AEMP TK Camp	DDMI supplies firewood for the camp and orders it in from Yellowknife. Airplane cargo space and weight considerations for participant luggage would prevent this.

Table 17 Formal Participant Recommendations and DDMI Responses for the AEMP TK Study (2021)

Recommendation	Rationale	Response (Provided December 2021)
Increase frequency of fish and water sampling to every month.	People want to understand the degradation of the fish.	DDMI considers the established/existing frequency for fish and water sampling for assessing mine-related impacts to fish as appropriate as it is informed by WLWB-led public review processes. DDMI will continue to follow the established frequency for water and fish sampling in the WLWB-approved AEMP Design Plan.
Results from past testing, in plain language, by year—highlight change and variation.	Clear visuals.	DDMI compiles plain language summaries of AEMP results, including changes from previous years, in the AEMP Annual Reports and AEMP Three Year Re-Evaluation Reports. These reports are submitted to the WLWB and undergo a public review. WLWB-approved Annual AEMP Reports can be found on the WLWB’s public registry.
Identify source of contaminants in water samples.	How is water changing?	The main driver of mine-related contaminant loading to Lac de Gras is the treated effluent discharge from the onsite water treatment plant. Results of water quality sampling and analyses and discussion of sources of contaminants are presented in the Annual AEMP Reports and in the 3-year AEMP Re-evaluation Reports. These reports are subject to public review and WLWB-approval processes. Other than natural run-off, no untreated water is discharged from the mine into the lake.
Test stomach contents of fish throughout year (identify types of bugs).	Not provided.	DDMI will continue to follow the established frequency for fish sampling in the WLWB-approved AEMP Design Plan. However, DDMI will commit to conducting stomach content analysis for fish caught at the next TK camp.
Develop a clear understanding of parasites and cysts found –identify which ones are of concern to human health.	Traditionally people will not eat fish with parasites unless they are desperate.	This recommendation has been addressed as part of responses to information requests presented by Golder Associates; specifically, that parasite lifecycles are complex and may involve different hosts/intermediate hosts that can influence parasite numbers.
Discuss who selects members of the AEMP and TK Panel.	Aimed at Indigenous Organizations).	The selection of representatives for TK Camp and TK Panel sessions is completed by Diavik’s five Participation Agreement Partners.
Discuss increased parasites in caribou –how should this be addressed?	Since diamond mines, people are seeing more parasites in caribou.	This recommendation has been addressed as part of responses to information requests presented by Golder Associates i.e., warming climate, changing weather patterns and increased numbers of muskoxen may influence presence of parasites in caribou.

## 7 Closing

The 2021 AEMP TK Program was well received as measured through the evaluation and feedback provided by participants as well as the expressions of gratitude shared during closing circles:

*...I love this camp here and we are on the barrenlands and it's very lovely land and we are staying in a good place, we are well taken care of. I am happy for that. Thank you, everybody here is helpful to one another, even there is sometimes I can get my own tea, and we are strong here. [Albert Boucher]*

However, participants were not satisfied with the state of the lake, water and fish and how Indigenous Knowledge seemed to be taken less seriously than western scientific findings. No participants were comfortable eating fish sampled, meaning that fish texture and palatability studies could not be completed, and some participants were not comfortable sampling water that was unboiled or untreated, such that water taste testing could not be fully completed. Participants expressed that water was a darker colour compared to past years. Additional concerns with fish included:

- An increase in the number of fish with the presence of parasites / cysts, and an increase in the prevalence of parasites / cysts within each fish;
- Change in fish shape (disproportionately large heads and thin / small bodies, for what Elders would expect for a large lake trout); and
- Change in stomach contents (decrease in small fish and food generally in fish stomachs, increase in bugs in stomach contents, decrease in diversity of food in fish stomachs).

Mutual respect for both ways of knowing and braiding knowledge systems must be at the core of future and ongoing work:

*[Western] science is not stronger than TK. . . it can't be one more than the other, especially when it comes to science. . . .you can't have science overrunning TK; it can't be like that. That means there is no respect. [Doris Enzo]*

Moving forward, participants expect the information requests and recommendations that came out of the 2021 AEMP TK Program to be addressed by Diavik in a timely manner; Elders and youth alike were deeply concerned by many of their fish observations. They want to collaborate and work together to understand how, when, and why such changes in fish and water came about, and what the implications might be for the larger ecosystem. Accordingly, they want to ensure that as Diavik moves towards closure, long-term monitoring is a top priority:

*Nancy Kadlun: Don't just take off after 20 years. Can you promise us for at least 50 years, not just 20? This is a whole big project they are doing. It hurts me if I say okay 20 years, that's nothing. We have so many people, we are sad for our land. We need to try and feel better. Especially if our fish are hungry.*

*Myra Berrub: If things were really good tomorrow, would you still want to do 50 years?*

*Nancy Kadlun: I would still, because it's already not good. Let's not say if, it has already been done.*

*Peter D. Sangris: Write it down, 50 years.*

*Nancy Kadlun: There's no more if.*

*When I look at the fish we worked on, that I have seen, I felt sad because I felt like that fish looked like it has been suffering. Maybe it's because there's lots of fish in this lake here, maybe it's going all over in the water, they are swimming all over the place, and some are biting each other, and fish are getting affected from each other. They are competing for food so they are going close together under the water [and this would pass parasites....] I would like to recommend that they do the testing yearly. And when the results come back and are sent out, we will know why the fish are getting sick, why it looks the way it looks now. If you don't have the testing done every year, it's too far in between and we won't know what's affecting them until it's too late. Every 3 years is too far between for testing, it has to be done early year. We don't know if the fish is affected by the mines, water, or lack of food. All that has to be done yearly so gradually we will find out why the fish is the way it is. The fish in this lake have no doctors and they are feeling sick, they can't go to a doctor if they are feelings sick! [Peter D. Sangris]*

*From now on, I would like to see where Diavik does the sample of water, fish, plankton, all the food the fish eat at the bottoms of the lake, the chemicals, the month, time of where you do it, I want to see it. Those are the things I never asked before but coming here a few times now, I see lots of difference. There's lots of parasites in the fish now, they don't look very healthy, it's pretty sad to see. I also heard you say there's testing of some fish in our water-I remember when I was young, my grandfather used to tell me if you move any sand or anything, there's chemicals in it. The things you move, it has salt in it and it goes back into the water. Now we see lots of bugs in our fish because there's less food. We see it. That's pretty sad for my people. And the people living around the area. I see it with my own eyes. If you do water testing or taking fish samples, I would like to see it on the map. This is the way of where we put our nets in there. Say we did water sample here. We do fish sample here, because here, the water drains out, there will be hardly any food there for the fish to eat, even the small*

*fish. You said you only take small fish sampling. For me, it shouldn't be just small, but all sizes. If you learn from a small-how can you learn anything from a small baby fish? The fish we did yesterday, fit had many parasites, because there's less food for them. There's no food on the bottom for them." [Doris (Terri) Enzoe]*

The disruption of some methods is unfortunate, as the AEMP TK approaches and methods aim for consistency so that information (e.g., on fish taste testing) can be compared across years; however, observations and perceptions that fish are not healthy enough to eat, and therefore that water is not healthy enough to drink, should also be considered a key indicator of change, to be taken seriously and considered alongside all other “data” collected at the 2021 camp. The strength to the AEMP TK Program rests on its commitment to the respectful collection of TK alongside science, and robust, diverse approaches and methods to support this goal. The interest in increasing the frequency of the testing and AEMP TK Program is indicative of this support and continuing to work together.

While participants were concerned about the health of the water, land and fish, they expressed a strong desire for ongoing collaborative, long-term monitoring in the area through guardianship programs that continue to “watch” and oversee the health of both fish and water. As Diavik moves towards closure in 2025, participants are passionate about keeping watching programs going, and including more participants from all groups (especially youth, so that important knowledge can be passed on):

*I'm so happy that they do the interview [with aRTLeSS] so they can look back and say, look what this happened long ago, let's try it all over again. Because if Elders aren't around and you know, younger people might seem to forget and go, go, go, go. But they have to stop to protect our water and our air and our land. So I'm so thankful for interviews. Because they'll be there forever. [Nancy Kadlun]*

*That Diavik stays, shares with the community, stays there. Like right now we have a great working relationship with them. They listen, they take all our concerns and they say, yes, we can do this... Like I said, they've developed a relationship with us, try and keep it after. Don't just walk away and say, okay we're done. See you later, here's your monitoring program. That kind of thing. So stay with the community and the community, the people will be happy to do that. Maybe have a feast in the community and dance and sing and share. That's what I'd like to see. [Kathy Arden]*

*We are working alongside DDMI. Seems like it's a very big thing we did while we were here, we checked nets, water, saw water samples, we've seen the fish with our own eyes, how it really looks... what the food source is for them. The land you see all around here ... it's all food for the wildlife you see roam on this land ... we don't want the feed to be destroyed... [Peter D. Sangris]*

*We have to try our best as Dene people. We have to watch, monitor, talk with the mining companies, especially those people working with wildlife. We love our wildlife, land, water. Even after the mine has closed, we are still going to be here forever. [Albert Boucher]*

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## Appendix A Signed Informed Consent Forms

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Katherine Arden on July 15, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhil Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
  9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
  10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
  11. The TK Data may also be stored at the following locations:
    - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
    - o Yellowknives Dene First Nation: Land & Environment Department;
    - o Tłı̨chǫ First Nation: Tłı̨chǫ Lands Department;
    - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
    - o North Slave Métis Association: NSMA Environment Department.
  12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 15 day of July 2021, in Yellowknife, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Kathy Anderson NSMA  
Participant (Indigenous Group)

[Signature]  
Diavik Diamond Mines Inc.

[Signature]  
Barnaby Consulting

PABLO SARAVANJA

Artless Collective

[Signature]

Thorpe Consulting Services

# Diavik Diamond Mines Inc. Aquatic Effects Monitoring Program 2021

## *Informed Consent Form*

I (name) Joanne Barnaby on June 24, 2022, ~~2024~~

give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to “my participation” in the DDMI Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study. I understand that “my participation” includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

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3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI TEK Camp and that my representative Indigenous organization, DDMI, Barnaby Consulting and/or Thorpe Consulting Services will make all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

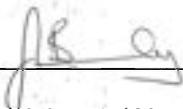
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - Yellowknives Dene First Nation: Land & Environment Department;
  - Tłı̄ch̄ First Nation: Tłı̄ch̄ Lands Department;
  - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TEK during the cultural camp, in the documentary and final report.

Signed this 24 day of June, 2022 ~~2021~~, in Hay River, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

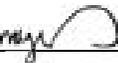
Signatures:

  
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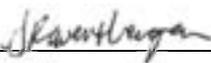
Participant (Aboriginal Group)

*Pablo Saravanja*  
 \_\_\_\_\_

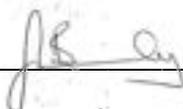
Artless Collective

  
 \_\_\_\_\_

Diavik Diamond Mines Inc.

  
 \_\_\_\_\_

Thorpe Consulting Services

  
 \_\_\_\_\_

Barnaby Consulting

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Albert Baucher on June 23, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
  9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
  10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
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    - o Tłı̄ch̄o First Nation: Tłı̄ch̄o Lands Department;
    - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
    - o North Slave Métis Association: NSMA Environment Department.
  12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 23 day of June 2021, in ~~NANA~~ Lutselke NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

X Albert Baraka

Participant (Indigenous Group)

PABLO SARAVANJA

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]

Thorpe Consulting Services

[Signature]  
Barnaby Consulting

\*Joanne Barnaby spoke with Sarazine on June 23, 2022, who confirmed with Albert that he signed all consent forms and meant to check all boxes that consent to his name, quotes, and images being used in report.

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Suzanne Boucher on July 20, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective,  
Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take  
notes, photographs and/or audio and video recordings related to "my participation" in the DDMI  
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understand that "my participation" includes a planning meeting held in June in Dettah, an on-  
the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from  
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in the fall of 2021.

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3. I am free to end an interview or refuse to participate in an activity at any time that I wish  
and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby  
Consulting, Thorpe Consulting Services may use the information collected to contribute  
to aquatic and fisheries management and monitoring, in the identification of indicators,  
and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS  
Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the  
DDMI Environmental Agreement may share my information which I have verified and  
given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational,  
cultural, heritage, and environmental purposes that are outside the scope of the DDMI  
AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI,  
aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

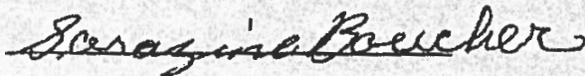
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̨ch̨o First Nation: Tłı̨ch̨o Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this July day of 21 2021, in LUTSEL K'E, NT/NU.

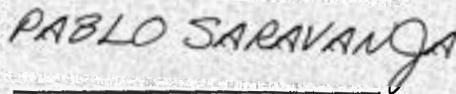
Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



Participant (Indigenous Group)



Artless Collective



Davik Diamond Mines Inc.



Thorpe Consulting Services



Bainaby Consulting

## Diavik Diamond Mines Inc. Aquatic Effects Monitoring Program 2021

### ***Informed Consent Form***

I (name) Lerna Prugose on July 31, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI TEK Camp and that my representative Indigenous organization, DDMI, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄ch̄o First Nation: Tłı̄ch̄o Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TEK during the cultural camp, in the documentary and final report.

Signed this 31 day of July 2021, in DDMI, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Lena Duggese

Participant (Aboriginal Group)

PABLO SARAVANJA

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]

Thorpe Consulting Services

[Signature]  
Barnaby Consulting

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Doris Enzue on June 23, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhìi Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

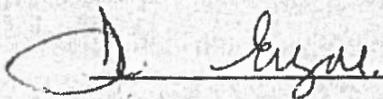
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄ch̄o First Nation: Tłı̄ch̄o Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 23 day of June, 2021, in Lutselke, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



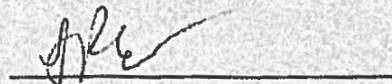
Participant (Indigenous Group)



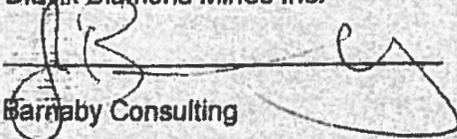
Artless Collective



Diavik Diamond Mines Inc.



Thorpe Consulting Services



Barnaby Consulting

Confirmed on June 2022 verification consent form that name, images, and quotes can be used in report

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Coloia Etoe on July 15, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhli Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

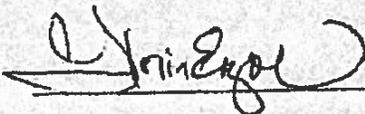
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄ch̄q First Nation: Tłı̄ch̄q Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 15 day of July 2021, in Lutsel K'e, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

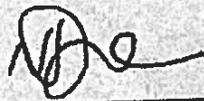
Signatures:



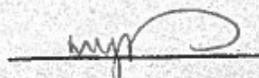
Participant (Indigenous Group)

PABLO SARAVANJA

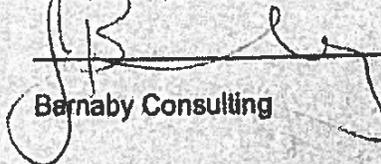
Artless Collective



Thorpe Consulting Services



Djavaik Diamond Mines Inc.



Barnaby Consulting

Confirmed on June 2022  
verification consent form that  
name, images, and quotes can be  
used in report

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

## ***Informed Consent Form***

I (name) Marie Adele Fodball on June 23, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhìi Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

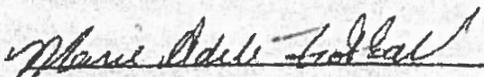
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 23 day of June 2021, in fish camp planning, NT/NU.

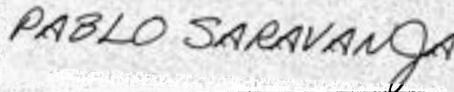
Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



Participant (Indigenous Group)



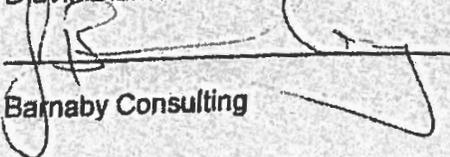
Artless Collective



Diavik Diamond Mines Inc.



Thorpe Consulting Services



Barnaby Consulting

Interview transcript was verified in person with Sarah Ravensbergen, June 6, 2022 (Yellowknife, NT). Joanne Barnaby also confirmed in person with Marie Adele on June 6, 2022 (in Yellowknife, NT) that she was satisfied with her interview being included in the report, and okay with the song being included in V13.0 of the video documentary.

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Nancy Kadlun on June 23, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective,  
Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take  
notes, photographs and/or audio and video recordings related to "my participation" in the DDMI  
Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I  
understand that "my participation" includes a planning meeting held in June in Dettah, an on-  
the land fish health and water quality study at a tent camp near the Diavik Diamond Mine from  
31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife  
in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB),  
established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhìi  
Land and Water Board have a mandate to review programs and results from TK monitoring  
activities. The DDMI AEMP has and will continue to engage local community members to  
collect samples, make observations and contribute to the design, format and methods of the  
ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both  
traditional ecological and western scientific knowledge.

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, videos, drone footage, Global  
Positioning System (GPS) units, and using audio- and video-recording equipment  
(collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish  
and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby  
Consulting, Thorpe Consulting Services may use the information collected to contribute  
to aquatic and fisheries management and monitoring, in the identification of indicators,  
and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS  
Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the  
DDMI Environmental Agreement may share my information which I have verified and  
given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational,  
cultural, heritage, and environmental purposes that are outside the scope of the DDMI  
AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI,  
aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
  9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
  10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
  11. The TK Data may also be stored at the following locations:
    - Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
    - Yellowknives Dene First Nation: Land & Environment Department;
    - Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
    - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
    - North Slave Métis Association: NSMA Environment Department.
  12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 23 day of June 2021, in Yellowknife, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures: Nancy Kaah

PABLO SARAVANJA

\_\_\_\_\_  
Participant (Indigenous Group)

\_\_\_\_\_  
Artless Collective

[Signature]  
Diavik Diamond Mines Inc.

[Signature]  
Thorpe Consulting Services

[Signature]  
Barnaby Consulting

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

## **Informed Consent Form**

I (name) NANCY KADLUN on July 21, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

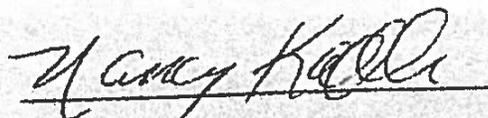
- all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;
7. I will receive financial compensation for my participation in accordance with DDMI policy;
  8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
  9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
  10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
  11. The TK Data may also be stored at the following locations:
    - Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
    - Yellowknives Dene First Nation: Land & Environment Department;
    - Tłı̨chǫ First Nation: Tłı̨chǫ Lands Department;
    - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
    - North Slave Métis Association: NSMA Environment Department.
  12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 21 day of July 2021, in Kugluktuk, NTANU

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

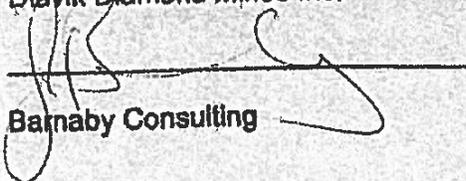
Signatures:

  
 Participant (Indigenous Group)

PABLO SARAVANJA  
 Artistic Director

  
 Diavik Diamond Mines Inc.

  
 Thorpe Consulting Services

  
 Barnaby Consulting

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) NANCY KADLUN on June 23, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
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11. The TK Data may also be stored at the following locations:
  - Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - Yellowknives Dene First Nation: Land & Environment Department;
  - Tłı̨chǫ First Nation: Tłı̨chǫ Lands Department;
  - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 23 day of June 2021, in Yellowknife, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

*Nancy Kaele*

Participant (Indigenous Group)

*PABLO SARAVANJA*

Artless Collective

*[Signature]*  
Diavik Diamond Mines Inc.

*[Signature]*

Thorpe Consulting Services

*[Signature]*  
Barnaby Consulting

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Jack Kaniak on July 21, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective,  
Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take  
notes, photographs and/or audio and video recordings related to "my participation" in the DDMI  
Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I  do  
understand that "my participation" includes a planning meeting held in June in Dettah, an on-  
the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from  
31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife  
in the fall of 2021.

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established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii  
Land and Water Board have a mandate to review programs and results from TK monitoring  
activities. The DDMI AEMP has and will continue to engage local community members to  
collect samples, make observations and contribute to the design, format and methods of the  
ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both  
traditional ecological and western scientific knowledge.

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3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, i.e. the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP/Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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;
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  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 21<sup>st</sup> day of July 2021, in Kugluktuk, NT/NU

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Jack Kaniak  
Participant (Indigenous Group)

PABLO SARAVANJA  
Artless Collective

[Signature]  
Diavik Diamond Mines Inc.

[Signature]  
Barnaby Consulting

[Signature]  
Thorpe Consulting Services

\*Natasha Thorpe texted with Nancy Kadlun on June 23, 2022 and Jack stated that he meant to check all boxes that consent to his name and images used

## Diavik Diamond Mines Inc. Aquatic Effects Monitoring Program 2021

### ***Informed Consent Form***

I (name) KELSEY MARTIN on JULY 31, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

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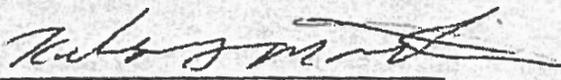
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
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  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TEK during the cultural camp, in the documentary and final report.

Signed this Satur day of July 2021, in the tundra, NT/NU.  
 AEMP TK Fish Camp, Lac de Gras

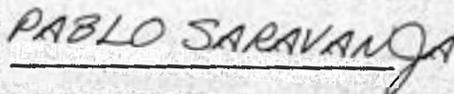
Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



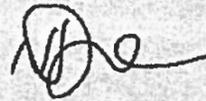
Participant (Aboriginal Group)



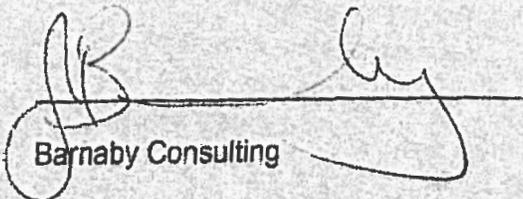
Artless Collective



Diavik Diamond Mines Inc.



Thorpe Consulting Services



Barnaby Consulting

As Kelsey Martin did not participate in the verification sessions, TCS was not able to verify information he provided during the process. Unfortunately, his interview transcript had to be removed.

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

**Informed Consent Form**

I (name) Vikki Niptanahak on July 16, 2021, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

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  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 16 day of July 2021, in Kugluktuk, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Vibki Onipwutiale

Participant (Indigenous Group)

PABLO SARAVANJA

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]  
Barnaby Consulting

[Signature]

Thorpe Consulting Services

## Diavik Diamond Mines Inc. Aquatic Effects Monitoring Program 2021

### *Informed Consent Form*

I (name) Sarah Ravensbergen on June 24, 2022, ~~2021~~  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

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5. Camp participants, my representative Indigenous organization, DDMI, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI TEK Camp and that my representative Indigenous organization, DDMI, Barnaby Consulting and/or Thorpe Consulting Services will make all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

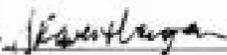
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  - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TEK during the cultural camp, in the documentary and final report.

Signed this 24 day of June, <sup>2022</sup>~~2021~~, in Victoria, BC, ~~NTNU~~.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



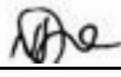
Participant (~~Aboriginal Group~~)



Artless Collective



Diavik Diamond Mines Inc.



Thorpe Consulting Services



Barnaby Consulting

## Diavik Diamond Mines Inc. Aquatic Effects Monitoring Program 2021

### ***Informed Consent Form***

I (name) Monica Redmond on 27 June 2022, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI TEK Camp and that my representative Indigenous organization, DDMI, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - Yellowknives Dene First Nation: Land & Environment Department;
  - Tłı̨chǫ First Nation: Tłı̨chǫ Lands Department;
  - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TEK during the cultural camp, in the documentary and final report.

Signed this 27 day of June 2022, in Victoria, BC, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

\_\_\_\_\_

Participant (Aboriginal Group)

*Pablo Saravanja*

Artless Collective

*[Signature]*

Diavik Diamond Mines Inc.

*[Signature]*

Thorpe Consulting Services

*[Signature]*

Barnaby Consulting

*[Signature]*

Monica Redmond,  
Fisheries Biologist,  
WSP-Golder

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Peter Sangris on June 23, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel. I understand that "my participation" includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report

Signed this June day of 23-15 2021, in DeTlagh, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Peter D. Sangvis

Participant (Indigenous Group)

PABLO SARAVANJA  
Y. K. Dettler

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]  
Barnaby Consulting

[Signature]

Thorpe Consulting Services

# Diavik Diamond Mines Inc. Aquatic Effects Monitoring Program 2021

## *Informed Consent Form*

I (name) \_\_\_ Sadetlo Scott \_\_\_\_\_ on \_\_\_ July 31 \_\_\_\_\_, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to “my participation” in the DDMI Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study. I understand that “my participation” includes a planning meeting held in June in Dettah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èzhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI TEK Camp and that my representative Indigenous organization, DDMI, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄ch̄ First Nation: Tłı̄ch̄ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TEK during the cultural camp, in the documentary and final report.

Signed this 31 day of July 2021, in Yellowknife, NT/NU.

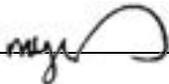
Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

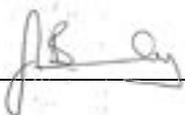
Signatures:

\_\_\_\_\_

Participant (Aboriginal Group)

 \_\_\_\_\_

Diavik Diamond Mines Inc.

 \_\_\_\_\_

Barnaby Consulting

*Pablo Saravanja*

 \_\_\_\_\_

Artless Collective

 \_\_\_\_\_

Thorpe Consulting Services

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Rainie Sharpe on 27 June, 2022  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to “my participation” in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2022 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek’èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - Kitikmeot Inuit Association; KIA Department of Lands, Environment, and Resources
  - Yellowknives Dene First Nation: Land & Environment Department;
  - Tłı̨chǫ First Nation: Tłı̨chǫ Lands Department;
  - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - North Slave Métis Alliance: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 27th day of June 2022, in Edmonton, AB.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

\_\_\_\_\_

Participant (Aboriginal Group)

*Pablo Saravanja*

Artless Collective

*Diavik*

Diavik Diamond Mines Inc.

*Thorpe*

Thorpe Consulting Services

*Barnaby*

Barnaby Consulting

*Sharpe*

Rainie Sharpe, MSc PhD PBIOL RPBio  
Principal, Aquatic Scientist  
WSP-Golder

## Diavik Diamond Mines Inc. Aquatic Effects Monitoring Program 2021

### ***Informed Consent Form***

I (name) TED TIGTTA on July 31, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Study. I understand that "my participation" includes a planning meeting held in June in Deltah, an on-the-land fish health and water quality study at a tent camp near the Diavik Diamond Mine from 31 July through 8 August 2021 and a data verification (report and video) meeting in Yellowknife in the fall of 2021.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI TEK Camp and that my representative Indigenous organization, DDMI, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and that final copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TEK during the cultural camp, in the documentary and final report.

Signed this 31 day of July 2021, in DDMI, NT/NU.

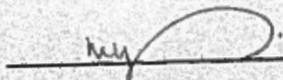
Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



Participant (Aboriginal Group)



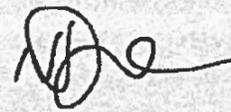
Diavik Diamond Mines Inc.



Barnaby Consulting

PABLO SARAVANJA

Artless Collective



Thorpe Consulting Services

**\*Note that many participants did not feel comfortable signing this form at the Dec. 2021 verification. Those forms that were signed are included in this appendix.**

**Participant Verification Form for the  
DRAFT Diavik AEMP TK Camp Report and Video  
December 2021**



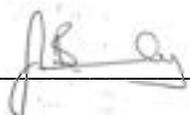
I, Joanne Barnaby (name), on June 24, 2022, ~~2021~~ in Yellowknife, NT, have reviewed the draft written outline for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report prepared by TCS and video segments containing the social events prepared by Artless Collective conducted at Lac de Gras from July 31 to August 8, 2021. An interpreter as well as Natasha Thorpe / Joanne Barnaby / Sarah Ravensbergen have carried out the verification of the camp notes and transcripts with me in December 2021.

With my signature and all corrections made, I agree that the notes are correct and complete and these, along with the social segments of the video produced, can be used in reports, presentations and publications by TCS and Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and educational initiatives. As promised, copies of these will be returned to me and my community organization.

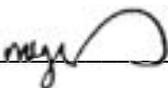
I agree to have my name acknowledged as an author of the AEMP TK Camp Report for 2021, including my photo, a brief biography, and my signature on the title page.

- Yes  
 No

*Please print and sign your name.*

  
\_\_\_\_\_

Participant

  
\_\_\_\_\_

Diavik Diamond Mine (2012) Inc.

  
\_\_\_\_\_

Thorpe Consulting Services

  
\_\_\_\_\_

Artless Collective

Participant Verification Form for the  
DRAFT Diavik AEMP TK Camp Report and Video



December 2021

I, Sarajin Baucher (name), on December 16, 2021 in Yellowknife, NT, have reviewed the draft written outline for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report prepared by TCS and video segments containing the social events prepared by Artless Collective conducted at Lac de Gras from July 31 to August 8, 2021. An interpreter as well as Natasha Thorpe / Joanne Barnaby / Sarah Ravensbergen have carried out the verification of the camp notes and transcripts with me in December 2021.

With my signature and all corrections made, I agree that the notes are correct and complete and these, along with the social segments of the video produced, can be used in reports, presentations and publications by TCS and Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and educational initiatives. As promised, copies of these will be returned to me and my community organization.

I agree to have my name acknowledged as an author of the AEMP TK Camp Report for 2021, including my photo, a brief biography, and my signature on the title page.

- Yes
- No

*Please print and sign your name.*

<sup>x</sup> Sarajin Baucher

Participant

[Signature]

Diavik Diamond Mine (2012) Inc.

[Signature]

Thorpe Consulting Services

[Signature]

Artless Collective

Participant Verification Form for the DRAFT

Diavik AEMP TK Camp Report and Video Segments

December 2021



Joanne Barnaby Consulting

I, NANCY KADLUN (name), on December 16, 2021 in Yellowknife, NT, have reviewed the draft written outline for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report prepared by TCS and video segments containing the social events prepared by Artless Collective conducted at Lac de Gras from July 31 to August 9, 2021. An interpreter as well as Natasha Thorpe / Joanne Barnaby / Sarah Ravensbergen have carried out the verification of my transcripts in December 2021.

Free, Prior and Informed Consent (FPIC) is a specific right that pertains to Indigenous peoples and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). It allows them to give or withhold consent to a project that may affect them or their territories. Once they have given their consent, they can withdraw it at any stage. Furthermore, FPIC enables them to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated. This is also embedded within the universal right to self-determination.

With my signature and all corrections made, I agree that my transcript is correct and complete and these, along with the social segments of the video produced, can be used in reports, presentations and publications by TCS and Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and educational initiatives. As promised, copies of these will be returned to me and my community organization.

These forms were read aloud to participants before their signing so as to be in compliance with ethical rules around free, prior and informed consent (FPO). I agree to have my name acknowledged as an author of the AEMP TK Camp Report for 2021, including my photo, a brief biography, and my signature on the title page.

Yes  
 No

Please print and sign your name.

NANCY KADLUN

Participant

Nancy Kadlun

[Signature]

Diavik Diamond Mine (2012) Inc.

[Signature]

Thorpe Consulting Services

PABLO SARAVANJA

Artless Collective

Participant Verification Form for the DRAFT

Diavik AEMP TK Camp Report and Video Segments

December 2021



Joanne Barnaby Consulting

I, Jack Kaniak (name), on December 16, 2021 in Kugluktuk, NU ~~Yellowknife, NT~~, have reviewed the draft written outline for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report prepared by TCS and video segments containing the social events prepared by Artless Collective conducted at Lac de Gras from July 31 to August 9, 2021. ~~An interpreter as well as Natasha Thorpe / Joanne Barnaby / Sarah Ravensbergen have carried out the verification of my transcripts in December 2021.~~

Free, Prior and Informed Consent (FPIC) is a specific right that pertains to Indigenous peoples and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). It allows them to give or withhold consent to a project that may affect them or their territories. Once they have given their consent, they can withdraw it at any stage. Furthermore, FPIC enables them to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated. This is also embedded within the universal right to self-determination.

With my signature and all corrections made, I agree that my transcript is correct and complete and these, along with the social segments of the video produced, can be used in reports, presentations and publications by TCS and Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and educational initiatives. As promised, copies of these will be returned to me and my community organization.

~~These forms were read aloud to participants before their signing so as to be in compliance with ethical rules around free, prior and informed consent (FPO).~~ I agree to have my name acknowledged as an author of the AEMP TK Camp Report for 2021, including my photo, a brief biography, and my signature on the title page.

- Yes
- No

Please print and sign your name.

Jack Kaniak  
Jack Kaniak  
Participant

[Signature]  
Diavik Diamond Mine (2012) Inc.

[Signature]  
Thorpe Consulting Services

Pablo Saravanja  
Artless Collective

Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021

Video

## Informed Consent Form

I (name) Katherine E. ARDEN on December 16, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk; KIA Lands Department
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 16 day of December 2021, in Yellowknife, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Kathy Anderson, NSMA

Participant (Aboriginal Group)

Pablo Saravanga

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]

Thorpe Consulting Services

[Signature]

Barnaby Consulting

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Joanne Barnaby on June 24, 2022, ~~2021~~  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to “my participation” in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek’èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Kitikmeot Inuit Association; KIA Department of Lands, Environment, and Resources
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Alliance: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 24 day of June, ~~2021~~, in Hay River, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

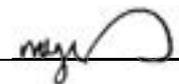
Signatures:

  
\_\_\_\_\_

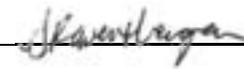
Participant (Aboriginal Group)

  
\_\_\_\_\_

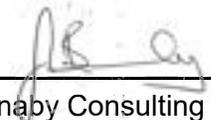
Artless Collective

  
\_\_\_\_\_

Diavik Diamond Mines Inc.

  
\_\_\_\_\_

Thorpe Consulting Services

  
\_\_\_\_\_

Barnaby Consulting

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

*Video*

## ***Informed Consent Form***

I (name) Albert Boucher on Dec 16, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

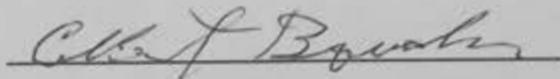
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Inuit of Kugluktuk: Kitikmeot Inuit Association of Kugluktuk;
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 16 day of Dec, 2021, in Yellowknife, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



Participant (Aboriginal Group)

PABLO SARAVANJA

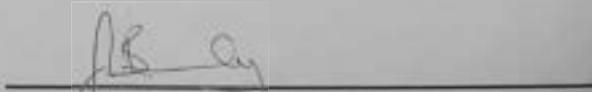
Artless Collective



Diavik Diamond Mines Inc.



Thorpe Consulting Services



Barnaby Consulting

Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021

Video

## Informed Consent Form

I (name) Doris (Terri) Enne on Dec 16, 2021

give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
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  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 16 day of Dec 2021, in Yellowknife NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Doris (Terri) Emzoe

Participant (Aboriginal Group)

PABLO SARAVANJA

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]

Thorpe Consulting Services

[Signature]

Barnaby Consulting

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021** Video

## ***Informed Consent Form***

I (name) Aloia Amoe on Dec 16, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

Through my signature below, I understand that:

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3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

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8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
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  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Association: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 16 day of Dec 2021, in Yellowknife, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Alonia Innoe.

Participant (Aboriginal Group)

PABLO SARAVANJA

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]

Thorpe Consulting Services

[Signature]  
Barnaby Consulting

Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021

Video

## Informed Consent Form

I (name) Marie Adele Football on Dec 16, 2021  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective,  
Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take  
notes, photographs and/or audio and video recordings related to "my participation" in the DDMI  
Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December  
14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB),  
established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii  
Land and Water Board have a mandate to review programs and results from TK monitoring  
activities. The DDMI AEMP has and will continue to engage local community members to  
collect samples, make observations and contribute to the design, format and methods of the  
ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both  
traditional ecological and western scientific knowledge.

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knowledge recorded on maps, in notes and photographs, videos, drone footage, Global  
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(collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish  
and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby  
Consulting, Thorpe Consulting Services may use the information collected to contribute  
to aquatic and fisheries management and monitoring, in the identification of indicators,  
and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS  
Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the  
DDMI Environmental Agreement may share my information which I have verified and  
given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational,  
cultural, heritage, and environmental purposes that are outside the scope of the DDMI  
AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI,  
aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
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    - o Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
    - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
    - o North Slave Métis Association: NSMA Environment Department.
  12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 16<sup>th</sup> day of December 2021, in Yellowknife, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.
- No, I do not want my name or images to be used in the report and video-documentary.
- only pictures, no video of Marie Adele singing

Signatures:

Marie Adele Football

PABLO SARAVANJA

Participant (Aboriginal Group)

Artless Collective

[Signature]

Diavik Diamond Mines Inc.

[Signature]

Thorpe Consulting Services

[Signature]  
Barnaby Consulting

Interview transcript was verified in person with Sarah Ravensbergen, June 6, 2022 (Yellowknife, NT). Joanne Barnaby also confirmed in person with Marie Adele on June 6, 2022 (in Yellowknife, NT) that she was satisfied with her interview being included in the report, and okay with the song being included in V13.0 of the video documentary.

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Nancy Vador on January 13, 2021 give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

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2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Kitikmeot Inuit Association; KIA Department of Lands, Environment, and Resources
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tẖicẖ First Nation: Tẖicẖ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Alliance: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 13 day of January 202~~1~~<sup>2</sup>, in KUGLUKTYK, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:



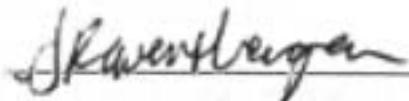
Participant (Aboriginal Group)



Artless Collective



Diavik Diamond Mines Inc.



Thorpe Consulting Services



Barnaby Consulting

**Diavik Diamond Mines Inc.**  
**Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Jack Kaniak on January, 202<sup>22</sup><sub>1</sub>  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to "my participation" in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Kitikmeot Inuit Association; KIA Department of Lands, Environment, and Resources
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tẖicẖo First Nation: Tẖicẖo Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Alliance: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 10 day of January 2022, in Kugluktuk, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

Jack Koniak

Participant (Aboriginal Group)

PABLO SARAVANJA

Artless Collective

mya

Diavik Diamond Mines Inc.

Skwentlegan

Thorpe Consulting Services

AB

Barnaby Consulting

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Sarah Ravensbergen on June 24, 2022, ~~2021~~  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to “my participation” in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2021 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek'èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services will make

all reasonable efforts to consult me, or my descendants, before using my information for purposes not indicated above;

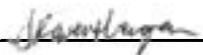
7. I will receive financial compensation for my participation in accordance with DDMI policy;
8. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - o Kitikmeot Inuit Association; KIA Department of Lands, Environment, and Resources
  - o Yellowknives Dene First Nation: Land & Environment Department;
  - o Tłı̄chǝ First Nation: Tłı̄chǝ Lands Department;
  - o Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - o North Slave Métis Alliance: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 24 day of June, <sup>2022</sup>~~2021~~, in Victoria, BC, NT/NU.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

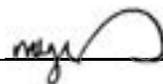
Signatures:

  
\_\_\_\_\_

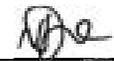
Participant (Aboriginal Group)

  
\_\_\_\_\_

Artless Collective

  
\_\_\_\_\_

Diavik Diamond Mines Inc.

  
\_\_\_\_\_

Thorpe Consulting Services

  
\_\_\_\_\_

Barnaby Consulting

**Diavik Diamond Mines Inc.  
Aquatic Effects Monitoring Program and TK Panel 2021**

***Informed Consent Form***

I (name) Rainie Sharpe on 27 June, 2022  
give permission for Thorpe Consulting Services Inc., Barnaby Consulting, aRTLeSS Collective, Diavik Diamond Mines (2012) Inc. and other program participants (i.e. community youth) to take notes, photographs and/or audio and video recordings related to “my participation” in the DDMI Aquatic Effects Monitoring Program (AEMP) and Traditional Knowledge (TK) Panel December 14-16, 2022 verification meeting in Yellowknife, NT, or attended virtually.

I understand that the Diavik TK Panel, the Environmental Monitoring Advisory Board (EMAB), established in 2001 with the signatories to the Environmental Agreement, and the Wek’èezhii Land and Water Board have a mandate to review programs and results from TK monitoring activities. The DDMI AEMP has and will continue to engage local community members to collect samples, make observations and contribute to the design, format and methods of the ongoing aquatic monitoring during the operations of the Diavik Diamond Mine using both traditional ecological and western scientific knowledge.

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, videos, drone footage, Global Positioning System (GPS) units, and using audio- and video-recording equipment (collectively referred to as Traditional Knowledge Data or TK Data);
2. I am free to choose not to respond to any questions that may be asked without penalty;
3. I am free to end an interview or refuse to participate in an activity at any time that I wish and / or choose to be anonymous in my participation without penalty;
4. My representative Indigenous Organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services may use the information collected to contribute to aquatic and fisheries management and monitoring, in the identification of indicators, and inclusion with scientific results, discussions, and knowledge;
5. Camp participants, my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting, Thorpe Consulting Services and the signatories of the DDMI Environmental Agreement may share my information which I have verified and given permission to share, for example, in either reports and/or video-documentaries;
6. I agree that my contributions to the TK Data may also be used for future educational, cultural, heritage, and environmental purposes that are outside the scope of the DDMI AEMP Camp or TK Panel and that my representative Indigenous organization, DDMI, aRTLeSS Collective, Barnaby Consulting and/or Thorpe Consulting Services 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. While at the cultural camp or in the follow-up review session, I am free to request that any information I share is removed, erased or deleted and that I will have one chance during the fall verification meeting to review draft transcripts, video-documentaries, reports and maps to make edits before I sign them off and copies will be provided to me;
9. I understand that DDMI cannot ensure the protection of the TK Data from public release (e.g., via youtube.com, Facebook, other social media, or Aboriginal group websites) once it is verified and released;
10. The TK Data will be summarized and integrated with scientific data into a report, which will be publicly available;
11. The TK Data may also be stored at the following locations:
  - Kitikmeot Inuit Association; KIA Department of Lands, Environment, and Resources
  - Yellowknives Dene First Nation: Land & Environment Department;
  - Tłı̄chǫ First Nation: Tłı̄chǫ Lands Department;
  - Lutsel K'e Dene First Nation: Lutsel K'e Lands Department; and
  - North Slave Métis Alliance: NSMA Environment Department.
12. I have the option of being either anonymous or given credit by name as an author and/or for providing TK during the TK Panel, cultural camp, in the documentary and final report.

Signed this 27th day of June 2022, in Edmonton, AB.

Would you like your name to be used in the video-documentary and the final report related to the TK Data you provided during the DDMI AEMP and TK Panel activities?

- Yes, I would like my name and images to be used in the report and video-documentary.  
 No, I do not want my name or images to be used in the report and video-documentary.

Signatures:

\_\_\_\_\_

Participant (Aboriginal Group)

*Pablo Saravanja*

Artless Collective

*meys*

Diavik Diamond Mines Inc.

*Sharpe*

Thorpe Consulting Services

*JB*

Barnaby Consulting

*Sharpe*

Rainie Sharpe, MSc PhD PBIOL RPBio  
Principal, Aquatic Scientist  
WSP-Golder

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, Katherine E. Arden (name), on June 6, 2022 in  
Yellowknife, NT have reviewed the updated draft report prepared by Thorpe Consulting and  
Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects  
Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to  
August 9, 2021.

Free, Prior and Informed Consent (FPIC) is a specific right that pertains to Indigenous peoples  
and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples  
(UNDRIP). It allows them to give or withhold consent to a project that may affect them or their  
territories. Once they have given their consent, they can withdraw it at any stage. Furthermore,  
FPIC enables them to negotiate the conditions under which the project will be designed,  
implemented, monitored and evaluated. This is also embedded within the universal right to  
self-determination.

With my signature and all corrections made, I understand that I have had time to review AEMP  
and TK Panel transcripts and return these with edits and agree that the draft report is complete.  
Thereafter, these can be used in written reports, presentations and publications by TCS and  
Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and  
educational initiatives. As promised, copies of these will be returned to me and my community  
organization.

This form was read aloud to me and other participants before signing so as to be in  
compliance with ethical rules around free, prior and informed consent. With verifications  
done and edits made, I agree to have my name acknowledged including my photo, a brief  
biography, and my quotes in the body of the report.

- Yes  
 No

Please print and sign your name.

Katherine E. Arden

Participant

Miguel

Diavik Diamond Mine (2012) Inc.

JPL

Thorpe Consulting Services

PABLO SARAVANJA

Artless Collective

**Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report**



Joanne  
Barnaby  
Consulting

**Verification  
Session:  
June 2022**

I, Joanne Barnaby (name), on June 6, 2022 in Yellowknife, NT have reviewed the updated draft report prepared by Thorpe Consulting and Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to August 9, 2021.

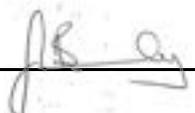
Free, Prior and Informed Consent (FPIC) is a specific right that pertains to Indigenous peoples and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). It allows them to give or withhold consent to a project that may affect them or their territories. Once they have given their consent, they can withdraw it at any stage. Furthermore, FPIC enables them to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated. This is also embedded within the universal right to self-determination.

With my signature and all corrections made, I understand that I have had time to review AEMP and TK Panel transcripts and return these with edits and agree that the draft report is complete. Thereafter, these can be used in written reports, presentations and publications by TCS and Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and educational initiatives. As promised, copies of these will be returned to me and my community organization.

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- Yes  
 No

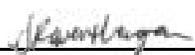
*Please print and sign your name.*

  
\_\_\_\_\_

Participant

  
\_\_\_\_\_

Diavik Diamond Mine (2012) Inc.

  
\_\_\_\_\_

Thorpe Consulting Services

  
\_\_\_\_\_

Artless Collective

**Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report**



Joanne  
Barnaby  
Consulting

**Verification  
Session:  
June 2022**

I, Albert Bouché (name), on June 6, 2022 in \_\_\_\_\_ have reviewed the updated draft report prepared by Thorpe Consulting and Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to August 9, 2021.

Free, Prior and Informed Consent (FPIC) is a specific right that pertains to Indigenous peoples and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). It allows them to give or withhold consent to a project that may affect them or their territories. Once they have given their consent, they can withdraw it at any stage. Furthermore, FPIC enables them to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated. This is also embedded within the universal right to self-determination.

With my signature and all corrections made, I understand that I have had time to review AEMP and TK Panel transcripts and return these with edits and agree that the draft report is complete. Thereafter, these can be used in written reports, presentations and publications by TCS and Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and educational initiatives. As promised, copies of these will be returned to me and my community organization.

This form was read aloud to me and other participants before signing so as to be in compliance with ethical rules around free, prior and informed consent. With verifications done and edits made, I agree to have my name acknowledged including my photo, a brief biography, and my quotes in the body of the report.

- Yes
- No

\*Joanne Barnaby spoke with Sarazine on June 23, 2022, who confirmed with Albert that he signed all consent forms and meant to check all boxes that consent to his name, quotes, and images being used in report.

*Please print and sign your name.*

Albert Bouché

Participant

[Signature]

Thorpe Consulting Services

[Signature]

Diavik Diamond Mine (2012) Inc.

Pablo Saravanja

Artless Collective

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, LENA DRYGEESE (name), on June 6, 2022 in  
Yknife have reviewed the updated draft report prepared by Thorpe Consulting and  
Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects  
Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to  
August 9, 2021.

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territories. Once they have given their consent, they can withdraw it at any stage. Furthermore,  
FPIC enables them to negotiate the conditions under which the project will be designed,  
implemented, monitored and evaluated. This is also embedded within the universal right to  
self-determination.

With my signature and all corrections made, I understand that I have had time to review AEMP  
and TK Panel transcripts and return these with edits and agree that the draft report is complete.  
Thereafter, these can be used in written reports, presentations and publications by TCS and  
Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and  
educational initiatives. As promised, copies of these will be returned to me and my community  
organization.

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compliance with ethical rules around free, prior and informed consent. With verifications  
done and edits made, I agree to have my name acknowledged including my photo, a brief  
biography, and my quotes in the body of the report.

- Yes
- No

Please print and sign your name.

Lena Drygeese

Participant

Mina D.

Diavik Diamond Mine (2012) Inc.

JTB

Thorpe Consulting Services

PABLO SARAVANJA

Artless Collective

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, Doris (Terri) Enzoe (name), on June 6, 2022 in  
Yllkuknife have reviewed the updated draft report prepared by Thorpe Consulting and  
Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects  
Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to  
August 9, 2021.

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Thereafter, these can be used in written reports, presentations and publications by TCS and  
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educational initiatives. As promised, copies of these will be returned to me and my community  
organization.

This form was read aloud to me and other participants before signing so as to be in  
compliance with ethical rules around free, prior and informed consent. With verifications  
done and edits made, I agree to have my name acknowledged including my photo, a brief  
biography, and my quotes in the body of the report.

- Yes  
 No

Please print and sign your name.

Doris (Terri) Enzoe

Participant

[Signature]

Diavik Diamond Mine (2012) Inc.

[Signature]

Thorpe Consulting Services

PABLO SARAVANJA

Artless Collective

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, Gloria Buzze (name), on June 6, 2022 in  
Yellowknife have reviewed the updated draft report prepared by Thorpe Consulting and  
Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects  
Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to  
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educational initiatives. As promised, copies of these will be returned to me and my community  
organization.

This form was read aloud to me and other participants before signing so as to be in  
compliance with ethical rules around free, prior and informed consent. With verifications  
done and edits made, I agree to have my name acknowledged including my photo, a brief  
biography, and my quotes in the body of the report.

- Yes  
 No

Please print and sign your name.

Gloria Buzze  
Participant

[Signature]  
Diavik Diamond Mine (2012) Inc.

[Signature]  
Thorpe Consulting Services

PABLO SARAVANJA  
Artless Collective

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, Marie Adele Foxhall (name), on June 6, 2022 in  
YK have reviewed the updated draft report prepared by Thorpe Consulting and  
Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects  
Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to  
August 9, 2021.

Free, Prior and Informed Consent (FPIC) is a specific right that pertains to Indigenous peoples  
and is recognized in the United Nations Declaration on the Rights of Indigenous Peoples  
(UNDRIP). It allows them to give or withhold consent to a project that may affect them or their  
territories. Once they have given their consent, they can withdraw it at any stage. Furthermore,  
FPIC enables them to negotiate the conditions under which the project will be designed,  
implemented, monitored and evaluated. This is also embedded within the universal right to  
self-determination.

With my signature and all corrections made, I understand that I have had time to review AEMP  
and TK Panel transcripts and return these with edits and agree that the draft report is complete.  
Thereafter, these can be used in written reports, presentations and publications by TCS and  
Diavik Diamond Mines (2012) Inc., in particular related to the Project, as well as in cultural and  
educational initiatives. As promised, copies of these will be returned to me and my community  
organization.

This form was read aloud to me and other participants before signing so as to be in  
compliance with ethical rules around free, prior and informed consent. With verifications  
done and edits made, I agree to have my name acknowledged including my photo, a brief  
biography, and my quotes in the body of the report.

Yes  
 No

Please print and sign your name.

Participant

Diavik Diamond Mine (2012) Inc.

Thorpe Consulting Services

Artless Collective

Interview transcript was  
verified in person with  
Sarah Ravensbergen, June 6,  
2022 (Yellowknife, NT).  
Joanne Barnaby also  
confirmed in person with  
Marie Adele on June 6, 2022  
(in Yellowknife, NT) that  
she was satisfied with her  
interview being included in  
the report, and okay with  
the song being included in  
V13.0 of the video  
documentary.

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, Nancy Kadlun (name), on June 6, 2022 in  
Yerawkujje have reviewed the updated draft report prepared by Thorpe Consulting and  
Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects  
Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to  
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done and edits made, I agree to have my name acknowledged including my photo, a brief  
biography, and my quotes in the body of the report.

Yes  
 No

Please print and sign your name.

Nancy Kadlun  
Participant

[Signature]  
Diavik Diamond Mine (2012) Inc.

[Signature]  
Thorpe Consulting Services

PABLO SARAVANJA  
Artless Collective

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, Jack Kaniak (name), on June 6, 2022 in Yellowknife, NT have reviewed the updated draft report prepared by Thorpe Consulting and Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to August 9, 2021.

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- Yes
- No

*\*Natasha Thorpe texted with Nancy Kadlun on June 23, 2022 and Jack stated that he meant to check all boxes that consent to his name and images used.*

Please print and sign your name.

Jack Kaniak

Participant

[Signature]

Diavik Diamond Mine (2012) Inc.

[Signature]

Thorpe Consulting Services

Pablo Saravanja

Artless Collective

Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report



Joanne  
Barnaby  
Consulting

Verification  
Session:  
June 2022

I, Wikki Niptanatik (name), on June 6, 2022 in  
Nybyk Lake have reviewed the updated draft report prepared by Thorpe Consulting and  
Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects  
Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to  
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done and edits made, I agree to have my name acknowledged including my photo, a brief  
biography, and my quotes in the body of the report.

- Yes  
 No

Please print and sign your name.

Wikki Niptanatik

Participant

[Signature]

Diavik Diamond Mine (2012) Inc.

[Signature]

Thorpe Consulting Services

PABLO SARAVANJA

Artless Collective

**Participant Verification Form for the DRAFT  
Diavik AEMP TK Camp Report**



Joanne  
Barnaby  
Consulting

**Verification  
Session:  
June 2022**

I, Sarah Ravensbergen (name), on June 6, 2022 in Yellowknife, NT have reviewed the updated draft report prepared by Thorpe Consulting and Joanne Barnaby Consulting and videos prepared by aRTLeSS for the Diavik Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) report at Lac de Gras from July 31 to August 9, 2021.

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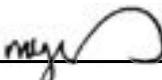
This form was read aloud to me and other participants before signing so as to be in compliance with ethical rules around free, prior and informed consent. With verifications done and edits made, I agree to have my name acknowledged including my photo, a brief biography, and my quotes in the body of the report.

- Yes  
 No

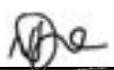
*Please print and sign your name.*



Participant



Diavik Diamond Mine (2012) Inc.



Thorpe Consulting Services



Artless Collective

## Appendix B Planning Session Materials

**Workshop Notes for  
Aquatic Effects Monitoring Program  
Traditional Knowledge Panel #13  
2021 Planning Session**

**Chief Drygeese Centre, Dettah, NT  
June 23-25, 2021**

**Day 1/3**

**Date:** June 23, 2021  
**Time:** 9:00am-3:00pm  
**Location:** Chief Drygeese Centre, Dettah, NT  
**Handouts:** Workshop agenda; Maps of CBM camp at Lac de Gras; AEMP fish / water form; CBM gear list and medical form; PPT presentations for each day

**Participants:** Agnes Allen (Kitikmeot Inuit Association, Translator)  
Nancy Kadlun (Kitikmeot Inuit Association, Elder)  
Mark Taletok (Kitikmeot Inuit Association, Elder)  
Gerome Basil (łutsël K'é Dene First Nation, Youth)  
Sarazine Basil (łutsël K'é Dene First Nation, Translator)  
Albert Boucher (łutsël K'é Dene First Nation, Elder)  
Doris (Terri) Enzoe (łutsël K'é Dene First Nation, Elder)  
Kathy Arden (North Slave Métis Alliance, Elder)  
Victor Mercredi (North Slave Métis Alliance, Elder)  
Charlie Football (Tłıchq Government, Elder)  
Marie Adele Football (Tłıchq Government, Elder)  
Beezoe Football (Tłıchq Government, Youth)  
Lena Drygeese (Yellowknives Dene First Nation, Translator)  
Peter D. Sangris (Yellowknives Dene First Nation, Elder)  
Therese Sangris (Yellowknives Dene First Nation, Elder)  
Zhanaie (Yellowknives Dene First Nation, Youth)

**Facilitators / Support:** Joanne Barnaby (Joanne Barnaby Consulting)  
Natasha Thorpe (Thorpe Consulting Services)  
Sarah Ravensbergen (Consultant)

**Observers:** Myra Berrub (DDMI)

Gordon Cummings (DDMI) [Day 2 Only]

**Purpose:**

To plan for the upcoming TK Panel Session #13 and AEMP  
CBM Camp, July 31<sup>st</sup> – August 8<sup>th</sup>, 2021.

**Day 1/3 Agenda: Wednesday, June 23 - Watching Fish and Water**

- 9:00 am Welcome Coffee
- 9:15 am Opening Prayer, Introductions, Review Draft Agenda, House-keeping
- Presentation 1: Overview of Aquatic Effects Monitoring Program
- Video: [Our Youth, Our Future: Watching Fish and Water near the Diavik Diamond Mine](#) (aRTLeSS Collective Inc.)
- Discussion: What were the strengths and weaknesses of earlier AEMP or other on-the-land camps?
- Presentation 2: Participant Recommendations for AEMP Sessions
- Discussion: What is important for the upcoming camp?
- Presentation 3: Watching Fish: Sampling and Tasting
- 12:00 *Lunch (provided)*
- Demonstration: Practice preparing fish for sampling according to TK
- Discussion: Are there any adjustments needed to the fish program?
- Presentation 4: Watching Water: Sampling and Tasting
- Discussion: Are there any adjustments needed to the water program?
- 4:00 pm Close

**Day 1/3 Meeting Notes:**

Peter: [Opening Prayer]

Myra: Thank you coming here, my name is Myra and I'm with Diavik. We are here to plan or TK Panel Camp. First we will around the room and have everybody introduce themselves.

[Introductions: see participant list at beginning for all people present]

Myra: We may be recording the session so we don't forget anything.

Natasha: Most have seen something like this before. If you are uncomfortable with us recording, it's no problem to say stop. You have the chance to look over a short workshop report from this. You will be compensated for your time. This form also covers the time we will spend out at the camp when we have a film crew preparing a video documentary. Same thing goes there. If you don't want anything used or are not comfortable with pictures or video, just let us know. On the bottom of the form, let us know if it's okay to use your name, or you would rather we don't use your name. Quana, mahsi.

[Video: [Our Youth, Our Future: Watching Fish and Water near the Diavik Diamond Mine](#) (aRTLeSS Collective Inc.)]

Joanne: That was our last fish camp, it will give you a sense of what to expect when we go out to the camp. It's a beautiful camp.

Natasha and Joanne: [Presentation #1: AEMP Overview for August 2021]

Joanne: Any questions?

Doris: Would it be possible if we can get a USB of the videos you got a few years back?

Joanne: I am sure that's possible. I believe they were sent out.

Myra: They were sent out last fall. After the 12th one, the last one in 2019, I did send copies of those to each of the offices. But sometimes it doesn't go back.

Doris: If we have events or something going on, it would be nice to have. Every three years we have this workshop, so more participants-it is important for the young people to go out to Diavik. Some of them don't understand what they are really here for. They should be sure ahead of time what is happening, we don't see this. The number one thing is that they do fish sampling, to understand how the fish are doing down the road. Mahsi.

Joanne: Thank you Doris. Any other questions?

Albert: [Translated] With the monitoring and the elders, it's important in the future, what you started out on-the third time [this is the third time he is planning for this camp] ... there are mines, lots of mines on our land, so this is why we want to monitor and we want the youth to learn. When we start saying like this, the teaching, monitoring ... to our people because it's our land and when we go hunting we are not scientists but if an animal is not healthy, we don't know unless we see signs. The tasting of the water and the fish, I know it has been done before. A long time, Elders used to say, that when the water-they knew all the lakes and the fish and the water they use. They watch all the water and fish. There was nothing that was sick in the water, it was fresh all the time. Nowadays there is a lot of mines and some lakes are starting to change. The fish are starting to change too. And the vertebrae that the fish have, some of them are no good. It is affecting them.

When you go to further lakes, the bigger lakes, and these big lakes where they are away from the mine, the water is very good and the fish too is very healthy. Nothing moved, nothing changed. But close to the mine there is always sediment or something from the mine that goes in the water. So the fish eat from there too. This is why the fish are starting to not be healthy on some lakes. I see what you're doing is starting to monitor and there are scientists too that are looking at the water. They know what's happening out there. When they get used to it, in the long term, they knew what happened, so they will take our places and-this is very important, to teach our youth. I am very happy to see the work that you guys are doing at the camp. When we talk about things, we know what we are talking about, because we know our land and what is on our land. This is our livelihood, we know what goes on anywhere, the animals, the land, even the forest, we know. When we have all this knowledge, our Elders too have told us a lot of stories about our lands, they grew up on it and we see it visually. Now that there is a mine that came up, there is a lot of issues concerning the mine site, which is not good for the land or the water. They have all kinds of chemicals and we know what goes on because we were at the mine and we've seen what goes on there. We are not unknowing about it. I wanted to comment and say what we are going here is very efficient for the future. The first time I'm going to be there since the beginning. It's very good, the comment, it's good if you send information to the communities.

...whatever we do comes back into our communities, for the knowledge of all the people that didn't go out there, they can know what went on. We're going out there and I want to participate in this. Our workers at the camp, we are going to Fort Reliance at almost the same time as our travel to the mine. We really didn't set a date yet (for the Spiritual Gathering) but it always happens in August. The issue of our spiritual gatherings is very important to our Elders...

our traditions and livelihood as Dene. The Diavik camp too, it's in August too, July or August so we don't really know what is happening. But anyway I will be present at the camp. We will let you know what is happening and get that information to you. With that I would like to thank you for giving us information and the kind of work you have been participating in on the land.

Joanne: It's good to hear about the program design, that we need to have youth directly participating, hearing directly from the Elders, to record what they are saying, both with TK and the science. If there other people who want to comment on what they see as the strengths or weaknesses of the current program, that would help us this week with planning it out. Any feedback?

Charlie: Mahsi. [Translated] ...sometimes they [Diavik] have ways of working that they put so much sand and gravel on roads, how to maintain and rebuild the land. The natural rain and the snow that is all on the glaciers, it's hard to really say what will happen, we can't predict anything. So when the mine is going to be closing, all the vehicles that they use, they said they were going to transport it back, what are they going to do with the machines that are used, all the stuff in the open pit. If there is a sudden movement everything will go into the water. I don't think it's a good idea to put stuff in the open pit. I don't want any machinery left there ... and I really have concerns about how the land will look for future generations. They are talking about the water, everything is changing. At Snare Lake, north of MacKay, north of Wekweèti, we've been experiencing really strong winds and things are changing with the weather. Our Elders in the past were saying things were changing and now today we are in that area. When we say that we are going to be monitoring and watching the closure of the mine, I am really worried about where they will put all the equipment they use. They should bring it back. Whatever they brought, they should bring it back where they got it from, so the land won't be ruined and contaminated. That's what I was thinking about coming here. Thank you. [Technical difficulties].

[Lunch Break]

Charlie: [Translated] all the changes in weather, ... if you haven't had that experience with water eroding the ground and climate change effects, the litter that was put into the ground and the sand and leaking water in the ground, it makes it rusty. If you think about it that way, and then you do that type of thing-for closing the mines, Diavik should take all those metal things put in the open pit and take it back to where they got it from. All the materials, equipment, they should take it back to where they got it. [Technical difficulties].

Joanne: We are going to watch Nancy cut the fish now and she will explain what she is doing. I will lead the youth through each question on the form. Let's start with the fish survey. The

Elders are going to say what they think of the fish (the fat, gills, deformities, shape, whether there are other issues you have). [Technical difficulties].

Nancy: [Outside filling out the fish form, teaching the group] What we did at the camp was cut it here, take those parts away. When we cut it, you see the bones here and you check to see how old the fish is. You check to see if the fish is healthy. The fish looks grey, it's like one day old. I think it's average. [Group discussion]. The fish is soft! [Group agrees].

[Group discussion] [Records fish health on the fish form]

Nancy: ...we cut it all [cutting head], record it.

Therese: When we go to the river we take the head, you can cut it. At [inaudible] lake, out to the river, their colour is like that [points to fish]. I learned those.

Therese: [Inaudible] sometimes they (gills) are dark red. Their colour changes.

Joanne: So if they are travelling back and forth between fresh and salt water? [Group discussion].

Nancy: How did you know this was good? We had a hard time with the knife, so this time I am just cutting it off. [Group discussion about fish]. He said there's lots of fish, that they used to eat the eyes. Now they don't eat that. [Group discussion about fish] [Technical difficulties].

Joanne: Did you want to comment on what you learned at the fish cutting, strengths or weaknesses?

Kathy: [Translated] I wasn't informed about this... we talked about the land, the water, the fish in the water, and we also see climate change every year, I hope the program [includes this] ...when we got out with the youth and the young people...this is the first time being at a planning meeting. I want to say thank you to people that are holding the workshop. ... [technical difficulties]

Joanne: So, we will finish early and try to fix the translation equipment so that everybody can hear. Myra will go around and collect the informed consent forms. There is a section on Covid. Myra should have your phone numbers in case we need to contact you tonight.

**[End Day 1/3 Meeting Notes]**

## Day 2/3 Agenda: Thursday, June 24 – Lessons of the AEMP Camp and Planning the TK Panel Session

9:00 am Welcome coffee

9:15 am Presentation 5: Lessons Planning

Discussion:

- Are there activities we should do or places we should visit?
- Are there any special lessons that Elders want to teach? Are supplies needed?

Overview: Participants, Logistics and Safety

Discussion: Are there any considerations around planning, safety and participation that should be discussed?

12:00 pm Lunch (provided)

### *Planning for Traditional Knowledge (TK) Panel*

1:00 pm Presentation: Overview of the TK Panel, TK Panel Session #13 Purpose

Presentation: Vegetation Monitoring Program at Diavik and Recommendations Made by Indigenous Groups To-Date

Round Table: What are some highlights of your community monitoring programs that might relate to plants?

Discussion:

- How can you tell the land (vegetation) is healthy?
- Are there particular plants that tell you about the health of everything (i.e. the ecosystem)? What are you looking at and for?

- What should be watched in a plant monitoring program during and beyond closure?
- Where, when and how should the land (vegetation) be watched?
- Are there key plants that should be monitored?
- How can we best use our time on-the-land to advance watching programs around plants now and into the future?

4:00 pm Close

### Day 2/3 Meeting Notes:

Peter: [Opening Prayer]

Joanne: We had so many technical issues yesterday that we made some changes to the agenda. Let's take a look at the changes we made to the agenda. We'll start with what has taken place in the past in terms of teachings that Elders have offered when they are at camp. We'll talk about any changes that you want to make. We'll talk through the list of supplies you need at camp. Then we will talk about the TK Panel Session. In addition to the fish and water monitoring work at camp, we are also holding an Elder's Panel Session. To introduce that, we're going to hear about the current monitoring programs Diavik is doing. There's a team of scientists at Diavik now looking at vegetation. So we will spend some time talking about what we want to look at in terms of vegetation. So we will develop ideas for how to keep monitoring the land after Diavik leaves, and before then what the Elders want to do when watching the land. We also want to hear from you what your communities are doing to monitor the land. For those who have monitoring programs, we want to start thinking bigger, getting you to think about how we can pull this together so that we are supporting each other between communities and finding the best way to develop our program so it's supporting each community. We'll continue with our planning tomorrow for how we spend our time out at camp and making choices about places you want to visit at Lac de Gras, and looking at how scientists are looking at the land, and deciding what works best for us. Any questions?

Albert: [Translated] There are grizzly bears, they are not scared of humans, they come to you and see you. They are not scared of nothing. So I would like to have somebody around at all times, that works for Diavik. I've been monitoring around there and there's a lot of grizzly bears around there that are not scared. It's very dangerous in the barrenlands. My question is for security is the people that are at camp-the people that travel on the land have respect for the land, when we are out there we will talk more about what we see that should be done. Thank you.

Myra: It's absolutely one of our priorities to make sure everyone is safe. We have a bear fence around the full camp area. I have never been to the camp before but we have never had a problem with bears coming into the camp, because of the bear fence. I don't go to the mine site very often myself, but we will have a safety person from the mine site there at all times, and he will present to us later. He will provide the details of the bear safety at that time.

Joanne: The people from Diavik that will be travelling with us while we're there, they have a gun if that is needed as well. We know that grizzlies can be unpredictable so we need to be careful. We don't go wandering alone-if we want to pick berries, we need to tell the camp people what we're doing and make sure they watch out for us.

Natasha: And we always have radios. And in the three times I've been to the camp we've only seen a bear once and it was far away.

[Presentation #2: AEMP Participant Recommendations (2018, 2015)]

[Presentation #3, 4: AEMP – Watching Fish, Sampling and Tasting (2018, 2015)]

[Presentation #5: Lessons Planning]

[Presentation #6: Overview of the TK Panel, TK Panel Session #13 Purpose]

Are there activities we should do or places we should visit? Special lessons you want to teach? Nancy has become famous for her bannock lessons! Will you need special supplies? If you tell us today we can make sure we prep those.

Joanne: Let's do a roundtable, is there something that you would like to teach the youth while we are there? If so, how can we support you?

Victor: I don't know too much. I'm really looking forward to this trip here. My dad lived a traditional life. I left home at 15, I'll be taking it all in. I can teach you about the Stanley Cup!

Kathy: I can't think of anything offhand. I see Wayne was talking about knots, I have a book on nautical knots, maybe I'll bring that out.

Albert: There is a lot of stuff we could teach the youth. But even in the camp, it's a very short-we talk about the bannock, the way you cook bannock. This fish you're going to clean and the different ways of cleaning, preparing it. Some of them are saying that they could tie knots, even the children have to be there and you have to try, hands on, that's the way you learn. The Elders, they have to follow the Elders and if they want to learn, they would learn. I lived on the land all my life. When I was 9 years old, 1949, I was out on the land with my parents. Then I started hunting and trapping and gathering food. I know a lot of traditional ways that we do things The youth, we don't really teach the youth because they are always at school, learning. When they come back, their Elders don't teach them anything. So we start talking about it, the Elders and the parents of the youth. Now we are starting our youth out on the land for a week

with Elders and they are taught in our traditional ways. It's 5 or 6 days we're going to be out there, and we have to teach them our traditional ways in 5 or 6 days. We would tell them and they will learn. It's good to stay out there on the land. In the meantime you can look at the land and we knew what was there before the mine started. Now we can visually see it again. Our Elders told us in the past to really respect the land, and our ancestors respect the land no matter where we are. The animals, caribou, water, respect the water, the fish. When you go out on the land to the lake, we pay the water out of respect, we are thankful we have water. In the winter, you either take a branch from the land and leave a small one to mark your road and pay respect or pay respect with tobacco. When we don't see the land for a long time, we still pay it-thanks giving, that we are able to travel on it again. That's the Dene way we were taught. Now we are going to the camp and we have to treat the children in a soft way, not to say you have to do it, but show them what you have to do. You cannot force people, you have to be gentle. When even now we go out on the land, if they go out on the land, if we don't teach them, what will happen to them? Even that, we have to teach them how to go out on the land, and they will survive. Nowadays we are in a different era, not like the past. Mahsi cho.

Joanne: Teaching the young people how to show respect on the land, practicing gift offerings, it would be really great if you could help with that, mahsi.

Albert: [Translated] Would it be possible that you buy tobacco so it could be shared among the people so it could be given to the land?

Myra: Yes.

Gerome: I would like to learn about paying respect for the land.

Doris: For me, ever since I start going to AE and TK camps for Diavik, I know yesterday we didn't follow the agenda but my Uncle Albert talked yesterday, it is at the same time as our gathering at the falls. We would like to take it home for that, because the Chief keep asking me, what dates are you going. I said you have to get in touch with Diavik to see. This year, the lady of the falls, for me that's really important, if you need help, the lady of the falls are there. We tell stories like that in all the special places on the lands, teachings for our young people. When you talk to a young person sometimes it goes in one ear and out the other, doesn't listen. If you want to learn, it has to go in an ear and you keep it with you until you're really old, have respect for your Elders. It's a good teaching, a role model for people that come out with us, the end of July, first week of August, you have to pay attention to what's going on at camp if you really want to learn. Then you carry it down the road and it's your turn to teach to young people. For me I want to teach the young people, we have all kinds of plants that even used for survival if you don't have any food. We wouldn't mind giving plant books about how we can make medicine and food you can take. Those are the things I want to see. The other thing I was thinking about, it's only one a week every three years. If we teach our young people how to do the sampling and fix the fish, give them a knife. In my community we have the Ni Hat'Ni Dene, on the land program. We teach how to do fish sampling and how to have respect, there's all kinds of other stuff you can teach. In this Diavik, you're only there for 5 or 6 days every 3 years.

IF you really want to learn, you have to really pay attention. No electronics, phones, you don't need those things. When you go to any meeting, all electronics has to stop. Pay good attention. When I go out on the land with people, I take the kid's phones away, and I tell the lodge people to not give them the passwords to internet so they can really learn. Mahsi cho. If we can get plant books, if you want to make tea, plants, even picking wildflowers, or butterweed, there's medicine from that. We get plant books before we go there. Mahsi.

Nancy: This is my third time going there. It's seems like we don't have enough time for the youth. If the youth would write down on the paper what they want to learn. We seemed like we don't have time for our youth when we were there because it went so fast. IF we could gather at the fire outside and tell stories, most of our youth don't know what happened before they were born. If we could gather every night after supper and talk to the youth and make time for that, it would be so great.

Mark: [Translated] [Talking about the importance of hunting and fishing and learning from his family, canoeing] ...my uncle taught me how to hunt caribou with a canoe. My uncle said I should know everything about the land from there. My mum and my dad were so pleased, we really enjoyed caribou hunting. After we go, he will go caribou hunting up there. [Telling stories that his uncle told him] Even though I went to school, I pass it down to them, I pass down what knowledge I learned in the past. I want to talk about our traditional life, long ago what we know, not about education at school. I'm always happy to give TK for how to hunt and things like that, I'm happy about being paid for speaking to young people. Everybody invited, we should talk about traditional ways. From my uncle I learned a lot, he taught me a lot, we talked about that at the education at school. They want to come back. When I get invited to speak at the school, I taught young people about traditional ways. Some kids, they ask, when you go hunting, how do you make a house? Outside! In English, it's-my uncle tells me how to make [tools, things in the snow]. I would like to see teaching of the traditional ways at that camp. I would make something to show how do certain things.

Joanne: Is there anything we should bring to help?

Mark: [Translated] I don't know, I am old and I have bad arthritis and he is not too quick anymore. He could teach people how to do this, that, he could teach us too.

Joanne: Maybe there's something he can bring from home and he can explain how it was made?

Mark: [Translated] He said he could bring something to the camp.

Joanne: Great, mahsi! [Break]

Zhanaie: First what I would like to learn is how to navigate, how to watch and know the land and travel on it. How to tell what direction you are going in by the trees and the sun. The second one is when its hard to start a fire in wet and dry conditions with resources we have,

stuff from the land. And different ways of how to build a shelter, and all the basic communication in all languages, thank you, hello, animals, weather, plants, land. Lastly, if we find animals, it would be great to learn how to identify them, the prints / tracks, direction of travel. Mahsi.

Joanne: That's an incredible list, I hope young people can be clear on what you want to learn! The clearer you are, the better Elders can teach you.

Charlie: [Translated] ...how they teach us to do things on the land. I've been on the land almost all my life, my wife and children are with me. Some day I want my kids to teach their own kids on the land, if I ask them to set up a tent for me, I want them to do it. There are a lot of animals on the land and we see all kinds, caribou, bears. If we are on the land we are happy to be outdoors. Back in the day with other people on the land, they say it's always good to bring young people on the land, how to cut up a caribou. That is how we teach them, by showing them out on the land. Sometimes when out on the land, you feel really good, your health is good, you see all animals, caribou, moose, bears, and you know what you have to do when you shoot an animal, how to fix and cut it. When you have young people, you show them and talk to them, you have to demonstrate to them how to do it so that they copy you. Then they in turn are learning at the same time. The Elders shows you what to do, and you are learning too. It's all at the same time, when Elders and young people are together. Today young people growing up are going to school, and it's hard to speak to them sometimes. But when you're out on the land and at home you talk to your daughters and sons in your language. You want them to know what you are saying. My son didn't speak our language before but now he is starting to talk well because I talk to him in the language all the time. When we go on the land, we always talk to the people in our language. At Contwoyto and MacKay Lake, we used to go there and set up a tent. There's a big lake and if we go out, we always have canoes with us. We have everything in the canoes, our tent and groceries and blankets and everything we need. We put it beside our canoes and where we are planning to go. Even if the water changes, we have to land and we set up our tent like that, anywhere. That's how we teach our young kids, to be prepared. I think the young people will take off on the land again, until September 16<sup>th</sup>! Every two weeks people will switch and a new group will come and replace them. The young people love that kind of teaching. You speak the language, do hands on activities on the land [referring to Boots on the Ground]. Wherever we go, we go on the land and the shores and set up tents where we go. Sometimes we find things on the land, old stoves or something that was used a long time ago. We think back and say, our ancestors were here. When we meet with other groups on the land, we say prayers with all the groups, that's how we teach. Everything is okay with us, we will all see each other out on the land again. Thank you so much.

Joanne: Everybody here will learn how to set and check nets, keep that in mind for something you want to teach.

Marie Adele: Yes, I would like to teach legends, stories, at evening I would like to tell them about legends and stories, and also to teach the youth it's very important, if it's your first time on the land and water, you have to pay respect and pay the water and the land. If we are going

by plane, before we get on the plane you have to feed the water. When you step on the land you have to feed the land too. It's very important. If it's the first time, for your safety and health, and also the weather. You never know what the weather will be like, that's why you have to pay the land and water. Also about where our ancestors burial site is, how they traveled and survived. There are a lot of stories about our ancestors that are lost on the land, how they make their way back and how they survive. They also say about medicine, maybe I can help with the medicine, what it is good for. Especially I would like to teach them about our language, speak in our language, and when they are on the land and working, we have to respect each other with words. Disrespect others, getting mad or saying bad words in our language, that's a no no. Our Elders, they said you have to watch your language and only use respectful language when you're on the land, especially when you go to different places you've never been. I can teach them about that. I can do stories, there's a lot of legend stories that has respect, the land, the people, the animals, the plants. Mahsi.

Beezoe: I would like to learn trapping, snaring, TK medicine [everything that Marie Adele said in previous paragraph].

Peter: [Translated] I was on the land to go trapping, caribou hunting, in 1940. I had no father but I used to sit in the tent with my grandfather so he taught me what his grandfather's taught him. He taught me about living on the land. ... if the wind is blowing from the south, you have to have to keep an eye out it. If you're sitting on the hilly part, you are careful of the animals that could come up behind you, because of the smell. If you are out on the land you could trip and hit your head so you have to watch when there are lots of boulders around. In the summertime we walk all over the place, we do things by walking, tell them to look around. We have to bring a gun. We have to listen to Elders, when they talk, you just listen. We have to bring all the safety stuff with us, bear spray, safety matches, lighter, everything you need for your survival. You have to think about safety all the time. Even when sleeping, they could come around the camp, watch what you leave in the open. Don't leave any food out. If we go by boat, you have to pay the water. You have to ask the Creator for help, you have to ask the Elder and see how they do it and watch them. That's what you're supposed to do. In Yellowknife I see orphans and I always stop and talk with them, I know they have no parents to talk to them. When you're on the land, you have to really look and be careful, pay attention. If you have a gun, place it carefully on the ground. If you have an axe or knife, sharpen it carefully. All the things you carry, take care of them. This is also how you talk to the people. If you go anywhere, you have to have extra shells in your pocket and bear spray, that should be taken as well. If you want to teach the young people, you have to talk them about safety, how to carry their guns and equipment. On the lake going to Łutsël K'é or Reliance, watch the water and where you're sitting in the boat, balance of the boat, I try to tell the young people like that. If you talk quietly and in a good tone, the young people will listen.

Joanne: Could you bring something to sharpen axes and knives with? That would be great. Thanks Peter.

Therese: [Translated] I am thankful, some of you come here by plane, we don't want anything to happen so you have to be careful. We watch for good health and safety, when we travel everywhere we ask the Creator for our safety. Yesterday when the lady was cutting up the trout, she cut it in a way that I never saw, that was new for me. Wherever we come from the land, however we are taught is how we do things, according to the land. We were all raised in different parts, but our ancestors taught us good. We learn by watching and doing it ourselves, like my mother and father taught me on the land. My mum taught me at Echo Bay, I would follow her, she said walk the way I walk, she said if you step on a branch and break it, an animal out there is going to hear you, so walk carefully. We looked for ptarmigans, chickens. At this camp, I've never been there or seen barrenlands. I was told there is no trees. I might get a chance to go yet. The way that we were taught is how we want to teach the young people. When you step on the ground, if you step on the ground, pay the land. That's how our families and relatives talk to us. Even the waters, land, we do that. The youth have to listen, they should take notes so they remember if they can read and write. All the things like where we are going to check nets, how we will cut the fish, cook the fish, we can do demonstrations while they watch or they can take part. They should take notes. I am thankful for all the words you have said around the table. Sometimes I go to my camp to [the bay] we set nets and take them, and I make dry fish for my children and my relatives, they love it. It's good to remind people to do things. Right now around here, Yellowknife Bay, the water is not good because of the mine. When you take whitefish from the bay here the flesh is soft and not good to eat, so we have to go further out to Great Slave Lake. So when we go to the camp, we always bring fish back. My mum and dad raised me, not biological but they raised me on the land. Until I was 15 I lived on the land with my parents. Then my brother picked me up by dog team. I didn't know he was my older brother. Then my sister told me she was raised by her mum and dad, taken as a baby. That's how I learned that my mum and dad were not my real mother and father. But they taught me a lot of things. As I grew older, I worked with them. I got pails of water from the shore and in the winter at the ice hole, I brought wood inside the house for them. I checked nets for them. They taught me a lot of things. At the camp, we have to teach the youth. They will use that knowledge in the future.

Joanne: That would be great if you could teach us how to make dry fish out there. There are different styles and it's great for people to see different ways. In your package you have a one-pager, I will go over it. It's supplies that you should bring. I know Elders are concerned about guns but we can't carry our own. One staff will have one, and when we go anywhere, they will be with us and have the gun. [Goes over packing list and camp rules – no hunting, no guns, length of knives under a certain measure, bags could be inspected, bear horns and spray provided, can't leave the camp alone]. Questions? All clear?

Nancy: About the shoes, what about mukluks, can we bring them? Moccasins?

Joanne: Yes but it's rough terrain. You'll be walking on uneven ground lots.

Kathy: About knives, less than 6 inches. Hunting knives we have are longer. So we have to bring something shorter, if you want us to bring our own?

Joanne: Myra will check that. We brought our own longer fish knives, but we will doublecheck that.

Doris: The mine has been there a long time. We go there every three years. You should provide us with a knife if we can't bring our own. If you give young kids something, they don't learn. At home my knife is this long, so I can't bring it. If you go through screening with the knife, if they find it and it's more than 6 inches, they will take it away. Even a lighter, you can only have one. Diavik is really strict. I go to so many mines that they take stuff away from you. You should provide knives and then we can use them. When we bring our own gear, we pay. I have to pay for my freight when I was here the last time over three years. You should pay to bring the things you have on the list.

Myra: If there is extra freight we will pay for that. I would like to get a list from you of things that have been a problem in the past so we can make sure we have all those things. I wrote down knives and lighters.

Natasha: You could put it on the evaluation form if you are not comfortable saying it now.

Charlie: [Translated] We should bring our own guns. If we are at camp and somebody gets hurt, what do we do? What is the camp heated by? Sometimes they bring lumber, that wood has been treated by chemicals and then they burn it. That's not right.

Joanne: The firearms, I can't seem them changing that. We have to pay attention to the restrictions out there to keep everyone safe. The gun is big enough to handle grizzly bears. The most important thing about safety is to follow the rules. There is a helicopter in the area in case of emergency. For the knife question, we will clarify if we can bring our own, and the size.

Nancy: Talking about flying, I come from Kugluktuk, we have to fly to Yellowknife, and we have to take two or three bags, and we have to pay extra.

Joanne: We are planning on going straight to the camp, not through the mine. We won't go through security that we usually would at site. But they might do a security check before in Yellowknife. So make sure no drugs, and we will clarify knife and luggage.

Marie Adele: What Nancy was saying is that the flight charge-from Wekweètì, if I have more than 50 pounds I have to pay for the rest of the luggage, that's what she's saying. We're leaving from Yellowknife right it's going to be extra big.

Joanne: Myra will check into that and see if she can pre-authorize extra charges. They will cover it.

Myra: We are taking floatplanes directly to site, so there is a limitation.

Nancy: Also firewood?

Joanne: We will be bringing wood out but not treated wood. They will bring wood that is good for cooking on. No birch. Doris says, no birch. They will bring good wood for cooking. The tents- sorry Charlie, in the tents there is oil heaters in them, they work really well. We have a guy that goes around and starts them for you, warm it up for you before you go in and go to bed.

Kathy: I'm assuming we'll have one floatplane that will be for the flight? We'll have a cook and bring all the food, for the overweight that we would have to the passenger planes, we will have three floatplanes? [Joanne: Yes]. Do we have one tent that's a shower? [Joanne: Yes].

Joanne: Main shower area is for men and women but there are stalls, and bathrooms.

Kathy: And an axe comes with the wood? [Joanne: Yes].

Nancy: About knives, you can sometimes put them in a separate box.

Joanne: We will sort that out hopefully today. [Lunch break].

Gord: [Presentation 7: Wildlife and Vegetation Monitoring Programs at Diavik (by DDMI)]

Charlie: [Translated] The companies that work in those areas, we are the ones that did all the work. So we have to clean up as much as we can, and do a lot more than just making the area liveable. Wildlife is all over and there are big piles of rock and gravel and natural formations on the land. I don't know if it will look the way it was before but after reclamation I hope they make it as good as they did before.

Gord: In regards to how Diavik is going to manage site after closure, we really want to hear from TK members, exactly how you would like to see it managed going forward.

Joanne: Any other questions?

Gord: [Presentation 7: Wildlife and Vegetation Monitoring Programs at Diavik (by DDMI)]

Joanne: There's a bullet that says new sites were added due to community members, can you speak to that?

Gord: I am not totally sure but it was brought up that between near and far field sites, locations should be added. So between 19 and 20.6 km from the mine, to cover that in between area.

Doris: When you say on the other slide about 2013, several sites were added directly from the community, where is that? I can only see your map, but I can't point where you did more work? For me it's hard to understand what zone are you talking about, what are you talking about, because I only can see the grey and the white on the map of your presentation. For me if I want

to ask questions, I really want to see what zone you are talking about or what zone the Elders wanted you to work on? Then I will understand. And to your other question, about the dust, this-every time I go to the site, I know you have lots of places where you put long sticks with a dust thing on top. From sitting here in Dettah, I cannot see in which area you are talking about the dust controls? Every time I go there, I always say, how do you check dust that is flying all over the site? In the wintertime it flies everywhere and the snow gets grey, then it melts and goes into the lake. Anything, little things that fall into the lake, the little insects in the water that the fish eat, we want to know what happens to the fish down the road? You don't check the bottom of the lake. Those are the kinds of things we want to know. It's so hard when you can't see the zone and have a meeting like this. If we can understand which part of the mine and the dust you're talking about, I would like to know. You are only showing me the map and I can't see because I am sitting so far from your presentation. Show me where you're talking about, I would appreciate it Mahsi cho.

Gord: Thank you for your comments. I can provide a map of the other zones to Myra and she can show that to you tomorrow. To this year's TK camp, I would like to visit some of the near field lichen field monitoring locations, which are on this map. On the far right side of the lichen monitoring map, that's where the camp is. We would like to go to one or two of the near monitoring locations.

Myra: We're going to talk after this presentation about what we want to do out at camp with monitoring and vegetation, maybe then it will be more clear.

Gord: Regarding effects of dust on the lake itself, as well as the dust gauges we also collect snow core samples at the end of the winter and analyze the snow collected from those cores for dust content and chemicals. We have an idea of the dust that settles in the winter. That's an important part of our dust monitoring, to try to capture the effects of dust on site. The main objective of the dust monitoring program is to manage dust on the site in an adaptive way. Knowing, collecting, every three months, knowing exactly how dust rates are changing throughout the year can help us manage our dust plan. We also have a dust rate trigger, at which point if we get to certain levels of dust deposition on an annual basis, we increase the frequency of our lichen and vegetation monitoring programs.

Doris: I will have lots of questions for you at the camp.

Gord: I appreciate the opportunity to answer them.

Victor: The dust situation when you do your sampling, that's based on Diavik's operations or Ekati's too?

Gord: All our monitoring programs are developed in coordination with Ekati. So our dust gauges are meant to try and reduce the effects of Ekati on our dust collection measurements as much as possible. That's why we don't have dust gauges close to Ekati but further to the south and east. We want to measure our own impacts from a dust perspective.

Victor: But it has to be factored in some way?

Gord: I believe they factor it in at Ekati as well. I'm not exactly sure how, or Goulder's report. But we design our program specifically to minimize the effect of Ekati. Ekati also has their own dust monitoring program. [Break].

Natasha: [Presentation #6: AEMP and TK Panel #13] Comments or questions from TK Panel members?

Doris: I'm Doris from LKFN. When I'm home my name is Terri. When I travel it's under Doris because that's my real name. Natasha, remember when we talked about the pit, and they were planning on putting rocks in there and filling it up with water? The PKC. Are they still going to fill it in with rocks and put water onto the PKC?

Natasha: I don't work for Diavik so we are not the experts. Myra do you want to respond?

Doris: I want to know if they will add water to the pit? Since Covid we never had a meeting. I wanted to know if they did. Mahsi cho.

Myra: In 2018 we put a water license amendment to the land and water board. There was a hearing in Yellowknife. In June of last year, 2020, we did receive approval from the Minister to go ahead. That is to put PKC back in the pits and cover it with water. After that environmental assessment, we went back to the water licensing process to again get approval. So there was another hearing; in September 2019 we went to Behchok̄ and Dettah for community hearings. Then we did another public hearing during Covid, not many came because of Covid but people from Tł̄ch̄ did come. Less than a month ago we received approval again from the Minister. There are other requirements we have to meet along the way. One of those is to create culturally relevant water quality criteria; we have done workshops on this. We have approval but will keep meeting with communities.

Doris: It partly answers my question but if whoever is going to the workshops with Diavik, if they don't pass it on, we ask the same questions over and over. I have an email I can send to you, if I don't make it to any workshops, I miss out on all the important things that are important for our next generations. It silences my voice for my community and my people. I can't see if there are healthy animals, fresh berries, and I always think like that. If you miss that, that's a way that we don't know what the people talked about in that meeting. I'll give you my email, mahsi cho.

Natasha: For those that haven't been out to a Panel, there's a video [in presentation].

Joanne: We were dealing in that video with the question of how do we leave the mine site in a way that caribou might come back? How do we make good trails of the caribou, as close to

their traditional trails as possible? That's what George was talking about, how to slope big rock piles so caribou can climb up safely. We all want caribou to return safely to the mine site.

Albert: [Translated] ...we always have to talk about how they can put things back the way they used to be. The future generation, we want them to enjoy the land like we did when we were young. This is why I still participate when there is something that is going on our lands. When the mines are on the land, we are speaking for our future generations and those that are just starting to walk on the land. We even have to look for names, whatever we need to do. People ask us what do you say, what's going on. And then I said about the pit, put all the waste rock back into the pit and cover it up. Now they said they're going to put waste rock and water. In the future, there will be vegetation there and animals will go there and get sick from it. Our Elders said that in my community too. Terri too is always present when we have meetings. Nowadays they want to put water back in the pit. The water is not going to be drinkable and there's lots of animals around there and you're taking rocks from under the ground and putting them water there, it's going to be all mixed up and it will turn to poison for animals. These are my thoughts. I don't think it's very good. We should bring up that subject again before a decision is made. The Elders too know how to dispose of things properly. This is not the proper way of covering up these pits. Even the youth here, they have to think of when they grow old and will be on the land. Animals will die from the poisoned water. Before that happens, it's better to make a plan where everyone is satisfied.

Natasha: Let's talk more about those things at this workshop and when we're out on the land. [Presentation continued]. This Panel is one of the best examples I've ever seen of people voicing their opinions and expertise and having a company respond. I don't work for Diavik but we have been happy to help this Panel for over 10 years because we see it as very different than at other mine sites. It's because of your TK laws and protocols, they guide you in how you come together to do hard tasks, even if you don't always agree. [Presentation]. The panel is a model of success celebrated across the north. It has been so successful that new mines are advised that they need to follow the same lessons that is used here. Questions?

Charlie: [Translated] ...if the mine is closed without doing any clean up on the surface it will be hard for the animals to go there. Look at what's happening over there on the land (points to the Giant Gold Mine), it's an example of what could happen. We don't want that to happen in the barrenland. Now Imperial Oil has two big islands in the (Mackenzie) River and it still shows today. For the Mackenzie River, it flows all the way there to the delta. There are people in the communities that keep in contact with each other, Chiefs, Grand Chiefs, talk about things people do on our land. There are people that get cancer from these kinds of contaminants. Even by the shorelines in our communities, you see the fumes, things floating, things there. In some communities too on the road and by the shore, in areas where they dig for oil and gas, we don't want that to happen here. We know how the land works because we work on it, live on it, sleep on it, walk on it, set our tents on it. That's why we don't want anything on the land to be ruined. There's a lady that mentioned she doesn't want anything to be left over. The open pit in those areas, they want to put waste rock on there and put it in, how will that be done? If they want us to ask questions and raise concerns about that, we have to see with our own eyes what

it looks like now and what it will like then. You can't keep us away, we need to know what is happening with closure plans. At one time the water was overflowing and it went over the dike, there as a road leading to it and we were watching it and saw it. All these ponds and creeks, the water used to be clear, see to the bottom. But later it wasn't clear anymore. If people work on our land, especially in the barrenlands, we have to look out for everything, the land, the animals, the water. We want to have a lot more of our people doing important work up there, environmental, with wildlife, all areas of the mine, and management. If you employ our people, they will know what to do and what not to do. The people employed will be educated and will know how look after our land. I hope you take our words and keep the land pristine. We know leadership always changes; whoever will replace me as leader will have to learn everything again to keep up to date about what is happening on the land. Before I leave office I will gather as much information as I can. We all have to teach each other in the Tłıchq region. We should always all share information with each other. Survival things like trapping, that is our way of survival and we will never stop doing that. About the Diavik tailings pond, is there something about that area too, the concern I raised to Diavik?

Myra: Thank you Charlie. I haven't addressed things as we've spoken so maybe I'll take a bit of time now. First I'll talk about the vehicles and buildings left at site after closure. We are not leaving any vehicles on site. All the buildings and things will be buried in the landfill on site right now, or if communities would like it, there is an opportunity for that. We won't be leaving anything on site. You will be able to see the land is disturbed but any hazardous materials will come off site. If there are spills on site we have to report them and collect that material. Regulators come and make sure we have done it properly. For reclamation activities and filling the pits ... we usually don't go to all Tłıchq communities but I have made a note to try, after Covid.

Albert: [Translated] The self-government in Tłıchq came to visit us in our communities, will the companies come do that?

Joanne: Put your request in for a community visit. Hopefully you'll see that starting in the fall, after Covid and things going back to normal. [Break].

Natasha: [Presentation] We are going to have a TK Panel out on the land this year, as members wanted. We are there from July 31 to August 8, we have lots to do for fish and water but we have lots to do to think about what other parts of the area should be monitored. Our main focus will be monitoring. We heard from Gord about all the monitoring going on right now but they are moving towards closure. What will it look like once they're gone? What will community members want to look at? Members have noted they want a special session just for monitoring the land. So this is in response to members requests. Right now there are also scientists out there, so maybe the youth could learn two ways of knowing. You should have these questions, but we are giving you a bit of homework. When we come back together July 31<sup>st</sup>, we are hoping you can bring some answers to the following:

How can you tell the land (vegetation) is healthy? Are there particular plants that tell you about the health of everything (i.e. the ecosystem)? What are you looking at and for? What should be watched in a plant monitoring program during and beyond closure? Where, when and how should the land (vegetation) be watched? Are there key plants that should be monitored? How can we best use our time on-the-land to advance watching programs around plants now and into the future?

Albert: [Translated] Good afternoon, what we are talking about is the land we want to work on. We have been working on these questions. When you talk about the land, it's a good suggestion that you have made also. The Dene people, we visualize the land and we live off the land-when we visualize things, we know the way the land looks like and we talk about these things together. For us, the land is kind of dead already to us. It's not a big parcel of land we are holding for the mining but it's land that is taken away, for the healthy land already. But we still have to help to revive the land. The animals too want to go back. The lake here, Charlie too, where they go out on the land, those are Dogrib lands. They hunt, trap, the land is always different. As the land grows, the vegetation grows, the caribou travel on these lands. If there's a closure of the mines, there will be big holes there. If they put water in there to fill it up, I just stated that I have seen a lot of things destroyed by making big holes and filling it up with water. Our people, we want it to be done in the proper way, not covering up something that has been damaged and cover it up more with water. Put the rock back in the holes and make land again, that's the only way to do it properly. When a person puts up a mine, they can't just fill it with water. But you will destroy it. Filling it with rocks and covering it up is better, you have vehicles and you can do the work. Make it look all the same. Vegetation growing back on it-I want to see land where there used to be land, not water where there used to be land. We have been on the land a very long time before the white people came. In my land where I come from, in 1972 we made an airport there, then we made a different one because the land wasn't good enough. Now everything is growing back on it on the first site. That was 1970. Now we put sand, gravel there, now there's a lot of things that grew on it, it's not a barrenland. There's resilience, if there is seeds and dirt that is blown around. The land is not visually the same but still if you want to make it beautiful like when they first started, the only way they can do it is by filling it up. Then in the future we would be proud of how we reclaimed the land, that there was a mine there and it is beautiful now. We are here to give advice and see what is done, that it is done the proper way. There are a lot of Elders still here, lots of people that use the land. We want to keep our land as it was before mining came. Once we get our there on the land, I will tell stories again and tell how it has evolved this way, and youth will learn this way. That's our culture. Thank you. This is how I want the Panel to work together.

Natasha: Thank you, I heard that trying to fix the land, and being proud of that, is important, and I hope you will talk about that out there, what it looks like. What will grow back? Should we help it grow faster?

Joanne: This sheet here is your homework, what we want you to think about in preparation for our camp, the questions. Not today, but when we get out to camp.

Charlie: [Translated] Mahsi. We were raised on the land. When they talk about changes on the land, this is where we are at right now. In the past there were a lot of tall, old trees on our land. We had an earthquake in the past. Maybe that is what happened. Things change on the land year to year-if you go on the land in your area you see the changes. Sometimes I talk to people in Sahtu too and ask them. When we go to the barrenlands I want to see the changes, all the changes along the way, I want to be part of that too. Not only for myself but other people in the north.

Kathy: Could we have a map of that area before mining? My understanding is those three pits were underwater before they became pits. If we could look at a map before those pits where there, we can understand from TK how the closure plans would go, breaching the pits and how the shore would work. That would be better going forward, we have to do a review of many things because sometimes information doesn't get out there to all communities and people don't understand what's been said. Like that Myra said today that final steps have been approved to fill in pits. I am sorry you're not going to be at the camp Natasha, you Joanne and Colleen have worked very hard over the years to help us understand what Diavik is doing, push us past our misunderstandings to recommendations that want going forward. They looked at them and many they liked. Some helped them save money in the long run and helped them understand how the system could work. Many people have been part of this. Mahsi.

Doris: Doris Enzo from LKDFN. You talk about closure of the mine, things aren't going to be the same. I've never seen the high hill in any of the mines before. You can see it too from Misery, Diavik, Ekati, too many mines. When you go to Pritchard Lake and look out, you can see a big hill. You can see a big hill that we have never seen before, you don't see that. I go in the barrenlands with my son and I've never seen a hill like that in my lifetime. The hills will be there forever now. That, we ask if they could put rocks in the pit but they won't do that, they will fill them with water. Anything you remove from the ground will be dead; it's going to be a lifetime to bring it back. All the wisdom from my community, my grandfather George, he said, I want to see when I go to Diavik, I got tears in my eyes. If an Elder speaks at the TK Panel for Diavik, I want to see it done down the road. The Elders have good words to say to us. If we don't listen to those, that's not good for us. We need to listen and carry our knowledge. I listen to everyone at this table. I keep those good words that you said. That will save my land and water and animals. Mahsi cho.

Nancy: I'm concerned about the North Inlet, it's contaminated. It's a big lake. We haven't talked about the North Inlet.

Joanne: I want to say that George Marlow was really key in deciding what on earth we can do with the big mountain, the North Country Rock Pile. He worked really hard to show where the traditional caribou trail is across the island. He helped us figure out the slope for caribou. He was sad that they couldn't do much to make that hill smaller but he did the best he could. How to make a good, safe trail for the caribou again. At some point in the future we will have a session to focus on the North Inlet, and recommendations for how to clean it up and monitor it into the future.

Nancy: Can we put nets beside there and take water for tasting? Start monitoring that area? [For this camp].

Joanne: I am not sure, we are not going to the mine. We will have to talk to the mining people to see how close people can come. Are people comfortable taking fish and water from there?

Myra: The water from the North Inlet goes to the treatment plant and then to the North Inlet. So it is clean there.

Joanne: There are questions about how clean that water is.

Myra: We have a 600 person camp at the mine and we get our drinking water from the lake. But it goes through a treatment plant first.

Kathy: Is there added chemicals in the water, at the plant, that cleans the water? Do they add extra stuff to clean the water?

Myra: They take things out of the water. They aren't putting chlorine for example in. I'll check to tell you exactly what goes in it. But they clean it and put it back into the lake.

Joanne: But the North Inlet is a contained area at the moment, right, it doesn't flow through like it used to?

Kathy: Traditionally there are natural ways to filter water.

Joanne: There was one TK Panel session focused on how to use natural plants to clean the water. That's part of the planning already but is something that can also be applied to North Inlet. The mine is never going to look like it used to before it started. It's how we deal with the change that's happened, and make it as best we can, knowing there is always going to be a big hill there. There will be pits that will be filled that were never filled before, they were part of the lake. But they became pits to get the diamonds out.

Natasha: If people can look at the maps tonight, they will notice where the AEMP collected fish and water last time. The vegetation program too, where the sampling locations are.

Joanne: At the camp, we will ask you where you want to set nets and check water.

Charlie: [Translated] He wants to know about GPS.

Joanne: They have it on the boats. We can mark off where the nets are set for future reference. We can get the exact spot they want. Please look at the questions and maps to think about where to set nets and water, and why you want to go there.

Myra: Re: the question about chemicals, they don't add or put any chemicals in the water before they put it back in Lac de Gras. And Doris asked for copies of the video on USB. We had some made, one for each community, if you want more, we can make some more.

Joanne: One final thing we will ask you to do is the medical form that Diavik has. I am worried about asking you to fill it out at home, we really need it filled out.

Natasha: Those forms are confidential.

### **[End Day 2/3 Meeting Notes]**

#### **Day 3/3 Agenda: Friday June 25 - Planning the TK Panel Session**

9:00 am Welcome coffee

9:15am Presentation: Overview of Monitoring Programs at Diavik and Recommendations Made by TK Panel To-Date

Round Table: Can you share some highlights of your community monitoring programs?

Discussion:

- What should be watched in a monitoring program during and beyond closure?
- Where, when and how should the site be watched?

12:00 pm Lunch (provided)

1:00 pm Discussion (cont'd):

- How best can we use our time on-the-land to advance a watching programs at site now and into the future?

Next Steps

3:00 pm Round Table: Closing Circle

4:00 pm Closing Prayer

### Day 3/3 Meeting Notes:

Peter: Opening Prayer

[Group fills out medical forms]

Sarah: [Presentation: TK Panel Monitoring Overview]

Victor: Climate change is a very important consideration. What has the TK Panel done to address this, I don't see this in any of the slides? It's a very important consideration, especially when thinking about the vegetation and potentially hazardous material that is buried under permafrost, and rising temperatures. The level of the water and movement of it are key.

Joanne: Sarah isn't the best person to ask that; the TK Panel has looked at permafrost melt and climate change. The Panel wanted to make sure that it was monitored, especially because of the north and south country rock piles, and the fact that they are designed to stay frozen.

Victor: Isn't that dangerous? Having hazardous material where it might melt?

Myra: It is covered by a thick layer of permafrost and monitored.

Victor: I have lots of experience at other mines, Diavik, Gacho Kue, Ekati, and I didn't see this work?

Myra: We are doing this at Diavik.

Victor: There are going to be issues with this as temperatures rise.

Joanne: This is a really important topic, as well as the TK Panel work to address this, it's something we could revisit and discuss, in the context of vegetation monitoring this summer at the camp. We could discuss what should be monitored and how it might be affected by permafrost melt.

Albert: [Translated] It's important that the mine do their part for closure. How can we do things different than they have been done in the past? I always look to youth for this.

Caribou can break their legs on big rock piles and boulders, it's important to protect the big animals.

When you borrow something, you have to give it back in good condition. Some sites are not good and are not being given back in good condition. If one mine does well at reclamation, others may follow; that's partly why this work is so important.

Thank you to the TK Panel for all the work they have done.

Two weeks before the trip, everyone should get tested for Covid. We are Elders and nervous.

You have to have good equipment because I can't hear very well and we are all having the same problems not being able to hear or understand English or the translators. This is a big deal because what we are doing is very important.

Doris: About the rock pile, I didn't see them cover it, it's supposed to be frozen for 200 years? We have climate change so this is a big deal to say. It's not going to be the same in the future with different species and the changes; is it supposed to stay frozen for 200 years?

And we should have a book to see the changes, scientific and IK, that have happened since the monitoring started. Because the mine doesn't show members at home what is happening at the mine site. So we have less caribou now and it's because the mines are built right on their travel route. And three years ago people were fishing and there were worms. I know there was also spills. I hope this year that we can see what is happening out there. And I don't mind seeing it every three years but then it [information] goes to the Wildlife offices in communities and we don't see the results. People should get a binder in the mail with results. Then people can see changes and understand what is happening and why the camp happens.

Joanne: We send reports every time to the participants and IGOs. Hopefully that starts happening. For site selection and watching, that's wide open when we get there, except for weather.

For climate changes and permafrost, can somebody from Diavik please be prepared to speak to these issues?

Myra: Yes.

Joanne: We can also ask Diavik for the temperature results, because they have that information going back to pre-construction.

[Break]

Joanne: We need to focus on how to plan for fish camp. How will we decide for water and nets and plant where to go? Scientists will also be there and we can talk to them. Which plants, and where, do you want to look at?

Mark: When you look at plants, it depends on the weather and the season. If it's a good season, berries will grow, if it's a good year, plants will grow normally, blackberries, etc. And animals depend on these so a normal year of growth is important. Caribou and wolves rely on plants that need specific weather.

Joanne: Where we go will be determined by weather, but it's important to think about what you want to see. Elders in 2013 said they wanted to see science and TK about plants being monitored. Are there specific places we should do this? Places where we are especially concerned about the effects of dust on the plants and animals eating it, for example?

Doris: The location of plants – is this at the campsite or at the lake? Because of Covid we can't go to the mine, but it's important to see if the plants close to the mine are dead. It would be good to see plants in the water because we are across the lake from Diavik. Plants will look healthy away from the mine but may not be. I want to see if the berries are healthy. It's only three years ago that we were close to the rapids. We could stay close to the shore and the camp and look at plants, this would be good because the ground is rough for Elders to walk on. Elders can tell us which plants are healthy and which are not.

Gerome: Are the blueberry bushes taller in the barrenlands?

Doris: They are different.

Joanne: Myra, how close can we get to vegetation on the island?

Myra: I don't know. It would be good to include some of those sites that are being scientifically tested so we could compare what TK and science say.

Joanne: If not this year, we could go another year. What plants are important to which animals?

Doris: Lichen are important for caribou.

Albert: It's important to look at the plants and fish close to shore. The bears eat all summer and get fat, hibernate. Willows, grass, all the vegetation around the mine that grows should be watched. Sometimes places where they throw out grey water from the mine, the grass doesn't grow because there's stuff in the water. And the birds and ducks, fish, bugs, they are in the grass, and eat the grass, and eat what is in the grass. Fish eat in the grass in the water. Flies fall into the water, and fish eat those [so anything in the water goes through the ecosystem]. I one time saw ants in fish stomachs, they blew off the island [Diavik], and fish eat it. And fish don't stay in one place, they travel around, and people get sick from fish. You have to be careful.

There's changes to the water but they [Diavik] don't tell us what they are.

If you throw out grey water it's no good-you are saying it's not bad but if it isn't, why don't you use it again? We see the changes but we can't gather evidence that it's bad water.

With blasting, dust travels, you see the black dust on your shoes and on the grass, willows, it contaminates things.

We should go as far as we can toward the mine to watch things, berries, blueberries. I am Dene and travel on the land, I know contamination. We should go by boat, travel, and look on the shore, and show kids what to look for. We have to know what to look for when we go out.

Scientists come and that's good, but we are acting like scientists too when we are out there, because we know the land and lie on it. We know if it will be a good or warm summer or if the berries will be edible.

Nancy: I wanted to go to test water and fish close to the mine, in the north inlet.

Joanne: To go to the mine will have to wait until after Covid.

Albert: There is a correct way to do things. We should go by boat places to place and check berries in certain areas. Southwest of the mine area and island, we should check fish there. You have to check different places. Water has a different smell close to the mine because of blasting, so fish wouldn't go there.

Joanne: We will have to set nets in different locations.

Doris: We should set nets near and far from the mine, and compare them.

Joanne: Yes. Only limits are Covid and weather.

Albert: How many km if the camp from the mine?

Myra: About 4-5 km, it takes about half an hour.

Albert: It's important to cook the fish in different ways when we go out. It's important to look at the health of the fish and the water, and to look for healthy berries and bees, this is a good sign. Dust can go far from the mine, and birds, bees, animals, all eat from the land and the water. So it's not just the mine that gets sick.

Doris: There's a rapids at Coppermine, if weather is good, we should set nets there, close to the mine site and the narrows. Since the camp was established, all these things have been written down, but today do we see anything different? They should send emails or reports to people. Do we have pictures of what vegetation looked like in the past, what the site looked like? It is different with climate change now. [What were the results of past studies?] August Enzoe will give me a binder to check, and pull everything that was said. How is it different than 2003, the plants, the fish, the water? DDMI is doing all this testing but they don't share the results. It's important to talk face to face about these things.

Joanne: Can we get some Elder guidance on Covid protocols? Perhaps youth can leave the room? [Youth and Elders decided youth will stay, to learn and hear the discussion] [Discussion of how many people are vaccinated and personal comfort around vaccines. Marie Adele notes her son has not been out of community so should be safe. Doris and Marie Adele and some others feel a test should be done in the community before they leave, but some places do not have a nurse / clinic / way to do this. Tentative agreement by group that if people are tested before they go, group is comfortable with everyone not needing to be vaccinated; but some nervousness around this. Myra explains Covid protocols and agrees to plan / determine details of when and where people can be tested] [Break].

Joanne: Anything youth would like to learn in particular?

Gerome: I'm down to learn. I have done fish sampling with Ni Hat'Ni, will this be different?

Joanne: We do water samples at different depths, and do fish samples as Nancy showed us.

Kathy: I did some research on caribou moss, the lichen in particular that they like. We should monitor this. And in the winter, grasses and mushrooms and Arctic edible plants. We should see if we can get pictures of these, and maybe taste the plants out on the land. I found two books, I will send to Myra.

Myra: We can bring books if you send me the titles.

Joanne: [Roundtable on questions about upcoming camp and how to spend our time].

Marie Adele: Are we sleeping in tents? [Yes]. I want to pick berries, blueberries, collect medicines, and check the land. We should let each other know what we are picking, what it's used for, and share. I want to go to a hill and look, and sit and talk and teach and share everything with others. I want to get informed, to see for myself.

Bezoa: Is there a stove or fire? [Both]. I want to make toast.

Peter: I want to know more about what's happening at the mine with fish and water and on the shores, to go on the shore in the boat and get water. I want to look at the way the water flows to the Coppermine River and different areas with outlets, because it will be different in different areas. We should compare Coppermine areas with other areas, maybe three different areas, and near the camp.

Fish don't like pollution, they stay away from certain places and wherever water is flowing to and from, we should take water and fish from there.

It's on a caribou migration route [the mine]; caribou food is there, and that's why they are there, that's why they go to certain places. And they aren't there anymore. [Suggesting sampling different caribou foods on their route]

Therese: Thank you, I've never been to the barrenlands and I really want to see them. With mines, we don't know what water we are consuming.

Kathy: I have never been there (to the fish camp), I am really looking forward to it. They should bring another plane because there is so many things to bring.

Gerome: I have done water sampling with Ni Hat'Ni, are we doing it ourselves? [Yes].

Albert: We have to have great respect as Dene. If the vegetation is healthy, the land is healthy too. We have to talk about everything, this is how we will teach. We have to share concerns. We are going to be here after the mine, and our kids too. I hope the mine learns from their mistakes. Labrador tea is used for medicine, we should test this. If that dies, that means land is not healthy; we need to check it. We have to communicate what we are doing.

Doris: We have to pay respect, that's a teaching. If we want to learn we have to listen without electronics, phones, etc. In 2018 we took fish home to the community, we want to do that again, and to make dry fish. We should bring big bags for dry fish. I want to get berries, especially blueberries too.

Nancy: This is my third time up there. We stayed in the boat a long time to sample water. I want to check water and have time for youth to hear stories, for us to tell stories. I always learn something on the land.

Mark: It's important to crack the ice and to see if the ice is good, if there is anything at the bottom, then you will know if water is good too.

Charlie: We need to keep each other informed and share. We know how to do things on the land. We need youth who want to learn. Our ancestors travelled by the stars on the barrenlands sometimes. ... You have to watch the landscape and the sky and know your land when you travel, this is how you learn and teach youth. You have to sit with Elders and listen, and watch and learn; this is how TK is passed on. Maybe in July we'll do a canoe trip, get a moose, with the young people learning and doing. Elders and youth need to take care of each other.

Nancy: [Story about her son wanting to travel in the barrenlands, going from Bay Chimo to Diavik, and how he wants to take her on this trip]. Diavik needs to clean things up so that he and I can travel.

Joanne: Thank you so much to everyone for your patience and time. It brings me hope to see people coming together to care for the land.

Peter: [Closing prayer].

**[End Day 3/3 Meeting Notes]**

DRAFT

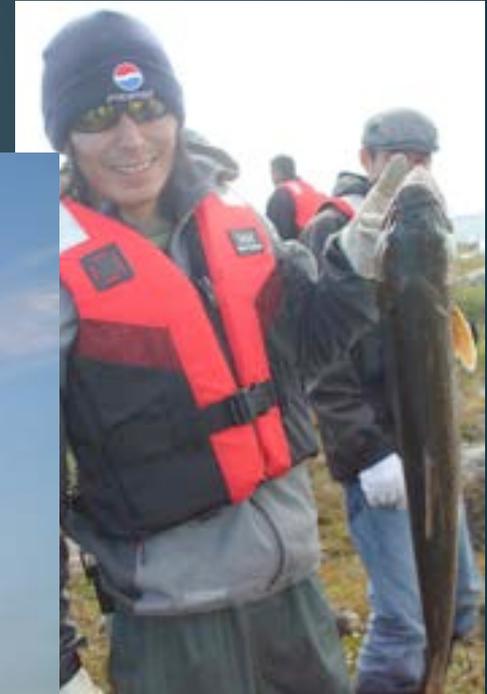


# Diavik Diamond Mine Aquatic Effects Monitoring Program: Overview for August, 2021

June 23, 2021 (Presentation 1)

# Outline

- What is the Aquatic Effects Monitoring Program (AEMP)?
- What are the key parts of the AEMP?
- What are the plans for 2021?



# 2021 Crew



# 2018 Crew

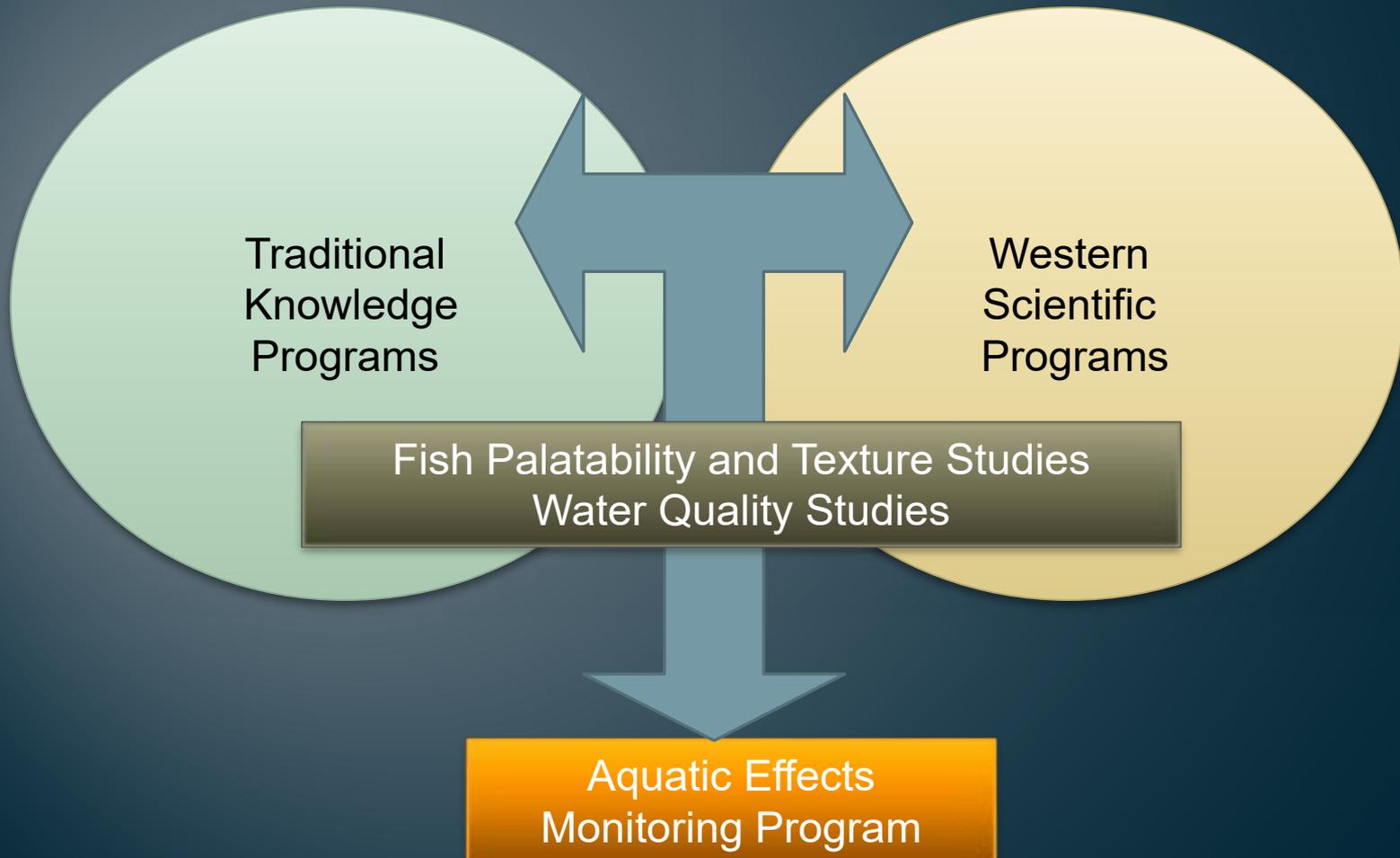


# What is the Aquatic Effects Monitoring Program (AEMP)?

- A way for community members to “watch” and “see with their own eyes” the health of the water and fish in Lac de Gras near Diavik Diamond Mine
- Participants: Elders and youth from the 5 signatory groups to the Environmental Agreement
- 5 days ‘on-the-land / water’
- Held many times:
  - 2002-2007, 2009, 2012, 2015, 2018



# What is the Aquatic Effects Monitoring Program (AEMP)?



Community  
Review, Input,  
Participation

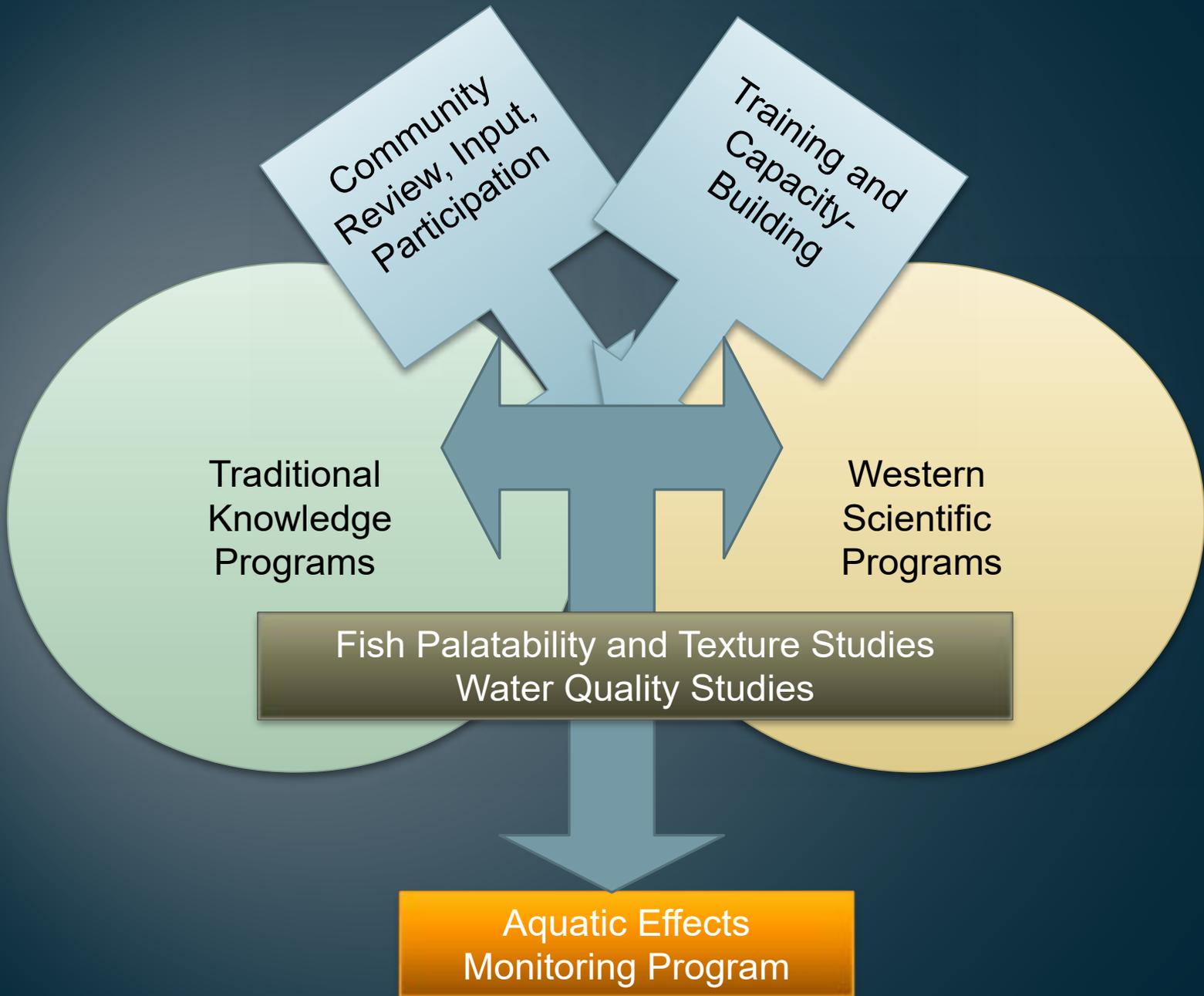
Training and  
Capacity-  
Building

Traditional  
Knowledge  
Programs

Western  
Scientific  
Programs

Fish Palatability and Texture Studies  
Water Quality Studies

Aquatic Effects  
Monitoring Program



# AEMP Goals

1. Provide a forum for information exchange between community members, scientists and DDMI particularly around mining and environmental issues;
2. Increase engagement and capacity building opportunities for communities;
3. Improve community involvement in, and understanding of DDMI's monitoring programs;
4. Enhance ways to use Aboriginal languages and to draw from customs and stories;
5. Facilitate Elder-youth and cross-cultural exchange;

# AEMP Goals

6. Improve contribution of 'TK data' in terms of collection, discussion, and verification;
7. Based on community feedback, expand on the standardized form used in the palatability studies, while continuing to collect data with the form such that data sets are standardized and comparable across years;
8. Initiate a TK interviewing element related to both water and fish that, for example, includes questions posed in the *Monitoring the Land by Watching and Using Caribou and Fish* (EMAB 2009); and
9. Explore identifying indicators of water quality and fish health from a TK perspective.



Diavik



CBM Camp



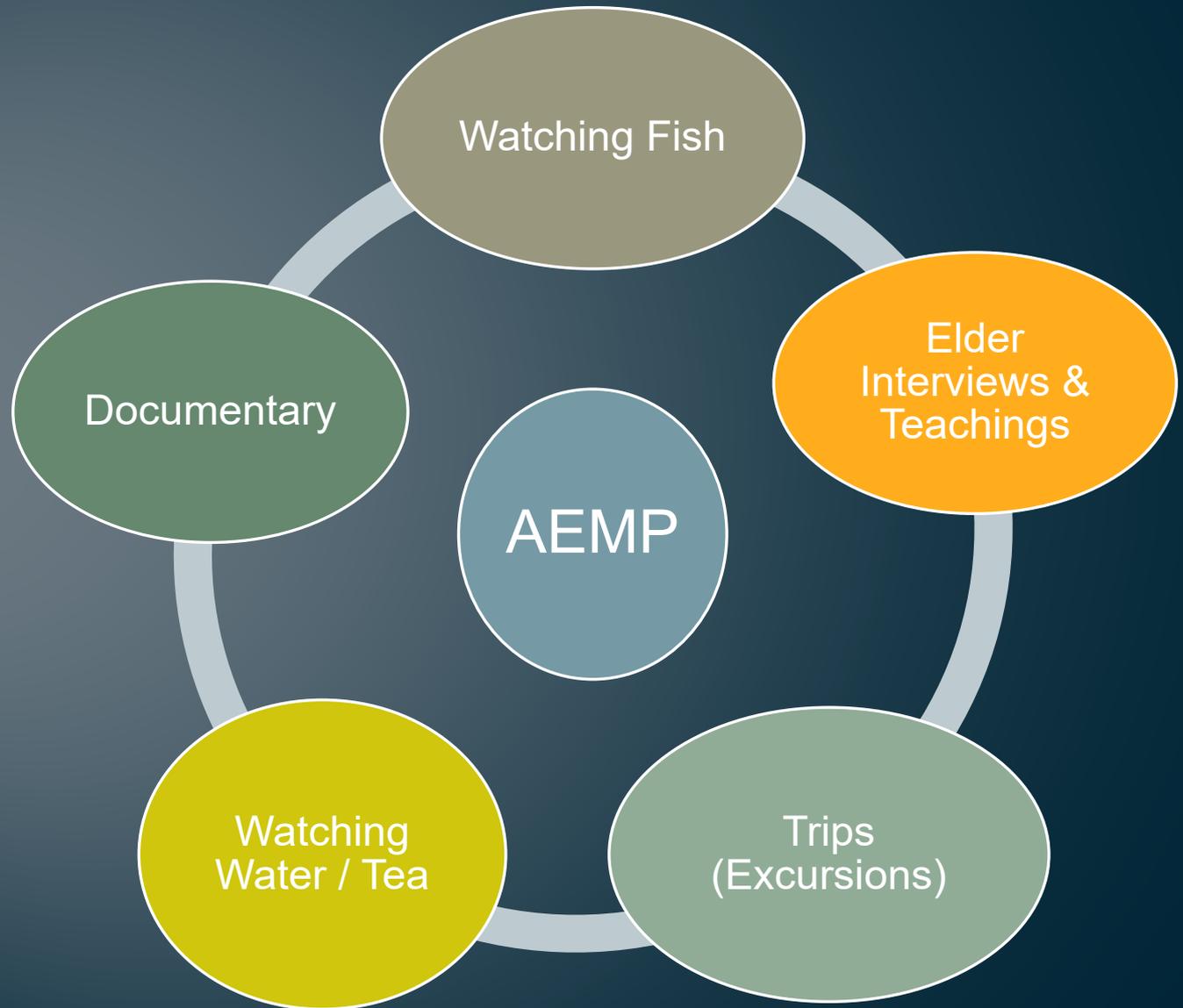
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Acquirec

# Where?



# Parts of the AEMP



# Watching Fish

- community members set nets (at least twice), catch and examine fish
- interview and fill out field form about how the fish look and feel
- biologists teach fish sampling methods to youth



# Tasting Fish

- community members prepare fish
  - grill
  - fry
  - bake
  - boil
- fill out field form about how fish taste and smell



Girth

Skinny  Average  Fat

Gills

Wine  Red  Pink  White

External

Firmness

Typical rebound  Slow rebound  
 Stays indented

Checklist of other indicators:

- Deformities
- Shape
- Scales

Fish type: \_\_\_\_\_

Fish ID (number): \_\_\_\_\_

Date: \_\_\_\_\_

Intestine

Deformities

Colour: \_\_\_\_\_  
Contents: \_\_\_\_\_

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

Internal

Checklist of other indicators:

- Heart
- Kidney
- Liver
- Odour
- Eggs

Tissue

Too Soft  Typical  Too Firm

**Overall Determination:**

- Would eat
- Would eat, but not enjoy
- Would not eat

# Fish Taste Study Questions

- 1) this fish looks excellent for eating and looks better than fish we usually catch;
- 2) this fish looks good for eating and looks similar to fish we usually catch;
- 3) this fish looks okay for eating but does not look as good as fish we usually catch;
- 4) this fish does not look good for eating and looks much worse than fish we usually catch; and
- 5) we would not eat this fish.

# Checking Water

- collect and test water samples from around Lac de Gras at locations selected by community members
- share knowledge of water, lake and surrounding area
- scientists demonstrate how to use equipment and take different types of water samples



# Tasting Water

- test water from two places in Lac de Gras by tasting tea and water
- Fill out field form



## Temperature

- Deep
- Cold
- Average
- Shallow
- Warm

## Tea Test

- Good Tea
- Average Tea
- Poor Tea

Sample #: \_\_\_\_\_  
Location: \_\_\_\_\_  
Date: \_\_\_\_\_

# Quality

## Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

## Movement

- Still Water
- Some Movement
- Running Water

Respect

■ Tobacco ■ Branch ■ Use of Language

Water  
is Alive

Proper  
Protocols

Other??

Eldercare

# Map of Fish Nets and Water Quality

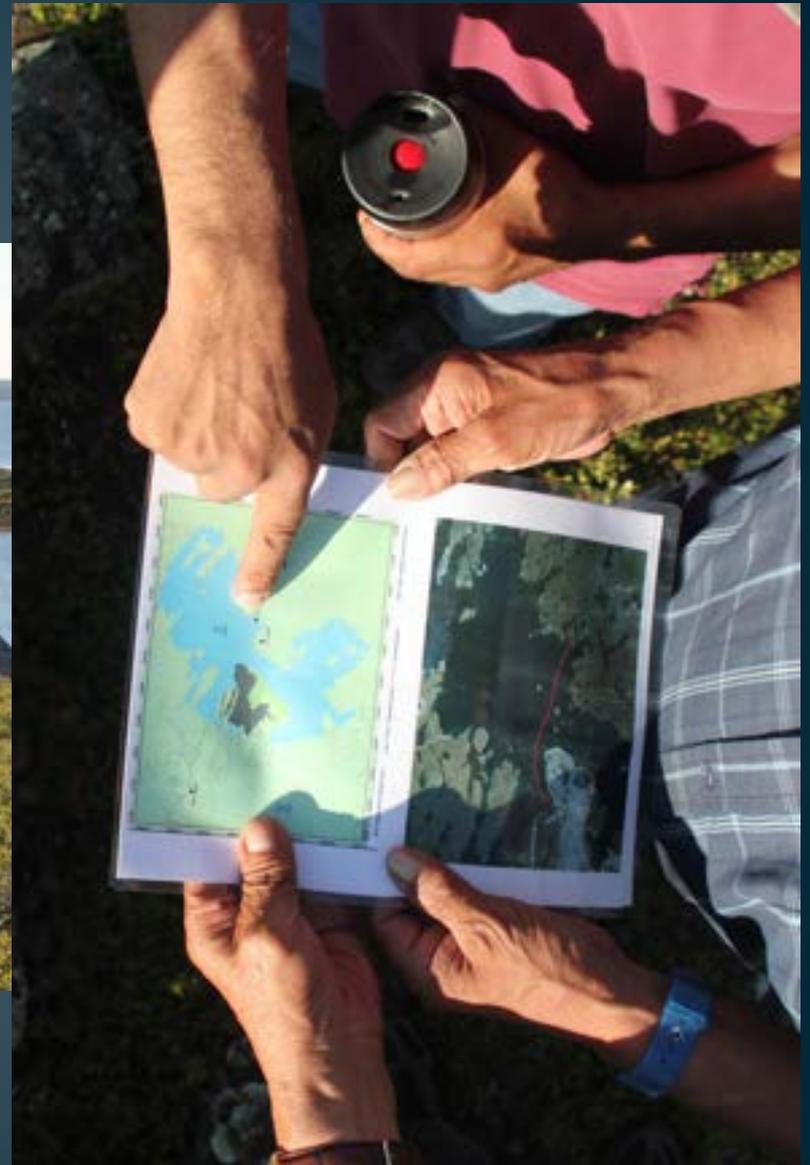


# Interviews / Video

Time for each group to share their stories, teachings, and insights of healthy fish and water



# Trips



# How would you describe the program to others?

- Engaging in monitoring the environment that is important to communities
- Amazing opportunity to learn about other northern cultures, as well as my own; invaluable time spent out on the land with wise and interesting people
- Amazing experience, awesome participants and camp leaders
- To monitor the mine close by
- Openness and helpful in ways of helping one another
- Good for youth; anywhere similar teaching on land
- I would encourage Elders and youth to take this opportunity
- I think its good but needs more traditional games
- Could be better and involve all community members
- Whoever wants to come, we should invite them in
- Same group should come back every 2 years
- You get on a good boat and go to a camp
- Join in



# How would you explain the value of this program to a senior leader at Diavik?

- Helped me understand what is being done to protect land and water and if Diavik is doing a good job; excellent community engagement; we can help with environment protocols having seen the land over many years; we need to work together
- The fish were in good shape so the water has to be, or the fish would be sick and dead
- Provided a hands-on, front-line exposure to the compliance monitoring and environmental impact management work that is required and aids in understanding how this is done and how complex and time consuming it can be
- Showed me what Diavik does to the water and what they're doing to help protect the land
- If we have Diavik and 5 regions report to their leaders on a regular basis, it would good all around
- If Diavik wants to help, why not?
- I think Diavik is a really good company to work with and understanding to accommodate what the Elders want to do
- Have this monitoring program on-going; more programs for youth and Elders; provide more for interpreting when we go into the evenings
- Dene involvement in on-going programs; check the water testing in spring time
- Very good program for it helps them to understand our ways of respecting the land and to help them in thinking of ways to pay more attention to stories; and for thinking about ways to do reclamation
- Protecting the environment is very important to us; work very close with First Nations
- Gives me ease knowing the mining does not have negative effects on the fish and water

# Do you feel there was anything missing from the camp?

- ✓ More youth involvement (x3); an experience like this can be life changing for youth
- ✓ Could be more fun
- ✓ Perhaps a bit more time for an optional on land activity
- ✓ Would have like to eat more fish, berries, etc. Maybe if each group got to cook something with the help of the cook each night, it would be an opportunity for more teaching/TK, e.g. fish egg bannock, blueberry crisp, fish guts, fish soup/chowder (Hilda was amazing).
- Ice cream
- Urinals
- Direct contact with home community
- Calling home, if possible
- Maybe a caribou program, too
- Everything good



## **Diavik Diamond Mine Aquatic Effects Monitoring Program: Participant Recommendations (2018, 2015)**

June 23, 2021 (Presentation 2)

# Discussion



---

What were the strengths and weaknesses of earlier AEMP or other on-the-land camps?

---

What is important for the upcoming camp?

# Participation



- More youth
- We need to use the camp as an opportunity to strengthen the spiritual understanding of the youth to counter their problems/challenges

## Methods (2015)

- any impacts from mining. Include some 'land' studies in future studies for this program, e.g. plants or shoreline vegetation and any dust on the plants
- Consider doing a similar program for caribou – harvest an animal, look at it, cook it and taste it – in mid-September.



## Methods (2015) (Cont'd)

- Plan for a boat trip all the way around East Island during the next camp. Participants want to see the entire island with their own eyes.



## Methods (2018)



- Better time management and planning in some areas
- More footage in the film of caribou tracks and people having fun when walking on the land or circle talk in the evening.
- More visuals, including photographs of the camp
- More Days

## Logistics (2018)

- Improve the pathway to the tents
- Better fishing rods with stronger line
- Nets should be 5-6" mesh size for average and decent size fish
- Need a new kitchen
- It would be nice if we can phone home once



# Discussion



---

What were the strengths and weaknesses of earlier AEMP or other on-the-land camps?

---

What is important for the upcoming camp?

**What is important for 2021?**

# Discussion



---

Are there any adjustments needed to the fish program?

---

Are there any adjustments needed to the water program?

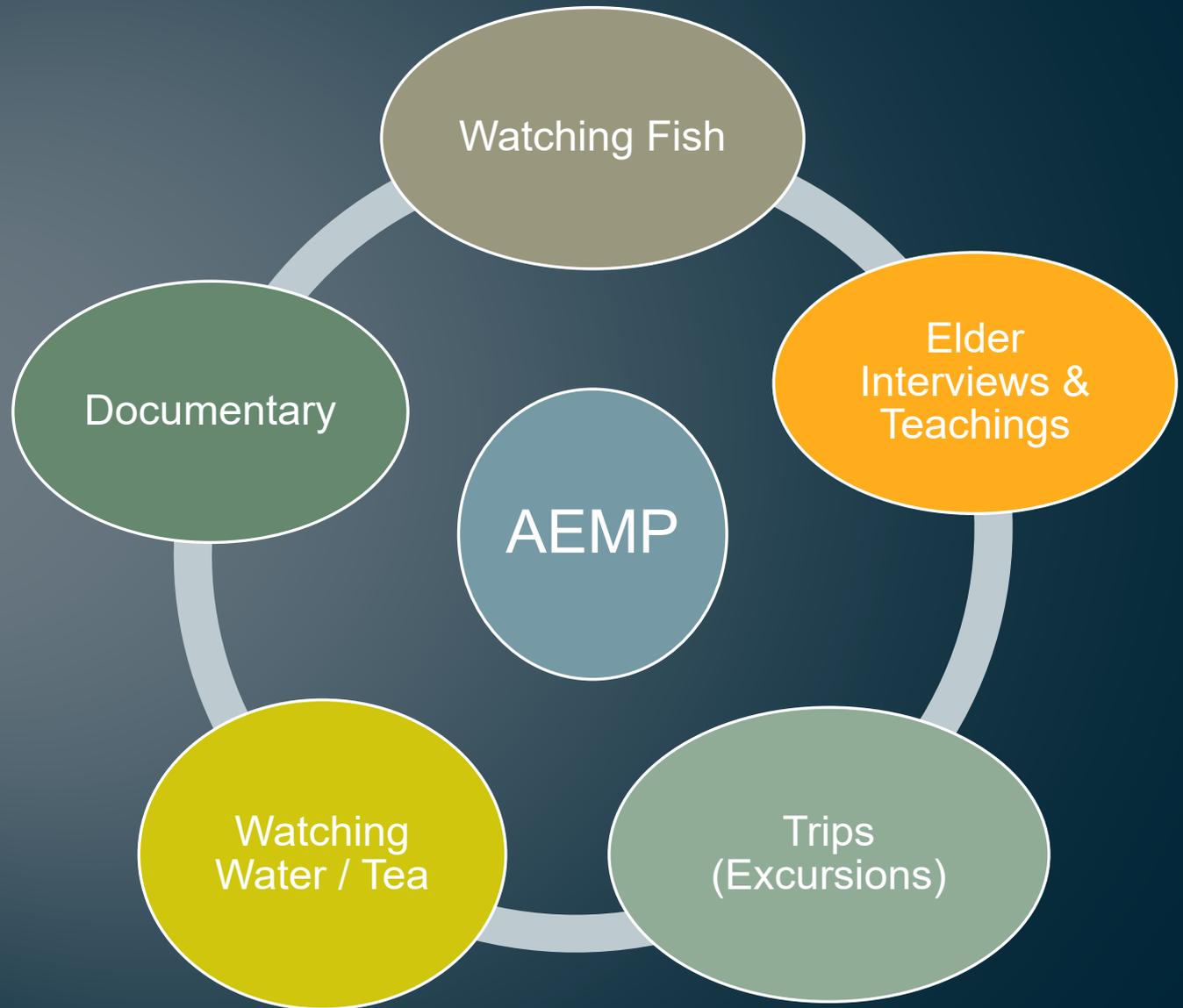
Adjustments?



# Diavik Diamond Mine Aquatic Effects Monitoring Program: Watching Fish: Sampling & Tasting

June 23, 2021 (Presentation 3)

# Parts of the AEMP



# Watching Fish

- community members set nets (at least twice), catch and examine fish
- interview and fill out field form about how the fish look and feel
- biologists teach fish sampling methods to youth



# Tasting Fish

- community members prepare fish
  - grill
  - fry
  - bake
  - boil
- fill out field form about how fish taste and smell



Girth

Skinny  Average  Fat

Gills

Wine  Red  Pink  White

External

Firmness

Typical rebound  Slow rebound  
 Stays indented

Checklist of other indicators:

- Deformities
- Shape
- Scales

Fish type: \_\_\_\_\_

Fish ID (number): \_\_\_\_\_

Date: \_\_\_\_\_

Intestine

Deformities

Colour: \_\_\_\_\_  
Contents: \_\_\_\_\_

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

Internal

Checklist of other indicators:

- Heart
- Kidney
- Liver
- Odour
- Eggs

Tissue

Too Soft  Typical  Too Firm

**Overall Determination:**

- Would eat
- Would eat, but not enjoy
- Would not eat

# Fish Taste Study Questions

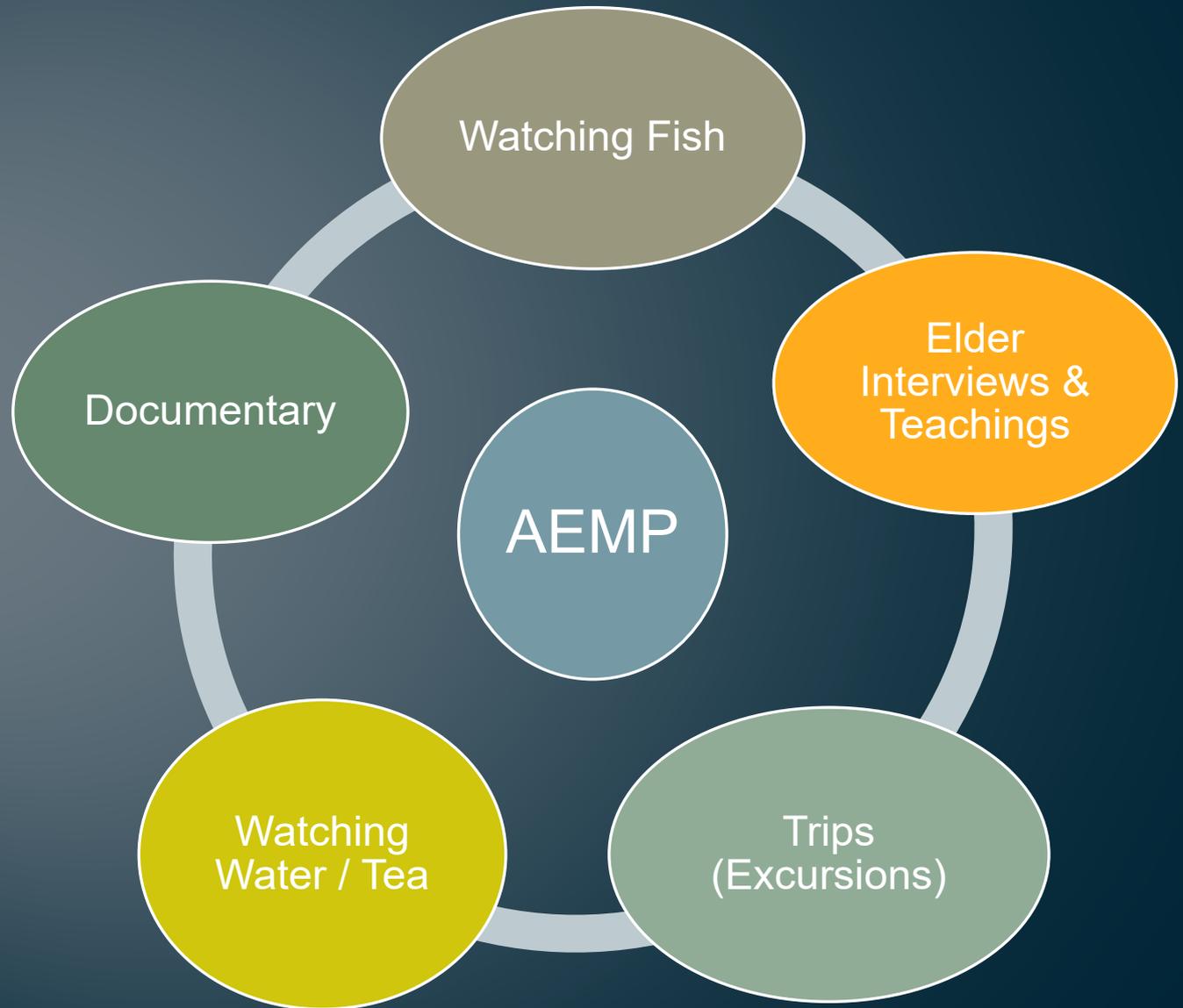
- 1) this fish looks excellent for eating and looks better than fish we usually catch;
- 2) this fish looks good for eating and looks similar to fish we usually catch;
- 3) this fish looks okay for eating but does not look as good as fish we usually catch;
- 4) this fish does not look good for eating and looks much worse than fish we usually catch; and
- 5) we would not eat this fish.



# Diavik Diamond Mine Aquatic Effects Monitoring Program: Watching Water: Sampling & Tasting

June 23, 2021 (Presentation 4)

# Parts of the AEMP



# Checking Water

- collect and test water samples from around Lac de Gras at locations selected by community members
- share knowledge of water, lake and surrounding area
- scientists demonstrate how to use equipment and take different types of water samples



# Tasting Water

- test water from two places in Lac de Gras by tasting tea and water
- Fill out field form



## Temperature

- Deep
- Cold
- Average
- Shallow
- Warm

## Tea Test

- Good Tea
- Average Tea
- Poor Tea

Sample #: \_\_\_\_\_  
Location: \_\_\_\_\_  
Date: \_\_\_\_\_

# Quality

## Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

## Movement

- Still Water
- Some Movement
- Running Water

Respect

■ Tobacco ■ Branch ■ Use of Language

Water  
is Alive

Proper  
Protocols

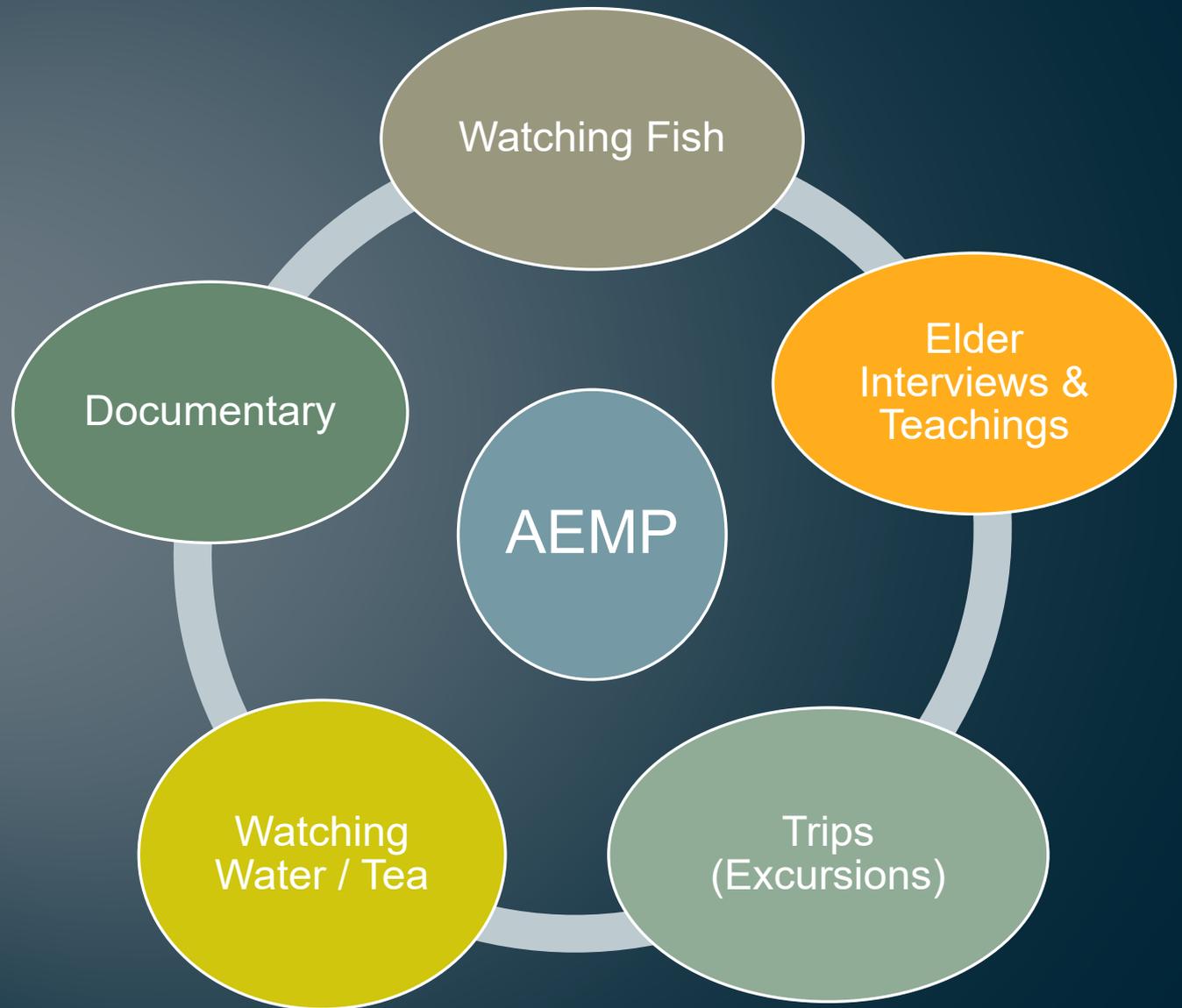
Other??

Eldercare

# Map of Fish Nets and Water Quality



# Parts of the AEMP

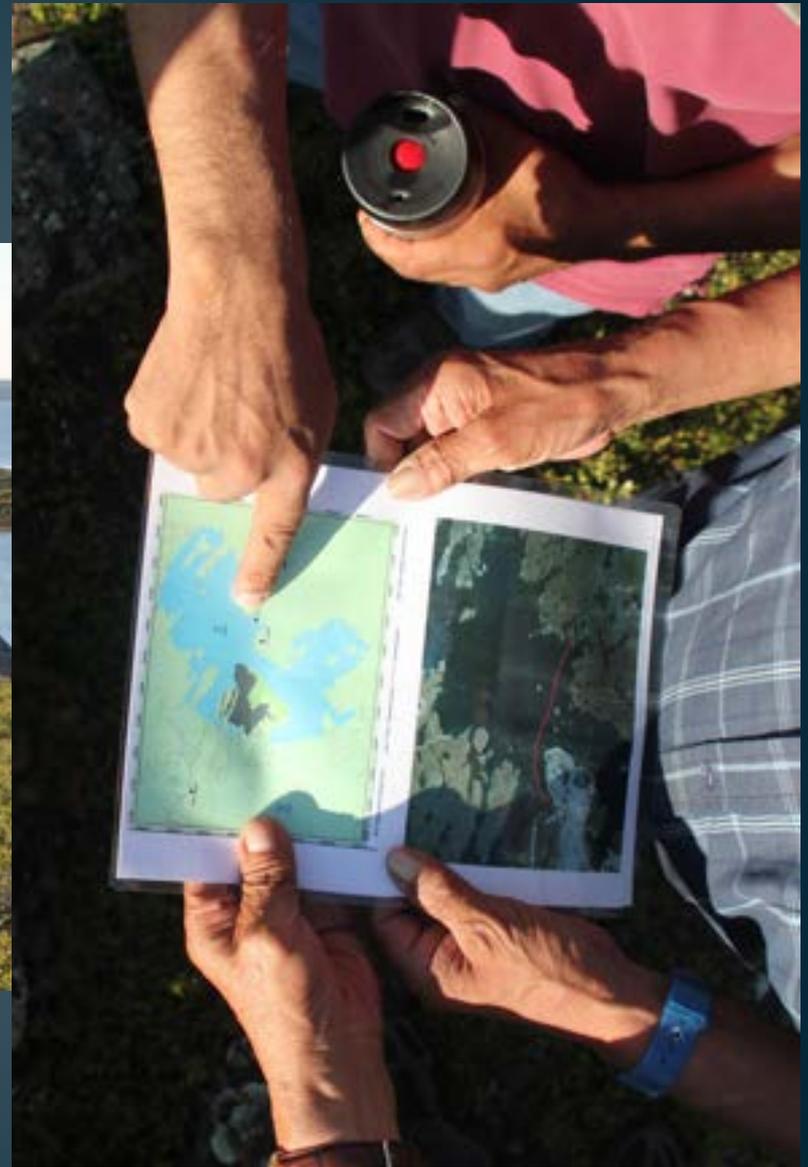


# Interviews / Video

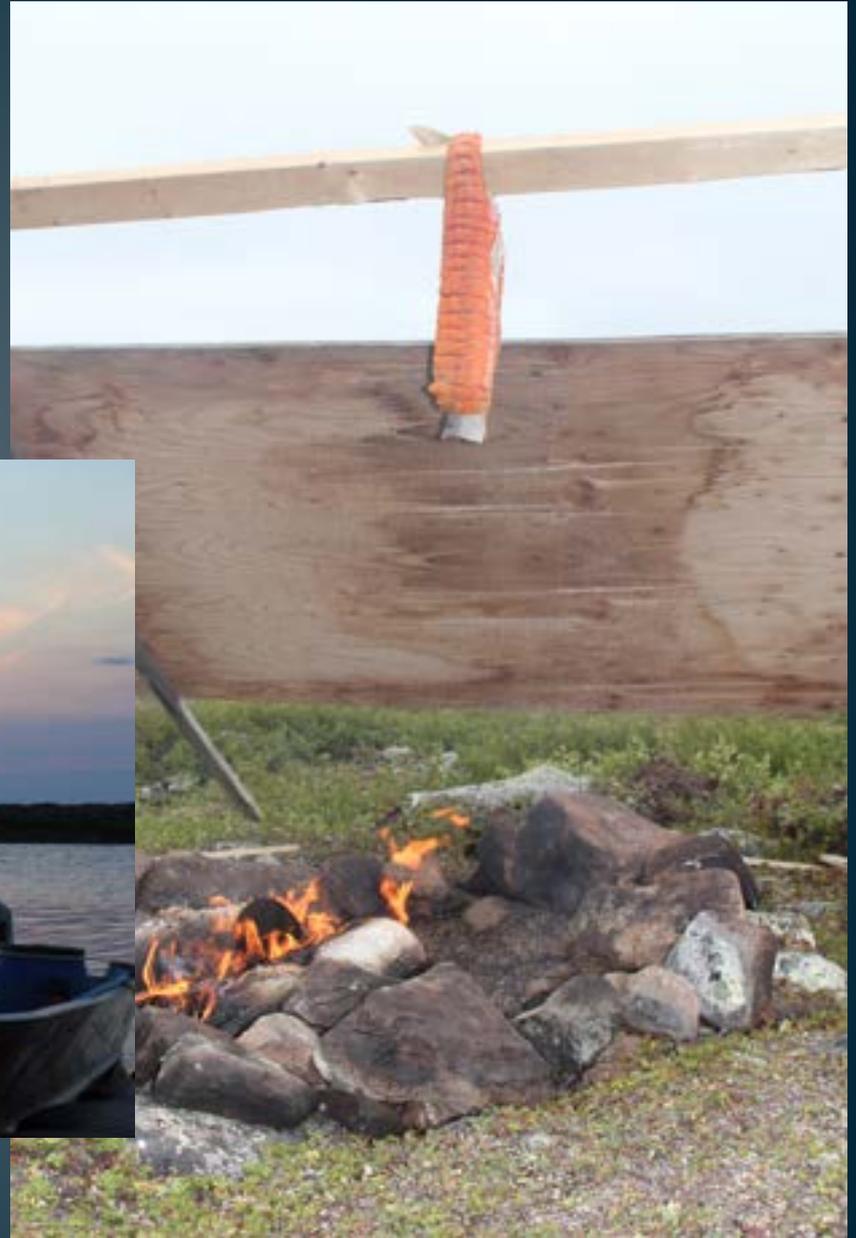
Time for each group to share their stories, teachings, and insights of healthy fish and water



# Trips



# Questions?





## **Diavik Diamond Mine Aquatic Effects Monitoring Program: Lessons Planning (2018, 2015)**

June 24, 2021

# Discussion



---

Are there activities we should do or places we should visit?

---

Are there any special lessons that Elders want to teach?

# Possible Teachings



- Plants, and traditional medicines (please bring supplies, medicines, resource materials, books) - Everybody
- Plant habitats and connections/links to wildlife - Everybody
- Knots - Wayne

# Possible Teachings

- Detailed lessons on how to prepare fish – make the youth “learn by doing”
- “Fish doctor” – teaching youth about healthy fish- Narcisse
- Freezing fish properly (newspaper, saran, foil, vacuum seal?)



## Possible Teachings (2015) (Cont'd)



- Traditional rules and protocols around respect and caring for the land, water, earth - Everybody
- Reading the sky, clouds, predicting weather, safety – Narcisse and Bobby

# Discussion



---

Are there activities we should do or places we should visit?

---

Are there any special lessons that Elders want to teach?

## Activities ? Lessons? Places to Visit?

- How to tie knots (knot book) - Kathy
- Living on the land, learning from the land, respectful protocols such as paying the land (use a gentle approach) – Albert
- Using plants for survival, making medicine and food- (plant books) - Doris
- Paying attention (no phones) – Doris
- Ask youth what they want to learn; nightly fireside lessons – Nancy

## Activities ? Lessons? Places to Visit?

- Hard work and independence on the land; hunting by kayak / boat; long ago stories and lessons – Mark
- Importance of Indigenous languages – Mark



Illustration by Bella Kapolak (Thorpe et al 1998)

## Activities ? Lessons? Places to Visit?

- Traditional fishing ways – fishing line? Harpoon? Bow and arrow? Wooden jig? Ulu? Nauna? – maybe raw supplies we could bring??
- How to set up a tent – Charlie Football
- Take orphans / youth on the land to teach them to prepare an animal (show youth; learn by doing)
- Importance of land to make you feel good – Charlie Football
- Respecting the land and water and others (traditional rules)- Mary Adele

## Activities ? Lessons? Places to Visit?

- When Elders talk, you must listen – Peter
- We must teach them everything from morning to night! – Peter
- Firearm and hunting safety; knife and axe sharpening; taking care of your tools / things- Peter
- Watching wind and water; boat safety (balance) – Peter
- Walk in my footsteps, walking on the land - Therese
- Making dry-fish - Therese

## Youth want to learn ...

- How to navigate, read and watch the land while we travel, direction of trees by the sun,
- How to start fires from the land (in wet and dry conditions)
- How to build a shelter using things from the land
- Basic words and communications in Indigenous languages of animals, plants, utensils
- Identify animal footprints (and maybe poop or other signs?) and direction they are going (how to read the land?)

## Youth want to learn ...

- Trapping, snaring, traditional songs, traditional medicines, dryfish, using flint - Beazoa

## To Bring...

- Plant books
- Nautical knots books and sections of rope
- Files for sharpening knives and axes
- Fish line, hooks, - can DDMI provide wood to make jiggers?



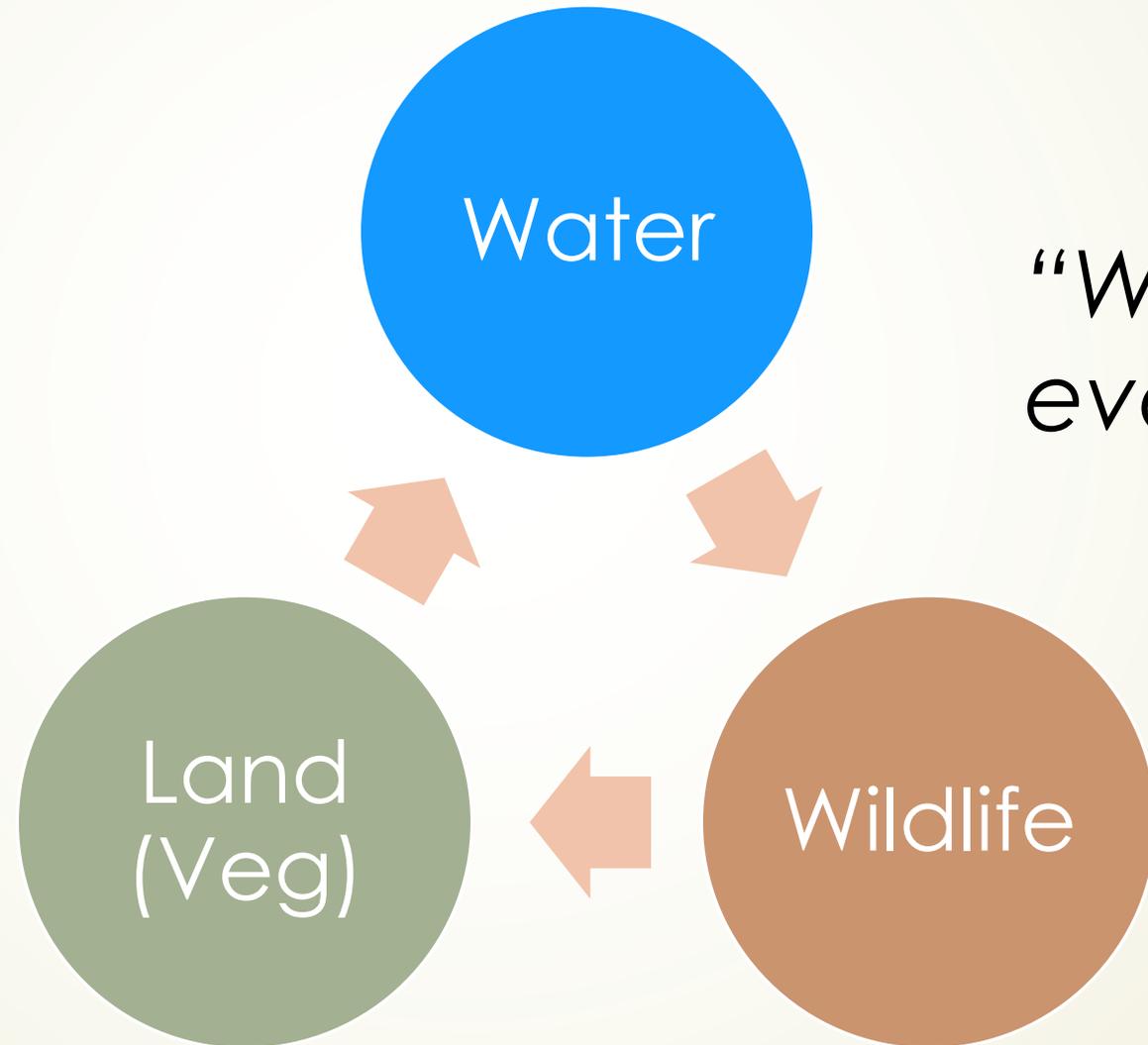
Presented at the  
AEMP and TK  
Panel #13  
Planning Session  
June 25, 2021  
(Presentation 7)

# Traditional Knowledge Panel: Monitoring Recommendations to Date

Foundations  
of the TK  
Panel  
Recommendations

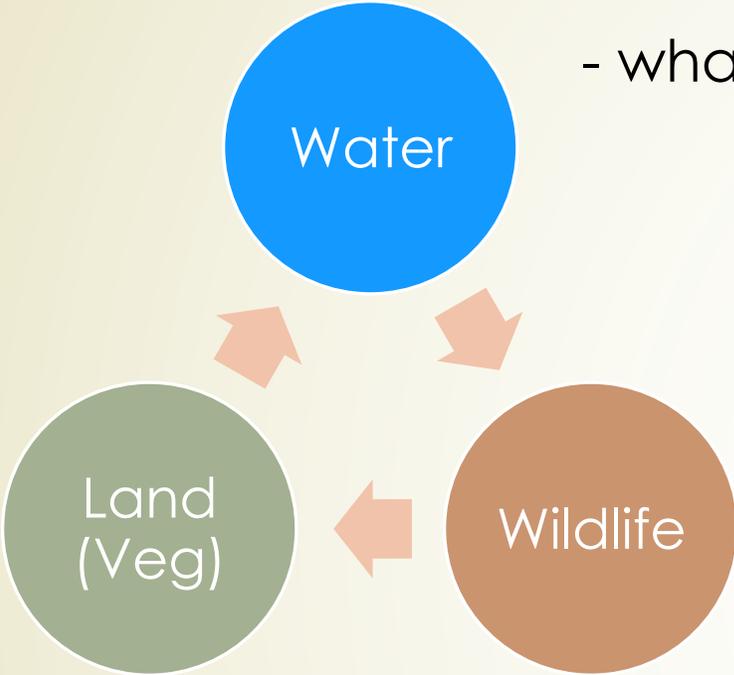


**What** the TK Panel wants to watch:



*“We watch everything!!!”*

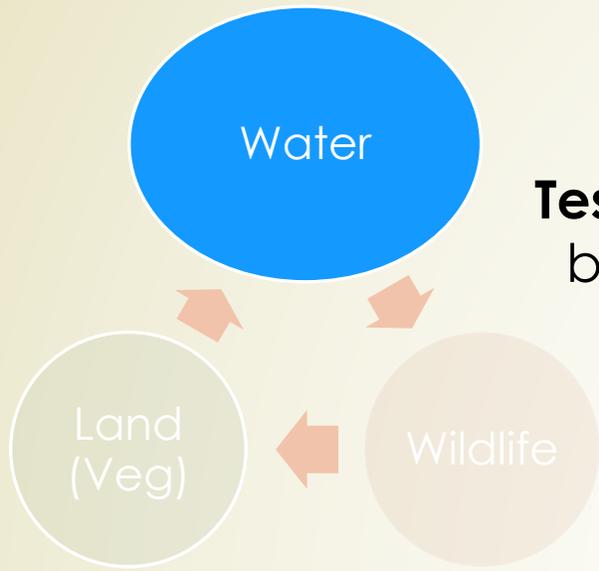
## Start-up watching projects might look at:



- what plants are growing on disturbed ground and why/why not;
- presence of grounds squirrels on the East Island;
- health of the shorebirds on the water (as an indicators for health of water);
- snow accumulation and natural revegetation around boulders atop the test pile;
- watch and monitor dust impacts on water and plants as an important part of the food chain;
- animal scat, this should be part of a TK Watching program;
- look at possible impacts on plants, with special consideration for those used for medicine.

**Effectiveness Monitoring:** Focus monitoring to determine if steps taken/closure and reclamation actions are working the way they were intended, through the following measures:

- 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.)



# **What** the TK Panel wants to watch: Water

**Testing with TK:** 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).

**Testing with Science:** Test water [first] scientifically and not by tasting.

**Sampling Time:** Monitor water in late May and early June as these are critical times (i.e. melt).

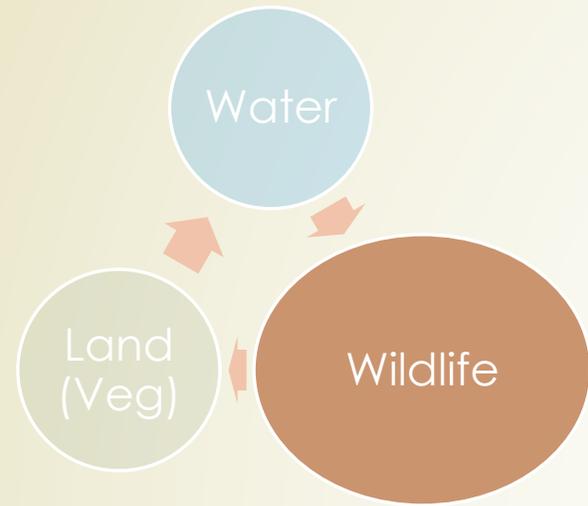
**Sampling Points:** Regularly measure water quality in all bays, drainage and run-off.

**The Narrows:** Sample fish and water from the Narrows (In both LdG and LdS).

**Fish Know Good Water:** 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.



# **What** the TK Panel wants to watch: Wildlife

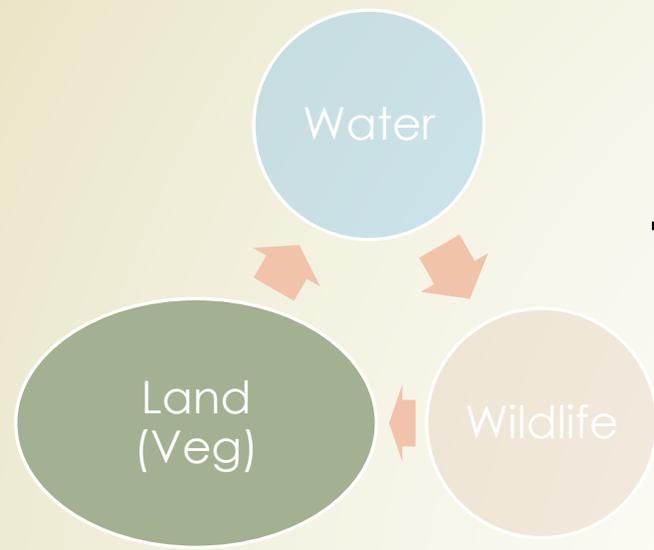


**Watch Caribou:** Four key areas for [caribou] monitoring: 1. Behaviours; 2. Herd composition; 3. Caribou health 4. Environmental conditions

**Use Technology:** 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. Ensure that all communities are involved in choosing where to establish locations for wildlife cameras, etc. Build 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



**Watch all Mines:** Focus monitoring on wildlife health and safety and possible impacts of other mines in the Lac de Gras area.



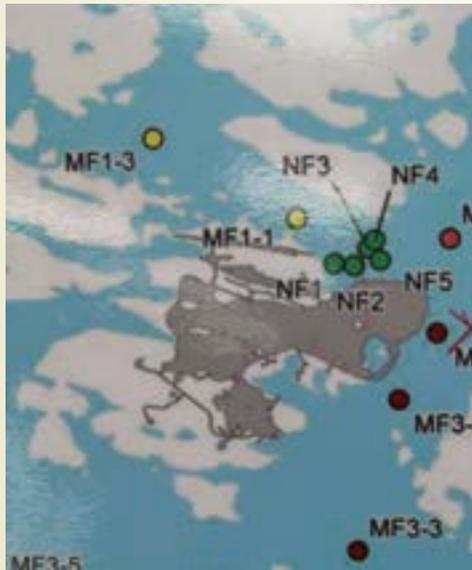
# **What** the TK Panel wants to watch: Land

**Transplant:** Transplant a variety of natural ‘tundra mats’ and compare them to seeded test plots; this will help natural recovery by maintaining the biodiversity of the area.

**Reseed:** Re-seed land and use dirt and safe sewage to facilitate re-growth. Use the natural tundra mat to guide plant selection to ensure natural balance.

**Women Perspective:** Have a women’s only session in the field next summer to address vegetation and other issues of interest to them.

**Watch Shoreline:** Annually check for algae growth around shorelines as too much can be an indicator that there is less oxygen for the fish.





Questions?



The RioTinto logo is displayed in white text on a red rectangular background. The background of the entire slide is a photograph of a field of white, fluffy flowers on green stems, with a soft-focus background of more greenery.

RioTinto

# Diavik Vegetation Monitoring:

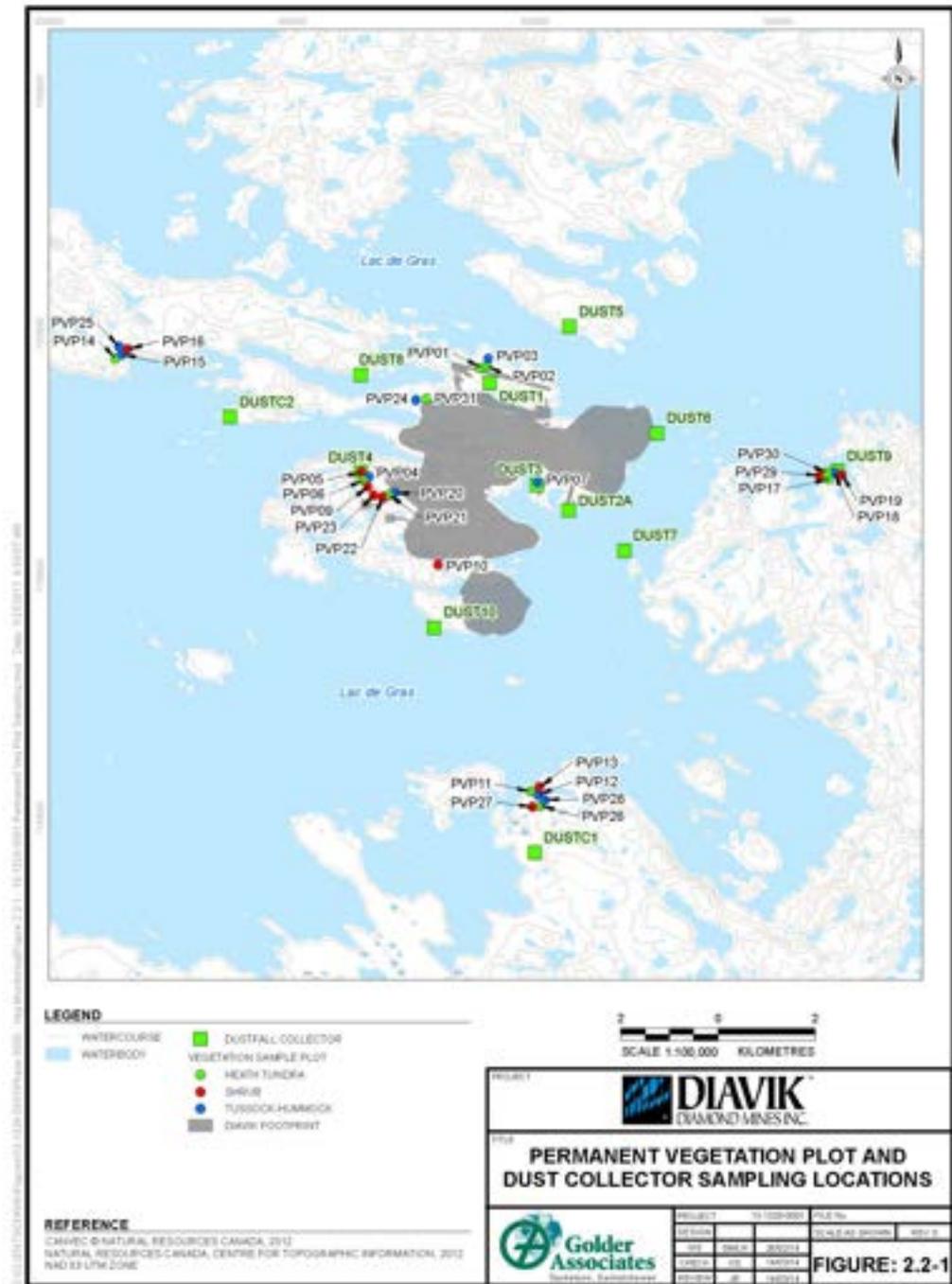
Presentation for 2021 TK camp

Gordon Cumming (DDMI) 24 June, 2021

Document Control #: ENVI-1215-0624  
Template #: DCON-029-1010 R8

# Vegetation-Related Monitoring Programs

- Vegetation and Lichen Monitoring Programs – Golder Associates
  - Completed in 2001, 2004, 2006, 2008, 2010, 2013, and 2016.
  - Now completed concurrently every 5 years, next one scheduled summer 2021
- Dust gauge collection program – 13 dust tubes collected every 3 months.



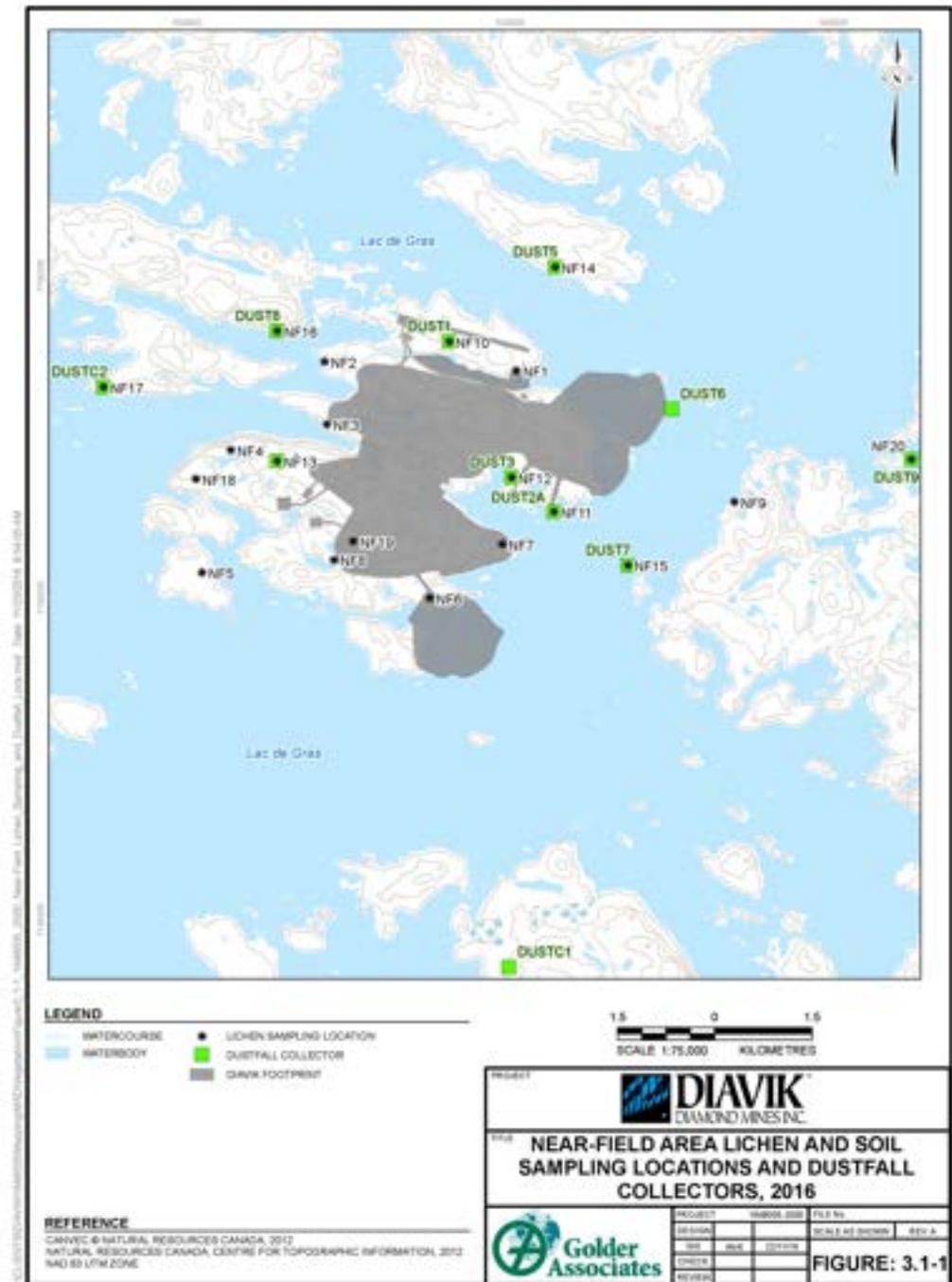
# Vegetation Monitoring Program

- 30 Permanent Vegetation Plots (PVPs) established since vegetation studies began in 2001.
- Plots are analyzed for plant species diversity and plant species abundance, looking for changes through the years, and between locations.
- Plots described as Mine plots or Reference plots based on distance from the Mine. Reference plots are compared against Mine plots.
- Dust deposition rates are analyzed to compare against vegetation findings.



# Lichen Monitoring Program

- Collection of lichen samples for chemical analysis of metals content. Determine possible health effects to caribou
- 3 sampling zones:
  - Near-field up to 6km from Mine,
  - Far-field 30km to 40km from Mine
  - Far-far-field 100km from Mine
- Several sites added to all zones in 2013 at the direction of community elders.
- Soil samples collected to analyze soil chemistry at all lichen sampling locations.
- Comparison between distance from mine, and changes between years.



# Dust Monitoring Program

- 13 dust gauge tubes permanently installed on the tundra get collected quarterly, the dust in each tube is weighed.
- Average dust deposition rate for each location calculated based on time the tube was replaced.
- Provides an indication of how dust deposition rate changes throughout the year, and at different locations around Lac de Gras.
- Sampling of snow cores for dust analysis on the lake, gives an indication of deposition rates over the ice cover period.

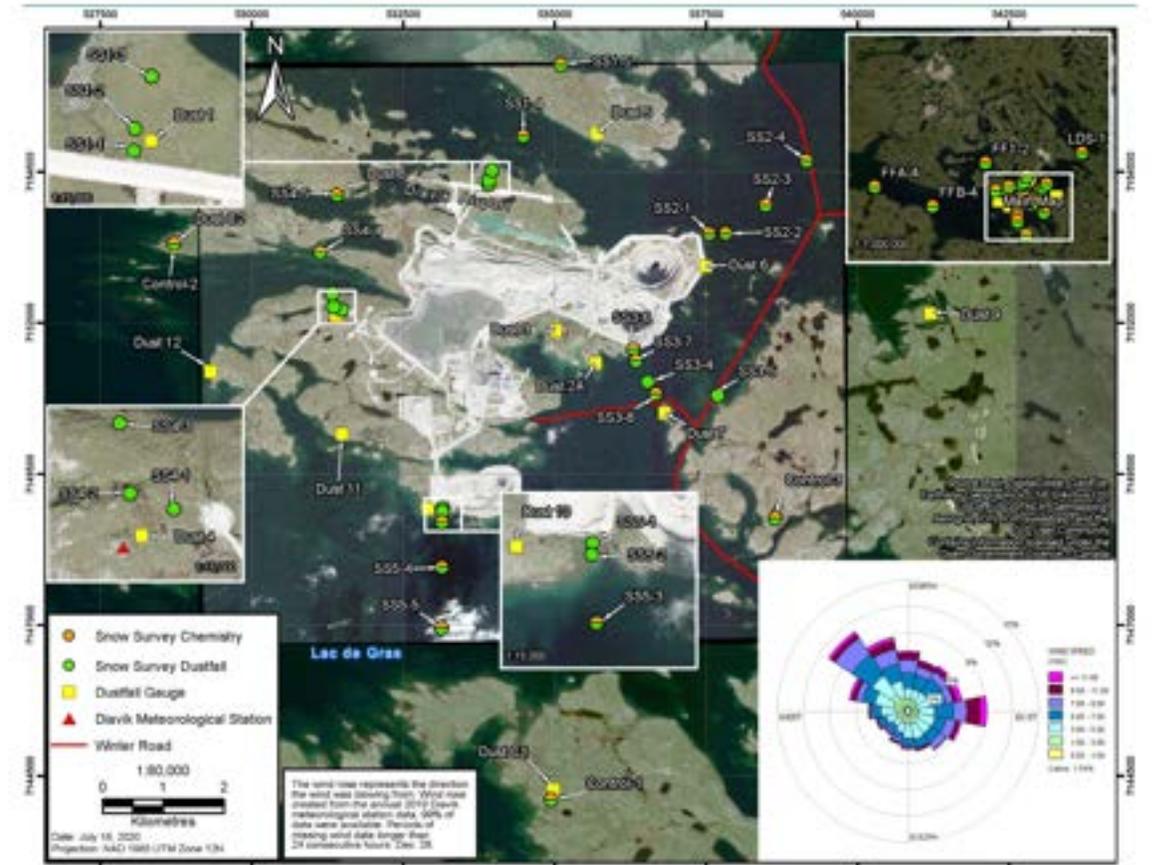


Figure 2.1-1: Dustfall Gauge and Snow Survey Locations, Diavik Diamond Mine, 2019

Thank you!

Questions?



The RioTinto logo consists of the word "RioTinto" in white, bold, sans-serif font, set against a red rectangular background. The background of the entire slide is a photograph of a vast, flat landscape covered in low-lying green vegetation with numerous small, white, star-shaped flowers. In the distance, a body of water is visible under a blue sky with scattered white clouds.

**RioTinto**

# Diavik Wildlife Management and Monitoring Plan Presentation

Diavik Diamond Mines (2012) Inc.

Gordon Cumming (DDMI)

2021-06-25

Document Control #: ENVI-1214-0625  
Template #: DCON-029-1010 R8

# Wildlife Management and Monitoring Plan Objectives

The main goals of the WMMP include:

- Where possible, include Traditional Knowledge (TK) and community member involvement in the programs of the WMMP;
- document Mine-related effects and test impact predictions made in the Environmental Effects Report (EER) of 1998;
- implement operational practices that mitigate disturbance to wildlife and wildlife habitat including migratory birds and their nesting areas, species at risk, and caribou;
- evaluate the accuracy of key predictions regarding the effects of the Mine directly on wildlife and wildlife habitat and adjust environmental management and monitoring practices accordingly; and,
- design studies and data collection techniques that will contribute to understanding and managing cumulative effects that can be shared across the NWT mining sector.

# Diavik Wildlife Study Area 2020



Diavik conducts wildlife research in the vicinity of the Mine.

TK participants annually help with wildlife monitoring programs, particularly Wolverine Snow Track Surveys

In 2020, no community participation occurred in order to protect communities and staff from Covid-19

Wildlife research at Diavik focuses on Barren-Ground Caribou, Grizzly Bears, Wolverines, and Raptors (birds of prey)

# Landscape Changes



Diavik's current footprint is 11.41 km<sup>2</sup>

The current footprint is expected to be at its maximum now for operations, with the exception of the South Country Rock Pile. The footprint may expand slightly during progressive reclamation activities on the North Country Rock Pile.

The current footprint is below the predicted value of 12.67 km<sup>2</sup> from the EER

# Barren-Ground Caribou Management



Behaviour scans on Caribou by Environment personnel whenever reported near the Mine, or when encountered off-site. – total of 33 group scans in 2020

Noting habitat type caribou are in during behaviour scans.

Report all mine-related injuries or mortalities – 0 in 2020

Inclusion of TK knowledge questionnaire whenever community member is on site

Allow all animals right-of-way, manage traffic when caribou are near haul roads

# Barren-Ground Caribou Summary



Caribou habitat loss continues to be below the EER prediction.

There continue to be low levels of caribou interacting with site and mortalities are very infrequent (one in 2004).

Mitigation continues to be effective at limiting effects to caribou.

# Grizzly Bears



Environment does education and outreach to workplaces around site on grizzly bear safety and requirements to report bears they see.

Deterrence away from areas with humans by trained Environment personnel, reporting to GNWT-ENR of all deterrent activities.

Direct grizzly bear habitat loss: 8.20 km<sup>2</sup>, less than the 8.67 km<sup>2</sup> predicted in the EER.

Responsible management of waste to reduce attractants.

Covering of all exterior door handles with metal plates to prevent wildlife entry indoors

Mitigation continues to be effective at limiting grizzly bear incidents and mortalities.

# Wolverines at Diavik



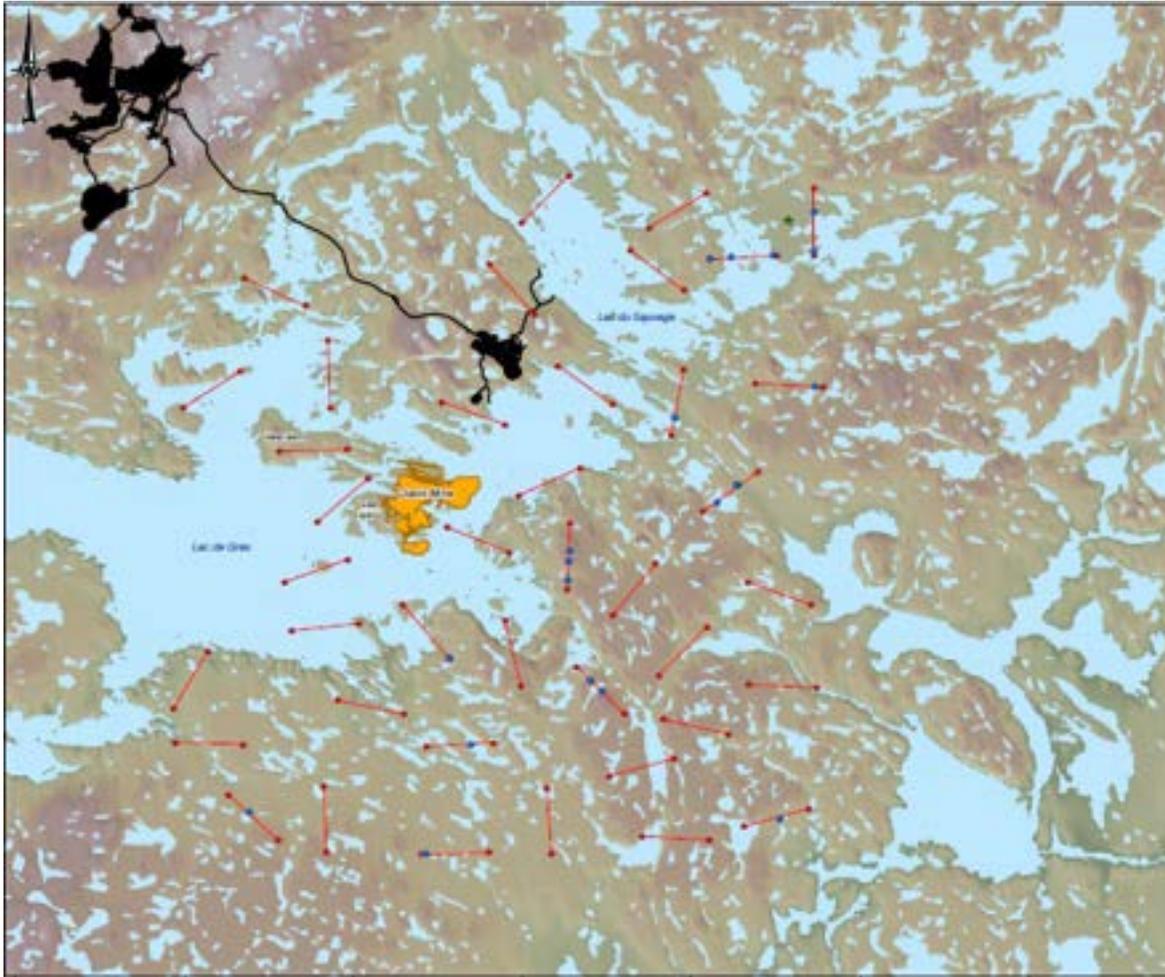
Similar to grizzly bear response.

Ensuring human and animal safety is priority with deterrence, reporting and attractant removal.

One relocation occurred successfully in 2020.



# Wolverine Track Surveys



One round of wolverine track surveys was completed in April of 2020 and 2021.

Ernest (Patty) Lockhart from LKDFN assisted and provided TK in 2021

Snow tracks were observed on 30.0% of transects. 40 transects completed per round

# Raptors



Daily A21 pit wall inspections and weekly inspections at other pits and Mine infrastructure for bird nests

2 Confirmed nests in 2020. One rough-legged hawk, one raven nest in safe areas. Fledging was successful for all nestlings.

Direct birds into safer areas using ENR-approved deterrents

Buffer zones around active nests to stop impactful activities like blasting

Mitigation continues to be effective at limiting effects to raptors.

# Waste Management



Waste transfer facility surrounded with buried chain link fence and remote controlled gate to deter animal access. Regularly cleared of snow in winter to remove snow access by animals.

Weekly waste bin inspections by Environment to identify any mis-segregated waste. Conducted twice weekly in the winter.

Food waste is incinerated at an indoor facility.

Thank you!

Any Questions?

## Appendix C Daily Camp Schedule

**Diavik Diamond Mines (2012) Inc.  
2021 Aquatic Effects Monitoring Program and TK Panel #13**

**Schedule of Daily Activities**

*Note that this schedule will be updated daily according to Elders' direction and DDMI weather updates. Priority will be given to boat related activities (i.e. water sampling, setting and retrieving nets) when weather is best.*

<b>Friday, July 30 (Day 0)</b>	
4:00 pm	COVID-19 Testing at the Explorer

<b>Saturday, July 31 (Day 1): Arrival and Set-up</b>	
7:00 am	Gather at Air Tindi Float Base (23 Mitchell Drive, Old Town, Yellowknife) Welcome and Health and Safety Overview
8:00 am - 10:00 am	Planes #1 and #2 leaves for Camp
	Opening Prayer & Circle Fire feeding ceremony Tent selection and luggage Housekeeping and Health and Safety Check-In
12:00 pm	Lunch
1:00 pm	Afternoon Gathering: review overall camp plan & evening plan Fishing off the dock, net inspections and preparations – select sites for fish nets and decide who will set nets Interviews
6:00 pm	Dinner
7:30 pm	Evening Gathering and Teaching Session: planning for Day 2

<b>Sunday, August 1 (Day 2): Training for Watching Fish</b>	
7:30 am	Breakfast Net 1 set
8:00 am	Morning Gathering: weather check and review plans for day
9:00 am	Youth training on fish testing forms Caring for nets lesson Knife sharpening lesson Otolith retrieval lesson

11:00 am	Fishing off dock, fish processing & TK observations – practice fish forms
12:00 pm	Lunch
2:00 pm	Net 1 retrieval Fish processing and TK Observations Plan media interviews for day 3
6:00 pm	Dinner
7:30 pm	Evening Gathering and Teaching Session; planning for Day 3 ( <i>Net 2 set</i> )

<b>Monday, August 2 (Day 3): Watching Fish</b>	
7:30 am	Breakfast
8:00 am	Morning Gathering: weather check and review plans for day
9:00 am	Net 2 retrieval
9:30 am	Fish processing & TK observations
11:00 am	Cook fish
12:00	Lunch: Fish Tasting and filling out forms
2:00 pm	Media Interviews Tying knots lesson
4:00pm	Select water sampling sites
6:00 pm	Dinner
7:30 pm	Evening Gathering and Teaching Session; planning session for Day 4

<b>Tuesday, August 3 (Day 4): Training for Watching Water</b>	
7:00 – 8:00 am	Breakfast
8:00 am	Morning Gathering: weather check and review plans for day
9:00 am	Youth training on water testing forms
10:00 am	Water sampling demonstration – equipment use
12:00 pm	Lunch
1:30 pm	Bannock making lesson
2:30 pm	TK interviews with Elders (Artless)
6:00 pm	Dinner
7:30 pm	Evening Gathering and Teaching Session: planning for Day 5

<b>Wednesday, August 4 (Day 5): Watching Water</b>	
7:00 – 8:00 am	Breakfast
8:00 am	Morning Gathering; weather check and review plans for day
9:00 am	Water sampling at TK1 and/or TK2
11:30 am	Lunch
2:00 pm	Water sampling at TK2 and/or TK 1
4:00 pm	Water tasting and completing forms
6:00 pm	Dinner
6:30 pm	Fishing off dock; fish processing
7:30 pm	Evening Gathering and Teaching Session: planning for Day 6

<b>Thursday, August 5 (Day 6): TK Panel and Monitoring Introduction</b>	
7:30 am	Breakfast
8:00 am	Morning Gathering: weather check and review plans for day
9:00 am	TK Panel Overview DDMI Monitoring Overview Vegetation Monitoring Overview Develop monitoring priorities, guidelines, protocols Select plots to visit and provide reasons
12:00 pm	Lunch
2:00 pm	Visit Vegetation Plot / Monitoring Site
4:00 pm	Discuss Monitoring Ideas and observations from the day
6:00 pm	Dinner
7:30 pm	Evening Gathering and Teaching Session; planning session for Day 7

<b>Friday, August 6 (Day 7): Vegetation Monitoring</b>	
7:30 am	Breakfast
8:00 am	Morning Gathering: weather check and review plans for day
9:00 am	Visit Vegetation Plot / Monitoring Site
12:00 pm	Lunch
2:00 pm	Develop Recommendations
6:00 pm	Dinner
7:30 pm	Evening Gathering and Teaching Session; planning session for Day 8

<b>Saturday, August 7 (Day 8): Review and Recommendations</b>	
7:30 am	Breakfast
8:00 am	Morning Gathering: review plans for day
9:00 am	Review Recommendations
11:00 am	Present Recommendations to DDMI
12:00 pm	Lunch
2:00 pm	Review of daily notes by camp participants (all days) Measuring success: participant evaluations completed Review plans for verification session in fall
6:00 pm	Dinner
7:30 pm	Evening Gathering and Teaching Session; logistics for Day 9 and return trip home Closing Circle

<b>Sunday, August 8 (Day 9): Heading Home</b>	
7:00 am	Bags packed Breakfast
9:00 am – noon	Morning Gathering Closing Prayer and Ceremony Flight 1 departs Flight 2 departs
12:00 pm	Return to YK (Air Tindi Float Base)

*Please contact Myra Berrub (DDMI) @ 780.667.1242 or Joanne Barnaby @ 867.876.1119 with any questions.*

## Appendix D Daily Camp Notes and Evaluations

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## Participant List

AEMP Camp 2021: July 31 – August 4, 2021	
Nancy Kadlun	Kitikmeot Inuit Association (KIA)
Jack Kaniak	Kitikmeot Inuit Association (KIA)
Vikki Niptanatiak	Kitikmeot Inuit Association (KIA)
Sarazine Basil	łutsël K'é Dene First Nation (LKDFN) (translator)
Albert Boucher	łutsël K'é Dene First Nation (LKDFN)
Doris Enzoe	łutsël K'é Dene First Nation (LKDFN)
Gloria Enzoe	łutsël K'é Dene First Nation (LKDFN)
Kathy Arden	North Slave Métis Alliance (NSMA)
Marie Adele Football	Tłı̨chǫ Government (TG)
Lena Drygeese	Yellowknives Dene First Nation (YKDFN) (translator)
Kelsey Martin	Yellowknives Dene First Nation (YKDFN)
Peter D Sangris	Yellowknives Dene First Nation (YKDFN)
Ted Tsetta	Yellowknives Dene First Nation (YKDFN)
Joanne Barnaby	Facilitator
Sarah Ravensbergen	Facilitator
Monica Redmond	Golder
Myra Berrub	DDMI
Gord Cumming	DDMI

## Summary of Daily Notes, AEMP 2021 - TK Camp, Lac de Gras, NT

<b>Saturday, July 31, 2021 – DAY 1</b>	
Daily Activities	<ul style="list-style-type: none"> <li>• Meet at Air Tindi Float Base in two separate groups, one plane at 8:00am and one at 10:00am.</li> <li>• Tent selection and getting settled.</li> <li>• Opening prayer and opening circle, fire feeding ceremony.</li> <li>• Overview of camp schedule for the week and camp safety.</li> <li>• Group discussion: which areas groups would like to prioritize for watching fish and water throughout the week, TK fish forms, and what the vegetation watching portion of the trip will look like.</li> <li>• Artless discussion of priorities for watching team and facilitators finalize interview questions.</li> <li>• Fishing off dock.</li> </ul>
Participants	<ul style="list-style-type: none"> <li>• All participants from all groups.</li> </ul>
Key Observations	<ul style="list-style-type: none"> <li>• It's very important to pay the land and the water; many participants are both happy and sad to be in the area.</li> <li>• Group decides that they would like to prioritize setting nets right by the mine on day 2, since the blasting schedule allowed this, and one farther away, to compare. Everybody wanted to go out in boats, so two netting settings boats and one observing boat is planned for day 2.</li> <li>• Artless will do interviews with community members.</li> <li>• One fish is caught but not eaten because of parasites, it is thrown on fire.</li> </ul>
<b>Sunday, August 1 2021 – DAY 2</b>	
Daily Activities	<ul style="list-style-type: none"> <li>• Morning discussion to check weather and finalize plan.</li> <li>• Three boats go out to set nets near the pits – two net setting boats and one observing boat set nets in the morning, leave them for three hours. All participants wanted to see the different locations of nets one and two, however, nets were checked individually by the participants that set them to save time.</li> <li>• Fish processing and fish observations from nets one and two and fish caught by rod. Practice demonstration of taking out otolith. TK fish forms filled out in late afternoon / evening; tents moved down to the water to provide shade (very hot).</li> <li>• Evening gathering: group decides that for day 3, one fish net and one water site would be sampled close to the mine on the south side by the little island. We would stay out there and do the water sample while waiting for the net. Then the following day, we would do the same at the narrows, while telling stories and talking about plants.</li> </ul>

Participants	<ul style="list-style-type: none"> <li>Net setting as follows: One boat set net #1 (GN1) with Gord (recorder), Peter, Kelsey, Jack (driver), and Nancy. Boat 2 set net #2 (GN2) with Sarah (recorder, Doris (driver), Gloria (net setter), Marie Adele, and Sadetlo). Third boat observed both net set sites with Albert (driver), Sarazine, Jay, and Myra.</li> </ul>
Key Observations	<ul style="list-style-type: none"> <li>Jack: “of the 7 fish we got, only 2 were healthy” (at net #1). Participants discuss parasites in fish and health of the water, and are generally not happy with the fish that are caught and dissected so far (fish seem skinny). Nancy makes dry fish from one fish caught, but participants not willing to eat / taste any others caught in the nets. However, during LKDFN’s dissection of lake trout #02, one minnow was found in its belly – but this was not seen by the rest of the group.</li> <li>Three boats without three radios was a challenge for communication within group.</li> </ul>
<b>Monday, August 2, 2021 – DAY 3</b>	
Daily Activities	<ul style="list-style-type: none"> <li>Morning gathering to check weather and review plans.</li> <li>Net #3 set (GN3) and water sample #1 taken (TK1), with three boats; one for water, one for nets, and one observing and fishing with rods.</li> <li>Water sampling and equipment use demonstration done by Gord.</li> <li>Fish processing and observations from Net 3 and fish caught by rod. TK fish forms filled out.</li> <li>Covid test in afternoon (negative for all).</li> </ul>
Participants	<ul style="list-style-type: none"> <li>Boat 1: Doris (driver), Marie Adele, Sarah, Myra – observer boat. Three fish were caught with rod at net #3, while they watched water sampling.</li> <li>Boat 2: Ted (driver), Jack (netsetter), Nancy, and Lena – set net #3. No fish caught.</li> <li>Boat 3: Gord (driver), Kelsey, Vikki, Kathy – water sampling. Gord demonstrated water sampling and Kelsey and Vikki helped / participated and learned. On return, they had positive things to say about Gord’s teaching.</li> <li>Fish processing attended by all participants, except that only LKDFN filled out forms for lake trout #02; other participants were still out checking other nets.</li> </ul>
Key Observations <sup>1</sup>	<ul style="list-style-type: none"> <li>Many observations were captured at fish processing on day 3. Several action items and recommendations resulted from fish processing of lake trout #15 and 16. Several people were visibly</li> </ul>

<sup>1</sup> While not a group activity, Jack spoke with EMAB on phone on Day 3, re: their board meeting and decision around continued support of the AEMP.

	<p>upset, and all were disturbed by the number of parasites and by only seeing bugs in the stomachs.</p> <ul style="list-style-type: none"> <li>• Several recommendations flowed from this: 1) A net be set by Diavik in the fall and fish be processed at the verification session to see if any changes occurred; 2) Testing stomach contents of fish at different periods of the year should occur;</li> <li>• Out of all fish caught, so far only one has been made into dry fish by Nancy, and none have been tasted other than this one. Participants are saying there are almost no fish that they would want to eat.</li> <li>• Scientific water testing of sampling from site #1 occurred (one boat dropped off samples at the Diavik dock on way back), but TK observations and processing did not – sample brought back to camp was accidentally contaminated so could not be processed. Several general notes were taken about how the water looked when it was collected; these are included below.</li> </ul>
<p><b>Tuesday, August 3, 2021 – DAY 4</b></p>	
<p>Daily Activities</p>	<ul style="list-style-type: none"> <li>• Morning gathering to check weather and review plans.</li> <li>• Group discussion on watching water and TK forms.</li> <li>• Fish processing.</li> <li>• Bannock making with Nancy.</li> <li>• Group singing night led by Marie Adele.</li> </ul>
<p>Participants</p>	<ul style="list-style-type: none"> <li>• All participants in all group discussions and fish processing.</li> <li>• Interviews with CBC, CKLB, and Cabin: done with Ted, Nancy, Kelsey today. Albert wanted to do in Chipewyan, Marie Adele did hers in Tłjchq.</li> </ul>
<p>Key Observations</p>	<ul style="list-style-type: none"> <li>• Weather was too windy to go to narrows, as hoped. Group priorities remain to watch fish, water, and vegetation at the narrows, and close to the mine, when weather and blasting schedules permit.</li> <li>• Joanne confirms with Gord that he / DDMI will set a net in September and Nancy will cut up the fish at verification in the fall, to check if the fish are eating properly at that time.</li> <li>• Scientific sampling requirements are complete re: number of samples needed, but participants wish to get at least three more fish to process, to see if there are changes from what has been seen so far, and so that samples of parasites and cysts specifically can be sent to the lab.</li> <li>• Details of the current AEMP and several action items and recommendations were discussed in morning as a group before LKDFN left, including recommendations about; winter ice fishing and ice collection for testing; ice core testing; testing water on top of ice; monitoring blasting residue on ice and snow; spring</li> </ul>

	<p>testing; sharing results with community members; and concerns about effects of recycled water being put back into the lake. No</p> <ul style="list-style-type: none"> <li>• Lake trout #18 and 19 again caused concern and alarm among many participants; these fish, followed by the health of lake trout #15 and 16, was an upsetting thing to observe over two days.</li> <li>• Rationale for water site #2 (TK2) is the same as for water #1: group wants to check and see how the water is close to the mine, and compare it to samples farther away. Group went back and sampled close the first site.</li> <li>• Several comments were made on the TK water forms, generally, including: water is always moving, you don't have to look for movement; TK does not fit into a box. Joanne clarified that this form was created by AEMP processes, and that we are not happy until participants are happy with it – the verification process was reviewed until participants were satisfied they would get a chance to review / correct information in a timely manner.</li> <li>• Fish that Nancy made into dry fish was the only one processed. At beginning, there was a couple of fish that some said they would eat (would cut out parasites). No fish were found without any parasites, and no participants were willing to do taste test as a group, especially after days 2 and 3 findings.</li> <li>• Repeatability of fish tasting methods from previous AEMP difficult if nobody wants to taste them, but this fact and the reasons presented for not wanting to eat fish are still very important information.</li> <li>• Many participants observed the following: Hungry fish; changes to the behavior of fish feeding on top and bottom to get food (elders identified which bugs came from the surface and which came from the lake bottom); changes / impacts in distribution of small fish (minnows etc.); changes to camp surroundings i.e.. lack of small fish on shoreline, and lack of birds around camp.</li> </ul>
<b>Wednesday, August 4, 2021 – DAY 5</b>	
Daily Activities	<ul style="list-style-type: none"> <li>• Morning gathering to check weather and review plans.</li> <li>• Group Discussion: Preliminary AEMP Recommendations.</li> <li>• Fishing off dock.</li> <li>• Evening Group Discussion: Vegetation Sampling Overview and Discussion of TK Vegetation Forms.</li> </ul>
Participants	<ul style="list-style-type: none"> <li>• All participants from all groups (group discussions). Fishing off dock: Monica, Kelsey, Gloria, Doris.</li> <li>• Weather was too windy to go to narrows.</li> <li>• As no projector at camp, group discussion on recommendations are done on large flipchart paper, with changes made</li> </ul>

	<p>throughout as they are discussed. Comments also recorded in audio</p>
Observations and Recommendations	<ul style="list-style-type: none"> <li>• Results from past testing be done in plain language, year by year, highlighting change and variations.</li> <li>• Identify source of contaminates in water sample results.</li> <li>• Test stomach contents of the fish throughout the year (identify types of bugs); develop a clear understanding of parasites and cysts found, identify which ones are of concern to human health.</li> <li>• Discuss with Indigenous governments who selects members of the AEMP and TK Panel from each group</li> <li>• Discuss parasites in caribou – how should this be addressed? Since diamond mines, people are seeing more parasites in caribou.</li> <li>• People want to have comparisons between various sites in Lac de Gras because of the way the water moves and with Lac du Sauvage.</li> <li>• People think the water and fish should be cleaner and better in Lac du Sauvage and want to see if there are parasites in the fish there too.</li> <li>• Want to check to see the vegetation at the narrows, because it's an important caribou crossing. As water is high, we could get through however weather does not look promising, too windy. In future, we should set a net in Lac du Sauvage closer to the Misery pit.</li> <li>• Several participants note they are disappointed not many youth here this year; Myra, Sadetlo, Sarah, Joanne, others, supporting with recording where needed for some groups.</li> </ul>
<b>Thursday, August 5, 2021 – DAY 6</b>	
Daily Activities	<ul style="list-style-type: none"> <li>• Morning gathering to check weather and review plans, and storytelling around the fire.</li> <li>• One boat goes out to set one net (GN4) and fish with a rod near the mine (others stay at camp).</li> <li>• Fish processing after lunch.</li> <li>• Covid test (negative).</li> <li>• LKDFN closing ceremony and stories around the fire – ceremony was held specially for LKDFN members leaving early for a private emergency.</li> <li>• Short evening discussion on vegetation.</li> </ul>
Participants	<ul style="list-style-type: none"> <li>• For all activities except the evening discussion, all groups participated (LKDFN left at dinnertime).</li> </ul>

Key Observations	<ul style="list-style-type: none"><li>• Weather is again too windy to go to the narrows.</li><li>• Previous participants noted that there were only 2 fish from 2018 that people said they wouldn't eat – this is an important piece of information to contextualize findings and concerns about parasites.</li><li>• There was a raven sighting at camp – was significant because people noticing a lack of birds, were very excited by this.</li><li>• Skinny fish with many parasites were found, and participants were visibly upset at the findings; similar results to previous days.</li><li>• Participants explain that because of the way the wind blows, Lac du Sauvage may not be as dusty as Lac de Gras. Part of the motivation is that DDMI has an exploration program at Lac du Sauvage. People seeing the helicopter going back and forth several times a day means they are likely extra interested in seeing the narrows and if it's different.</li><li>• Some participants tasted water and tea at the three different sampling depths – some people were not comfortable tasting the water not boiled.</li></ul>
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## Maps / Resources Shared

- Informed Consent Form
- Evaluation Form
- Camp Daily Schedule
- AEMP Water Quality Sampling Locations (map)
- TK Study Fishnet Set Location and Water Sample Locations 2018 (map)
- AEMP Biography Form
- 2014-2016 Re-evaluation Report
- PK to Mine Workings Factsheet
- AEMP Report 2018, AEMP Report 2015
- Table 1.4-1 Important Fish Part Names
- Table 3.2-1 Fish Species in Aboriginal Dialect
- Table 3.2-4 Summary of Health Indicators for Fish
- TK Fish and Water Forms and TK Fish Tasting Evaluation Sheet (Palatability)

## Detailed Daily Notes, 2021 AEMP TK Camp, Lac de Gras, NT

### Saturday, July 31, 2021 – DAY 1

#### Getting Settled, Opening Circle, Fire Feeding Ceremony

-All groups gathered at the fire and Elders noted that right away when you step on the land from the plane, you should pay the water. We went around the fire and each person took a pinch of tobacco and prayed (Marie Adele led this). Ted led a drum song with men drumming while Marie Adele fed the fire with the tobacco offering.

-We did a 'round fire' to introduce ourselves and some participants shared some of what moved them. Albert shared that he was happy to be out on the land, and to be here; Peter Sangris told us of when he was looking out the window from the plane he was remembering stories his mum told when his family would travel on the land from Contwoyto / Courageous Lake to Great Slave Lake, it made him remember. His mum worked very hard on out on the land. Gloria shared that she is both very sad and happy to be here, and spoke about how she misses the caribou, and the way things were before the mine; *"the land misses the caribou"*. Many people shared that that they are very happy to be out here on the land watching.

-Gord gave a safety presentation and addressed questions from the group.

### **Group Discussion (Selecting Net Sites)**

-Lunch was followed by a group discussion in the big white circus tent; very buggy. The group chose sites for nets: three areas were chosen as priorities and drawn on the map (photo taken to back up). Albert, Peter, Doris, and Marie Adele discussed the fishing sites, with other listening and agreeing.

-Elders agreed they want to sample close to the mine on either side of the pits; Gord confirmed there would be no blasting August 1, so it would be possible for community members to watch close to the mine this year. To take advantage of this, Elders agree they want to set one net in each of those places (2 total) on the second day, and leave them in for 3 hours before checking them. Many people wanted to go in the boats and so it was agreed that 3 boats would go out, 1 to each fish site, and then the third would be a watching boat. On the map, sites are numbered by priority – people also want to test sites close to the mine, and far away in order to compare them.

-Monica was asked questions about what we do when we pull the nets, and stated that fish should be clubbed when they are pulled out of the water, because this means to her that fish do not suffer. Some did not agree with this statement; LKDFN participants stated they would not usually club fish. Doris stated that we have to respect each other, and Gloria stated what she would like non-Indigenous people to know where she is coming from when she leaves a fish alive – for tour guiding she will kill the fish right away but for her own consumption people wouldn't take a dead fish home and leave it dead and then prepare it, because it's not a good taste. Joanne explained to Monica that many people view the clubbing of fish as disrespectful to the fish and were concerned about the spiritual wellbeing of the fish and fisher.

-Elders had questions about sampling the vegetation sites, and if the walking would be difficult. Elders stated it is too long to walk back and forth from the kitchen and are worried about the rough trails and tripping.

-Joanne noted that TK Panel recommendations from the vegetations component may be dealt with at the verification sessions, this is just the beginning of the TK Panel watching and documenting their observations.

-Facilitators discussed the interview approach with Artless and explained that Sadetfo would take a lead with developing the questions to be asked.

-Community members fished off the dock. Gloria caught a lake trout along the shore, about 15 m west of the dock. She cut it open but it had parasites and tumors inside and was very skinny, she said it was not good to eat, and threw it on the fire.

## **Sunday, August 1 2021 – DAY 2**

### **Group Discussion: Setting and Checking Nets**

-Set net #1 (GN1) (with Gord (recorder), Peter, Kelsey, Jack (driver), and Nancy) close to the shore at the mine, on the northwest side of the pit.

-Albert, Doris, Peter, and others, really wanted to sample close to the mine on the north side, because that is where water is discharged into the lake. There are pools of water behind the dike that they think might affect the water and the fish close to there.

-Gloria and Doris noted that the place where the first net was set was very shallow; Albert wanted to put it right by the shore. Some stated there may not be many fish there because it is too close to the mine and there is too much vibration.

-Marie Adele fished with a rod while observing net #1, and caught 1 lake trout at 10:450 am. This was processed as the practice fish back at camp right before lunch.

-Doris: “we set the net here [net #1] because there are little lakes in there, behind where it’s blocked. The water drains and it’s not healthy water, it’s always on my mind. If anything is in the water, we want to see. I have been trying to put nets here for so long”. At net site #1, Doris also talked about the north country rock pile and how much work had been done by community members to try to change it.

- Net #2 (GN2) was set at 11:10 am and pulled at 2pm. Gloria recommended getting monofilament nets only for next time, much easier. Lost fish in net #2 because of the net used.

-At the end of the net being pulled, 2 lake trout total escaped. They were big. The site was cold, deep water, away from the mine, and was pulled after 2 hours. It was chosen away from the mine so that we could compare with net #1. Gloria, Albert, Peter, Doris, Marie Adele, Sadetfo and Sarah were in this boat. Net set by Gloria, Doris was boat driver, Sadetfo.

**LKDFN Fish Processing Transcript, August 1, 2021, 2:30pm [LKDFN, TG discussion of lake trout with Monica and Sadetlo]**

-Gloria: "...We want to look at its gills to see if its got anything in its gills, any bugs. It looks good. We want to look in its guts. ...

-Albert: ...let's see what's in the guts. ...I used to eat this kind. Only thing that is healthy is have a little bit of fat. Too skinny, that means they are not really healthy. ... Looks good.

-Gloria: He's fat?

-Albert: No, I don't think so. ...

-Gloria: His skin is good, his scales – looks good. ...

-Albert: Lots of fish in its belly. ... [Gloria: How's his kidneys?]

-Albert: It's not too bad. Looks good, looks okay. ... yeah, kidney's okay. ... Those fillet ... white fish, red, strong. Ten dollars. ... for me, it's good fish, this one here.

-Gloria: We don't see anything, so it looks healthy.

-Albert: You cut right here, it's all pus one side. Any fish, one side. One side. My dad used to tell me one side, so every time I fillet fish, one side pus. ...

-Sarah: You would definitely eat it, yes?

-Sarazine: Yes.

-Albert: Yes, eat it, cook it! That one too is nice, look at it. That's nice. ...

-Doris: It's only on one side all the time, see there's nothing on this side. ... [Gloria cuts open trout organs] ...and it's yellow see, so this you want to poke right through. Even this one too, you should check this one too. ...

-Sarah: What's that?

-Albert: Pus. Remember, you had that one yesterday?

-Sarah: Normal, or not normal?

-Doris: Not normal.

-Gloria: Our TK says from previous-from how we used to be when we were kids growing up, we didn't see much of that kind. We hardly, rarely have seen cysts or parasites on our fish. When the water starts getting warmer, that's when we got an increase. But at the same time, you have to think about other factors that come into play, so for me my main concern would be the metals that are in the fish, the area of the fish, how much of these we get out of this lake. ...

-Albert: Good. Good fish. ...

-Marie Adele: You're leaving the good part out, on the belly! We don't mind having the skin.

-Albert: I've got my own knife too. Good for fry, good for cooking on the fire. Some people, they fillet the fish like this. ...

-Gloria: [Lake trout #03 now – Sadetfo fills out TK form for Gloria] His scales look good, there are no deformities on anything. ... gills look fine. The gills here, he's got a little bump right here... me, for my TK, I would basically say there's a bump on it, until I look at it. ...

-Sadetfo: What colour would you say the gills are? ...

-Gloria: Pink. ... me, I'll identify that there's a bump right there.

-Doris: Maybe it got attacked a long time ago, wounded. Because there's a mark right there, look. And the fins are kind of-

-Gloria: Like a scar.

-Doris: Yes.

-Gloria: And on this side there's nothing.

-Sadetfo: What would you say for the girth?

-Gloria: He's skinny. He's a skinny guy. Skinny woman. ... he's not too healthy. ... Because he's got parasites and cysts. I don't know about parasites but I assume when I see stuff in it's stomach like that, right away I already know he's got parasites on his flesh. ... my TK is based on feeling, based on how my observation is. So this cyst is hard. Like she [Monica] said, if it's hard and shiny, you could still eat them... and then the orange one is where you should cook them through, or freeze them? ... Gloria: Look at this liver, see how it has got one [parasite] right embedded inside? And it's hard. ... it has got it on it's stomach, and there's one here but I don't know what you call this in English.

-Monica: Pyloric caeca. ...

-Gloria: And it's a male. If he was healthy, you'd probably eat that ... his gall bladder is a little bit dark. Spleen is dark too. ...his heart, he's got little things on his heart [heart cysts]. ... That question, I am not going to answer that question ["Is the firmness *typical* – the word typical is not a good one, doesn't reflect how we think about this] because I look at certain things inside the guts. ... he's got a little stickleback inside his guts, and he's got bugs, he's got a fly. So his contents are fly, stickleback. He's a little bit hungry."

### Monday, August 2, 2021 – DAY 3

#### Group Discussion: Setting and Checking Nets, Testing Water

-Net #3 (GN3) was set and left while water sampling done - about 1.5 hours. Set at 11:15am, pulled about 1:30pm. Rationale for sampling at net #3: Elders agreed the night before that this is where they wanted to sample, because of the new pit, A21. The thinking is that the water and fish might be different here. The site was deep water, and the net was perpendicular to small island. Trucks and dust were continually observed on shore by the observation boat.

-Doris: "when I was young, there were so many fish and no parasites. Now when I eat fish, I get dry lips" – discusses how water flow changes the fish habitat. Doris and Albert too said that the warming is what people think is causing the parasites.

-Boat situation with three boats worked better as all three had radios today. Some participants felt that they would like to check further west than where net #3 was placed, off the west end of the island, because of the way the water and fish move.

-At net #3, Doris caught two lake trout; Marie Adele hooked one but it got away. One Doris caught broke the net. Fish were caught by rod right at water sampling point #1 on day three. Water sample #1 at about 10 m deep, dark water. Perpendicular to island, deep water.

-Doris: First fish caught: looks healthy! I don't want any samples taken from that, I want to split it in half and cook it right on the fire. Second one, looks okay. Marie Adele said, it looks like there's lots of fish by net 3 because the water is moving, you can see it.

-Doris said of the first lake trout caught for the day, "I will eat fish from this lake if it's healthy. The first one looks good, the second one is okay, but I won't know unless I open them. I want to cook the second one and I don't want any samples taken." – If you are making dry fish, you don't want to scientifically sample it too (as this is seen as ruining the tissue). But for other ways of cooking, it's okay to take a sample.

-For the lake trout caught by Sarah, it had a different colour, Marie Adele said it was the colour that makes it different as well as other things, whether they are in deep or shallow water. The one Sarah caught was very thin.

-Jack noted that they hit the fish on the head when they catch them, that in their culture, they are taught to do this; so, mixed opinions on clubbing fish after catching.

-Jack: first week, new moon, is when it always gets stormy / windy (exact timing of this camp)

-Ted and Lena told a story while at net #3, pointing up and down the lake and noting that in 1996 Ted mapped the YKDFN journey from Yellowknife to Ekati, it was last done before than in 1956. In 1996 they mapped out all the story sties, graves, burials, place names of every lake, important sites, they travelled by canoe (light canoe) to do this, used 1:50 000 map for mapping and 1:250 000 map for travelling. It's not in GIS.

-Net set #3 about 10 m from shoreline of island.

## **Fish Processing**

-Some participants stated they would eat fish from this lake, some participants stated they would not eat fish from this lake, or would greatly prefer not to (even if it looked healthy from the outside), because it is from this lake specifically. Opinions were mixed within and between groups, but more solid (negative) opinions became to emerge from lake trout #15 and 16 on.

-No fish were caught in net #3. Participants had various explanations, including: net set in place with less/no fish; mine noise, vibration caused fish to move away; fish there were caught instead by people rod fishing, rather than in net; other explanations.

-Out of all fish caught, so far only one has been cooked with, made dry meat by Nancy, and none have been tasted other than this one. Seems to be an important issue, as people are saying there are almost no fish that they would want to eat. After the two fish forms were filled out by people, Sarah asked Kelsey if he wanted to fish off the dock: Kelsey said he was grossed out by the fish we caught and all the parasites and worms and would not want to eat the fish caught in the lake anymore after seeing that.

## **General Discussion Notes**

-Marie Adele: where the water was collected for sample #1 is dark, deep water. "Don't know if it's clean or not, have to do the water sample."

-Water sample #1 location: several participants stated the water was dark and deep, and did not appear clear, and that the water looks much different than last time (Nancy). There are quotes to support this from later days /on TK forms.

## **Tuesday, August 3, 2021 – DAY 4**

### **Group Discussion: TK Forms**

-Sarah reviews the TK water forms and opens discussion with group around where people would like to watch water

-Albert: The movement part of the TK form doesn't make sense. Water is always moving around, the movement is very important.

-Group discusses and agrees on the importance of, and recommendations related to: watching water in the winter by ice fishing; ice collection; testing contents of/contaminants in ice cores; testing the overflow on the ice (when travelling, get more info from sampling this, this should be tested, re: Gloria, Sarazine, others); examine the water in the spring (Gord: we sample snow before it melts only).

-Albert: After the ice forms, collect the ice, it's not enough to sample when there is ice. Should collect snow and analyze that too. Needs to be done more often. Albert would like to see this twice per month. Also important is to make water and then taste that. Blasting residue important to consider on snow and ice, and what collects on top. Can do the same – the cleanest water is at the top, if you can drink the water, ask scientists to drink the water and test it.

-Sarazine: Water processing plant brings in water and recycles it – everything will be affected by this recycled water.

-Albert: "The snow is the best way to test it. The Elders said you should test the snow. If you test that, you'll get all the info you need. That's the only way he will accept what is happening at the mine." After they look at water samples in the lab, they should have the water results come back to people.

-Sarazine: More parasites in the fish show that the water isn't healthy. Ants in the stomach content mean the fish are eating whatever they can. That's why the fish aren't healthy, full of blood and it's pitiful, this is our livelihood. Big loss to our food chain and to our thoughts.

-Kathy: For snow collection, do you have dust collection, with different levels? Do you test / record layers of dust? [Gord: Total dust from entire snow period, for entire season, is analyzed.]

-Kathy: Different places for dust collection? [Gord: Yes.]

-Kathy: Anything unusual in those samples so far? [Gord: Higher dust deposition than is normal, dust on snow.]

-Kathy: Dust from acidic rocks, or kimberlite? [Gord: Don't know. Can look into it but can't look at the different rocks and tell where the dust is from, only the different chemical compounds found in the dust.]

-Gloria: [Speaking as individual, not for LKDFN – ask permission to use any of the following quotes / idea specifically]. Elders have to understand that when scientists / Diavik say there are high nutrients in the water, that means it's silty. They bring up salt [stir up salt in the water], then put water into the treatment plant and back through, and this water is high in silt [and then that gets put back into the lake]. Winter/ice monitoring: it starts as slush and then starts freezing. At that time of year, it's very windy, can't test that. Once it is built, the wind keeps blowing it off, if you have wind coming down. We have to think about this too. Spring runoff is important too, but have to think about how this would work. I don't agree with testing snow once per year, have to remember that's from our / my knowledge, that's my survival mode and part of it is me feeding myself. As for once one test per year, I don't agree with it. When they tell you that [that the water is silty], that means they can't keep up to it with their pumps. "When they ask you to taste tea, that's your TK. In English, it's put into a specific definition. We

are not defined by that. We should think about how to use this, how the process is. Think about our kids, I worry about my kids kids. For the forms, I know it looks like putting it into a box, but we want to talk about it.”

-Ted: “I wouldn’t recommend anyone to drink this water unless purified, cleaned, or tested. It goes into the lake...” there’s spills, I wouldn’t drink the water [because of the spills and all the other things he has seen at site that go into the water, speaking from experience at site].

-Albert: “Since the mine was here-before, the fish were good, but after the mine, the same chemicals added, what Ted said is really true, that’s what happens. The Elders knew the fish was very good in this lake before. Since the mine has been here the fish are not healthy anymore. We can’t say the water is very good because it’s not feeding the fish. I’d like to have a really good study so that you can look at fish parasites, but the way they’re doing the science now is not good, it’s not satisfying.”

-Nancy: “I’m really concerned for the fish, all I’m seeing is bugs in their stomach. This time of year they should be full of fish. I’m concerned about the water and the fish. I want to know if baby fish moved away. I want to see in one month if the fish have bugs in their stomach. We all know the fish should be fat at the beginning of August But there’s nothing in their stomach, so I’m concerned about the water.”

-Joanne: “The TK forms, these have been developed out of past work by the TK Panel and AEMP. The verification session-this is your chance to review all of this and make sure we got it right. The TK forms: you are in charge of this, and we’re not happy until you’re happy with it. That’s why it’s so important to be straight, as clear as you can be, honest, and tell it like it is. These group discussions are really important, and we are recording those through notes. .... That verification session is really important for people to attend, and if you’re not able to attend, everybody will receive the draft report by email, sent you, or snail mail if you want it that way. You can make corrections, we’ll get them and include them in the final report, but I really hope you can all make it. I’m thinking that it’s especially important as we make recommendations, to make sure those are really clear. They’ll stay draft until that verification... but we want to make sure we are clear on those recommendations before we leave this camp. ... [agreement by group at this last point]

-Doris: I’ve been going to TK Diavik camp. I usually sit down with my uncle before I come here, and I ask him, this is the change I want to make. I ask him, how does he feel about it. Because we sit around here, there’s a recording person here and we have a consultant person who works for TK Panel for Diavik, but how come when we do our draft at home, between all three of us and translator, whatever we said. Then one of us from that group should sit with the consultant and say, this is what they said. Not just one the draft and email it back and forth, but in person, whatever those people said should be right there with the consultant person. It’s

never been like that before, but that's what I want to see. Because our words are very important to us, and written down it's very important to us too. It's not only for us. Every time I get an interview, I say, when I come here for my community, and other communities, we all come here to protect our land, our water, our animals, vegetation, everything. Those are really important. But when we miss something, when you send us a draft and we missed something, the person that was at the TK Panel would be with them, sitting around the table. Because I know you guys do. It's important to us that we say some of the parts we missed, so it's written down. When I read the binder, it was never like that. I want to say these things because I know I want to go home and be with my uncle and I have to say these things before I leave. It's really important to us. Even though we try to bring young people to learn, it's only for like 10 days or 8 days, and they want to take a different job, even though we try ... usually when it's not Covid we would go to the mine site but it's not going to happen for a while ... these things are really important. If we want to work together, this is how we do it. I'm saying that because my uncle told me to say that in this meeting. Marsi cho."

-Myra: So I'm clear, you want to review at the same time as the consultant is doing it?

-Doris: As they're doing the last report.

-Myra: We will get the report at the same time as you will get the report, so we are all reviewing it at the same time. We don't sit down with them.

-Doris: But we should, that's what I'm saying.

-Joanne: The verification meeting is for that; to make sure that it's all-all components of it, are there.

-Doris: You might add something that we forgot. That's what I was told to say.

-Gloria: Please explain the verification meeting? [Joanne: Usually October, November ... We will send a draft before the meeting for your review, ahead of time. Then the -verification meeting. Hopefully you'll take the time to review the report before we get there, so you can be ready to say, this is the change I want.]

-Gloria: I will also be doing my own report but it will be good to have yours too.

-Joanne: That's great, that's really exciting to hear.

-Lena: The four of us live in different areas, we don't see each other all the time. How do we get together to review the draft, how do we coordinate that, we have to track each other down, find a place, find a time to meet, who pays for that? It's hard for us ... unless we go to Diavik office or something ... it's hard for us to get together in communities.

-Myra: Every band is different in how they want to do that process. Normally I communicate with staff person [Violet in this case? Sarah? Ryan?]

-Lena: All those people sometimes don't know what's happening [in communities, regarding report reviewing and participation in the AEMP-they're new].

-Myra: They [staff offices] should be communicating with people. I can give this feedback.

-Joanne: Can we get a commitment from people so that they can organize and come together for verification? [Agreement].

-Lena: It would be good for us to get together. But sometimes Peter goes out on the land and doesn't tell people!

-Peter: We as a group here should all agree on what is said, if I go taking up too much space and other groups don't get a say... [that's not good] we all have to get together again and make sure that we agree. ...

-Ted: We [YKDFN delegation] represent 1700 members, our membership is growing. We should have a committee like with Giant Mine, 2 youth, 2 Elders, a translator, to talk about important subjects. We should put a committee together to work with leadership, to have additional new members on the TK Panel too. 2 youth, 2 Elders 2 hunters, and a translator.

-Joanne: Good idea, but for this camp, there is not enough space for everyone, to accommodate all of those people.

-Ted: We don't want to leave hunters and trappers out, they have important things to say.

-Joanne: The idea of having a dedicated committee to interact with Diavik would be wonderful, they could decide who could come to camp. [Several people agree this is a good idea, Gloria, Doris, others]

-Marie Adele: We tried to get more people but we are small, only 60 people.

-Doris: If you can't get people, they should go to the next community to see. [Myra: We tried.]

-Gloria: It should be a staggered process, so that everyone will be well-informed.

-Joanne: Now we need to decide where to get water. Water sample #1 was contaminated by accident. [Water sample #1 was decided on the advice of Albert and Peter, with agreement from others; we need to decide where the next one should go] Should we go back to the same place?

-Nancy, Lena: We should go back to the same place, because that's where the net was set.

-Joanne: We'll try to go to the narrows tomorrow, and do water and fish. We are worried about the fish, with parasites, and we also want to get more fish so that we can test the parasites specifically.

-Monica: If we get three more fish, we can test them for parasites specifically.

-Jack: With good weather tomorrow, we should test water and fish at the narrows [group agrees].

-Group decides that for today, some will fish off the dock to get those / in the bay, and some will get water.

-Doris: [Re: comment about the weather / land being beautiful] “Keep it in your head, don’t say ‘it’s nice, beautiful’, we don’t say that out loud. It’s important to have respect for the land, pay the water, pay the land. Can grab sand, or willows, anything from the land, and share with the water. Do this all the time, as many times a day as you want to.”

-Monica and Joanne have a talk after lunch. Monica was under the assumption that 10-15 parasites per fish was normal. Joanne said No, TK says zero is normal, people generally do not want to eat fish with parasites, although sometimes if it’s just a few they will cut them out and eat the rest of the flesh. Monica said that parasites come into the lake from somewhere, they are transported in. Then the conditions with the mine likely mean that it is perfect for growth – increased nitrogen, warming, increased reflection from small light particles in water, et.

-Nancy: “There’s no good or bad way to cook bannock!” [Joanne: Yes there is! Tells a story about bannock nailed to the wall.]

### **Fish Processing / General Notes**

-Some participants have not been to camp before, but are still also seeing changes in the past, 6 years to 3 years to now. Having people that are new and have new perspective, and having people that have been here and also have perspective, is really strong grounding.

-Joanne and Monica have a conversation about parasites: for other projects / areas, Monica states that 40 – 50 parasites in one fish is considered a medium amount, 15-20 is considered low. Joanne clarifies that this is not what community members are basing their observations; as Gloria stated the previous day, participants are using zero parasites (pre-industrial, TK-based observations) as the baseline: “you’re talking to people who knew this land before, you can’t compare it if you haven’t seen it”. Monica clarifies with group later that she is listening and understands that this is serious; positively received.

### **Wednesday, August 4, 2021 – DAY 5**

#### **Group Discussion on Preliminary AEMP Recommendations: Transcript, August 4, 2021, 9:00am [All participants, all groups] - Part 1**

-[Gord gives another overview of the AEMP water sampling program and answers questions]

-Jack: When you check each location, do you take at every year? [Gord: Yes, but we have times where there are fewer...]

-Albert: Do they take the sediments too? [Gord: Yes, every 3 years, all these points. Yes, [we look at] types of bugs in sediment too.]

-Albert: Every 3 years, they take sediment, maybe you should do it every year ... do you sample at Lac du Sauvage? This channel and way down the big lake, look every month, to see – if the fish swim. Is sediment taken there, too? [Gord: Yes.]

-Albert: “Elders came to do fish testing here, with Elders and youth that came here and they said the fish was good. They consumed all the fish they cooked at it was good. Now I look at it and the fish was not very good. The way I look at it, the fish is not very good and not good for humans to eat.”

-Jack: What do you sample for bugs? [Gord: We look at the species, and amount, and chemicals in the sediment.]

-Jack: So you’re testing bottom to top? [Gord: Yes, that’s currently every 3 years. The water quality stuff is every year, twice a year.]

-Sarazine: And the fish was okay [in Lac du Sauvage]. Now you look at it, and it’s not good to eat, it’s not edible. And you can’t say it’s not the mine, something happened to the lake. ...

-Albert: Do you take sediment in the winter? [Gord: No, just the summer.] ... Maybe that’s what you should be looking, at, looking at sediment in winter, because winter and summer is different. “Elders say the fish in there is not very good now, you see a lot of worms in there stomach. I seen even flies in there. When there’s a little stream that goes, there is a lot of flies that fall in the water and go down the stream, and then the fish eat it [from the mine]. That’s what we see in their stomachs. No fish, that’s what we found”.

-Jack: “You’ll eat what you can when you’re starving [re: hungry fish]”.

-Gord: So we do monthly water sampling near diffuser, we sample that water every month.

-Albert: But the samples that you take, why don’t you tell us what you know about the places where you got the water? [Gord: Diavik collects samples, I don’t know details.]

-Albert: “It’s very important for our people, and for the future generations [to have this information]. In the future with the closure of the mine, the kids that were there now will come to trap again on the land. Set nets. They know where this is good hunting before. That’s why very important for us, this area and some are where the mines are. We have to talk about. Workers are supposed to do a good job, that’s what we need”.

-Gord: I can tell you what I know. There have been small changes in nutrients in the lake, more nutrients in lake. That’s the main change I’m aware of in the water.

-Sarazine: When you see the food chain, what do you see in it? Bugs?

-Gord: We do a drag net to collect plankton, tiny animals. That's changes every year and we haven't seen any trends in that. But nutrients that plankton feed on have gone up a bit in this area of the lake. Over here, haven't noticed any chemical changes that would explain why the fish have so many parasites, I just don't know why that would be.

-Doris: On your map when you do water testing, fish testing, is this map from this year?

-Gord: Yes, since Diavik started, this map is for every year. It's from a few years ago, it doesn't show where we do small fish surveys every three years.

-Ted: How often do you sample water by plant? [Gord: Every 7 days.

-Ted: ...we have seen an increases in parasites. Caribou have parasites. ... yes [we want to see sampling of caribou too]. Because they are linked to fish. [fish specifically? Water?] All the water chemistry, water and fish (Ted and Gloria).

-Doris: "Because we're in TK camp, and Diavik when they do their samples, do we compare those with our camp?"

-Gord: We don't do large body fish sample [so can't compare parasites in large fish]. But yes, the water quality samples we collect are analyzed the same. And it's included in the data you'll get.

-Doris: "If we did water sampling today, it's only for this camp?"

-Gord: It's part of AEMP and our data.

Doris: "You do sample at Diavik's site, it takes a while for this to get to our community or WRRB. When they come last minute to our community to have a public meeting, you have to read everything last minute. And figure out when they did their last water testing, plankton testing? Every month, every three years, you do once. I don't think it's right, for me. I think they should do it every month and see if there's any changes. Sometimes when we do site visit, to tell you the truth, they clean up before we get there. All the time, no bull about it. My friends work there, and they do that because we go to the incinerator, how can that place be so spotless and clean? We know that because our friends work there and they say, you're doing all this before you guys came. They hide things from us. When you do fish sampling from Diavik's side and here, I want to see them both with my own eyes. Now I know the fish is in the water. The water is more dark ... if I never came here before I wouldn't know anything. Thanks for my uncle August, he said its's time for you to go, and now I see changes now. So if I see the report from Diavik's side and our side, it's not going to be the same. Be honest and work with us together. If they come to my community and Gord goes to the meeting, I have things to say to him now. Because this is our land, all they're doing is taking the diamonds out, and look at it. We're caribou eaters, all our caribou is gone, it's pretty sad. And now it's going to be our fish and our water? It's pretty sad. I just keep writing 'sad' on my notes all the way down, I write on my

notes here. And I'll take it here because I'm going to write something about it at our next meeting. I'm not putting it all on you [Gord: it's okay]. ...when I first started coming to these meetings, my dad said, you have to say it right, so they hear you."

-Nancy: "...when we see how much is on there, it's telling us something. The water goes to Kugluktuk. What's going to happen to all the water, you see. I am very sad to see hungry fish, how it's going to be there, because that's our only water. We have to do it quickly. Three times I came here, every three years, and I see big changes, for our fish. How is it going to be next time? ... could somebody move it to a better river because of the bug problem? ...could we make it stop, if the fish are not good?"

-Joanne: It's so true, one of the challenges with the changes we're seeing at this camp, is what does this mean for how to clean it up? How do we clean up the water, how do we get the fish healthy again? How do we deal with the parasites? Those are all challenges that Diavik is facing, and hopefully the other mines as well. It's one that we'll have to address, we have to be involved in figuring out how to do those things. This is the first camp where there was pretty major problems identified for the fish. It's creating a shift for us in our understanding of what the impacts are. That will be our challenge, to get it back to a healthy state.

-Kathy: "I was wondering about what changes may have occurred in this way for temperature. Do you know if Diavik, before mine started, they took lake temperature? [Gord: yes]. "Because it affects the fish too, if it's soft or firm [flesh], parasites. Because you're recycling water from DDMI and Ekati and I bet it's not the same temperature, it's salty and I bet it affects. Can you get us a temperature record, what it was before and what it is today, to see if it's warmer than it used to be? Probably it has a big effect on many things that are changing."

Joanne: Gord is trying to get this information, but he might have to present some of it at the fall meeting.

-Gloria: "So your AEMP program, you have many dots on that map. That map will confuse us a little, you have some that are three years, some from every year, you need to split that so that every map represents it on it's own. When we look at it, we assume that you do that every year ... but that's not the case. That doesn't happen. We're visual people, so we need to be able to have split maps.

When you say you test the underground water every 7 days, you're looking for something specific, right?"

-Gord: "Right. We test for nutrients, metals, mercury, ammonia, total suspended solids, conductivity (salts), hydrocarbons."

-Gloria: So water sampling, you check chemistry. So that chemistry, do you check for metals as well? [Gord: Yes, total and dissolved metals.]

Gloria: Okay, because I can look at that map and be confused. I would like to have maps where the data are split for each AEMP program. ... I want my people to be part of this AEMP program, because those kinds of things are important.

-Gord: We do that for the wolverine survey program [involve community members] and last year we couldn't, because of Covid, but next year. ...we try to get someone to help us with wolverine track survey, last year couldn't but will try to get more people. This year we had Patty [Myra chimes in to remind of this].

-Albert: We should have taken water, from every place, we take a bottle and look at it, look at the colour, some people say it's black, you should have done that, but now it's too late.

-Joanne: We have that documented – every time we have people here, then we'll ask you questions.

-Albert: I said, we should have done that - take 6 or 7 bottles, then we will know.

-Joanne: It is documented from past years. Samples are not in front on us, but we have the words from Elders each time, how they describe each time.

-Albert: We should have kept the samples [to see the colours].

-Joanne: We'd like to go through the recommendations that have come out of the previous few days, as a group [presented on flipchart paper]. **Number one, results from past testing in plain language, year by year, highlight change and variation.** Albert was mentioning that he would like water samples to have been kept from previous years, some place so that they could look at each water sample from each year.

-Gord: A lot of samples have a designated time period when they need to be ran, otherwise data is not reliable. Certain elements will change through time.

-Joanne: It was really just for visual testing. ...we want it visual, plain language, track it over time, any variation from year to year, what is showing up. Good?

-Gloria: For the results? [Joanne: Yes.]

-Myra: There are a lot of reports, we have started going through them but we weren't able to get a lot of info to share now. But I have these one-page factsheets, if you want you can go through them, high level summary, until we get more detailed information about the results. This year is a really big change.

-Doris: In 2018, we have been here, Nancy and I, we have seen changes. And the water is a darker colour.

-Myra: In 2020, it was noted that an increase in small plants and bugs, exactly what we're seeing here too.

-Doris: "That was one reason why I'm so glad we put nets in the water where they drain water and recycle and it goes back into the lake. We already knew there was salt in the water and it's

not good for the fish. They've been recycling it since day 1 and the water is getting darker. ...where else do they recycle their water? ...I really have to think about things here, because they do recycle this over there. I go and ask all kinds of question at site visit, I say can I go there and I have to put a thick mask on because I want to see."

-Gloria: "I think it would be important to develop a program where all the history is gathered. And present it in a way that-present it in the communities. A 2-week program where you learn the history throughout the environmental monitoring programs set out at Diavik. To help gain proper knowledge that needs to be know, which you probably have, the dialogue at these camps. It's not only good for the dialogue but it's good to incorporate young people at these workshops and it should be in our communities."

-Joanne: That historic perspective, present it in detail?

-Gloria: "Yes, and not at community hall, but a reaching setting, on the land. Our communities, we all have somewhere we go for this. It's really important that I advocate this so that our young ones when they are grown are able to share that and see the changes themselves, and have some history toward that. Diavik was 2003, my oldest was born in 2000. And I'd like him to have the history of this area. And not only the scientific but also the TK that has been gathered here. It's important that our members at home have that information. I ask for that recommendation and also the fact that because of Covid we couldn't meet for environment meetings, we had to do everything by Zoom. I know Diavik has asked for water license recently, and we all were meeting through Zoom, we all were asked if we would say yes to a water license for Diavik. We should think about that. And we should think about that decision, because we weren't able to meet. We are people that meet together, not through Zoom. If we're seeing the effects of unhealthy fish, unhealthy water, we shouldn't be saying yes for a water license to Diavik."

-Ted: "...I talked to my friends at Kugluktuk [Nancy, Jack], the water runs right to their community. This report from this week's study should be given out to the communities, and let people know that there's a lot of parasites in these fish, let hunters know. There should be further study on caribou, plants, us hunters and trappers, we see everything. There should be ptarmigan there, we should have caribou there... we don't have time to look at all the stomachs and see if there are parasites. When you say TK study, that includes everything, not only fish but all animals that they survive on, and plants. Everything is included in that, in that report, it has to go to CC. People have to know what's going on. It's serious, I seen a lot of different mines operate, and fish are getting to where it's unhealthy. If the fish is not healthy, the water is not healthy."

-Kelsey: "It's a lot of knowledge, it's good to learn. The fish is getting sick, and if the water is not healthy, the fish is not healthy. It's good to learn. I wouldn't eat the fish, no way I would eat the fish. I used to think about it, I'm not going to eat fish here, no way."

-Jack: Could we get results from past testing on dust? We know Diavik does dust collection, all over, how many times do you check those. Do they test every year or?

-Gord: Every month for dust. No-every 3 months, every quarter.

-Jack: "We've been here since Saturday morning, it was a calm day that day, Sunday, and Monday the same. Calm and hot days, but windy on there. If you look at the mine site, sometimes you can't hardly see it because of the dust. Dust all over the place, you can see it. So lot of dust right now, you can see it coming from the road, pits, everything, sometimes it's so bad you can hardly see the island, it's spreading all over the place. Today and yesterday we have wind and now it's all clear, the whole area is clear because the wind blow it all away. The first thing I noticed was the birds, since we came here, all the dust is gone, but suddenly there is birds. So how many years has this dust been going in the lake, since 2003. It's been all those years the dust goes into the lake. Diavik tells us that it doesn't affect, but we all know it's affecting the system, the land, water, air, all of it. When I came and looked at it, if I didn't come here I would have believed Diavik if they say it's fine. ...but seeing it now, it's a great time difference. I'm not going to believe Diavik anymore because of what I've seen. I believe it's killing all the wildlife on the lake, all the dust from all those years. Doris said she noticed changes in the lake, it's getting darker, and now it's getting worse. I'd like to know how all that dust programs, how many times a year, what is the outcome of what you are thinking."

-Ted: "Just looking at it now, I came up here to work in 2003, 10 years here, ... it is good for employment, but now I see the results. Dust everywhere, I really have a problem with open pit mine now, the big hill on the ground, if they are going to mine, I don't think there should be any more open pit mines, I see the destruction, the damage. That's my recommendation, I don't want to see any more. Dust everywhere, I see a problem with what we did now, I worked there before. I don't like what I see now, I want them to clean that up. It's too much waste, too much dust. I see it."

-Joanne: The next recommendation the group came up with is: **identify source of contaminants in water samples**. I don't know if DDMI / Golder has the capacity to answer this. But people have a desire to know. We are at that stage where we need to be talking about cleaning up, not just monitoring. But cleaning up. Is everybody okay with that idea?

-Albert: Every year it seems to be people are repeating themselves year after year and there are still no results. What is keeping the information, there is no action.

-Sarazine: "Sometimes it's hard to get to the bottom of anything when we don't have the resource to do it our own self. Listening to somebody saying this, it's okay, it's good, but we know it's not good, especially for the fish and the food chain. There used to be ducks and seagulls and ravens, I see 2 ravens since I been here, I never saw no ducks, if there is any. And also the seagulls are very scarce, hardly any seagulls. We seen a lot of geese migrating past here, pretty every day there is geese and eggs and all that. I don't think there is any here, it's like the animals abandoned the land, so we know something is bad. ...I live on the land all my

life, I'm an Elder but my home is the land, I'd rather be out there than in the city or anywhere. So a lot of different stuff happened, I went to the mine at the beginning, and with Elders at that time and we saw lots of animals around and now there's nothing, even coming here, we never see no muskox or anything, before when you come to barrenlands, you see things, a few caribou, now nothing. Now the land is there but there's no animals there. Jack said he walked all the way on the shore and small fish and water, there are always little fish on the water, and there's always sand pipers and water birds. I don't see any here. What are we doing, talking our heads off, it's prevention of the food chain for ourselves, for the animals. Sometime sit seems like it's useless to go to places ...to me there is no respect for myself and the people, the Elders that are here. And also for the land, for the water, animals, all for a little piece of rock. Sometimes I think we shouldn't have said yes to the mine, but everything was good, very good. I didn't think it would come to the point where we are. ...we can't even consume fish from here as we've seen it. What are we doing just sitting here, letting the mining industry tell us, we will help you out... this result, where is it going? It has to go to the mine, and their results have to come to us. Terri said she got information but I didn't know that until I came here. These things are happening amongst our own people." ...

-Nancy: "This isn't the first time I've been, I've been in the past for some of the other programs. Doris was saying it's darker today, but this time ...if we made tea from the lake... it was nice for water for tea. Right now if I made my own tea it would be dark. When we started coming here, the water was better than all the lakes I've seen because it is a huge lake. Today, now it is darker and more dust, and there is a way to have the dust coming into this whole place. Now these people say it is costing us too much money. We always share this... they said it would cost too much money to do this dust program. But there's a way. There's a way that you can stop all the dust from going over, but they will say it's too expensive. ... what's costing? This place is special to us. You shouldn't say anything about the cost, there's a way to stop the dust."

-Joanne: Okay, recommendation #3: **test stomach contents of the fish throughout the year (identify types of bugs)**. We learned from Monica there is no testing right now of stomach contents, and we heard people say they want that tested. Whether from TK camp or science, they want to see that added to what is studied in the lab when the samples are sent to the lab.

-Jack: If they are going to do that, they should test for chemistry in the stomach in all the stomach contents.

-Ted: ... [re: something he saw on the Discovery channel about malaria testing, show he watched about this] ...we need to know more, don't throw it away, make sure these fish ... they are eating these bugs, any of the bugs have a disease in them? Just try to find out where these parasites are coming from, try to help the fish.

-Albert: "How many times I said this, when you cut the belly you can see all kinds of bugs in there, all time. So the fish won't be fat."

-Sarazine: "Is there a way we could look at all the streams that are running into the lake too, all the water on the land, when the wind comes up, everything falls in the water and then it goes downstream. If they are contaminated [bugs] they come downstream. ... if it's happening here ... sediment here should be tested, because the water runs from this lake and goes to Coppermine, we don't know what's being carried in those streams. That's one recommendation I should have talked about."

-Joanne: Do you know how much effort has been done on this?

-Gord: Not sure, it's not part of current sampling programs.

-Albert: "That's the reason I suggested they have nets there in the water, so we can see the difference in the winter. In the summer when all these bugs go in the water, and all the fish are eating, we want to know what they eat in the winter also, what is in the water."

-Joanne: **Recommendation #4 was to develop a clear understanding of parasites and cysts found, identify which ones are concern to human health.** Right now we don't have that information, we'd like to have that added to what's analyzed from the fish samples sent to the lab. Right now, we know when Monica is taking that little portion of fish, those two pieces, they don't include parasites, the parts of the fish that has parasites. So we'd like to see that changed, you can send those clear ones out, but also add to the list, pieces of the flesh that contain the parasites so we can develop a clearer understanding of what those parasites would do to humans if they ate them.

-Monica: We want to send samples of the parasites to an expert to confirm the species, and record detrimental results.

-Sarah: Jack – yesterday, you talked about your concern for effects throughout the food chain, no? Not just humans?

-Jack: "Yes! And I want to know ... what are the [fish] eating that makes the parasite population grow? What makes them grow? If they are eating something from the mine that is causing that, we need to know."

-Albert: "Why are the fish like that, near the mine. ...the trappers inland, they set nets and some have parasites in there. ... but if there is just one little puss on it, we cut it out and we eat it. But it's beside the mine, some are saying we should eat the fish here, he's seen it and there's lots of parasites there and it's not only one kind. The water, sometimes there is underground water flow and if anything gets in there it goes in the water. ...it gets contaminated. We should have fish tasting here, ...even the fish tasting, I think we shouldn't do it. Maybe just a taste. It might taste oily or you don't know. ... We should just taste it [the fish samples] not swallow it. Not fill your belly.

-Sarazine: "I used to come here with Elders fish tasting, we ate all the fish we cooked, even the guts. Now..."

-Nancy: "The first time I came here, 2015, there was a lot of healthy fish. Every day we had fish heads, cooking it in the fire, on their own, in the kitchen, cooking anything we want. And last

year there was so many cysts. This year, we are not seeing anything inside the fish. That's hard."

-Joanne: We started seeing that change in 2018.

-Nancy: "Then, there was so much white stuff on their body, all the way down the fillet to the tail. I notice we are not eating fish. The first time I came here we were all eating fish because the fish was healthy. Just 6 six year, only 6 years [since the change]."

-Monica: For sending samples to the lab, it's a little late to send a whole set, but we could catch some more fish today. If we get a fish with cysts in a lot, I'll take these samples, bag them separately, freeze them, so we have something to look at. Then in the future, maybe an expert in parasites, will say, next time we do fish program, this is how we test. For this program, I've been making good notes about where we find the parasites. I'm taking it seriously and I'm recording it.

-Joanne: It's a new program Diavik needs to add in terms of parasites and bugs.

-Monica: I can also get the DFO parasite book from the north to whoever wants it. We do stomach content analysis sometimes for fish. If we get a fish with lots of bugs in the stomach this week, I can take a sample, we won't be able to analyze it properly but we will have something to look at it from this year.

-Doris: "It's because they've got no food in the water, that's why they are eating bugs"

-Monica: I just wanted to say, my opinion changed from the beginning, I know it didn't seem like I was taking the parasites seriously. But I am listening, working hard to record [overall positive response].

-Albert [Re water quality sampling map]: "...way at the end of the lake, we should set a net there, to see what kind of fish they are eating on. We should set nets there."

-Myra: I don't think we can travel there by boat.

-Gord: Boats might not be able to travel through there.

-Albert: Just for testing, then we'll see if the fish are different. [Gord: I'll try, but it's not my decision to make.]

-Gloria: "Before we move on, when the thaw happens, you have a layer on top of the water. I think that should be tested. When I travel after the ice is gone, all that pollen and stuff on the ice, that should be tested. The other thing is, once the fish is invested with parasites, or cysts, how does it degrade the fish throughout time, the health of the fish? And how it sucks its life out of it, killing it. I want to find out those things. What's their life span now? It would be good to know. We all live in the north so we all work with DFO. We have parasite books at our disposal. I'll always come back and say, we can still watch the fish. As long as you cook it, freeze it, but this time it's about how we see the fish decreasing as now the parasites are killing the fish, taking it's life. We need to know the time frame of it. Jack's right, I think about photosynthesis as well too, the coverage, temperature, they all have an affect on our livelihood. Those things are all part of it."

-Jack: We need a meeting tent.

-Albert: "Set the tent and wood stove for Elders, would be good. Weather can't be good all the time."

-Doris: "We want a bigger tent with a conference space just for us, instead of being in the way in the kitchen. Reclamation of the mine is going to be longer. ... From now on, I would like to see where Diavik does the sample of water, fish, plankton, all the food the fish eat at the bottoms of the lake, the chemicals, the month, time of where you do it, I want to see it. Those are the things I never asked before but coming here a few times now, I see lots of difference. There's lots of parasites in the fish now, they don't look very healthy, it's pretty sad to see. I also heard you say there's testing of some fish in our water-I remember when I was young, my grandfather used to tell me if you move any sand or anything, there's chemicals in it. The things you move, it has salt in it and it goes back into the water. Now we see lots of bugs in our fish because there's less food. We see it. That's pretty sad for my people. And the people living around the area. I see it with my own eyes. If you do water testing or taking fish samples, I would like to see it on the map. This is the way of where we put our nets in there. Say we did water sample here. We do fish sample here, because here, the water drains out, there will be hardly any food there for the fish to eat, even the small fish. You said you only take small fish sampling. For me, it shouldn't be just small,, but all sizes. If you learn from a small-how can you learn anything from a small baby fish? The fish we did yesterday, it had many parasites, because there's less food for them. There's no food on the bottom for them."

-Jack: "Yesterday we were talking about the diet of the fish they're eating, everyone was sitting here, I walked on the island, the whole island looking at the shore to see if there are any minnows or sticklebacks along the shore in the reeds. Sad to say, never saw one. ...something is going on here, they should be showing up on the shore, we should be able to see them. .. that bottom for the fish, it tells me that the fish are starving. When you have insects on the bottom of the bay [they eat that] ...like everybody else is saying, they should have some kind of small fish. We should be able to see birds, other food for the fish. In the wintertime and summer time, there's great big difference between summer and winter. In winter it's covered with ice and there's hardly anything down there."

-Peter: "It's true, the fish have changed, I've seen it with my own eyes... this lake, we haven't been to all different places on the lake, but I'm sure it's not that one area where the fish is bad, it's probably all over the lake. Every year, as the fish spawn, and you get more and more fish, maybe there will be less food for them, as they fish, and the population gets larger. If the food was available for the fish, the trout would have been really fat, and not have an empty stomach. When we open the stomach and guts and we checked it, there was hardly any food in the stomach, except for bugs. Even one trout that we saw in this lake, and in the other lakes, they live as long as 40 years. Even when female fish have eggs, the eggs are a big tube, sometimes about 250 000 eggs and in those two tubes. Sometimes out of the 250 000 eggs,

sometimes maybe 7 or 8 survive, maybe more or maybe less. Other animals eat those fish eggs too, like ducks and seagulls, and other mammals in the water, other fish too. In this lake here, there's probably millions and millions of eggs to be spawned, and then out of those eggs, maybe it's going to thousands that live. But then if there are too many fish in the lake and not enough food for them to eat, they will look like the ones we've seen, when you cut their stomachs open.

I had a summer job with DFO before four summers in a row, I saw how they did their paperwork and cutting and measuring and all the things we did. I know about that kind of job. I also looked at all these things they did, and this is the first time I've seen fish like this that is cut open and there's only bugs in there. This is the first time. All these lakes over the north, they are not all the same water type. Different minerals, different things are in the water. Some have even salt in there, according to the bottom of the lake, the soil, water is in the water, whatever is growing along the shores. All that affects the quality of the water. Sometimes they have salt in there even though it's not near an ocean. Some of the little ponds have salt on them. From those little lakes, they have streams that go to bigger lakes. There could be streams coming from all others, so it could be from little lakes, plus the mining... We also have to consider the community for where our friends are from, up the river that goes to the ocean. That water flows from this lake here, that water also affects Kugluktuk, and there's an area called Bloody Falls, if you go up to Bloody Falls, people take fresh water from there to take back to their community. When I look at the fish we worked on, that I have seen, I felt sad because I felt like that fish looked like it has been suffering. Maybe it's because there's lots of fish in this lake here, maybe it's going all over in the water, they are swimming all over the place, and some are biting each other, and fish are getting affected from each other. They are competing for food so they are going close together under the water [and this would pass parasites....] I would like to make a recommendation that they do the testing yearly. And when the results come back and are sent out, we will know why the fish are getting sick, why it looks the way it looks now. If you don't have the testing done every year, it's too far in between and we won't know what's affecting them until it's too late. Every 3 years is too far between for testing, it has to be done every year. We don't know if the fish is affected by the mines, water, or lack of food. All that has to be done yearly so gradually we will find out why the fish is the way it is. The fish in this lake have no doctors and they are feeling sick, they can't go to a doctor if they are feeling sick!"

-Jack: "Since Peter asked about Bloody Falls, it's 14 km from the community, our water intake is about a mile from the delta. That's where we get our water, right at the mouth. It takes about a mile from the delta."

**Group Discussion on Preliminary AEMP Recommendations: Transcript, August 4, 2021, 2:00pm [All participants, all groups] - Part 2**

-Joanne: Sometimes the group wants to make recommendations to their own groups, to Chief and Council, or their IGOs. Right now, for who goes to the TK panel or the camp program, other communities are happy with the way it's set up now. But part of the problem has been in terms of consistency, there isn't always a lot of consistency with staff and election processes, so ted was suggesting that in his community, they should set up a working group or committee similar to the one set up at giant mines, so the committee is consistent over the years. Even though they aren't the ones going out to the programs, they are selecting who is going out and they are getting consistent feedback and report. We have a few more recommendations to go through.

**Recommendation #5: Discuss who selects members of the AEMP and TK Panel from each group.**

Ted was asking for support, asking your own community for support on this, if it's needed from your own community.

-Ted: [Re: how the panel committee is set up for Giant Mine, he is suggesting something similar for Diavik]

-Joanne: They meet frequently and they are focused on Giant Mine. Another committee would be focused on Diavik or other diamond mines in the area, so you have a group of people who are committed to receiving info and are building knowledge and history for each mine that begins development.

-Ted: Three people work together with one staff from the mine, they are the mine person that work to get people together. It works well. [They meet monthly].

Joanne: So you would have more continuity, more regular communication. And from there it goes to CC.

-Albert: "I'm happy to be here. When we talk about the mine, it's our land that we are talking about, we represent our land and our people when we come here, it's not only for us. I'm so happy to come here and help out. And sometimes unexpectedly something happens, tragedy happens, we are all in the same position here. We don't know who is, or what is going to happen. That's why I really want to stay here and continue the work, but this is my half-brother and he really wants me to go home. The day after tomorrow they are going to send the body back to Łutsël K'é, and they are going to have a night of keeping him there and then the funeral will be on Saturday. He was related to us here that are sitting here on this panel today. We talk about the water, the fish, the land, the animals around here that survive on the land. I am really happy when I help out in these decisions. To help all my community members too so I have to go back tomorrow. When your family member passes on, we've all been through all of this together, when a loved one passes. Tomorrow when I go back, I want to leave the next day. ...I love this camp here and we are on the barrenlands and it's very lovely land and we are staying in a good place, we are well taken care of. I am happy for that. Thank you, everybody here is helpful to one another, even there is sometimes I can get my own tea, and we are strong here."

-Joanne: Over the next few days we will continue to make recommendations. Do you want to finalize them while we are still in camp, or would you be okay with finalizing them at the verification meeting in the fall? ...

-Albert: "In my community we have our own workers that work with that, in renewable resources and wildlife committee. When it comes to the TK Panel for Diavik, there are people that are good people that will select other people and they should be on the panel, as long as they... because some Elders, sometimes they are good and sometimes they are not, so there are Elders than are over 60, but they are still good on the land."

-Sarazine: I thought Joanne would get the people to come to this here, so I guess it wasn't like that.

-Joanne: Your leadership, your nation, has a process that they use and they work mainly through the wildlife committee in Łutsël K'é.

-Sarazine: I'm not on it. ...

-Joanne: I have no say over that.

-Albert: "When we have TK Panel, we always included a youth to come with us, and there is hardly any youth here. He thinks it's not fair for them to be excluded because I know there is some youth that could have come, but they were not asked to come, if they wanted to. And they put some here, so there is no youth, just adults. And it's a learning thing for the youth too, for the future. Us Elders, we can't always be around. If we have a change, they should start learning."

-Joanne: Everybody wants youth, sometimes we try to find youth to come through your process, your wildlife committee, and we can't find anyone who is willing or able.

-Sarazine: Not all the youth use Facebook. They should have a sign saying they need more youth. It's easy to do, you can't just use Facebook.

-Joanne: We're depending on the wildlife committee to advertise it, tell them not only to post it on Facebook.

-Myra: I'm not exactly certain where it was posted, but I know that it was posted.

-Sarazine: More information, they have a big place, I know where they could post things, everybody that goes there should post things.

-Joanne: Back to the question of how you want to finalize the recommendations, do you want to try to finalize them here before we all leave on Sunday morning, or do you want to keep writing the ideas down, and then finalize them at the verification session in the fall?

-Ted: I want them in draft, for input, and then we might add more, and you have to tell us. You never want to leave hunters and trappers out.

-Joanne: We need to hear from you people who experienced this. We could look at an extra step in the process this time, where we draft the recommendations here, with your input, and we take them and clean them up, make sure everything is clear, and then email them to each of

you as participants. And then you can bring whatever you want to the October fall meeting, to finalize them. Yes?

-Jack: For the verification process, where everybody gets together, in Yellowknife. We'll be discussing the draft recommendations? Maybe that's where the final recommendations will be done. I know, right before the verification process, there might be some more coming.

-Joanne: Yes, but they need to come through you, because you were here.

-Jack: But what we're discussing in Yellowknife, it will be draft-and we will finalize them. Yes, that's good with me.

-Joanne: Everybody ok? [Kathy: Yes. [Others yes...]]

-Doris: "Re: who selects members, I remember when our wildlife manager – he was working with Joanne on other stuff, I won't discuss. But LauraJane got an email about TK camp, who is going to be going out. We had a wildlife meeting with our own board. They select people to go. But the people that went in the past that came here before, we asked. And then we picked up a young person. He came to the first session in Dettah but then when he went home he took a summer job. I told him you were out when we were self-monitoring, we had to do all kinds of stuff when we self-monitoring, so he couldn't come. I don't know how my sister got on, but I wasn't there. All the signs were up for the youth, they said I'm not going to go there for 10 days because it's a short-term thing, June July August September they want to make money for themselves. Most of the youth all went for a job. It was hard for us to find somebody to come. Every 3 years we have a hard time looking for people. LauraJane will call the wildlife committee and ask who wants to go, and put Albert's name down. August said no because my wife is not healthy. Albert came with a translator. We tried to ask Ernest, he was doing something else, he said no. I was told you are only allowed to take 1 woman, 1 man, 1 youth. So for me it doesn't matter if you are a man, woman, it doesn't matter to me, we still speak for our committee members, for ourselves, our youth, that's what we came here for. It was on the community Facebook board and there was hardly anybody. ...we struggled to find people, and if we take our own family member, then people talk about it. So I don't pick my own family, so I stay out of that. That's why I stay out of it. It should be 2 youth and 2 Elders, then it would be easier for us. We only take one all the time and we have a hard time at home. In 2018 when we came, I brought a young guy with me, and Nancy bought a young guy, they were taking out fish right on the dock, working together, learning from each other. This year it was hard. I don't know how to resolve these issues we're talking about, because in 3 years' time, I have no idea. ...we need 2 youth, 4 people from our community. If we can't find someone, then we can bring less, but we try to take a boy and a girl all the time to our different other meetings, but sometimes it's really hard. The young boy that came to our meeting, I was so happy to bring him, but he said I will work for Ni Hat'ni and it's a longer job."

-Nancy: "For our side, too, we had a translator, but the translator couldn't come so the Elder wouldn't come. So we tried selecting others and it was pretty hard with Covid. Vikki was selected by KIA because she's a summer student."

-Joanne: Marie Adele, are you satisfied with the way your organization worked on this?

-Marie Adele: "It was unexpected, the call, they called my husband first and she called the next day, to pick a youth. So all the youth, it's not a good time, August, it's when all the summer students go back. ...they all have summer jobs, to go out on the land. ...my son doesn't want to have a Covid test, and he didn't want to come, he didn't want to take a chance. I asked my granddaughter but she is diabetic... I got a hold of her... the rest of people are working, wanting to come, but the last day they phoned TG. Our community is small, some are working at the mine, some are getting ready to go to the assembly, some families take their kids. It's really hard to find a youth that is not doing anything, they all have a job. ...I feel so bad, if only I have two youth and one Elders coming with me, it would have been great. It's my first time being out here, I'm thinking what am I getting myself into. But this is our land, I want to see what happens. This is the first time I've been close to a diamond, Diavik mine, first time I've seen across. In the 80s and 90s they were talking about opening a mine, I always wanted to see it. There was a few of us, they bring them to Wekweèti, they keep saying no no no but we knew this was going to happen. It's really sad to see this, especially ...if I didn't come I wouldn't have know anything at all, what's wrong with it, the water too. The lake, the boat ride, Terri's right, it's dark, black. In my community when you go for a boat ride, you can see right now, you can see whitefish. But here I tried to look in the water but it was too dark to see anything. The only time I see the fish is when they come up to grab a little insect or something on the lake. I'm so sad, I know I should have really tried, but I want to know 2 weeks ahead of time that I was coming out here, I would have tried my best to get a youth. I'm not much a talker here to learn and I learn from listening, hearing what the others are saying. After this, all the paper when you bring it back, send it to the chief of each community, not just to the TK Panel."

-Joanne: After our verification meeting, where you have a chance to review the draft report and finalize the recommendations, after you review it and approve it to say this is what happened, I agree, this is our consensus on recommendations, then once that's finalized by you, then that's when it goes to the Indigenous governments.

-Marie Adele: "Our TG office is in Behchokò, so it's hard to find out what's going on, and if there's anything like this going on, it's hard to find it. It's really hard to find out. I'm glad to be here and learn a lot, listening, looking, mahsi. Sorry for not getting a youth."

-Joanne: What **about the next recommendation. Recommendation 6: discuss parasites in caribou – how should this be addressed? Since diamond mines, people are seeing more parasites in caribou.** DDMI doesn't harvest caribou, so they don't have a study program. There is a monitoring program, it's never been clear to me, so I'll let you explain it.

-Gord: Our caribou monitoring program is focused on the behavior of the caribou around the mine. Any time a caribou is reported, technicians will go out and see how much time they are spending on activities, eating, running, walking, with the hope of determining changes in behavior depending on whether it's close to or far from the mine. That's the extent of our monitoring because we don't kill or harvest any caribou and don't check for parasites inside them.

-Jack: Does GNWT, ENR, does sample caribou?

-Gord: They do helicopter surveys of people in the past, I can't speak to when that was done.

-Jack: Do they sample parasites?

-Gord: I think it's focused on hunters providing them with samples. They rely on hunters giving them information.

-Gloria: "With the ice road in particular, or any mines, I have experience with Gahcho Kué. If they see a dead caribou or injured caribou, they will call ENR to put the caribou down, then they will sample that caribou. But like Gord said, hunters are provided with a sample kit to do sampling. They would like us to do it every time we go out, but we don't have caribou in our area anymore. So we travel many miles away and at that time, sampling sort of gets done probably and sort of doesn't because in -40 weather you are working as fast as you can to get that caribou and then keep going. We don't have a base camp, we are only setting up canvas tents in the wintertime."

-Joanne: One thought was-should Diavik continue to play a role after operations is finished in monitoring caribou, and what role should that be?

-Gloria: "At the beginning of any kind of mine, they wanted to watch the behavior, that's the extent of what they felt comfortable doing. As members of this area, it's to a point where development has been going on for so long that it needs to start happening together. When you're saying, discuss parasites in the caribou-if Diavik has been here since 2000 and right on the migration route of the caribou, it needs to be a program, an expanded program."

-Joanne: Right now they are only looking at behavior on site. Once it's closed, people won't be there full time to watch out for the caribou. Ideas for how that could work, so that Diavik can continue to play a role in supporting monitoring?

-Ted: "Support financially and monitor with each group."

-Albert: "We all hunted caribou, and we live on the caribou. A long time ago, there was lots of caribou. Some of the caribou had cysts on their liver. And on their lungs, they had pus on their lungs, I've seen that. So in between the skin and the flesh, wasn't smooth, was rough. In the past, I've seen that. I just wanted to tell a story. When the mine came out on the land, from Łutsël K'é straight north, northeast from Łutsël K'é. When I was hunting I saw 11 caribou with broken legs. We went out there just to monitor things that were on the land, and this is what I've seen. He saw one small caribou with a mother, and they both had broken legs, baby and mother, and they were so skinny. The Elders that were with us told him to shoot both of the

caribou. They were suffering. We looked at it, it was really skinny, but we skinned it, and whatever wasn't good, we saw where the broken leg was, the liver, the contents of the stomach. We brought it back to Łutsël K'é and then we gave it to the game warden, ENR in Łutsël K'é. They never told us, this is what happened, or nothing, no information. At that time, they had roads, the roads weren't defined on the side, there were rocky boulders there. So that is why, when there is lots of caribou they travel really fast, so if they step in a crack they break their legs. I've seen them travelling that way, when it's rough. So I came here and I came to the mine, not only this one but other ones, so I told them to make a slope, define it so there are no sharp rocks or anything. Maybe a year later, when at Diavik, there's lots of caribou there. I asked them, where did you work on the slope since I was last here. They showed us, one place, it was 50 ft, that's the only one that they had fixed. They said that was the caribou crossing, if caribou are scared and running they would cross anywhere, even if it wasn't a crossing. This is what happened at that time. After the closure of the mine, what is going to happen? Even now I look at the fish, the lake, it's not very good what lives here now. So even after closure of the mine, what I think for myself, when the mine closes, all those rocks that they put on the surface, all the vegetation that grow on those rocks, when the caribou come in, they are going to start eating the vegetation from that moss where the rocks are. And how are we going to know that it's not good for the caribou, and when they are sick we can't know it. After the closure of the mine, they should still monitor caribou, and if they see caribou, let us know what way they are travelling, if the caribou travel this one, and then they go south a long ways, to Fort Chip, there are Chip in Saskatchewan and they get caribou there. And I travelled to meetings with these people also. Now there are a lot of fish here, the fish is no good because the water is no good. What about the caribou? If the caribou get more parasites and if it's contagious, the people will get sick from it too. So when the mine closes, they should still keep looking at the caribou and the vegetation on the rock pile. Even for a long time after the closure of the mine, they should still keep monitoring it.

-Joanne: Building on that and Ted's suggestion, there are many communities, everyone here has—except for Métis, an established Guardians program that from their own communities, they are monitoring caribou, and other things. Maybe the idea to ask Diavik to contribute to that monitoring activity, long into the future, would be the way to go. In the last couple of years, I've been involved in work to bring all of those programs together to talk to each other and form a relationship with each other so they can begin coordinating their own monitoring activities with each other, find out who is going to be there, what time of year, start building a working relationship with those existing programs so that could be part of the future after Diavik is finished with their mining activity and their monitoring role. People okay with that idea? Supporting existing community based monitoring programs, contributing to them working together with other communities, coming together to share responsibilities and information, with what they're finding?

-Albert: Yeah, good.

-Doris: "This is a hard discussion, we all know ...we have caribou stewardship in our community. In the winter when the ice road is open, there is caribou close to the mine. There's traffic on ice road like crazy. ENR are watching people, I don't know if they do samples. But they take meat home and some communities overload, shoot more caribou. We campaign in our community that the ice road is only made for the mine, we are fighting for it with Gahcho Kué, we are trying not to come this way and hunt for ourselves, we go somewhere else for muskox. It's pretty hard. Everybody that lives in NT and NU they go hunting and they make sure they take a certain amount. But there is parasites in the caribou... if we see an injured caribou, we have to shoot it. How would they know if it's healthy? I went to the mine so much and there was a caribou laying there, you could see right from the kitchen. When they are on the road, all vehicles stop for them. What do they eat, we don't know, because everything around the mine is gravel spill, who knows. They say they clean it up, there's still got to be something on there. For me, we should really monitor our caribou, their health, that's the recommendation. The ice road is only made for the mine, and I heard in my community that we should be talking about stuff like that. It's not made for highway to go hunting a long time ago when we went hunting we go into bush by skidoo or dogs, but as soon as the road is open, everybody uses it. They bring their trailer, tent, house, we see garbage on the ice road. I'm not going to lie. My uncle was on there, this year Jake was on the highway, he came and stopped me and said auntie there is so much garbage on the road. People throw their garbage away, leave their meat behind. A young person telling me things, we have to bring it up here. We talk about caribou, why is it that the mine ice road is open to the public? We can live off other animals like muskox. I've lived off it for 5 years, because I was told caribou was declining. Our freezer was full of muskox meat. ...we have to learn from each other and work from each other."

-Joanne: And that's one of the major concerns that all of the community guardians programs have. So they are struggling with how to stop that harvesting from happening on the winter roads. They are looking to mining companies, all of the mining companies, because they all use them, to help solve that problem, how do you stop that from happening, how do IGOs stop that from happening, GNWT, how do we give the caribou a chance to come back, into the numbers we used to have here.

-Doris: "My son went hunting from somebody with Behchokò, he was in the truck... the person driving was not charged but my son was, he only went to help out the person to go out.... my cousin Freddy Sangris too. ... he only volunteered to go help an Elder out..."

-Ted: "...the winter road should be stopped, you should be checked, you went once, you're not allowed to go away. We need a stronger truck stop on the road. I went once, got a few caribou, I'm good with that. It's not fair... we've got to have stricter rules."

-Jack: "Talking about the winter road, I believe the only way to stop the slaughter of caribou is to ban all hunting off the ice roads. Only up to the mine sites, like Doris was saying. I think that's

going to help, if we ban hunting on ice roads. It's a private road, not public. Right from the start, when Lupin mine opened, they started the winter road. ...winter road opened, back early '60s. I heard stories, people coming from ... all the way to Inuvik, Alberta, people coming up here, slaughtering animals and bringing them back. At the start, people said there were thousands of people going by with truck loads and they are all going out of the territory. The only solution I can think of is to ban all hunting off the ice roads."

-Joanne: So-what about the fish and water sampling, where would people like to go next?

-Peter: Maybe a mile away from the last time we set nets?

-Gord: We can go into Lac du Sauvage [got go ahead from Diavik management]... we can bring blankets, tarps, and we can set nets there. If we want to go up into Lac du Sauvage, we can do that.

### **General Notes on Discussion Re: Preliminary AEMP Recommendations**

-As well as the recommendations above, a number of other recommendations were made on this day by participants from LKDFN, below as follows.

-Albert: do sediment sampling every year – since the mine there is more sediment. The water goes through the plant but it's still not good, worried about the fish and water.

-Albert: we should fish sample in Lac de Gras and Lac du Sauvage, and do it more often

-Albert: we should do fish tasting in the winter too, because there's more chemicals in the water then. In winter you should test too. You should be watching it all season.

Albert: "You should test the other lake [Lac du Sauvage], your definition is of where the water is not good."

-Gloria: I want to see the data, by year, going back, all that DDMI / Golder has. This should be displayed as visual summary, with quotes, something where you can easily compare the scientific data with the TK data, and easily understand / compare it.

-Albert: you should do winter and summer sampling - sample winter and sample more often.

## **Thursday, August 5, 2021 – DAY 6**

### **Morning Gathering to Review Plans, and Storytelling**

-Many stories were told around the fire on this day. For example, Peter told about the time when we won championship dog races in March 1972 with 5 dogs (against other teams who had 14 dogs). Every day it was 50 miles, the same route every day, and he won \$7500. He went hunting with the same dogs to MacKay Lake, that's why they were so fast; they would hunt caribou. He trained the dogs for hunting caribou and trapping, so they were strong. The leader, Blackie, had one eye. The story is documented in a book and video, "From the Trapline to the Finish Line".<sup>2</sup> He has a newspaper article that he keeps in pages of the bible, when he is bored

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<sup>2</sup> <https://www.abebooks.com/9780919315310/Trapline-Finish-Line-Story-Yellowknives-0919315313/plp>

at home he takes it out and reads it again. In one race with Jonas Sangris, both their lead dogs were called Blackie, so when he gave his Blackie instructions, Jonas' team moved / listened and he went by him and won!

### **Evening Tea / Water Tasting: General Notes**

- Group generally discussed that top 2 m sample should be clear.
- Jack: when you put it on the fire, it makes the water smoky. Change the form – agree, it's okay, not. As it is does not make sense.
- Nancy, Jack: stuff floating, little bugs in the water
- Peter, Kelsey: small pieces of white something, maybe dust, and bugs; not usual to see small bugs actually moving in there; stuff floating on top; "cant' drink it, there will be small bugs in you"; some "small light bugs, some dark bugs, really small, he's watching them"
- YKDFN not happy with the water sample: Lena: "maybe that's why the fish are sick ... I'm upset". Fish are inside the water, so it affects them... Peter: "the bugs are playing baseball down there, one eyed champion at baseball"
- Some participants do not want to taste water samples with boiling (Peter, Lena), others wary

### **Transcript of Evening Tea / Water Tasting: August 6, 2021, 6:30pm [All participants except LKDFN delegation] - Part 1**

- Jack: If you do it tomorrow and leave it overnight, it will change the taste. And if you do it over the fire, it will change the taste of it, taste like smoke.
- Joanne: It's the way we've always done it. I understand, but to make changes in the method right now isn't going to work. But we will note it. [Suggested to use kettle, not pot, but there was no kettle at camp].
- Sarah: What did you think of it so far? [2m sample, from water #2]
- Jack: "It's got all this little stuff floating, there's little bugs, hard to see, but there".
- Kathy: "There's little bugs. Looks like super baby fish. There's a bunch of them. There was one big bug in there, he's probably still in the bottom."
- Jack: "A whole bunch of them running around". ...
- Lena: "Those small particles, they look like dust." ...
- Vikki: "There was no fish" [when trying to catch today]-
- Joanne: Was it light enough to see?

-Vikki: "Dark water, too" [at the sampling site]

### **Transcript of Evening Tea / Water Tasting: August 6, 2021, 6:30pm [All participants except LKDFN delegation] - Part 2**

-[Sample #2, 2m]

-Sarah: Do you usually take water from the land? [Yes].

-Kelsey: Yeah, [this sample] tastes all right. Tastes clear. ...

-Sarah: Tastes clear, tastes okay? You went out on the boat, right? Was it pretty deep?

-Kelsey: Yeah, deep. It was dark, deep water. The movement was kind of calm. Some [movement]. I couldn't see-it was dark. Yeah, I could see my hand [in the water]. [The tea] tastes all right. Tastes like tea. ... The water was cold. It was dark water, dark blue.

-Sarah: When you're out camping, how do you choose where to get water from?

-Kelsey: I would go on a spring, get spring water from a hill where it seeps in. But I would want to know where it seeps through, not a creek or-if it comes from a hill then they collide together and they go to shore. Not where there's a beaver dam, or it goes down. Like natural spring water. So all the water we're trying is boiled? ...

-Joanne: No. So far, that's what you've tried. But there is some un-boiled, if you want to try it, but you don't have to.

-Kelsey: "Yeah. Because there's bugs in there. I would try it and spit it out ... the very first taste of the boiled water, it kind of tasted stale, I don't know if I said that. That's what I was trying to get that. When I very first tasted it."

-Sarah: And you said you're nervous about the bugs?

-Kelsey: "No, it's all right, I'll drink it."

-Joanne: Ready for the middle sample? [Some people left for dinner]. I'm thinking we can do that tomorrow. So Gord, we'll do the next two tomorrow.

-Gord: Sounds good.

### **Water and tea tasting (afternoon), Transcript, 2:00pm, August 7, 2021**

-Myra: "Community members would like all of us to try too.

-Sarah: Can you tell me what you think of it? [6m sample, sample 1-2] Of course, you don't have to drink it if you don't want [no, Peter doesn't want to drink it]. Does it look okay?

-Peter: It's good. Nothing there.

-Kelsey: There's a few little spots.

-Kathy: Yeah. [Sarah: Kathy, you think the same?] Yeah.

-Kelsey: Yeah, kind of looks like dust or something.

-Kathy: Yeah, or dead bugs. ... looks like bed bugs. There's 1, 2, 3, 4, 5. It's either dirt or those little dead bugs. Specks. ...

-Nancy: Last time [last camp, 2018] we did this two times in a row. ... it's good to do it at the same time, so that you can taste which is which. You do the top and the bottom at the same time, that way you remember what you taste. If you wait the next day, it's no good and it sits- you wouldn't be able to say, it tastes the same as yesterday.

-Sarah: I hear you, we should have done that. Do you want to do it all again, taste it today?

-Nancy: No.

-Vikki: [6m sample, 1-2] Sand?

-Nancy: Again, you can see those little bugs in there that you already see. You can see them. You could see them floating at the bottom. That bugs you see yesterday, they'll be at the bottom today, not moving around. ...

-Joanne: We will do the third level now on the fire.

-Myra: Do you want to drink some?

-Marie Adele: No. ...I don't even know if I'll try it.

-Myra: Even if it's boiled and it's cold?

-Marie Adele: Yeah, I'll try that. ...

-Lena: Peter wants one to look at [not to drink]. ...

-Peter: 1, 2, 3 [counts bugs] There's three of them. Still alive, yeah. They still play hockey. ... They're moving [the bugs], see better with the light. ... I see four [bugs].

-Sarah: And you don't want to drink any of this? [Sample 1-2]

-Peter: No. ...

-Kathy: To me it tastes good, not flat [sample 1-2, cold water]. The other hot one tasted flat, that's probably because of boiling. And there are five specks, that could have been bugs. Clear water, good, not flat. There are 6 live bugs, very tiny. Very, very tiny red bugs. Cute bugs in the water. ... I would be curious to know what they are, because I think they're natural to water. I remember my dad getting pails of water and there were beetles, like a soft backed beetle... we still drank the water, fill it up from the lake when you're camping, boil it up and make tea. If you're thirsty I remember being in the boat and you just stick your cup out and splash in water, and Great Slave Lake water always tastes so good. It's got a bit of a sweet taste on your palate, you know you're drinking water from there.

-Sarah: Would you scoop your cup like that from this lake?

-Kathy: Probably. Because if you're moving like that in the boat you're churning up water, the side, we were taking it from different levels ... the two meter had it as well [bugs], their bugs were different though. These are just the red ones, the other ones had the see-through, they almost looked like a larval stage. It would be nice to know. Have to ask the water guys and see if

they have pictures of different bugs in the water. Those little guys too, I've seen them in the water.

-Sarah: It sounds like it's more where the water is?

-Kathy: Could be. Would be interesting to get water from the other side, to see if they had bugs. It's all moving water coming from different small lakes [from Lac du Sauvage area] that have all kinds of bugs in it and get transferred down. I kind of think it's natural. ...

-Marie Adele: There's one at the bottom, two [bugs]. ... we should take it home, look. ... [sample 1-2, cold water]...

-Myra: I was going to drink it.

-Marie Adele: With those little bugs in there? Are you kidding? ... [Myra: You think I shouldn't drink it?]

-Marie Adele: No, don't drink it. ...

-Kathy: The hot water tasted flat. Didn't get any tingling or anything in my mouth. The cold water had 6 live bugs, and they were cute. There was five specks in the hot water we could see.

...

-Nancy: The first time we were at camp we did it at the same time, the top and bottom, so you can tell the difference.

-Joanne: Yeah, it's hard when they are spread out like this. ... there's lots of first level left, do you want to have another look or taste? ...

-Sarah: So this one should be 1-3 on the forms [bottom level, 11m].

-Joanne: Make sure to use new cups. ... there's ash in this one [from the fire]. ... For next time, we need a big kettle.

-Peter: [sample 1-3] Three or four small dead ones [bugs]. ...

-Joanne: Hard to tell, I'm pretty sure there is one bug for sure. But the other stuff might be ash. I can make out one bug. But I can't be trusted with my vision! ...

-Nancy: There's bugs. When you heat it, it tastes all the same, because you taste the smoke. The sample is not good. ...when the water is hot, it tastes all the same, and when it sits overnight. ...

-Sarah: Did you try the cold water?

-Nancy: Yes, I did. It tastes all the same [if sitting in plastic overnight]. This one is different. Not really, but you can notice the different tastes, tastes kind of sandy or something. ... Tastes muddy. ...

-Kelsey: Tastes like smokey tea over the fire. ... The normal cold water tastes just like smoke. No-the warm water tastes like smoke. Smoke on the water.

-Kathy: ...there's a little plankton.

-Peter: Yeah, this ones small, that ones big. That one is bigger. ...

-Sarah: Are you going to taste this?

-Kelsey: Yes, this little bug is not going to stop me.

*Gord explains scientific water sampling again to others in group in background.*

-Marie Adele: It's hard to describe, everybody has different tastes.

-Sarah: I agree, but I think it's also about comparing it to water that you've had out on the land or that's good.

-Marie Adele: The water here in Diavik is not the same as at home. My water... you get it right in the middle, not on the edge, not around [the water body]. ...

-Kathy: I took a video of this bug with my phone! ...

### **General notes from water tasting**

-Joanne: There's lots of the top water left, do you want to have another look / taste?

-Nancy: I don't think it would help. [Re: sample 1-3] It needs to be all done at the same time, to taste the difference and not to be done over fire, because it just tastes like smoke. When out the first time, we were out for 9 hours on the water and did all the sampling, then tested once back at camp, and didn't let it sit overnight in plastic where it can change the taste.

**[End of AEMP 2021 Daily Camp Notes]**

# Diavik 2021 AEMP and TK Panel #13 Evaluation Form

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Thank you for participating in the Aquatic Effects Monitoring Program and TK Panel #13. We hope you enjoyed your time at the camp. We appreciate your honest and constructive feedback on your experience. Your responses will help us improve future camps.

1. How would you rate the camp for **working together?**
  - Very good
  - Good
  - Neither good nor poor
  - Poor
  - Very Poor
  
2. How would you rate the camp for **Elder-youth teaching opportunities?**
  - Very good
  - Good
  - Neither good nor poor
  - Poor
  - Very Poor
  
3. How would you rate the opportunities for you to **communicate among participants?**
  - Too many opportunities
  - Enough opportunities
  - Too few opportunities
  
4. How would you rate the **respect among participants?**
  - Very good
  - Good
  - Neither good nor poor
  - Poor
  - Very Poor
  
5. How would you rate the **Elder care and attention?**
  - Very good
  - Good

- Neither good nor poor
- Poor
- Very Poor

6. How would you rate the **documentation of Traditional Knowledge?**

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

7. How would you rate the **filming process?**

- Too much time
- Enough time
- Too little time

8. How would you rate the **venue and food** for the camp?

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

9. How would you rate the **logistics** for the camp (e.g. hotel, travel, honoraria)?

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

10. How would you rate the **camp for safety?**

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

11. **Overall**, how would you rate the camp?

- Very good
- Good
- Neither good nor poor
- Poor
- Very Poor

12. What were the strengths of the camp? What did you enjoy about the camp?

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13. How could the camp be improved?

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## Appendix E Interview Questions and Transcripts

- Name, community
- 1. Tell me about a time when you were out on the land?
- 2. Have you been to the Lac de Gras area before?
  - a. Yes: What are you seeing that's different?
  - b. No: What do you hope to see?
- 3. Why is this area (Lac de Gras) important to you?
- 4. Why is it important for both youth and Elders to be involved in this work?
- 5. What does healthy fish and healthy water mean to you?
  - a. What are you seeing?
  - b. What do you hope to see?
- 6. Elders and everyone here have said the caribou haven't been in this area since the mine opened. What would it mean to you to see caribou here again?
- 7. In 2025, Diavik will be closing. What sort of long-term monitoring do you want to see happen? (i.e. vegetation, wildlife, water, fish, birds, etc.)
- 8. What do you hope to see happen in your communities after the mines close?
- 9. Is there anything else you would like to share with us today?
- Mahsi cho / Marsi / Quana!

*\*Verified by Kathy Arden, December 2021*

Katherine Arden: My name is Katherine Arden. I'm from Yellowknife, Northwest Territories, born and raised there.

Speaker 2: Thanks. So, we wanted to get a chance to talk to people. People have so much to share here, so it's great that we can do one-on-one.

Katherine Arden: Mm-hmm (affirmative).

Speaker 2: I guess, to start, can you tell me about a time that you were out on the land? A special time, something that sticks out in your mind?

Katherine Arden: It's been a long time since I've been out on the land. I [00:00:30] don't have as much experience as the Elders here on the land. They depend on the land, they hunt on the land and everything. I guess you could say I'm an Elder in training and learning from the Elders here that do live on the land. But I have in my past hunted chickens and ptarmigans. I had my own 20:20 [00:01:00] and a 410 and did chickens and rabbits... did some snaring. I grew up around it with my father, went out duck hunting with him when I was young, went and tended nets, summer and winter, shot a caribou, skinned a bear. So, I've had those opportunities in my life. So, I understand when the Elders are [00:01:30] talking about their concern about the land and the animals that's affected by the mine.

Speaker 2: Thank you.

Katherine Arden: Thank you.

Speaker 2: Have you been to the Lac de Gras area before?

Katherine Arden: I've been on the TK Panel since I think about 2014, which was the first time I'd been to the Lac de Gras area. This is my first time at the Traditional Knowledge Camp. I'm glad that I came because [00:02:00] it's an opportunity for me to, like I said,

*\*Verified by Kathy Arden, December 2021*

learn from the Elders here, what changes they've seen and what I see for vegetation, the animals that come through here, the caribou that come through here, had an opportunity to see some of their old trails that they've been on and see some grizzly bear poop, see a grizzly bear. We've been fortunate with that. Saw a moose. [00:02:30] It's very fortunate for me to come here. Yeah.

Speaker 2: Can you tell me a bit more about what you've seen this trip? About fish and water and things since you've been here?

Katherine Arden: Yes. I've been to other camps like Snap Lake where we did fish tasting to check the health of the fish. And here I was very surprised to see the parasites [00:03:00] in the fish. I think out of 21 fish that we got, there was only one good fish. And we had an opportunity also to open up those little pustules that are on the fish and see the parasites that are inside. I'd never seen that before. Always thought that fish were always healthy, and apparently, it's a big change from last year. When the other members of the traditional knowledge [00:03:30] panel came here, they said that there's a big, big difference in the fish this year. So, it's a big concern what's going on with the water, and there's other animals that drink that water. So, they're concerned about that. The caribou coming through here.

Speaker 2: Mm-hmm (affirmative) why is this area important to you?

Katherine Arden: Well, as far as I know, [00:04:00] it's been a hunting area for many people from long ago. And even for people today, and there's concerns with the effects that the mine has on the land right now, dust that's affecting the food for the caribou. It's affecting the water. It's affecting the fish. In my family, my dad, my brothers all came up in this area. They were prospectors [00:04:30] and they'd stake claims in this area, but they also hunted and brought food home from this area. I remember my

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dad bringing lots of caribou home and we'd be cutting it up and freezing it. That would be our food source. And I don't ever remember seeing a, my dad saying that there was a sick caribou or things like that. They were all healthy and they all had good food here.

Speaker 2: [00:05:00] So on that topic, Elders have been talking about how there hasn't been caribou in this area, much since the mine.

Katherine Arden: Mm-hmm (affirmative).

Speaker 2: What would it mean to you to see caribou come back through here?

Katherine Arden: I think it would mean a lot. Absolutely it would mean a lot. That would mean that things are coming back. Their food source is coming back, and if they do use this area, especially the North Country Rock Pile, [00:05:30] because it's being built and graded for them to pass over, because it sits on top of one of their migration routes. So, if they start coming back here, that means that there's some sort of normalcy that's coming back to the land, maybe the vegetation is coming back. But my understanding is that it takes a long time for lichen to grow back. And the dust here at the mine is affecting lichen in this area. So, when we went [00:06:00] out there, I've noticed there isn't much, it's very sparse.

Speaker 2: And what about healthy water and healthy fish?

Katherine Arden: Of course, that's very important. Everything relies on the water and from what I understand, this water goes all the way down through to Copper Mine and everything along the way is affected by what happens in this lake. Right now [00:06:30] just looking at the fish, there's obviously something wrong. They're stressed somehow. My theory is that it's the blasting

*\*Verified by Kathy Arden, December 2021*

that's going underground is we're reverberating into the water systems, which is probably stressing them out. I mean, they're startled all the time, and that weakens their system and they're more prone to parasites, but that's my theory.

Speaker 2: Okay. So [00:07:00] why is it important for you for both youth and Elders to be involved in this kind of watching work?

Katherine Arden: Because things are changing. This is only one diamond mine. There's another one across the way. We have to keep on top of what these mines, how these mines are affecting their livelihood. And going forward, if we have youth that are learning how to use the land and hunt [00:07:30] and whatnot, they have to learn and watch and see what the effects are on the vegetation, the animals, the fish, the water, and everything. So, we have to try and keep that kind of a traditional alive. So yeah, it's important that the youth be involved in this evolution.

Speaker 2: So, we've been talking a lot about diamond closure plan for [00:08:00] 2025. What kind of long-term monitoring do you want to see happen?

Katherine Arden: Everything, everything, water, vegetation, fish, caribou, wolverines, the wolves, the bears, all of them. And we talked about that today and we wanted to see some very long-term monitoring because [00:08:30] things don't quit in 10 years or 20 years. So, we want to see maybe 50 years of monitoring and have Diavik Diamond Mines involved with that and involved in the community. Don't just walk away. You've created a relationship with us now, since you started. Stay with us. Maybe have some community celebrations where you can come together and share the [00:09:00] knowledge on the monitoring with the whole community and not just the people that are on the traditional knowledge panel. Our people are

*\*Verified by Kathy Arden, December 2021*

people that like to gather and share information. So, I think that's important that they do that.

Speaker 2: Is there anything you'd hope to see in your own community or in other communities after the mine closes?

Katherine Arden: That Diavik stays, shares with the community, stays [00:09:30] there. Like right now we have a great working relationship with them. They listen, they take all our concerns, and they say, yes, we can do this. That's a very good suggestion. We're going to try that. No, we can't do this and remain with the community. Like I said, they've developed a relationship with us, try and keep it after. Don't just walk away and say, okay, we're done. See you later, here's your monitoring program. [00:10:00] That kind of thing. So, stay with the community and the community, the people, will be happy to do that. Maybe have a feast in the community and dance and sing and share. That's what I'd like to see.

Speaker 2: I have one more question if that's okay. So, you said you've been part of the TK Panel since 2014?

Katherine Arden: About 2014. I believe when I started. Yeah.

Speaker 2: Okay. I'd love to hear a little bit about what you've seen since you joined, [00:10:30] kind of how your experience has been since that time, if it's changed?

Katherine Arden: Well, when I came on, I knew nothing really. So, the best thing I could do was just listen. I started out asking questions. I was told, oh, we already dealt with that one. Oh, we've already dealt with that one. So, I thought, okay, well I might be on the right track then. So that's when I started learning just to listen and see what the Elders were saying, because some of them had been on there for quite a long time. [00:11:00] So that's what I've been doing now, is listening. And hopefully I can keep

*\*Verified by Kathy Arden, December 2021*

going forward with it. If those Elders pass on, then hopefully I can take that and run forward with it to the upcoming youth and take those concerns and keep pounding it and keep saying, this is our concern. This [00:11:30] is our concern. So that's how I see myself as Elder in training, to keep those things going forward.

Speaker 2: You see yourself as a bit of an advocate as well?

Katherine Arden: It's something I'm learning. Yeah. I never really knew exactly what an advocate was, but I guess you could say that.

Speaker 2: Elder in Training also.

Katherine Arden: Yeah. Elder in training.

Speaker 2: Thank you.

Katherine Arden: Okay. [00:12:00] Thank you.

Speaker 2: Do you have any questions?

Speaker 3: No.

Speaker 2: Okay.

Speaker 3: That's wonderful.

Speaker 2: Anything else you'd like to share or that you'd like Diavik to know or [crosstalk 00:12:08]

Katherine Arden: Not at the moment, no. That actually, well, my comment is a, I would just like to say thank you to Diavik for keeping an open mind and listening to our concerns and taking them and doing something with them or saying, yes, we can. Yes, we, or we can't do that [00:12:30] because of this or that. So, yeah. But

2021 AEMP TK Program

Participant: Kathy Arden

Interviewers: Sarah Ravensbergen (Speaker 2), Jay Bulckaert (Speaker 3)

*\*Verified by Kathy Arden, December 2021*

like I said, they've been very good with us, so we appreciate that.

Speaker 2: Thank you so much.

Katherine Arden: Okay.

Speaker 3: Thank you for your time.

Katherine Arden: Yeah. Thank you. [crosstalk 00:12:43].

Speaker 2: I've learned so much from that.

[End of Interview]

*\*Joanne Barnaby spoke with Sarazine on June 23, 2022, who confirmed with Albert that he signed June consent form and meant to check all boxes that consent to his name, quotes, and images being used in report.*

Elder Albert: I'm from Łutsel K'e in Northwest Territories.

Interviewer: Masi. The first thing I wanted to ask, if you had a story about the land you want to share, about being on the land.

Speaker 3: [Dené Sq̄łíné 00:00:24].

Speaker 4: [00:00:30] Albert, you can just speak to her.

Elder Albert: Yeah, okay.

Speaker 3: [Dené Sq̄łíné 00:00:36].

Elder Albert: Okay.

Speaker 3: [Dené Sq̄łíné 00:00:40].

Elder Albert: Not from here, from my country, right?

Interviewer: Yeah.

Elder Albert: Okay. Yeah, I remember 1947, in '47 until today, [00:01:00] I was seven years old. I was born 1940, March 20. I'll say March 20. 1949, and I'm working with my dad now, 1949, nine years old. I've been trapping, hunting, fishing, until 1952, '53. [00:01:30] I didn't stay in school. I never stayed in school. I learned a lot of things from the bush. I learned from my dad, and I go alone [00:02:00] trapping around [Dené Sq̄łíné 00:02:05]. From [Dené Sq̄łíné 00:02:08] and north, east, and the south, and [inaudible 00:02:14] in the west, for muskrats, and beaver in the spring. Wintertime and the fall time, go for... First one I go for squirrel. [00:02:30] The squirrel was 10 cents.

That time, anything is cheap. Anything was cheap. A can of milk was 25 cents, lard 25 cents. I remember I bought cigarette for my mom, 45 cents a package, there's 25 in there. And 20 in the pack, that's 35 [00:03:00] cents. I remember that. Since

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that, I don't go to school, that's why I learned a lot of things from the bush. [Dené Sḡłíné 00:03:20], around [Dené Sḡłíné 00:03:21], and I told you already, from the north, from the west, this side here, all the way, I'd be travelling [00:03:30] with people, not myself, I'm all alone, with my friends, and my brothers, my dad. We used to go all over the places. I learned a lot of things from the bush.

Until [00:04:00] 1970, I went to Fort Smith, between. I was in Fort Smith for three months, for training heavy duty equipment, trucks, CAT, and loader. And then from there, I [00:04:30] worked for myself in [Dené Sḡłíné 00:04:32] in 1970, and I got the... I worked, I started to work with CAT, with my friends, and my friend, he died, who I worked with them. They passed away, both of them. My friend George Marlow, [00:05:00] we were raised together, and my friends, all these now is... His son passed away. My brothers. I worked with a lot of elders, lots. I learned a lot of things from elders, lots.

I worked 1970 [00:05:30] to year 2003, I'll be working with [inaudible 00:05:35], for my hometown, driving the water truck, and sewer truck, and garbage truck. From there, I go hunting all over the places for caribou. Those days, there's a lot of caribou. [00:06:00] I told you guys already, I learned a lot of things from elders. That's what I learned from them. Now, a lot of mines around. I go with my chief, my elders, go around with. From there, I learned things too. Lots. Now, [00:06:30] I came here twice, and [inaudible 00:06:37] twice. I stay one week, one time, another week-

Speaker 3: [Dené Sḡłíné 00:06:43].

Elder Albert: Two weeks. That's why now, the way I see, on [00:07:00] the mine side, fish, and water, it's not the same. It's not the same. Way different. That's why we came here with elders, and the

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people, right around all over. Way different, before mine, before the mining. I see a lot of people go hunt around here before he tells me [00:07:30] everything. Now, way different.

Interviewer: What does healthy water and fish to you? Because we're seeing lots of fish with those parasites in them. What does healthy fish and water mean to you?

Elder Albert: [Dené Sḡłiné 00:07:48].

Speaker 3: [Dené Sḡłiné 00:07:48].

Elder Albert: [00:08:00] I can see, it's way different, lots different. The water, and the big lake, right here it looks like the water doesn't look the same from before. The fish too, that doesn't look the same.

Interviewer: [00:08:30] Why is this area, why is Lac de Gras, this area, important to you?

Speaker 3: [Dené Sḡłiné 00:08:38].

Elder Albert: Yeah, this country is really important for us in the borderlands, not only me. The [inaudible 00:08:56], all this [00:09:00] side of people, the [inaudible 00:09:02], they use this land here for the caribou, trapping before, hunting, they're still doing that. Still doing that. But only thing, the water and the fish, it's not the same. I don't think anybody, they're going to eat fish from this lake. Maybe the next 10, 20 [00:09:30] years, even the water, nobody will drink water here.

Interviewer: Yeah, it's very different, hey?

Elder Albert: Mm-hmm (affirmative).

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Interviewer: Yeah, very different. Why is it important for youth and elders to be here, to see what's going on?

Speaker 3: [Dené Sq̓íné 00:09:57].

Elder Albert: Pure land. [00:10:00] This is our land. We're the people land. People [inaudible 00:10:04] tell you. That's really important for us.

Interviewer: What do you hope to see happen for long-term monitoring? For after the mine closes, what do you hope to [00:10:30] see happen?

Speaker 3: [Dené Sq̓íné 00:10:31].

Elder Albert: Lots. Lots. Yeah. I told you guys already, when your mines closed, for me, you should watch for caribou, the grass are growing. That's the one, they're feeding, they're eating from the grass, the caribou. Even if fish look at right [00:11:00] now, you see his belly, nothing in there. A lot, nobody can eat that fish. The way you look at it, you can't. You can't eat that. And water too like that. You see the water is different. People talk about, you see it's black over here, all the water is black. That kind of things, we've got to watch [00:11:30] everything. Everything, mining company. That's pretty hard, pretty hard to tell anything like that.

You know there are people, us, who are really important for us, we live on it. We live on land, and water, and the fish, and caribou. Those people, those people, they're working in the mine, they're taking out [00:12:00] diamonds from the ground, right? Look at how many loose rocks over there. You see it? They just take it out, take it out. Those kinds of things we're aware about, we talk about all the time. Yeah. Yeah. That's what he says when he seen it. Yeah, they're very good. This is

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good. Water, [00:12:30] good. Fish is good. Everything is good. For us, it's not that. Not too good at all. No. Not too good.

Interviewer: It's different when you're the one who's eating it, you're the one who has to go out there all the time, who sees the caribou gone. It's very different for the people to be here, and to see what's happening. Yeah, it's very different. What would it mean to you [00:13:00] if the caribou came back? What would it mean to you to see caribou come back here?

Elder Albert: It's got to come back, it's got to pass here. Caribou trail right here all the way to the east, the caribou trail. Remember I told you already, I was here two weeks, from [inaudible 00:13:23] people. We worked together right here, I stayed with them. We just [00:13:30] looked at our land, and caribou feeding, everything. But that time, we didn't even work on the water. And the fish, we don't even know. We don't test [inaudible 00:13:54]. That's for land, how far the dust [00:14:00] goes. They go how the caribou feeding there, come, they're eating. That's why we watch on everything. And so, I know a lot of [inaudible 00:14:14], all the way down to the lake there. Remember I talked to the people there? Test the fish at home, at the other end. And down the mouth [00:14:30] in the river, in the river, that's the place too, now. You see, that's why we find a lot of things, us people. We know a lot of things about that. I told them to do that.

Speaker 3: [Dené Sqłíné 00:14:50].

Elder Albert: Yeah.

Interviewer: [00:15:00] I wonder if maybe my grandpa, I think my grandpa was out here too at that time. He came out when the mine first started, with my mom I think. Gabrielle Mackenzie, and-

Elder Albert: Who?

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Interviewer: Gabrielle Mackenzie is my mom.

Speaker 3: [Dené Sq̓łíné 00:15:15].

Elder Albert: Gabrielle Mackenzie?

Interviewer: Yeah, and then Joe Suzie Mackenzie was my grandpa. He came out here at the time too.

Elder Albert: Yeah, [00:15:30] he was trapping. There's a trap line around here.

Interviewer: Yeah, my mom was telling me, the caribou, they used to hunt them in the water, that they used to come through here, and they would hunt them in the water too.

Elder Albert: Yeah, that's right.

Speaker 3: A lot of people did that here.

Elder Albert: Yeah, just the same with the [inaudible 00:15:50] in the borderlands too.

Interviewer: Yeah. Because they haven't really been [00:16:00] looking at the caribou yet, hey? They haven't really done testing on the caribou to see what's happening with them, but what do you want to make sure happens for the caribou?

Speaker 3: [Dené Sq̓łíné 00:16:12].

Elder Albert: He might be sick from the mines. I told them already, [00:16:30] I was thinking when the grass growing, loose gravel, they dump all over the place, from there, the grass is growing. If the caribou, after mine close, the caribou passes, they're going to eat from there. They're going to eat from there. You see, that's why, you never know, maybe poison. Maybe they

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get sick from there. Not even caribou. [00:17:00] Geese, ducks, everything. Even now, look at the fish, how it is.

Us people, we care about this kind of land here, we're like the land, we're like the fish, we're like the caribou. That's why we have to talk about it all the time. These people, they're [inaudible 00:17:26], our animals. We live [00:17:30] on animals. Those guys that are living differently. They're growing everything, but that's what they live on it. Not us. We go hunt for that caribou, fish, ducks, geese. That's why we live on it.

Interviewer: Was there anything else you wanted to share with us?

Speaker 3: [Dené Sqłíné 00:17:56].

Elder Albert: Nothing much. I told [00:18:00] you what is important. I like this place right now.

Speaker 3: [Dené Sqłíné 00:18:10].

Elder Albert: Yeah, that's for youth we're doing this. That's for the youth. We can't be with them all the time. We're elders. The young people, they're travelling around here, [00:18:30] next 30, 40, 50 years. Even 100 years, they're still travelling around here for caribou. That's why we talk about a lot of things around for our land, a lot of things. We don't want to spoil anything. Really important for us.

Interviewer: Absolutely. [inaudible 00:18:57], the last thing I wanted to ask you [00:19:00] was that, if you had to say one thing to your youth, even from your own community, one message that you wanted to leave them while you're here, what would that be? What would you say to them? What do you want to make sure they know?

Speaker 3: [Dené Sqłíné 00:19:17].

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Elder Albert: [00:19:30] We're supposed to work together.

Speaker 3: [Dené Sq̓líné 00:19:43].

Elder Albert: I know. My family, my brothers and sisters, even now these days, chief, and all [00:20:00] over the country, we go and work together. They talk about that kind of things, for the mine. But we gave them a good, we talked a good, "Do this, do this." He doesn't do that. "Yeah." He just says, "Yeah." That's it. That's all it is. And after we turned around and walk away, he doesn't care about it. They just care about money, that's all. They don't care about their land.

Speaker 3: [Dené Sq̓líné 00:20:29].

Elder Albert: [00:20:30] That's why we talk to chief, we told him, "Chief." When I get back to [Dené Sq̓líné 00:20:38], now when we go together, we have a little meeting again, why you go there [inaudible 00:20:49] tell me. Why? What did he say? And I'll tell the truth, what I see. I've got to tell him what I see. The fish, the water, [00:21:00] got a nice camp. From there, we're travelling around, [inaudible 00:21:08], a few hours, come back. Yeah. I'll tell. I'm going to tell them.

Interviewer: Mahsi.

[End of Interview]

*\*Verified June 6, 2022 by Doris Enzo in Yellowknife, NT.*

Doris Terri Enzo...: My name is Doris Terri Enzo. I'm from Łutsel K'e First Nation. I came to this TK camp for my people and my community. I really like being out on the land. I was born in the bare lands, [00:00:30] passed Artillery Lake and I'm reincarnated. Most of my life since I was young until I was like maybe 12 years old, I lived off the land with my late parents. Until today, I still go out. Last year when COVID started, I went out on the land by myself. [00:01:00] March, April, May, June, July. Self-quarantine. And it didn't bother me being by myself. I had to work on my moose hide, and I just started two years ago where I learned how to do a moose hide.

Other than that, my kids, they don't mind being away. I don't have no more small little babies in my house. I can [00:01:30] do whatever I want. I just ask, and they'll say, "Okay, mama, if you want to go and do something." They do all kinds of bush things with me. Like set up my tent for me, get my wood, get my water. And then they come and drop off things. They don't stay long and they just go home, just to check on me to see how I'm doing. I go out hunting, [00:02:00] fishing, do all kinds of stuff.

For me, being out on the land, it's more peaceful being in your community. You sleep good, you have that spruce sprouts on the floor and your tent smells way better, you don't hear negative things or bad things. And there's nothing to [00:02:30] worry about. Set muskrat traps in the springtime, pick berries in the fall time, just doing lots of nature walk. Even though I have nobody to talk to, still, I know the plants are growing and they could hear you. That's how it is with me. I still do it today.

Speaker 2: Is there a particular story [00:03:00] about being out on the land that you want to share today?

*\*Verified June 6, 2022 by Doris Enzo in Yellowknife, NT.*

Doris Terri Enzo...: I like being out in bare lands. I like going to Tampa Bay, Tent Lake, Whitefish Lake. The scenery over there is so beautiful. And I always tell young people, "If you see it in your own eye, you'll always want to come back." [00:03:30] In the wintertime I go there by Skidoo, in the summertime we go by plane. And this year, I'm not sure if it's going to be the end of August or first week of September, I'm going to Artillery Lake and I'm going to canoe back to Fort Reliance. Maybe all the way to [inaudible 00:03:56]. I'm not sure.

[00:04:00] I want to teach kids where they can survive on their own. I'm not going to cook for them. All I'm going to do is just tell them how it is to be out there, which is really good for me that we are not carrying any electronics, except satellite phone and inReach. It's only for emergency. You don't phone home every day. Those are the things. Because when I was growing up, I didn't have those things. I [00:04:30] never had to worry about how my family members are in [inaudible 00:04:34]. As long as I make it home, my family is okay, maybe once a week we'll phone home to see how things are. If something happened and it's an emergency, then we'll go. Other than that, we'll just stay on. As long as it's a family member, you need to support your family.

Speaker 2: [00:05:00] Absolutely.

Doris Terri Enzo...: Those are the things we're going to be teaching our young people. I think there's like eight or 10 canoes that we're going to be going with.

Speaker 2: That's amazing.

Doris Terri Enzo...: So, we're going to take some elders, but they're going to be flying home. They're just going to stay with us for a few days, maybe five, and then we're going to be carrying our canoe and our stuff, protection. Maybe about eight or nine...

*\*Verified June 6, 2022 by Doris Enzo in Yellowknife, NT.*

Speaker 2: It's going to [00:05:30] be amazing trip.

Doris Terri Enzo...: I'm really excited for that.

Speaker 2: Yeah, you must be. You've already mentioned you were born at Artillery Lake, you grew up on the tundra, on the barrenlands. You know this area, but why is this particular area, this Lac de Gras, why is this lake really important to you?

Doris Terri Enzo...: The [00:06:00] first thing is we used to have lots of caribou here before. Now, after the mine started to develop in our tundra, we were getting less caribou and we really wanted to study why they're moving away. We have a caribou board or a committee, and then the community members, all the hunters, [00:06:30] we all get together. We all sit down. We talk about why, and we share our information with each other and we do studies. And most of our elders that used to tell us things long time ago are not there with us, but we still carry their knowledge of how things are changing. And for me, why it's really important [00:07:00] for me to be here, I really wanted to see how things are not the same now, like since the mine started until today. I really like to monitor things and see with my own eyes how things are changing.

The thing I've seen is the fish are not the same anymore. And the water, it used to be just clear. Like you could see the [00:07:30] bottom of the lake, now it's dark. But I didn't say anything about stuff like that but I seen it yesterday. Because I travelled by boat before in this lake and it's really dark. And I'm just wondering why. So when I go home, I'm going to ask my uncle, "Look, remember when we went for a boat ride here maybe 10 years ago? We could see the bottom [00:08:00] of the lake now we can't see the bottom of the lake." And I'm going to ask him why is it like that? Then he's going to have an answer for me. So I keep those things in the back of my head.

*\*Verified June 6, 2022 by Doris Enzo in Yellowknife, NT.*

It's not only my uncle, my late mom, if she was still alive with me, she'll tell me why those things are changed. Even my great grandpa will tell me. Because [00:08:30] when he was alive, when we're out on a bush, he said to me, we're sitting down, and he said, "My girl, you see all these things, they're really healthy and nice. After I'm gone, maybe 30, 40 years, it's going to be different." And it is different today. How would he know? Maybe he seen ahead or [00:09:00] dream about it, deja vu or whatever. Because I do get it. I think I dream about something and then all of a sudden I'm there and the same people that I would dream about, is there with me. And it's like, Hmm? Remember we were here and they'll say, "Why?" Oh yeah, I seen you in my dream and we were here together.

[00:09:30] I really care about, especially my water, because if we didn't had water, how are we going to live? If we didn't had our food, because we eat fish, we're the fish people, caribou people, all the berries that we pick, it's never all store-bought food. We all live off land. So I really care about those things. And I really watch. [00:10:00] I learned lots of things from my dad. That's why I can even drive a boat, Ski-Doo. The only thing I don't drive is a vehicle because I wasn't taught that. But then when me and my [inaudible 00:10:15] go out on the road by ourself, I drive and I don't tell anybody. At least it's teaching me, you know what I mean?

Speaker 2: Yeah.

Doris Terri Enzo...: Before I get my license.

Speaker 2: [00:10:30] I hear this lots from Dene people that we don't just look at one aspect of the land or one aspect of the water and one aspect of the fish, we look at the full thing. When you're looking at water, fish and land, what are you looking for? What is healthy look to you?

*\*Verified June 6, 2022 by Doris Enzo in Yellowknife, NT.*

Doris Terri Enzo...: If the mine wasn't here and the fish, now [00:11:00] when I eat fish, my lips gets dry. Why? Maybe there's something different. I always ask my auntie. When I was younger eating fish, it was never like that. There's got to be something else because I eat fish every day if I have to, or every second day, or for us, Friday is the best day for us to eat fish because that's [Dené Sᓄᓄᓄ 00:11:31]. [00:11:30] That means Friday. It's fish day. So we eat fish on Friday. But if I was out there on the land and I have nothing, then I have to live off fish every day, whatever it is. And before I open it up, I make sure. We really look.

This is not like my first time doing fish sampling. I've been doing it for like 14 years already [00:12:00] with the waters of the land and I teach kids and then I'm with the wildlife committee. I still teach some people when we go somewhere. When we have to check fish, I just tell them, "This is how it is." And then they'll ask me, "Why did we hire that guy then if you know how to do it?" I said, "It's not up to me. You guys have to say it, I can't talk for you all the time. And [00:12:30] then if you tell the wildlife manager saying, 'Oh yeah, Terri could do it. Why were you hiring somebody from out of town?'" Still same. I really check every little thing. Even when we kill a caribou, I open it up, I look inside the guts and check everything. Still do it today. I was taught that when I was growing up. I still teach my kids, my grandchildren.

Speaker 2: [00:13:00] And now all of those are so connected, right?

Doris Terri Enzo...: Yeah.

Speaker 2: I know you guys were saying in the meeting today that it's not just that the fish have parasites, it's also that the water is silty. Like you're seeing it looked different. What other connections do you... When you're looking at the whole picture, what other

*\*Verified June 6, 2022 by Doris Enzo in Yellowknife, NT.*

connections are you making? What other things are you looking for in the berries, for instance?

Doris Terri Enzo...: Because we didn't do vegetation, we didn't go anywhere yet, [00:13:30] I go around looking around because this year it didn't warm up fast. In the barrenlands, it doesn't warm up fast so the plants, it'll probably be better in August or first week of September. Usually blueberries grow the end of July, first week of August you could see them. But here you can't. [00:14:00] And the weather this year, it's really funny. It didn't really warm up right away. But as soon as the end of July came, it's so hot. Even when we phone home or my sister phoned home yesterday, it was like 31. It's so hot. I think about my people at home, the elders, how they feel. [00:14:30] It's first time the temperature of the heat is more higher than it usually is.

Speaker 2: Yeah, those are all really concerning things.

Doris Terri Enzo...: So, the plants in the barrenlands don't grow fast, but I didn't go to that narrows yet so I can't really say how it is, you know?

Speaker 2: Yeah.

Doris Terri Enzo...: And I think we came too early.

Speaker 2: Yeah. That's what a couple of people have said.

Doris Terri Enzo...: Yeah, we [00:15:00] came too early.

Speaker 2: It would have been nicer to come later in the-

Doris Terri Enzo...: Yeah. In the middle of the month or something or the end. Yeah.

Speaker 2: Why do you think it's important that both youth and elders get involved in work like this, in camps like this?

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Doris Terri Enzo...: I think the elder and the youth, when they do things together, it's the elders that are teaching the youth all their knowledge so that they can carry their tools [00:15:30] for the future. And then if they get old, they'll teach the younger people. So it's like, this goes on and on and on. We have to teach our young people these things so it doesn't stop in one place, so it just moves on. Because of residential school, we lost our... There's lots of people that lost their language. Now they [00:16:00] just speak English to their kids. I never did. I know how to speak my language. Even though I went to high school in Yellowknife, I was never sent out because when the nuns and the priest came to our community, my parents took off before them. So I never got picked up to go to residential school.

And then I just went to school in [inaudible 00:16:29], but there were still [00:16:30] priests and nuns teaching us, but I still kept my language. I just told the priests, "You're not going to stop me to speak my language." But in school I have to. But when I got home, I just spoke my language. And then now my grandchildren do speak Chippewan if you say something to them. In some homes, when I say something in my language, they'll say, "I don't know what you're saying." Because their parents [00:17:00] never taught them because they already lost it because they went to school.

I try to keep all my tradition knowledge and my language to my family, to the kids, and I even go to school and volunteer to speak Chippewan. I try not to lose things. I teach them, I take kids out from school, me and my brother. All the knowledge and how to live [00:17:30] off the land and do snaring, trapping, we teach them all. And then in a spiritual place, where you're supposed to be quiet, we tell them that there's graveyard here, you have to have respect. You pay the water because water is alive and you never know. You pay the water. When we go to the barrenlands, like here, we never say it's nice and sunny. It's only in my [00:18:00] mind that I keep it to

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myself because that's what I was taught when I was growing up. You never say those things. So I still keep it with me. And then I'd teach my kids and my grandchildren and other people's kids.

Speaker 2: Yeah. That's one of the things like it's so nice to get to know your family lives here. You guys are so strong in your culture, so strong in your language, and you have so much passion about what's happening here. It's really beautiful [00:18:30] to see, so I really appreciate it. I just wanted to say that to you. Everybody's talking about the caribou and how important they are to culture, to language, to our livelihood, to us surviving this area, what would it mean to you to see them return here?

Doris Terri Enzo...: This is one thing I did when the caribou [00:19:00] was declining. I try not to go hunting for any caribou. I had to go to muskox because I wanted more caribou to come back down there. And people will ask me, "Do you got dry meat?" And I'll say, "Yeah, I have dry meat. But it's only a muskox dry meat." "Oh we want caribou." I said, "Well, I'm not going to go hunting for caribou because it's declining. [00:19:30] You got to learn how to make the herds larger again by not going hunting for caribou."

And I always say that in meetings even when the hunters are there. I don't close my mouth for anybody. I just say my piece and just tell them straight forward how it is, that we don't need to go hunting because there's lots of muskox now, it's still the same food, it came from barrenlands. [00:20:00] And some people listen to me because now they go hunting for muskox. And I said it's important. For like five years I think, I never went for caribou, even though we were asked, "Oh yeah, let's go hunting for caribou." My son and I will say, "No, no, no." But this year, we did go for caribou. But that was a long ways.

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[00:20:30] Past Eileen Lake. I think it's called... Oh, I can't remember. Some kind of foot lake or something we went to. And we got blizzard, I had a hard time finding our way back to camp, had to stop, camp, use our GPS. Then when we take off, we're back into somewhere else because we can't see anything. But we [00:21:00] made it back to camp which was okay. Stuff like that.

Speaker 2: Yeah. It's like those personal sacrifices you're having to make so that the caribou return. Right?

Doris Terri Enz...: Yeah.

Speaker 2: What do you hope to see in terms of long-term monitoring for Lac de Gras? What do you want to see happen? What do you want to make sure happens in the future? We know [00:21:30] the mine is closing in four years in 2025. That's pretty soon [inaudible 00:21:35]. What do you want to make sure happens after that?

Doris Terri Enz...: I didn't want them to bury anything underground, but I know they're doing it. And because of climate change, things melt. The land always [00:22:00] move in certain ways. I hope plants grow back. I always ask about that, where they pile up the rocks. I didn't want it too high. I wanted it slanted for the caribous when caribous come back. And in the pit, they're filling it up with water where I disagree with it, [00:22:30] but they're still going to do it. Water moves all over the place. I want to see healthy things around this area again, but then we have to monitor it and just watch how it is going to be down the road. Maybe it'll be different. It should be a long-term monitoring [00:23:00] and really watch what's happening with the fish, the plants, the animals, even the birds. Everything that lives on this land.

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Speaker 2: Yeah. What do you hope to see after the mines close? What do you hope to see happens in your own community?

Doris Terri Enzo...: In my own community, if we ever... If there's caribou around here, we're going to come back. [00:23:30] And we want to check. And if it's different, we're going to bring it home and tell our people, this is what we seen. This has never been there before, this is what's happening. We'll still do stuff like that. We always monitor things, like we really watch. If there's any changes, we tell each other. [00:24:00] We see something, we tell each other. We see stuff in our water that we never see before, there's people that see things now that we never seen before. We hear about it. We all get together and sit down, we just tell, "Oh yeah, you know what? I seen this big thing in the water." "Yeah, I did too." "So don't travel alone by yourself." Stuff like that.

Speaker 2: [00:24:30] Absolutely. Is there anything else that you wanted to make sure was shared today or anything you wanted to share with us about what's happening here?

Doris Terri Enzo...: The water testing for me twice a year is not really good for me. I keep telling them in the springtime when the water drains off and goes, because they're not going to be collecting [00:25:00] everywhere. They're not going to be standing every corner around the island collecting water and testing water. For me, they should do it twice a month, even with the snow, because the snow now it's kind of like soft. Long time ago when I was growing up it was never like that. It was just hard, but now it's just like powder. [00:25:30] It's different.

Watching yesterday, when we went to put nuts in the water, I see all the sand flying, that incinerator, where there's burning things that even smell gross. I asked them. When we were in our tent, me and my sister, we smelled it. And [00:26:00] even when we were sitting beside the fireplace, we smelled it. And

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it was even worse when I went there by boat. And the dust they are flying and all the little, tiny little fish in the water, you could see stuff like floating in the water, like grey stuff. It has to be from over there because it was windy. It moves, and the water never sits [00:26:30] in one place if it's windy because it's a river. It goes from over there at the narrows to Coppermine. The water never stays, and things move.

Speaker 2: Is there a message that you want to send to youth, whether it's about the land or whether it's about the importance of this kind of work that you've been doing for so long or even about [00:27:00] your culture, is there a message that you want to share with youth?

Doris Terri Enzo...: I really want my youth to come and join with the elders and just sit there and listen to our stories of whatever has happened way past until today and learn from it, carry the tools with them because there's not much elders anymore. Everything that I gave them, I'm hoping that one day [00:27:30] they're going to be using it, because when I first started with the watchers of the land, I had two youth. One of them was my nephew, one of them was Sarah's grandson. He's an ENR now. And now he's working with fire, land, water, and animals. And those are the stuff that I gave him. I taught him every day how [00:28:00] to protect the animals, the water, everything that we live on today. And I'm so proud of him when he told me, "Auntie I graduated. Now I'm at ENR." And I said, "Yeah. So, you really listened to me." I even cried because I was so happy for him.

And those are the kinds of things I want to teach. Now we have another young [00:28:30] man that's an ENR from our community again. Jake moved to Yellowknife; he's living in [inaudible 00:28:37]. And there's two more ladies that are going to be going to school in Fort Smith to be ENR. And I'm so

2021 AEMP TK Program

Participant: Doris (Terri) Enzo

Interviewers: Sadetlo Scott (Speaker 2), Jay Bulckaert (Speaker 3)

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glad the ladies are getting inside the young ladies that are in there.

[End of Interview]

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Interviewee: Łutsel K'e. That's where I'm from.

Interviewer: I see. The first question is, just tell me about a time you were put on the land, and it can be any experience that you want to share.

Interviewee: It's so hard to pick only one. [00:00:30] I travelled a lot with my parents growing up. I really enjoyed going out with my mom and dad. We'd go for picnics all the time. We'd pick berries, so there's many spots that are dear to me, [00:01:00] especially picking berries with my mom. To know where all your secret berry picking spots are. We'd approach whatever area we were going to, and she'd just know right away, "This is where I want to be," she'd tell my dad, so that we'd pull up. The first thing they would say is, "Look at [00:01:30] all these beautiful plants, they're growing really well." They were always happy to see plants.

My dad liked laying on the land. Lay sideways. For me, it's significant because the joy they had. My mom always used to tell me that anywhere you go the pillow is your land, because growing up she used to tell us, " [00:02:00] You protect your pillow, where you lay your head. It keeps all your dreams, also gives you a lot of dreams." That's how sometimes your ancestors come back to you to share stories with you. So, anytime we would come to an area, it'd be so... There's just this great feeling inside you.

[00:02:30] So, blueberries are really significant to me from my mom. Memories, memories of areas, especially the mouth of the Lockhart River. Our sacred area, [Dené Sqłiné language 00:02:50], she brings lots of fresh water, clear water, healthy water and healing water. [00:03:00] So, we'd go to that area and pick blueberries because it was abundant. It was a sacred area. It was an area that everybody [LKDFN people] knew

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about, but everybody was able to pick as much berries as...  
They couldn't.

When I think about those areas I think about my parents, and I think about the other elders that we'd be travelling with, because it wouldn't only be us. We'd always travel with [00:03:30] a group of people. There would be five boats, five families, and we'd always be together. When I think about my dad, I think about winter. They're hard workers. They're very strict too, very set in their old ways. [00:04:00] But my dad always made it fun. I remember before they built all those roads in the community, before it was even touched, he'd put all of our sisters in a sleigh. There'd be like five of us, sometimes we couldn't all fit, and I'd stand at the back of the sled. I wanted to kind of wrap my feet around the back of the strings [00:04:30] when you stand behind and you have to kind of maneuver the sleigh.

So, I'd just wrap my legs around the bottom, put my bum on the snow and off we went. Then I fell off. I'm like, "No, wait for me." He didn't wait. He knew where he was going to picnic, and he knew that I could get there. I [00:05:00] think he always pushed me like that. He'd never just do anything for me just to make it easy for me. He kind of was always teaching me. He taught me how to collect good wood, like burning wood, because wood keeps us warm. He taught me hard work. In the olden days there used to be lots of snow, like six feet. We'd go camping in the wintertime. We would [00:05:30] have to shovel all that snow.

They were trying to show me how hard they had to work for themselves. When I think about myself right now, it's not as hard as the life they were living. I think about [00:06:00] land and water, and how important it is to us. (So, it's not just one area that is important to me [responding to the initial question asked of her]) There's many areas that are very, very

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important. We have family areas, but we also have community areas that we go together, for example, [Dené Sḡłíné language 00:06:20]. When I think about all these areas, I think about all the times I've shared, not [00:06:30] only with my family, but with other family members, and the joy that they had, and the stories that they would tell.

I gained a lot of knowledge, understanding how our world works here. We go out on the land, but we go out on the land looking at the sky and looking at [00:07:00] the land, and determining where we're going to go that time, where there's going to be good fish, where there's going to be good berries, where there's going to be abundance of caribou. When I was young, I didn't have to go very far for caribou. I just had to look out my window. I remember when my two boys were young, very young, there was caribou in the ice and my dad was like, "Hey, we got to go get those [00:07:30] two caribou," and he wanted the boys to go with him.

At first, I was a little bit worried they were small and stuff, he was like, "No, dress them up. It's not far," he said. So, he took them. Just to see them to be together like that and then to go get two caribou, it's a joy. A mother's joy. [00:08:00] Imagine what my mom felt too to see her grandchildren, it's like a blessing.

Interviewer: Absolutely.

Interviewee: So, when I think about going out on the land, I think about all those things. I feel it inside me. I feel it in my heart. Like I said, my mom used to say, "The land is your pillow. [00:08:30] It's your home and you protect it." So, I'd like to carry on her legacy and protect my home.

Interviewer: Absolutely.

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Interviewee: Yeah.

Interviewer: Yeah. It's such an important thing. It's such an important knowledge and message to be sharing, not just with you but also, your kids to see that inter-generation. To see them being passed on that knowledge to, that's so important.

Interviewee: Yeah.

Interviewer: Yeah. [00:09:00] How do you feel about-

Speaker 3 - Mal...: I just need to do one clap, sorry.

Interviewer: No worries.

Speaker 3 - Mal...: Thank you.

Interviewer: Why's this area in particular important to you?

Interviewee: This area is really important to me, but right now I'm sad. Like when you asked me that question. This is right on the migration of the caribou route. [00:09:30] Before Diavik was even there, I remember going to an environmental assessment hearing, and my youngest was small. I only had him [inaudible 00:09:44]. I had my baby in my hand and I thought about... Sitting in this hearing, I thought about all the caribous [inaudible 00:09:56], and [00:10:00] I thought about them. I was sad for them because being from where I'm from, like I said, we know where to go for our food source, and knowing that this is home for the caribou. This is where they migrate [00:10:30] with their families, with the young ones, it's important.

That's why it's important to me. It's because it belongs to the caribou. It doesn't belong to development, and to know that my family lived here at one time, especially my auntie, Madeleine, my grandpa, [00:11:00] my mom, my two oldest

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siblings... My oldest brother and my oldest sister were born out here. When you see development the way we see development. We are the generation that are currently suffering, and that makes me think about future generations. [00:11:30] I love my land and I love this area, and I'm really sad for caribou. This area is really important, especially water. Water is life.

So, to know that if flows to our waters and they're sacred [00:12:00] waters, so when you ask about the significance of this area, it's dear to me. It's part of me and it's part of my family. We are caribou people. That's where we come from. It's like losing a little bit of who you are or having a [00:12:30] missing piece in your heart. I think that's why I don't feel good to know that. The ground misses being danced on. The land misses it. So, just imagine how lonely they are as well. When you graze any area new life comes. [00:13:00] That's what caribou did around here.

Often, I think about when I was young, and I travelled [inaudible 00:13:11] lands for harvesting in the Fall time. I'm very lucky to see the ground dance and the hills move. To even experience that for myself, because you hear a lot of elders talk about it, [00:13:30] and understand their feelings because I was able to see it for myself. Then to know that they've moved all this water and drained all these lakes, they changed the area. We suffer because of that. [00:14:00] This area is really sacred to us. It's sacred to caribou.

Interviewer: Absolutely. It's really hard to see these mines, to see the changes, to hear that there is change out here. To know that the caribou are moving, and they've been moving away for so long. As you're out here, what are [00:14:30] you seeing that's different too?

Interviewee: Pardon me?

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Interviewer: What are you seeing out here that's different?

Interviewee: What I see here that is different from when I first came here, when Diavik first started. It's all the change in the land. All the waters that are no longer there. To see big holes. When we flew over it, to see all those big pits. [00:15:00] It's like having a tumour. That's how I see it. This part of the earth... We all work together on this earth. This earth is living like we're living. We all have internal organs. They all work in different ways to help you live. [00:15:30] So, this part of the world they would say... Our people would say this, "We are the heart of Mother Earth. We help it breathe."

Now to know that we're drilling holes where we shouldn't be drilling holes, so you see the change in the land. You see the change in the fish, [00:16:00] and to know that the water nutrients is high, so you know that it's silty, that stuff affects fish. It affects not only fish, it affects all animals that decide to drink from this area. You see those changes, and they're not natural to here. [00:16:30] They're not natural to anywhere. You don't see caribou. You hardly see any wildlife here. Even the birds. I was wishing to hear them singing for us but because how birds sing; one sings, the next one goes on, and it goes on, and it goes on, then [00:17:00] they return it back. But then it seems like they're only in one area. They're kind of trying to stay together too. So, it makes me think about the songbirds of this area.

Even the little buggies. You see a lot of it in the water. You [00:17:30] see the change. As a land person, I see change.

Interviewer: You've spent so much time on boats. You guys run fishnets all the time. You see fish, you cut up fish. You're always dealing with it. Yesterday we had the opportunity to kind of look at the actual insides of the fish and check the fish. [00:18:00] What do you see that's different with them as well?

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Interviewee: Well first of all, only having one kind of fish. We've only caught trout. We didn't catch anything else, not even a Whitefish. Then bringing the fish in and preparing the fish. There's a lot more parasites in the fish. There are cysts in the fish. [00:18:30] Compared to when I was a young girl and the amount of fish that we ate, we didn't see those kinds of things. Every fish that we opened had a parasite. As Dene people, when we see deformities, we don't want to eat the fish [00:19:00] because we're not used to that. We're not used to deformities of any sort. So, when you see a fish and it's got things that it shouldn't have, on its insides and sometimes on its flesh, it scares you and you don't want to eat it.

I grew up with fish and I work a lot with [00:19:30] fish, and it just seems to be increasing more and more and more. Science will say it's because of climate change. We all feel the effects of change. I don't like to use the word climate change. Change does happen. That's not a word we would use. We're people that observe, so when we see development like that, that's where we come from. The change would come from that. What we put into the sky comes back down.

[00:20:30] So, the change in the fish, from my understanding of my observation, is it's the area that has been changed that affects our fish and anything that drinks from the water. That's what I see.

Interviewer: You mentioned too that your family... You guys always picked berries, [00:21:00] you're always on the land, you're always gathering. What are you seeing that's different with the berries? What kind of concerns do you have about the vegetation out here?

Interviewee: Normally we come in late fall, and that's when we would harvest berries from this area. [00:21:30] When I think about vegetation, I think about how strong it is, and I think about my

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mom's stories because she would... I think she was trying to teach me about growing up. So, when it came to any kind of leaf, willow or tree, she would always make me touch it. She would talk about [00:22:00] how she would want that willow, that tree, that leaf, to grow to be healthy and strong because in return we would be healthy and strong. I'm sort of like that tree, if I could withstand the winds and all the environmental factors, I'd be healthy and strong.

When I think about that kind of stuff I think about the pollutants [00:22:30] that fall in this area. The amount of dust that comes off the Diavik mines, the amount of noise that comes off. I think about the bumblebees that pollinate the flowers, if they're healthy, if they're abundant. They play a big role here too. [00:23:00] I've seen a couple of bumblebees, not as much bumblebees as I would like to see. So, are plants being pollinated enough to grow strong and healthy so that I can pick berries? So, when I think about berry picking, I think [00:23:30] about all those things.

Interviewer: Yeah, they're so interconnected, right?

Interviewee: Yeah.

Interviewer: Yeah, every part of it is helping the land grow strong.

Interviewee: That's right.

Interviewer: Yeah. In terms of long-term monitoring, because we're seeing dust, because we're seeing fish that have more parasites than they normally have, we know that the caribou aren't in this area. What do you want to see in terms of long-term monitoring?

Interviewee: [00:24:00] You know when development comes there's so many words that are used that are not our own words.

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Interviewer: Absolutely.

Interviewee: In regards to long-term monitoring, [00:24:30] as stewards of the land, to make sure our people are the ones who are doing it. The people that come from this area. When I think about when the diamond mines shut down, and then they start [00:25:00] to cover everything, try to fill those pits with the waste rock, I think about runoff and how secure that is, because now we have to involve science. We have to. We need to be able to have things tested because [00:25:30] we could see things, observe, but at the same time we don't know how high the pollution is in the plants or in the fish. But we're observant people. Very observant. We see change in whether how water flows... So, [00:26:00] we understand runoff. We understand rain, we understand wind, we understand all those things. So, when you have our people out here and they're observing all of that, we know what scientists tell you. We're going to tell you before even the scientists tell you.

It's not because we went to school. It's because we live off the land and [00:26:30] we see change. Dene people are the professors of this area. They're the biologists of this area. They're the historians of this area. They're going to be the ones who tell you when they see it happen before the biologists, before the people that went to school to do all these things and become educated and get degrees. We tell you before they even tell [00:27:00] you. Then they wonder how you know.

So, monitoring this area after the diamond mines close is very important. It's very important. They hope that caribou would come back to this area. When I think about monitoring, I think about monitoring the land, watching the water, watching the vegetation, watching the [00:27:30] animals, all those kinds of things. But also, having elders come together to see what we can do to help them come back, because there's going to be

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certain areas that we don't want them to come back to, that have to be blocked off. Tailing ponds, all those things. It's going to be so crucial after the first few years after the diamond mines close, to make sure [00:28:00] that the pollutants are not in the runoff. It's so crucial to our livelihood here.

It's like survival mode for us, and then right away we're coming up with plans in our heads individually. That's when we need to come together and make sure that [00:28:30] things are happening right and being respected. Being heard. That is so important. Everybody fights for their rights. I want our rights to be recognized here and our word [00:29:00] to be taken as truth, and to be told that we can do the right monitoring without budget cuts.

Interviewer: Yeah, I think it's so important that our people are taken truthfully. [00:30:00] What we say here is not just passive knowledge. People have been here for years and years and years. They come out every time they want to know what's happening. How important do you think it is for youth to start getting involved too?

Interviewee: Youth are so important. I think about when I was a youth. I think about my mentors and the people I looked up to, to strive to be. [00:30:30] In our culture we want you to have good life. You always hear elders say that [Dené Sǫłíné language 00:30:38]. "To live good and healthy." We want that for our young people because when they live good and healthy, we have healthy community, and healthy mindset. Part of the teachings we grew up with is going out on the land, [00:31:00] youth participating, being there, observing. If we take that away from young people, they kind of get lost a little bit and they struggle. Especially with changes that have occurred, for the young people, they really, really need to be part of these [00:31:30] discussions.

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We have a lot of young people that don't have this opportunity. I don't know, we want everybody to participate and we kind of tend to lean more to older people, when we should be leaning more to young people. They should be as equal [00:32:00] in the numbers because youth talk amongst each other just like older people talk amongst each other. You see old people get together, they talk about weather, they talk about spirituality, they talk about all kinds of things. When I sit amongst them and I hear, and I listen, it's just put me in awe. The [00:32:30] amount of knowledge that I've just heard that I was part of, that was shared with me, that is instilled in me, would be the same for young people.

To share stories with them for them to hear and to listen, and to feel, [00:33:00] it's our livelihood. They're our livelihood. You know when old people get old, we take care of them and that's occurring all the time. So, when we lack in that, we lack in that wholeness of our people, of the whole north. [00:33:30] We always want to be whole. We always want to be knowledgeable and, like I said, to live good life for your people and for your land.

Interviewer: Mm-hmm (affirmative). Absolutely. We know the mine is going to close. That's already been determined. They've already decided 2025 it's closing. What do you hope to see happens in your own communities [00:34:00] after that?

Interviewee: In terms of what?

Interviewer: There's such a huge part of the mine. Like in every community, there's so much of... Our income has been coming from here. Like the monitoring even, what do you want to see in terms of... Diavik is closing, what is their responsibility to each community? What do you want to see happen in your own community after the mine closes?

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Interviewee: [00:34:30] You know when diamond mines first came, they promised... No, they came to our community, and they said all the young, they'll get employed. "You'll have lots of jobs [00:35:00] for your people, for your families." In our community we have maybe less than five people that work in these diamond mines. So, I already feel like they kind of failed us that way. [00:35:30] When I think about what kind of legacy we're going to have after the diamond mines are closed... I guess to actually fulfil that legacy, Diavik's promised us many things. We have a lot of social issues, [00:36:00] and to provide services that can help my people. That should have been there. Like they said, that would be there.

[00:36:30] When I think about the impacts of Diavik, not even the amount of times we'd come out here to go hunting, the amount of times the caribou would be at our front step. We didn't have to go very far. I think about that impact. They've taken away [00:37:00] the ability for caribou to come to our doorstep. I think about how the hunters, the men, would feel when they were out hunting for them to provide food to their families, to bring them home to their families. How they felt: they felt strong. [00:37:30] They felt powerful. They felt good, happy. I think about those kinds of things.

I think about how the woman would make dry meat, and how we were young and happy. So happy to eat dry meat all the time, and marrow, everything from the caribou. [00:38:00] I feel like it's been taken away from us for a long time now, and how that makes our men feel. I think about that kind of stuff. How can we bring those kinds of feelings back after the diamond mines close? How can we help them feel happy [00:38:30] and full of good things? How do we bring that back to them and to the community? How celebrations used to happen before the diamond mines, because we used to celebrate all the time.

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We used to share in potlucks. We'd all bring food. It seemed like we had [00:39:00] potluck a lot when I was young, compared to how we don't have potlucks anymore. So, when the diamond mines close, how do you bring that back to our people? Because nowadays we live off of money, [00:39:30] and money is not a good thing because it splits people. In our communities, we have people that make a lot of money and people that don't make a lot of money. Programs and services, housing. The housing rent [00:40:00] is crazy, then people don't want to work. It all is combined together in how it affects us in our communities.

I guess how they could help us is pay for our homes, so that way our men are not worried about keeping a roof over the heads for their families. You know they've taken away our food source. [00:40:30] Making sure we have decent homes to live in, that are not rundown, infested with mould or whatever, because when I think about our home, I think about how it feels to have a home. So, in [00:41:00] return, for all the loss I guess, because the IBA monies don't cut it. A million dollars doesn't cut it because us, we decided to share our money with other communities. So, when we shared with our relatives and other communities, it's split. We know nowadays that that's not very much money. [00:41:30] The amount it costs to live, that's not very much, a million dollars.

I think about all the things that we no longer have, especially men. I think about them lots. I think about their happiness. They've always provided [00:42:00] for us. I've seen my dad work hard, very hard, and my brother work very hard for our family. I feel for them, really feel for them, because now they need to get educated and need to go away from home. [00:42:30] This kind of livelihood and development, it's taken so much from us. So, social problems, mental health, all of those things, food security. [00:43:00] Those things are really

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important. Those things, for our community, need to be addressed.

I think about other communities too. We're an isolated community. We choose not to have a road built to try to keep our ability to travel on the land constantly. I think about those kinds of things. [00:43:30] I think we're trying to protect who we are. We're on survival mode and to make it somewhat comfortable, our mental wellbeing needs to be addressed. The mental wellbeing of the community needs to be addressed. [00:44:00] How we take our young people out needs to be addressed because financially, we're always told that we can do it because we don't have enough money. We could only have five charters when we should have 15 charters, so that we could take all our young people out, plus our old people, and that no families feel left out.

[00:44:30] Because we're in a pick and choose situation now compared to where it was never like that. We've always did things together and we've always, always provided for the ones that were less fortunate. So, when I think about all those things I think about housing. I think about the importance of money that this society says we need to be able to provide for our families to have a healthy mental well-being. I want the house things to be addressed because it should be.

Interviewer: [00:45:00] Yeah, absolutely. You really should. That's the very least they could be doing.

Interviewee: Yeah.

Interviewer: Yeah.

Interviewee: It's human rights...

Interviewer: ...What would it mean to you to see caribou back here?

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Interviewee: What [00:46:30] would it mean for me? It'd make me happy. It would make me really, really, really happy. It would make me strong. It would make our men strong [00:47:00] to be able to have caribou at our front doorstep again. I'd be really happy. My kids would be able to experience that. My grandchildren, that I don't have right now, would be able to experience that. The amount of drums we'd have from caribou. [00:47:30] To have caribou back in this area again, grazing the area. To have babies born. Baby caribou born and watch them run around, jumping. I'd be really happy. My ancestors would be really happy. The land, the sky, everything would be really happy. That's what it would mean to me.

Interviewer: [00:48:00] It's such a hopeful thing and it also brings a lot of pain sometimes.

Interviewee: Yeah, it does because you are hopeful but at the same time it's like a dream.

Interviewer: A really beautiful one.

Interviewee: Yeah. I don't mean to cry but...

Interviewer: It's really okay.

Speaker 3 - Mal...: Thank you for your honesty.

Interviewee: Yeah, [00:48:30] to have them here again I'd be happy because then I know my mom and dad would be happy. Their parents and their parents, and the land would be happy. Yeah.

Interviewer: [Dené Sqłíné language 00:48:52].

Interviewee: Yeah.

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Interviewer: I was just noticing you've been holding that [00:49:00] beautiful berry in your hand this whole time. I know your mom is just with you, hey?

Interviewee: Yeah.

Interviewer: She's just always here.

Interviewee: Always. Everywhere I go she's there. At the same time, I think she could see everything I do now, so I got to... She's a really important person to me and I got to make sure I carry her legacy. She fought so hard. She fought so hard for her beliefs. [00:49:30] She made sure that we could have camps like this. She made sure that we were able to participate. She probably thought our words would be respected and taken. So, for me, it's making sure that I live on through her, and that my kids do too.

Interviewer: [inaudible 00:49:59] so [00:50:00] much of that though. It's really cool to see both you and your sister here this weekend. You guys have no problems just saying what you need to say. It's good, that's exactly what... I'm sure your mom and your dad both would have wanted.

Interviewee: Yeah. My aba would always say, "Don't be shy. Say what you need to say."

Interviewer: Yeah, strong parents lead to strong kids.

Interviewee: Yep, it definitely does. We're all land users.

Interviewer: Heck, yeah.

Interviewee: Yeah. [00:50:30] I'm proud to be an [Dené Sḡłiné language 00:50:32].

Interviewer: You should be.

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Interviewee: I'm very proud.

Interviewer: That's a powerful name right there.

Interviewee: Yeah.

Interviewer: Yeah. [Dené Sqłiné language 00:50:40], is there anything else you wanted to share with us today?

Interviewee: I guess a message to the people would be continue to believe in your spirituality. [00:51:00] Pray to the water, pray to the land, even pray to the trees, because one thing my mom taught me was that those are our gods. You might have Christianity and you might be praying in that way, but we also have [00:51:30] spirits and gods within our land. Spirituality is really important. When you're not feeling good or doing well, the land is here to help you. Your grannies and your grandpas are here to help you. Spirituality is really important. For us, the Lady in the Falls [00:52:00] is very important. She heals us. We're able to pray to her when we are not well. When we have sickness amongst our people, there are some people in the community that could help you get medicine from the land. The medicine from the land is really important. [00:52:30] It's help heal us. It's really important to understand that. To have faith and to understand where your people come from.

When you watch the northern lights, I think about my ancestors, and I think about caribou. I think about all those kinds of things, [00:53:00] and we are so powerful, and it makes your heart feel good. It makes your head feel good, your space. Spirituality is important. Even learning little phrases in your own language. For me, I always tell my kids, [Dené Sqłiné language 00:53:25]. "You're strong. [00:53:30] Strong in your head, strong in your heart," that stuff is really important. Trust in your faith. Even though you don't see other

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people do it, do it for yourself. That's an important message that all people hear.

And hug each other. [00:54:00] The older people, I feel like, miss the hugs and the love. I know they do. Our people are lonely. So, be kind to each other and continue to try to visit the trees and the grass, [00:54:30] the waters. One thing I do every time I get a fish, I'd be like, "Hi, I missed you. You missed me?"

Interviewer: You were doing that yesterday.

Interviewee: Yeah. Those things are important because the land misses us and we miss the land, and spirituality is part of that. I remember my mom prayed on top of the hill. We didn't get very much caribou that one winter. She said to [00:55:00] me and my other two sisters, "Let's go on top of the hill, we'll have a picnic," she said. There was still ice. So, we walked on top of the hill, she went to a corner of the hill, and she prayed. We got back to the house. She wanted me and my other sister to take our niece back to our older sister. As we were walking... At that time, the community wasn't developed so far. As we were walking, we saw two caribou and [00:55:30] I thought, "Oh my mom's got powerful prayers."

So right away, one of us ran back home and said, "There's two caribou." My dad and my brother, they grab a gun. They got the two caribou and we shared it. We had a big picnic. All kinds of people came. I often think about that prayer she did and how powerful she was, and how gifted she was. I have a huge amount [00:56:00] of faith in our home, in our sacred areas, in our ancestors. So, I pray for all of you to have strong hearts, strong minds. Life throws us difficulties. It's part of life. It's part of teachings. You just need to be able to be strong. Strong in our hearts.

2021 AEMP TK Program

Participant: Gloria Enzoe

Interviewers: Sadetlo Scott (Interviewer), Jay Bulckaert (Speaker 3)

*\*Verified June 27, 2022 by telephone with Sarah Ravensbergen.*

[00:56:30] Let those difficulties teach you. That's it. [Dené Sq̄łiné language 00:56:36].

Interviewer: [Dené Sq̄łiné language 00:56:36].

Interviewee: Yeah.

Interviewer: You're so great.

Speaker 3 - Mal...: [Dené Sq̄łiné language 00:56:43]. That was amazing. That was honestly amazing.

[End of Interview]

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Speaker 1: ... you're from?

Marie Adele: I'm Marie Adele Football, from Wekweètì.

Speaker 1: Awesome, thank you. So, can you tell me about a time you were out on the land?

Marie Adele: Well, ever since I was born, my family be going on the land from places to place, where is there good seasons for hunting or trapping or fishing. So, up until I was old enough to go to residential school. [00:00:30] So, that's how long I've been with my families, about six, eight years. And then, I went out to residential school. And then from there, our family go out on a land and if they don't want to send us back to residential school, we travel with them. So, it seemed mostly we lived in Rayrock and when it was closed, my family, they moved to Behchokò. [00:01:00] So, that's where we started living. But they do go out on the land, just like for muskrat hunting, they go to the Russell Lake area. That's where they stay for couple of weeks or a month. And then when July comes for treaty day, that's when they go in to get their treaty and then what we need, they buy and then we go back.

Speaker 1: [00:01:30] Yeah. You've spent most of your life on the land, eh?

Marie Adele: Yes. Most of my life on the land, yeah. And when I moved here to Wekweètì, that's the same thing, mostly where we can, we go out on the land.

Speaker 1: Yeah. All the time. And have you been to Lac de Gras before?

Marie Adele: No. This is my first time.

Speaker 1: [Tłıchq Yatı̄ language 00:01:53]?

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Marie Adele: First time here. And I'm really happy to be here to see there's two mines [00:02:00] across from each other. So, I thought it was further away from each other, but I didn't realize they were just right across from each other.

Speaker 1: Yeah. They're really close.

Marie Adele: Yeah.

Speaker 1: ...While you're out here, what do you hope to see?

Marie Adele: What I hope to see while I'm out here is to make sure that all the plants and stuff are still healthy. [00:02:30] That we can be eating it now, it's okay, and the fish, too. And I didn't really notice about the fish how it's unhealthy or healthy. So, it's really good experience to learn, to see what, which, and how long they live, and which is male and female.

So, I'm really happy [00:03:00] to be here to learn all that and to see. And about the mine, I didn't really know it was like that. When I seen it, I was really unhappy, and when the first time when they were talking about it, or they're going to open a mine on the barren land around here that I didn't really want to, but we have no say. So, when I seen it, [00:03:30] no, it makes me feel really sad. Thinking about my grandchildren and their children, great, great grandchildren that they might, they're going to be out here. And they want to travel, we teach them when they were young how to go out on the land, how to hunt and all that. And I don't know what's going to happen. That's one thing. That's why we're still here. We really need to [00:04:00] help out as much as we could.

Speaker 1: And that's why, like this next question, why is this area important to you? Why this particular spot, what's important about this area?

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Marie Adele: This spot is really important because this is where the caribou migrate, they pass through, and then they go back down to our community [00:04:30] or to Whatì or Gamètì. And as the Aboriginal people, we live on caribou meat. That's our food. There's all over the world, people have their own food, when they go someplace and if it's not available, if it's not there, then they're craving. That's how it is with our people. It's the caribou meat that they've been [00:05:00] living on for such a long time. And it's their healthy food. So, they did at that time, when the caribou come, there was no waste, even the guts and all that stuff inside the caribou stomach, it was just like a dessert for the elders and also the youth. And also, they have the caribou blood, that's what [00:05:30] they were having [to be] healthy.

Because when my uncle came to visit with his family, they stay at our house. And at that time, it was a hunting season, August, was all the caribou coming back, this was in about '80s or '90s. So, when I seen him, I was boiling the meat. They just came back, fresh caribou meat. [00:06:00] And I just put it in the water and it was boiling for 10 minutes, he came in and he took one of the meat out of the pot. It wasn't really well done. "Hey, hey, hey," I said, "it's not done, I just put it, it started boiling 10 minutes ago." He said, "No, no, no. This is the best part of the meat to eat." And I said, "There's too much blood." He said, "The blood makes you strong and healthy. Keeps [00:06:30] you going." "Oh, okay." So, that's the time. I was still young, so that's a thing I learned.

So, every time they talk about caribou, I always think about him that he was right. Even the people in the community, if there's no meat or if we go to Behchokò in Yellowknife, people, they do crave for caribou meat too. They say, "Any meat? You have any fresh meat, any dry meat [00:07:00] or

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things like that?" So, I feel so sorry for, with the mine and all that, that caribou are starting to decrease. Hardly they don't come around our community. In March when it's time for them to go to the barren land, right across our hometown on a lake, there's a thousand, a thousand of caribou just passing through. [00:07:30] We see it, we see them just passing through. And now, how many years did they start taking different routes, different direction. So, we don't hardly see them, but only last year did they start coming. And there were lots. They're not increasing. So, it's just that they went to different routes, [00:08:00] different trail to make their own way to come down.

Speaker 1: Hmm. It's quite different to see, and scary almost, to see caribou disappearing and moving and, because it makes people concerned, eh?

Marie Adele: Mm-hmm (affirmative).

Speaker 1: Yeah. They're so important, that's exactly it. Even you just talking about it, I'm getting hungry. My mouth is just watering.

Marie Adele: Yeah. Before [00:08:30] I moved to Wekweètì in '80s and Wekweètì people, they used to come to Behchokò for Treaty Day, and just to get what they need. And one time, I heard an elder, they brought dry meat, pound meat, and they make lard out of the bones, and they used [00:09:00] to bring all that. And even ribs, they take the bones out and they dry it, and they bring to Behchokò and they share. They share with Behchokò elders. And then, I guess they stay for a while, maybe a couple of weeks or so, and then they'll run out, there was one elders that were saying, "Oh boy, I'm just craving for caribou meat, dry meat. I'm just craving, I'm out of it now." [00:09:30] And even Whatì, they bring dry fish. And them, too,

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when they go to Behchokò, they say that when there's hardly any fish or dry fish, they crave. It's all like that. Since that, they make a community just to be close to [00:10:00] the caribou and live on the meat.

Speaker 1: Yeah. Why do you think it's important for both youth and elders, we have used some youth here and both elders, why do you think it's important for them to be involved in this work?

Marie Adele: Well, to be involved in this work for the youth and the elders is to take care of our land, to make sure there's no more damage [00:10:30] for the youth and for their, maybe in the future, for their great, great grandchild. Then, they'll teach their children how to take care of their land and learn from the elders. Like when the elders tell them stories about this, then maybe they'll listen and pick it up, and them, [00:11:00] too, can continue on taking care of their land to make sure these stuffs don't happen again, like the mine coming up to their community or close to their community.

Because that's what happened to Rayrock. That's where my parents are from, that's where they settled down, that was our hometown. And now we have to be moved out [00:11:30] from the land because it's all contaminated. And for so many years, we can't step in or go there. So, only the people that started working, cleaning up, are the only one that's allowed. And that is so sad, I even talked to my son and my daughters about it. Being moved out of our own community where [00:12:00] we live, and it was so sad for me. I didn't know they were having meeting about it. About Rayrock, how to clean up, and what to do and all that.

So, I've been so many years, right now I'm 66. So ... I'm just lying. I'm 67. I just turned. [00:12:30] So, see, that long, and

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then sometimes I just wondering, all the people, they split, they went to Gamètì and Whatì. And my family moved to Behchokò, and there's a lot of family move to Behchokò. And our town, Rayrock, could have been a big community, more than Behchokò and maybe [00:13:00] Wekweètì because all the people just split because of the mine. So, that is so sad. That's what we need to continue on teaching our youth. And, hopefully, the elders that know more about it, more stories, hopefully they'll continue on teaching them and working with people like this year, like monitoring [00:13:30] the land and green places where there's mine. It continued, even though this one close, they have to continue on.

Speaker 1: Yeah. It's really important that we see the land returned to the way it was. And the elders keep saying that, yeah, the caribou had left, but it's really important, and lots of people have said this already, it's really important [00:14:00] that we start seeing caribou. If the land is healed, the caribou will come back. And what would it mean to you to see that happen for this place, in particular? What would it mean to you to see caribou return to this area?

Marie Adele: Well, right now it's a time for caribou to return. For example, if I see it tomorrow, I'll jump all day, I mean I'll dance all day non-stop. I'll be so happy to see them. But [00:14:30] after the land healed and all of that, hopefully, yes. But that might be after our time with our kids and their grandkids and their kids, hopefully, before that, but that will be after my time. So-

Speaker 1: It's a long process.

Marie Adele: ... I don't really know, yeah.

Speaker 1: Yeah, it's a really long process. So Diavik is due to close in 2025, they've [00:15:00] already stated that. What do you

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want to see ...? What kind of long-term monitoring do you want to see?

Marie Adele: Well, until the long-term monitoring-

Speaker 1: Monitoring.

Marie Adele: ... monitoring is, as long as the ground heal, the land heals and see the green grass like this coming back and all the plant and all that started growing healthy and all [00:15:30] that. As long as everything is green, they should continue on.

Speaker 1: Yeah. It should be continuous work.

Marie Adele: Mm-hmm (affirmative).

Speaker 1: ...What is healthy fish and water to you? What are healthy plants and land to you? What does that mean?

Marie Adele: [00:16:00] Healthy plant is just like our medicine. We use the plant for medicines, and the berries and cranberries, any berries starting to come back while the ... Even it's close to the mine here, but I never [00:16:30] been here, but they said there's berries somewhere around nearby. So, that, too, should be look after, make sure they're healthy. And just, like I said, as long as everything turn green, it's all that matter. Where's the smoke coming from?

Speaker 1: Oh, it's just a coil, don't worry. Nothing's on fire.

Speaker 3: Turn that off, I'll let you turn that off. I don't want that on camera [inaudible 00:16:58]. Forgot that was still going.

Marie Adele: [00:17:00] So, that is very important, the water, the fish because mostly people, they live on the fish, too, most of them. I remember when trapping with my uncles and aunties,

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we move on a land every morning. So, he sits, knit. And when the men to go back trapping, me and my auntie [00:17:30] were going to check the net every morning. And I noticed they have fish in the morning, for lunch, for supper, three times a day. Fish, fish, fish, fish, out of the way, and I was just wondering why. So, I did try. At that time, the fish were healthy, fat. So, that's very important because [00:18:00] of the elders. A lot of elders are really sick, are starting to get sick because they don't have their traditional food, like fish and caribou, just like I said.

Speaker 1: Yeah. It's such an important part of who we are.

Marie Adele: And also, ducks.

Speaker 1: Yeah.

Marie Adele: Ducks. We noticed a different taste. And some of them, we noticed that [00:18:30] there's some stuff in the guts that are different. And the taste is starting to be different, too, because they come from outside somewhere down south and they come. So, even the ducks this year was really different case for me, not the right taste.

Speaker 1: Is that something that you'd want to see long-term, do you want the ducks' taste-

Marie Adele: Yes.

Speaker 1: ... to be monitored, as well?

Marie Adele: Mm-hmm (affirmative). [00:19:00] Yeah.

Speaker 1: Yeah. What do you hope to see in your communities after the mines close?

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Marie Adele: Well, to see that our community with other, I don't know how far we are from, but to have some of our community just to come out with their families and the land and to check the land, to [00:19:30] see how it is, and to make sure that the land is healing slowly. Because we're kind of close and have our community work together and have people come out with boating or with by air, it doesn't matter, but just to come in and check and keep their land and see if it's healing and healthy and [00:20:00] all of those plants and the water and the fish are coming back healthy. That's what I want to see because ... And it's our kids, their generation, that they're the one that going to live in that community once we're gone. So, we need to work with each other and [00:20:30] help each other to make sure that it's healthy, the water, the fish, and to make sure that it's coming back.

Speaker 1: Was there anything else you wanted to share? I know we were talking earlier about the story you had about your father going out on the land and getting caribou, right?

Marie Adele: Yeah. Behchokò people at around August, the end of July, [00:21:00] right after the treaty day or something. They used to come out from Behchokò all the way here to the barren land to go hunting for caribou. The men, they always do that. They come out and to go hunting. And caribou, when it's fresh, is really heavy to pack. They go from portage to portage, and sometime, maybe it was spoiled on the way. [00:21:30] So, even the men, even my dad, he makes dry meat, and he makes as much dry meat as he could that, and it becomes light once it's dry. Even the ribs, too, they take the bones out and they use the plants to smoke it. So, the flies will keep away, so they won't bother the meat. So, that's what they used to do. And as a young girl, when we know [00:22:00] they're coming back,

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everybody in Behchokò they go down to the shore to meet them.

And we listen for the gunshot. If it's one gunshot, that means there's something happen, accident or something. But if it's three, it's good sign. Three shots if it's a good sign. Everybody just starts clapping, yelling, welcoming them back. And when we were young, we were [00:22:30] young, what we do is we just grab that canvas bag. And then we'll just take it, we'll run home, and then before my mom open it, we open it. And we just go for their dry meat right there.

Speaker 1: Yeah.

Marie Adele: That's what they used to do. Even from Behchokò, people, men they always come out to the barren land to hunt. And, recently, now there's a plane that you can [00:23:00] travel with and that's what they start using. Because I seen a picture of my dad somewhere, standing on the boat and they were coming back from the barren land.

Speaker 1: I'm going to have to try and find that photo.

Marie Adele: Yeah.

Speaker 1: Yeah.

Marie Adele: I got that at the house, yeah.

Speaker 1: Nice. Hmm. Yeah, caribou dry meat is like gold, right?

Marie Adele: Dry meat is like gold for everybody. [00:23:30] Even now, it still is, but the lack of hunting and the lack of caribou not coming, it's pretty hard.

2021 AEMP TK Program

Participant: Marie Adele Football

Interviewers: Sadetlo Scott (Speaker 1), Jay Bulckaert (Speaker 2)

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Speaker 1: [Tłjchq Yatì language 00:23:43] Was there anything else you wanted to talk about?

Marie Adele: It's good enough.

Speaker 1: It's good?

Marie Adele: Yeah.

Speaker 1: You were great.

Marie Adele: Yeah, [Tłjchq Yatì language 00:23:52]

Speaker 1: [Tłjchq Yatì language 00:23:52]

Speaker 3: [Tłjchq Yatì language 00:23:52]

Speaker 1: Yeah.

[End of Interview]

*\*Verified by email (to [Myra.Berrub@riotinto.com](mailto:Myra.Berrub@riotinto.com) and forwarded to [sravensbergen@tcservices.ca](mailto:sravensbergen@tcservices.ca) on January 17, 2022*

Speaker 1: My name is Nancy Kadlun. I'm originally from Arctic Sound. That's where I was born, Katimanik, and we lived in Umingmaktok for a long time, 25 years. We moved, now I live in Kugluktuk to this day.

Speaker 2: And the first question I wanted to ask you was about, if you wouldn't mind sharing, a time you were out on [00:00:30] the land.

Speaker 1: Soon as the winter's warming up, I'm going out on, the land on weekends. Right now, I'm going to my cabin back and forth every weekend because it's nice and warm. And I'm glad to be here today where I used to always go, Contwoyto Lake. And this is, this place is just similar. So, I [00:01:00] love to be out.

Speaker 2: And you've been to Lac de Gras before.

Speaker 1: Lac de Gras, I've been here. This is maybe my seventh time here, but in TK camp, this is my third time.

Speaker 2: Oh, wow. Wow. And what are you noticing so far? That's been different this year.

Speaker 1: This year, the water's been very high. There are no rocks by the [00:01:30] shore. I guess from the glaciers. The water is racing from the ice melting.

Speaker 2: What have about the.... What are you noticing that's different with the fish and the plants?

Speaker 1: Well, I've never noticed the plants right now. [crosstalk 00:01:54] But for the fish, they're hungry. They have [00:02:00] no food in their stomach, except they have bugs, which I don't normally see.

Speaker 2: Mm-hmm and why is this area, Lac de Gras, why is this area in particular important to you?

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Speaker 1: Because the water is going to Kugluktuk and that's where we're right in the mouth of the river that's coming from here.

Speaker 2: That water flows straight into your community. Yeah.

Speaker 1: We're right in the mouth of where it's [00:02:30] coming out. [crosstalk 00:02:33] So this is our water.

Speaker 2: And why is it important for both youth and elders to be involved in these kinds of camps and this kind of work.

Speaker 1: Because the youth are our future. We won't be here forever. And we would like our land to be the same as the way it is for our future grandchildren. Because no one [00:03:00] would live healthy without a good water.

Speaker 2: Yeah, absolutely. What does healthy fish and healthy water mean to you?

Speaker 1: It means to me so much because the fish are our food and only us, like all animals eat fish to survive, like bear any kind of animals, wolves, wolverine they rely on fish [00:03:30] before winter. That's when they start to get fat and the water is so important because every living thing live out the water.

Speaker 2: Yeah, absolutely. Elders and even the people at the camp this week, everybody has been saying that since the mine has opened, since Rio Tinto opened and even [inaudible 00:03:55] that we haven't been seeing as much caribou in this area.

Speaker 1: [00:04:00] Because caribous are very sensitive to smell. Even if you just step on the ground, they would smell your footprints or wherever you sit. That's how all the animals are, because they're not used to like any kind of soap or any smell from your clothes. And they're very sensitive to noise, especially the [00:04:30] dust that's coming from underground. If we are an animal that dust that come

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from underground, the smell is very strong. [crosstalk 00:00:04:45]  
So it's not healthy for any, any living thing.

Speaker 2: Mm-hmm absolutely. And we know that Diavik is going to be closing in 2025. They've already said that. What sort of long-term monitoring do you want to see happen?

Speaker 1: [00:05:00] We would like to be monitored for a long time because this dust and all that activity that's going on, it won't settle right away. It's not going to be-I don't know how long it might be, but all the stuff that's coming from there, it's not going to settle that fast.

Speaker 2: Yeah. You had made a really-I'm just going to swat some mosquitoes. You had made a really good point [00:05:30] the other day that, that even though this mine is closing, that's not the end of mines for us. Hey. Yeah.

Speaker 1: It's not end of mines for us because we're in a really rich country. And there's so much. Everything that people want from our area. There's never ending diamonds, gold and whatever. So, the mines won't stop [00:06:00] for, for life I bet. But we would like our land to be clean as possible because in the future, if we don't take care of it, it's going to be all like no animals left [crosstalk 00:06:16] for our future. [crosstalk 00:06:19] Which you can see today starting already. Yeah, absolutely. We don't want it to get any worse.

Speaker 2: Yeah, no, it's really important. What do you hope to see happen in your [00:06:30] communities once the mines close?

Speaker 1: Our community won't really be affected by just one mine closing, because I won't say it's going to close. There's always going to be more mines. So, I have no say about how it's going to affect our community. What would only affect us is our air and water and animals. So [00:07:00] we try to keep everything clean as possible. If any mine ever closes everywhere? Like I know it won't happen, but I wish it could. That's the only time that's when our land is clean and

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go back to normal, but I don't think that will ever happen. So, I'm so happy for Diavik [00:07:30] doing this just so we could try and have this going all the time for our future, because if we don't respect anything, then it's just going to be all [crosstalk 00:07:48]. Not healthy again. [crosstalk 00:07:50]. So even though we may not be helping, but just our words, please [00:08:00] for our future, because we are not living here forever. And there's our generations.

I'm so happy that they do the interview. So, they can look back and say, look what this happened long ago, let's try it all over again. Because if elders aren't around and you know, younger people might seem to forget and go, go, go, go. But they have to stop [00:08:30] to protect our water and our air and our land. So, I'm so thankful for interviews. [crosstalk 00:08:41] Because they'll be there forever.

Speaker 2: Absolutely. Is there anything else that you want to share with us today? Anything that you're observing or anything that you want to say from your heart about what's happening her.

Speaker 1: Coming from my heart, I'm so happy coming here a [00:09:00] third time and I know it will go on for a while. I don't know if I'm going to come back in two years. You, you never know how life is going to be. So, I'm so thankful for things happening like this because we really need to protect our water and our land. It's healthy for our young people, because we all know that then people like to go anywhere. So, let's try and keep our world clean [00:09:30] as possible.

Speaker 2: Let's see, [inaudible 00:09:36].

Speaker 1: Thank you too.

Speaker 2: Yeah. Thank you so much.

[End of Interview]

*\*Verified by email with Sarah Ravensbergen on June 8, 2022*

Vikki Niptanati...: My name's Vikki Niptanatiak and I'm from Kugluktuk, Nunavut.

Speaker 2: And can you tell me about a time when you were out on the land?

Vikki Niptanati...: The time that I remember being out on the land is when I was between the ages of 10 and 12. We were about 40 to, or 35 to 40 miles east of Kugluktuk. And we were out there to, because it was in the [00:00:30] springtime, and we were there for the geese hunting. And my dad had taught me during that week how to use a rifle, a 22 rifle, because I kept bugging him and was, "Can you teach me how to use that?" Because all of my brothers growing up and my siblings, they were taught as well by my dad, how to hunt geese.

So my dad had to go back to town to go grab grub for the rest of the week [00:01:00] that we were there. And so it was just my mom, myself, and my two brothers that were there at the tent. But my brothers had stayed up the whole night geese hunting, so then I saw two geese landing because I remember there was two, and I was trying to wake up my brother's I was, "Can you wake up so that we can go get those two geese that [00:01:30] landed over there by the lake". And he said that he was too tired and that I should not bother him.

So then I went to my mom I was, "Mom can I go see those two geese that are in the lake? And can I try shoot them with the gun?" And she was, "As long as you're careful and you don't point it towards the tent or you don't shoot towards the tent, or you just make sure you like carry it properly." So I was getting closer [00:02:00] to the geese I start crouching and then I got close enough to shoot the rifle to the geese. And then I just sat there and I looked through the scope and my heart was beating.

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And I was scared that I was, because I didn't know what would've happened. And because I was scared that my dad wasn't around wasn't around and because I'm more comfortable if he's around, if I'm shooting a rifle and, [00:02:30] and it took me a long time to shoot the rifle. So when I finally shot it and I shot that geese, it didn't fly or anything and I got so excited. I ran to the geese, almost forgot the rifle. I forgot that part. I grabbed the geese. I brought it to my mom and I was so excited. I was "Mom, I got my first geese". And then from there I fell in love with the geese hunting and the way how the geese is, especially when you shoot it up [00:03:00] in the air. It's like falling, which is really nice. I mean mm-hmm

Speaker 3: Can I just make an adjustment? You're doing an amazing job. You're doing great. You've just got a piece of hair that's coming through your glasses. If you don't-

Vikki Niptanati...: Oh okay.

Speaker 3: You'll be in annoyed by that when you see yourself on camera.

Vikki Niptanati...: Oh, it's okay.

Speaker 3: Thank you.

Vikki Niptanati...: Mm-hmm (affirmative)

Speaker 2: Thanks Vikki. Have you been to this area before?

Vikki Niptanati...: No, I've never [00:03:30] been here. Okay. But my father had been here before, so to guide. Yeah.

Speaker 2: What did you hope to see when you came here?

Vikki Niptanati...: What did I hope to see when I came here?

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Speaker 2: Or, what did you expect to see? Maybe?

Vikki Niptanati...: I didn't know because I didn't ask my dad where exactly Lac de Gras is. So I didn't expect to see the mine just right here, actually. Yeah, kind of bothered that we're close to [00:04:00] a mine.

Speaker 2: It bothers you?

Vikki Niptanati...: Yeah

Comes because of the noise and there's no animals, and there's... What I notice is that the ravens and the [Inuinnaqtun language 00:04:13], what is it in English? Seagulls.

Speaker 2: Seagulls?

Vikki Niptanati...: Yeah. Yeah. And the birds like the little birds, whatever. When I go camping there's usually a lot of ravens and seagulls that are coming. And also in the morning and the nighttime [00:04:30] is when you hear the birds chirping, I was, you don't hear that here. Mm-hmm

Speaker 2: Why is this area important to you?

Vikki Niptanati...: Why it's important?

Speaker 2: Mm-hmm (affirmative).

Vikki Niptanati...: When we were doing the vegetation inspection over here, I saw a lot of caribou trail. So I think that's very important for [00:05:00] the caribou since they were here before, yeah.

Speaker 2: Elders and everyone has been talking about how the caribou hasn't been in this area since the mine opened, what do you think it would mean to you to see caribou come through here again?

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Vikki Niptanati...: Oh, it would honestly, when you, when I was younger we would go to a campsite and they would be herd of caribous just crossing by and we just [00:05:30] watched them. And now to come out here and not see any animals or see any caribou herds, it's very sad not to see that.

Speaker 2: What does it mean to have healthy water and healthy herds of caribou and healthy fish?

Vikki Niptanati...: I would not be living if we didn't have any water. And they're very important, the water and the fish to many people because we live off of [00:06:00] that and there's a lot of what you call it, omega in the fish. So it's very important to the people. Yeah.

Speaker 2: And people from Kugluktuk have talked about the water flowing down and being a source. Is that something that you think about when you're here?

Vikki Niptanati...: Yeah, that's something that I think about because the mouth of the Kugluktuk river, that's where we get our fresh water and that's where we drink it. And [00:06:30] that's where we get like, so every time when we're going to go out to camping, we go to the mouth of river and get some water just for our camping water. And that would be sad to not to do that anymore. So..

Speaker 3: I have a question for you.

Vikki Niptanati...: Mm-hmm (affirmative).

Speaker 3: Just while we're on the topic of caribou. Can you describe to Sarah what caribou [00:07:00] mean to you and your people?

Vikki Niptanati...: okay So the caribou, what it means to us is it's a main source for, well, back in the day when they didn't have any grocery stores or anything it was the main source for Inuit people and to harvest. And they would also use the, they would use the

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whole meat and they would not waste any. And also with [00:07:30] the [Inuinnaqtun language 00:07:31]...

Speaker 3: The pelt?

Speaker 2: The hide?

Vikki Niptanati...: Yeah, the skin, they would use the as well for they would make parkas and ski pants and that's how they would survive in the winter as well. So what it means a lot. Yeah. Oh, I love the [Inuinnaqtun language 00:07:52], the dry meat.

Speaker 2: Oh, sorry. I missed that. The [Inuinnaqtun language 00:07:56], I love the [Inuinnaqtun language 00:07:58] The dry meat. Yeah. Mm- [00:08:00] hmm

Do you get that same feeling here you were talking about, being at with peace and seeing them, do you get that feeling when you're here in this area?

Vikki Niptanati...: Oh yeah. When I get that same feeling for every animal. What I see every animal that I eat, I get the same feeling. It's like when you see your husband for like, or you're in love with someone and you're just you get that feeling with the geese and the animal, the caribou. [00:08:30] It's very the same, the things that you eat. So that's how I feel when I see an animal and then when it's shot and then I bring it back and yeah.

Speaker 2: Thanks. I was going to ask you why is it important for both youth and elders to be involved in this work and to come to this camp and watch and do this kind of thing?

Vikki Niptanati...: It's very important [00:09:00] for youth and elders to get to put in their input on this kind of workplace or the camp site that's involved in the affected communities because elders have so much knowledge that just even listening this whole week, listening to them talk about the water, the land, and [00:09:30]

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it, they have a lot of knowledge of the things I didn't know about. So then to hear them talk about how important it is and for them to pass it down to the youth that would keep it going from generation to generation. And that would, that's very important. I mean, I want my kids to [00:10:00] know about what's going on and what you see in the water or the land. So, and it's very important. I really loved hearing the stories about everything. So yeah.

Speaker 2: Do you hope to be back in three years then?

Vikki Niptanati...: To be back?

Speaker 2: To be back to this camp in three years?

Vikki Niptanati...: Yeah. I would love to come back. If I had a chance to come back, then I would love to come back. Yeah. I mean just because there's a lot of elders and they have so much knowledge. [00:10:30] Yeah. Yeah.

Speaker 2: I wanted to ask you a couple things about Diavik closing. So in 2025 Diavik is supposed to close and I'm wondering what sort of long term monitoring you want to see happen.

Vikki Niptanati...: Oh, so the re-vegetations that's happening right now and the plants and also testing for contaminations and [00:11:00] yeah. That's about it. Mm-hmm

Speaker 2: Mm-hmm (affirmative) Would anything specific for caribou, or?

Vikki Niptanati...: Oh, I'd love to see caribou back around here. All the animals, the ground squirrels. Yeah. And you don't see much rabbits around here too. So I would love to see all the animals being able to come back home, because this is where I saw [00:11:30] a lot of caribou trails. So I feel like this is their home and yeah.

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Speaker 2: How would you feel if you came back and you saw that?

Vikki Niptanati...: And saw all of it? Oh my God. I would cry seeing that. After seeing the mine, I would cry for, I would be cry happy tears because the animals are back. So yeah, it's very important for also the migrations of the caribous and [00:12:00] all the of the other animals, so yeah.

Speaker 2: So are, is what you're seeing now, is this really different from that future vision?

Vikki Niptanati...: Yes, it's very different.

Speaker 2: Can you talk a bit about that? Like what you've seen and what you hope to see.

Vikki Niptanati...: The same, like the same questions or the previous question.

Speaker 2: Mm-hmm (affirmative)

Vikki Niptanati...: I would like to see all the animals come back and also would like [00:12:30] yeah, all the animals to come back, yeah.

Speaker 2: Thanks.

Vikki Niptanati...: That would be good.

Speaker 2: And what do you hope to see happen in your communities after the mine closes?

Vikki Niptanati...: After the mine closes?

Speaker 2: Mm-hmm (affirmative)

Vikki Niptanati...: What I would hope to see?

Speaker 2: Yeah, is there anything at home that when you think about your community and your family at home-

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Vikki Niptanati...: Oh.

Speaker 2: Is there anything that you think about or would be important to have, or to see [00:13:00] after the mine closes?

Vikki Niptanati...: Community meetings of the closure of the mine and also in the future of how it is right in that future. To see what it's like the effects on the environment and the land and the water and, and also to see that in the future as well. Yeah-

Speaker 2: So- I'm sorry.

Vikki Niptanati...: I think that would be important [00:13:30] to see what's happening right now, what affect it. And also to have that way can like, I don't know. Mm-hmm.

Speaker 2: So it's important for you that Diavik shares what's the science that's been going on? Is that right?

Vikki Niptanati...: Yeah. That's very important, yeah. The communities that are infected areas, so that will be very important.

Speaker 2: Okay.

Vikki Niptanati...: Mm-hmm (affirmative)

Speaker 2: Okay. So do you have any other questions? Did you want to see the sheet?

Speaker 3: [00:14:00] Can you maybe one of the last questions, you talked about one of the things that's a bummer is that you don't see any caribou. Is there anything else you've seen in the last seven days out here that is concerning to you, specifically? Like with the water or the vegetation or the fish?

Vikki Niptanati...: So the fish, that concerns me with the fish because there's [00:14:30] bugs in the fish and we're not being able to eat it.

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[Inuinnaqtun language 00:14:40], which is dried fish or either boil it or cook it. That's one of the concerning things because every time we go out, on the land, my dad would go out into the ocean and set up nets and he would catch fish and we [00:15:00] were able to eat it. And so it's kind of sad to see that with the fish not eating and just only eating bugs. And also the [Inuinnaqtun language 00:15:16], I don't remember what it is in English, but it's a bird like that, it comes out in the ocean and they just like sit around and also like the [naucks] and the ravens. There's not [00:15:30] really any of around, the first few days there was not any, and that's what we noticed about the birds though and the fish and Mm-hmm (affirmative)

Speaker 2: Was it too quiet?

Vikki Niptanati...: Too quiet? Yeah, it was too quiet. Yeah. Because I'm so used to, every time we go out and then it would also be nighttime and you could hear the birds and then the birds are the first thing that wakes up. So they're chirping. So it was really nice to hear all of that. [00:16:00] And to hear not the birds was kind of concerning. Yeah.

Speaker 2: Can I-

Speaker 3: What? I'm good, yeah.

Speaker 2: Okay. Can I ask you one more thing?

Speaker 3: Mm-hmm (affirmative).

Speaker 2: And then lunch time. Does it change how you feel about the water in the lake when you see the fish?

Vikki Niptanati...: Oh

2021 AEMP TK Program

Participant: Vikki Niptanatiak

Interviewers: Sarah Ravensbergen (Speaker 2), Jay Bulckaert (Speaker 3)

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Speaker 2: And the things you've seen with the fish and the birds. Does that change how you feel about the actual water and the lake and coming [00:16:30] down to [inaudible 00:16:32]

Vikki Niptanati...: Yeah, because I'm not able to drink that the water that's here compared to the ones in Kugluktuk, it changes a lot. Yeah. Because in Kugluktuk that's where we get our water, a lot of our water from to drink. So yeah.

Speaker 2: That make you nervous.

Vikki Niptanati...: Yeah. It makes me nervous because to think about it, it's going down Coppermine River, like [00:17:00] yeah. And water is expensive. So, don't, I love the Coppermine River, fresh water. So mm-hmm yeah.

Speaker 2: Is there anything else you wanted to share or tell us or to Diavik?

Vikki Niptanati...: No, I really appreciate that I got the opportunity to come out, and join everyone and be able to [00:17:30] listen to the stories of the elders and it looks really nice. Mm-hmm (affirmative).

[End of Interview]

Joanne Barnaby: My name is Joanne Barnaby. And my role is to help facilitate two programs that we're operating out here this time together for the first time, the Traditional Knowledge Panel and the Aquatic Effects Monitoring Program from both a traditional knowledge perspective and a scientific perspective. So, we're [00:00:30] gathering data from both elders and the fish biologists.

Speaker 2: Amazing. And why do you think that's important to kind of get both sides of the perspective? Why is it important that you're doing this both together at the same time?

Joanne Barnaby: Well, the elders, the Traditional Knowledge Panel, felt way back when that fish and water monitoring was really [00:01:00] important to the communities. And they wanted not only to hear about the scientific side, they wanted to see with their own eyes. They wanted to come and taste the fish. They want to taste the water. They wanted to feel assured that it wasn't being polluted. And they felt really powerfully that this area is sacred. And [00:01:30] they're, of course, extremely concerned about the caribou. And over time as the mines all developed, they felt that that was a definite impact, was on the caribou, and the loss of habitat and the noise pollution and the disruption to their migration patterns. And so that's the basis really [00:02:00] of both programs. That was their primary concern. And they were concerned that the spirit of the land might leave. And if that happened, they were worried about the future of this area. Yeah.

Speaker 2: And you've been doing this sort of work for a very long time. Do you mind just describing to me when you started and how you got started in this kind of work?

Joanne Barnaby: Okay. [00:02:30] Well, I started actually when I was a kid. Elders dragged me along to meetings all the time, and they pegged me as somebody who could build the communication gap between the western world, including western science,

and the traditional world and including traditional knowledge. And so [00:03:00] they kind of guided my development through that. And I worked for many years in land claims for the Indian Brotherhood and the Dene Nation. But I always was drawn to the cultural work, the knowledge work. And so, when the chiefs asked me to set up the Dene Cultural Institute, I did that, [00:03:30] but it took me not long to realize that doing administration in support of the cultural work was not the role I wanted to play. I wanted to do the hands-on work with elders and passing on the culture to young people.

So that's when I went on my own. And one of the first things I did actually was I designed a cross-cultural training [00:04:00] program for Diavik, and then delivered it for 12 years, a very significant program for that kind of training. It was three full days. All of the executive and senior management it was mandatory for them, and it was open to anybody on the workforce. So, we ended up training well over 600 workers over that 12-year period. [00:04:30] And I really think it created the possibility for these programs that followed, because of the appreciation and the understanding of the importance of the land to people in their culture. Not only in the past, but ongoing. And so, it helped to create the atmosphere that led to the creation of these two programs. [00:05:00] Yeah.

Speaker 2: Yeah. And that's the kind of work we want to see happening. Everybody has been talking about how important this all is. It's pretty incredible that you were able to build up that kind of basis, that this is an important thing we need to be doing.

Joanne Barnaby: Yeah, yeah.

Speaker 2: Yeah. It's such important work. And I really appreciate it and I know everybody else here appreciates what you do. But I think it's really... And I think maybe not everybody knows this, but [00:05:30] to have that elder guidance when you're really

young to build that up, and for them to say this is important and that's what you have to do with your life. What a powerful message.

Joanne Barnaby: Yeah. And to me it was a natural fit. I never resisted. I never had a desire to do anything else. And so, it was definitely meant for me. And I [00:06:00] feel really good. I'm disappointed in the other mines that they haven't got similar initiatives. I actually did design a course for... What's that other one called?

Speaker 2: [inaudible 00:06:24].

Joanne Barnaby: No, the other one.

Speaker 2: [00:06:30] Diamonds or gold?

Joanne Barnaby: Diamonds.

Speaker 2: Oh.

Speaker 3: I'm sorry. I'm no help.

Joanne Barnaby: This is terrible. Anyway, it doesn't matter.

Speaker 2: You were designing a program.

Joanne Barnaby: Yeah. And [Sabet Biscay 00:06:52] used to work for them.

Speaker 2: Right.

Joanne Barnaby: And she's the one that got me to design the cultural programming. It was [00:07:00] quite different, quite a bit shorter than what Diavik was committed to. And it was really, really hard, and they wanted everything recorded and basically just presented on arrival on site, online. And so, with the work that I did with Diavik, every time I brought elders with me. And [00:07:30] there was a whole pool of elders, incredible elders, they're almost all gone now, who came and helped deliver the

course. And so, they had firsthand contact with people. And it worked well in terms of both sides really developing an appreciation for each other and the diversity, the cultures that were at the mine. [00:08:00] So it was really special that way. Yeah.

Speaker 2: Yeah. What kind of elders and youth... having both involved in this kind of work is so important. How do you feel about that?

Joanne Barnaby: It's critical. It's absolutely critical. The elders don't feel right if there are no youth. They [00:08:30] feel like it's wasting their time, almost. Even though the communication is focused at the mining companies, they feel that it's really important for young people to hear what's being communicated, why, what's underlying that passion, developing their own love for the land. All of that feeds [00:09:00] into keeping the culture strong. And they feel very strongly about that. And we're all really disappointed, the COVID period that we're dealing in prevented us from dealing with last minute changes. I mean, we had youth all lined up.

Speaker 2: It happens.

Joanne Barnaby: It happens, yes. Especially with COVID.

Speaker 2: Yeah.

Joanne Barnaby: And all the restrictions here, the added restrictions here. [00:09:30] Which I support.

Speaker 2: For sure. Yeah.

Joanne Barnaby: Even though they're pain in the butt. Or the nostril, whichever.

Speaker 3: It's all good.

Speaker 2: I guess the last question I have for you is what do you hope to see for this area after the mine closes?

Joanne Barnaby: Well, I share that passion that elders have about caribou, [00:10:00] and I'm praying that the caribou will return. And they'll return in the large numbers that we've had in the past. And a lot of the work that the elders have put into planning for reclamation has been focused on caribou. So, they created a pathway which follows their traditional [00:10:30] pathway, their traditional trails. They've recreated that in terms of making an easy path for caribou to follow, in the hopes that they'll return. So that's an important part of the dream for the future. Obviously, there's also many other elements in the environment that needs to remain [00:11:00] and get healthy. Water is huge, fish is huge. Of course, all the vegetation that all the animals need is really big. So, the commitment on the part of elders to suffering through tons of technical stuff that they have to learn in order to understand [00:11:30] what the issues are, what the challenges are, and what the limitations are.

And they've been extremely patient and really keen to learn. And it's really amazing when you have that. And we've had quite a few elders involved. Some have passed on, but we've had real consistency. As long as somebody is healthy enough [00:12:00] to come, they come. They're really, really committed to it. And they're also really scared. They're really scared about what they see. They see the big rock piles, and they're like, "Holy crap, that's not natural." And they see all the bare rock that's been uncovered from all the vegetation has been removed. And they see the pits and the [00:12:30] possibility of slime being put in the pits and the fears around that, that it'll come to surface and contaminate. Even though it's chemical free by the time it gets there, it's still a big worry. Yeah.

Speaker 2: For sure. Yeah. Is there anything else that you want to share?

Joanne Barnaby: [00:13:00] I've over time really come to believe certain people in Diavik have really maintained the commitment to the

communities, to the North and to Indigenous cultures. And I know who they are, and as long as they're there I'll be there. So yeah, individuals can make a huge difference. [00:13:30] And so when you see that level of commitment developing within the company, you want to support that and encourage that. And it's gotten strong. I'm pretty confident that they'll follow through. We've presented close to 300 recommendations over the years, and [00:14:00] we've checked back on each of those to monitor the follow-up. And they've got a really good track record. We were rather surprised. We at one point decided we better take a look and see how much follow up there's been.

And one of the things that the elders really value is as we develop the recommendations [00:14:30] and we present them at the end of every session, we get a preliminary response immediately from the senior managers. And so, the elders can walk away from a particular session from this camp with a certain confidence that they're being heard and that their recommendations will be followed. So [00:15:00] that's pretty, pretty darn good. And then Diavik Follows up at our next session with a more solid response, concrete response, that we can hold them accountable for. And yeah. So that's good. That's really good. And it's rare.

Speaker 2: It is rare.

Joanne Barnaby: Mm-hmm (affirmative).

Speaker 2: Yeah.

Joanne Barnaby: Yeah.

[End of Interview]

2021 AEMP TK Program

Interviewee: Monica Redmond

Interviewers: Sadetlo Scott (Speaker 2), Jay Bulckaert (Speaker 3)

*\*Verified with Sarah Ravensbergen: by email with Monica Redmond on June 24, 2022, and by email with Rainie Sharpe on June 27, 2022.*

Monica Redmond: My name is Monica Redmond and I'm a fisheries biologist with Golder.

Speaker 2: Awesome, thank you. So, this week we're here to do some fish analysis and water analysis. What is it you're looking for when you come to these camps? What are you assessing with the fish?

Monica Redmond: I do an internal and external examination of the fish. So externally, I check for a variety of features. [00:00:30] Do you want me to name them all?

Speaker 2: Yeah, if you don't mind.

Monica Redmond: Okay. On the outside of the fish, we check to see what the skin looks like, mucosal layer. Are there any lacerations? Has the fish been injured in any way? We check the eyes for parasites, clarity, check the gills for colour or parasites. We check the length, both the fork length and the total [00:01:00] length of the fish as well as the total wet weight or total weight of the fish. Those are the main ones. We also assess fins. Essentially, just looking for aberrations of the fish externally.

And then internally, we do the same thing, however with the organs. Just make sure the colour looks good, whether or not there's presence of parasites. Stomach contents, what are the fish eating? How much is the [00:01:30] fish eating? And likewise, with all of the organs. And we finish up the assessment by generally taking an ageing structure. And the ageing structure in this case is the otolith bone which is a floating ear bone located deep within the fish's skull. And that for the species is generally the most common used identifier for age.

Speaker 2: You were mentioning the [00:02:00] other day that the preference to using the otolith bone is specific to the trout that you...

Monica Redmond: Generally speaking, there are more preferred ageing structures for specific species. For the trout, the otolith gives us the best estimate of the fish's age. Other features could be used for non-lethal fish assessments. So, if we didn't want to kill the fish and release, we could rely on [00:02:30] items such as scales or fins.

Speaker 2: What are they called?

Monica Redmond: Fin rays.

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Speaker 2: So, we've had the opportunity now to pull some nets. Some people did some offshore fishing. [00:03:00] Even when you're going to the water, how does the water that you're seeing here, how would water impact what you're seeing in the fish?

Monica Redmond: Can you please elaborate on water?

Speaker 2: Yeah. The lake. Things like lake clarity.

Monica Redmond: Okay.

Speaker 2: How would that impact the fish?

Monica Redmond: Often times when we check water clarity, we do this for both fish programs and water quality programs where we measure the Secchi disc depth which is a visual indicator of how the clarity of the lake [00:04:00] is, how far into the lake you can see. Can you see 30 centimeters or a meter or five meters, etc.? And generally, that would mean how much phytoplankton, algae is floating, little microorganisms are floating within the lake. So, it could speak on how productive the lake is. And depending on the lake and depending on the species, it can indicate [00:04:30] the health of the lake overtime.

If it's a typically really clear, really cold lake, an oligotrophic lake, and then overtime you see it getting greener and more difficult to see, it's an indicator that there's more productivity in the lake and that things are changing. Things are warming up. There are more nutrients.

Speaker 2: Mm-hmm (affirmative). And how would the temperature of the lake impact a fish?

Monica Redmond: [00:05:00] The temperate of any water body really impacts the fish. There are a few different types of fish like warm body fish. Up here, it's cold body. Salmon, salmonid species. So, lake trout in this case are cold water fish and they have a specific range of temperatures that they survive well in. And given that it's the north and in the summer, it can be very hot, the top layer of the lake [00:05:30] can heat up quickly. However, in the wintertime it can get really cold and ice over. There's a certain level of tolerance that these fish have.

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And generally, in warm water conditions, they'll swim low into cooler pockets. But, if the lake, going back to the clarity of the lake and the productivity, if the entire water body of the lake starts heating up because there's so many nutrients and particles [00:06:00] floating in the lake, over time that cold pocket of water that the fish escape to can become a little less and competition sets in with fish and the weaker fish might get put into more stressful, warmer conditions.

Speaker 2: Got you. We've had the opportunity now to cut open some fish and really assess what's happening in the stomach contents as you've mentioned [00:06:30] within the gills, within the skin and flesh and that kind of thing. What are you observing with the fish that we've pulled so far?

Monica Redmond: Well, the biggest observation of this camp is parasites. I'm sure many others have spoken of it. It's a very big issue. They are abundant and we're seeing parasites in many areas [00:07:00] of the fish. Most commonly you'll find them on the top of the stomach within the body cavity. Just like little round hard balls that latch themselves onto the tissue. But other areas that I check the heart. The heart has teeny tiny, smaller than a grain of sand, in this case, little cysts that live within it. The liver, you'll find them in there. The flesh, you'll find them. [00:07:30] Inside of the stomach in the Pyloric Caeca, which is in addition to the stomach, you may find tape worms. Really, I'm checking everywhere.

Other things that I'm noticing is the colour of the liver seems a little off potentially for this area. For this fish. I'm drifting off, because I don't know...

Speaker 2: That's okay. [00:08:00] So some of the other things they were, when we were taking a look at the fish and doing the-

Monica Redmond: Oh, the stomach?

Speaker 2: Yeah, they were talking about the heart being smaller in some fish. They were concerned about that. They also started noticing that the eggs and the sperm weren't as productive as they normally would be for the age of the fish. That was something that they were concerned about.

Monica Redmond: Right.

Speaker 2: What are you observing [00:08:30] as well?

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Monica Redmond: Yeah. Thanks for that. To speak on the stage of the gonads, that's a fish term's how well is the fish producing their gonads given this point in the season. So, I'm recording not only is this fish a male or a female, but what [00:09:00] do the gonads look like. Are eggs developing? Are they big and round? Does it look like the fish is ready to spawn this year? Is the milt sac starting to whiten up in colour in approach to spawning season?

Lake trout spawn in Fall, so we'll see them actively spawning around as early as September, October, around there. Sometimes late August. For [00:09:30] this specific latitude, I can't really speak on it. There's a lot of resting fish. Fish that aren't spawning this year. With lake trout, they have spawning cycles of... there'll be years in-between where they just gaining energy and feeding. And it seems like a lot of the fish that I'm observing this year [00:10:00] aren't spawning this year. Some are, but from the set of fish that I've seen.

And to speak on the size of the heart, that one I find challenging to address. I haven't noticed anything alarming with the heart size. So, that's where the [00:10:30] people who know the fish the most could probably speak more sufficiently. We don't have calipers to monitor the size or anything and I don't have a scale and I haven't noticed anything necessarily alarming that I would take notes on.

Speaker 2: In terms of the reproduction of the fish, we did look at the stomach content. They've been finding mostly in the stomach contents was [00:11:00] really just bugs. They aren't finding any other fish in there. In my brain now, I really think about fat and to be able to reproduce your diet would really impact that.

Monica Redmond: Yeah.

Speaker 2: How do you feel about the stomach contents and what you're seeing there?

Monica Redmond: Yeah. It's not unusual to find [00:11:30] insects, flies, benthic organisms within the stomach contents of lake trout. But I do think it's usual to see this amount of bugs almost exclusively within the stomach contents of a trout given that its mid-summer and there should be minnows around. Initially, we found a few samples that had some fish in it, but at this point, I [00:12:00] would expect a little bit more. ...There's a high amount of bugs in the stomach contents and I would expect to see more fish.

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Speaker 2: Mm-hmm (affirmative). Can you just remind me how many fish we've actually-

Monica Redmond: Looked at?

Speaker 2: Yeah, because I don't remember to be honest.

Monica Redmond: Also, I want to circle back to, you mentioned [00:12:30] fat.

Speaker 2: Yeah.

Monica Redmond: Can I just speak on that right now?

Speaker 2: Yeah, absolutely.

Monica Redmond: Okay, sweet. One thing I have noticed is that one of the things we look at when dissecting fish is the amount of fat content within the stomach cavity. Fish that eat a ton and are super healthy, generally have a layer of mesenteric fat intertwined in amongst the organs. It's usually attached [00:13:00] to the stomach layer and I've seen no fat. Every single fish is without that mesenteric fat layer.

Speaker 2: Oh, yeah.

Monica Redmond: Yeah. Which is used as an indicator of health. And sorry, what was the last one?

Speaker 2: Oh, the sample size. Just how many we've pulled so far. How many we've actually been looking at...

Monica Redmond: At the moment our sample size includes 18 fish. Of those 18, as a group with the community members, we [00:14:30] have looked at, I believe nine or 10 fish and I have assessed a few myself. Just taken tissue samples and ageing structures for the lab. But we're starting to develop a bit of a story. We're starting to have collected enough fish to start seeing trends, instead of one or two fish that may just [00:15:00] be outliers.

Speaker 2: For sure. And these fish are actually being taken from multiple locations around [inaudible 00:15:07], not just one fish net, correct?

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Monica Redmond: Yeah. It's tricky this year. Ideally, we would be capturing fish using a few different methods from a few different locations. Healthier fish may be located in one area because the habitat's good and at a certain depth. So, this year [00:15:30] we've been restricted to, I believe we've done three gill net sets and I think we've done four angling efforts. And some of those have been caught near the mine and some of them have been caught near camp...

Speaker 2: Mm-hmm (affirmative)...

Speaker 2: ...From a personal perspective, how does the changes that you're seeing feel? You've been doing this for a long time. You see all kinds of fish, but how is what you're seeing right now making you feel?

Monica Redmond: It's been an interesting journey. This camp has been an interesting journey, especially when you weren't wearing the science hat. It's given me a lot of pause [00:24:30] to reflect on the changes and hearing the stories of the people. And I approach every field program the same. I show up. I have a job to do. I collect data. I record notes and then I leave. And at the end then we analyze the data, and we create the story.

I've never worked with such a knowledgeable group who know it intimately. They [00:25:00] know the land, the fish, the water intimately and I coming from a science background show up and to be able to say a story and same as the people participating that's around, they have this background knowledge, but I have no background knowledge. I just show up and collect the data and I measure the fish.

So initially I show up and I look at the fish and I think, yeah, sure, some are skinny and sure there are parasites, but [00:25:30] there is X, Y, Z reasons why this could occur and all those little things that add on and layer up over time. It could be any of these but as the fish keep showing up on my cutting table and as the groups continue to participate, I'm starting to get a bit of that background knowledge even if it's not directly through a data that had been [00:26:00] checked for quality assurance.

There's still a story being said. And there is a fish in particular that I'm sure I'll remember for a while that seemed like it would be just perfect, just a beautiful, young fish and it too was really unhealthy. And from what I'm hearing from the people, that's typically not what's to be expected. Yeah, I find that this [00:26:30] opportunity working within this

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camp with these people coming from a western background, they're teaching me to be a better biologist. They're bringing up stories and they're bring up thought patterns and creating their own network of the ecology and the history of the land and it's humbling and it's intimidating [00:27:00] and it's beautiful and I wish I could just live here for years and collect data for years and provide answers. It's tough being in this position because I care and I'm working with people who care, but the tools... you know?

Speaker 2: Yeah, for sure. Do you mind describing to me pulling that perfect fish because I remember you were telling [00:27:30] me it looked beautiful. Do you mind?

Speaker 3: We have it on the camera. I'm pretty sure. We were shooting it.

Speaker 2: Yeah, do you mind just describing to me what it looked like to you and what you were hoping for-

Monica Redmond: Why I thought it looked so great?

Speaker 2: Yeah.

Monica Redmond: Okay. This was a beautiful little lake trout. It was caught by angling along the shore by [Myra 00:27:57]. And she was so excited and [00:28:00] she thought, oh, it might be too small and maybe I should throw it back but obviously we're going to keep it. And when I took a look at it, it was like, yeah, it's small but it wasn't so small. I knew it had potential of being a juvenile, which means that it hasn't quite matured enough yet to spawn. It's still within a certain younger age bracket.

And it made me think okay, well, it's good to extend our data range and see what a younger fish [00:28:30] looks like, how its tissue chemistry presents. It hasn't had as much time as the larger fish we've been assessing to get infested with parasites and to have that bioaccumulation of mercury and chemicals and so on and so forth. It cleans lake fish, and it was tiny but it was excited that maybe community members might want to eat it. So, I look at it and the skin is beautiful, the mucus layer's shiny [00:29:00] and slippery. And the head itself is rather narrow but the body seemed to be a little bit fatter than the head. And when the body is fatter than the head, you know that it's growing well, that the bone structure of the fish needs to catch up with the amount of food that the fish is eating.

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Whereas if you see a fish with a really big head and a skinny body, it means that one time there was abundant food, and it was growing at a really good pace and all of a sudden that [00:29:30] food source became unavailable for some reason. Whether it was sick, couldn't hunt well et cetera. So, the body gets a little skinnier.

So, I see this beautiful, little lake trout and it's got shiny eyes and perfect skin. It's nice, round and fat. And I'm thinking it's young. It hasn't had the time yet. And I tell everybody, I'm so excited. And we cut it open, and it was just full of parasite. [00:30:00] It was probably one of the fish that had been influenced the most by parasites of the 18, 19 samples that we looked at.

But on a side note, this is a young fish, and she still had a lot of weight girth to it and she still was developing her egg sacks. Her row was bright and it was growing and it seemed [00:30:30] as if she probably would spawn this year. So, the health of the fish today was good, except for the parasites will likely overwhelm her and had already started to infest the flesh and we couldn't eat her. It was a good indicator fish.

Speaker 2: Yeah. Maybe that's a good point. Why [00:31:00] wouldn't you want to eat a fish with parasites? Because we do know that there's typically some in the flesh. We see it diversely. But you see it in the community still, but why is that a bad thing necessarily to... why wouldn't somebody want to eat a fish that has parasites in it? The amount of parasites that are in that?

Monica Redmond: Thank you for bringing that up because I absolutely don't want to say that eating a fish with parasites [00:31:30] is bad. That's not at all the case. There are parasitologists that are far smarter than me who are dealing with parasites that study these and they've indicated which parasites are healthy and which aren't. And obviously the preparation of the meat is key.

If you cut into a fish and I've cut into a fish< my personal fish that have had parasites in the organs. You're like, all right, that's fine. But what does the flesh look like? [00:32:00] And the flesh still has some adult worms in there and it's not great, but you just cut them out and eat them. Just cook the flesh really well. If you cook the flesh thoroughly or

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you freeze it, I believe at -20. In the north, I just throw it outside overnight in the winter and they next day thaw it and eat it and it's fine.

So, I'm not saying [00:32:30] that fish with parasites in the flesh is bad and can't be eaten. I've worked in communities and on lakes where every single trout and every single white fish or every single whatever fish we pull out is full of parasites. But that is common in these lakes and it has been like that for a long time. It's well established. And people are like, "Yeah, we just cook the fish, and we eat it. ... My own personal rule of thumb is if there's a few on the stomach [00:34:00] and there's one or two on the flesh, just cut around the ones in the flesh and it's fine. But if there's one that you open up and it's just parasite city, then I wouldn't bother.

Speaker 2: Yeah. And you're cutting the whole fish.

Monica Redmond: Yeah. I can take this little chunk and this chunk here. At that point, it's what aren't you seeing and...

Speaker 2: Yeah, for sure. [00:34:30] Gross. I mean, you probably don't think it's gross, but they creep me out.

Monica Redmond: No. My parasite and fish health course was 08:00 AM on a Friday morning in the university. And you show up with your smoothy or your coffee and sit down all blurry eyed and all of a sudden the instructor is like, "Okay, kids. This is what we're learning today." And it's just... [00:35:00] It's so gross. It's interesting as a biologist as you spend time working with the animal and working on the land what you find interesting, what... obviously, any fish biologist or most of them, they just want to go angle and then cut open fish and look at it. It's cool. But as I get to know the animals, yeah, parasites have really struck me as something interesting and they have a story [00:35:30] to tell. It's gross but, I don't know. I can't finish that sentence. It's weird to think that they're cool, that they're kind of cool.

Speaker 2: Okay. This is the thing. They're an indicator of health, right?

Monica Redmond: Yeah. But they're not the only indicator.

Speaker 2: For sure, yeah.

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Speaker 3: Can you describe what it looks like up here, what you find beautiful?

Monica Redmond: Oh, okay. So on that conversation we were having about the macro and micro and the beauty of the land.

Speaker 3: [00:36:00] Yeah. Because literally, your perspective is actually... everybody else obviously thinks the land is beautiful but you're coming from outside. So your perspective actually is unique in that.

Monica Redmond: Yeah. Okay, I would like to speak on that.

Speaker 3: Also switching it up from the grossness of parasites...

Monica Redmond: Well, I was hoping that there would be something like this in there as well because it's just that good feel.

Speaker 2: Mm-hmm (affirmative), absolutely.

Monica Redmond: Okay.

Speaker 3: [00:36:30] Take your time.

Monica Redmond: Did you want to ask me it or should I just...

Speaker 2: I'll rephrase the question.

Speaker 3: [inaudible 00:36:41].

Monica Redmond: I don't know if for the process or whatever.

Speaker 2: No, that's fine. This your first time being out here. I think it's your second?

Monica Redmond: Well, I've lived in Yellowknife for three years. But to Lac de Gras and up here. [00:37:00] This is my second time here at Lac de Gras, but I've worked in the area a handful of times.

Speaker 2: Yeah. Even just flying into this and location and having an opportunity to spend some time and really look at the land. From your perspective. What is beautiful about this place [00:37:30] in particular?

2021 AEMP TK Program

Interviewee: Monica Redmond

Interviewers: Sadetlo Scott (Speaker 2), Jay Bulckaert (Speaker 3)

*\*Verified with Sarah Ravensbergen: by email with Monica Redmond on June 24, 2022, and by email with Rainie Sharpe on June 27, 2022.*

Monica Redmond: I think I'll just go with my spiel.

Speaker 2: Do it. Yeah, go for it.

Monica Redmond: Because hard. The Tundra is quite similar and a few other places I've been. So, I think speaking into it as a whole.

Speaker 2: Mm-hmm (affirmative). Yeah, go for it.

Monica Redmond: Okay, sweet. [00:38:00] This is the story. I consider myself an islander from Vancouver Island. I've lived there on and off for 16 years and I was raised along the west coast as well. So, my history with land is mountains, big mountains and huge cedar trees and big, wild oceans and [00:38:30] huge fish and just everything is macro, everything is big and raw. And huge rain drops coming down. Yeah, it's thrilling. It's thrilling being on the ocean, big waters. And When I moved to Yellowknife for years ago. I've since relocated to Victoria. But I've spent three years in the north and working [00:39:00] on the Tundra. I've returned to this specific spot a few times here as well and it was really important moving up to the north to be mindful that the land is different from my own. I was a little bit concern whether or not I'd be able to attach the land like I have back home. My family's not outdoorsy but I always find great satisfaction beyond land. I [00:39:30] go into the forest with my dog all the time and I'm on the ocean constantly.

So, connecting to the land is important. And when I came up here, it was just covered with snow and ice, and it was just what is this? It was January 1st. It was tough. But as the snow melts away and the pink rock gets exposed, and the cranberry bushes are pushing through and Labrador tea. I've never seen [00:40:00] Labrador before...

It was so cool to fly up to the tundra for the first time and step on it. And the softness of the land. Perfect for Tundra naps against the hard boulder gardens and the incredible lichen.

I learned how to shift my perspective of beauty in nature from this big macro lens of the west coast to a micro lens where I just want to lie on the soft [00:40:30] Tundra ground and look at the tiny, little cranberry flowers and the cloudberry flowers as they pop up and be among the Caribou lichen and the smell of the Labrador tea. And it's so comforting

2021 AEMP TK Program

Interviewee: Monica Redmond

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the land and it so much beauty in its own way. But it's just the lens that you put on, the lense that you view the beauty in.

As a west coaster, I was surprised [00:41:00] about how quickly I fell in love with the north and with the Tundra and what it has to offer...

[End of Interview]

## Appendix F Completed TK Fish Inspection Forms

Female fish

Skinnny Fish

4 plank 8'21  
885  
4.75kg



Skinny  Average  Fat

Entered Aug 30, 2021, SK

Gills Enlarged



Wine  Red  Pink  White

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Liver - 0.25 kg  
Female - 0.20



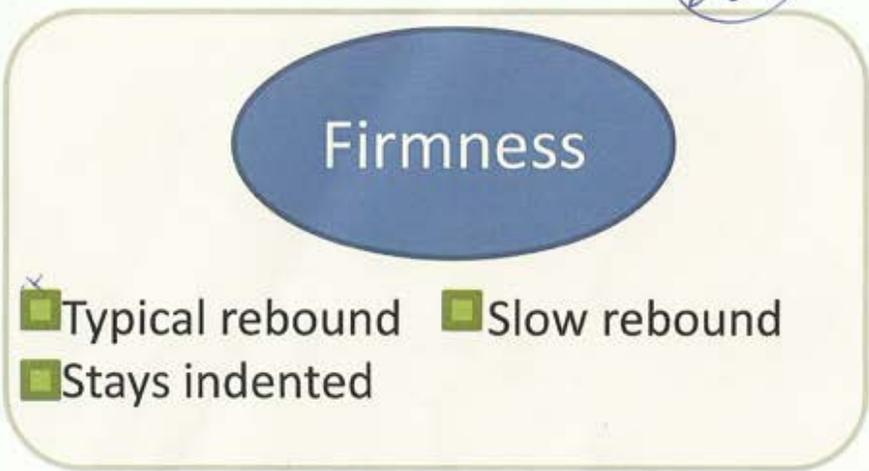
Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? ~~Cyst on Heart~~



Is there anything unusual about this fish?

What can you teach us about the outside of this fish?



Typical rebound  Slow rebound  
 Stays indented

- Fish type: Trout
- Fish ID (number): 2 1LCTR 2
- Date: August 1 2021
- Recorder: Vikki  
KIA - for Jack/Nancy

## Intestine

Liver-coffee

Colour: \_\_\_\_\_

Contents: \_\_\_\_\_

What can you teach us about the insides of this fish?

# Fish Internal

## Deformities

- None
- Worms
- Tumours
- Parasites
- Location?  Tissue  Stomach

Checklist of other indicators:

- Heart - ~~enst~~ -enlarged
- Kidney
- Liver
- Odour
- Eggs

Gull Bladder - large

## Tissue

- Too Soft
- Typical
- Too Firm

Stomach - Full of Eggs  
- Cyst - Diephbellum

## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

FIA - LRT02

Caught near the main

**Girth**

Skinny  Average  Fat

Male  
 early stage female.  
 ML 821  
 ML 885 length  
 457 kilos

Entered Aug 30, 2021, SK.

**Gills**

Wine  Red  Pink  White

skinny firm looking inside.

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

fish had bigger than the body.

**Fish External**

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? sets

was too small for the size of fish.

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

**Firmness**

Typical rebound  Slow rebound

Stays indented

firm fish

heart-white sets.

Fish type: Trout

Fish ID (number): 2, LKTR2

Date: August 1 2021

Recorder: Shirley - for Heart Scales  
 LKDFN

## Intestine

Colour: Red

Contents: \_\_\_\_\_

*Stomach  
2/3 full.*

## Deformities

- None
  Worms
  Tumours
  Parasites  
 Location?
  Tissue
  Stomach

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart Dead
  - Kidney to small
  - Liver to small narrow
  - Odour None
  - Eggs None
- gallbladder Dark.

## Tissue

- Too Soft
  Typical
  Too Firm

*Orange etc  
& more orange.  
Can be used for  
human & dog.*

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

Entered Aug 30, 2021, SF

# Girth

4.7 kg

- Skinny
  - Average
  - Fat
- Because head is big.

# Gills

- Wine
  - Red
  - Pink
  - White
- fins change

# Fish External

Checklist of other indicators:

- Deformities
  - Shape - skinny
  - Scales - Good
  - Other? Eyes - good
- No external parasites  
Female

Why was this fish selected?

Caught on line

How do people tell when a fish is healthy or unhealthy?

Cysts on stomach  
Liver - cysts - too small for size of fish - discolored (orange colored)  
Heart - large appendage  
Gall bladder very dark green

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

Skinny - Big head

What can you teach us about the outside of this fish?

- Fish type: TROUT
- Fish ID (number): 2, LKTR2
- Date: August 1, 2021
- Recorder: Kathy Brock  
NSMA

## Intestine

Colour: Good

Contents: Bugs

What can you teach us about the insides of this fish?

If cysts are orange do not eat or feed to your dogs, cook before giving to animals.

If cysts are white OK to eat.

## Tissue

Too Soft  Typical  Too Firm

# Fish Internal

O to lith removed

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

Diarrhoea - close to mine

Checklist of other indicators:

- Heart - OK
- Kidney
- Liver - Cysts
- Odour - OK
- Eggs - female, will not spawn this year
- ~~Gonads~~, O25 kg  
Liver →

### Overall Determination:

- Would eat this fish *No orange parasites*
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

Cysts

Entered: Aug 30, 2021, SR.

## Girth

- Skinny
- Average
- Fat

skinny body big head

88.5 cm

## Gills

- Wine
- Red
- Pink
- White

Dark Red

# Fish External

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

The fish scales color  
Big head skinny body

Checklist of other indicators:

- Deformities *Big head*
- Shape *skinny body*
- Scales
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

## Firmness

- Typical rebound
- Slow rebound
- Stays indented

Fish type: Lake Trout

Fish ID (number): 2, LKTR2

Date: August 1st 2021

Recorder: KELSEY MARTIN

YKDFN

for Peter, Lena, Ted

## Intestine

Colour: pink/red  
Contents: \_\_\_\_\_

Female Trout  
Female Trout

## Deformities

- None
- Worms
- Tumours
- ~~Parasites~~
- Location?  Tissue  Stomach

What can you teach us about the insides of this fish?

The heart was Deformed.

# Fish Internal

Checklist of other indicators:

- Heart - cyst
- Kidney - looks fine
- Liver - Liver is small cyste on liver
- Odour - smells like fish
- Eggs - nothing

Gills are enlarge  
Gill bladder is really black

85% full with Bugs in the Stomach

## Tissue

- Too Soft
- Typical
- Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

85% full with bugs in the stomach

## Girth

Skinny  Average  Fat

83.5 Fork  
90.6 length  
6.185 kg.

## Gills

Wine  Red  Pink  White

Entered: Aug 30, 2021, SL

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

## Fish External

Checklist of other indicators:

- Deformities - heart.
- Shape
- Scales - No Deformities
- Other? \_\_\_\_\_

## Firmness

Typical rebound  Slow rebound  
 Stays indented

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

LKEN ONLY

Fish type: TROUT

Fish ID (number): 3, LKTR3

Date: August 1 2021

Recorder: Glenn Kozore

LKEN - for Albert Serizone

## Intestine

Colour: \_\_\_\_\_  
Contents: \_\_\_\_\_

*Stomach  
sets.*

## Deformities

- None
- Worms
- Tumours
- Parasites
- Location?  Tissue  Stomach

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart *okay.*
- Kidney *- looks okay narrow*
- Liver *@ encl. better same color.*
- Odour
- Eggs *eggs good late stage found.*

## Tissue

- Too Soft
- Typical
- Too Firm

*Flesh is light color*

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

**Girth**

Skinny    Average    Fat

65  
60 mm fill ~~weight~~  
70.5 mm length  
3.5 kg weight

**Gills**

Wine    Red    Pink    White

Bump on  
left flank

Entered  
Aug 30  
2021  
SK  
= good

Why was this fish selected?  
Caught in net  
How do people tell when a fish is healthy or unhealthy?

**Fish External**

- Checklist of other indicators:
- Deformities
  - Shape
  - Scales - good
  - Other? Tissue - parasites

**Firmness**

Typical rebound    Slow rebound  
 Stays indented

Bump on right flank → Doris  
"maybe attacked or old wound/scar"

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

LKEN ONLY

Fish type: Trout - male (late)  
Fish ID (number): 4, LKTR4  
Date: August 1 2021

LKEN ONLY

Recorder: Sadetta & Gloria (weighing)  
Scott & Doris Enzo

## Intestine

Stomach  
- parasites found

Gull bladder  
- is a little dark

Spleen  
- is a little dark

Heart  
- cysts found

Colour: Dark (Spleen/Gull bladder)

Contents: Prim Stickleback, Fly (hungry)

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart - cysts found
- Kidney -
- Liver - parasite found
- Odour
- Eggs
- Parasite found in p.c. ~~PTL~~

## Tissue

Too Soft  Typical  Too Firm

**Overall Determination:**

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

Elder: Albert & Sarah.

# Girth

- Skinny
- Average
- Fat

4.805 weight kg.

# Gills

- Wine
- Red
- Pink
- White

# Fish External

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Checklist of other indicators:

- Deformities **big skinny body**
- Shape **Poor skinny**
- Scales **good**
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

# Flesh Firmness

- Typical rebound
  - Slow rebound
  - Stays indented
- Good.**

Fish type: Trout

Fish ID (number): 5 LKTR

Date: August 1 2021

Recorder: Gina

LKDFN - for Albert & Sarah.

## Intestine

Colour: shows spots.  
Contents: yellow & white

*Final.  
Fish  
Under weight  
for its size.*

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
*Small bugs.*

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart *Small.*
- Kidney
- Liver *healthy color. & small.*
- Odour
- Eggs

*Yellow spots (inside.)*

## Tissue

Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish *- no, b/c it's from lake - this night.*

Is there anything unusual about this fish?

*LETA5 - UKDFN*

*but Albert lake - this night.*

Jack + Nancy



- Skinny
- Average
- Fat

Big Skinny Narrow fish  
 - Body Slim  
 - Big Head  
 888  
 4.005kg  
 - Wounds on mouth - hook  
 - Whiteish spot left side



enlarged gills  
Reddish wine gills

Gills

- Wine
- Red
- Pink
- White

Cultured Aug 30, 2021 SR

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Observation, Smell, Parasites on stomach.

- when you touch the fish on the outside and its soft, its sick  
 - It's not fatty, only eating bugs



Checklist of other indicators:

- Deformities
- Shape
- Scales - they are fine
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?



- Typical rebound
  - Slow rebound
  - Stays indented
- Meat is soft

- Meat is soft

No cyst on the meat

Fish type: Trout - Lake

Fish ID (number): 5, LKTR 5

Date: August 1 2021

Recorder: Vick - for Jack, Nancy

KIA N unavunvif.

## Intestine

- Parasites on Stomach
- Yellow spots in stomachs
- Bugs in stomach
- Empty stomach
- Fish underweight

Colour: Coffee alike

Contents: \_\_\_\_\_

## Deformities

- None
- Worms
- Tumours
- Parasites
- Location?  Tissue
- Stomach

What can you teach us about the insides of this fish?

- Bugs in the stomach
- Empty stomach

# Fish Internal

Checklist of other indicators:

- Heart - small
- Kidney
- Liver - small
- Odour - no difference
- Eggs

## Tissue

- Too Soft
- Typical
- Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

Big Head small body.

KIA  
LFTROS

8.24 fork length  
8.80 total length  
4.80 **girth**

immature female

~~meat is soft~~  
no wounds on body

- Skinny
- Average
- Fat

large head: narrow body  
wounds on mouth

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

~~meat~~ - good colour  
not too soft  
- no cysts  
- edible

**Firmness**

- Typical rebound
  - Slow rebound
  - Stays indented
- meat is soft

(Entered Sept 1 2021 SR)

**Gills**

- Wine
  - Red
  - Pink
  - White
- enlarged gills

~~white spot on scales~~

- small liver
- Checklist of other indicators:
- Deformities
  - Shape
  - Scales white spots
  - Other? \_\_\_\_\_

**Fish External**

~~penetrable in stomach~~  
~~liver is small; coffee coloured~~

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

Fish type: trout

Fish ID (number): 5, LKTR5

Date: August 1 2021

Recorder: Myra - for Marie Adele  
TG

## Intestine

Colour: \_\_\_\_\_

Contents: \_\_\_\_\_

*parasites  
guts + stomach - white spots  
yellow spots*

What can you teach us about the insides of this fish?

*lots of bugs  
small amount*

# Fish Internal

## Deformities

- None
- Worms
- Tumours
- Parasites
- Location?  Tissue  Stomach

Checklist of other indicators:

- Heart *small*
- Kidney
- Liver *small; coffee colour*
- Odour
- Eggs

## Tissue

- Too Soft
  - Typical
  - Too Firm
- not*

*good colour*

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish *not edible*

*b/c of white + yellow spots*  
Is there anything unusual about this fish?

# Girth

- Skinny
  - Average
  - Fat
- skinny fish narrow*

*enlarge girth*

Total length  
888  
Weight  
4.805

# Gills

- Wine
  - Red
  - Pink
  - White
- Wine Red.*

Why was this fish selected?  
 To see if the fish is affected from mine.  
 How do people tell when a fish is healthy or unhealthy?  
 Overall the appearance of the fish

# Fish External

- Checklist of other indicators:
- Deformities
  - Shape *Big head narrow body.*
  - Scales *White spot on scales on left side.*
  - Other? Wounds on the mouth

Is there anything unusual about this fish?  
*The meat is soft not firm.*  
 What can you teach us about the outside of this fish?

# Firmness

- Typical rebound
  - Slow rebound
  - Stays indented
- soft meat*

Fish type: *lake trout.*  
 Fish ID (number): *5* *LKTR5*  
 Date: *August 1* *2021*  
 Recorder: *Kelsey* *for Peter + Lena, Feb*  
*YKOFN*

*YKOFN - LKTR05*

## Intestine

Colour: Coffee alike

Contents: \_\_\_\_\_

*lots of bugs  
in stomach  
- The fish is  
under weight for the size.  
- Big head narrow  
body.*

## Deformities

- None
  - Worms
  - Tumours
  - Parasites
- Location?  Tissue  Stomach  
*white spots & yellow spots on guts*

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart *The heart is small*
- Kidney
- Liver *small liver coffee colour*
- Odour
- Eggs *no eggs.*

## Tissue

- Too Soft
- Typical
- Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

*Big head narrow body The fish is under weight for the size.*

Entered Sept 1, 2021, SR

Jack & Nancy  
North Inlet  
Dyke



Girth

Skinny  Average  Fat  
82.4 cm 4.805 Kgs



Gills

Wine  Red  Pink  White

Why was this fish selected?

Came from near the  
muree

How do people tell when a  
fish is healthy or unhealthy?

Eyes, gills



Fish  
External

Checklist of other indicators:

- Deformities - wound on mouth
- Shape - looks good
- Scales - spot behind gills
- Other? Enlarged gills

Is there anything unusual about this fish?

What can you teach us about the outside  
of this fish?

Semi-firm

Good color



Firmness

Typical rebound  Slow rebound  
 Stays indented

Fish type: Trout-lake

Fish ID (number): 5, LKTR5

Date: August 1, 2021

Recorder: Kathy Arden

NSMA

## Intestine

Colour: Yellow spots  
Contents: Bugs

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
-yellow spots

What can you teach us about the insides of this fish?

Parasitic - yellow spots

# Fish Internal

Checklist of other indicators:

- Heart - small
- Kidney
- Liver - small - coffee color - parasites
- Odour - NONE
- Eggs - None

## Tissue

NO cysts

Too Soft  Typical  Too Firm

## Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

Under weight - maybe not enough food

Albert & Sarah.

Girth

Skinny  Average  Fat

Entered Sept 1, 2021, SR.

Gills

Wine  Red  Pink  White

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Fish External

Checklist of other indicators:

- Deformities
- Shape *okay*
- Scales *okay.*
- Other? \_\_\_\_\_

Aside Firmness

Typical rebound  Slow rebound  
 Stays indented

*Firm*

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

Fish type: Trout.

Fish ID (number): 6, LKTR6

Date: August 1 2021

Recorder: Gloria WDFW

948 lbs  
7.270 kg

## Intestine

Colour: Parasite  
Contents: Stomach

## Deformities

- None
- Worms
- Tumours
- Parasites
- Location?  Tissue
- Stomach

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart Normal good
- Kidney
- Liver Good
- Odour
- Eggs - Healthy
- gut bladder good (plank)

## Tissue

- Too Soft
- Typical
- Too Firm

**Overall Determination:**

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Other

Is there anything unusual about this fish?

WBFN- LKFR06

Jack + Nancy

# Girth

- Skinny
- Average
- Fat

Skin looks more healthier

866 L  
945 TL  
7.270kg

Fish eggs

Entered Sept 1, 2021. SR.

# Gills

- Wine
- Red
- Pink
- White

Why was this fish selected?

From near Dierick mine

How do people tell when a fish is healthy or unhealthy?

- Skin looks more healthier, and scale looks good
- Mouth is healthier - whiter
- Looking at it, gills, scale
- More firm, fat content
- More orange color

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

# Fish External

Checklist of other indicators:

- Deformities
- Shape - Big
- Scales - Good
- Other? looks healthy

Is there anything unusual about this fish?

What can you teach us about the outside of this fish? looks healthier, scale is good

Fish type: Trout

Fish ID (number): 6, LKTR6

Date: August 1 2021

Recorder: Vikki (for Jack + Nancy)  
N. N. N. N. N.

KIA

## Intestine

Normal Blood  
Color

Colour: Normal

Contents: Fish

## Deformities

- None
  - Worms
  - Tumours
  - Parasites
- Location?  Tissue  Stomach

A few cyst on stomach

What can you teach us about the insides of this fish? It is healthy, no bugs in stomach had fish eggs

# Fish Internal

### Checklist of other indicators:

- Heart - good
- Kidney
- Liver - Healthy - Big
- Odour - good smell
- Eggs - Fish Eggs
- Cyst on Stomach

## Tissue

- Too Soft
- Typical
- Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

Entered Sept 1, 2021, SE

86.6cm  
94.5cm

7.270 kg



Girth

- Skinny
- Average
- Fat



Gills

- Wine
- Red
- Pink
- White

Why was this fish selected?

Call

How do people tell when a fish is healthy or unhealthy?

- Head & body are uniform
- Flesh good color



Fish External

Checklist of other indicators:

- Deformities - None
- Shape - Nice shape
- Scales - Good shape
- Other? Has eggs
- Mouth healthy

Is there anything unusual about this fish?

None

What can you teach us about the outside of this fish? firm, scale look good, head & body proportional.

Fish type: Lake Trout

Fish ID (number): 6 LKTR6

Date: August 1 2021

Recorder: Kathy Ardon

ETUG NSMA



Firmness

- Typical rebound
- Slow rebound
- Stays indented

## Intestine

Colour: Good

Contents: Fish

What can you teach us about the insides of this fish? *Is eating other fish, keeps it healthy*

# Fish Internal

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
*white cysts*

Checklist of other indicators:

- Heart - *normal*
- Kidney - *good*
- Liver - *Healthy*
- Odour - *good*
- Eggs - *Yes*

## Tissue

*Red/Orange*

- Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

*No,*

*LFTR6 - NSMT*

Entered Sept 1, 2021  
SK

TG - Marie Adele Football

**Girth**

Skinny  Average  Fat

8.66 fork length  
9.45 total length  
2.270 kg

Why was this fish selected?

big; looks healthy

How do people tell when a fish is healthy or unhealthy?

scales, skin, feeling (soft/hard)  
gills - pink or red

**Gills**

Wine  Red  Pink  White

Checklist of other indicators:

- Deformities X
- Shape big and healthy
- Scales
- Other? \_\_\_\_\_

# Fish External

Is there anything unusual about this fish?

No

What can you teach us about the outside of this fish? looking and feeling

**Firmness**

Typical rebound  Slow rebound  
 Stays indented

hard / firm

Fish type: trout  
 Fish ID (number): 6 LKTR6  
 Date: August 1 2021  
 Recorder: myra

TG - Marie Adele

## Intestine

Colour: \_\_\_\_\_

Contents: fish - so healthy *big eating fish*

*a few cysts; white*

What can you teach us about the insides of this fish?

## Deformities

- None
- Worms
- Tumours
- Parasites
- Location?  Tissue  Stomach

# Fish Internal

Checklist of other indicators:

- Heart *big normal*
- Kidney
- Liver *healthy; big (bigger when becoming fat)*
- Odour
- Eggs *✓ healthy*  
*blood healthy*

## Tissue

- Too Soft
- Typical
- Too Firm

*looks healthy*

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

TG - UKTRG

Entered Sept 1, 2021, SR

# Girth

- Skinny
- Average
- Fat

The Fish looks average not too skinny not too big.  
 Weight 7.270 kg.  
 Length 9.45

# Gills

- Wine
  - Red
  - Pink
  - White
- Pinkish white

Why was this fish selected?  
 To see if its affected from The Diamond mines  
 How do people tell when a fish is healthy or unhealthy?  
 Just by looking at it  
 The Texture & colour of scale

# Fish External

- Checklist of other indicators:
- Deformities *nothing*
  - Shape *The Body & head looks good.*
  - Scales *The scales looks good*
  - Other? \_\_\_\_\_

# Firmness

- Typical rebound
  - Slow rebound
  - Stays indented
- The Fish feels hard*

Is there anything unusual about this fish?  
*The Fish look average & healthy  
 The Texture of the Body was Firm.*  
 What can you teach us about the outside of this fish? *The Scales was good the colour looks good.*

Fish type: Lake Trout.  
 Fish ID (number): 6 / LKTR6  
 Date: August 2021  
 Recorder: Kelsey, (Peter, Lora)  
YKOFN Ted

## Intestine

Colour: Normal colour  
Contents: \_\_\_\_\_

*The outside  
on the stomach  
is good just a few  
cyst. The fish  
overall looks healthy  
and was eating  
good*

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

What can you teach  
us about the insides  
of this fish? *Fish eggs  
look healthy*

# Fish Internal

Checklist of other indicators:

- Heart ~~is~~ *Normal*
- Kidney
- Liver *The Liver is good*
- Odour *smells like fish*
- Eggs *Are good*

## Tissue

Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish *& enjoy it.*
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

*The fish looks healthy  
The colour looks good*

*YKDFN - UKTRG*

Entered Sept 1, 2021, SR.

696 Tail  
Total 756  
3.865 KG

# Girth

- Skinny
  - Average
  - Fat
- Between Fat & Skinny*

# Gills

- Wine
- Red
- Pink
- White

# Fish External

Why was this fish selected?

*To see if it is affected from the diamond mine*

How do people tell when a fish is healthy or unhealthy?

*The Texture & color of the fish  
The outside of the stomach if any  
Parasites or cyst.*

Checklist of other indicators:

- Deformities
- Shape *Shape of head & body look average*
- Scales *The colors are good*
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Fish type: Trout  
 Fish ID (number): 7, LKTR7  
 Date: August 1 2021  
 Recorder: Kelsey, (Peter, Louisa), Ted  
YKDFN

## Intestine

Colour: Normal pink

Contents: \_\_\_\_\_

The Fish is skinny  
In the stomach of the fish is full of insects in the 5 cyst on the outside of the stomach

## Deformities

- None
  - Worms
  - Tumours
  - Parasites
- Location?  Tissue  Stomach

cyst

What can you teach us about the insides of this fish? ~~fish~~

# Fish Internal

### Checklist of other indicators:

- Heart *small but ~~good~~ little cyst*
- Kidney
- Liver *The liver is healthy but looks small but has cyst on liver.*
- Odour *smells normal*
- Eggs *No eggs*

## Tissue

- Too Soft
- Typical
- Too Firm

### Overall Determination:

- ~~Would eat this fish~~
- ~~Would eat this fish, but not enjoy~~
- ~~Would not eat this fish~~

*If I was really hungry*

Is there anything unusual about this fish?

*A lot of insect in the stomach*

*YKDFN  
LKTR07-*

# Girth

Tucko  
\*healthy

- Skinny
- Average
- Fat

6.96 fork length  
7.56 total length  
3.845kg

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

inside of mouth - healthy  
but one spot is pink

Entered Sept 1, 2021

# Gills

- Wine
- Red
- Pink
- White

big

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? \_\_\_\_\_

# Fish External

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

firm and hard

Fish type: trout

Fish ID (number): 7, LKTR7

Date: August 1 2021

Recorder: Myra  
TG - Marie Adele

Football

## Intestine

Colour: \_\_\_\_\_

Contents: full of insects  
*guts are healthy*

What can you teach us about the insides of this fish?

## Deformities

- None
- Worms
- Tumours
- Parasites
- Location?  Tissue  Stomach

# Fish Internal

Checklist of other indicators:

- Heart *small but good.*
- Kidney
- Liver *small but healthy*
- Odour *none (good)*
- Eggs

## Tissue

- Too Soft
- Typical
- Too Firm

*firm*

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

Jack + Nancy

# Girth

- Skinny
- Average
- Fat

Mouth is clean  
 - Purple inside mouth  
 FL = 696  
 TL = 756  
 W = 3.865 kg

Entered Sept 1, 2021 SK

# Gills

- Wine
  - Red
  - Pink
  - White
- Big Gills

# Fish External

Checklist of other indicators:

- Deformities
- Shape - good firm
- Scales - good colors
- Other? \_\_\_\_\_

Why was this fish selected?

Near Deavik Mine

How do people tell when a fish is healthy or unhealthy?

Skin is healthy looking, firm meat.

# Firmness

- Typical rebound
  - Slow rebound
  - Stays indented
- Firm and level

Is there anything unusual about this fish?

Mouth is purpleish color

What can you teach us about the outside of this fish? Skin is healthy looking, firm meat

Fish type: Trout 7 Male

Fish ID (number): 7, LKTR7

Date: August 1 2021

Recorder: Vikki (for Jack + Nancy)

KIA Nunaminit ~~KOEN~~

## Intestine

Soft meat  
but firm  
yellowish  
orange

Colour: My Normal color

Contents: Empty

What can you teach  
us about the insides  
of this fish?

Insects in stomach,  
fish is skinny.

# Fish Internal

## Deformities

Cyst

x Bugs

- None    Worms    Tumours    Parasites  
 Location?    Tissue    Stomach

Checklist of other indicators:

- Heart - Good - small - little cyst
- Kidney
- Liver - Healthy - But small - cyst
- Odour Healthy
- Eggs - No eggs - Male fish

## Tissue

- Too Soft    Typical    Too Firm

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

purple around the gut  
Insects in stomach

4/12/17 - KIA

N/A ~~XXXXXXXXXX~~ ~~XXXXXX~~

Albert & Sarah.



- Skinny
- Average
- Fat

6.96 FL  
 7.56 length total.  
 3.965 weight.

Entered Sept 1, 2021, SR



- Wine
- Red
- Pink
- White

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Albert would eat fish from lake, but Serazine + Gloria would not eat any because it is from this location + do not trust the mine.



Checklist of other indicators:

- Deformities *red mark on skin*
- Shape *good - little skinny*
- Scales *good*
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?



- Typical rebound
- Slow rebound
- Stays indented

Fish type: Trout  
 Fish ID (number): 7, LKTR7  
 Date: August 1 2021  
 Recorder: Gloria (Albert, LKDFN Sarah)

## Intestine

Colour: slim side

Contents: liquid

What can you teach us about the insides of this fish?

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

stomach

Checklist of other indicators:

- Heart small for fish.
- Kidney
- Liver size.
- Odour
- Eggs firm good

## Tissue

Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish no

*if I was hungry!*

Is there anything unusual about this fish?

Entered Sept 1, 2021, SR

69.6 cm  
756 cm

3.865 kg



Skinny  Average  Fat



Wine  Red  Pink  White

Why was this fish selected?

From North Inlet Dike

How do people tell when a fish is healthy or unhealthy?

Flesh - Firm - good color

Gill - pink - wine

No odor

Liver / kidney / heart - good color / size



Checklist of other indicators:

- Deformities - None
- Shape - good
- Scales - marred from sitting
- Other? \_\_\_\_\_
- Mouth - purple on right side

Is there anything unusual about this fish?

No

What can you teach us about the outside of this fish?



Typical rebound  Slow rebound  
 Stays indented

Fish type: Lake Trout

Fish ID (number): 7, LKTR7

Date: August 1, 2021

Recorder: Kathy Arden

~~NSMA~~ NSMA

## Intestine

Colour: Good

Contents: Insects

What can you teach us about the insides of this fish?

- Pipe is healthy

## Tissue

Too Soft  Typical  Too Firm

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach - Good

*None*

*None*

*1 Liver  
1 Kidney*

Checklist of other indicators:

- Heart - Good
- Kidney - Healthy - small
- Liver - Healthy - 1 Parasite
- Odour - Good - 1 - Parasite
- Eggs - None - map

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

*ND*

*NSMA-LTR 07*



Skinny  Average  Fat

Male  
SK Fish  
FL = 641  
TL = 695  
W = 2.370 Kg



Looks good on the gills

Wine  Red  Pink  White

Entered Spot 1, 2021, SK

Why was this fish selected?

First 3 of 3 fish today

How do people tell when a fish is healthy or unhealthy?

It is not healthy bc they are all eating bugs. Meat is not texture and is a skinny fish



Checklist of other indicators:

- Deformities
- Shape - Skinny
- Scales - Right scale of fish
- Other? \_\_\_\_\_



Typical rebound  Slow rebound  
 Stays indented

Is there anything unusual about this fish?

Parasite on the Meat

What can you teach us about the outside of this fish? Skinny fish

Fish type: Lake Trout

Fish ID (number): LKTR # 15

Date: August 2 2021

Recorder: Vikki - for Nancy + KIA Jack.

## Intestine

Colour: <sup>Dark Red</sup> ~~Be~~ Not Normal colour (Hungry)  
Contents: \_\_\_\_\_

What can you teach us about the insides of this fish?

- Bugs in stomach, Heart is small
- Coffee like liver and white spots
- One cyst on stomach

## Tissue

Too Soft  Typical  Too Firm

## Deformities

- Bugs

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

# Fish Internal

Checklist of other indicators:

- Heart - Small
- Kidney
- Liver - Coffee alike, white spots / yellow
- Odour - Good
- Eggs - Male fish

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?  
Small liver, heart. Meat texture is soft and yellow  
KIA - LKTR 15

# Girth

- Skinny
- Average
- Fat

weight  
• skinny tail

FISH

64.1 fork  
69.5 total length  
2.370<sup>kg</sup> weight

# Gills

- Wine
- Red
- Pink
- White

\* was out of water for awhile after catching

Entered Sept 1, 2021, SR

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

# Fish External

Checklist of other indicators:

- Deformities
  - Shape - good
  - Scales - dried out, <sup>still normal</sup> pinkish light colour
  - Other? \_\_\_\_\_
- yellowish skin

SKIN/TISSUE  
• Parasites found

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

2 LK farms by LKDFN (1/27)

Fish type: Trout - male

Fish ID (number): LKTR 15

Date: August 2 2021

Recorder: ~~\_\_\_\_\_~~ Sarazine  
~~\_\_\_\_\_~~ LKDFN

Sarazine

## Intestine

\* Stomach

• parasites

Colour: not healthy

Contents: Bugs

↓  
"needs nutrients from different kinds of things - not necessarily a bad thing"  
What can you teach us about the insides of this fish?

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

↳ liver, heart, stomach, tissue/flesh

# Fish Internal

Checklist of other indicators:

- Heart - <sup>covered in</sup> parasite
- Kidney - doesn't look good
- Liver - parasite
- Odour
- Eggs - too skinny
- gonads - colour is not good,

° not a healthy fish

## Tissue

Orange/yellow colour

→ not necessarily a indicator of a bad thing

→ maybe a surface fish, which is why its lighter in colour

Too Soft  Typical  Too Firm

\* soft

**Overall Determination:**

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

\* would not give to dogs either  
Is there anything unusual about this fish?

641 ~~PK~~ length

695 total length



Girth

Skinny  Average  Fat

2370Kg

male

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Entered Sept 1, 2021, SP



Gills

Wine  Red  Pink  White



Fish External

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? skinny but not healthy-looking

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?



Firmness

Typical rebound  Slow rebound  Stays indented

2 LR LKTR 15 forms (2/2)

Fish type: Lake trout

Fish ID (number): LKTR 15

Date: August 2 2021

Recorder: Doris (Terri) Enzoe

LKDFN

## Intestine

Colour: dark red

Contents: Burp

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart *the heart is not healthy. by looking at it.*
- Kidney
- Liver *white stop on it*
- Odour
- Eggs

## Tissue

*few white stop on the meat part*

Too Soft  Typical  Too Firm

## Overall Determination:

- Would eat this fish *NO*
- Would eat this fish, but not enjoy *No*
- Would not eat this fish *Not healthy looking for me*

Is there anything unusual about this fish?

212 LICTA15 CRDEN

6.41  
6.95 TL

2,370 kg

## Girth

Skinny  Average  Fat

Entered Sept 1, 2021, SR.

## Gills

Wine  Red  Pink  White

Pinkish

Why was this fish selected?

Caught @ AZI Pit

How do people tell when a fish is healthy or unhealthy?

# Fish External

Checklist of other indicators:

- Deformities - NONE
- Shape - Good
- Scales - Patches - White
- Other? Make fish

Is there anything unusual about this fish?

What can you teach us about the outside of this fish? Nice color

## Firmness

Typical rebound  Slow rebound  
 Stays indented

Fish type: Lake Trout

Fish ID (number): LKTR 15

Date: August 2 2021

Recorder: Kathy Arden - NISMA

~~\_\_\_\_\_~~

## Intestine

Colour: Good  
Contents: Bugs

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
*cysts x 2* *cysts*

What can you teach us about the insides of this fish?

*Probably having a hard time catching smaller fish - on skinny side!*

# Fish Internal

Checklist of other indicators:

- Heart - *cysts*
- Kidney *N/A*
- Liver - *cysts*
- Odour - *OK*
- Eggs - *NONE*

## Tissue

Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

*None*

*LKTRIS NSM*

Entered Sept 1, 2021, SR.

# Girth

100  
 Skinny  Average  Fat  
641 fork length 695 total length

# Gills

Wine  Red  Pink  White

# Fish External

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? \_\_\_\_\_

2.370kg male  
Why was this fish selected?  
b/c Sarah caught it  
How do people tell when a fish is healthy or unhealthy?

# Firmness

Typical rebound  Slow rebound  
 Stays indented

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

Fish type: 15 lake trout  
Fish ID (number): LKTR 85  
Date: August 2 2021  
Recorder: myra Ticho-Marie  
TG alices

## Intestine

Colour: \_\_\_\_\_

Contents: lots of bugs

What can you teach us about the insides of this fish?

## Tissue

Too Soft  Typical  Too Firm  
parasite (a few)

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
throat

Checklist of other indicators:

- Heart parasites
- Kidney
- Liver white parasites
- Odour good
- Eggs none

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

ble of all the parasites

Is there anything unusual about this fish?

## Girth

- Skinny
- Average
- Fat

Skinnny fish Doesn't seem to be eating healthy

695 Length  
Total weight  
2.370 kg

## Gills

- Wine
- Red
- Pink
- White

Reddish pink

Entered Spt 1, 2021, SR

Why was this fish selected?

To see if the fish is affected from The Diamond mines.

How do people tell when a fish is healthy or unhealthy?

By the texture & color of the body

# Fish External

Checklist of other indicators:

- Deformities
- Shape *kind of big head skinny body*
- Scales *Dark coloured scales*
- Other? \_\_\_\_\_

## Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

*it has a big head skinny body*

What can you teach us about the outside of this fish? *Dark colored scale*

Fish type: Lake Trout

Fish ID (number): LKTR 15

Date: August 2 2021

Recorder: YKDFN - Kelsey - for  
YK Peter, Conrad, Ted.

## Intestine

The intestines in the fish didn't look as normal

Colour: Dirty red

Contents: \_\_\_\_\_

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

CYST.  
Cyst on the liver & guts and cystoparasites on the meat/flesh

What can you teach us about the insides of this fish?

In the stomach nothing but insects, looks like it was starving

# Fish Internal

Checklist of other indicators:

- Heart *small heart*
- Kidney
- Liver *coffee like color with cyst*
- Odour
- Eggs *no eggs*

## Tissue

Too Soft  Typical  Too Firm

*Not right color. meat look to yellow.*

Y KDFN  
LICR15

*Not as normal as GSC Fish.*

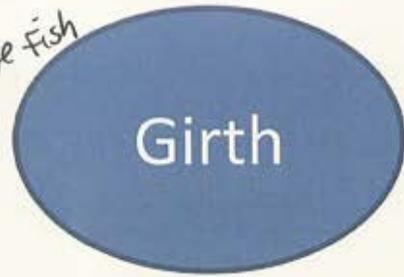
## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

*The fish is not eating right & Doesn't look healthy. The meat is too soft*

Young Average Fish



- Skinny
- Average
- Fat

Fish

FL = 606  
 TL = 654  
 W = 2.375 Kg

White spots on the fins

Lean mouth

Entered Sept 1, 2021, SR.



- Wine
- Red
- Pink
- White



Why was this fish selected?

2/3 fish caught today

How do people tell when a fish is healthy or unhealthy?

Has a lot of parasites and cyst all over kidney, meat, stomach  
 Full of bugs in stomach

Checklist of other indicators:

- Deformities
- Shape
- Scales - ~~None~~ Dried out, looks ok only
- Other? \_\_\_\_\_



- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

A lot of parasites and cysts on Meat, liver  
 What can you teach us about the outside of this fish? lean mouth, skin looks good

Fish type: Lake Trout

Fish ID (number): LKTR 316

Date: August 2 2021

Recorder: Vikki, for Nancy  
 KIA + Jack

## Intestine

Colour: Whitish

Contents: Bugs

I am very disgusted and Sick because they are not eating different nutrients and not healthy. What are they eating? I am so grossed out. THEY NEED TO EAT!! NOT JUST BUGS!! -Nancy

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

✓ Liver ✓ Meat

What can you teach us about the insides of this fish?

- Meat is firm but has a cyst  
Liver is big but has a lot of Parasites. Small heart

- Full of Bugs

# Fish Internal

Checklist of other indicators:

- Heart - Small ; not normal
- Kidney
- Liver - Big and Normal and full of parasite
- Odour - Smell is good
- Eggs - Has eggs

## Tissue

Too Soft  Typical  Too Firm

Tape worm in the cyst

**Overall Determination:**

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

Alot of parasites and cysts and bugs in Stomach

LIKTRIG  
KIA

Entered by TZ - Sept 2021

606 girth

654. girth

3.275

Girth

Skinny  Average  Fat



Gills

Wine  Red  Pink  White

Why was this fish selected? *because we got fishing in boat rob*

How do people tell when a fish is healthy or unhealthy?

*By looking at it*

*Small*



Fish External

Checklist of other indicators:

- Deformities
- Shape *skinny*
- Scales
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

Firmness

Typical rebound  Slow rebound  
 Stays indented

*2 LK forms for LKTR16 (1/2)*

Fish type: Trout

Fish ID (number): LKTR16

Date: August 2 2021

Recorder: Ferri Doris

*LKDFN*

## Intestine

Colour: Oranges  
Contents: Bugs

What can you teach us about the insides of this fish? *No healthy by looking at it*

## Tissue

Too Soft  Typical  Too Firm

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

Checklist of other indicators:

- Heart *the heart is small.*
- Kidney
- Liver
- Odour
- Eggs *short eggs*

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

*No I would not eat it no healthy*

Is there anything unusual about this fish?

*1/2 LKTR<sup>16</sup> - for LKDFN*

# Girth

- Skinny
- Average
- Fat

FISH  
 60.6 fork  
 65.4 total length  
 2.375 kg weight

# Gills

- Wine
- Red
- Pink
- White

\* parasites

12 Sept 2021

# Fish External

Checklist of other indicators:

- Deformities
- Shape - good
- Scales - good, pinkish colour
- Other? \_\_\_\_\_

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

2 LK Arms for LKTR16 (2/2)

Fish type: trout  
 Fish ID (number): LKTR16  
 Date: August 2, 2021  
 Recorder: Sarazine LKDFN

## Intestine

\*parasites found

Colour: normal

Contents: bugs only

What can you teach us about the insides of this fish?

# Fish Internal

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

\* tissue/flesh parasites, stomach, liver, heart

Checklist of other indicators:

- Heart - not normal, too small
- Kidney -
- Liver - parasites, colour good
- Odour - good
- Eggs - has eggs, no good - too much blood / too small
- bladder - parasites

## Tissue

- Too Soft  Typical  Too Firm

~~lots of parasites~~ \* lots of parasites found (both sides of fish)

## Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

2/2 LKTR16 LKDFN

Tz Sept 2021

6.06  
b-5476

2.375 Key



Girth

- Skinny
- Average
- Fat



Gills

- Wine
- Red
- Pink <sup>Red</sup>
- White

Why was this fish selected?

Caught @ AZI Pit

How do people tell when a fish is healthy or unhealthy?



Fish External

Checklist of other indicators:

- Deformities none
- Shape Good
- Scales Good
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

Hasn't been eating good food!

What can you teach us about the outside of this fish?



Firmness

- Typical rebound
- Slow rebound
- Stays indented

Fish type: Lake Trout

Fish ID (number): LKTR 16

Date: August 2 2021

Recorder: Kathryn Gordon USMA

~~EDTA~~

## Intestine

Colour: Pink

Contents: Bugs

What can you teach us about the insides of this fish?

Been infested w/ parasites since born.

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

10+  
Cysts

Cysts

2 kinds - white & orange

Checklist of other indicators:

- Heart - small
- Kidney N/A
- Liver - Parasites - lots
- Odour - OK
- Eggs - Yes

## Tissue

Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

Very parasitic

NSMA UKTR 16

TZ Sept 2021

**Girth**

Skinny    Average    Fat

60cm fork length 65.4 total length  
2.375kg

**Gills**

Wine    Red    Pink    White

**Fish External**

- Checklist of other indicators:
- Deformities
  - Shape
  - Scales
  - Other? \_\_\_\_\_

Why was this fish selected?  
*we got it across from mibe*

How do people tell when a fish is healthy or unhealthy?

Is there anything unusual about this fish?

**Firmness**

Typical rebound    Slow rebound

Stays indented

What can you teach us about the outside of this fish?

Fish type: lake trout  
 Fish ID (number): 44TR 10  
 Date: August 2 2021  
 Recorder: Nyssa Thelma-Mante  
 TG

## Intestine

Colour: \_\_\_\_\_

Contents: bugs - stomach

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
all over

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart small
- Kidney
- Liver normal, big; lots of parasites
- Odour good
- Eggs yes

## Tissue

- Too Soft  Typical  Too Firm  
a lot of parasite

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

lots of parasites even though appears healthy externally

LKTR 16 TG

## Girth

- Skinny
- Average
- Fat

skinny fish

6.06 cm  
2.375 kg

## Gills

- Wine
- Red
- Pink
- White

Reddish pink

Why was this fish selected?

To see if its affected from Diamond mines.

How do people tell when a fish is healthy or unhealthy?

The size weight & texture and color of the scales

# Fish External

Checklist of other indicators:

- Deformities
- Shape *skinny*
- Scales *pale to medium*
- Other? \_\_\_\_\_

## Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

The fish looks *skinny & pale*

What can you teach us about the outside of this fish? *skinny fish & pale*

*Doesn't look to healthy not eating right*

Fish type: Lake Trout

Fish ID (number): LKTR 16

Date: August 2 2021

Recorder: YKDFN - Kelsey for Peter

*JUG Lena, Ted*

YKDFN LKTR 16

## Intestine

The intestines of the fish  
Doesn't look healthy

Colour: Dark red

Contents: \_\_\_\_\_

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

The outside of the stomach has a lot of parasites & on the flesh/meat.

What can you teach us about the insides of this fish?

The inside have cyst on the flesh meat. The meat looks yellow

# Fish Internal

Checklist of other indicators:

- Heart The heart is too small
- Kidney
- Liver Liver is big with lots of parasites.
- Odour
- Eggs A few little eggs

## Tissue

Too Soft  Typical  Too Firm

The meat looks to yellow

## Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

The fish does not look healthy, not eating right.

YKDFN LRTR16

**Girth**

Skinny  Average  Fat

~~710~~ FL  
775 ~~FL~~  
Total length.  
3.065 Kg -

**Gills**

Wine  Red  Pink  White

Why was this fish selected?  
*because we need to see all the fish in the lake where the mine is*

How do people tell when a fish is healthy or unhealthy?  
*The fish is unhealthy*

**Fish External**

- Checklist of other indicators:
- Deformities *big head*
  - Shape
  - Scales
  - Other? \_\_\_\_\_

Is there anything unusual about this fish?

**Firmness**

Typical rebound  Slow rebound  
 Stays indented

What can you teach us about the outside of this fish?

~~1000~~ ~~ANDBEN.~~  
Fish type: ~~lake~~ lake trout  
Fish ID (number): LRTA 18  
Date: August 3 2021  
Recorder: Devis Gem Cruz  
LKDFN

## Intestine

Colour: \_\_\_\_\_

Contents: bugs

What can you teach us about the insides of this fish?

*To much bugs*

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

# Fish Internal

Checklist of other indicators:

- Heart *small heart*
- Kidney
- Liver *light brown*
- Odour *healthy*
- Eggs *No. eggs*

## Tissue

- Too Soft  Typical  ~~Too Firm~~

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

*CKTR 18 UDFN*

T2 - Sept 2021

**Girth**

Skinny    Average    Fat

710 fl lgn   775 total length  
3.065 kg  
male

**Gills**

Wine    Red    Pink    White

**Fish External**

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

**Firmness**

Typical rebound    Slow rebound

Stays indented

Fish type: trout  
 Fish ID (number): ~~18~~ ~~118~~ LKTR  
 Date: August 3 2021 18  
 Recorder: myra for Tliche-Marie

T 6

## Intestine

Colour: \_\_\_\_\_

Contents: bugs

*guts - parasites (one cyst in stomach)*

What can you teach us about the insides of this fish?

# Fish Internal

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

*guts*

Checklist of other indicators:

- Heart *small*
- Kidney
- Liver *coffee colour / light brown*
- Odour *healthy*
- Eggs *x*

## Tissue

- Too Soft  Typical  Too Firm

*2 cysts*

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

# Girth

- Skinny
- Average
- Fat

# Gills

- Wine
- Red
- Pink
- White

# Fish External

Why was this fish selected?

*Caught in Inlet*

How do people tell when a fish is healthy or unhealthy?

Checklist of other indicators:

- Deformities
- Shape *Big head*
- Scales - *OK*
- Other? *small body*

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

Fish type: *Lake Trout*  
 Fish ID (number): *LKTR18*  
 Date: *August 3* 2021  
 Recorder: *NSMA - Kathy*

## Intestine

Colour: Pinkish

Contents: Bugs & 1 cyst

What can you teach us about the insides of this fish?

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

• 2 cysts  
• orange color

1 cyst

Checklist of other indicators:

- Heart - bit small
- Kidney N/A
- Liver - like brown - coffee color
- Odour - OK
- Eggs - N/A - Male

## Tissue

Too Soft  Typical  Too Firm

## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

NO

NSMA LKTR 18

TE Sept 2021



Girth

- Skinny
- Average
- Fat

710 FORK  
 Length: 775  
 Weight 3.065 Kg



Gills

- Wine
- Red
- Pink
- White

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?  
*Look at size of head, body, color, fins*



Fish External

Checklist of other indicators:

- Deformities
- Shape *skinny*
- Scales *OK*
- Other? \_\_\_\_\_

*Big head  
skinny body*

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?



Firmness

- Typical rebound
- Slow rebound
- Stays indented

Fish type: Lake Trout

Fish ID (number): LKTR/8

Date: August 3 2021

Recorder: Lena -  
YKDFN Gr Peter, Ted

## Intestine

Colour: Pale stomach color

Contents: Bugs

What can you teach us about the insides of this fish?

- Cysts on guts
- No food in stomach
- Same bug-like in stomach

## Tissue

Too Soft  Typical  Too Firm

2 Cysts on mid-section of fish

YKAFN 4FTR18

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

Insects/bugs, There's no food, 1 cysts.

Checklist of other indicators:

- Heart - small
- Kidney
- Liver - light brown
- Odour - strong odor
- Eggs - No eggs

## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?  
Looks healthy on outside but the insides has no food in stomach

12 Sept 2021

# Girth

- Skinny
- Average
- Fat

Male Fish  
 FL = 710  
 TL = 775  
 W = 3.065kg  
 Healthy Clean Mouth

# Gills

- Wine
- Red
- Pink
- White

Firm Meat  
 Colour is light (meat)

# Fish External

Checklist of other indicators:

- Deformities
- Shape *skinny*
- Scales - *scales looks okay*
- Other? \_\_\_\_\_

Why was this fish selected?  
 Caught on fishing Red across the camp  
 How do people tell when a fish is healthy or unhealthy?  
 Fish looks healthy on inside - right color but bugs in stomach  
 No Nutritional Value.

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

*Just like the others, only eating bugs*

What can you teach us about the outside of this fish?  
*Mouth looks clean, Scales looks good. A SKINNY fish*

Fish type: LKTR

Fish ID (number): LKTR18

Date: August 3 2021

Recorder: Vikki -

KIA for Nancy + Jack

## Intestine

Parasite on the  
meat tissue and  
Ribs

Colour: coffee alike

Contents: bugs

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

What can you teach  
us about the insides  
of this fish?

Cyst on gut. Small heart/liver  
Coffee looking - not eating right

# Fish Internal

Checklist of other indicators:

- Heart small
- Kidney
- Liver small
- Odour strong
- Eggs - malc fish

## Tissue

- Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

Not eating any fish only bugs

KIA CKTR18

TZ - Sept 2021

44.6 TL  
49.5 TL

0.865 kg

**Girth**

Skinny  Average  Fat

small fish young

**Gills**

Wine  Red  Pink  White

**Fish External**

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

Checklist of other indicators:

- Deformities - NONE
- Shape - small
- Scales - OK
- Other? \_\_\_\_\_

**Firmness**

Typical rebound  Slow rebound

Stays indented

Is there anything unusual about this fish?

Full of cysts

What can you teach us about the outside of this fish?

Fish type: LK Trout

Fish ID (number): 19 LKTR19

Date: August 3, 2021

Recorder: Kathy Arden NSMA

## Intestine

Colour: Pale

Contents: Bone - very little

## Deformities

- None
  - Worms
  - Tumours
  - Parasites
  - Location?  Tissue  Stomach
- ↓ lots of cysts

What can you teach us about the insides of this fish?

# Fish Internal

Checklist of other indicators:

- Heart - cysts - small cysts
- Kidney - deep red
- Liver - cysts
- Odour - OK
- Eggs - cysts

## Tissue

full of cysts

- Too Soft
- Typical
- Too Firm

## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

So young & full of cysts

# Girth

- Skinny
- Average
- Fat

# Gills

TB - Spt 2021

- Wine
- Red
- Pink
- White

looks healthy

# Fish External

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

this one

Checklist of other indicators:

- Deformities
- Shape
- Scales - colour okay
- Other? \_\_\_\_\_

small size for the other fish we've been getting

Is there anything unusual about this fish?

empty stomach

What can you teach us about the outside of this fish?

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

firm

usually fish w/ eggs would be large, this one not KIA

Fish type: lake trout

Fish ID (number): LKTR19

Date: August 3 2021

Recorder: Sarah - for Jack. Peter

## Intestine

Colour: right colour

Contents: em fly - ~~just fly~~

↳ only small insects, no food, just like other fish

What can you teach us about the insides of this fish?

- usually should have big big liver, but this one not

## Tissue

Too Soft  Typical  Too Firm

orange, right colour but cysts throughout all tissue

BUT CYSTS EVERYWHERE.

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

all insides - liver, etc. cysts in stomach cavity

Checklist of other indicators:

- Heart - tiny cysts on heart - right colour
- Kidney
- Liver - right colour but dark
- Odour - not strong odour.
- Eggs

dark brown but right colour, too small

↳ - skinny

## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

NO

TZ - Sept 2021

# Girth

446 length  
495 length  
0.865 kg

- Skinny
- Average
- Fat

# Gills

- Wine
- Red
- Pink
- White

Why was this fish selected?

We just all the fish to see if they are healthy but not healthy

How do people tell when a fish is healthy or unhealthy?

# Fish External

Checklist of other indicators:

- Deformities
  - Shape
  - Scales
  - Other? on the trout
- To much Parasites on the small lake trout*

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?

lot of Parasites on the fish

What can you teach us about the outside of this fish?

Fish type: LT trout  
 Fish ID (number): LT 19 LKTR19  
 Date: August 3 2021  
 Recorder: Doris Lynch

LKDFN

## Intestine

Colour: \_\_\_\_\_

Contents: ~~Blue~~ *Sups lots Parasites*

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

What can you teach us about the insides of this fish?

*unhealthy fish*

# Fish Internal

Checklist of other indicators:

- Heart *ok*
- Kidney *Dark*
- Liver *\* Parasites lots*
- Odour
- Eggs *yes*

## Tissue

- Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

T2 - Sept 2021

**Girth**

Skinny    Average    Fat

446 flk lgh   495 total length  
0.865 kg

**Gills**

Wine    Red    Pink    White

**Fish External**

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

*by looking at it, feeling*

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? \_\_\_\_\_

**Firmness**

Typical rebound    Slow rebound

Stays indented

Is there anything unusual about this fish?

*too many cysts - stomach, gills, liver*

What can you teach us about the outside of this fish?

Fish type: lake trout  
 Fish ID (number): LT19 LKTR19  
 Date: August 3 2021  
 Recorder: myra for ticho - Marie

TG

## Intestine

Colour: \_\_\_\_\_

Contents: very little bugs

What can you teach us about the insides of this fish?

# Fish Internal

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

Checklist of other indicators:

- Heart *a few cysts*
- Kidney *no*
- Liver *one cyst*
- Odour *none*
- Eggs *yes*

## Tissue

- Too Soft  Typical  Too Firm

*too many cysts, both sides*

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

*it has a lot of cysts on the meat*

CKTR19

TG

T2 - Spt 2021

# Girth

- Skinny
- Average
- Fat

Fl 446  
 Length  
 49.5  
 Weight  
 0.865 kg

# Gills

- Wine
  - Red
  - Pink
  - White
- Redish pink

Why was this fish selected?  
*Looked healthy on the outside*  
 How do people tell when a fish is healthy or unhealthy?  
*SKINNY head SKINNY body*

# Fish External

- Checklist of other indicators:
- Deformities
  - Shape *very skinny*
  - Scales *look good not damaged*
  - Other? \_\_\_\_\_

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?  
*The fish is small & very skinny*  
 What can you teach us about the outside of this fish? *it looks ~~good~~ very skinny like it was starving*  
 Fish type: Lake trout  
 Fish ID (number): 17 UKTR19  
 Date: August 03 2021  
 Recorder: YKDFN  
*Kelsey - for later, Lena, Ted*

## Intestine

Color of meat  
Looks good  
but lots of  
cyst on the  
meat

Colour: intestines look pale pink  
Contents: \_\_\_\_\_

## Deformities

- None
  - Worms
  - Tumours
  - ~~Parasites~~
- Location?  Tissue  Stomach  
*Parasites on the stomach & flesh*

What can you teach us about the insides of this fish? *The meat color looks good but inside of the flesh has lots of cyst*

# Fish Internal

Checklist of other indicators:

- Heart *small heart*
- Kidney
- Liver *one cyst on the liver*
- Odour
- Eggs *Look Good*

## Tissue

- Too Soft
- Typical
- Too Firm

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- ~~Would not eat this fish~~

Is there anything unusual about this fish?  
*Lots of cyst in the stomach & on the flesh*

*YKDFN  
CPTK19*

# Girth

- Skinny
- Average
- Fat

Big head skinny body

FL 748  
TL 815  
TW 3.325  
Male Trout

# Gills

TZ - Sept 2021

- Wine
- Red
- Pink
- White

Dark Red gills

# Fish External

Why was this fish selected?  
*To see if it was affected from the Diamond disease*

How do people tell when a fish is healthy or unhealthy?  
*When its a good size/fat  
 The color of the scale*

Checklist of other indicators:

- Deformities
- Shape *Big head skinny body*
- Scales *Dark color*
- Other? \_\_\_\_\_

# Firmness

- Typical rebound
- Slow rebound

- Stays indented

*kinda firm but soft*

Is there anything unusual about this fish?

*A Red leach on ~~the~~ near its Anus.*

What can you teach us about the outside of this fish?  
*The scales look good, but the texture of the fish is too soft & <sup>dark color</sup> skinny*

Fish type: LAKETROUT

Fish ID (number): LKTR 20

Date: August 05<sup>th</sup> 2021

Recorder: YICDFN

*Kelsey*

## Intestine

Not a healthy fish look like it was starving

Colour: pinkish yellow

Contents: \_\_\_\_\_

What can you teach us about the insides of this fish? it has a cyst on the liver & stomach

# Fish Internal

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

It has parasites in the stomach & on the liver on the meat & a tape worm 2 inches

### Checklist of other indicators:

- Heart Normal size heart and it has a in the inside
- Kidney Normal size heart
- Liver Brownish color with cyst
- Odour smells like rotten in the guts
- Eggs nothing but bugs in the stomach

## Tissue

Too Soft  Typical  Too Firm

The flesh of the meat is too soft & the color of the meat is too light.

### Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish not a healthy fish

Is there anything unusual about this fish?

inside its stomach its only feeding on insects  
Looks like its starving

TZ - Sept 2021

74.8 TW  
81.5

3.325 Kg



Girth

- Skinny
- Average
- Fat



Gills

- Wine
- Red
- Pink
- White



Fish External

Checklist of other indicators:

- Deformities - NONE
- Shape - Skinny
- Scales - OK
- Other? \_\_\_\_\_

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?



Firmness

- Typical rebound
- Slow rebound
- Stays indented

Is there anything unusual about this fish?  
*Looks like it is lacking nutrition*

What can you teach us about the outside of this fish?  
*Outside looks good - dark color*

Fish type: LK Trout

Fish ID (number): LKTR 20

Date: August 5, 2021

Recorder: Kathy Arden - NSMA

NSMA

## Intestine

Colour: Pinkish

Contents: Bugs

What can you teach us about the insides of this fish?

Looks healthy, even though skinny, one cyst on stomach & small spot on liver.

## Tissue

Too Soft  Typical  Too Firm

## Deformities

<sup>1-tape</sup>  
 None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
<sub>\cyst</sub> <sub>\cyst</sub>

Checklist of other indicators:

- Heart - still pumping - few cysts
- Kidney - good
- Liver - small spots
- Odour - good
- Eggs - none - Male

# Fish Internal

## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish - parasites

Is there anything unusual about this fish?

None

TZ - Sept 2021

# Girth

- Skinny
- Average
- Fat

7.48 - fork length  
 8.15 - total length  
 ---  
 3.325 - weight

# Gills

- Wine
- Red
- Pink
- White

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

# Fish External

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish?

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Fish type: Trout

Fish ID (number): LKTR 20

Date: August 5 2021

Recorder: Sarah - Marie Adele and Myra

TG

## Intestine

Colour: \_\_\_\_\_

Contents: only bugs

What can you teach us about the insides of this fish?

# Fish Internal

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

*a few outside are inside*

Checklist of other indicators:

- Heart *heart cysts*
- Kidney
- Liver *small dot x2*
- Odour *water*
- Eggs x

## Tissue

- Too Soft  Typical  Too Firm

### Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

Is there anything unusual about this fish?

T2 - Sept 2021

# Girth

length  
FL 7.48  
TL 8.15  
W 3.325

- Skinny
- Average
- Fat

# Gills

- Wine
- Red
- Pink
- White

# Fish External

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

This lake no food the fish and they lots of bugs.

Checklist of other indicators:

- Deformities
- Shape
- Scales *it look good on the skin*
- Other? \_\_\_\_\_

Is there anything unusual about this fish?

What can you teach us about the outside of this fish? *under weight*

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Fish type: Lake trout

Fish ID (number): 20

Date: August 5 2021

Recorder: ANDREW DAVIS ENDA

LKDFN

+ Albert

## Intestine

Colour: ~~None~~ coffee

Contents: Empty

## Deformities

- None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach  
✓ heart

What can you teach us about the insides of this fish?

*the fish eggs  
Empty stomach, bottom insect  
Yellowish meat color  
worms on meat*

# Fish Internal

Checklist of other indicators:

- Heart *Normal heart, full of parasites*
- Kidney
- Liver *- coffee color, liver looks good*
- Odour *Normal*
- Eggs *has eggs*

## Tissue

- Too Soft  Typical  Too Firm

Overall Determination:

- Would eat this fish  
 Would eat this fish, but not enjoy  
 Would not eat this fish

*If I am hungry, I would eat it ✓*  
Is there anything unusual about this fish?

*Empty stomach*

KIA-LKTRZL

TE - Sept 2021

# Girth

- Skinny
- Average
- Fat

721-FL  
774-TL  
3.560-weight.

# Gills

- Wine
- Red
- Pink
- White

Why was this fish selected?

How do people tell when a fish is healthy or unhealthy?

too skinny

# Fish External

Checklist of other indicators:

- Deformities
- Shape
- Scales
- Other? head is too big for body

Is there anything unusual about this fish?

What can you teach us about the outside of this fish? dark back like trout.

# Firmness

- Typical rebound
- Slow rebound
- Stays indented

Fish type: LKTR 21

Fish ID (number): LKTR 21

Date: August 5 2021

Recorder: Sarah - for Albert

LKDFN

## Intestine

Colour: normal

Contents: bugs

What can you teach us about the insides of this fish?

*Only bugs in the stomach*

## Tissue

Too Soft  Typical  Too Firm

## Deformities

None  Worms  Tumours  Parasites  
Location?  Tissue  Stomach

*Colour is too light*

Checklist of other indicators:

- Heart - *full of parasites*
- Kidney *good*
- Liver - *coffee colour*
- Odour - *normal*
- Eggs *small*

# Fish Internal

## Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

TE - Sept 2021

4721  
77.4 TL

3,560 kg

**Girth**

Skinny  Average  Fat

*(Handwritten arrow pointing from Average to Skinny)*

**Gills**

Wine  Red  Pink  White

**Fish External**

Why was this fish selected?  
*Caught off reef close to TK camp*

How do people tell when a fish is healthy or unhealthy?

- Checklist of other indicators:
- Deformities - *None*
  - Shape - *Good*
  - Scales - *Good*
  - Other? \_\_\_\_\_

**Firmness**

Typical rebound  Slow rebound

Stays indented

Is there anything unusual about this fish?  
*NO*

What can you teach us about the outside of this fish? *- looks good*

Fish type: LK Trout

Fish ID (number): LKTR 21

Date: August 5, 2021

Recorder: Kathy Arden - NSM

**NSM**

## Intestine

Colour: OK - pink

Contents: few bugs - one alive

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

*cysts  
tape worm*

*cysts - 3*

What can you teach us about the insides of this fish?

*Looks healthy - on skinny side!*

# Fish Internal

Checklist of other indicators:

- Heart - *good*
- Kidney - *dark red*
- Liver - *pale*
- Odour - *OK*
- Eggs - *yes*

## Tissue

Too Soft  Typical  Too Firm

**Overall Determination:**

- Would eat this fish
- Would eat this fish, but not enjoy
- Would not eat this fish

Is there anything unusual about this fish?

*NO*

*N.S.M.A - UK 2021*

## Girth

- Skinny
- Average
- Fat

Big head kind of big body

FL 721  
TL 774  
TW 3.560 kg  
Female Trout

## Gills

- Wine
- Red
- Pink
- White

Pinkish <sup>pale</sup> white gills.

Why was this fish selected?

To see if its affected from  
The Diamond mines

How do people tell when a  
fish is healthy or unhealthy?

When its a good size or fat  
body & the color the gills

# Fish External

Checklist of other indicators:

- Deformities
- Shape *Big head kind of skinny body*
- Scales *Dark scale color*
- Other? \_\_\_\_\_

## Firmness

- Typical rebound
- Slow rebound

- Stays indented

Is there anything unusual about this fish?

*it has a big head &*

What can you teach us about the outside  
of this fish? *it looks healthy on the outside  
but in the inside it doesnt look to good it was*

Fish type: Lake Trout *starving not healthy*

Fish ID (number): LKTR 21

Date: August 05<sup>th</sup> 2021

Recorder: YKDFN

*Kelsey*

## Intestine

Colour: pinkish white

Contents: \_\_\_\_\_

What can you teach us about the insides of this fish? *it has cyst in the stomach Female trout*

## Tissue

*The meat is too soft.*

Too Soft  Typical  Too Firm

*light color meat with alot of tape worms & cyst*

*1KDFN- LKTRZ1*

## Deformities

None  Worms  Tumours  Parasites

Location?  Tissue  Stomach

*Parasites in the the guts/stomach  
tape worms & cyst in the flesh*

# Fish Internal

Checklist of other indicators:

- Heart *small heart*
- Kidney *little dark color*
- Liver *Brownish coffee like color*
- Odour *Smells it was rotten<sup>in the</sup> inside*
- Eggs *really small few eggs*

Overall Determination:

- Would eat this fish
- Would eat this fish, but not enjoy
- ~~Would not eat this fish~~ *Too Gross.*

Is there anything unusual about this fish?

*The fish was a female trout had little eggs and a few bugs in the stomach looked like it was starving*

## Appendix G Scientific Fish Testing Results

Date	Objective	Effort	Fish #	Species	Fork Length (mm)	Total Length (mm)	Total Weight (kg)	Otolith Collected	Sample Weight (kg)	Duplicate	Duplicate Sample Weight	Life History	Stage	Sex	Stomach %	Stomach Contents	Gonad Weight (kg)	Liver Weight (g)	Condition	
31-Jul-21	NA	AL1	LT1	LKTR	NC	NC	NC	NC	NC	NC	NA	NC	NC	F	NC	NC	NC	NC	NC	
1-Aug-21	TK	AL2	LT2-4	LKTR	821	885	4.705	2	0.040	LT2-5	0.040	Resting	Resting	F	25	Bugs	0.020	0.025	Fair, skinny	
1-Aug-21	TK	GN2	LT3	LKTR	835	906	6.185	1 broken	0.040	NC	NA	Mature	NC	F	100	LKTR	0.080	0.060	Good	
1-Aug-21	TK	GN2	LT4	LKTR	650	705	3.500	2	0.040	NC	NA	Mature	NC	M	25	Bugs	0.110	0.015	Good, mod. parasites	
1-Aug-21	TK	GN1	LT5	LKTR	824	888	4.805	2	0.040	NC	NA	Mature	Resting	F	NC	Bugs	0.010	0.030	Skinny	
1-Aug-21	TK	GN1	LT6	LKTR	866	945	7.270	1	0.075	NC	NA	Mature	Late Stage	F	25	NNST	0.115	0.080	Good, some parasites	
1-Aug-21	Sc	GN1	LT7-4	LKTR	696	756	3.865	2	0.050	LT7-5	0.035	Mature	Late Stage	M	100	Bugs	0.155	0.030	Good, some parasites	
1-Aug-21	Sc	GN2	LT8-4	LKTR	653	715	2.380	0	0.035	LT8-5	0.015	Mature	Early Stage	M	100	Bugs	0.015	0.020	External good	
1-Aug-21	Sc	GN1	LT9	LKTR	678	740	2.745	2	0.035	NC	NA	Resting	Resting	M	50	Bugs	0.010	0.015	Good external, moderate parasites	
1-Aug-21	Sc	GN1	LT10	LKTR	522	578	1.555	2	0.045	NC	NA	Mature	Late Stage	F	100	Bugs	0.010	0.010	Good external, moderate parasites	
1-Aug-21	Sc	GN1	LT11	LKTR	615	673	2.140	2	0.030	NC	NA	Mature	Late Stage	F	100	Bugs	0.045	0.025	Good external, many parasites	
1-Aug-21	Sc	GN1	LT12	LKTR	677	735	2.850	2	0.035	NC	NA	Resting	Resting	M	75	Bugs	0.015	0.025	Poor, skinny, many parasites, right gills eroded	
1-Aug-21	Sc	GN1	LT13-4	LKTR	468	510	1.100	2	0.040	LT13-5	0.035	Immature	Immature	M	100	Bugs	<0.005	0.010	Many parasites	
1-Aug-21	Sc	GN1	LT14	LKTR	877	952	5.340	0	0.025	NC	NA	Mature	NC	F	0	NA	0.105	0.030	Moderate parasites	
2-Aug-21	TK	AL3	LT15	LKTR	641	695	2.370	2	0.035	NC	NA	Resting	Resting	M	100	Bugs	0.01	0.025	Good external, skinny	
2-Aug-21	TK	AL3	LT16-4	LKTR	606	654	2.375	1	0.045	LT16-5	0.035	Mature	Early Stage	F	100	Bugs	0.025	0.02	Good external, skinny	
2-Aug-21	NA	AL3	LT17	LKTR	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	Good external, moderate-high parasites
3-Aug-21	TK	AL4	LT18	LKTR	710	775	3.065	2	0.030	NC	NA	Resting	Resting	M	25	Bugs	0.01	0.015	Good external, skinny	
3-Aug-21	TK	AL4	LT19	LKTR	446	495	0.865	1	0.030	NC	NA	Mature	Late Stage	F	10	Bugs	0.005	0.005	Great external, healthy-looking, meaty	

0

Notes:

LKTR = Lake Trout; NNST = Ninespine Stickleback  
 NA = Not Applicable; NC = Not Collected; - = None  
 AL = Angling with Lure; GN = Gill Net  
 F = Female; M = Male  
 Parasite coes on "Parasite Guide" worksheet

Date	Objective	Effort	Fish #	Species	Parasites - Gill	Parasites - D. Cyst	Parasites - R. Cyst	Parasites - Heart	Parasites - Muscle	Parasites - N.	Parasites - Stomach (In)	Parasites - Liver	Comments
31-Jul-21	NA	AL1	LT1	LKTR	NC	More than 1	NC	NC	NC	NC	No	No	NC
1-Aug-21	TK	AL2	LT2-4	LKTR	No	Yes	No	No	NC	No	No	No	Dark gall bladder
1-Aug-21	TK	GN2	LT3	LKTR	No	Few	No	No	NC	No	No	No	-
1-Aug-21	TK	GN2	LT4	LKTR	No	Yes	No	Cysts	NC	No	No	Yes	Coffee coloured liver
1-Aug-21	TK	GN1	LT5	LKTR	No	Few	No	No	NC	No	No	No	Coffee coloured liver
1-Aug-21	TK	GN1	LT6	LKTR	No	Few	Few	No	NC	No	No	Yes	Coffee coloured liver
1-Aug-21	Sc	GN1	LT7-4	LKTR	No	Few	Few	Cysts	NC	No	No	No	-
1-Aug-21	Sc	GN2	LT8-4	LKTR	No	Moderate	Few	No	NC	No	Yes	No	Coffee coloured liver
1-Aug-21	Sc	GN1	LT9	LKTR	One	Moderate	Few	No	NC	No	No	No	-
1-Aug-21	Sc	GN1	LT10	LKTR	No	Moderate	Few	Worms	NC	No	No	No	-
1-Aug-21	Sc	GN1	LT11	LKTR	No	Moderate	Few	Cysts	NC	Yes	Yes	No	-
1-Aug-21	Sc	GN1	LT12	LKTR	Many	Moderate-Hi	Few	No	Yes	No	Yes	No	Right gills eroded, first gill eroded significantly, eroded gill plate, gill parasites, skinny fish
1-Aug-21	Sc	GN1	LT13-4	LKTR	No	Moderate	Few	No	No	No	Yes	Yes	-
1-Aug-21	Sc	GN1	LT14	LKTR	No	Moderate	Few	No	NC	No	No	No	Coffee coloured liver
2-Aug-21	TK	AL3	LT15	LKTR	No	Moderate-Hi	Moderate	Cysts	Yes	No	Yes	No	Coffee coloured liver
2-Aug-21	TK	AL3	LT16-4	LKTR	No	Moderate-Hi	Moderate	Cysts	Moderate	No	Yes	Moderate	-
2-Aug-21	NA	AL3	LT17	LKTR	NC	Yes	Yes	NC	NC	NC	NC	NC	Not available for Science, in too poor shape for Camp consumption as planned.
3-Aug-21	TK	AL4	LT18	LKTR	No	Few	Few	No	Yes	No	NC	No	Coffee coloured liver
3-Aug-21	TK	AL4	LT19	LKTR	No	High	High	Cysts	Numerous	No	No	Numerous	-

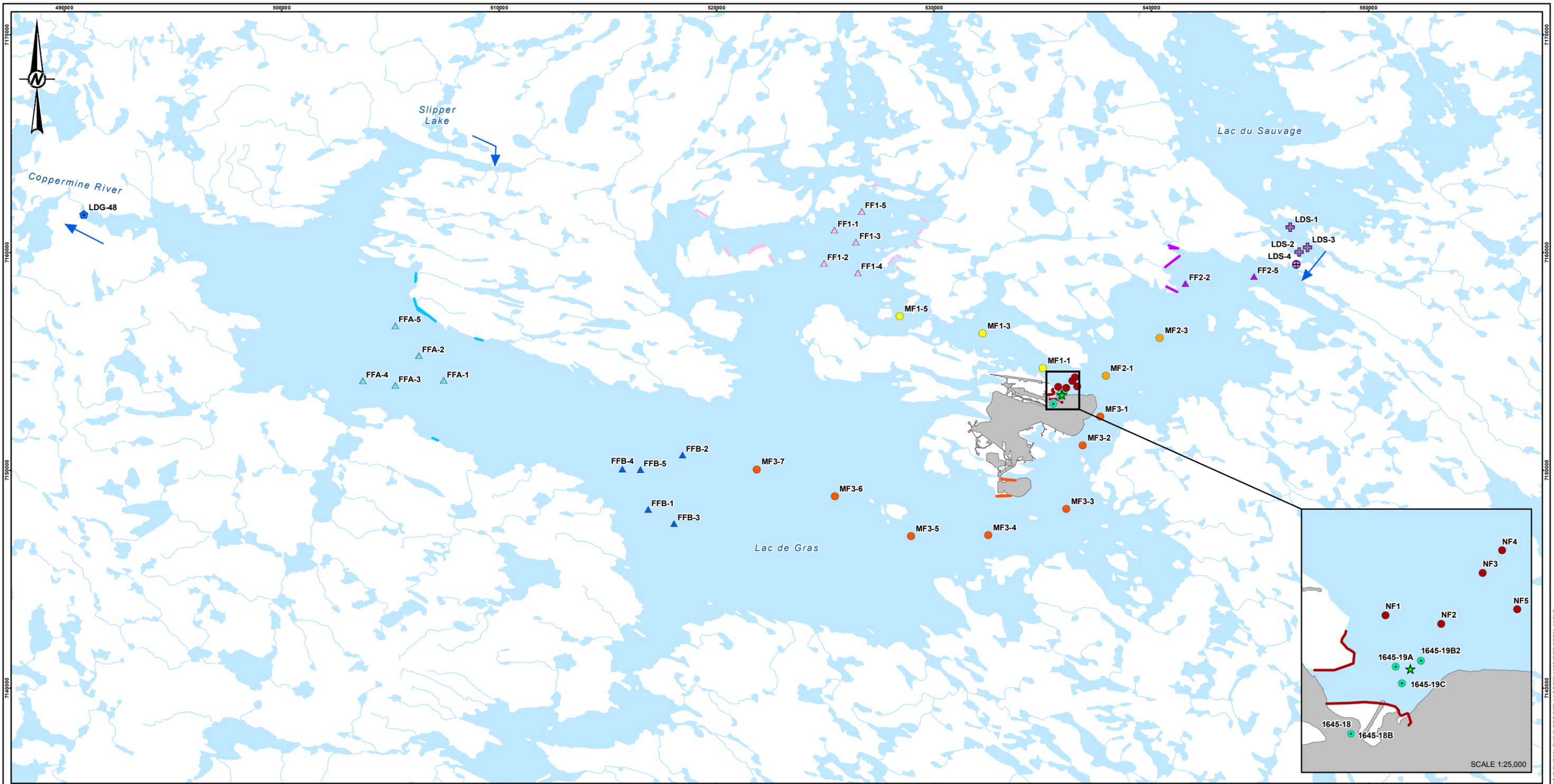
Notes:

LKTR = Lake Trout; NNST = Ninespine Stickleback  
 NA = Not Applicable; NC = Not Collected; - = None  
 AL = Angling with Lure; GN = Gill Net  
 F = Female; M = Male  
 Parasite coes on "Parasite Guide" worksheet

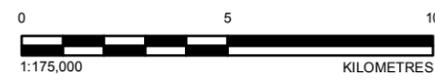
Effort Number	Gear Type	Lure	Net Mesh Size (in)	Location	Coordinate	Date	Set Time	Pull Time	Min Depth (m)	Max Depth (m)	Distance from Shore (m)	Habitat Type	Veg Present
AL1	1 Rod	barbless	NA	Camp	12W 541071 E 7152194 N	31-Jul	18:00	18:15	1	3	4	BO, shoreline, bay	SV, AV
AL2	2 Rods	barbed	NA	Mine	12W 535584 E 7153547 N	1-Aug	12:00	12:06	3	10	Near	BO, near shore, NW of Diavik Diffusers & treated water effluent	NC
GN1	Gill Net	NA	3	Mine	12W 535584 E 7153547 N	1-Aug	10:40	14:45	3	10	Near	BO, near shore, NW of Diavik Diffusers & treated water effluent	NC
GN2	Gill Net	NA	3	N of TK Camp	12W 541082 E 7153175 N	1-Aug	11:11	14:00	NC	Deep	100	Cold water, deep.	NA
GN3	Gill Net	NA	3	NE of Mine	12W 534610 E 7148111 N	2-Aug	11:12	13:12	3	10	60	BO, next to island, extends North to mine	NC
AL3	2 Rods	NC	NA	NE of Mine	12W 534610 E 7148111 N	2-Aug	11:30	13:15	3	10	60	BO, next to island, extends North to mine	NC
AL4	3 Rods	NC	NA	Bay across from Camp	12W 540970 E 7152424 N	3-Aug	11:44	12:50	0.5	3	5	BO, shoreline, bay	OV
AL5	4 Rods	NC	NA	Bay across from Camp	12W 540970 E 7152424 N	4-Aug	15:30	17:00	0.5	3	5	BO, shoreline, bay	OV
GN4	Gill Net	NA	3	Between Camp and Mine	12W 540018 E 7152570 N	5-Aug	10:41	12:03	3	10	200	Small exposed BO island set opposite from shore	No
AL6	4 Rods	NC	NA	Between Camp and Mine	12W 539468 E 7153498 N	5-Aug	11:50	10:50	0.5	5	1 - 15	Off of an island both by shore and by boat	AV

Effort Number	LKTR Caught	LKTR Released	LKTR Observed	Other Spp.	Total Fish	Comments	Surface Water T°C	pH	Conductivity (µS)
AL1	1	0	1	No	2		NC	NC	NC
AL2	1	0	0	No	1		NC	NC	NC
GN1	6	2	0	No	8	Small bay near mine pit, right by shore. South toe of airport peninsula, extending East from shore into deeper water.	NC	NC	NC
GN2	3	1	1	No	5	Net running perpendicular to shore. Wx clear, sunny, calm waves, light wind. Near a string of islands.	26.5	7.21	0
GN3	0	0	0	No	0		26.5	7.21	0
AL3	3	0	2	No	5	Dipnet developed a hole that lost fish			
AL4	2	0	1	No	3	Windy, overcast. Sheltered from wind	13.5	8.26	40
AL5	0	0	2	No	2	Windy, overcast. Sheltered from wind	NC	NC	NC
GN4	1	0	0	No	1	Windy, overcast.			
AL6	2	0	1	No	3	Windy, overcast.			

Area	Parasite Code	Parasite Name	Type	Description
Stomach	D.	<i>Diphylobothrium</i>	Cyst	Orange, lumpy
Stomach	R.	<i>Raphidascaris acus</i>	Cyst	Silver, round
Heart	Heart	<i>Ichthyocotylurus</i>	Cyst/Worm	Tiny cysts
Muscle	Muscle	<i>Triaenophorus crassus</i>	Cyst/Worm	Large white short worms
Body Cavity & Air				
Bladder	N.	Nematoda	Worm	Long skinny round worms
Liver	Liver	Cestoda or Nematoda	Cyst/Worm	Cysts and short round worms
Gills	Gills	<i>Salmincola edwardsii</i>	Crustacean	Crab-looking



- LEGEND**
- ★ DIFFUSERS
  - SURVEILLANCE NETWORK PROGRAM
  - STATION LOCATIONS**
  - ▲ FAR-FIELD 1
  - ▲ FAR-FIELD 2
  - ▲ FAR-FIELD A
  - ▲ FAR-FIELD B
  - ◆ LAC DE GRAS OUTLET
  - ⊕ LAC DU SAUVAGE
  - ⊕ LAC DU SAUVAGE OUTLET
  - MID-FIELD 1
  - MID-FIELD 2
  - MID-FIELD 3
  - NEAR-FIELD
- 2019 FISH SAMPLING AREA TRANSECTS**
  - FAR-FIELD 1
  - FAR-FIELD 2
  - FAR-FIELD A
  - FAR-FIELD B
  - MID-FIELD 3
  - NEAR-FIELD
  - FLOW DIRECTION
  - WATERCOURSE
  - DIAVIK FOOTPRINT
  - WATERBODY



**REFERENCE(S)**  
 HYDROGRAPHY DATA OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.  
 PROJECTION: UTM ZONE 12 DATUM: NAD 83

CLIENT	<b>RioTinto</b>	
CONSULTANT	YYYY-MM-DD	2020-04-28
	DESIGNED	LJ
	PREPARED	LMS
	REVIEWED	LJ
	APPROVED	ZK

PROJECT	DIAVIK DIAMOND MINES INC.		
TITLE	<b>SAMPLING STATIONS, 2019 AEMP</b>		
PROJECT NO.	PHASE	REV.	FIGURE
19115664	8000	0	1-2

PATH: I:\CLIENTS\DIAMONK\1645\Map\Products\Fish\AEMP\_2019\Fig1\_2\_2019\_AEMP\_SamplingStations\_Rev0.mxd PRINTED ON: 2020-04-28 AT: 8:32:19 AM  
 IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



**GOLDER**  
MEMBER OF WSP

# Responses to Parasite Information Requests

2021 DIAVIK DIAMOND MINE AEMP TRADITIONAL KNOWLEDGE CAMP FOLLOW-UP INFORMATION

Golder Reference No. 21452119-2208-PP-RevA-8000

Diavik Work Plan No. 703 Rev.0

Diavik PO No. 3104699646

19 November 2021

Prepared By: Rainie Sharpe

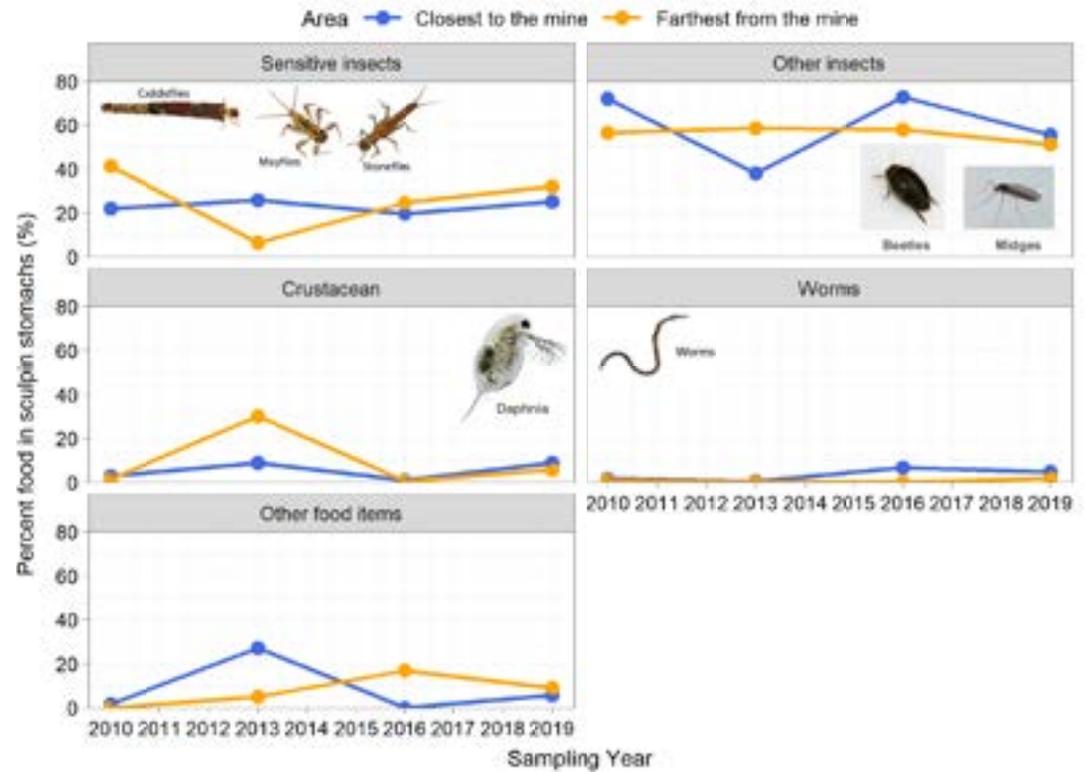
Reviewed By: Zsolt Kovats

# Stomach Content Analysis of All Fish Processed under AEMP

## IS THERE A LINK BETWEEN SLIMY SCULPIN STOMACH CONTENTS AND LARGE BODIED FISH DIET AND/OR HEALTH?

The diet of Slimy Sculpin consisted mostly of insects, including several sensitive species such as mayflies, stoneflies and caddisflies. The second most common food item was crustaceans (for example, copepods and water fleas), followed by worms and other food items (Figure 1). The relative amount of each food item was similar close to and far from the mine, and was fairly consistent over time, with the exception of some minor differences in 2013.

There wouldn't be a direct link between the stomach contents of Slimy Sculpin and large-bodied fish species such as Lake Trout. These species live in different habitats and have different life histories, and while both species prey on invertebrates, Slimy Sculpin do not eat other fish (with the exception of fish eggs).



# Stomach Content Analysis of All Fish Processed under AEMP

## SLIMY SCULPIN STOMACH CONTENTS OVER TIME

Golder. 2011. Aquatic Effects Monitoring Program 2010 Annual Report for the Diavik Diamond Mine, NT. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada.

Golder. 2014. Aquatic Effects Monitoring Program 2013 AEMP Annual Report for the Diavik Diamond Mine, NT. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada. March 2014.

Golder. 2017. Aquatics Effect Monitoring Program 2016 AEMP Annual Report Version 1.1 for the Diavik Diamond Mine, NT. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada. March 2017.

Golder. 2020a Aquatic Effects Monitoring Program 2019 Annual Report. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada. April 2020.

# Stomach Content Analysis of All Fish Processed under AEMP

## LAKE TROUT – TK CAMP

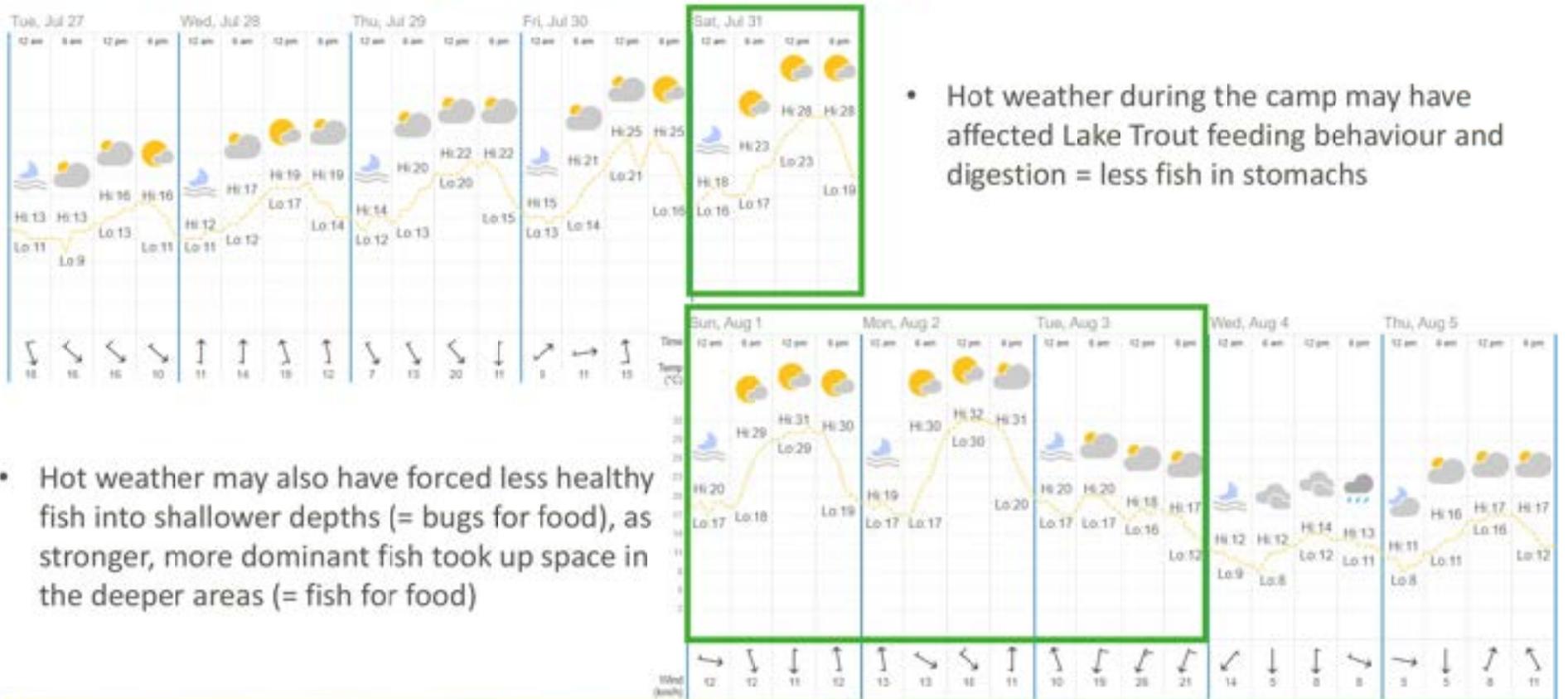
Lake Trout are adaptable predators that feed on a variety of organisms, including invertebrates (i.e., bugs) and smaller fish. Their diets are based on the catchability of different prey species, with bugs being an important component of their diet in northern lakes, where food availability is seasonal and less predictable (e.g., Chavarie et al. 2014). If the majority of Lake Trout sampled during the fish tasting event contained bugs, this would suggest that bugs were the most available prey item prior to capture (please note that photographs from the tasting event indicate that at least one Lake Trout did have fish in their stomach [Photo 1]). The numbers of small fish in the stomachs of Lake Trout does not suggest there has been an impact on fish populations in Lac de Gras, or subsequent impacts on the health of Lake Trout in this system, only that bugs were the most readily available prey prior to capture.

The weather during the camp was very warm, which may also have impacted Lake Trout by altering feeding behaviour and digestion times. Less healthy individuals may have been forced into shallower water (therefore, making them more catchable by camp participants), because healthier stronger individuals took the deep holes.



# Stomach Content Analysis of All Fish Processed under AEMP

## LAKE TROUT – TK CAMP (SUPPORTING INFORMATION)



- Hot weather may also have forced less healthy fish into shallower depths (= bugs for food), as stronger, more dominant fish took up space in the deeper areas (= fish for food)

- Hot weather during the camp may have affected Lake Trout feeding behaviour and digestion = less fish in stomachs

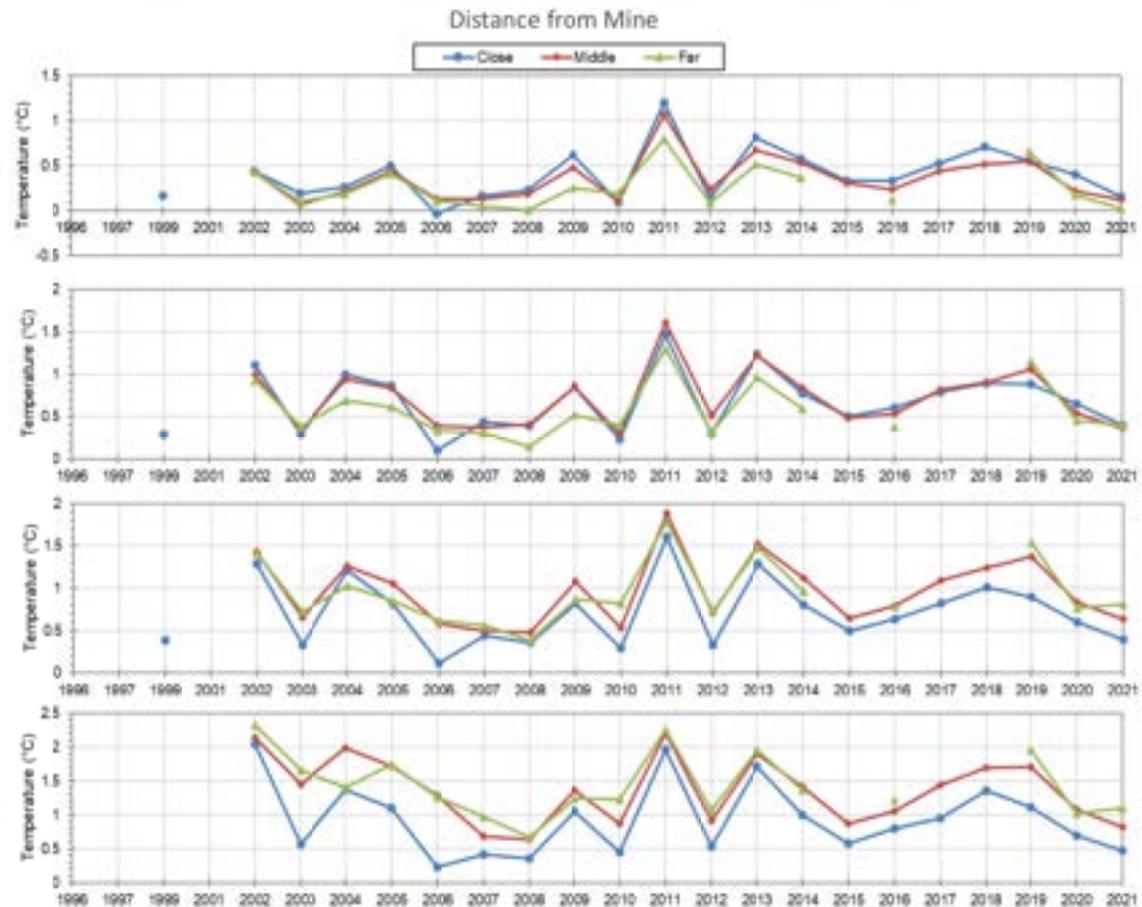
## Temperature of Lac de Gras over Time and Distance from Mine

### OPEN-WATER AND ICE-COVER SEASON WATER TEMPERATURE

- Water temperature in Lac de Gras has been measured every year since 2002 (see following figures):
  - There is some variation among years, probably reflecting the timing of the measurements; for example, temperature would be colder in late September compared to early August
  - There is no obvious increasing or decreasing trend in temperature over time at any depth or location, in either season.
  - Close to the Mine, temperature in deep waters tends to be colder than in other areas of the lake during winter, by about 0.5°C. There isn't enough baseline data to tell whether this is mine-related.

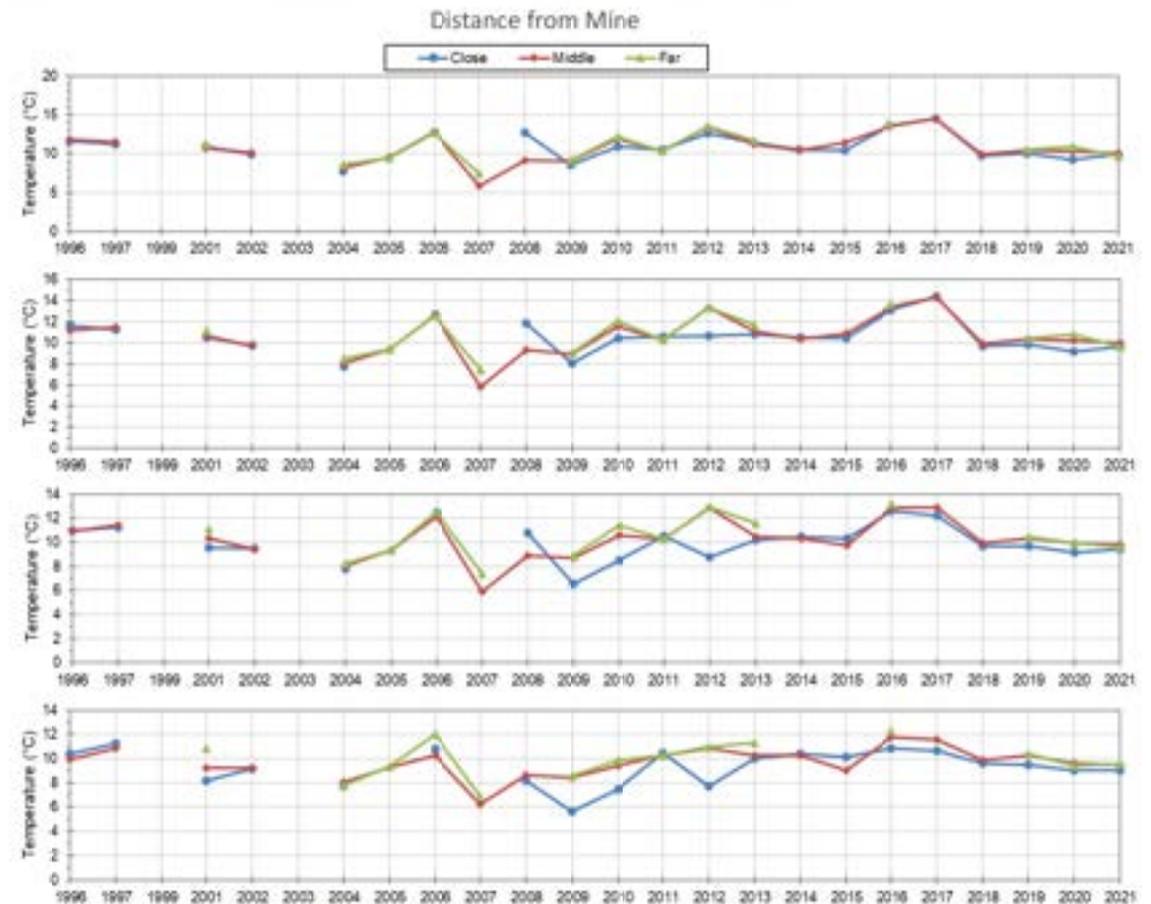
# Temperature of Lac de Gras over Time and Distance from Mine

ICE-COVER SEASON



# Temperature of Lac de Gras over Time and Distance from Mine

OPEN-WATER SEASON



# Results from Small Fish Studies - Parasites

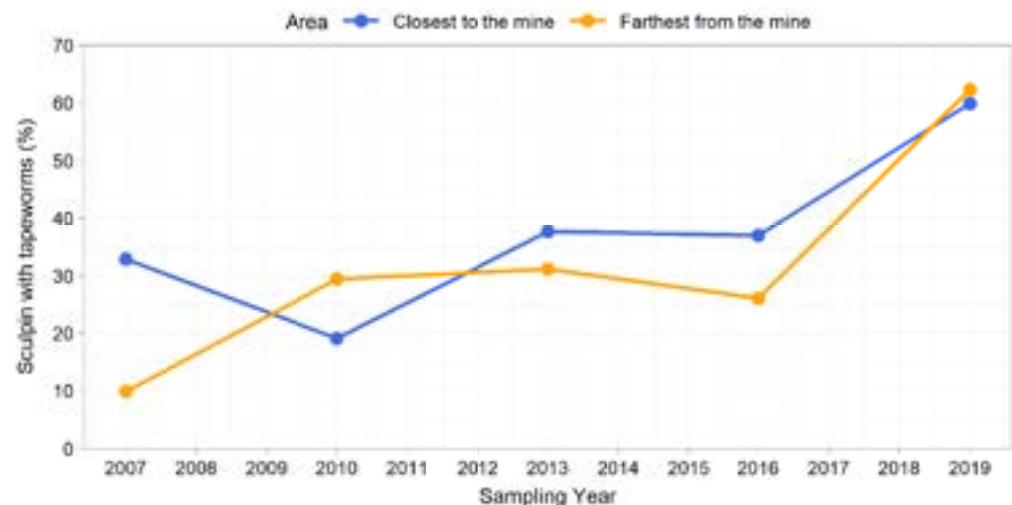
## SLIMY SCULPIN – HISTORICAL PARASITE INFORMATION UNDER AEMP

Information on internal parasites was documented for Slimy Sculpin sampled during the Diavik AEMP in 2007, 2010, 2013, 2016, and 2019 (Golder 2008, 2011, 2014, 2017, 2020a), with trends over time evaluated during the 2017-2019 AEMP Re-evaluation report (Golder 2020b, Section 10.2.2.4).

Slimy Sculpin in Lac de Gras were commonly infected with tapeworms (specifically, the plerocercoid form of *Ligula intestinalis* [CRI 2006]). These tapeworms have a complex life history, first infecting copepods (small crustaceans), then small-bodied fish (such as Slimy Sculpin), and finally fish-eating birds. Once they infect a fish-eating bird, the parasites release their eggs into the water through the bird's feces, repeating the cycle.

The number of Slimy Sculpin infected with tapeworms has changed over time, both near the Mine and far from the Mine in Lac de Gras (Figure 2). The number of infected fish varied from 10% to 40% between 2007 and 2016 and then increased to around 60% in both areas in 2019. As similar patterns were observed in both near and far from the Mine, it does not appear to be related to Mine activities. Instead, recent increases in the number of infected fish may reflect more favorable conditions for these parasites in recent years, such as environmental conditions or an increase in the numbers and condition of available hosts (that is, copepods or fish eating birds).

It is unlikely there would be a direct link between parasitism in Slimy Sculpin and large-bodied fish species such as Lake Trout. Most parasites have complex life-histories and require specific host species to reproduce, with the tapeworms found in Slimy Sculpin requiring a fish-eating bird to complete their life cycle, and are unlikely to infect Lake Trout. However, if conditions in recent years have been more favorable for tapeworms infecting Slimy Sculpin, the same may be the case for other species of parasites.



# Toxicity of Surrounding Lakes and Streams

## POSSIBLE INPUTS FROM SURROUNDING ENVIRONMENT

- DDMI has collected water quality data in Lac du Sauvage since 2010. Stream data are not available. Concentrations of all samples from lakes were below guidelines (referred to as Effect Benchmarks) for the protection of aquatic life and drinking water except for:
  - Laboratory pH values were below the drinking water Effects Benchmark of 7 in the majority of samples and below the aquatic life Effects Benchmark of 6.5 in seven samples. This is a normal condition for northern lakes.
  - Total manganese concentrations in two samples were greater than the drinking water Effects Benchmark of 20 µg/L, which is an aesthetic guideline applied to prevent undesirable tastes in beverages and staining of plumbing fixtures and laundry.
- Additional water quality data is also available for Thonokied Lake, Afridi Lake, and Lac du Sauvage for 2016 and 2017 from the Jay Project (Reference Lake Report for the Jay Project):
  - The data for these lakes show that total metals were either below detection limits or, if detected, below AEMP benchmarks, with the exception of lead. A total lead concentration was slightly above the AEMP benchmark of 1 µg/L in one sample collected from Lac du Sauvage. This result is likely anomalous, given the consistency of all other sample results.
- Overall, the data for surrounding lakes indicates that surface waters in the area of the Diavik Mine are non-toxic to aquatic life and people.

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

- Parasites observed in 2021 (field ID):

- Cestodes (Tapeworms):

- Diphyllobothrium* (cyst obs)
- Triaenophorus* (cyst, worm obs)

- Nematodes (Roundworms):

- Raphidascaris acus* (cyst obs)
- Other (worms obs)

- Trematode (Fluke):

- Ichthyocotylurus* (cyst obs)

- Crustacean

- Salmincola edwardsii* (adult obs)

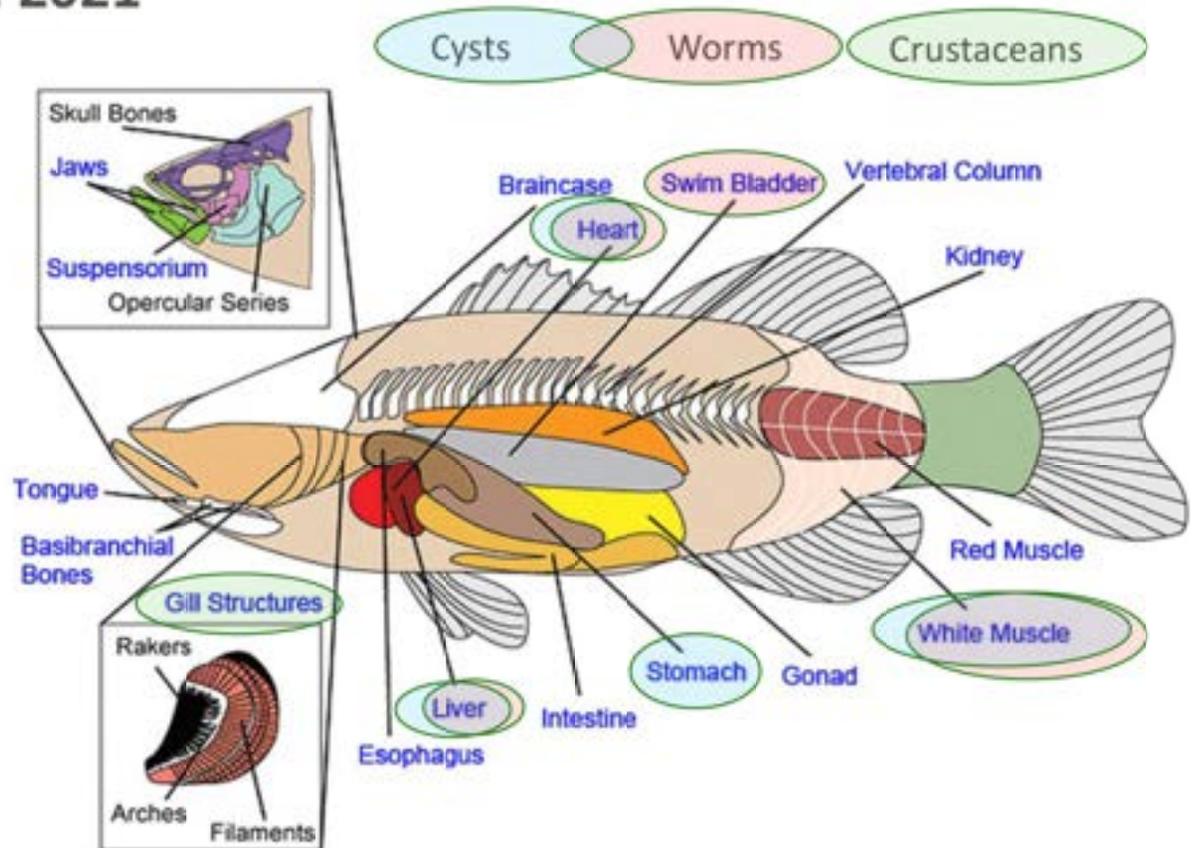


Image credit: [The Anatomy of Fish \(thesprucepets.com\)](http://TheAnatomyofFish.com)

# Parasites and Cysts found in 2021

## 2021 COMPARED TO PREVIOUS YEARS

- Cestodes, Nematodes, Trematodes and Crustaceans were documented in fish before the Mine started operating (1996)
- Consistent with early years of operation (2002, 2003, 2005)
- Consistent with subsequent TK camps (2008, 2012, 2015, 2018)

*"The stomach, which is typically cooked and consumed, was not eaten from the fish because of large numbers of parasitic cysts."*

*- 2009 Community-based Monitoring Camp Report*

*"Cysts along the outer stomach wall and esophagus. I see this a lot and it is ok. This is very normal."*

*- Paul Vecsei, Golder*

*- 2015 AEMP Traditional Knowledge Studies Report*

*"We saw yesterday one of the ones that had the big head and tapered body. There was no mass to it whatsoever. When we opened it up, it had no fat on the stomach, an enlarged gallbladder, and a lot of worms. My overall impression is that it would not be too favourable as the proportions were all wrong."*

*- Elder Adrian D'Hont, North Slave Métis Alliance*

*- 2012 Community-based Monitoring Camp Report*

*"Bigger fish are generally skinner."*

- **Elder Madelaine Drybones, Łutsel K'e Dene First Nation**
- 2012 AEMP Traditional Knowledge Study Report

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Cestodes (Tapeworm)

- *Diphyllobothrium* are taken up by fish after eating infected planktonic copepods (e.g., *Cyclops*, *Diaptomus*). Two of the three possible *Diphyllobothrium* species in the NWT may infect humans and dogs; *D. dendriticum* is more common and short-lived, *D. latum* is longer lasting but easily treated – neither is life threatening. Cysts are normally found in fish muscle and are killed with thorough cooking or freezing to -21°C.
- *Triaenophorus* are taken up by fish after eating infected planktonic copepods (e.g., *Cyclops*) and are common in freshwater fish species in the Northwest Territories and are harmless to humans but can affect the value of infested fish. Larvae of *T. crassus* encyst in the muscle of a variety of salmonids. Larvae inside the cysts are thin, ribbon-like worms several cm in length.



Photos of Lake Trout 22 (LT22) muscle parasites (suspected Cestodes).

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Nematodes (Round worm)

- ***Raphidascaris acus*** is in Class Nematoda (round worms). They are found in the digestive tract, body cavity, swimbladder, gonads and liver. Most salmonids are infected by adult worms which cause limited tissue damage. Migrating larvae can cause considerable damage to organs (e.g., liver). **These parasites do not infect humans or dogs, but they can affect fish health.**
- **Other** - These transparent or white, unsegmented worms are widely distributed in freshwater fishes in the Northwest Territories and Nunavut. Common representative genera include *Cystidicola*, *Hysterothylacium*, *Philonema*, and *aphidascaris*. They are found in the digestive tract, body cavity, swimbladder, gonads and liver. Most salmonids are infected by adult worms which cause limited tissue damage. Migrating larvae can cause considerable damage to organs. **These parasites do not infect humans or dogs, but they can affect fish health.**



Photo of Lake Trout 12 (LT12) internal organs and parasites (Cysts).

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Trematodes (Flukes)

- *Ichthyocotylurus* is in Class Trematoda (flukes). These small parasites infect the internal organs of a variety of salmonids in the Northwest Territories and Nunavut. Their occurrence is likely widespread, geographically and in terms of fish species but, because of their small size, they are seldom seen. The adults attach to their hosts using suckers on their front end and belly (anterior and ventral surfaces). Representatives of the genera, *Crepidostomum*, *Diplostomum*, and *Ichthyocotylurus* infect freshwater fishes in the region. They have an indirect life cycle with at least one intermediate host, typically a snail or clam. Larvae (metacercaria) of *I. erraticus* form tiny cysts, usually on the heart, of least cisco and broad and lake whitefish in the western Arctic. These larvae develop into adults in fish-eating birds. **These parasites do not infect humans or dogs but can affect fish health.**



Photo of Lake Trout 21 (LT21) heart and parasites (Cysts).

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Crustaceans (Copepods)

- *Salmincola edwardsii* (Subphylum Crustacea) - The genus *Salmincola* has a circumpolar distribution and its members are relatively common on salmonids in the region. *S. edwardsii* attach to the gills of lake trout and do not have an intermediate host. *Salmincola* have free-swimming larvae that attach themselves to the outer surface of the fish. These larvae move and shed (molt) their outer surface several times before maturing to adults. During the final larval stage the larger female attaches itself permanently to the fish using a large, circular anchor or *bulla*. Sexual reproduction occurs during this stage or as an adult. The tiny male then disappears, and the female remains to feed on gill and/or skin tissue and to shed eggs into the water from her two egg sacs. The adult females are typically about a centimetre in body length. Heavy *Salmincola* infestations can lead to secondary infections that kill the fish. Some lake trout have over 50 *S. edwardsii* on their gills. These parasites do not infect humans or dogs but can affect fish health and the value of infested fish.



Photo credit: [Salmincola edwardsii on the gills of an Arctic charr photo credit DB Stewart.png \(720x506\) \(researchgate.net\)](#)

# Caribou - Parasites

## DISCUSS PARASITES IN CARIBOU

Parasite species such as warble and bot flies and different worms are common in caribou and occur naturally (GNWT 2017). Caribou cows are believed to be susceptible to some worm parasites during calving because cows are more concentrated and closer together at this time and calving and milk production lowers the immune response that inhibits parasite egg production and increases the risk of infection (Gunn and Dragon 2002).

Caribou parasites such as flies and worms have a life-cycle stage that occurs outside the animal's body. Weather conditions that are more favorable to survival of either adults or larval parasite stages may increase the abundance of infectious parasites or the length of time when caribou can become infected (Gunn and Dragon 2002). For example, Gunn and Dragon (2002) suggested that the predicted increase in global temperatures may favour the emergence and survival of worm larvae and increase caribou exposure to infection. Alternatively, increasing trends in muskoxen abundance in the NWT (Culyer et al. 2020), who's range and parasite species overlap with caribou, could also increase the infection risk to caribou (Hughes et al 2009). These suggestions are consistent with an increasing trend in parasites noted by Traditional Knowledge holders at the 2021 Traditional Knowledge camp. An increasing trend in caribou with parasites would be driven by natural factors, such as weather and muskox numbers, operating over very large areas and long periods of time and not the result of the Diavik Mine.

# Caribou - Parasites

## REFERENCES

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**TECHNICAL MEMORANDUM****DATE** 14 March 2022**Reference No.** 22511717-2325-TM-Rev0-1000**DIAVIK WORK PLAN No. 683 Rev. 0****DIAVIK PO No. 3104816260****TO** Kofi Boa-Antwi, MSc RPBio, Superintendent, Environment  
Diavik Diamond Mines (2012) Inc.**CC** Goodman, Nicole (DDMI) <Nicole.Goodman@riotinto.com>; Ritgen, Dominic (DDMI)  
<Dominic.Ritgen@riotinto.com>; Gray, Kyla (DDMI) <Kyla.Gray@riotinto.com>**FROM** Rainie Sharpe, Zsolt Kovats**EMAIL** Rainie\_Sharpe@golder.com,  
Zsolt\_Kovats@golder.com**DIAVIK 2021 TRADITIONAL KNOWLEDGE CAMP – PARASITE SUMMARY**

At the request of Diavik Diamond Mines (2012) Inc. (DDMI), this technical memorandum summarizes the fish health results of the 2021 Traditional Knowledge Camp (TK camp) in support of the Aquatic Effects Monitoring Plan (AEMP) for the Diavik Diamond Mine (the Mine). The fish health data are summarized herein and provided in the Attachment 1.

**1.0 BACKGROUND**

The 2021 TK camp occurred from 31 July to 5 August 2021 on the southeast side of Lac de Gras (approximately 2 km from the Mine). Fishing activities undertaken at the TK camp targeted Lake Trout (*Salvelinus namaycush*) by angling and setting gill nets, with subsequent fish health and palatability assessments being completed by the camp participants and Elders. Towards the end of the TK camp, it was decided by DDMI and Golder staff that some representative parasite samples would be collected, preserved in 10% buffered formalin, and shipped to Biologica Environmental Services, Ltd. (Biologica) in Victoria, BC, for identification. The data associated with the fish health portion of the camp, including parasite field identifications, were compiled by Golder staff (i.e., Monica Redmond) during the camp and are reported herein.

**2.0 SUMMARY OF RESULTS**

Fishing effort data from the 2021 TK camp are presented in Table 1. Fish were collected by both angling and gill nets from multiple locations in Lac de Gras. A total of 30 Lake Trout were captured or observed, and no other fish species were documented during the 2021 TK camp.

**Table 1. Fishing Effort Data from the 2021 Traditional Knowledge Camp**

Effort Number	Gear Type	Lure	Net Mesh Size (in)	Location	Coordinates	Date	Set Time	Pull Time	Min Depth (m)	Max Depth (m)	Distance from Shore (m)	Habitat Type	Surface Water Temp. (°C)	pH	LKTR Caught	LKTR Released	LKTR Observed	Other Species	Total Fish	Comments
AL1	1 Rod	barbless	NA	Camp	12W 541071 E 7152194 N	31-Jul	18:00	18:15	1	3	4	BO, shoreline, bay	-	-	1	0	1	No	2	-
AL2	2 Rods	barbed	NA	Mine	12W 535584 E 7153547 N	01-Aug	12:00	12:06	3	10	Near	BO, near shore, NW of Diavik Diffusers & treated water effluent	-	-	1	0	0	No	1	-
GN1	Gill Net	NA	3	Mine	12W 535584 E 7153547 N	01-Aug	10:40	14:45	3	10	Near	BO, near shore, NW of Diavik Diffusers & treated water effluent	-	-	6	2	0	No	8	Small bay near mine pit, right by shore. South toe of airport peninsula, extending East from shore into deeper water.
GN2	Gill Net	NA	3	North of TK Camp	12W 541082 E 7153175 N	01-Aug	11:11	14:00	-	Deep	100	Cold water, deep.	26.5	7.2	3	1	1	No	5	Net running perpendicular to shore. Wx clear, sunny, calm waves, light wind. Near a string of islands.
GN3	Gill Net	NA	3	NE of Mine	12W 534610 E 7148111 N	02-Aug	11:12	13:12	3	10	60	BO, next to island, extends North to mine	26.5	7.2	0	0	0	No	0	-
AL3	2 Rods	-	NA	NE of Mine	12W 534610 E 7148111 N	02-Aug	11:30	13:15	3	10	60	BO, next to island, extends North to mine	-	-	3	0	2	No	5	Dipnet developed a hole that lost fish
AL4	3 Rods	-	NA	Bay across from Camp	12W 540970 E 7152424 N	03-Aug	11:44	12:50	0.5	3	5	BO, shoreline, bay	13.5	8.3	2	0	1	No	3	Windy, overcast. Sheltered from wind
AL5	4 Rods	-	NA	Bay across from Camp	12W 540970 E 7152424 N	04-Aug	15:30	17:00	0.5	3	5	BO, shoreline, bay	-	-	0	0	2	No	2	Windy, overcast. Sheltered from wind
GN4	Gill Net	NA	3	Between Camp and Mine	12W 540018 E 7152570 N	05-Aug	10:41	12:03	3	10	200	Small exposed BO island set opposite from shore	-	-	1	0	0	No	1	Windy, overcast.
AL6	4 Rods	-	NA	Between Camp and Mine	12W 539468 E 7153498 N	05-Aug	11:50	10:50	0.5	5	1 - 15	Off of an island both by shore and by boat	-	-	2	0	1	No	3	Windy, overcast.

Notes:  
 TK = Traditional Knowledge; BO = boulders; LKTR = Lake Trout; NNST = Ninespine Stickleback; NA = not applicable; - = not collected or no data available; AL = angling with lure; GN = gill net; F = female; M = male.

A total of 17 fish were assessed for fish health in 2021 (Table 2). Of these 17 fish, 10 fish had aging structures successfully collected and processed for age determinations; Lake Trout captured in 2021 ranged in age from 12 to 30 years old. Fish weights ranged from 865 to 7,270 g and total lengths ranged from 495 to 952 mm. Nine of the Lake Trout assessed were female fish, and eight were males; of these, all but one juvenile fish were determined to be adults. The majority of fish only had bugs in their stomachs, which was of concern to Elders and camp participants, however two fish were documented to also have fish in their stomachs (i.e., one Lake Trout had a Ninespine Stickleback in its stomach, and one Lake Trout had a smaller Lake Trout in its stomach). Lake Trout gonad weights ranged from 0.005 g to 115 g for females and <0.005 g to 0.155 g for males, and liver weights ranged from 0.005 g to 0.080 g for females and 0.010 g to 0.030 g in males. Condition was comparable between female and male Lake Trout, ranging from 0.79 to 1.27 in all fish. Gonadosomatic index (GSI) was more variable between the sexes, with a male fish having the largest documented GSI of 4.01, and a female having the smallest documented GSI of 0.21. Liversomatic index was more comparable between males and females, with values ranging from approximately 0.43 to 1.17 in all fish.

Parasites were observed in or on at least one organ (i.e., the gill, stomach, heart, muscle, liver) or within the body cavity of most Lake Trout captured in 2021. During the TK camp, Monica Redmond used a field guide (i.e., Stewart and Bernier 1999) to identify parasites observed in the fish processed as part of the camp and documented these field parasite identifications alongside the fish health data. Biologica identified each parasite sample to the best achievable level (e.g., genus or species) and provided these data to DDMI in January 2022. The field parasite identifications are presented alongside the laboratory parasite identifications in Table 2, and photographs are presented in Attachment 1.

**Table 2. Fish Data Collected During the 2021 Traditional Knowledge Camp**

Effort Data				Fish Measurements - Field Data			Fish Health Assessment - Field Data						Fish Health Indices - Calculated			Parasites - Field(a) and Laboratory(b) Identification								Comments		
Date	Effort	Fish #	Species	Age	Total Weight (g)	Fork Length (mm)	Total Length (mm)	Life History	Gonad Development Stage	Sex	Stomach % Fullness	Stomach Contents	Gonad Weight (g)	Liver Weight (g)	Condition	Gonadosomatic Index	Liversomatic Index	Gill - Salmiccola edwardsii	Stomach (Outside) - Diphyllobothrium	Stomach (Outside) - Raphidascaris acus	Stomach (Inside) - Unidentified	Heart - Ichthyocotylurus	Muscle - Triaenophorus		Body Cavity - Nematoda	Liver - Cestoda or Nematoda
																		-	Diphyllobothrium sp., Nematoda indet., Cestoda indet.	-	Unidentified cysts	Triaenophorus sp.	Nematoda indet.		Diphyllobothrium sp.	
01-Aug-21	AL2	LT2-4	LKTR	26	4705.0	821	885	Adult	Resting	F	25	Bugs	0.020	0.025	0.85	0.43	0.53	No	Yes	No	No	No	NC	No	No	Fair, skinny, dark gall bladder
01-Aug-21	GN2	LT3	LKTR	30	6185.0	835	906	Adult	NC	F	100	LKTR	0.080	0.060	1.06	1.29	0.97	No	Few	No	No	No	NC	No	No	Good
01-Aug-21	GN2	LT4	LKTR	-	3500.0	650	705	Adult	NC	M	25	Bugs	0.110	0.015	1.27	3.14	0.43	No	Yes	No	No	Cysts	NC	No	Yes	Good, moderate parasites, coffee coloured liver
01-Aug-21	GN1	LT5	LKTR	26	4805.0	824	888	Adult	Resting	F	NA	Bugs	0.010	0.030	0.86	0.21	0.62	No	Few	No	No	No	NC	No	No	Skinny, coffee coloured liver
01-Aug-21	GN1	LT6	LKTR	25	7270.0	866	945	Adult	Late Stage	F	25	NNST	0.115	0.080	1.12	1.58	1.10	No	Few	Few	No	No	NC	No	Yes	Good, some parasites, coffee coloured liver
01-Aug-21	GN1	LT7-4	LKTR	21	3865.0	696	756	Adult	Late Stage	M	100	Bugs	0.155	0.030	1.15	4.01	0.78	No	Few	Few	No	Cysts	NC	No	No	Good, some parasites
01-Aug-21	GN2	LT8-4	LKTR	-	2380.0	653	715	Adult	Early Stage	M	100	Bugs	0.015	0.020	0.85	0.63	0.84	No	Moderate	Few	Yes	No	NC	No	No	External good, coffee coloured liver
01-Aug-21	GN1	LT9	LKTR	17	2745.0	678	740	Adult	Resting	M	50	Bugs	0.010	0.015	0.88	0.36	0.55	One	Moderate	Few	No	No	NC	No	No	Good external, moderate parasites
01-Aug-21	GN1	LT10	LKTR	-	1555.0	522	578	Adult	Late Stage	F	100	Bugs	0.010	0.010	1.09	0.64	0.64	No	Moderate	Few	No	Worms	NC	No	No	Good external, moderate parasites
01-Aug-21	GN1	LT11	LKTR	16	2140.0	615	673	Adult	Late Stage	F	100	Bugs	0.045	0.025	0.92	2.10	1.17	No	Moderate	Few	Yes	Cysts	NC	Yes	No	Good external, many parasites
01-Aug-21	GN1	LT12	LKTR	-	2850.0	677	735	Adult	Resting	M	75	Bugs	0.015	0.025	0.92	0.53	0.88	Many	Moderate-High	Few	Yes	No	Yes	No	No	Poor, skinny, many parasites, right gills eroded, first gill eroded significantly, eroded gill plate, gill parasites
01-Aug-21	GN1	LT13-4	LKTR	-	1100.0	468	510	Juvenile	Immature	M	100	Bugs	<0.005	0.010	1.07	-	0.91	No	Moderate	Few	Yes	No	No	No	Yes	Many parasites
01-Aug-21	GN1	LT14	LKTR	-	5340.0	877	952	Adult	NC	F	0	NA	0.105	0.030	0.79	1.97	0.56	No	Moderate	Few	No	No	NC	No	No	Moderate parasites, coffee coloured liver
02-Aug-21	AL3	LT15	LKTR	20	2370.0	641	695	Adult	Resting	M	100	Bugs	0.010	0.025	0.90	0.42	1.05	No	Moderate-High	Moderate	Yes	Cysts	Yes	No	No	Good external, skinny, coffee coloured liver
02-Aug-21	AL3	LT16-4	LKTR	17	2375.0	606	654	Adult	Early Stage	F	100	Bugs	0.025	0.020	1.07	1.05	0.84	No	Moderate-High	Moderate	Yes	Cysts	Moderate	No	Moderate	Good external, skinny
03-Aug-21	AL4	LT18	LKTR	-	3065.0	710	775	Adult	Resting	M	25	Bugs	0.010	0.015	0.86	0.33	0.49	No	Few	Few	NC	No	Yes	No	No	Good external, skinny, coffee coloured liver
03-Aug-21	AL4	LT19	LKTR	12	865.0	446	495	Adult	Late Stage	F	10	Bugs	0.005	0.005	0.98	0.58	0.58	No	High	High	No	Cysts	Numerous	No	Numerous	Great external, healthy-looking, meaty

Notes:

LKTR = Lake Trout; NNST = Ninespine Stickleback; < = less than; NA = not applicable; NC = not collected; - = no data available; AL = angling with lure; GN = gill net; F = female; M = male; indet = indeterminate (unable to identify further).

(A) Field parasite identifications were completed by an experienced fisheries field biologist during the 2021 Traditional Knowledge Camp using Stewart and Bernier (1999) as a field guide.

(B) Laboratory parasite identifications are indicated by grey shading and were completed by Biologica Environmental Services, Ltd in Victoria, BC, Canada on preserved samples that were shipped following the completion of the field program.

Reference: Stewart DB and Bernier LMJ. 1999. Common Parasites, Diseases and Injuries of Freshwater Fishes in the Northwest Territories and Nunavut. Department of Fisheries and Oceans, Central and Arctic Region. Winnipeg, MB, Canada.

The predominant parasites observed in 2021, organized by location in the body they were observed, are as follows:

- Gill
  - *Salmincola edwardsii*, which are small crustaceans, with a crab-like appearance
- Stomach
  - *Diphyllbothrium*, which are orange-coloured cysts that are lumpy in appearance (Attachment 1, Photo 1A, Photo 1B).
  - *Raphidascaris acus*, which are silver-coloured cysts that are round in appearance
- Heart
  - *Ichthyocotylurus*, which are tiny, white-coloured cysts, which were observed in high numbers clustered together on the heart (Attachment 1, Photo 2)
- Muscle
  - *Triaenophorus*, which are large and short, white-coloured worms observed in the muscle tissue (Attachment 1, Photo 3)
- Body Cavity
  - Nematodes, which were observed as long skinny, round worms within the body cavity
- Liver
  - Cysts and short, skinny round worms were observed in the liver tissue (Attachment 1, Photo 4)
  - *Diphyllbothrium* were identified by Biologica from liver samples

All parasite identifications by Biologica in the laboratory were in agreement with the field identifications performed by Golder staff using the field guide by Steward and Bernier (1999).

## 2.0 CLOSURE

We trust the above meets your present requirements. If you have any questions or requirements, please contact the undersigned.

**Golder Associates Ltd.**

### ORIGINAL SIGNED

Rainie Sharpe, MSc PhD PBIOL RPBio  
*Project Manager*

RLS, ZK,jlb

### ORIGINAL SIGNED

Zsolt Kovats, MSc  
*Project Director*

Attachments: Attachment 1: Photographs

[https://golderassociates.sharepoint.com/sites/157917/phase 1000/05 technical work/02\\_tkcamp\\_parasite\\_summary/22511717-2325-tm-rev0-1000-tk camp parasite summary 14mar\\_22.docx](https://golderassociates.sharepoint.com/sites/157917/phase%201000/05%20technical%20work/02_tkcamp_parasite_summary/22511717-2325-tm-rev0-1000-tk%20camp%20parasite%20summary%2014mar_22.docx)

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## 3.0 REFERENCES

Stewart DB and Bernier LMJ. 1999. Common Parasites, Diseases and Injuries of Freshwater Fishes in the Northwest Territories and Nunavut. Department of Fisheries and Oceans, Central and Arctic Region. Winnipeg, MB, Canada.

**ATTACHMENT 1**

**Photographs**



Photo 1A: *Diphyllobothrium* observed on Lake Trout stomach.

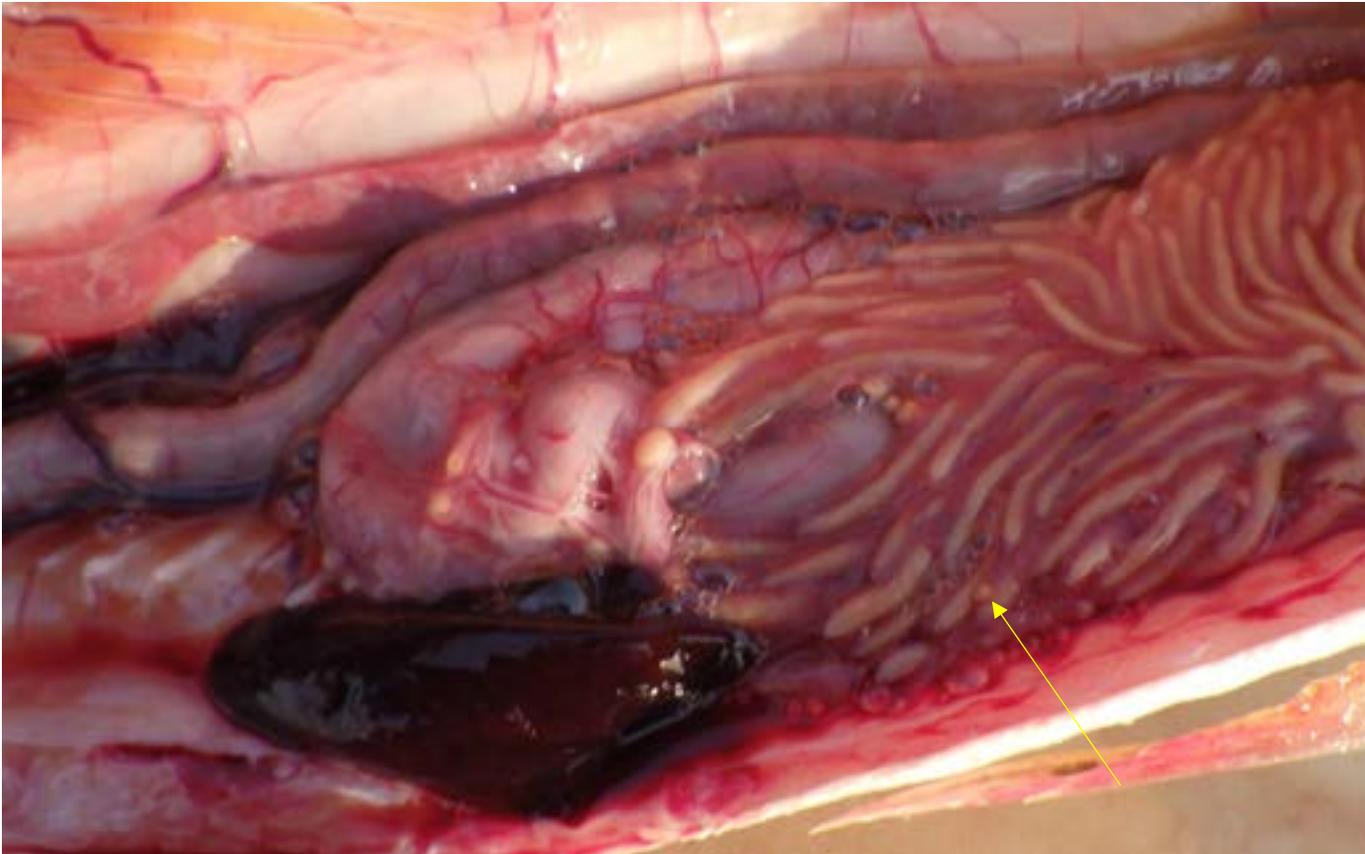


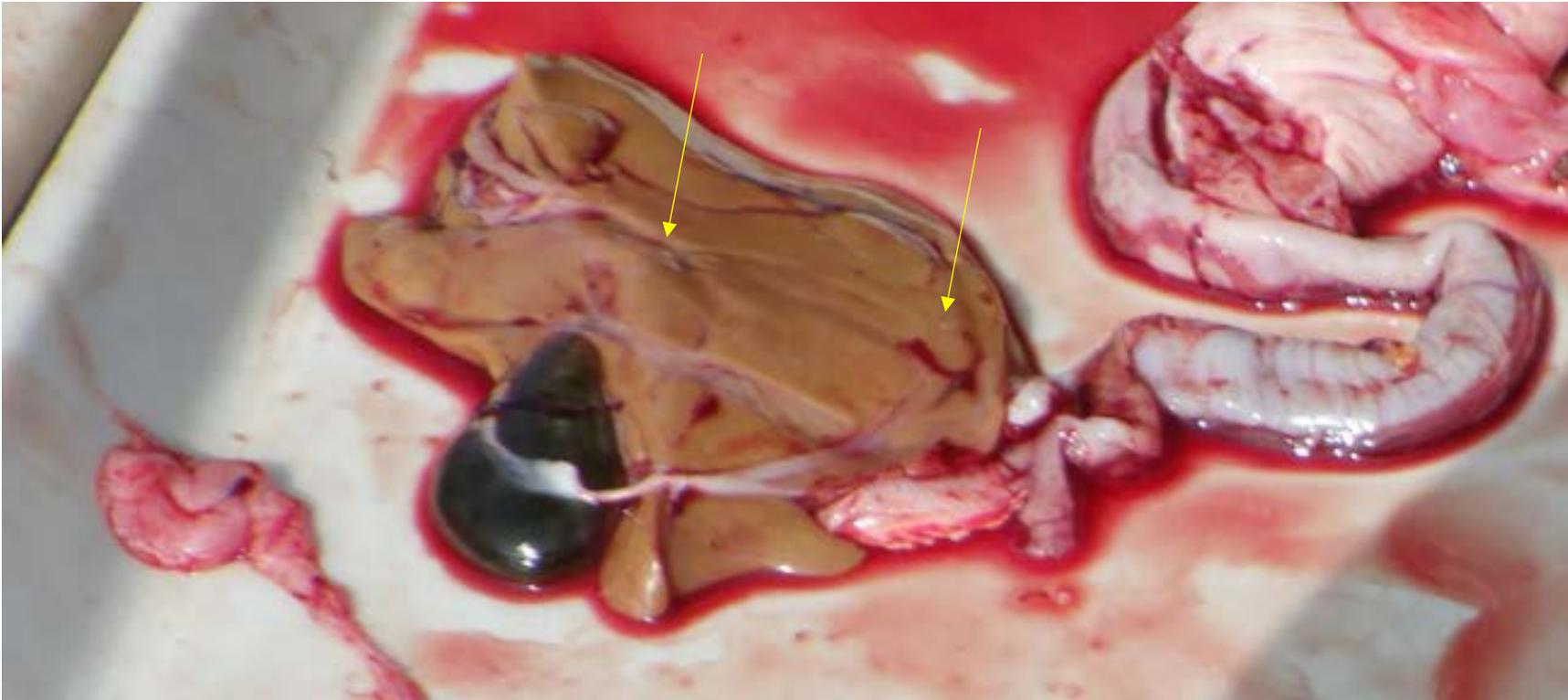
Photo 1B: *Diphyllobothrium* observed on Lake Trout stomach.



Photo 2: *Ichthyocotylurus* observed on Lake Trout heart tissue.



Photo 3: *Triaenophorus* observed in Lake Trout muscle tissue.



**Photo 4: Cysts and short, skinny round worms observed in Lake Trout liver.**

## Appendix H Completed TK Water Quality Forms

Entered Sept. 17, 2021, SK.

# Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

# Tea Test

- Good Tea
- Average Tea
- Poor Tea

\* usually would get spring water for will, not where beaver dam for example, looking for natural spring water

Sample #: 1-1  
 Location/Depth: 2 m  
 Date: August 6 2021

# Water Quality

# Colour

- Blue
- Green
- Murky/Yellow

Dark, deep water, dark blue

# Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

YKDFN  
 Sarah for Kelsey  
 - tastes clear, tastes okay → after when first tasted boiled water, tasted stale.  
 YKDFN  
 Recorded by Sarah for Kelsey

Dark, but could see hand

# Movement

- Still Water
- Some
- Running Water
- movement

calm.

Entered spt 17 2021 SR.

Both spat out the water  
Clear

Jack + Nancy  
Vikki

KIA

### Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

### Tea Test

Plain Tea

- Good Tea
- Average Tea
- Poor Tea
- Clear Tea

Sample #: 1-1  
 Location/Depth: 2m  
 Date: August 6, 2021

## Water Quality

Other comments: Can only taste only smoke. Clear water and taste smoke

### Colour

- <sup>Dark</sup> Blue
- Green
- Murky/Yellow Clear

### Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

### Movement

- Still Water
- Some movement
- Running Water

Entered Sept 17 2021 SR.

# Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

Boiled water: Taste boiled  
Regular water: Good

# Tea Test

- Good Tea
- Average Tea
- Poor Tea

2M

Sample #: ~~1-2-3~~ <sup>1-1</sup>

Location/Depth: 13m <sup>2m</sup> (~~2, 6, 11m~~)

Date: August 5, 2021

# Water Quality

# Colour

- Blue
- Green
- Murky/Yellow

Kathy, NSMA

# Clarity

13m

- Deep water, can not see bottom.
- See bottom of water
  - Murky
  - Cannot see your hand in the water

# Movement

- Still Water
- Some
- Running Water
- movement

Entered Sept. 17, 2021, SR.

## Temperature & Depth

- Cold     Average     Warm
- Deep     Average     Shallow

## Tea Test

- Good Tea     Average Tea
- Poor Tea

just like the water  
- my mouth is oily

FRESH WATER  
- don't want to taste  
BOILED WATER  
(like warm to taste)  
looks yellowish in the  
paper cup  
taste smooth  
and oily  
all the way  
down to my  
throat

# Water Quality

## Colour

- Blue     Green
- Murky/Yellow

Sample #: 1-1 - taste test

Location/Depth: 2m

Date: August 7 2021

Marie Adele (Ticho)  
recorder: myra

## Clarity

- See bottom of water     Murky
- Cannot see your hand in the water

## Movement

- Still Water     Some
- Running Water    movement

Entered Sept. 17 2021 SR.

6M

Water tasting from 6m water near Diavik. 6m below surface

# Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

Cold water from 6m

# Tea Test

- Good Tea
- Average Tea
- Poor Tea

it tastes like tea but kind of stale.

Tasted cold water not boiled Tasted like normal water found only two bugs

Sample #: 1-2  
 Location/Depth: 6m  
 Date: August 7 2021

# Water Quality

Normal color  
~~Dark~~ water

# Colour

- Blue
- Green
- Murky/Yellow

bits from 6m below

# Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

6m below surface dark blue cannot see hand in water

little dead boiled bugs at bottom of cup or little specks of dirt. six specks of dirt. warm water boiled Taste Kind of stale overall still tastes like water

# Movement

- Still Water
- Some movement
- Running Water

Some movement from waves

Entered Sept. 17 2021 SK

6m

# Temperature & Depth

- Cold     Average     Warm
- Deep     Average     Shallow

Hot clear water: Taste flat →  
 Cold clear water: Good not flat  
 6 live bugs very very tiny reel bugs - cats  
 Specks = 5 could be good bugs

# Tea Test

- Good Tea     Average Tea
- Poor Tea

Sample #: 1 - 2  
 Location/Depth: 6m  
 Date: August 7 2021

Kathy - NSMA

# Water Quality

# Colour

- Blue     Green
- Murky/Yellow

Too deep to see the bottom.

# Clarity

- See bottom of water     Murky
- Cannot see your hand in the water

# Movement

- Still Water     Some
- Running Water    movement

Entered Sept 17 2021, SA.

## Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

## Tea Test

- Good Tea
- Average Tea
- Poor Tea

BOILED WATER:  
 taste hot (temp):  
 doesn't tell you  
 much - no flavor  
 taste lukewarm:  
 "greasy"

COLD (NOT BOILED):  
 some small red bugs  
 - it's the same as  
 in my hometown  
 that's why we  
 filter  
 it  
 (thin cloth)

Sample #: 1-2  
 Location/Depth: 6 m  
 Date: August 7 2021

Tucho - Marie Adele  
 recorder - Myra.

# Water Quality

## Colour

- Blue
- Green
- Murky/Yellow

## Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

## Movement

- Still Water
- Some
- Running Water
- movement

Entered Sept. 17 2021 SR

# Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

What we did the last time we did twice in a row to taste the difference!

It is about the same as warm water. Its good. Never notice any difference.

# Tea Test

- Good Tea
- Average Tea
- Poor Tea

Nancy

KIA

Don't drink caffeinated water

Sample #: 1-2  
 Location/Depth: 6m  
 Date: August 7 2021

Comments: It taste good, I saw a little something but other wise it taste good. In the middle you can almost taste like it is thick, mud, clear water from the bottom.

# Water Quality

## Colour

- Blue
- Green
- Murky/Yellow

Dark Blue

## Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

See a little

## Movement

- Still Water
- Some movement
- Running Water

I would suggest that we do all water samples together instead of waiting until the next day!

Entered Sept 17 2021 SP.

# Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

11 metre below surface

# Tea Test

- Good Tea
- Average Tea
- Poor Tea

MM  
Taste like smoke tea water over the fire overall it taste like Tea

cold water from 11 metre below surface  
little specks of dirt about 13  
Sample #: ~~2-3~~ 1-3  
Location/Depth: 11 metre  
Date: August 7th 2021  
YKDFN

# Water Quality

# Colour

- Blue
- Green
- Murky/Yellow

few boiled bugs or dirt at bottom of cup. counted 13

# Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water from 11 metres

Not boiled.  
Cold water not boiled  
Clear water only found one bug  
taste like normal tap water

# Movement

- Still Water
- Some movement
- Running Water

Dark blue water but in cup it looks clear with little specks of dirt  
water taste like boiled smoke water

you're welcome :)

Entered Sept 17 2021 SR.

11m

# Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

Hot clear water: Smoked water  
 Cold clear water: Good-normal  
 • no bugs

# Tea Test

- Good Tea
- Smokey Average Tea
- Poor Tea

Sample #: 1-3  
 Location/Depth: Across from AZ1  
 Date: August 7, 2021

Kathy - NSMA

# Water Quality

# Colour

- Blue
- Green
- Murky/Yellow

# Clarity

- Too deep to see bottom
- See bottom of water
  - Murky
  - Cannot see your hand in the water

# Movement

- Still Water
- Some movement
- Running Water

Entered Sept 12 2021 SR

# Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

# Tea Test

- Good Tea
- Average Tea
- Poor Tea

BILED:  
same as the  
2m water

NOT BILED:  
one small red  
big (same as  
in our community  
colour lots clear

Sample #: 1-3  
 Location/Depth: 11m  
 Date: August 7 2021

Hicho - Marie Adele  
rec - myra

# Water Quality

# Colour

- Blue
- Green
- Murky/Yellow

# Clarity

- See bottom of water
- Murky
- Cannot see your hand in the water

# Movement

- Still Water
- Some
- Running Water movement

Evaluated Sept 17 2021  
SK.

Cold water: I can taste  
like a fishy bottom.  
Kinda fishy.

KIA

Nancy/Vicki

Don't have caffeinated  
tea

## Temperature & Depth

- Cold
- Average
- Warm
- Deep
- Average
- Shallow

## Tea Test

- Good Tea
- Average Tea
- Poor Tea

Sample #: Ag 1-3

Location/Depth: 11m

Date: August 7 2021

Comments: This one taste like muddy and  
dries up your tongue because of  
the sand. It also feels like it makes your  
mouth dry. It taste earthy

# Water Quality

## Colour

Pink Blue

- Blue
- Green
- Murky/Yellow

## Clarity

See a little

- See bottom of water
- Murky
- Cannot see your hand in the water

## Movement

- Still Water
- Some
- Running Water
- movement

## Appendix I Scientific Water Testing Results



Your P.O. #: 3104474131  
 Your Project #: AEMP  
 Site Location: OPEN WATER  
 Your C.O.C. #: 39816

**Attention: DDMI Environment**

DIAMOND MINES INC.  
 Product Splitting c/o G&G Expe  
 107 Berry St.  
 Yellowknife, NT  
 CANADA X1A2N8

**Report Date: 2021/08/25**  
 Report #: R3063175  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C159819**

**Received: 2021/08/17, 08:00**

Sample Matrix: Water  
 # Samples Received: 3

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Acidity pH 4.5 & pH 8.3 (as CaCO3)	3	N/A	2021/08/19	AB SOP-00005	SM 23 2310 B m
Alkalinity - Low Level	3	N/A	2021/08/20	AB SOP-00005	SM 23 2320 B m
Low level chloride/sulphate by AC	3	N/A	2021/08/19	AB SOP-00020	SM23-4500-Cl/SO4-E m
Carbon (DOC) Lab filtered (1)	3	N/A	2021/08/23	AB SOP-00087	MMCW 119 1996 m
Conductance - Low Level	3	N/A	2021/08/20	AB SOP-00005	SM 23 2510 B m
Fluoride - Low Level	3	N/A	2021/08/20	AB SOP-00005	SM 23 4500-F C m
Hardness Total (calculated as CaCO3) (2)	3	N/A	2021/08/24	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO3)	3	N/A	2021/08/24	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CV-Lab Filtered	2	2021/08/23	2021/08/23	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Dissolved) by CV-Lab Filtered	1	2021/08/23	2021/08/24	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	3	2021/08/23	2021/08/23	AB SOP-00084	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	3	N/A	2021/08/24	BBY WI-00033	Auto Calc
Elements by ICPMS Low Level (dissolved) (3)	3	N/A	2021/08/21	CAL SOP-00265	EPA 6020 m
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	N/A	2021/08/24	BBY WI-00033	Auto Calc
Elements by ICPMS LL (total undigested)	3	N/A	2021/08/21	CAL SOP-00265	EPA 6020 m
Ammonia-N Dissolved, LL (Unfiltered) (4)	3	N/A	2021/08/21	AB SOP-00007	SM 23 4500 NH3 A G m
Ammonia-N Low Level (Preserved)	3	N/A	2021/08/21	AB SOP-00007	SM 23 4500 NH3 A G m
Nitrate + Nitrite-N (calculated) Low Lev	3	N/A	2021/08/20		Auto Calc
Nitrogen (Nitrite - Nitrate) Low Level	3	N/A	2021/08/19	AB SOP-00023	SM 23 4110 B m
pH @25°C (5)	3	N/A	2021/08/20	AB SOP-00005	SM 23 4500-H+B m
Orthophosphate by Konelab (low level) (6)	3	N/A	2021/08/18	AB SOP-00025	SM 23 4500-P A, F m
Total Dissolved Solids (Calculated)	3	N/A	2021/08/24	CAL WI-00053	Auto Calc
Total Dissolved Solids - Low Level	3	2021/08/22	2021/08/22	AB SOP-00065	SM 23 2540 C m
Total Kjeldahl Nitrogen (Dissolved) (7)	3	N/A	2021/08/21		Auto Calc
Total Kjeldahl Nitrogen (Total)	1	N/A	2021/08/20	BBY WI-00033	Auto Calc
Total Kjeldahl Nitrogen (Total)	2	N/A	2021/08/21	BBY WI-00033	Auto Calc
Nitrogen (Dissolved)	3	2021/08/20	2021/08/20	AB SOP-00093	SM 23 4500-N C m
Nitrogen (Total)	3	2021/08/20	2021/08/20	AB SOP-00093	SM 23 4500-N C m
Carbon (Total Organic) (8)	3	N/A	2021/08/23	AB SOP-00087	MMCW 119 1996 m
Phosphorus-P (LL Tot, dissolved) - UF/UP (9)	3	2021/08/20	2021/08/21	AB SOP-00024	SM 23 4500-P A,B,F m
Total Phosphorus - Low Level	3	2021/08/20	2021/08/21	AB SOP-00024	SM 23 4500-P A,B,F m



Your P.O. #: 3104474131  
 Your Project #: AEMP  
 Site Location: OPEN WATER  
 Your C.O.C. #: 39816

**Attention: DDMI Environment**

DIAMOND MINES INC.  
 Product Splitting c/o G&G Expe  
 107 Berry St.  
 Yellowknife, NT  
 CANADA X1A2N8

**Report Date: 2021/08/25**  
 Report #: R3063175  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C159819**

**Received: 2021/08/17, 08:00**

Sample Matrix: Water  
 # Samples Received: 3

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Total Suspended Solids (NFR)	3	2021/08/19	2021/08/19	AB SOP-00061	SM 23 2540 D m
Turbidity	3	N/A	2021/08/20	CAL SOP-00081	SM 23 2130 B m

**Remarks:**

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
- (2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
- (3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
- (4) Dissolved Ammonia > Total Ammonia Imbalance: When applicable, Dissolved Ammonia and Total Ammonia results were reviewed and data quality meets acceptable levels unless otherwise noted.
- (5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.
- (6) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.



Your P.O. #: 3104474131  
Your Project #: AEMP  
Site Location: OPEN WATER  
Your C.O.C. #: 39816

**Attention: DDMI Environment**

DIAMOND MINES INC.  
Product Splitting c/o G&G Expe  
107 Berry St.  
Yellowknife, NT  
CANADA X1A2N8

**Report Date: 2021/08/25**  
Report #: R3063175  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C159819**

**Received: 2021/08/17, 08:00**

- (7) Dissolved TKN > Total TKN Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
- (8) TOC present in the sample should be considered as non-purgeable TOC.
- (9) Dissolved Phosphorus > Total Phosphorus Imbalance: When applicable, Dissolved Phosphorus and Total Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.  
Rhecie Phayouphone, Key Account Specialist  
Email: Rhecie.Phayouphone@bureauveritas.com  
Phone# (403)735-2283

=====  
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



**RESULTS OF CHEMICAL ANALYSES OF WATER**

BV Labs ID		ADY041		ADY042		ADY043		
Sampling Date		2021/08/02 12:35		2021/08/02 11:23		2021/08/02 00:09		
COC Number		39816		39816		39816		
	UNITS	TK1	QC Batch	TK2	QC Batch	TK3	RDL	QC Batch
<b>Calculated Parameters</b>								
Dissolved Hardness (CaCO <sub>3</sub> )	mg/L	8.93	A322192	8.37	A322192	8.66	0.50	A322192
Total Hardness (CaCO <sub>3</sub> )	mg/L	8.37	A323824	7.77	A322191	8.71	0.50	A322191
Nitrate plus Nitrite (N)	mg/L	0.012	A323734	0.15	A323734	0.015	0.0022	A323734
Calculated Total Dissolved Solids	mg/L	16.0	A323295	15.1	A323295	15.3	0.50	A323295
Dissolved Total Kjeldahl Nitrogen (Calc)	mg/L	0.125	A322925	0.139	A322925	0.122	0.020	A322925
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.261	A321959	0.343	A321959	0.306	0.020	A321959
<b>Misc. Inorganics</b>								
Fluoride (F)	mg/L	0.026	A325713	0.025	A325713	0.026	0.010	A325713
Dissolved Organic Carbon (C)	mg/L	2.2	A324808	2.4	A324808	2.5	0.20	A324808
pH	pH	6.15	A325711	6.05	A325711	6.16	N/A	A325711
Acidity (pH 4.5)	mg/L	<1.0	A324750	<1.0	A324750	<1.0	1.0	A324750
Alkalinity (Total as CaCO <sub>3</sub> )	mg/L	4.57	A325710	3.76	A325710	4.47	0.50	A325710
Total Organic Carbon (C)	mg/L	3.2	A324812	3.2	A324812	3.2	0.20	A324812
Acidity (pH 8.3)	mg/L	1.1	A324750	1.3	A324750	1.0	1.0	A324750
Alkalinity (PP as CaCO <sub>3</sub> )	mg/L	<0.50	A325710	<0.50	A325710	<0.50	0.50	A325710
Bicarbonate (HCO <sub>3</sub> )	mg/L	5.58	A325710	4.58	A325710	5.45	0.50	A325710
Carbonate (CO <sub>3</sub> )	mg/L	<0.50	A325710	<0.50	A325710	<0.50	0.50	A325710
Hydroxide (OH)	mg/L	<0.50	A325710	<0.50	A325710	<0.50	0.50	A325710
Total Suspended Solids	mg/L	1.4	A324941	1.5	A324941	1.5	1.0	A324941
<b>Anions</b>								
Orthophosphate (P)	mg/L	<0.0010	A324353	<0.0010	A324353	<0.0010	0.0010	A324353
Dissolved Chloride (Cl)	mg/L	3.3	A324815	2.9	A324815	3.0	0.50	A324815
Dissolved Sulphate (SO <sub>4</sub> )	mg/L	4.1	A324815	3.9	A324815	4.0	0.50	A324815
<b>Nutrients</b>								
Total Ammonia (N)	mg/L	0.019	A327202	0.013	A327202	0.022	0.0050	A327202
Dissolved Nitrite (N)	mg/L	0.0012	A325119	0.0019	A325119	<0.0010	0.0010	A325119
Dissolved Phosphorus (P)	mg/L	<0.0020 (1)	A326385	<0.0020 (1)	A326385	<0.0020 (1)	0.0020	A326385
Total Phosphorus (P)	mg/L	0.0027	A326426	0.0028	A326426	0.0048	0.0020	A326426
Dissolved Nitrate (N)	mg/L	0.011	A325119	0.15	A325119	0.015	0.0020	A325119
RDL = Reportable Detection Limit N/A = Not Applicable (1) Sample filtered and preserved past method specified hold time								



BV Labs Job #: C159819  
 Report Date: 2021/08/25

DIAMOND MINES INC.  
 Client Project #: AEMP  
 Site Location: OPEN WATER  
 Your P.O. #: 3104474131  
 Sampler Initials: TK

**RESULTS OF CHEMICAL ANALYSES OF WATER**

<b>BV Labs ID</b>		ADY041		ADY042		ADY043		
<b>Sampling Date</b>		2021/08/02 12:35		2021/08/02 11:23		2021/08/02 00:09		
<b>COC Number</b>		39816		39816		39816		
	<b>UNITS</b>	<b>TK1</b>	<b>QC Batch</b>	<b>TK2</b>	<b>QC Batch</b>	<b>TK3</b>	<b>RDL</b>	<b>QC Batch</b>
Dissolved Nitrogen (N)	mg/L	0.14	A326113	0.29	A326113	0.14	0.020	A326113
Total Nitrogen (N)	mg/L	0.27	A326101	0.49	A326008	0.32	0.020	A326101
<b>Lab Filtered Nutrients</b>								
Dissolved Ammonia (N)	mg/L	0.024	A326660	0.018	A326660	0.017	0.0050	A326660
<b>Physical Properties</b>								
Conductivity	uS/cm	31.1	A325712	27.2	A325712	29.5	1.0	A325712
<b>Physical Properties</b>								
Turbidity	NTU	0.36	A326372	0.27	A326372	0.28	0.10	A326372
Total Dissolved Solids	mg/L	18.4	A327619	23.6	A327619	17.6	1.0	A327619
RDL = Reportable Detection Limit								



BV Labs Job #: C159819  
 Report Date: 2021/08/25

DIAMOND MINES INC.  
 Client Project #: AEMP  
 Site Location: OPEN WATER  
 Your P.O. #: 3104474131  
 Sampler Initials: TK

**MERCURY BY COLD VAPOR (WATER)**

BV Labs ID		ADY041	ADY042	ADY043		
Sampling Date		2021/08/02 12:35	2021/08/02 11:23	2021/08/02 00:09		
COC Number		39816	39816	39816		
	<b>UNITS</b>	<b>TK1</b>	<b>TK2</b>	<b>TK3</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Elements</b>						
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	A328366
<b>Lab Filtered Elements</b>						
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	A328368
RDL = Reportable Detection Limit						



**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

BV Labs ID		ADY041	ADY042	ADY043		
Sampling Date		2021/08/02 12:35	2021/08/02 11:23	2021/08/02 00:09		
COC Number		39816	39816	39816		
	UNITS	TK1	TK2	TK3	RDL	QC Batch
<b>Dissolved Metals by ICPMS</b>						
Dissolved Aluminum (Al)	ug/L	6.88	6.22	5.27	0.20	A324880
Dissolved Antimony (Sb)	ug/L	<0.020	<0.020	<0.020	0.020	A324880
Dissolved Arsenic (As)	ug/L	0.215	0.219	0.210	0.020	A324880
Dissolved Barium (Ba)	ug/L	2.51	2.10	2.33	0.020	A324880
Dissolved Beryllium (Be)	ug/L	<0.010	<0.010	<0.010	0.010	A324880
Dissolved Bismuth (Bi)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	A324880
Dissolved Boron (B)	ug/L	<5.0	<5.0	<5.0	5.0	A324880
Dissolved Cadmium (Cd)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	A324880
Dissolved Chromium (Cr)	ug/L	<0.050	<0.050	<0.050	0.050	A324880
Dissolved Cobalt (Co)	ug/L	0.0274	0.0349	0.0256	0.0050	A324880
Dissolved Copper (Cu)	ug/L	0.624	0.679	0.584	0.050	A324880
Dissolved Iron (Fe)	ug/L	11.3	11.8	8.5	1.0	A324880
Dissolved Lead (Pb)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	A324880
Dissolved Lithium (Li)	ug/L	1.90	1.73	1.76	0.50	A324880
Dissolved Manganese (Mn)	ug/L	4.29	4.13	3.13	0.050	A324880
Dissolved Molybdenum (Mo)	ug/L	0.416	0.303	0.339	0.050	A324880
Dissolved Nickel (Ni)	ug/L	0.918	1.57	1.08	0.020	A324880
Dissolved Selenium (Se)	ug/L	<0.040	<0.040	<0.040	0.040	A324880
Dissolved Silicon (Si)	ug/L	<50	<50	<50	50	A324880
Dissolved Silver (Ag)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	A324880
Dissolved Strontium (Sr)	ug/L	18.6	16.6	17.9	0.050	A324880
Dissolved Thallium (Tl)	ug/L	0.0025	<0.0020	<0.0020	0.0020	A324880
Dissolved Tin (Sn)	ug/L	0.012	0.035	0.011	0.010	A324880
Dissolved Titanium (Ti)	ug/L	<0.50	<0.50	<0.50	0.50	A324880
Dissolved Uranium (U)	ug/L	0.0608	0.0399	0.0496	0.0020	A324880
Dissolved Vanadium (V)	ug/L	<0.050	<0.050	<0.050	0.050	A324880
Dissolved Zinc (Zn)	ug/L	1.79	1.86	<0.10	0.10	A324880
Dissolved Zirconium (Zr)	ug/L	<0.050	<0.050	<0.050	0.050	A324880
Dissolved Calcium (Ca)	mg/L	1.88	1.77	1.78	0.010	A322609
Dissolved Magnesium (Mg)	mg/L	1.03	0.963	1.03	0.0050	A322609
Dissolved Potassium (K)	mg/L	0.935	0.867	0.924	0.010	A322609
RDL = Reportable Detection Limit						



**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

BV Labs ID		ADY041	ADY042	ADY043		
Sampling Date		2021/08/02 12:35	2021/08/02 11:23	2021/08/02 00:09		
COC Number		39816	39816	39816		
	UNITS	TK1	TK2	TK3	RDL	QC Batch
Dissolved Sodium (Na)	mg/L	1.94	1.73	1.82	0.010	A322609
Dissolved Sulphur (S)	mg/L	0.79	0.68	0.78	0.50	A322609
<b>Total Metals by ICPMS</b>						
Total Aluminum (Al)	ug/L	7.61	8.34	8.76	0.20	A324866
Total Antimony (Sb)	ug/L	<0.020	<0.020	<0.020	0.020	A324866
Total Arsenic (As)	ug/L	0.210	0.196	0.181	0.020	A324866
Total Barium (Ba)	ug/L	2.42	1.99	4.61	0.020	A324866
Total Beryllium (Be)	ug/L	<0.010	<0.010	<0.010	0.010	A324866
Total Bismuth (Bi)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	A324866
Total Boron (B)	ug/L	5.9	<5.0	5.5	5.0	A324866
Total Cadmium (Cd)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	A324866
Total Chromium (Cr)	ug/L	<0.050	<0.050	<0.050	0.050	A324866
Total Cobalt (Co)	ug/L	0.0351	0.0443	0.0512	0.0050	A324866
Total Copper (Cu)	ug/L	0.550	0.670	0.595	0.050	A324866
Total Iron (Fe)	ug/L	13.6	16.0	17.9	1.0	A324866
Total Lead (Pb)	ug/L	<0.0050	0.0062	0.0073	0.0050	A324866
Total Lithium (Li)	ug/L	1.64	1.70	1.84	0.50	A324866
Total Manganese (Mn)	ug/L	6.17	6.68	7.74	0.050	A324866
Total Molybdenum (Mo)	ug/L	0.468	0.292	0.323	0.050	A324866
Total Nickel (Ni)	ug/L	0.868	1.33	1.13	0.020	A324866
Total Selenium (Se)	ug/L	<0.040	<0.040	<0.040	0.040	A324866
Total Silicon (Si)	ug/L	<50	<50	<50	50	A324866
Total Silver (Ag)	ug/L	<0.0050	<0.0050	<0.0050	0.0050	A324866
Total Strontium (Sr)	ug/L	18.8	15.1	17.6	0.050	A324866
Total Thallium (Tl)	ug/L	<0.0020	<0.0020	<0.0020	0.0020	A324866
Total Tin (Sn)	ug/L	<0.010	0.038	0.013	0.010	A324866
Total Titanium (Ti)	ug/L	<0.50	<0.50	<0.50	0.50	A324866
Total Uranium (U)	ug/L	0.0591	0.0424	0.0501	0.0020	A324866
Total Vanadium (V)	ug/L	<0.050	<0.050	<0.050	0.050	A324866
Total Zinc (Zn)	ug/L	<0.10	1.62	<0.10	0.10	A324866
Total Zirconium (Zr)	ug/L	<0.050	<0.050	<0.050	0.050	A324866
Total Calcium (Ca)	mg/L	1.76	1.61	1.82	0.010	A322610
RDL = Reportable Detection Limit						



BV Labs Job #: C159819  
Report Date: 2021/08/25

DIAMOND MINES INC.  
Client Project #: AEMP  
Site Location: OPEN WATER  
Your P.O. #: 3104474131  
Sampler Initials: TK

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		ADY041	ADY042	ADY043		
Sampling Date		2021/08/02 12:35	2021/08/02 11:23	2021/08/02 00:09		
COC Number		39816	39816	39816		
	UNITS	TK1	TK2	TK3	RDL	QC Batch
Total Magnesium (Mg)	mg/L	0.966	0.910	1.01	0.0050	A322610
Total Potassium (K)	mg/L	0.923	0.818	0.904	0.010	A322610
Total Sodium (Na)	mg/L	1.88	1.64	1.80	0.010	A322610
Total Sulphur (S)	mg/L	0.79	0.70	0.67	0.50	A322610
RDL = Reportable Detection Limit						



### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C
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Sample ADY041 [TK1] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab (low level). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Acidity pH 4.5 & pH 8.3 (as CaCO<sub>3</sub>). Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Alkalinity - Low Level. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen (Nitrite - Nitrate) Low Level. Sample was analyzed past method specified hold time for Total Dissolved Solids - Low Level.

Sample ADY042 [TK2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab (low level). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Acidity pH 4.5 & pH 8.3 (as CaCO<sub>3</sub>). Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Alkalinity - Low Level. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen (Nitrite - Nitrate) Low Level. Sample was analyzed past method specified hold time for Total Dissolved Solids - Low Level.

Sample ADY043 [TK3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab (low level). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Acidity pH 4.5 & pH 8.3 (as CaCO<sub>3</sub>). Sample was analyzed past method specified hold time for Total Suspended Solids (NFR). Sample was analyzed past method specified hold time for Alkalinity - Low Level. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen (Nitrite - Nitrate) Low Level. Sample was analyzed past method specified hold time for Total Dissolved Solids - Low Level.

**Results relate only to the items tested.**



BV Labs Job #: C159819  
Report Date: 2021/08/25

### QUALITY ASSURANCE REPORT

DIAMOND MINES INC.  
Client Project #: AEMP  
Site Location: OPEN WATER  
Your P.O. #: 3104474131  
Sampler Initials: TK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A324353	Orthophosphate (P)	2021/08/18	98	80 - 120	104	80 - 120	<0.0010	mg/L	NC	20		
A324750	Acidity (pH 4.5)	2021/08/19					<1.0	mg/L	NC	20		
A324750	Acidity (pH 8.3)	2021/08/19			100	80 - 120	<1.0	mg/L	NC	20		
A324808	Dissolved Organic Carbon (C)	2021/08/23	99	80 - 120	95	80 - 120	<0.20	mg/L	6.7	20		
A324812	Total Organic Carbon (C)	2021/08/23	101	80 - 120	97	80 - 120	<0.20	mg/L	6.3	20		
A324815	Dissolved Chloride (Cl)	2021/08/19	106	80 - 120	103	80 - 120	0.61, RDL=0.50 (1)	mg/L	NC	20		
A324815	Dissolved Sulphate (SO4)	2021/08/19	103	80 - 120	98	80 - 120	<0.50	mg/L				
A324866	Total Aluminum (Al)	2021/08/21	94	80 - 120	97	80 - 120	<0.20	ug/L	8.1	20		
A324866	Total Antimony (Sb)	2021/08/21	108	80 - 120	108	80 - 120	<0.020	ug/L	6.7	20		
A324866	Total Arsenic (As)	2021/08/21	88	80 - 120	86	80 - 120	<0.020	ug/L	0.39	20		
A324866	Total Barium (Ba)	2021/08/21	88	80 - 120	87	80 - 120	<0.020	ug/L	1.6	20		
A324866	Total Beryllium (Be)	2021/08/21	111	80 - 120	107	80 - 120	<0.010	ug/L	NC	20		
A324866	Total Bismuth (Bi)	2021/08/21	95	80 - 120	94	80 - 120	<0.0050	ug/L	NC	20		
A324866	Total Boron (B)	2021/08/21	116	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
A324866	Total Cadmium (Cd)	2021/08/21	87	80 - 120	87	80 - 120	<0.0050	ug/L	NC	20		
A324866	Total Chromium (Cr)	2021/08/21	94	80 - 120	95	80 - 120	<0.050	ug/L	NC	20		
A324866	Total Cobalt (Co)	2021/08/21	91	80 - 120	93	80 - 120	<0.0050	ug/L	3.1	20		
A324866	Total Copper (Cu)	2021/08/21	87	80 - 120	87	80 - 120	<0.050	ug/L	3.2	20		
A324866	Total Iron (Fe)	2021/08/21	109	80 - 120	107	80 - 120	<1.0	ug/L	4.1	20		
A324866	Total Lead (Pb)	2021/08/21	92	80 - 120	91	80 - 120	<0.0050	ug/L	NC	20		
A324866	Total Lithium (Li)	2021/08/21	108	80 - 120	104	80 - 120	<0.20	ug/L	2.3	20		
A324866	Total Manganese (Mn)	2021/08/21	94	80 - 120	95	80 - 120	<0.050	ug/L	0.49	20		
A324866	Total Molybdenum (Mo)	2021/08/21	NC	80 - 120	88	80 - 120	<0.050	ug/L	2.9	20		
A324866	Total Nickel (Ni)	2021/08/21	93	80 - 120	94	80 - 120	<0.020	ug/L	13	20		
A324866	Total Selenium (Se)	2021/08/21	99	80 - 120	95	80 - 120	<0.040	ug/L	13	20		
A324866	Total Silicon (Si)	2021/08/21	81	80 - 120	84	80 - 120	<50	ug/L	7.2	20		
A324866	Total Silver (Ag)	2021/08/21	84	80 - 120	86	80 - 120	<0.0050	ug/L	NC	20		
A324866	Total Strontium (Sr)	2021/08/21	NC	80 - 120	87	80 - 120	<0.050	ug/L	2.4	20		
A324866	Total Thallium (Tl)	2021/08/21	93	80 - 120	91	80 - 120	<0.0020	ug/L	19	20		
A324866	Total Tin (Sn)	2021/08/21	104	80 - 120	102	80 - 120	<0.010	ug/L	8.7	20		



BV Labs Job #: C159819  
Report Date: 2021/08/25

**QUALITY ASSURANCE REPORT(CONT'D)**

DIAMOND MINES INC.  
Client Project #: AEMP  
Site Location: OPEN WATER  
Your P.O. #: 3104474131  
Sampler Initials: TK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A324866	Total Titanium (Ti)	2021/08/21	82	80 - 120	90	80 - 120	<0.50	ug/L	NC	20		
A324866	Total Uranium (U)	2021/08/21	89	80 - 120	89	80 - 120	<0.0020	ug/L	1.7	20		
A324866	Total Vanadium (V)	2021/08/21	95	80 - 120	96	80 - 120	<0.050	ug/L	NC	20		
A324866	Total Zinc (Zn)	2021/08/21	104	80 - 120	102	80 - 120	<0.10	ug/L	NC	20		
A324866	Total Zirconium (Zr)	2021/08/21	87	80 - 120	107	80 - 120	<0.050	ug/L	NC	20		
A324880	Dissolved Aluminum (Al)	2021/08/21	105	80 - 120	88	80 - 120	<0.20	ug/L	2.7	20		
A324880	Dissolved Antimony (Sb)	2021/08/21	109	80 - 120	106	80 - 120	<0.020	ug/L	5.5	20		
A324880	Dissolved Arsenic (As)	2021/08/21	92	80 - 120	89	80 - 120	<0.020	ug/L	7.2	20		
A324880	Dissolved Barium (Ba)	2021/08/21	NC	80 - 120	92	80 - 120	<0.020	ug/L	1.7	20		
A324880	Dissolved Beryllium (Be)	2021/08/21	99	80 - 120	107	80 - 120	<0.010	ug/L	NC	20		
A324880	Dissolved Bismuth (Bi)	2021/08/21	91	80 - 120	97	80 - 120	<0.0050	ug/L	NC	20		
A324880	Dissolved Boron (B)	2021/08/21	106	80 - 120	112	80 - 120	<5.0	ug/L	12	20		
A324880	Dissolved Cadmium (Cd)	2021/08/21	89	80 - 120	91	80 - 120	<0.0050	ug/L	NC	20		
A324880	Dissolved Chromium (Cr)	2021/08/21	94	80 - 120	106	80 - 120	<0.050	ug/L	NC	20		
A324880	Dissolved Cobalt (Co)	2021/08/21	90	80 - 120	102	80 - 120	<0.0050	ug/L	1.0	20		
A324880	Dissolved Copper (Cu)	2021/08/21	88	80 - 120	89	80 - 120	<0.050	ug/L	0.64	20		
A324880	Dissolved Iron (Fe)	2021/08/21	102	80 - 120	109	80 - 120	<1.0	ug/L	4.8	20		
A324880	Dissolved Lead (Pb)	2021/08/21	92	80 - 120	95	80 - 120	<0.0050	ug/L	NC	20		
A324880	Dissolved Lithium (Li)	2021/08/21	103	80 - 120	106	80 - 120	<0.50	ug/L	6.2	20		
A324880	Dissolved Manganese (Mn)	2021/08/21	91	80 - 120	105	80 - 120	<0.050	ug/L	6.9	20		
A324880	Dissolved Molybdenum (Mo)	2021/08/21	NC	80 - 120	93	80 - 120	<0.050	ug/L	1.2	20		
A324880	Dissolved Nickel (Ni)	2021/08/21	90	80 - 120	103	80 - 120	<0.020	ug/L	6.0	20		
A324880	Dissolved Selenium (Se)	2021/08/21	99	80 - 120	102	80 - 120	<0.040	ug/L	4.7	20		
A324880	Dissolved Silicon (Si)	2021/08/21	88	80 - 120	75 (2)	80 - 120	<50	ug/L	11	20		
A324880	Dissolved Silver (Ag)	2021/08/21	84	80 - 120	88	80 - 120	<0.0050	ug/L	NC	20		
A324880	Dissolved Strontium (Sr)	2021/08/21	NC	80 - 120	92	80 - 120	<0.050	ug/L	1.0	20		
A324880	Dissolved Thallium (Tl)	2021/08/21	93	80 - 120	93	80 - 120	<0.0020	ug/L	13	20		
A324880	Dissolved Tin (Sn)	2021/08/21	104	80 - 120	108	80 - 120	<0.010	ug/L	NC	20		
A324880	Dissolved Titanium (Ti)	2021/08/21	94	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
A324880	Dissolved Uranium (U)	2021/08/21	95	80 - 120	96	80 - 120	<0.0020	ug/L	0.21	20		
A324880	Dissolved Vanadium (V)	2021/08/21	94	80 - 120	103	80 - 120	<0.050	ug/L	12	20		



BV Labs Job #: C159819  
 Report Date: 2021/08/25

**QUALITY ASSURANCE REPORT(CONT'D)**

DIAMOND MINES INC.  
 Client Project #: AEMP  
 Site Location: OPEN WATER  
 Your P.O. #: 3104474131  
 Sampler Initials: TK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A324880	Dissolved Zinc (Zn)	2021/08/21	93	80 - 120	111	80 - 120	<0.10	ug/L				
A324880	Dissolved Zirconium (Zr)	2021/08/21	94	80 - 120	109	80 - 120	<0.050	ug/L	NC	20		
A324941	Total Suspended Solids	2021/08/19	116	80 - 120	98	80 - 120	<1.0	mg/L	4.4	20		
A325119	Dissolved Nitrate (N)	2021/08/19	102	80 - 120	101	80 - 120	<0.0020	mg/L	11	20		
A325119	Dissolved Nitrite (N)	2021/08/19	99	80 - 120	98	80 - 120	<0.0010	mg/L	NC	20		
A325710	Alkalinity (PP as CaCO3)	2021/08/20					<0.50	mg/L	NC	20		
A325710	Alkalinity (Total as CaCO3)	2021/08/20			95	80 - 120	<0.50	mg/L	7.6	20		
A325710	Bicarbonate (HCO3)	2021/08/20					<0.50	mg/L	7.6	20		
A325710	Carbonate (CO3)	2021/08/20					<0.50	mg/L	NC	20		
A325710	Hydroxide (OH)	2021/08/20					<0.50	mg/L	NC	20		
A325711	pH	2021/08/20			100	97 - 103			1.8	N/A		
A325712	Conductivity	2021/08/20			102	90 - 110	1.1, RDL=1.0 (3)	uS/cm	0.34	20		
A325713	Fluoride (F)	2021/08/20	100	80 - 120	98	80 - 120	<0.010	mg/L	2.4	20		
A326008	Total Nitrogen (N)	2021/08/20	NC	80 - 120	106	80 - 120	0.023, RDL=0.020 (4)	mg/L	2.9	20	89	80 - 120
A326101	Total Nitrogen (N)	2021/08/20	97	80 - 120	104	80 - 120	<0.020	mg/L	6.0	20	86	80 - 120
A326113	Dissolved Nitrogen (N)	2021/08/20	97	80 - 120	99	80 - 120	<0.020	mg/L	4.3	20	85	80 - 120
A326372	Turbidity	2021/08/20			103	80 - 120	<0.10	NTU	5.4	20		
A326385	Dissolved Phosphorus (P)	2021/08/21	104	80 - 120	110	80 - 120	<0.0020	mg/L	NC	20	92	80 - 120
A326426	Total Phosphorus (P)	2021/08/21	100	80 - 120	105	80 - 120	<0.0020	mg/L	NC	20	87	80 - 120
A326660	Dissolved Ammonia (N)	2021/08/21	NC	80 - 120	102	80 - 120	<0.0050	mg/L	0.44	20		
A327202	Total Ammonia (N)	2021/08/21	102	80 - 120	100	80 - 120	<0.0050	mg/L	6.3	20		
A327619	Total Dissolved Solids	2021/08/22	90	80 - 120	112	80 - 120	<1.0	mg/L	4.3	20		
A328366	Total Mercury (Hg)	2021/08/23	100	80 - 120	99	80 - 120	<0.0019	ug/L	NC	20		



**QUALITY ASSURANCE REPORT(CONT'D)**

DIAVIK DIAMOND MINES INC.  
 Client Project #: AEMP  
 Site Location: OPEN WATER  
 Your P.O. #: 3104474131  
 Sampler Initials: TK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A328368	Dissolved Mercury (Hg)	2021/08/23	94	80 - 120	100	80 - 120	<0.0019	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Method blank is <2x RDL.

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(3) Method blank above criteria. Data inspected. All data < RDL or greater than 10x Method Blank.

(4) Method Blank <2X RDL.



BV Labs Job #: C159819  
Report Date: 2021/08/25

DIAMOND MINES INC.  
Client Project #: AEMP  
Site Location: OPEN WATER  
Your P.O. #: 3104474131  
Sampler Initials: TK

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

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Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

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Sandy Yuan, M.Sc., QP, Scientific Specialist

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



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# Custody Tracking Form



W39816-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: TK1  
Last Sample: TK3  
Sample Count: 3

Relinquished By				Received By			
Nicole Goodman	Digitally signed by Nicole Goodman Date: 2021.08.10 16:07:08 -06'00'	Date	2021/08/17	Deji Wu	D	Date	2021/08/17
		Time (24 HR)	08:00			Time (24 HR)	08:00
Goodman		Date	2021/08/17	Leo Chu	Leo	Date	2021/08/17
		Time (24 HR)	15:20			Time (24 HR)	15:20
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at [www.bvna.com](http://www.bvna.com).

### Triage Information

Sampled By (Print)

# of Coolers/Pkgs:

TK Camp

1

Rush

Immediate Test

Food Residue

Micro

Food Chemistry

### \*\*\* LABORATORY USE ONLY \*\*\*

Received At: MED2  
Labeled By:  
Verified By:

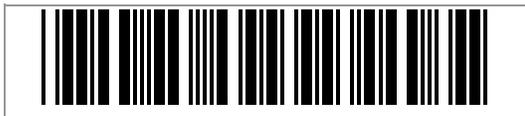
Lab Comments:  
C159819

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	8	8	8
Y	Y	Y	6	6	8

Drinking Water Metals Preservation Check Done (Circle) YES NO



eCOC: W39816



Project Information: C159819  
 Job Received: 2021/08/17 08:00  
 Results Required By: 2021/08/20 17:00  
 Expected Arrival: 2021/08/13 17:00  
 Submitted By: Nicole Goodman  
 Submitted To: Edmonton ENV: 9331  
 48th St

**Invoice Information**

Attn: ACCOUNTS PAYABLE  
 DIAVIK DIAMOND MINES INC.  
 P.O. BOX 2498  
 300-5201 - 50th AVE.  
 YELLOWKNIFE, NT, X1A 2P8  
 Email to:  
 invoices@riotinto.com

**Report Information**

Attn: DDMI Environment  
 DIAVIK DIAMOND MINES INC.  
 107 Berry St.  
 Yellowknife, NT, X1A2N8  
 Email to:  
 ddm.environment@riotinto.com  
 mark.nelson2@riotinto.com  
 nicole.goodman@riotinto.com

**Project Information**

Quote #: B50917  
 PO/AFE#: 3104474131  
 Project #: AEMP  
 Site Location: Open Water

**Analytical Summary**

A: 2021/08/20 17:00

Client Sample ID	Clnt Ref	Sampling Date/Time	Matrix	#Cont	1-AEMP Open Water-Routine Chemistry	2-AEMP/SNP - TSS / TDS / TURB	3-AEMP/SNP - Total Ultra Trace ICPMS Metals	4-AEMP/SNP -Dissolved Ultra Trace ICPMS Metals	5-AEMP/SNP- Total Mercury	6-AEMP/SNP- Dissolved Mercury	7-AEMP-TOT NUT-TKN, TP, TOC, TN	8 - AEMP/SNP - Total Low Level Ammonia	AEMP Diss Nut(DKN, Totdiss P/N,OPO4, NO2/NO3) UF/UP	AEMP- Dissolved Ammonia
TK1	1	2021/08/02 12:35	GRAB WATER	12	A	A	A	A	A	A	A	A	A	A
TK2	2	2021/08/02 11:23	GRAB WATER	12	A	A	A	A	A	A	A	A	A	A
TK3	3	2021/08/02 00:09	GRAB WATER	12	A	A	A	A	A	A	A	A	A	A

Deadlines are estimates only and are subject to change. Please refer to your Job Confirmation report for final due dates.

**Submission Information**

# of Samples: 3

Details: Incorrect bottle used for TSS - 250mL only, may be insufficient volume. attn Rhecie Phayouphone, 403 735 2283

## Appendix J Verification Session Materials

**Agenda**  
**Diavik Diamond Mines (2012) Inc.**

**Post-Camp Verification Session:  
Aquatic Effects Monitoring Program TK Study  
and TK Panel Session #13 (Vegetation)**

**Explorer Hotel, Yellowknife, NT  
December 14-16, 2021**

**Day One: Tuesday, December 14, 2021**

8:30 am	Coffee
9:00 am	<b>Opening Prayer</b>
	<b>Workshop Welcome and Overview</b> <ul style="list-style-type: none"><li>• Round table</li><li>• Overview of verification session purpose and agenda</li></ul>
	<b>TK Panel Session #13 Draft Report Overview and Discussion</b> <ul style="list-style-type: none"><li>• Review of report / key themes, finalize recommendations</li><li>• Responses from DDMI</li></ul>
12:00 pm	Lunch (provided)
1:00 pm	<b>TK Panel Session #14 and Future Topics Planning</b> <ul style="list-style-type: none"><li>• Review of TK Panel monitoring recommendations</li><li>• Review of past TK Panel topics</li><li>• Brainstorm future TK Panel topics (2022 and beyond)</li></ul>
4:00 pm	<b>Closing</b>
<i>Evening Hand-outs</i>	<i>Review: AEMP TK Program - Author biographies and photo collages Review: AEMP TK Program - Draft transcripts (report appendices)</i>

**Day Two: Wednesday, December 15, 2021**

8:30 am	Coffee
9:00 am	<b>Day Two Overview</b>
	<b>Draft 2021 Report Overview and Discussion: TK</b>
	<ul style="list-style-type: none"> <li>• TK Results: Review of fish and water analysis</li> <li>• Review and discussion of approaches and methods, reflections</li> </ul>
	<b>Video Clip Screening</b>
	<ul style="list-style-type: none"> <li>• Report title and dedications brainstorm session</li> </ul>
12:00 pm	Lunch (provided)
1:00 pm	<b>Draft 2021 AEMP Report Overview and Discussion: Science</b>
	<ul style="list-style-type: none"> <li>• Presentation: Review of fish and water analysis</li> </ul>
	<b>DDMI Responses to AEMP 2021 Information Requests and Recommendations</b>
4:00 pm	<b>Closing</b>

### Day Three: Thursday, December 16, 2021

8:30 am	Coffee
9:00 am	<b>Day Three Overview</b>
	<b>Finalize report title, dedications, photo collages and author biographies</b>
12:00 pm	Lunch (provided) and group photo
1:00 pm	<b>Community Review Next Steps</b>
	<ul style="list-style-type: none"> <li>• Report and video review process</li> </ul>
	<b>Future AEMP Planning and Participants Discussion:</b>
	<ul style="list-style-type: none"> <li>• Review of feedback and recommendations for next time</li> <li>• Review and discuss verification forms</li> </ul>
	<b>Closing Circle</b>
	<b>Evaluation Forms</b>
4:00 pm	<b>Closing Prayer</b>

We hope for some break-out groups for discussion. Breaks will be scheduled as needed.  
Please contact Myra Berrub (DDMI) @ 780.667.1242  
or Joanne Barnaby @ 867.876.1119 with any questions.

## Diavik Diamond Mines (2012) Inc.

### Post-Camp Verification Session Notes: Aquatic Effects Monitoring Program

#### Explorer Hotel, Yellowknife, NT December 15-16, 2021

<b>Date:</b>	December 15-16, 2021
<b>Time:</b>	9:00am-4:00pm
<b>Location:</b>	Explorer Hotel, Yellowknife, NT
<b>Handouts:</b>	DDMI PPT slides; TCS PPT slides; verification session workshop agenda; AEMP 2021 draft report including bios, interviews, photos
<b>Participants:</b>	Nancy Kadlun (Kitikmeot Inuit Association) – participated by Zoom Jack Kaniak (Kitikmeot Inuit Association) – participated by Zoom Albert Boucher (Łutsël K'édé Dene First Nation) Doris (Terri) Enzoe (Łutsël K'édé Dene First Nation) Gloria Enzoe Sherring (Łutsël K'édé Dene First Nation) Kathy Arden (North Slave Métis Alliance) Marie Adele Football (Tłı̄chq̄ Government)
	<i>Regrets:</i> Vikki Niptanatiak (Kitikmeot Inuit Association) Lena Drygeese (Yellowknives Dene First Nation) Kelsey Martin (Yellowknives Dene First Nation) Peter D. Sangris (Yellowknives Dene First Nation) Ted Tsetta (Yellowknives Dene First Nation)
<b>Interpreters:</b>	Sarazine Basil (Łutsël K'édé Dene First Nation)
<b>Facilitators / Support:</b>	Joanne Barnaby (Barnaby Consulting) Sarah Ravensbergen (Thorpe Consulting Services) Natasha Thorpe (Thorpe Consulting Services) – participated by Zoom Jay Bulckaert (aRTLeSS Collective) Pablo Saravanja (aRTLeSS Collective)
<b>Presenters:</b>	Rainie Sharpe (Golder) Gordon Cumming (DDMI) Kofi Boa-Antwi (DDMI)
<b>Observers:</b>	Myra Berrub (DDMI) Amanda Annand (DDMI) – Dec. 16 Kyla Gray (DDMI) – participated by Zoom Nicole Goodman (DDMI) – participated by Zoom

**Wednesday, December 15, 2021**

**Joanne: Morning welcome and review of agenda.**

[Diavik PPT – Gord Cumming presents 2021 water and mercury results]

**Gord C:** A sample at three depths was taken southeast of the mine. The results indicate that water quality is good. [Goes through 2021 results and graphs].

**Doris:** What is CCME?

**Gord C:** Canadian Environmental Quality Guidelines.<sup>1</sup>

**Doris:** Is it possible to get a copy of the fish sample results to take back to the Committee? Everything that happens I have to take back to the Wildlife Committee. I need to see results.

**Marie Adele:** I would like a copy too.

**Albert:** ...you could see the bottom of the water before but they said the water colour is still good to drink. But when we were there we wouldn't drink the water from the shore.

**Joanne:** Albert said that the appearance of the lake has changed. You can't see the bottom anymore. You used to see a lot deeper. He called it "black water" and said that to him that's a sign there is a problem with the water. He wants to know what you have to say about that.

**Gord C:** Thank you Albert. I can't talk to what we saw there in the sense that I am not a TK expert and I have only been there for three years. I can only say what the scientific data says. We have to take the TK as well as the scientific data to get a holistic picture of the health of the lake.

**Albert:** The way I remember the lake, it's a lake by itself, not an open like Great Slave Lake. It's quite a large lake but it is an inland lake. This is why we are concerned about it. If there is a big lake ... even back home we get the water, the water comes right from the barrenlands. It's kind of a yellowish colour. There's lots of water that goes into those lakes and they are not moving. This one here is not like that. Even the inland lake, if it's yellow, we know it's clean water because it's filtered - that goes in from the land. But when there is a mine that the water... they do clean the water but I don't really know anything about it ... but I know they clean it and put it back in the lake. When you use something dirty and put it back in something clean, something has got to go wrong. The lake you may say it's good but it's not good, even you can visually see it. What is the definition of the colour of the water, it's black when you look at it. Even me I wouldn't drink the water from there, it might hurt our systems, we might get sick from it, even the fish are not in good health as I've seen it. This is our concern and when they do these sciences lab tests, we want to know everything about the test. Now you say the water is drinkable and still good. We were all at the camp and we all know the water has changed. The Elders that knew the lake before the mine was there, they said it was just pure clear water. This is the way we knew that lake. But now it's hard to tell if it's the same lake or the water is

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<sup>1</sup> See: <https://ccme.ca/en/current-activities/canadian-environmental-quality-guidelines>. Note that Canadian Environmental Quality Guidelines (CEQGs) are administered by the Canadian Council of Ministers of the Environment (CCME).

different in colour, just black. We want a straight answer: is the water still drinkable? If it is, why are the fish getting sick that are in that lake? There are ducks, other animals that drink from that water too. People they all go drink water, without water they can't survive. The water goes a long ways to the Arctic too and they use the water to drink out there. Sometimes we have good advice but they always have different words saying everything is good. I know how the water runs because I am a trapper and I live on the land before. We ask them to filter all the water before it's put back in the lake, or else make a lake where they use that water, so you don't want to put it back either. Use a smaller lake for other water treatment. But it's not done. I'm not too worried about myself but for the future generations. Those are the ones that are going to suffer. Even the fish when we were out there are not edible. If the water is good, the fish should still be good too. We live off the fish from that lake and now I can't eat that fish, the way it looks. They have nothing in their stomach, they usually eat small little fish but we only seen bugs in the water and water. That's not the way it should be, those fish are starving or something. We don't know if they are healthy too. They have no fat. Nothing! This is why we are always concerned about the environment, as a Dene person. I live on the land, you see some fish and that and I am very concerned. This is why I like to ask questions, so this is what I wanted to ask.

**Gord C:** There are a lot of different reasons why the colour of the water could change. I can't answer that based on water chemistry data. But based on water chemistry analysis we have done, the water seems drinkable according to the water chemistry. Rainie will talk more to fish health and give some context to some of the things we saw this summer.

**Kathy:** Yesterday I was asking Gord Macdonald if Diavik had the temperature of the water when they first started and if there is a difference. I think difference in water temperature might affect fish health as well, even if it is slight.

**Gord C:** I don't have it in front of me, but that information can be gathered and sent to you.

**Rainie:** In the handouts, we have water temperature data on slide six and seven. Main takeaway message from slide, the lake temperature hasn't changed much over time. It hasn't gotten warmer or colder.

**Doris:** I think we are trying to ask when the mine opened the first time, at Diavik, what was the temperature of the water? I don't know how long you've gone back talking about the water temperature. Maybe for this year or a few years back, but for my information I want to know from the day it started to today. I know it goes up and down. When you first started the mine, everything on the lake was really healthy, the little insects were there, all the fish was healthy, the water was more clear, it has been over 18 years since the mine opened and they are planning to close 2025. For us, when we go site visit, we see different things that weren't like that. And lots of times I always ask how are you going to put everything back the way we go back there. You can't put it back the way you guys go. I know you bury things underground, it's going to be frozen forever. Remember there is climate change and I keep saying that every time

I go to any meeting. Land, water, animals, air, it's all going to change. Maybe no more ice or snow. These are from my grandpa's words when I was young, now I am over 60 years old, and now it's here today. We also know that. Where is all the food for the fish that live at Lac de Gras? How come they are all sick? Those are the questions I want to ask. I know we don't live underwater but we see it, we see it is dark. I drove a boat there this year, and that's why I know. I cruise around on that lake, and watch every time I go somewhere, I make sure I watch things. I know things are changing slowly. It doesn't matter if it was at Lac de Gras, Artillery, Whitefish Lake, Gamèti, wherever I go I watch things. Everything is changing. In the spring it was cold, just about all summer and then all it goes warm and it's not freezing. Usually it freezes in October. ...when we say something, our TK, it's very important. You guys have to listen to us and work together. The way we see things, I listen to my Elders and I keep their words and it stays with me over, it doesn't go in one ear and out the other. I care about my land, my animals, my plants, and the younger generation. I always speak when I'm in a meeting too. I speak for my people back home.

**Nancy:** I requested fish at least to see in the winter, we still have a long winter. I would still really like to see if the fish have any food in their stomach in the wintertime. Because sometimes they might have empty stomach but wintertime everything else would be full for any kind of little fish. I still really want to see if the fish are healthy during the winter because it's cold. If somebody would at least take two fish by the communities, I would travel by myself and check for myself. I would really like to see two fish in whole winter, I would like to see difference in summertime and wintertime, thank you.

**Gord C:** We can look into that, we don't have a monitoring program for large body fish in the winter but we will consider that option.

**Joanne:** Nancy made that request at camp, two fish, she wanted to see if there was a difference with a change of temperature on condition of fish, so that's something that she's been talking about for some time now. She specifically asked that 2 fish be caught just before this meeting and that they be brought here for them to examine.

**Jack:** Question about the lake temperature during summer period, currently 17, the temperature spikes right up in shallow middle, middle and deep water parts. It shows that the temperature goes way up in the territory in 2016 and 2017, open water season. Just wondering why is that, is there a reason that you know of? Thank you.

**Kofi:** We have been measuring water quality since the beginning of the project. We started before the project, baseline, as part of the environmental assessment. We started measuring while doing exploration and we've been keeping this data that we collect over the years.

**Gord C:** [Continues with presentation, explains mercury bioaccumulation and mercury findings graph from 2021]. There's bioaccumulation in fish over time, usually mercury in older fish. The majority of fish sampled are below the Canada Health guidelines.

**Albert:** Two questions. One: you looked at the water, how did the water look at that time to you this summer? How did it look before? Was the water and fish good at that time? If there's going to be a new mine, now we know what to look for. Ekati was there and we didn't know what mines could do to land but now we know. You have solutions for everything. What is your solution to bring the fish back? So they are healthy? Question two: now I hear small fish have no mercury. Are you saying that? And if we catch a big fish and it has mercury, so the fish is not edible or healthy? How would we know? Maybe this is what you should look at too. We always have to say this to protect the food chain. If fish are sick and we consume them, people would get sick too.

**Gord C:** You would have to eat a lot above that level to get sick.

**Doris:** Can we see past mercury tests since doing the TK camp? Do you have the same graph of fish samples with weight, age, mercury [levels] and their health? Four years ago someone came to Łutsel K'e to say not to eat big fish because it has mercury. She said it's not healthy. When we check nets, we see what size is good but some people don't know that and they eat it. Mercury is in fish and we don't know if it's healthy. Is there any difference from this TK camp with mercury? Any graphs from the past camps?

**Gord C:** Yes, they are in every TK Camp Report from previous years.

**Doris:** I want to see previous mercury graphs.

[Rainie shares presentation of 2021 fish, parasite findings, and Diavik information request responses]

**Joanne:** Ekati has a weather station – we should use that as a clearer, more precise indicator of temperature. Based on my memory, which is not the greatest, my memory is that 2015 was far hotter than this year. Doris was there, Nancy was there, and we were all in t shirts, the whole time, whereas this past year, we put our jackets on...

**Doris:** When there was no mine at Lac de Gras, the fish were healthier I guess, water was clear, lots of food. Ever since I can remember, my mum and dad always put nets in the water, summer winter fall spring. They always bring fish home and we never saw bugs in there, no pus, worms, bugs in there. Even after I went home from the TK camp at Diavik, my brother and I went fishing in Fort Reliance, at the gathering, and we didn't see any bugs in the fish. Even at home I never see any bugs in the fish. I make sure my brother goes and visits nets, we fix fish together outside. I showed them how I was taught to do fish sampling and never once did I see bugs in the fish stomach. But at Diavik this fall I seen so much bugs, unhealthy fish, and we were supposed to be doing fish tasting. I wouldn't eat any fish in Lac de Gras. I don't know why we have to do fish tasting, it's unhealthy for us as Dene people, we know fish are not healthy. I know there is not much food in Lac de Gras for the fish to eat for some reason ...grayling, they must have moved away, they know if there is something right or wrong in the area, there is blasting, the fish can hear it. So for me, there is less food for all the fish that are at the mine site. I keep telling you guys that there's climate change, the weather is different. In the deep

water, the fish know where the water is warm and where it's cold. They've got to stay in cold. Whatever little tunnels they have, that's where they are going to stay. I see lots of bugs floating on top of the water, grey stuff on top of the water, I went and drove on a boat, that's how I see it. There's something kind of fishy for me right now that I ask questions and questions, but I never get the results back in the proper way. When I go home I'm going to speak to my Elders, how it is at the mine site, going to show them all these pictures, and say that's what they said. For me, I feel like there is something missing in here about fish. I know we don't live under the lake like the fish do, how do you think they feel when there is no food, where are they going to go? They see all these bugs on top of the lake that they eat, because there is no more food ... just like us, we don't see anymore caribou, how do you think we feel? We are the caribou and the fish people, and it is getting sadder. Every time we come to this workshop with all mining companies, I put in my TK and ask questions, but sometimes I don't get response. But I am trying to ask - tell me as I need to know. What's going to happen down the road when everything shuts down and it's not healthy, just like Giant Mine here? Everything has been destroyed from us. It's pretty sad. Whatever is in air, goes on water on land, somebody sees it or not, but we can't see it. You can't see it, because it's airborne. We don't see that. But I heard it on the news. If the fish are in the water, why is there so much bugs? Where is the food? When I am asking these questions, I want an answer, or something on black and white. That's it from 2015 it's different now. You show it to me then I'll understand. I understand when the mine started, the day it started, show it to me. I'll see, I'll see a difference. When you do explosions in the pit, everything that you move underground, it has poison inside it. My grandfather told me if you moved something, it's not healthy. How can you see, it's not healthy, it kills all these little insects that are not healthy. The birds, the ducks, maybe even the caribou, they drink water. There's got to be something wrong. A few years if I go back to Diavik TK camp, maybe it will be something else that hasn't been there before. Sometimes I think we just sit and repeat ourselves over and over. ... I keep saying, there's climate change coming, nobody is answering my question, gets warm and cold. Why? Even those things, nobody is answering me back. Look at the water, it gets high too. We have more water this year. If the water goes up, every little plant that goes up with trees and whatever. Fish are not going to be healthy. ...

**Albert:** We are sitting at the TK panel here, we are here to present to the communities as the Panel here. We are concerned ... I can see with my own eyes, in the past, it hasn't been like that. I don't know what happened to the water and the fish. If the water is not too healthy, how could you say the fish are healthy? I have been going from lake to lake in that area before the mine was there. So now you are giving us information and what the fish eat and where they have parasites and tapeworms you talk about everything. We know why the fish get sick. If the water is not healthy, you would get sick too if you had to live under there. Sometimes I listen and sometimes I don't think it makes sense. Because in the past, there was good water, good land, good vegetation, berries for us and animals, springtime when it gets warm, if they go to

the little creeks. When there is water running things are moving, there is some flies and moths or anything that falls on the water, I see the fish eating those. Now when they are blasting, and all that dust, erosion, it lands on the water, from there it goes to the bottom. The fish are getting there, even us if we are really warm, we move to where it's cool, then eat what is available, that is what the fish are eating now. We all know how we are. That is why there has been a lot of erosion of the land, the water, we know that and now they are eating bugs and there's mostly bugs in the water and in their stomachs. There's lots of dust in the water too. We are wondering how come the fish are not healthy now as I said. We are looking at this mine. We wouldn't want it to happen again if there is another mine that is going to be put up in our land. I think all it did was destroy the land and our waters. We keep repeating ourselves again with the scientists, the people that are working in the mine, the native people that work there, they are telling us what happens over there because we ask questions. Once you destroy something it's hard to make it good again, especially the water. My concern is the water and the animals, caribou, they eat off the land, as I said, ducks, birds, wolves, wolverine, bear, this is what we are seeing, we are not there 24/7 but we know what goes on every day at the mine ... the scientists seem to know what goes on even though they are not familiar with the land in the area, until they put up that mine. Now the water is not even good and some years there is more dust ... I looked at it, I went over there, looked at it, seen a lot of stuff, there is a lot of dirt, dust, that went in the water. Then we had fished [in previous camps] and we had fish tasting, and the fish were still good at that time. But now the fish are not edible. The science says we could eat it and we are not going to get sick from it. This is why we are asking – it's our concern as Dene, what goes on- on the land and on the water. The mining people will tell you a lot of things. We are thinking we need to get a solution. How are we going to fix anything that happens on the land, the water, the fish? Now you are telling us about the fish and how they grow and how old they are when they get sick. As a trapper we fed our dogs and live alone on the fish all winter. In summertime sometimes I know the fish won't eat, sometimes there is a span when they don't eat, when they lay their eggs and I know they go to deep water when it gets hot. And then in the fall they come back, they don't stay in one place. In spring they go near the shore, you could see them, I know. They eat along the shore. So the fish, even the small fish go, they live mostly in water or it's mostly warm where it's kind of warm. For the future, that's what we are talking about here today. Give us your info, scientific information, we'll give you TK, as a Dene we know what we're talking about. I really appreciate how they would look after the water, and have their respect for the animals, especially the fish. If we say the fish is no good, the water is no good. This is what I have to do as an Elder to protect our food chain for the kids that are growing up, this is what I want to say, thank you.

**Joanne:** You raise a really important point. What do we do when our knowledge, when TK and science don't line up? Where we don't agree on what we're seeing. That's an issue I think that Diavik needs to grapple with, in terms of finding ways to resolve problems, together. Using both

knowledge systems, even when we are not in agreement with what we see. That's a challenge I think we all face. I know the Elders are really committed to finding solutions. They don't want to be stuck, with nowhere to go. And no answers that satisfy them. We really need to respect that. To tell it as we see it. I know Paul Vecsei he made comments that parasites have been seen, and there is no question in anybody's mind about that. It's the sheer volume that was of huge concern this past summer. Even though it was hotter in 2015, I believe, and Jay, Nancy, Doris, can attest to that, we saw different results. So the fish diving into holes that you talked about, what happened then? Did they not dive to colder water then so that they could make themselves available to us? Those are the kind of realities that we need to talk about and resolve. And how to deal with the problems that we face.

**Nancy:** I haven't heard anything about anybody looking at the fish in the winter. I would be very satisfied at least if I check on one or two fish, because they say they're healthier in cold but I would really like to see some in winter. When you fish for trout in winter without net, they are really easy to catch with hooks, they are easiest to catch with hook, no nets. I haven't heard anybody talk about fish health differences between summer and winter and I would like to see that.

**Jack:** The fish this year [referenced in the presentation, LKTR03 with a fish in its belly] I believe I didn't see it. I made some notes that every fish was cut open. I don't remember seeing this. [Sarah pulls LKTR03 TK fish form at Gloria's request, so she can speak to it]. I did not see three that had the fish in the stomach [at the 2021 camp]. I didn't see any fish that were healthy. What other stuff was in the stomach contents of the fish from this year? What is going on with past slimy sculpin studies? Another concern is that much dust settling into the lake it is too much.

**Gord C:** LKTR03, this one was dissected at camp, caught near the Diavik diffusers. For slimy sculpin, we catch them with a small electrical current in the water so you wouldn't see them in the water, from my experience.

**Joanne:** I didn't see anyone eat fish. Nancy prepped one and smoked it and Myra said she saw people eat it. There was concern around the number of parasites found if fish in fish and people chose not to eat but if anyone did, please say.

**Gord C:** Yes, I ate the smoked fish.

**Jack:** We heard that fish are healthier in deep water. We did do deep netting on the west side of the mind site. The fish that were caught in that were skinny all hungry the same as caught in the shallow nets. It seems like there's no food.

**Gord:** The depth of that net where water quality was taken was 13 meters. That was about 100 meters from where there was discussion of water temperature.

**[Break]**

**Rainie:** I appreciate how you feel and what you saw. I want to talk about temperature. We pulled together Ekati temperature, May 2015. The temperature was 27 degrees and the other

highs were in their teens. As for the air temperature, we confirm that this year's camp was warmer in terms of air temperature.

**Joanne:** We had to go inside to do interviews because it was cold this year. It just doesn't jive in my memory. And we all say the same thing. The reason I'm emphasizing this is that you're tying the condition of fish to the temperature of the water and that's the reason that it's important. But what matters is if this part of the explanation of the poor condition of fish year, yet we did not get those results from 2015 when we all remember it being hot. If it was the hot weather that is causing us to catch unhealthy fish in 2021, why didn't it happen in 2015?

**Rainie:** The actual temperature in the graph was warmer this year. But whether or not it felt like that is another matter. I also want to talk about mercury increases. Some mercury is from natural sources. 2021 was a high water year and one natural source of mercury is runoff from the land that then puts more mercury into the water. Most of the mercury we're seeing in fish in the North is from other parts of the world from the atmosphere and water. So some is natural, but lots of it is from other parts of the world [through atmospheric fallout]. Mercury concentrations in 1996 in lake trout we can compare to before and now but before the mine was operating to present, mercury has not increased. Not eating big fish is an important safety approach.

**Gloria:** Because of Nonacho Lake, we all know about mercury. We know it's natural we know mercury is natural in smaller lakes, it falls from the sky. We know our land is sensitive; that's why we are told to respect it. We know all about mercury; our people normally don't eat big fish anyway. Science doesn't have to tell us that. I need to stress that you took water out, put it through [filtration plants]; you did flood and alter the [mine] area.

**Jack:** Do we have mercury data on spiny sculpin?

**Rainie:** They're low in mercury as we would expect, they don't have much magnification. They're low levels in sculpin but there are small changes in phosphorus from effluents, so there's more food for the fish and not less.

**Albert:** We're concerned about the fish and changes in the water. Before the mine did you do studies on fish? Elders talked about it a long time ago. They wanted fish studies done on water. That's the way we need to do fish testing. At camp we didn't want to taste the fish. When you fry fish it tastes different. We used to have [lots of] fish. Lots of little fish in the stomach. We tasted it. I had some and I still have it here. If the fish was good at that time [at 2021 camp], we would have eaten it. We know if fish is fat or skinny. But pussy fish and skinny fish that are suffering, you can't eat that.

**Jack:** How much mercury does it take when fish settles on the bottom of the lake?

**Albert:** [Tells story of 1968 and mercury coming off the land into the lake]. Fish are skinny and not edible. Any fish in that lake we took was all the same. If the water wasn't disturbed, it would not have been like that. Nowadays it is not fine. Like in the old days, what we are talking about is very important for Dene people. Elders used to tell us that we would see this, even said

that they would eat insects for food. That's what they would tell us, that TK is passed on. So if we see change on our land, we try to restore what is done to the land.

**Gloria:** Thank you for all your scientific information. ...I think about my livelihood, my children livelihood and all my ancestors prior to me, my own parents, my sister Terri, my brother Peter, they were born in the bush. I recall them telling me stories of how my late mum was up in the barrenlands because my parents are sisters to Madeline Drybones. How they lived off fish one winter, just from a story they told me, I recall them living off fish when they were young, them and Terri. I think about how healthy those fish were and I think about them living out on the barrenlands, surviving the hardship they did. I think about my own traveling with my parents, any time we went to [Fort] Res, when we went camping in the fall time to hunt caribou, the fish were abundant. They were healthy, Elders would be like, always happy because those fish for them are like almost gifts from the land, the creator, and they were happy to eat that fish because the water was so clear, fish was so healthy, I think about those kinds of things when I sit here. And then I think about when the mine explorations started happening, started talking about developing the mine, I think about the amount of water they moved, and the amount of lakes that got drained, and the disruption of the whole area itself. Fish in tanks, if you don't take care of them, they die. All these things I think about, what our fish look like today. I want to mention that. And that-in the olden days they would say your future ... life will get different and going to get harder because of all the change that will be occurring. They already know this, they knew it before I was born and every time they would talk to us they would tell us that. They prayed really hard for us because we are their future and now that I'm sitting there, our children are our future. ... To be alive to live a healthy lifestyle, our land has to be healthy, all the things that surround us and feed us have to be healthy. When I listen to Albert, he says, so that mining doesn't affect our lifestyle and the health of our land, this is why we sit here. I think about his own testimony. He sits here from his heart he talks. He worries about us and our future, about caribou, fish, plants, all those things. Those are actual testimonies, those are real words from a real human person. They are not words just spoken that should be taken. To cut and paste and meet certain needs in your report ...When we sit here, we are real people with real testimonies. I wanted to mention that because my late parents sat at these meetings. They fought for the same things, they have real words, when they say we are constantly repeating ourselves, that is what we are doing. Some of your science reflects some of our science, but you only take bits and pieces of it, it's like you don't believe us. When we sit here and say, I see this, I know, it's because they actually know. They are not making up stories, this is our life, our livelihood, we are land people. Your studies go back to 2002, you have a baseline, these are Health Canada guidelines, the Canadian ministers, those things are not our things. Our environment here is different, you could take from others elsewhere and try to mimic those but its' not real. Our testimonies are real, we are real people that live here and have lived here for many, many, many years. It's time you understand that these testimonies are real, we are real

people here, from these lands. We know what we talk about. It's time that you respect that. The other thing is that we are supposed to be here for a verification session. I can't verify anything here. I don't have the technical support that I should have sitting amongst us. You have all your technical people here supporting you. But yet we are denied that here. I can't verify anything. This is a session where documents are given to me. I don't have time to sit amongst my people at home and go through all of this stuff. I'm almost hesitant to talk. Terri mentioned noise underwater, that's a study that should happen. Underwater is different, think about orcas and how sensitive they are. Our fish are sensitive too. You guys reference a lot of slimy sculpin studies. That's not only the fish you should be monitoring and measuring... there are other things. There are no grayling. Grayling were there at one time and now they are not anymore, they are a sensitive fish. If there is no grayling, the sensitivity of grayling-compared to now, there is no grayling, so you know there is change. When you reference all these scientific things and you say there is no change, we know there is change. We know, we see it, here from you, from all of the TK, from all the testimonies, from all the people here and probably from people after me. You reference Madeline Drybones who was very knowledgeable. I have lots of love for her. You hear Albert talk about when trout go into deep waters because it's colder, that's correct. We know those things. We told you that probably prior to this and you heard it in other meetings, we know that already. You talked about water movement, where they go there to go feed. One of the nets we set right beside the mine, there was movement, we caught fish with rod and nets ... because there was water moving there and there was drainage happening. They do go to those areas. You talk about climate change and it's almost used as an out for all the information that is gathered. You can almost use it to say, because of climate change this is happening. But the amount of activity that is happening, dust, movement of water, those are factors as well. Your information only goes back to so many years, it doesn't go back to before that, and that's why those testimonies are so important. Those are real people with real knowledge of the area. You use a lot of monitoring and distance, close, middle, far, some of your data started in the middle of all the years you've been collecting data, a lot of it wasn't close at the being. In the middle you started going close - the data is almost broken in the way. But our testimonies are not broken. You heard Albert ask, we ask all these questions because we want to know. Those questions of why are for our health, for the animals in the area, for their health. We are so knowledgeable in observation, sometimes when you collect your data, to meet your needs sometimes I feel like I can't believe you, because it actually affects you. But you want production and things to happen. You can't sit here and say it's all true. When you reference fish three (LKTR#03) I remember that. We thought it was healthy, we brought it to the Elders, we looked at it. It wasn't healthy for them. Because when we cut the fish, there was parasites, there was cyst, I was told to burn that fish. The Elders didn't want to eat it, nobody wanted to eat it. But when we did the testing, sampling, we were done, they looked at it, but cut up, it wasn't good. That was fish number three.

I am glad Joanne caught weather from town and using that for site. When you mention the cysts and you the yellow one, I can't pronounce the name, it was on the flesh as well, not only in the stomach content. It was on the actual fish. You mention the parasites and the cysts throughout the years. Joanne mentioned 2015 was warmer, I think about all these things from the time you start collecting data. The difference in water throughout years, I go back to how my family was raised in the barrenlands, because at that time, you would go hunting in certain years, go as a big community. I think about those days, when I was young, when fish was brought out, we never worried about parasites, cysts, we hardly threw fish away. I think about the data that is collected now and the way it is collected. It's because our land is altered. It's because of that. Compared to when I was young, when our past people lived on the land, in those areas, we are barrenland people too. We have a lot of people that lived in those areas. Prior to me, they still have camps for us young people. At those camps, we worked on fish, caribou, we did a lot of land things.

When you talk about the food system and the skinny fish, we have our own studies, we know when fish are starving. We know when they are not healthy and don't have enough food. And the fish we see, at the TK camp, they are starving. The amount of bugs is less, they are starving fish. Bigger fish are the predators. They are stronger, they will eat other fish.

I can tell you there is not much big fish in that lake. There needs to be a monitoring program for fish in the wintertime. To hear that Nancy's requested it over and over and over again, it's sad we have to repeat ourselves. Thank you, mahsi.

**Jack:** You said dust is not having a measurable effect. That statement bothers me. It might be true for science, but for Indigenous people, we are seeing the difference in the clarity of the water. In early days, the water was clear. Now this summer, it is dark. That statement is true for science, but for our people it is not. Dust is produced by three large mines throughout the area. They produce dust all day 24/7. On a calm day, it covers the whole area. When you start saying it only affects one area ... it is probably settling on the bottom of the lake. That's probably why we are seeing no food for fish. Dust is going into the lake 24/7; it will affect fish and [aquatic] life of all kinds. Some of those fish had enlarged gills, which is not normal. Normally, they are very fine. It tells me that something is happening here. We know what we know more about that. Thank you.

**Joanne.** When we make sweeping statements like that - either TK or science - it put walls up. Not sure that's helpful. How do we explain that people can't see the bottom of the lake anymore when a few years ago they could? How can you explain that dust stays suspended for a very long time in the lake?

**Rainie:** Everything that we can measure with science supports that dust is not having an effect. But how folks understand that is different. As part of the AEMP we have a lot of depth, clarity, total suspended solids data. If there were more total suspended solids in the water, then we

should not be able to see through the water. We measure this with Secchi depth. But we do not see change.

**Doris:** When I first started going, the water was clear. Now it's not. Even using that black and white thing, the Secchi disk ... you are doing that dust sampling, those spots should be on Diavik right around the ground. We complain about dust in the air and the dust gauges. Everything that's on the land we care about. And I don't understand why I keep hearing that it's still the same. If you take water and recycle it and put it back into the lake it will have an effect. Jack will know as we've been at meetings together in EMAB. It's so hard for me to hear everything, to hold everything you're saying true. It is so hard now that the mine is close to closing. What happened to caribou fish and water?

**Gloria:** You said the influence of dust is too small to measure. Maybe the area of sampling is not enough to measure the influence. Maybe that should be increased and change. We should change how the monitoring is happening ... If it's not a measurable difference and TK says it is a different, then we need to change how monitoring happens. So much has been done to the area in mining drainage activity. The density of cold water makes it cleaner in the lake and water temperatures changes. Then you get turbidity, dust flow, etc. When you recycle water, it changes the dynamics.

***[aRTLeSS shows two short film clips]***

**Albert:** I want to say something about the water. The north side, you ever went down there to test the water on the north shore, across? Maybe the water should be tested all over the lake, to see the definition of the water too.

**Rainie:** We monitor all over, at stations throughout the whole lake.

**Albert:** Do you test the water at the west end of the lake too?

**Rainie:** Yes, I can show you a map, Myra has it, where we monitor in the lake.

**Albert:** When you check the water at the west end beside the mine, do you compare the water sample of all the sides? Is it all the same, or some of them are different? And another one is, north end maybe you should have a net there and just for once, just to see how the fish are in wintertime. Then go to the west end too to look at the fish. Then we will find out what is happening with the fish, maybe it is different in winter and summer. Then you will know the season where the fish are different.

**Rainie:** When we sample the slimy sculpin, we sample at different places than those places because fish aren't always where the water are. Important new info – in 2018 at the TK camp, nets were set overnight and left in the water overnight to catch different number of fish and population moving around at night. This past summer they were set for shorter periods of time. That is also a factor why we would see different fish.

***[Sarah presents AEMP TK fish and water findings presentation – no questions]***

**Joanne:** We need to talk about what's in the report - your interviews, bios and quotes. We need to figure out how we will make changes to reports and notes. Would you have time to make

changes to notes now? Maybe in future TK Panel meetings that might be a time when you could come together and put comments on interviews and reports. How will we be able to verify the video? This is the fun stuff but also there is serious stuff. Diavik?

**Kofi:** There will be a final cut; how we will review it and verify it will need to be figured out.

**Doris:** Okay for me, but this one with Jay and Sadetlo, there are spelling mistakes in it – should be barrenlands – Timber Bay – Florida. Chipowa should be Chipewyan.

**Gloria:** I signed a consent form, I've been interviewed, as a community member I would like to have all that footage, it's not only sits with all Wildlife Committee and Wildlife Department, it sits within our First Nations right to be able to hold that info for future generations. As an individual, parent, that info is important to have for my children's children. So however you are going to release that footage to us, I have the right to **all** the footage and I would like to see all of it. How you release it to me, I don't want anything cut and paste. I know you're going to use it for advertising, but as a community member from LKDFN we are entitled to all that footage, thank you.

**Jay:** I would agree, that is everyone's right who is filmed in our industry, that's how it goes. You own the right to your image on camera. The way we would do that needs to get figure out. It would be a lot of work, you're in lots of shots, so we would have to go through the eight days and pull all the parts that you are in. It's doable but it is time consuming. We need to arrange and figure out how to do that. From our perspective, that's totally doable, we have no problem getting you that footage.

**Gloria:** It does get a bit tricky when it comes to perspective of who holds what. That is discussion for our leadership, for some stuff that would have to be discussed, we will take it home. I'm easily okay saying I consent to other members here being able to hold some of that, but we also shared a lot of info. How that info is used, at the end of the day, we don't want that info used against us. It's also respecting each other's First Nation. How we sit at the table together, when I come to it from this perspective, I can agree as an individual, but there are some things I might have to bring to the board members. What do they decide? I would have to respect that.

**Myra:** It brings up something that we have been challenged with, we have been advised that YKDFN will not have their info in reports. We have provided you with draft reports, they are going to have to be edited quite a bit now. Because of that info, we can't release any of the drafts at this point. We are trying to sort that out, but I don't have an answer for us today. We will need to discuss this as a group.

**Joanne:** That makes things more complicated than they were. So the draft you have in front of you, you can't take it home, because it contains the participation and quotes from YKDFN members. They've asked that these not be released in any way.

**Gloria:** So you'll cut and paste and then relay the other info to us?

**Myra:** We're trying to get you the data so you have that to take home. But we have to pull – you'll have appendices with all data.

**Gloria:** Maybe that's why it's important to have our lawyer here.

**Joanne:** The whole question of YKDFN participation and unwillingness to participate was brand new to us too. We will have to adjust our reports, and aRTLeSS will be asked to adjust video footage and the draft videos they are working on now.

**Jay:** We want to find a way to do it so it's as easy and efficient and the end result is desirable for everybody. There is concern right now that this could get quite complicated. It's the tone, which I think we can figure out, the other part is for edit reviews. Where we are getting direction from, who has the final say, that could get complicated and I want to notify everybody about that right now. I'd like to avoid that, it's a matter of trying to figure out why we get everybody's feedback and how that is synthesized. If we get ten pieces of feedback it will get very confusing. Now we need to take out YKDFN and that changes a lot of the narrative flow of current edit. It's possible that we might need to start fresh potentially. Maybe not. It could be the case.

**Joanne:** Normally we would view a video together. And everybody would agree to approve it or suggest changes. That would take place fairly quickly. It's going to be more complicated. And take more time than what we have in this week.

**Doris:** I know there is one group of First Nations that are not sitting here and I have to go home and talk to my Chief, why things are not going the way it should. I think for the video, it's kind of complicated with me right now. I've been videoed so many times and I never see the video for me being recorded but on the magazines-I'll be there because for that Thaidene Nënë, they never sent me anything and that's what they are using for myself and my son. For this it's-I have to bring it back to my First Nation. It has to be after the new year-I thought we would all be here and doing things together-I even went and talked to my uncle, what's happening. And he agrees, how I am feeling right now [Albert] – if we are going to have another meeting and discuss it in the new year, we have to discuss it. I'm going to bring it home in the new year, have a meeting with Wildlife, the other two people that sit on the Water Board, ask for things, what I was here for. I need some feedback. I can't sign off on anything right now and that's what my uncle said. He understands what I am saying.

**Joanne:** That's perfectly understandable and it wouldn't be fair to ask anyone to sign off on something they haven't seen yet. That includes both the written report and the video.

**Jack:** We know you mentioned YKDFN are not participating. What about NSMA? Are they here?

**Joanne:** Kathy was here, she plans on returning, she had a medical issue. They are participating.

**Gloria:** We could proceed with recommendations and all, it's being able to analyze all that information, coming up with recommendations for monitoring of Diavik. We can still proceed with that. At the end of the day, it comes down to TK holders of knowledge and how that might be used, and it's unfortunate but the reality of it is that it's precious. And it's important to have

those rights respected. It might take a little bit of time, but it needs to be discussed by our First Nation. Mahsi.

**Joanne:** I agree and we are getting to the end of the mine's life, I'm surprised some of this stuff didn't come up earlier, but things have been moving along really well, and the experience from this year's camp really shook people. And whether or not science agrees, it did shake our people up. So people are being super cautious. For good reason, they are looking for assurances, beyond what we have had in the past. So that's where everything is at. Not quite as simple as it used to be. That's a necessary development.

#### **Thursday, December 16, 2021**

**Joanne:** We need to discuss the title of the report, dedications we want to make, approve the photo collages, that are in the written report, make sure the profiles that are written up are okay with you.

**Doris:** I want to dedicate it: we had our ancestors who walked the land before. All their tools that they told us, and we still have it with us, now we are teaching. To all the ancestors who have gone before us whose teachings continue to serve us.

**Albert:** They were people who started this before the program had a name. When I am here I talk about the knowledge. ... I use the Elders words to talk about our land today. So it was been carried on, from when I was young. Keep our ancestors' and parents' words, and we all live in harmony with the land and the water. These words are very strong, they carried us to today. ... now we have to look at the land and water again, the mine is there, there is a closure of the mine, we have a lot of work ahead of us to do. It's not us that are going to clean it up, but it's up to the Creator.

**[Group discussion. Title chosen is "Our Word As Truth", dedication "to all the ancestors who have gone before us whose teachings continue to serve us". All participants in attendance agree they are satisfied with this].**

[Sarah shares photo collages – Nancy, Jack, happy with. Doris and Gloria fine with photos. All but Kathy still want time to review their transcript, bio. Albert is fine with the picture used for the bio].

#### **[Kofi presents Diavik responses to AEMP TK recommendations]**

**Joanne:** What do you think is possible, what can be expected from next steps from you?

**Kofi:** Thanks again for inviting Diavik to the verification session. We had an eventful TK camp with community representatives, there were a number of different experiences, we got to apply TK and assess changes that are being observed by community representatives. This was documented by video and recordings [transcripts]. In addition, we are currently here at this session, this session is also being recorded, we brought our consultants in fish expertise who couldn't be there at the TK camp to answer camps. There were a number of recommendations

that we've provided responses to, it will be reflected in the AEMP TK report. There have been challenges getting the final video package for presentation. The plan is to incorporate additional footage from this verification into the footage so we have one package rather than piecemeal, just one video that covers everything and the plan will be to share with all community representatives who are at the TK camp. The format in which we share is TBD but the plan is for each community representative to have time to review the video. All that opportunity will be provided to everyone who was involved in TK camp to review the video and verify it. The details of the technicality, of how we do that, we have yet to firm that up. As you've been told, one of the key communities involved was unable to participate and has requested their images and quotes be removed. We hope to resolve this issue and we hope to maintain representatives in the video. There is still some work to do but the opportunity will be given to review the video and give consent before it is released.

**Joanne:** We've had at least one person ask if they are able to see all of their interviews that they gave while at camp. I don't know if there are other people who went to camp who also would like to see all of their own footage. That needs to be clarified. Are there other people, Kathy, Marie Adele?

**Kathy:** I am just going over the verbal transcripts. There is a lot of run on sentences in there. I didn't know I talked like that. Yeah, I would like to. Thank you.

**Jay:** There has been some conversation about there being words not transcribed. We used Rev.com and our understand is that it might be partly automated, that's not anybody on that end misconstruing words - it might be a robot that understand. If you're seeing anything like that in your transcript, they are not trying to put words in your mouth that you didn't say.

**Jack:** Whatever is planned, we can review with it, we would like it back as proposed. There's something there what he just said, are there any implications on somebody inserting words in there, on behalf of people who are not there?

**Jay:** No. The transcriptions are just a written form of your whole interview. If you want to see your whole interview, that's always possible. It's just an easy way for everybody to understand what they said. Regardless of mistakes made in the automated service, we are only using your video. We are not misplacing with mistakes Jack. Those mistakes can be corrected.

**Marie Adele:** I am doing corrections. I want to see it, yes, yes.

**Jay:** We can send a link to you and you can look at it while reviewing the notes, if that's helpful.

**Doris:** I know when you email something to us and we want to watch it on our email, the video you're going to send us, our internet is pretty poor at home, even if we go in a zoom meeting we get cut off. It's really difficult unless you're up at 3am to watch yourself.

**Joanne:** Still some uncertainty but Diavik will advise us when they are able to figure out next steps and take those next steps. We also hope to hear aback from Diavik once you resolve things with YKDFN. That would be really helpful to all of us, in terms of the report and to all of

the people that were at the camp, that would be much appreciated. We also wanted to talk about the informed consent form.

**Doris:** From July 31 to August 9 to now I can't sign anything. I want to see my video and the robot generated notes. I have to review it they were not said the way that I said them - it all needs to be okay. Of what I said it has to be fixed before I okay it. I can't sign it. I need it all fixed then my words are fixed and it's not good for future years. I don't want to miss anything. I want everything to be verified. Jack the form says Yellowknife but we are not in Yellowknife brackets [Sara fixed]

**Kathy:** YKDFN quotes are everywhere throughout the report. How will we fix that?

**Joanne:** We are hoping to be able to leave their names in and the quotes could say anonymous but we don't know yet. If they want it all to be removed, it's going to take time and there will be changes to the report that are big. It's a huge loss. Especially Peter he made huge contributions. It will be sad without their voices.

**Jack:** Without the support of YKDFN, will the report be going ahead?

**Joanne:** Hopefully with anonymous quotes, yes.

**Gloria:** I can't verify transcripts without the video and I'd like to be able to see the video. When you read things, you have to be okay with your TK. I am okay with the TCS part [of the verification form, TCS having access to the data] but I do not agree to the Diavik part [Diavik having access to videos and reports and sharing for promotional and education purposes]. That part I don't agree with. And YKDFN are my relatives; to say that's not a connection, we're all Treaty 8, a group, how things are happening in their community affects us. That needs to be put into context. We are Akaitcho people. ... how this is unfolding is unfortunate but we are all one people.

**Myra:** We are not picking and choosing pieces that are produced. We haven't been able to control that they haven't been at the meeting.

**Joanne:** Would you be putting information from videos and reports on the website?

**Myra:** Yes.

**Kofi:** There would be a link to the TK report posted on the EMAB website.

**Joanne:** The main purpose of the video and reports is to give something back to communities. All data and activities and the video an important vehicle for letting our own communities know what's going on. That's why we want to do a video - it is our oral tradition. How will this work? How will we stop people from accessing the video once it is online?

**Doris:** This is the second time I am in a video. I was never told it would be used on the EMAB website or by Diavik. If you do anything like that, you have to ask me. If I know how it's going to be used ... I can understand you're using TK ... but five days to take TK is too short. The Elders are here during COVID. It's hard, why is my TK being used? ... I don't want to be used by Diavik or any mine. This really makes me think. Now I have to go home to my Chief. I thought the video was only here... it shows what we did. Now I have to explain it all to my uncle. I have to

repeat it back. Now you are saying you will use the video for things that I did not agree to. I stayed at the camp for a short time because I lost a family member. I have to back up because now I really have to think. I disagree with that part of the plan...

**Gloria:** We have to make sure TK is considered ... our comments are truths made ... and these are not reflected in how the outcomes will happen most of the time. The reclamation, what we say, how it happens, needs to be considered, it's a stepping stone for how we will be in the video. It impacts our TK and how people use it. We as Dene are always fighting to be respected. We are at that table now. People are watching. We have been in mining for a long time we see how it plays out. Our word is not truth to them, like it is to us. Eventually this was going to happen. Changes and now we have to think about it and consider it I have to be careful. If one word is not used as truth, I need to think... We are truth people.

**Natasha:** In 2012 everyone sat down with the form that you signed. There's the informed consent form and verification form. I'm hearing that those need to be revisited and new commitments made for the video piece. In 2012 people from your organizations said that they want a video.

**Gloria:** Thank you, I've been hearing and wanted to bring this up, the oral tradition is important. How that is written up is also an important matter for future generations. Regulators should have the information, and it's right to say that we need a video, we have to have it for our people to bring home. We sit with Diavik and our recommendations need to be heard, and our TK and oral history and lands people's Elders, leadership... They like to see that video and they will say yes or no. These are important changes.

**Natasha:** In the past we put together all photos and videos for communities and sent that to each community so that that history and footage is there that is owned, for example, by KIA forever.

**Joanne:** I think more time and thought should be put into these forms.

**Albert:** Albert Boucher from LKDFN. Sometimes it's difficult to make decisions on behalf of our people. ... we are here, there is not enough of us involved here and there are three from LK and a few from others. But Diavik, you are working with us and we are supposed to work with you too. So when we are on the side by ourselves, my community is like that. People around here, Fort Res, Fort Rae, and around the GSL area, people are all coming together before, we all come together to talk. It's a big concern amongst all the other communities too. We are supposed to help one another and sometimes we go to a TK camp and there is nobody representing other communities. For me everyone is going down, the people that we used to work with we are not working with one another anymore. We have to keep our livelihood in a healthy way, like our ancestors used it before and now it is our turn. So from ... all these other communities, they go use that land for hunting, use the water, and the way I think of it, there should be someone else, there should be two translators instead of one, they are use to-to be present at a meeting like this, and now we are doing our own work here, us Elders without our youth listening in. We

are not going to be around all the time so the youth have to learn from the Elders, that's the way we are in our culture. This is why that's we call it unity of the people, and we are all working together towards our land, wildlife, caribou. They learn from us and we take our Elders words, which they have given us, and carry on because it's good. What is wrong with this -it's not right, the people -when our Elders told us what was going to happen in the future, and now we are walking where they had told us, because we see it and they didn't see it. They foretold us what was going to happen to our land. The water is not very good, the fish too have a lot of parasites and it's not edible which is taking away from our diet. In the past before the mine started, the animals were healthy and the fish was good and the water was good to drink. Now you're scared to drink water from there. We are here talking about what is going on and for me this year is not even a lot of people here to talk. There is no Elders, I'm the only one with another lady here. What about the people that we are talking about? The youth? That's supposed to be learning from us. This year is a big issue for us because it's concerning our people and our land and our wildlife and water. That's the way I'm thinking, as an Elder, and how I see it. If there was another Elder listening to what I have to say, we all get ideas from one another so they would say what they want to say but that's our way. Our nature is as Dene people, we all work together. We have to talk about our land, our water, our animals that we live on. When I come here, when I talk about something, if I don't really understand I don't say anything about it, but this year I can say a lot because I know a lot and I understand. Once I start talking I can't seem to stop so I'm going to stop here.

**Joanne:** I'm a little concerned about the recommendation related to the increase in sampling. It's fine to list what the WRRB says you should do, but people say they saw changes this year and so they want to understand why. So that explanation was about heat. But what about winter fish and results that are acceptable to community members? That's why we brought this forward.

**Rainie:** The science AEMP is every year for water quality, plankton, and eutrophication, etc. It is every three years for a comprehensive AEMP, which is water, sediments, lake bottom, plankton, fish, spiny sculpin, stomach contents, tissue chemistry gonads, eggs, gills, skin etc. That is happening this year 2022. For two weeks, if anything changes there are commitments made by Diavik because there are defined levels of change and what you have to do with that change.

**Joanne:** Make sure that you say that it is spiny sculpin that you're talking about not trout, so people are clear.

**Kofi:** Yes, spiny sculpin are the key species because they are more sensitive.

**Rainie:** [shows the comprehensive sampling map] We kill 90 fish at each sampling site, 30 male 30 female 30 juvenile. It's frustrating, but not sampling large lake trout because we would have to sacrifice hundreds of fish to satisfy these requirements and we can satisfy DFO requirements by sampling spiny sculpin.

**Doris:** Kofi, thank you. I am glad to understand why the water is darker. I have been asking over and over and now it has been recycled and goes into the lake. I could not get any info. I knew it was from recycled water already but it finally is good to hear that come out so I can understand it. Everywhere else you go the water is clear but Lac de Gras is different. That's how we used to work together. Just tell us this is, why? Now I want to know why fish are unhealthy, why there is less food in the lake. I want to get nets in the water four times per year, summer, fall, spring winter. If that would be possible. I would appreciate it. If you really understand TK and working with you, we really need to put our heads together and see why things are changing. I always want to see things in black and white written. In fall, they go up river and the fish spawn we all go for Ciscos. We get lots of fish. For caribou it's different as they're declining all the time. It is sad. I live off the land and I watch, I asked my brother my son if they see change to write it down on the calendar. For example, the water was clear. All close to Yellowknife bugs in the water things are changing and we still care.

**Albert:** Thank you for informing us. When we talk about the fish at the mine site, we have seen the fish were not good. When we talk about our livelihood and say it is not very healthy, we know the water and we know the fish. Now you are telling us, talking about one specific lake that the mine is using, we are not talking about the whole place where there are lots of lakes and other lakes. I am very observant when it comes to my land and my water and so this is what I want to say. In the summertime, the water gets hot some years and some years the water stays cool. In winter, even if Diavik could do that at the west end, they should have a net in the winter, and the north end, just to see the fish how the fish are, because we don't know in winter, it's different. Maybe the fish is good on that side but at one point where we are fishing, we know the fish is not good. In other areas of that lake, that's what they should check. This is why we want the winter fishing. Maybe we have three nets or four nets in winter in different places, so the fish go over all the lake, they stay in one place, so it's only close in the mine site where the fish have a lot of parasites, we will know. It's quite a ways from there, so we will find out this way for sure. Maybe this way you can compare the parasites that are in the fish, and if it's only around the mine site, maybe it will be caused by the mine, if not, we will at least find out. That's why we said we want to set nets in these places when the water is cold in the winter. Maybe even next summer when we go back to TK camp, and then you can give us information then to see how the fish are at the particular site that we mentioned. What do you think about that? Thank you.

**Doris:** I hope we can we all meet together in the new year.

**Kathy:** We hope that we can all make the best decisions without YKDFN here.

**Joanne:** We will take all the copies back that we handed out.

**Gloria:** You're the superintendent [Kofi]? Thank you, Jack for your input. I want to start with the fact that your response requires a response from us. You refer to a lot of the WRRB. I respect the regulatory system but at the same time, when we discuss certain projects like this one, the

AEMP program, it's an ongoing collaboration. Your company runs AEMP every three years, we understand that you have to meet a quota. You have the water sampling that happens however many times per year. It leads to the question about what Nancy was asking about fish in the winter, it leads me to question spring runoff, sampling on top of the snow, Jack also mentioned the sediments. The frequency of that in your AEMP program for us, we really want to see what your schedule is throughout the year. As a TK holder here at the table, we would need to understand that to comprehensively understand how we fit our knowledge into all that. From our observations, your monitoring programs are not working, because the findings are saying it's all okay and there are no environmental concerns. I can't accept your responses. I know you refer to the WRRB, but these projects ... need to be respected... When we have new findings of TK, you need to take it like scientific knowledge and it needs to be as equal to scientific knowledge if not more. Effluent, discharge, it really affects our water system, and I take into account all the observations that I've seen here at the table. All of these things come down to your AEMP program and the design. You refer a lot to the regulatory guidelines that you need abide by. Those are ongoing, and that means the guidelines will need to change according to our TK. That's why I ask you if you're the boss. The boss at the end of the day decides how we are going to take TK and insert it into these AEMP programs. If we are respected people at the table, I would like to have your respect. Thank you.

**Kofi:** Science can't answer all the questions, and that's why the AEMP program is unique, it is supposed to be a combination of science and TK, and it's evolving: our design plan is not static. Every now and then it gets challenged and reviewed by both the regulators and all the five Participation Agreement communities. Next year we submit reports to get challenged, and changes can then be incorporated into the design. We can continue to refine the design based on realities. Thank you for these comments.

**Kathy:** What is preventing you right now from stepping outside of this WRRB design plan and getting two winter fish? Can it not be done because of the AEMP design plan?

**Kofi:** We look forward to addressing this concern because it's an identified gap. We've already started having discussions internally about it. We want to make sure that it's the program that, once established, would be accepted, so we can provide that as evidence as well. We need to ensure it's really well thought out. All this input which is from TK will inform the design going forward. We want to design something that will be accepted.

**Kathy:** Thank you. But three or four winters, is there time in there to be able to change that plan so that the request for testing two winter fish so it would get in there before the mine closes?

**Kofi:** Yes, we will, and are willing to consider programs outside the regulatory process. That's what the TK camp is all about, is to provide additional knowledge that will inform our progress. Rainie is our consultant fish biologist, manages our AEMP program, I am giving you that today that we will be looking into options for collection of some fish post-fall next year so we can

provide information that will be of value to you. It's important that we present that info how we will do it, so that makes sense to you and you can comment before we start it. We will provide that next year.

**Kathy:** We wanted to clarify the difference in the fish this summer compared to winter fish and see if there is difference in the parasite level in the lake trout, and if colder water makes a difference in that. That's something that we were questioning and want to know if water temperature makes a difference.

**Rainie:** Based on science, if the parasites are present in the fish in the summer as you saw, the fish don't get rid of the parasites once they are in the fish. So we would not expect to see the same fish with less parasites in the winter. I think the questions would be in sampling in the winter, we could be getting some food the other fish in the lake and seeing if they have as many parasites as the ones you observed at camp.

**Kathy:** As you said, the healthier fish would go to the bottom where it's colder. The weaker ones would stay in the warmer water where we were catching them. So we were more in the sick zone compared to the healthy zone which is deep water. In colder weather those fish would come to the surface to get caught is what you're saying? [Rainie: nods].

**Jack:** Going back to our recommendations, our people are saying dust is the major contributing factor, affecting the turbidity of the lake. The dust does not settle right away. Just wanted to mention while we were leaving the TK camp this summer, I was looking at the surface. Right on top, but maybe two or three miles away, one mile away at least, you could see the dust on top, right on the surface, flying around, because there is a little bit of wind. You could see the dust just like snow in winter, flying around on top of the water. You guys, Diavik seems to be dismissing our observations on this, I'd like to point that out, thank you.

**Joanne:** I suggested to Rainie, before the statement that's in there now, we add – science cannot detect that dust is not having a measurable effect on water quality or biological indicators in Lac de Gras. It's to acknowledge that, so far, science can't detect it. Perhaps there are limitations in science right now that might change over time, but at this point, I would suggest that to make it so that it is not a sweeping statement that the water is perfect.

**Jack:** Thank you.

**Doris:** Because of what has happened, I feel like whatever we see in draft, is the only thing that we are signing this for, because the report I didn't see, the video I didn't see, we can't get it because one Akaitcho territory is not involved anymore. I signed to get my video, I signed to be at camp. But since one community is not involved in this, what do we do next? Where do we go? ... we know YKDFN was not able to participate.

**Joanne:** We are trying to get things completed as far as we could. We were hoping we could verify what we have done so far.

**Kathy:** If we decide we don't want to sign this, where does that leave you? We are all feeling that the YKDFN is not here. The report we looked at had a lot of their knowledge in it. I'm

feeling [we should] wait for Diavik's talks with them to see if they can get them on board, because if they are not on board you have to take them all out of that report. If they are, then it leaves report as is with additional comments and photos. The photos there now include members of YKDFN, and what do you do, black them out? It's a tough, sad situation. We know you have put many hours into this, DDMI and TCS. I don't know if we should hold off on this verification but come to an agreement that here, we didn't read it yet. And then maybe if we can Zoom in the new year, come back in the new year and there will be new status? Something new that comes out of this?

**Kofi:** No comments.

**Albert:** ...in the Panel here, what we always talk about is the dust formation that's a very big concern to me. Who is going to talk about it if we don't talk about it? There's dust every day from the mine. So I am concerned about it and we already said a lot of comments about that dust. When the Elders ... when we make a decision, it's always based on your culture and your life. For me today ... YKDFN is not participating... this is what I'm thinking about. We can't say just because they're not present here today that they don't want to work with us. Even about that video taking, even if they are not here ... we can't say we are going to take them off. This is going to be ongoing ... we don't know how we are going to go together. Next time if they are feeling good and their leadership make their decision to be here. I don't think they don't want to participate anymore, but for this time, we are all having problems with that here. Maybe somebody could ask them or talk to them before decisions like this. Maybe they will come back next time and will probably give us an answer and tell us why they don't want to work with us for now. This is what I think about it. Instead of us talking about it like this. Our main concern is the water, the fish, the dust, we have been talking about it last year, today we are coming back with the same questions. We want to clarify ... I think we all have to agree on things that would be for the betterment for things that will be better for the land, ice fishing in the winter. We don't know when we'll come back together again but we should talk about when we are going to go back. We don't know, we can't say I will make a decision, as it might not happen. ... we can say I am happy to be back here and work with everybody and I listen to everybody and then I got a [interpreter] and ... although I don't speak the language I know what you are talking about. Thank you again, lots of us are putting words down here and it's very strong. Jack too is present here which I am very happy they are here. This is what we call healing one another in our language and water and environment and animals. Our Elders never jumped on any decision before they talked about it, before anybody was satisfied. I think about it, it is only me and if I didn't have the knowledge of our Elders, I wouldn't be here talking this way. So now, I am concerned about the fish. I am still thinking about it. And like every year, we have to fish and look at the fish, and even the bottom sediment that they would like to be tested, maybe some fish are eating the sediment and that, because the way I think of it, and the way the fish are in the springtime, they go towards where the little creeks are, and then they eat whatever

they can find, flies and moths, whatever they can find. It goes in the water. So you see a little bit of sediment like you see, ducks and in their stomach, but not much. And that only happens in the spring. And then we find a lot of small little fishes in there. ... and that's what they go there to pick up. So now we see what happens over at that camp when we were there at the beginning, the fish weren't like last year when we saw them, they were a lot better than that, and now they are getting more parasites and it's not even edible, it's not very good. When we say, we know it's going to get worse before it gets better. When you put your report in, everything is good, the water is good, the air is good everything ... then why aren't the animals, the fish have more worms in there.

So I already told you this, when I say something like this, it's for the future generation of my people. Maybe they'll be other mines that are coming up. We know the example of how the mine works now. So we think about what is happening on our land, and we have to talk about the stuff that is a concern to our people. Even the fish, it's only one season that they fish out and maybe in winter or summer time it's different. Some people say in wintertime the fish go way deep down and they go up to warm water. I don't know because when something is not right with the animals we see the fish and that happens to land animals too. When I don't know something, I don't talk about it. I would really appreciate if we resolve some of what is happening over at the mine, because I don't like to talk about something and then not know what is going to happen in a few years. So you know that when-even about the video and that, you should talk to them, and see if they are okay with them being taken out. You can't just take them out because you think they should be taken out. I am worried about covid too. Thank you to everyone here.

**Joanne:** We have another issue to address, and that is that we have been video-taping this meeting for the last few days. We have been recording on video this verification meeting. We don't want to get that mixed up with the fact that you haven't seen video from the camp. We will pass around this form for you to consider. This form is basically the same as the one you signed at camp, but it's focused on this verification session.

**Jack:** I have responses to Kofi's presentation. One, the increase frequency of fish sampling. Diavik says they have to respond to WRRB. But we made an agreement signed by parties and DDMI and the TK Panel has the right to review; DDMI has to respond to TK. These are in the sections in the impact assessment. Two: dust source of contaminants. TK people see dust contributing to water sediments, contaminants, clarity, turbidity This is stated by all people at TK Camp. To say [there is no impact from dust on the lake and species] they're dismissing the TK Panel recommendations, which should not happen. Three, the stomach contents rationale is that fish are starving [rationale box on Kofi's slide for this suggestion was blank]. There is no food, only insects. Diavik is studying only sculpins; is Diavik noticing less sculpins? This was never answered. For parasites, it has been observed in a lot of TK camps that there were more

parasites. But now there are too many and in 2021 summer there are infestations in the body, stomach, gills of every fish. What is the life cycle of parasites, why is it increasing?

**Kofi:** Diavik recognizes the need for TK in the AEMP. This program is specific to TK and needs to include it. There is an environmental agreement, Diavik notes in Section 4.9...but the TK Panel is not an EMAB panel. ...We can't quantify fish palatability, but I agree it is important.

**Rainie:** Changes in spiny sculpin are that they're harder to catch fish over time in those areas. The fish are still there, the parasite increase we do not know. Only abundance goes up and increased last year but the idea is that it was very warm and healthy fish dove deep. But science does not have an answer.

**Myra:** NWTMN and Fort Res Government, and DKFN – identified in the PK to mine workings [Project] - as being interested in having discussions about regulatory submissions next year...

**Joanne:** Albert is always talking about wanting more Elders and more youth.

**Myra:** At previous sessions, we had agreement that another group would join us. They didn't make it this time, but next time.

**Albert:** I've already stated that when we come to meetings and when we are all healthy without Covid there was a lot of people attending. We are now looking at this mine and looking at the closure of the mine, that's why we are working with them. So I think you have more participants... even the mines where they put the tailings pond and how they are going to fix that, there is lots of issues concerning that. I don't like when they do that and leave it open, for animals to get in and all that, even ducks land in little ponds of water, this is no good. Even the animals go around the tailing ponds and they drink from the tailing pond and it will affect them too. In the beginning they said that. Since, sometimes we give good advice but it costs too much money or something, they always don't do what we ask them to do. .... I want to see, what they put on the land, and Elders get ideas from each other, we are always looking at these things, this year is new to us too. When there is mine closure there will be animals coming back to the land and they will come back when there is no noise and no disturbance. We have to watch these animals, if they get sick and die, even geese, ducks, they eat from that and they'll have that in them, we won't know, ... this is the way things spread around. There's a lot of migrating birds too. They fly over where the mine is and some would stay there in summer which they don't do anymore. This is why it's a big concern for the people. This way we can help one another too, as Dene people. This is what I'm thinking about now, don't do things without talking to the people or what will they think? We are not the only people that are there, we are here today but there is a lot of people concerned about it. This is why we are here, to try to resolve things that were done on our land, especially the closure of the mining. As we don't get all the information but you do know a lot of info which you can pass down to us too in the community. This is the thing I wanted to say. We don't send letters or videos to anybody but we listen when there is new information coming up like this. So this is what I want to say. Here at the TK Panel, I think it's very good because we get a few information, maybe not

everything, but still we get information. This is all I wanted to say, thank you again for being here today. We're all here at the table and I think I wish everybody good health to the next time we meet again. ... I'm sitting here giving advice as an Elder, I'd like to thank the [interpreters]. I wish everybody to be good and healthy throughout the year.

**Joanne:** I think people remain open, we can work out schedules and see who is available. Maybe it's not all three every time, maybe it's rotated depending on numbers. Very last thing is to complete our evaluation forms.

**Jack:** The TK Panel has solved problems together, worked together, now we have great concern about YKDFN not participating in this session. It seems like we're missing an arm now. We need them to help us in the recommendations. Whatever we need to put forward to Diavik and the regulators. Somehow I feel like we don't know why they don't want to participate but seems like somebody is doing divide and conquer tactic, that's my concern. Another thing I'd like to say is over the years, TK observations and recommendations have been put forward over and over and over. It seems like they are not taken seriously and dismissed. This has to change. I would like to recommend that to Diavik.

**Nancy:** Since we can't make it to Yellowknife, I am so thankful for Zoom and participating. We would never be attending if there was no Zoom.

**Kathy:** I would like to say how nice it is to see everybody here again. Thank you to everyone for putting forward your opinions.

**Albert:** *Closing prayer.*

**[End of AEMP Verification Meeting Notes]**

# DIAVIK AEMP TK CAMP – FINAL VERIFICATION SESSION

## DRAFT AGENDA

Dates:	June 6, 2022
Location:	Tree of Peace
Presented by:	Diavik Diamond Mine Inc.
Re:	<b>Diavik (Aquatic Effects Monitoring Program (AEMP) Traditional Knowledge (TK) Camp – Final Verification Session</b>

### Monday June 6, 2022

- 9:00 am Opening Prayer and Welcome  
Review of Draft Agenda  
Overview of Session Purpose
- 9:30 am AEMP TK Camp Video – Screening and Discussion
- 10:30 am Break
- 10:45 am AEMP TK Camp Report – Review updates since December 2021
- 12:00 pm Lunch
- 1:15 pm AEMP TK Camp – Final Verification Discussion
- 2:15 pm TK Panel #13 – Time to Review
- 3:15 pm Close

## Diavik Diamond Mines (2012) Inc.

### Post-Camp Verification Session Notes: Aquatic Effects Monitoring Program

#### Tree of Peace, Yellowknife, NT June 6, 2022

<b>Date:</b>	June 6, 2022
<b>Time:</b>	9:00am-3:00pm
<b>Location:</b>	Tree of Peace, Yellowknife, NT
<b>Handouts:</b>	AEMP 2021 draft report 'Our Word As Truth' V3.2 including bios, interviews, photos, detailed notes; meeting agenda
<b>Participants:</b>	Nancy Kadlun (Kitikmeot Inuit Association) Jack Kaniak (Kitikmeot Inuit Association) Vikki Niptanatiak (Kitikmeot Inuit Association) Albert Boucher (Łutsël K'é Dene First Nation) Doris (Terri) Enzoe (Łutsël K'é Dene First Nation) Gloria Enzoe (Łutsël K'é Dene First Nation) Kathy Arden (North Slave Métis Alliance) Marie Adele Football (Tłı̄chǫ Government) Peter D. Sangris (Yellowknives Dene First Nation) Ted Tsetta (Yellowknives Dene First Nation)
	<i>Regrets:</i> Kelsey Martin (Yellowknives Dene First Nation)
<b>Interpreters:</b>	Sarazine Basil (Łutsël K'é Dene First Nation) Bertha Catholique (Łutsël K'é Dene First Nation) Lena Drygeese (Yellowknives Dene First Nation) Mary Rose Sundberg (Yellowknives Dene First Nation)
<b>Facilitators / Support:</b>	Joanne Barnaby (Barnaby Consulting) Sarah Ravensbergen (Thorpe Consulting Services) Natasha Thorpe (Thorpe Consulting Services) PIDO
<b>Observers:</b>	Myra Berrub (Diavik) Kofi Boa-Antwi (Diavik) Gord Macdonald (Diavik) Cherish Winsor (Diavik)

**Monday, June 6, 2022**

**Peter:** [Opening prayer]

**Myra:** [Introduction, overview of agenda] Most people know each other by now, so we can probably skip group introductions.

**Albert:** Only us from LKDFN were at the last [TK Panel] meeting, but we did work together well. I was disappointed that the previous workers [facilitators] weren't there. Now we are working separate like that, that's not very good. We always have to work towards one goal that we have to achieve: that's our land. When we work together, we know each other, and we know what we want. This is the way it should have been. We all help one another with words. ...How come the previous people out there with us weren't there, and there are different people? We are all here to help one another; let's not go our own direction. If we work together, everything will be good for us and for our land... You have the big binders, that's why we did all that work and it's good when it's all written down, so we can look back at it and see the work that we have done and what we said about it. This way you have ongoing work, and you don't stop in one place, you don't do a different thing at the next meeting... I would like to shake hands and welcome everybody... God willing, we will have another meeting soon here, because there are lots of people getting sick. So as an Elder, we have TK working with the mine. I am happy that they are listening to the Elders. Thank you so much.

**Joanne:** Albert, I wanted to explain that Natasha and Sarah and I will be with you today, but this will be the last day that we work with you. Diavik issued a contract to somebody else to take over the work that we have been doing with you. I wanted to be clear that this will be our final day, and it's to finish off the work we started from the camp last year. Hopefully we can all agree on the report that we have written and the video that was done. I also wanted to say I know you haven't seen the video. It's too bad because the people who made the video are not here today. Any changes you want to make, we are going to have to communicate that through Diavik, and make sure you're comfortable with the video results...

**Jack:** Good morning, thank you for all the people that came for this meeting, which was short notice again. Did we do any introductions before the meeting started?

**Nancy:** Every meeting we have, we need introductions, because we have papers that everything that is put in. It's like we are disappointed with something if we don't go around, because we have people that read our books and want it from us. There is always someone who wants to know how come you did that, how does the meeting go. We should do introductions because some of us have been here for a long time but there are always new people coming. Our papers are going to be there forever, even if we are gone, so we have to go through the introductions. Today I am disappointed of what I am here about, what I hear about the facilitators that have been here so long [crying]. People that come here, they take our land from us. They should just let us start with introductions, that's how meetings go.

**Doris:** I wanted to express my feelings. The last time we had a meeting was December 2021, at the Explorer. Some of the people did not make it to the meeting time. There were people missing from the community. We as a group that sit around the table should have been notified, because we have a say. We have been there since it started. Without even telling us, they changed the workers. They just let go these people that are sitting beside me, without telling those that are working around the table. If we would have finished all the work we are doing, it would have been okay. But we didn't finish. In the back of my mind, I'm thinking now that the other people are there facilitating, we have to repeat ourselves.

These people [Joanne, Natasha, Sarah] we worked with a long time. We don't have to repeat ourselves... This is about my land, animals, water, and fish. I can't sit back. I hope this doesn't happen again for the next time. I hope it's on record, that somebody is hearing me, because I don't think it's right. Even coming to meetings, they don't even tell you when you're staying or where you're going. How do people work here? ...When we worked before, [they have the details written down to share with participants]. ...It has been a while since it's like that. You want to work together? Show us things. That's where all the caribou were when I was young... I'm not happy. The people that are working with us knew everything about our background, because they have been there for a while. If we ask questions, they understand. But with the new people, I don't think so. ...The next meeting, I don't think I'll miss it, because I have lots of feelings about my water, air, fish, land. It's really important for me and my kids, my grandkids...

**Ted:** If we speak in our language, our words are stronger, and our heart is stronger. We are here to speak on behalf of our next generation. Since mining started on our lands, it is very difficult, what's happening on our lands. The economic development on our lands, and all the people working there, and how to deal with that: there are a lot of issues there. Some Elders here with us have experience working with the mines. When we talk about the mining industry, it's very difficult, sometimes they work on a 12-hour rotation. ...When it first opened and all the employees worked, the closure-that's how the mine works, any kind of mine. Once it has opened then they work on closure. The minerals have been depleted then the mine goes into closure mode: the mine will not always be open forever. This lady [Joanne] that has been working for us, her job has come to an end and we need to thank her. But our job as members, whoever comes along, we need to work with them. That's why we are here, and I really think Joanne has done a very good job. ...As members we still have a job to do in the future for animals: how to do reclamation and repair the migration of all the animals in that area, the fish too. Some mines work with chemicals. We need to make sure we understand every aspect of a mine and how they operate. Into the future, we need to make sure we monitor the lands and that they don't contaminate the lands. ...I would like to thank everyone here. We all have a common issue of concern which we need to talk about.

**Myra:** Myra Berrub, closure team, Diavik...

**Natasha:** [introduction]

**Joanne:** Joanne Barnaby... I started as a consultant almost 20 years ago with Diavik to do cross-cultural training for about 10 years. In part because of that awareness created within Diavik, they established the TK Panel and the fish camp. I was fortunate enough to be asked by the Elders to facilitate the TK Panel work and a couple of years later I worked with Natasha to do the fish camp. It has been a long haul. I felt very strongly about the issues that we are addressing, and the role that we were playing with the Elders to put forward your ideas for closure and reclamation. I feel there was a great deal of good work done over those years. We were shocked when out of the blue Diavik asked us to bid on the contract that we had been doing for many years. We asked whether or not this was something that the Elders wanted, and they said there was no role for the Elders to play in selecting their facilitators. That was a big surprise to us, as it was the Elders themselves who requested our support as facilitators in the beginning. The biggest concern that I have about that is that things changed after our fish camp last year. I get really suspicious about that, about the timing of that, and whether Diavik is trying to downplay what we saw at the fish camp, both with the fish and with the water. I've let Diavik know my concerns and have made it clear that I'm going to express the truth regardless of whether I have an

ongoing role or not. This is a point at which we really need to ensure that our communities know what we saw. They need to know that there are problems with the fish, and they need to know how you felt about it, and the fact you were not comfortable with eating the fish, and that you had major concerns about the condition of the water as well. I'm hoping that this meeting will result in a renewed commitment to communicating the truth and getting it out there...

**Doris:** Doris Enzoe, LKDFN. I would like to thank everybody that is here, it is nice to see friends and we've seen each other in just about every meeting. I've been with the TK Panel-I'll miss these facilitators that are with us. ...We are not done with Diavik yet... I'm glad to be here because I want to finish the video so our members at home can see it.

**Albert:** Albert Boucher, LKDFN. These mines have been operating for a long time now. We have to watch what is going on in the environment. We are concerned about our water, our life, and we are also concerned about the future so our children can use it... We love our land, and we don't want anything to happen to the land. This is how we are working with the mining companies. Once the mine is closed, the land would never be the same after it's all mined out. They could never fix it the way it was. We have to try our best as Dene people. We have to watch, monitor, talk with the mining companies, especially those people working with wildlife. We love our wildlife, land, water. Even after the mine has closed, we are still going to be here forever. What's going to happen after the mine closes and there is caribou migration, and we will be hunting them? We don't want them to be sick because that's our livelihood, that's what we survive on. Even the caribou too, we don't want our caribou to get hurt. They are really scared animals, they run. Whenever there are caribou around, they have to stop the work. We have been living off caribou from the beginning of time. The caribou, they know where to migrate, how to go, to follow the people, we know that, it's a true fact. I am talking about the future. What I'm thinking is that in the future, I want to take back that land and I want reclamation to be done so it's almost the same; but it will never be. These are the questions as Elders we have to talk to... Put our recommendations together and this is how we have to work together... Right now, we know there is some contamination happening. It never used to be like that in the past. ...If something goes wrong, it won't get better in a day. It's going to take a long time. That water is leading right out to Coppermine [River]and people live there too. If that water is no good, they wouldn't be able to drink that water. The fish is going to be contaminated. Everything that lives off water, it will all be contaminated. Before that, we will have to monitor and work with Diavik really well. They have to listen... Now they are closing the mine... In the future, there's going to be a different generation living. I would like to thank everybody that we are having a meeting with this important thing we are talking about. ...We have to put recommendations forth to the mining company. We have to support each other regarding wildlife and the environment. In the past, the way we used to live, it's all different. As Dene people we don't like to eat food like ...white men. They are trying to feed us anything, stuff in the store, and we are not feeling healthy... We live off the wildlife. We don't want our food or waters to spoil because of Diavik mine. We are just starting to talk about the closure of the mine, so we have to put good recommendations forth for the mine to listen. I am thankful to be here today, and we all know each other. Next time we come to a meeting we will say, you know the last meeting what happened, we still have to continue our meetings like this... I am thankful to be here.

**Kathy:** Kathy Arden, NSMA. I'd like to say how good it is to see you, Natasha, Joanne, Sarah. I know this is going to be your last day with us, but I thought I'd relay my feelings about how we worked with you,

and you've worked with us. Never once in all the years we worked together have you ever, ever, not once...put words in our mouth. You always made sure that what we had to say came from our heart, how we saw things, how we felt about things that went on at Diavik mine. You've taken us down many roads on TK, water, bugs, air, fish, animals, and how it's going to be affected, how these animals and these plants are going to be affected by the mine after they leave. They always let us observe things, never said, have you seen this or that, it came from us. And I thank you for that and the many years working with us, encouraging us to speak and say what we want. We will miss you, but we know you're not far. Thank you.

**Ted:** Ted Tsetta, YKDFN.

**Peter:** Peter Sangris, YKDFN. We are talking about the mine; I want to mention a few things. The mine is closing, and we will be talking about it. I wanted to say a few words about the mine closure after lunch today. We live here beside Giant Mine; they just started doing the clean up. They ruined a big area of our land, and we see how ugly and bad it looks there. I worked there too for a long time. I also worked at Con Mine, Cominco. I see that the YKDFN have been really ruined from Giant Mine. My land has been ruined and contaminated... Sometimes we have a meeting about the land... I wanted to tell the people about what we went through and what we had to live with here. We know the water is bad and the fish is really skinny. We think about all the things we have seen in the past... We always have to talk about it and say something about it because of future generations. The way the water looks beside Diavik mine, the water that flows to the Coppermine River-I am sure that the people living at the end of the outflow, they are not happy with what they saw. The way we looked at the fish and the guts, the stomach of the fish was just empty, there was no food for the fish. That is how we looked at the things we saw last summer...

**Gloria:** Gloria Enzoe, LKDFN. The main reason I participate is for my children and future generations, and the traditional homeland of our territory, which provides us food and clean drinking water. I wanted to thank the consulting team. I was only here one year, last summer. I really enjoyed the hard work you put into observing, how you were participating and how you connected with members. Just from what my eyes see, you guys do a really good job. You connect with all of us, all one on one, you want to understand who we are, our way of thinking, how we contribute to this program. Those are important points because that's how we are able to feel comfortable trusting people to do the work toward this report. Mahsi cho. I won't be here after today. For those that stay after today, terminology is really important, and being able to take from what we have learned and the previous years to this upcoming meeting and the next few days is really important. I wanted to say I'm sorry I'm not going to be here. It feels like sad times. Thank you to everybody that showed up, you traveled a long way. I'm glad you're able to make it here, mahsi.

**Vikki:** Vikki Niptanatiak from Kugluktuk. I appreciate and am thankful for the opportunity to come back and listen to the Elders, especially Peter. Nice to see Joanne and Sarah and meet Natasha, very nice to meet you. I went to the first camp, last year, and seeing the fish, the water, how affected they are and seeing how it is after the fish camp-I went home and went camping with my parents. We went to set nets and we caught a few char and whitefish, and they usually don't gut the fish but I asked if we could check the stomachs and the insides and it was very healthy. It was shocking to see how affected it is for fish at the mine site and to see fish at home. It was sad to see that.

**Jack:** Thank you again, Jack Kaniak with KIA. Last summer was my first participation at the fish camp due to one of our participants who had to go to a June session. I was happy that I went because I got to see what was going on over there. It seems like there are changes in the environment from the mines around that area. During that session of the TK camp, like everybody else was saying, there was changes being noticed... Diavik keeps saying there are not changes, which is very concerning, because we are people that live on this land forever, for thousands of years. They live off the land, the water. That's their store, everything is out there. They know when the changes are occurring. You don't need scientific papers to notice what is happening. They know that because they lived there all their life. Two of the main things that were supposed to be done for this fish camp at the AEMP for environmental studies were the fish palatability and water taste testing, two of the main components of the TK camp. As mentioned by participants, there are real changes... Back in the exploration days for Diavik, the water was very clear. I keep saying this, you could see right to the bottom, 60ft or more. Now the whole thing is dark. It's hard to see the bottom until you're about 5ft from the shore. It seems like the water has changed so much. This is very concerning because a lot of the fish are not edible anymore and the water is not drinkable anymore. I have seen that during the camp. The fish are so infected with all kinds of parasites, and they are all skinny. During that time, at that period, at the end of July, early August, first two weeks of August, the fish should be healthy. They should have fat...but all these fish are all skinny with no meat on them. They have nothing in their stomachs like everyone else mentioned before. This is of great concern. We will see these changes further down the river, and in the drinking water. If things don't change, our drinking water-we may not be able to drink that anymore. Just like nobody wants to drink that water in Lac de Gras anymore. The Coppermine could be going the same way. Another concern is the change of consultants. It's of great concern to everybody. As mentioned, the TK Panel right from the start has been working with Natasha and Joanne and their team. They got to know each other over all these years, and they know the land, the people, they have videos of the land. All of a sudden there is a change mid-stream, towards the end of the mine life. That's of great concern to myself and other groups. Why the sudden change? When it's the final stage of the mine's life, when they change who is doing work mid-stream, there will be changes. The results may be different from different consultants. We don't even know who the new consultants are, we have concerns about that. Feels like we have to restart again. Thank you.

**Nancy:** Nancy Kadlun, from Kugluktuk. I'm thankful we are doing introductions... I'm thankful to come back and see the film. I'm thankful for that fish lady that used to come back. They've been around for so long. All the Inuit and our Elders living in our area, they don't lie, they talk about the truth to their Chief. I was taught by my mother. All these Elders that talk, they are telling the truth, and nobody is going to change that. Even if they change the leaders or get new people, it's not going to change our way of life, because this is our land, our water. For the change I see this summer at fish camp, I wanted to see the bottom of the lake to see all these kinds of living worms we saw in 2015. We didn't get to do that. I'm concerned why. I still want to see that, what's under there, or is too much dust? It's the main thing I wanted to see, a scoop from under there to see the living things, which I did in 2015 when I was there. In 2015 we were eating fish every day, cooked, dried, and the fish were healthy. This year on the fish cutting, only one fish I made dry fish from, and we never even cooked or baked fish like we did in 2015. Only one dry fish I made this time... We tell the truth because we were told by our Elders to do this. Nothing is going to change what we are doing, even with new people, because we were taught how to

care for our land and water. It has been going on for so many years. I was shocked to hear these ladies are getting let go, without us even having a meeting. If they were going to be let go, we could have heard from Diavik and said, could we meet and talk about it. We never heard anything and we were shocked. Why are they doing that? Is it because people saw the water and fish? ...It's not going to change our land and water... People will still talk about it. I've been there for so long... If I have to, this is going to go on. We want our land and water to be clean because that's what we're living off of... Especially in Kugluktuk, because that's the only water we are living off and drink. Nobody is going to change how we talk about what we are talking about.

**Marie Adele:** My name is Marie Adele Football, Wekweèti. This year was the first time I went to the fish camp this past year. All the people that attended the camp, we witnessed with our own eyes. We talked with all the people that attended the camp, and we don't talk with lies. We talked honestly of what we had seen and that's how we share our information. Some people are saying that they want to delete some information, so I am starting to wonder, what are they trying to hide? We all spoke as Dene people and Inuit and Métis. We all survive with caribou and we also consider the water to be very important because of the fish. We have the ducks that go on the water and the land is very important to us. Anything that grows on the land such as the plants are very important to us. The berries are all important to our health. We are all around this table to work together. They collect our TK and they have it written down. Sometimes they are considering deleting some of the information we collect when we observe the land. Why are they trying to delete some of the information we shared? From now on, whoever goes to the camp, when I go back to my community, I want to share what I observed. I will share that information. I'm wondering if they send this information to the leadership in our communities and why is it that they don't say anything about it? ...Maybe they are changing the report that goes to leadership, maybe that's why leadership are not bringing up these issues that we are concerned about? ...The people who have been to camp have observed changes... We can't say the changes are good. We can't lie and make reports like that. It's not good to change the report or the TK of people. The information you collected from us, I would like to see whether the mining made a report and made changes. ...We know that things like that happen sometimes, they make changes to the contract or facilitators, maybe because they are speaking the truth and the mining company doesn't agree with it... We are Dene people, and we tell the truth... Maybe they don't want the people in the communities to hear the changes? ...We can't say that this is correct. It seems like it's a sudden change because we really believe these people have done a huge job and we are saddened by that. Natasha, Joanne, Sarah, mahsi, I wanted to thank you very much, I worked with you this past year and went to the TK camp and I learned a lot from you ladies. I don't hide the truth, I will tell the truth to my people. If the leaders are listening to me, I'm going to make sure I see the report that has been sent to them, whether that report is the same as what we have seen here. I feel sad and it's hard for me to speak. Today will be the only day I am here, because I am going to work in Behchokò, so I am heading that way. Mahsi, every one of you.

**Cherish:** Cherish Winsor, I work in corporate relations so I am here today to listen to what you have to say about the video and talk about how we would use the video, and how we will share it...

**Nancy:** Who decided the facilitators would be let go? We didn't have any discussion... We should have had an emergency meeting to notify us.

**Myra:** We didn't let the facilitators go. We put out a request for proposal. Periodically with different work we have been doing, it will go out to contract to make sure we are getting the best representation for the work that is to be done. We made the decision at Diavik to see if there was anyone else in the community or in Canada that could do facilitation work. The information we have been collecting over the last 10 years, it's not going away. It's there and on the EMAB website for the public to see. You'll see with this report, there haven't been any changes since December. The facilitators are going to go through what the changes to the report are. If you don't think it represents what happened at the camp last summer, then we need to change that. We haven't shared that with anybody, and there is no other report that someone else has seen. This is not going out to the public until this group decides it is ready. If it isn't sharing what you think happens then we have to change that, and the same with the video.

**Jack:** Thank you Myra. You just stated this long-standing contract consultants are under, it is reviewed every-how many years, you said? The contract, you said they reviewed it, how many years apart do they review this contract before they decide?

**Myra:** I can't answer that.

**Jack:** How often have you reviewed the previous contract? How many years, and all of a sudden this year it has been reviewed and changed?

**Doris:** I know that we didn't finish our reports and then Diavik changed the people that are with us doing our work and just let them go. This is the question I was going to ask, how long does the facilitators stay on, until their contract is over? Can you give me something before I leave today? And for how long, it's every 10 years, three years, five years? They never told us, all of a sudden, they just changed. We negotiated with Diavik in our community, and if they want changes, they should have let leadership or Wildlife know, or the people in the TK Panel... I want to find out how long it takes to change facilitators. Maybe at our next meeting, if we don't like the facilitator, we change it. I don't know how this goes. I want to find out.

**Natasha:** If it is okay, Myra, I can answer this. The first four years, the TK Panel was run through EMAB. At that time, community members said, EMAB is in the middle, we want to talk directly to Diavik to have our words heard. Diavik listened and from that point forward, the TK Panel was administered by Diavik. Then the AEMP started too, to be under Diavik. The TK Panel was unhappy at that time with the facilitation. They requested Joanne and invited her to be their facilitator. That came from you. That's when she became involved in that part, 2011. Since 2011, we have been working as a team and we've been very blessed that we have had your support and Diavik every year has renewed our contract based on the quality of our work and the support from you. It hasn't gone out for bid. There hasn't been a competition. This year there was a competition, and Det'on Cho Logistics, the business arm of the YKDFN, were awarded the contact for the TK Panel. The AEMP as I'm told will go out for bid in 2024. That's what I know.

**Nancy:** We have so many questions to ask. We should have someone who answers us right away, especially as people are being let go. We ask why, and there should be answers right away...

**Ryan:** Ryan, PIDO...

**Bertha:** Bertha Catholique, LKDFN.

**Lena:** Lena Drygeese, YKDFN.

**Mary Rose:** Mary Rose Sundberg, Dettah.

[Break]

[AEMP video screening]

**Joanne:** Questions?

**Doris:** Why cut them off when you make the video, put the whole thing. You cut out some stuff on here, just show little things here and there. I want to see the whole campsite when we go, from when we get off the plane, the drone flies around. They cut some off. We should have had more pictures of the fish on our video.

**Gloria:** Is this us finalizing the video and saying it's okay?

**Natasha:** That's the idea, to give you a chance to look through it to provide your overall big picture comments, and your specific comments. Did we spell something wrong? Start big picture. Is the message reflecting your feelings?

**Gloria:** If that's the case then-I didn't read the whole report, but the AEMP reflects what the TK objectives are. So what we say in our TK is taken to the AEMP program and this is why we're here. The video clips: there's a lot of portions of it that are not in the video. We talked a lot about fish with parasites. We also talked about the sediments: that's not included in this video, which I feel is a big part what's important, because heavy metals go to the bottom. In this report it also states a lot of our TK. In the video, it makes it look really nice, you see the land, the people talking, but you don't see what we are trying to say. It makes it look good for the people, Diavik. Us, we are observant people so watching the video, we see our people and it makes us happy. But in a western way of understanding, the thing we are trying to address is the harm that mining industry does to our land. We talked about the importance of the mine closing, how important it is for us to make sure that it's closing right. We are worried about fish because we are fish eaters, and water because we drink the water. I'm sure Diavik doesn't want to agree. We addressed a lot of issues at this camp, and at the meeting in December, but you don't see that reflected in the video, those hard topics in the video. When scientists say about the fish results and they are talking about why they don't see any changes from previous years, they are assuring you they will continue to look at the water and look at the fish, but yet they are not talking about the true concerns TK members have: too many parasites, warmer water levels, the fish doesn't have enough food in those waters, the amount of fish caught from previous years went down. We didn't make it to that one area [the narrows at Lac du Sauvage], so there's more changes that could have occurred, effects that have occurred. We can easily say that we understand there are more parasites, and you'll look at the fish food. But at the same time, when you read this report, which is supposed to be a reflection of the video, they take your TK, they say that it's really important, and that it will reflect their monitoring. For me in this video, we should have all the recommendations stated in this video. This is what all the TK holders sat at this table recommended for the AEMP program for Diavik. It should state that right on the video. That should be a point at the end. For me, it's important as an LKFDN member. If I'm a member to my community and they see this, it's sort of saying, it's okay, fish are okay, we'll continue to monitor them. But as a community representative, it's important for me to point out all the recommendations that I suggested. They should see that this is what their representative is stating. This is what she is fighting for, for us, as members.

**Nancy:** For me looking at this film, I feel it's too short and it showed only the fun parts. Closure is important: all the important stuff is not there. We have a lot of people at home who don't read the reports. All the concerns should be in there. It's short and only the fun stuff is shown, especially when our people don't read reports, but they like to watch a video. That's my concern, thank you.

**Ted:** It is short, but they are leaving some key points out of this. You have to interview members that work there, what they see, what they did. They saw spills, accidents. It's not on here, how many chemicals were used underground. What I did underground there, it's horrible. You just see the tip of the iceberg. There's more to the video than what is said by us as land users. It's just not complete and the poor fish-I've been to Great Bear Lake and fished there, and you see small fish inside of trout. But at Lac de Gras there are no fish in the stomachs and only bugs. It's just not normal. The water is dark. The number of caribou is down. All the parasites in the fish. You can go on and on. For us to say that this video is complete, I don't think it's accurate. I made mistakes too working there. You have to interview former workers... It's not complete. We'll have to get it completed and it has to go back to communities and let the communities have a say before it goes out. I think if the community has a say we might have the answer for future mines.

**Lena:** When I was watching the video, that part that came on when Peter was talking and I was trying to read captions, the captions didn't reflect what he was saying. The wording is written in English and it wasn't correct.

**Natasha:** Today is the day to get that right.

**Joanne:** I saw an earlier version of this, and I saw a lot more reflected as to what I consider what happened, the truth of what happened. When we had that meeting in December, a lot of stuff was added from that meeting that wasn't at the camp. It seems to have taken away from what was actually going on at camp and what was being said by the Elders and the youth. I know there is more footage available, because I saw it, that has been cut to make room for the December discussion. There is a possibility that we could get a fuller picture if some of that footage was brought back into the final video.

**Jack:** That video is a nice picture show. It's a pretty picture show, is what I'm hearing. It's very good, but it doesn't capture what people are saying and what is happening. The hard issues, like people are saying, should be included in those discussions on the video... All the hard issues we are having meetings about, it should be included in those videos so people in the future, in communities, can make decisions based on what they are seeing, not just pretty pictures. We need to include all the hard issues and discussions.

**Nancy:** What I didn't see in the film was the dust, which you could see when it's clear out. You can see how far the dust goes, how it makes the bottom of the water from the dust-the water, it is so thick with all the brown dust, it's going to be all covered under there. That's why our water is getting more dark... In the water there is no oxygen and it's all covered underneath. It is like that for so many years that it means there are no fish. I would like to see with a scoop how it is.

**Doris:** For me, if I go to fish camp at Diavik, what do we go there for is to fish and to sample. Every three years, people go there and we see changes. It is true that since Diavik started, they do explosions. The dust flies, it gets into the water and land. When it gets to the bottom of the lake, there isn't any oxygen... When I go to fish camp at Diavik, the pictures I really want to see and show will be the fish and the water and the air, dust, and what's happening at the mine site, so we can report back to our membership. If I brought paper home and show it to them, I have to sit there and read what is said there. With the video when we show it like this, it's good, but we cut out so many fish things. The really important thing is the fish we went there for and everything, including our water. I showed some pictures that I got when Myra gave me an envelope and they asked me, you have any more pictures? I said no because I thought it would be on our video, but it's just a short part where there are bugs in the

fish. The next camp, if we are going to go to, I want to see more fish, the water changing colour, the dust in the air, and if we are getting our interviewed in the tent... I didn't see that, when we went to the interview. We went into the castle [large tent] for interviews, we talked about stuff, I didn't see that part. The mine's got lots of money... Why worry about stuff like that, you show us all our pictures... For next time, make it longer. And I want to see if we can go put nets in the water in the wintertime. We've been saying that, it can happen. It's going to be closed in 2025, but we still have to watch what will happen down the road...to see if we see any changes.

[Lunch]

**Ted:** There should be more about the fish [in the video]. You've got to have both sides of the picture. ...I don't agree with it.

**Albert:** What I'm going to say is regarding the mine, the work at the mine and all the wildlife we survive off. ...When the mine first began operations, way back before the mine started development, I used to trap and hunt around that area. It must have been about 10 years ago, and at that time we walked all around that mine. We even went all over the place to look at the land using a chopper and we looked at all the shoreline, the lakes, the water. We stayed there for one week. We had a meeting with the mining company regarding the environment and effects. For two years I've been working with them, we stayed for a week. It's not only me but others from surrounding communities. You just mentioned all the communities, Rae, Gamèti. Those Elders I worked with, we talked with each other. After we toured and looked, we came to each other and we talked. When we are talking about fish, the fish used to be really healthy, they used to be fat. When you got fish off the lake and opened it, it used to be fat and healthy... We could see all the trails from caribou from a long, long time ago. I saw it with my own eyes, caribou trails. Maybe three or four days we went to the mine and had a tour. We also had concerns about boulders around the mine. The caribou could get hurt from those big boulders, they are migrating, and they pass through there. We didn't want roads to be built so high, so the caribou could cross. About seven or eight years ago, I did see some changes after the mine developed, and Peter Sangris was there at that time. We saw one caribou, and there was a little slope, about 50ft. They made slopes and the grade, and they didn't even listen to us. We told them to make the roads really low, touching the ground, but they didn't listen to us. Instead, it's about 50ft, that's how high the road was. What's going to happen when they are migrating back to their calving grounds? They have to go right around and it's not healthy for the caribou. The mining companies are...not listening to the recommendations that Elders have given them. We have been living with this wildlife and on this land for a long time. We survive and live off it. If we don't defend our wildlife, nobody is going to defend it for us. If we have to survive without the wildlife, we won't survive at all... We don't go hunting and waste caribou... That's the kind of people we are. I'm not the only one going to that camp and the fish tasting. Every time we put our recommendations, they say yes we are going to work on it. But they don't even listen. They just say yes but it doesn't work. They are not listening to us Elders. They are strong in making money, but as Dene people we are not like that. The community, people also working at the mines, they also tell us what's happening when they come back to the community. Now they are using all these explosives. We didn't want explosives when there are caribou, that's what we have told mining people there. Today, we started that program, fish tasting program, so that's when I recommended to the Elders not to cook the fish, but cook it on open fire, that's the only way you can taste the fish to see if it is contaminated or tastes different. Now they are frying it, so it just kills the taste... Last year when we went to the fish

camp, we stayed there, we set nets and checked the fish. We opened the fish and looked in there and there were parasites in the stomach and even little ants in the stomach. There were little bugs in the stomach, and also the sand from the bottom of the lake, and the fish were skinny and very unhealthy. We know the fish are contaminated because of the mine, because whatever falls into the lake, the fish will eat. When I'm talking about something, I look at it with my own eyes. I don't make up stories... I know if a fish is unhealthy, I've been living on this land and I know if a fish is healthy just by looking at it, because that's how I survived, is using fish. We used to have fat jumbo whitefish but now when you go over there the whitefish is really tiny and it's not healthy as it used to be. It's really skinny. In the meat you could see those parasites as well. If I didn't see that, I wouldn't talk about it, but I'm talking about what I saw. That's what's happening. The water is also getting contaminated. It's not as clear as it used to be. The land is also contaminated. Now the fish is getting contaminated... We keep stressing to environment people, but they don't listen. Once it is contaminated, it will never be fixed how it used to be, it will never be as healthy. The water that goes into the Coppermine: every year we have rainwater, snow water, everything that is contaminated all falls down on the ground. It goes down to the lake. Whenever we have a meeting like this, we have to come up with a good strong recommendations, and the people at the mine have to listen to us. We all have to communicate what is best for the land, sometimes they don't even listen to us. When I get home and my people are asking me questions, what did you say and do, I will tell them a story of what I saw and what I said, and my recommendations. Maybe they'll say something in a newspaper, you never know. You told me this, and if it's not true: then it seems like I would be lying, but it's not like that. We don't want any lies. We want to work together, and we want to work on the truth. We don't want to hide anything, so we know what's going on. As communities, we have Elders coming and we all work together. As Dene people, we really love our land, wildlife, and we think of our generations and the future. I'm old now, and I'm not going to be here for much longer. I used to live on the land, and I really enjoyed it. It was pristine, not contaminated, and that's how I want my grandchildren to live. ...This new generation, when they come and it's contaminated, what's going to happen? They will suffer, not us, because we will be gone. When it comes to environment meetings, I put the best recommendations I could, and I want people to listen to me. ...It has been going on like this for a long time. We will teach our children how to look after the land. I'm not going to quit. As long as the companies are on our lands, I'm going to defend my water and my fish. When I was younger, there was no mining, and I could travel and live freely and it's not like that anymore. We used to travel on the Great Slave Lake in summer, go camping anywhere or for a picnic. How many years we've been doing that, and you never saw that we ruined the land. We put the garbage away...so it still looks beautiful. ...I'm not going to stop and look at it and stand back, I'm going to say something regarding my land and my wildlife. It's going to be the next generations-we want that generation to enjoy the land like I did when I was growing up.

**Natasha:** Thank you Albert... It sounds like people don't want to see the video again? [Group consensus: no]. Is there anything else you want to say? One of our jobs today is to give a review to see if it's ready to go out. This is your time.

**Kathy:** I felt the video was really well put together, had nice pictures, and the comments that were picked out were okay. And then it ended. My feelings are that it never really covered the meat of the issues that were discussing, which was our concern with the fish and the water, and the dust that we could see coming from Diavik where we were. In particular, there is one thing that comes to mind and

that's when we met in December. There was a conversation between Terri [Doris], Gloria and Diavik regarding the health of the fish, and they were comparing the data, the scientific data to what our eyes saw and our concerns with what we saw. Both Terri and Gloria did not let go of that. They hung onto it until finally Diavik admitted they don't really know why the fish are like that. And Terri said thank you, that's all you need to say. Do you remember that Terri?

**Terri:** Yes.

**Kathy:** It reminds me of going back to the old land claims days when negotiations were on, and where there was an issue or concern, nobody would let go of that. They hung onto that issue and fought it tooth and nail until they got what they wanted for their communities. It was reflected in all the videos taken of the negotiations. They weren't gleaned over, those were heavy issues that had to be dealt with during land claims. This here is the same thing. We saw the issues with the fish, they are trying to tell them, this is what is going on, this is what we see. So what about your scientific data? Throw it out the window and look at the fish. This is for the future. You're here today and gone tomorrow, but we are still here and our grandchildren, and so on. Those kinds of issues have to be reflected in the video. It's a nice video, soft and warm and whatever. But maybe just to mention too, that bear came into camp and we had to scare it away. It's a nice shot but... that's my feelings.

**Ted:** This video is going to be released and it's not complete. ...You can't just show pretty pictures. You can't make a video of mine operations without those things as well. I'm not going to agree with the release of this video, it's not done. This is not done. Please don't release it the way it is... Even the PKC, we are still having battles with that. ...You are putting it back underground even though we said no. If you're not going to agree to our terms, why should we agree with your video? ...We've lived with mining destruction here for 70 years. Please don't release it the way it is... I think it should be done properly.

**Peter:** What was said regarding that-when the mine first started, even though they monitor everything, was the fish monitored and checked before the mine started? How did the fish taste at that time before industry started? Is there baseline information on that? I don't see any information regarding that. When I look at the fish today, the fish has no food in its stomach. When the mine first started, I am sure they checked the fish, and I am sure it was fat. If the fish the way it looks today, obviously it's telling us it has affected fish. We should take a look at the baseline information collected at the start of the mine and it seems like they don't have that information. We don't really know what to say beyond that, we have nothing to say because we know the effects. It's hard to comment on it. Maybe it's not the mine, maybe because it's a huge lake and the food is depleting somehow, maybe because it's too many fish in the lake, it could be other possibilities as well, but we are not being told that. For now, it's kind of difficult to say, it would be nice to take a look at that information from the beginning. The information we look at right now, I think it's obvious that it's because of the mine, but it's difficult to say unless we have all the information together. I am sure there are thousands of fish in the lake. If all the fish are skinny like that, I don't think it's right. It looks like they don't have enough food, what can be done for that? The fish lives a long time. Even trout lives for approximately 40 years. With the thousands of fish in the lake, it's not only that type of fish, there are other types of fish in there as well. It's difficult to say. If there is ever another mine, baseline information is really important and also the quality of fish is important. Then years later, we can monitor how it has been changing. When I think about it, it looks like the fish are really hungry and like they don't have enough food and that's why they are suffering. It's difficult. When I say a fish lives for 40 years, and when it dies, it floats to the top and either the bears or

other animals eat it. That's probably what happens and there is no food for fish, so we should take a look at that. I know that we are working on reclamation of the mine because it's going to close pretty soon. Even though we bring up concerns, it doesn't seem like there is hardly anything being done. Maybe it was like this before and they were not telling us, so it was hard to say, because they are not being honest to provide us with that information.

**Natasha:** ...[Reviewing summary points/notes] What I've heard is: my feelings aren't shown; very good images but it doesn't speak to the hard issues; the video is not complete; it's only the tip of the iceberg; only the fun parts are shown; it's too short; it's important as a representative of my community to show my work, to have it shown what I do; there aren't any interviews shown in the video; the film should end with our recommendations; the issues around dust in the water or no oxygen in the water weren't addressed; minor issues around fixing the spelling of some of the translation that is not right. ...Today is your day to give feedback and decide on whether this is to be released. Myra has prepared copies of the video for you to take home. Any other comments missed?

**Jack:** The video is very good in terms of pictures and sights. There is one thing that should be shown: weather days, when it's calm days, windy days. When we were there last summer, the first two days or three days it was very calm, warm, no wind, lots of dust. Seems like the whole area is in a fog on calm days, there is so much dust. ...I think that should be captured, the difference between what's coming out when it's sunny and when it's not.

**Natasha:** ...Maybe the video can't capture it all, maybe the report can also share details.

**Jack:** But most people are not seeing the report, only the video.

**Joanne:** Something I heard at camp and in December was a lot more passion than what's reflected in the video. People's feelings were shared quite openly at both the camp, and at the meeting and that you don't get a sense of that from this video. I know it has been captured on video, that footage is available. They have many hours and hours of video to pick from, to select from. My question to Diavik is, are you prepared to make the further investment to expand the video, get it to the point where it's a more accurate reflection of what Elders in particular were expressing? Is that a possibility?

**Myra:** Just a reminder for folks that I am on the community's team. I am here to represent you. Cherish is with our corporate relations team and communications team...

**Cherish:** The video as it is now, if you aren't comfortable with it, it won't be released. Today we are here to hear your feedback, what needs to be added, removed, themes we've missed. I've heard things you didn't feel were represented. So we've heard a good list of some of your concerns and if you have others, please share. We will take that, and we will recruit... Are you okay with that?

**Natasha:** What do you need from the group to move forward? Community members are proud and excited to move forward... What can we do to get it wrapped up and moving forward?

**Cherish:** As clear feedback as we can get. There is a long list, from what I can hear. If we can agree on specifics and themes, then we can get those back and it will be easier to get a final cut that matches what the cut is. If the list is vague, it's harder to make the changes.

**Ted:** To recap, our coordinator is out of town right now, Ryan Miller, and we need to touch base with him. We have a working group around closure, and a committee, and I mention all those recommendations need to be done. Even the winter road itself has to be checked, every lake tested, big lakes... You can't just shoot the picture outside and say it's dandy, it doesn't work like that. We have to

get this back to our members and work with our communities, get a list of what we need to see, we have to work together. The way the video is shot is not complete.

**Myra:** The video is just meant to be a reflection of the experience in August. We didn't go to the mine site so there won't be footage of underground of that in that video. It is just supposed to document what we did in August. So the winter road and that, I know there are some recommendations that maybe we weren't able to see in August, so those are in the report, but in terms of footage, there won't be things from the wintertime that are shown there.

**Jack:** Thank you Myra. Are there people online during this meeting, can they be introduced? Thank you.

**Natasha:** We have Kofi and Gord online, maybe you both want to introduce yourselves?

**Gord:** Hi, Gord MacDonald, closure manager for Diavik. I was asked to join as there was questions about changes in facilitator contracts. I am happy to provide information on that. If not, or we can do at a different time, I can sign off.

**Kofi:** Kofi, superintendent of environment. ...I am joining to observe with no intention of getting involved. We want to obtain feedback that you provide to inform our future programs.

**Myra:** Gord Cumming is acting superintendent and wanted me to convey he is happy to see all of you on video. He may try to join again later.

**Joanne:** Gord, while you're here, can you address comments about changes to the video?

**Gord:** Cherish is there.

**Joanne:** She has the authority to commit to that [making changes to the video]?

**Gord:** Absolutely.

**Cherish:** I am in charge of communications for the mine. Anything that goes out, anything we write, visuals, ads, they all go through my department to make sure they are ready to be released. It doesn't go anywhere without your consent or approval. If the video is not there, we will have to do more work. We will have to make sure we get it right. As I'm hearing now, it's not appropriate to release it yet, so we wouldn't do that yet.

**Joanne:** Are there specific things from the camp you would like to see added that are not in there?

**Myra:** You all got a copy of the video [of your interview] that was done with Artless. That might help jog your memory for things that we have captured on video that you said you want?

**Natasha:** Not the video, everyone's interview.

**Myra:** Yes, everyone's interview. You did also receive a copy of the fun vignettes, our teaching sessions from Elders, but we have not all signed off on sharing those around. So we should have a chat about that. We have a draft video on usb sticks so there will have to be a discussion, should we distribute that now or do you not want to distribute that now?

**Kathy:** I don't mind it being distributed, it's nice and well put together. But it doesn't cover all the heavy issues we are speaking to: the condition of the fish, water, air quality, vegetation, things that we went through there. It would be nice for us to keep but going forward we can build upon that and put in those heavier issues we are dealing with that we want people to understand what the concern is. That is why we went there. As I said in the video, of 21 fish there was only good one... So that's the kind of thing that needs to be reflected, thank you.

**Natasha:** Can we make that a specific recommendation? ...Expanding on fish, water, dust, recommendations?

**Kathy:** When we did the vegetation, we were checking out if we thought food was good for caribou. It was lean on the lichen, dry and dusty. There were a few patches of good ones, but I don't know if there was close up video other than the ones we saw there, but there were areas there where there was not much to eat in that same area. ...So that piece would be gone in five seconds, and then there would be nothing.

**Natasha:** But that was part of the TK Panel? Not AEMP? Maybe that is better captured in the TK Panel report. The video will miss learnings from the TK Panel.

**Kathy:** So that piece can stay in, that's a good piece. This is what caribou like to eat. Maybe we can up the fish end and our concerns. We have a lot of footage on different people cleaning, cutting fish. It could be repetitive.

**Joanne:** I picked up on a couple of things in an earlier version of the video, Nancy's powerful emotions were captured when she cut open a fish and found so many parasites she was actually crying and really upset with what she saw. That conveys pretty powerfully the feeling around the camp with everybody. So that might be something specific you can add back in. Another piece that I see is not in this version that I saw in earlier version was Jack talking about his walk around the edge of the lake, and not being able to see any minnows and small fish. That speaks to the issue of why we aren't finding any small fish in the stomachs. There are a couple of specific things.

**Gloria:** When you think of the time frame, it's long [from camp to this verification]. Asking everyone exactly what we remember, as I remember-as an LKDFN member, the raw footage is important to me. I feel like I should be able to have that raw footage instead of being given clips here and there. I don't mind my personal interview but raw footage for the community's archive is something that I'd like to have in our community. If the video is geared just to the AEMP and water quality: fish health [is important to add more about], we had a lot of footage happen at the TK camp. We are close to the mine site, so you don't see where the net was put in near the mine site. I think that's important. You had three boats go out, that kind of footage is important. You see a little bit of the interview with the young person and the Elder, there is good footage, but I think about the meeting in December where we talked about AEMP monitoring, and it's indicators. There are a lot of recommendations we talked about, especially the monitoring program. In regards to monitoring length and time, I feel like that's important footage. We talked a lot about spring runoff, sediment, plankton, oxygen levels, fish health, fish food, that stuff is an indicator of specifically water quality and fish health. As a community member of LKDFN, that footage is important. One area where Diavik states that fish health is okay from previous years to this year, I can't agree with that. You do have baseline data, you do see change and a lot of the documentations, once again, reflects what TK says, reflects on us. I can't agree with that especially if you're saying in the reports that it comes from community members and their TK. At the other meeting, I said: it's our testimony, it's our truth. If I agree to it, I'm agreeing you're correct. I can't agree to that. The AEMP program needs to get better. I stated that at the other meeting and I'll state that again. ...The reports often go on a shelf... If you put the recommendations on the video at the end, people can look and see if they are done. For me that is very important. Industry almost overworks us. We have a lot of reports in our community with under capacity, and video is very strong. If they send to a different community member, then the community member can see the video and they can look back at the report to see if things are actually changing. For me, it's important for that to be part of the video. It's a documentary but also documentaries are in depth; it should be a documentary.

**Natasha:** ...Is there anything that should be removed?

**Nancy:** For me this film, it's already done. The next time they are doing it, they should show what we are just doing. They already got the copies. For next time we will do better, have it longer, when we are there. We already all have copies with that, we are not going to take them back and change them. For next time we will do a better job. Before we put it on a usb, we should all see what can be there. We can all watch it before, and make it longer, the way we want it, from what we talked about today.

**Kathy:** I'm confused now, because Nancy is talking like this video we saw is the final, when we said it's not the final? We are going to add on, are we going to change it? You just asked us, do we want to keep it? ...It's nicely put together, but we are making the final, which is existing, and adding to it? ...We will continue to get it right?

**Gloria:** When you have Gord and Rainie talking about the fish health and data, I can easily say I don't agree with that footage and that should be deleted. If we are talking about mutual respect: science is not stronger than TK. If you are trying to capture where science is more than TK, that one clip, I can't agree with that. This video, if that's the case, then you need to have where you have that clip of your scientists, and then put right next to it a clip of your Elder saying, I don't agree with this, because of parasites, run off. Those clips that you didn't put into the video. They need to be respected. It can't be one more than the other, especially when it comes to science. If you are taking TK and saying-you can't have science overrunning TK, it can't be like that. That means there is no respect. Making sure that TK is stronger than science and we can easily have passion for this in the video, which is there, we love our land, we want to protect it, we're worried for future generations. But when the clip comes at the end with science like, my data says this, and then it slows down: it can't be like that, you can't end it like that. When you have scientists saying, fish get parasites, it's okay to eat, there is one tapeworm that is not healthy for humans, you should have clip next of the Elder saying, is there more parasites this year, are you testing runoff in spring? Are you doing sediment testing in winter? Surface testing of ice on top? The dust? Is the testing long enough? Those clips need to be side to side, it can't be one over the other. I know that's not going to be approved, but it needs to be approved. ...However we decide to move forward, other people are watching. You are being watched, and we are being watched, and a bigger audience is watching. This is not a game, it's our livelihood here too. We all represent our people. It's important to capture it right.

**Cherish:** I wanted to respond. We do have to go through a lengthy process when we do these things and we've been doing that over the last few months. Lots of opinions have come back and on a different of occasions we said, we can't cut that. Myra and I and the team online, we have all said that. We don't want to wash away those comments that you have, we want to make sure they are in there. So where we need to, we will try to protect that as we go through approvals. If we can, and we have footage, we can add that in and then go through approvals and make sure that it's as accurate as it can be. This video won't be shown if you don't all agree to it. We need to make sure we're all comfortable, we'll keep going until we get it right.

**Doris:** Who makes decisions of what clips you're putting together?

**Cherish:** It was made by Artless and then they shared it with us, so a collaboration between Diavik and Artless.

**Doris:** People around the table were videoed, and how come we can't get involved and say, this clip is good, and we can add to this video? Every time we try to work together-I always say, work together. I've

been videoed, asked questions, interviewed, and if I don't want those in, I will say, I don't want those in there. When you make the video, we should be involved. Last year when we went there, there was lots of fish that had lots of bugs in there, I only seen a few. But the envelope I got from Myra, I have lots of pictures of the fish on it. That's our land, you want to know how it will be better or to get back to healthier, that's what I heard the first time they went on. Today it's not like that. I can remember since my late mum was alive, it was in the fall, she asked questions and said this this this, today it is not the same. We all know here from the community know there are changes, and I always talked about climate change too. But before the mine started, the fish was healthy. There was no dust, no people, everything was healthy. No garbage, no diesel, trucks, no thinking. When you go to the barrenlands, without having lights, houses, generator-there is nothing there, you go out there, you can smell the plants. If I go to Diavik, it's too bad I'm not going, I would have told you if I went on Wednesday that it doesn't smell... It's not the same. ...From science, it's different. But we live in on the land, and it's not the same. ...I should have seen more bugs in the video, there was only bugs in there. I might not agree with the video going on, there are all those things that I don't agree with.

**Jack:** When you stated that Diavik was fixing up the video before they release it... If that's occurring, my question is, what about the transcripts, are they being treated the same? When we add words on, is that the same thing happening? Thank you.

**Natasha:** Thank you for asking that important question. In 2015, we had youth, on your recommendation, come for two to three days before going on the land. Artless trained them at the Diavik office, how to use video and cameras and how to edit movies afterwards. And it hasn't been a part of recent programs. Even that time it was tough to get youth involved, even though it was training and funded. But I'll give you that history. Transcripts: we are very strong as a team to not let those transcripts go anywhere except into your hands until you have signed them off. ...We will never make a change on purpose. We give you the time to verify or to review it to make sure we get it right.

**Sarah R.:** [Presents TCS AEMP PPT: overview of main results in report and key changes, i.e., addition of new parasite results and verification of author bios, photos, interviews, and Diavik responses to formal AEMP recommendations by participants]

**Jack:** The first page of recommendations, "Results from past testing, in plain language by year, highlight change and variations. The rationale was clear visuals." The response doesn't seem to answer that. What was asked, what is meant by clear pictures?

**Sarah R.:** From my notes, I understood that participants wanted the scientific results of past testing in a way that is easier to understand. E.g., complex graphs can be hard to understand, so presenting these in an easier way with pictures would be helpful.

**Myra:** In reports prepared, there is a historical overview of what fish observations have been made in the past. Then there is the science side, and measurements that are happening. Both of these get submitted to the Water Board.

**Gloria:** It's the history of what has been happening. We have heard the data has been collected over the years. You have science collected, [it would be helpful to have] those reports put into simpler forms. You've collected data throughout the years and are able to have that for us, when we participate in these meetings, that scientific data from when you first started. You have shaped the water from one area to the next. Throughout the years we have been able to see that, so when I think about my own way of understanding, Peter's way of understanding, the maps and all that, [simpler visuals would help].

**Myra:** Before the last camp, we sat down with our communications team... we had those one-page summary sheets...

**Sarah R.:** Those and plain language summary reports are in Appendix J of the 2021 report.

**Jack:** The last one: “Developing a clear understanding of parasites, and which ones are of concern to human health. Rationale was, traditionally people will not eat fish with parasites”. The response was-I had a question about this at the camp, what is making the parasites grow so fast and so much, and we talked about climate change. Here in the response, it says specifically that parasite life cycles are complex and may involve different intermediate hosts that can influence parasite numbers. Can we get a breakdown of what those hosts are and what is driving the parasites in Lac de Gras? Here they are talking about different hosts, can we get some specifics on that?

**Myra:** I can pull up Raine’s presentation... [presented December 2021]...

**Jack:** You’re talking about the report sent out before verification?

**Myra:** No, we didn’t have the results back from the lab, so they [Raine, Golder] presented quite a bit of information in that presentation, but then there was another report back from the lab.

**Natasha:** That one came out March 2022. That’s the one that we can get copies of for participants.

**Jack:** On that report, does it say that climate change is causing it?

**Kathy:** If you go to page 63 of [the 2021 AEMP report] Our Word is Truth, they talk about the parasite and cysts, there is a summary...

**Jack:** Golder is saying that there are so many parasites because they have more hosts. So what I causing them to grow so much in Lac de Gras? ...

**Kofi:** Thank you for the question, we provided a response. Presence of parasites in fish has been recorded over the last 20 years... parasites were recorded in baseline reports before Diavik... the presence of parasites in fish is not a new phenomenon. We are talking about whether it’s increasing over time, and linking the cause of that increase. That is a more complex question. Golder and Raine explained in December that they have a number of hosts, so it can start in a slug or something and then that gets fed on by a bird and then the bird poos around water and it gets in water and goes into a bigger area. That could increase to a bigger area. ...There are increased number of birds around Lac de Gras... It’s an environment that has attracted birds... Additional analysis is required. We can’t lose focus on climate change: with increases temperature, it could be influencing parasite numbers. We continue to study these over the years. The work is not done, these are questions we want answers to, throughout public review, by regulators, these are [questions we hope to answer].

**Albert:** Talking about the parasites and the fish from that lake: I know I told you, I live off the land, and the fish, I look at it and understand it. Around 2015 or 2016, I live off the land until that year and still today. You say there are ravens and birds that fly, migrating, they poop in the water and then that’s where the parasites come from. There are all kinds of waterbirds around there and they poop in the water. ...It’s not from these feces from the birds or seagulls that the fish are sick. It cannot explain this; since time immemorial, my ancestors lived off the land and it never happened. The only reason it happened-we set nets all over, even the lake we used to go to, we set nets and there’s no parasites like that in fish. Now the way I used to go out there for the fish tasting, to the fish camp, and then there is always one place fish have-looks like a parasite but it’s not, it’s normal. It’s on one side of the fish and my dad used to tell me if you cut a fish you’ll see it’s there, and it’s always there. When we go to the mine, the fish was very good at the beginning. Even where there is a flood and that, the fish eats from

the land, from all the dirt and gas and the road going out back into the water. That's where you know the fish would be the same because of what happened on the land. There is some oil too from the exhaust and all that. Out there, it's the same thing. If you don't watch where the water seeps down into the lake, there can be oil and gas from all the diesel trucks out there and then the blasting, the smoke and fumes, they go in the water. There are a lot of minnows there too and then we always find minnows in trout, even in whitefish. ...Fish are predators, they eat small little fishes. And you see just dirt, flies, anything that is floating on the lake, that's what they pick up and they eat, you can see it. I cannot blame the environment, natural causes for it, it's only because of the mine. So, I told you that when I was there, I know a lake where this happened. There was a flood and...there was fishing out there, trapping on the land, the fish was very good. Our ancestors fished at Nonacho Lake. After the dam was built and there was a big flood after the spilled the dam, the fish was not even edible, the skin of the fish was just black. It's what they eat that affects the fish. When they know if that lake is healthy, the fish are healthy in there. But this lake is - scientists may know everything, but that lake is not healthy, that's why the fish is not healthy. They have to have a reason and that's the reason, it's because of the water and the water they put back in the lake, that is why the fish are not good now. It's all the dust going in the lake. And some lakes, inland lakes, it's not all the same, it's all different. Some inland lakes the water is dark, some places it's clear, so when it goes from here, you'll fly over. You'll see it's muddy at the bottom. Some places have just clean water, natural things. This lake we live on here, it is very good. The river comes from the barrenlands to our land. If you see canoe, you can see 30ft down, you can see all the rocks and everything down there. The fish are good now, but I don't know in the future. Eventually the water is going to run off into the Great Slave Lake from up there. Everything is started by the mining, that's no good for the environment. No matter how careful you are to not contaminate the land, you contaminate it. Who do you think is going to suffer? We are the ones that are here after they leave. They throw their pen away and we are the ones that suffer. That's why we always try to protect our land. We want only good things for our future generation. Everyone wants good things for their kids and grandkids and the lives of our people. When we come here, we come with an open heart, kindness, we have to say what we have to do, the way I feel about it. Now the water is not going to be pristine... Here will be a lot of runoff that goes into that lake also. We are talking here about everything on the land, about the closure of the mine. So we could go to the mine and look for a day trip. Then we have to ask a lot of questions if we don't know what is happening out there. We always say, don't look only at one place. On the northeast where the water is deep, we want to fish there, where the river goes; to the Coppermine, the mouth of the river, we want to check down there too. They [people at the mouth of the Coppermine] depend on the water, the water has to be clean. There is lots of minnows too on the lake where the fish are, eating those other minnows. But there is nothing, just water and bugs in the stomach of the fish. I know this is what happened. And all the Elders that talk about it, the only reason is on account of the mine, and nobody can get away from it because it wasn't like that before. You can't blame the environment and the migrating birds. There are not millions and millions of seagulls, it's just a few. Before the mine was there, there was birds migrating there, but the fish weren't sick from that. If you are starving, you eat anything: that's what's happening to the fish in that lake, because they have no food there. So, we try to protect the environment, but when there is something like a company mining on the land... How are they looking after anything? Now you are blaming it on the migratory seagulls, and they live on the fish, the seagull, but the fish didn't get parasites from all these. It's from the mine,

the blasting, the fumes, everything that is going on on that lake. ...There are chemicals you cannot clean out. That will take maybe 100 years. So, this is what my concern is. You tell us the truth, because we know what is going on. We don't need to play blame games here, we have to be honest and talk to one another. That is why I always say we come to a meeting like this. We know what we are talking about, us Elders. I never went to university or anything, but we study the land we live on, we know what happens. Our animals, our land, that is our deepfreeze, our fridge. This is the way our ancestors lived...

**Ted:** What type of birds are we talking about? Have we seen birds with parasites? You said that they poop in the water and the fish eats it, it's like a food chain, goes on and on, so we are blaming the birds now. So I just want to know what kind of birds you are talking about?

**Natasha:** That might be a question for Golder or Myra to follow up on. What I've heard today is Elders talk about parasites. They are not something brand new, but it would be interesting to hear from TK a similar study, what have Elders seen over their lifetimes in terms of changes? As we heard from Albert, you may not have a university degree, but you've studied the land your whole life. You know all about parasites, whether they are in birds or fish or water. I want to make sure we come out of today knowing we have accomplished two major things. Our work today was to look at that video, provide feedback. Second, our work today was to approve the changes in the report. You saw the draft report in December, you gave feedback then, our team made those changes. The only things standing in the way of completing that report and finalizing it, are those little pieces, like the bios, we have your picture and the story, and the interview notes. And the parts of the daily notes that include your name. if you haven't already given it back to us today. We ask you, we are begging you, it's so important like Jack said, to get things right, that we don't want to sign it off unless you are comfortable with it. The other thing we have is a verification form for the draft TK report. The first paragraph explains that you have reviewed the draft report, and you have reviewed the video.... Do we all agree that the report is complete? I'm seeing nods? [Yes, non-verbal agreement around the room]. This form says you reviewed the video but not that you signed off. What we heard from Diavik is that they will take your recommendations and consider them in terms of editing the film. ...There is so much respect and gratitude and reference to working together, just like you have always said. I think you should be really proud of the hard work done today and always. You talked this morning about the change in facilitators and we appreciate hearing your feedback and insights. I know Gord was on the line to address that, we can ask him to come back or maybe there is another time...?

**Joanne:** Is there any opportunity for the group to talk about it tomorrow?

**Myra:** Yes. We did have a discussion with Gord about this at the last TK Panel session, and we can bring it up on the agenda again tomorrow.

**Joanne:** We are still hoping to have a conversation with Diavik about what their reasons were for switching facilitators.

**Jack:** If the TK Panel were to discuss this tomorrow, would you want to be there or do you need to?

**Joanne:** We have other commitments. We have a CGC meeting tomorrow and the next day. We will be tied up with that.

**Nancy:** I need say something. They work so hard, tirelessly from when we start. This is not the end, we will still ask for your help. You are not stopping here right now.

**Doris:** Since I started going with Diavik and with you, I am always appreciating you guys. If I didn't understand, I always ask questions, you make me understand more clearly. I don't know how many

Commented [NT1]: DDMI follow-up

years we have been with Diavik off and on, I'm going to miss you, but you're not that far. Thank you for everything you did for us. You never know, maybe you'll be back. I'll push for it, if I go for meetings, I won't stop asking. As I get older, I will still speak for you.

**Gloria:** I'm not going to be here tomorrow so best of luck for continuing your meeting, travel safe, and TCS will always be here participating in many other forums-I'm pretty sure you're going to come back to this table eventually. Mahsi.

**Joanne:** I'd like to express my love and appreciation to all of you. The hardest part was not losing the contract but losing the opportunity to work with you, and the work that you're doing is so important. That is my life's work too. Whether I am here or not, I will be addressing the issues, in one form or another, and we will speak the truth about the whole experience...

**Natasha:** I echo what Joanne says, it has been such a privilege and honour to work with you over the last decade and you blow me away, you really amaze me with your expertise. The recommendations, ideas, thoughts, everything you've been able to share, what Diavik has been able to respond to. You have to know in your hearts that you really made a difference, and I don't too many people can say that. I think it's because of us working together from our hearts. Like Joanne says, we are still really sad not to be continuing on this path with you but are grateful for the time we have had... Thank you to the interpreters and Ryan from PIDO.

**Peter:** [Closing prayer].

**[End of AEMP Verification Meeting Notes]**

Diavik 2021 AEMP and TK Panel #13 Evaluation - December 2021 Verification Session Summary Results

Question	Very Good	Good	Neither Good nor Poor	Poor	Very Poor	Total Responses	Comments
1. How would you rate the session for working and communicating together?	1	4	1	1	0	7	
2. How would you rate the session for mutual respect among participants?	2	2	1	2	0	7	
4. How would you rate the recording and documenting of TK during the session?	2	3	2	0	0	7	
5. How would you rate the facilitation of the session?	2	3	2	0	0	7	Always good!
6. How would you rate the outcomes and findings of the session?	2	1	1	2	1	7	
8. How would you rate the venue and food for the session?	2	1	1	1	1	6	Soups were delicious!; Not at Yellowknife rate
9. How would you rate the logistics from the session (e.g., hotel, travel, honoraria)?	1	2	1	0	2	6	Not at Yellowknife rate
10. Overall, how would you rate the session?	1	2	3	1	0	7	Always good.; Mistakes written
Question	Too much time / Too many opportunities	Enough time / Enough opportunities	Too little time / Too few opportunities	Total Responses	Comments		
3. How would you rate the opportunities for you to share your knowledge and experiences?	1	5	1	7			
7. How would you rate the amount of time to discuss the topic(s) during the session?	0	3	4	7			

**11. What were the strengths of the session? What did you enjoy about the session? Is there anything you recommend for the upcoming campo that you could share?**

None

Elders speaking; ensure more community participation: 1) women 2) Elders 3) Land users 4) Youth 5) Tech support > need to be in attendance for all communities.

The facilitators lead us through the agenda items really well, kept a good pace. I enjoyed the food, it was really good. Whatever comes up we will share.

The strengths are in the facilitators, who command the pace and thoroughness of the topics to be discussed... All opinions are respected and listened to.

Pre-camp meeting should be carried out prior to going to camp to clarify what the TK Camp involves, i.e. provide notes each day.

**12. How could the session be improved? Is there anything that could be changed?**

None

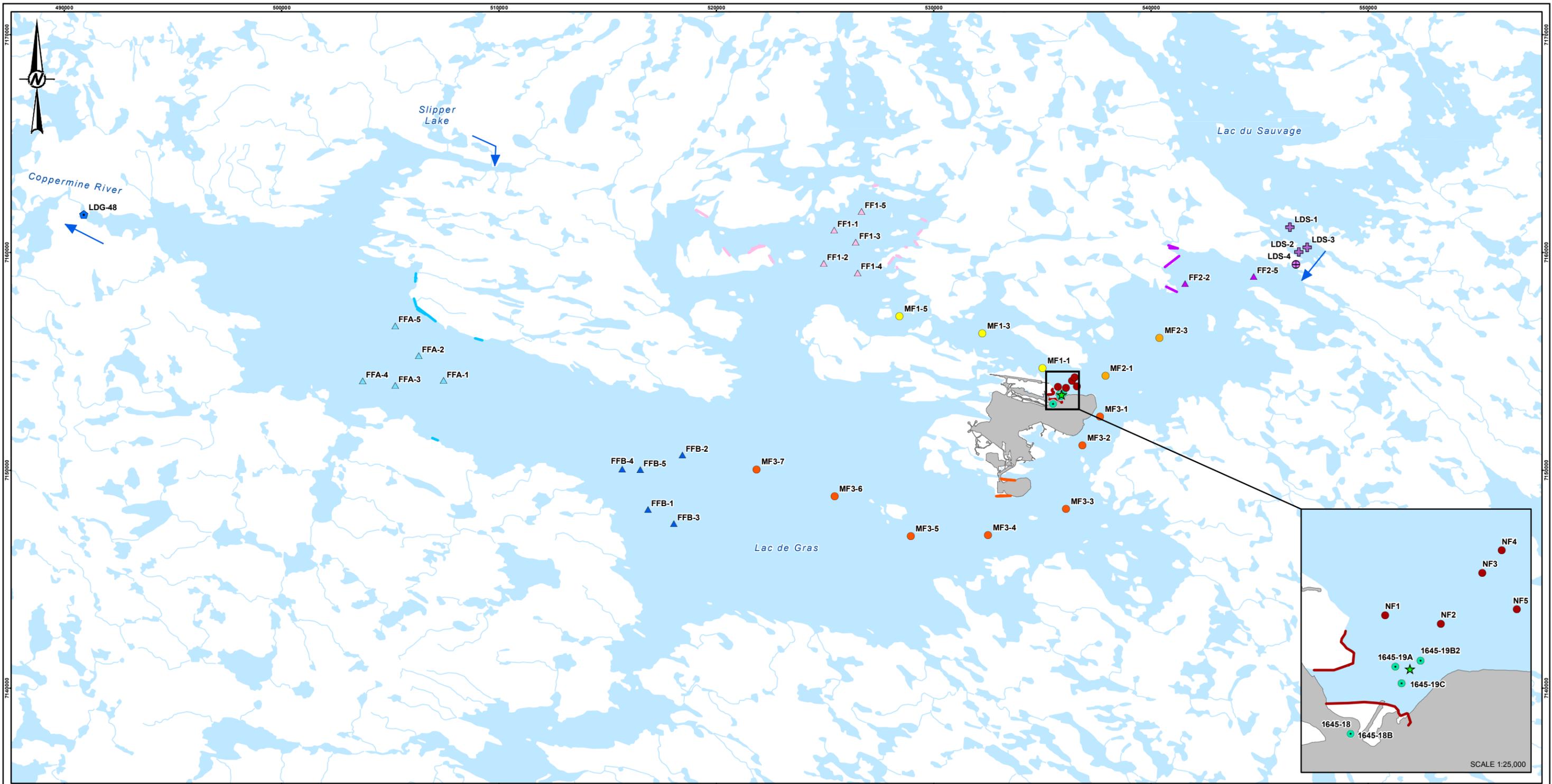
To have all our members attend. 9 people of group need to attend all meetings and have time to preworking prior to meetings, and after meeting discussions - so we can fully participate, and have our people understand and reply respectfully in all areas of discussions.

Need more Tlicho representation from all of their communities, especially youth.

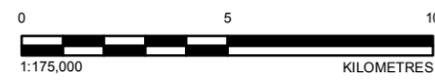
Sessions are great, I wish good health to everyone, Merry Christmas and see you in the New Year.

I would like to do more testing with the river, runoff, and using scoops again like in the past to see living organisms in the lake.

Diavik site visit should be done to view each stage of the entire operation.



- LEGEND**
- ★ DIFFUSERS
  - SURVEILLANCE NETWORK PROGRAM
  - STATION LOCATIONS**
  - ▲ FAR-FIELD 1
  - ▲ FAR-FIELD 2
  - ▲ FAR-FIELD A
  - ▲ FAR-FIELD B
  - ◆ LAC DE GRAS OUTLET
  - ⊕ LAC DU SAUVAGE
  - ⊕ LAC DU SAUVAGE OUTLET
  - MID-FIELD 1
  - MID-FIELD 2
  - MID-FIELD 3
  - NEAR-FIELD
  - 2019 FISH SAMPLING AREA TRANSECTS**
  - FAR-FIELD 1
  - FAR-FIELD 2
  - FAR-FIELD A
  - MID-FIELD 3
  - NEAR-FIELD
  - FLOW DIRECTION
  - WATERCOURSE
  - DIAVIK FOOTPRINT
  - WATERBODY

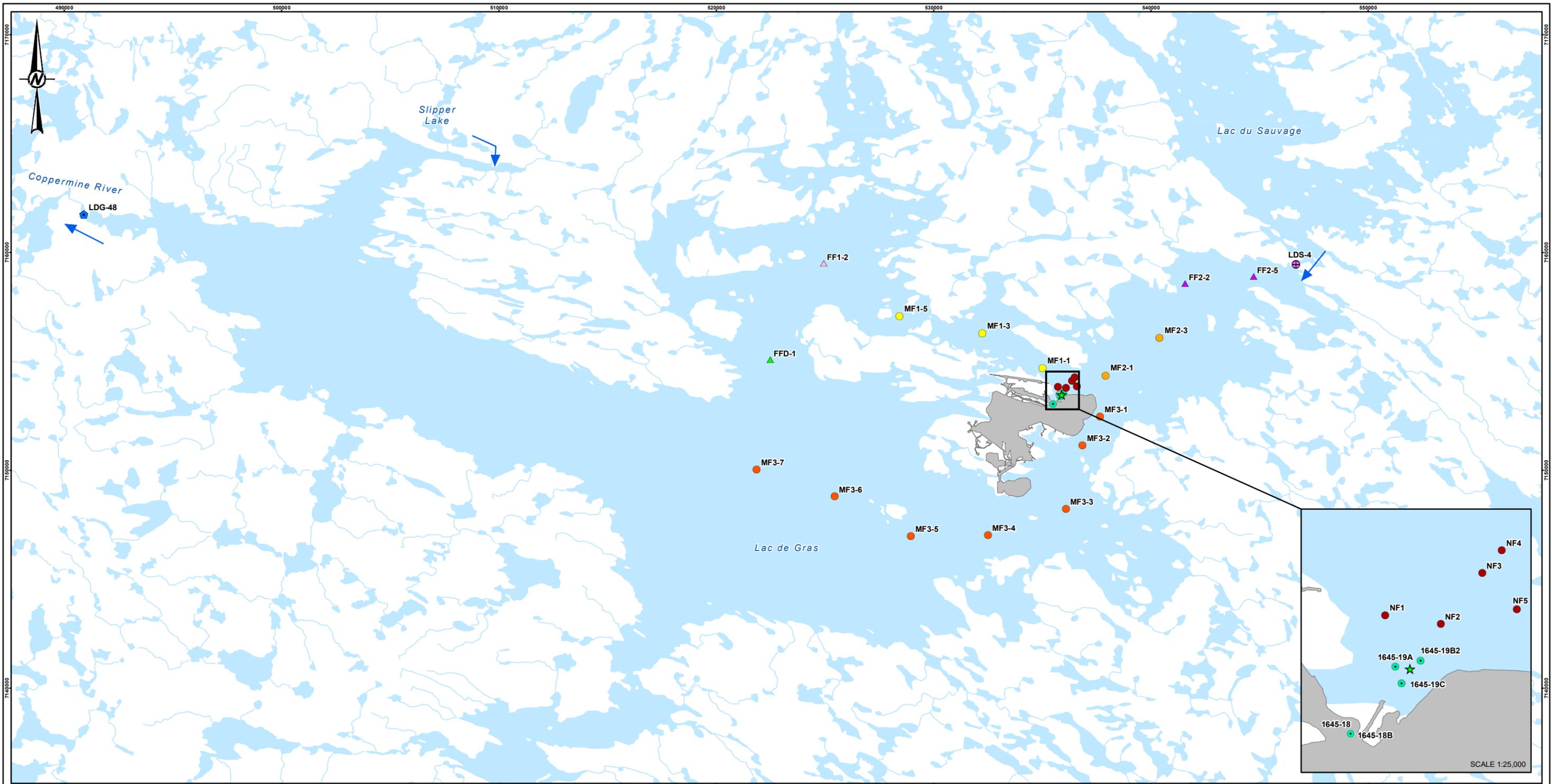


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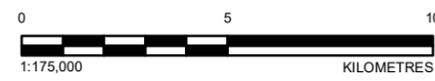
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CONSULTANT	YYYY-MM-DD	2020-04-28
	DESIGNED	LJ
	PREPARED	LMS
	REVIEWED	LJ
	APPROVED	ZK

PROJECT	DIAVIK DIAMOND MINES INC.		
TITLE	<b>SAMPLING STATIONS, 2019 AEMP</b>		
PROJECT NO.	PHASE	REV.	FIGURE
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- LEGEND**
- ★ DIFFUSERS
  - SURVEILLANCE NETWORK PROGRAM
  - ▲ FAR-FIELD 1
  - ▲ FAR-FIELD 2
  - ▲ FAR-FIELD D
  - ⬇ LAC DE GRAS OUTLET
  - ⊕ LAC DU SAUVAGE OUTLET
  - MID-FIELD 1
  - MID-FIELD 2
  - MID-FIELD 3
  - NEAR-FIELD
  - ➡ FLOW DIRECTION
  - WATERCOURSE
  - DIAVIK FOOTPRINT
  - WATERBODY



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CLIENT		
CONSULTANT	YYYY-MM-DD	2021-03-22
	DESIGNED	MC
	PREPARED	LMS
	REVIEWED	MC
	APPROVED	RLS

PROJECT	DIAVIK DIAMOND MINES (2012) INC.		
TITLE	<b>SAMPLING STATIONS, 2020 AEMP</b>		
PROJECT NO.	PHASE	REV.	FIGURE
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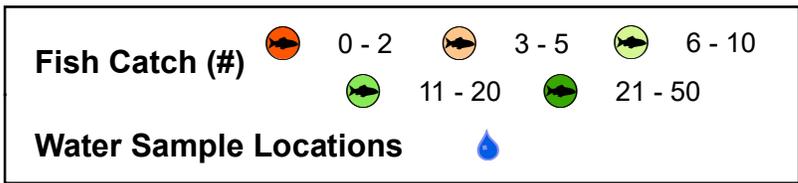
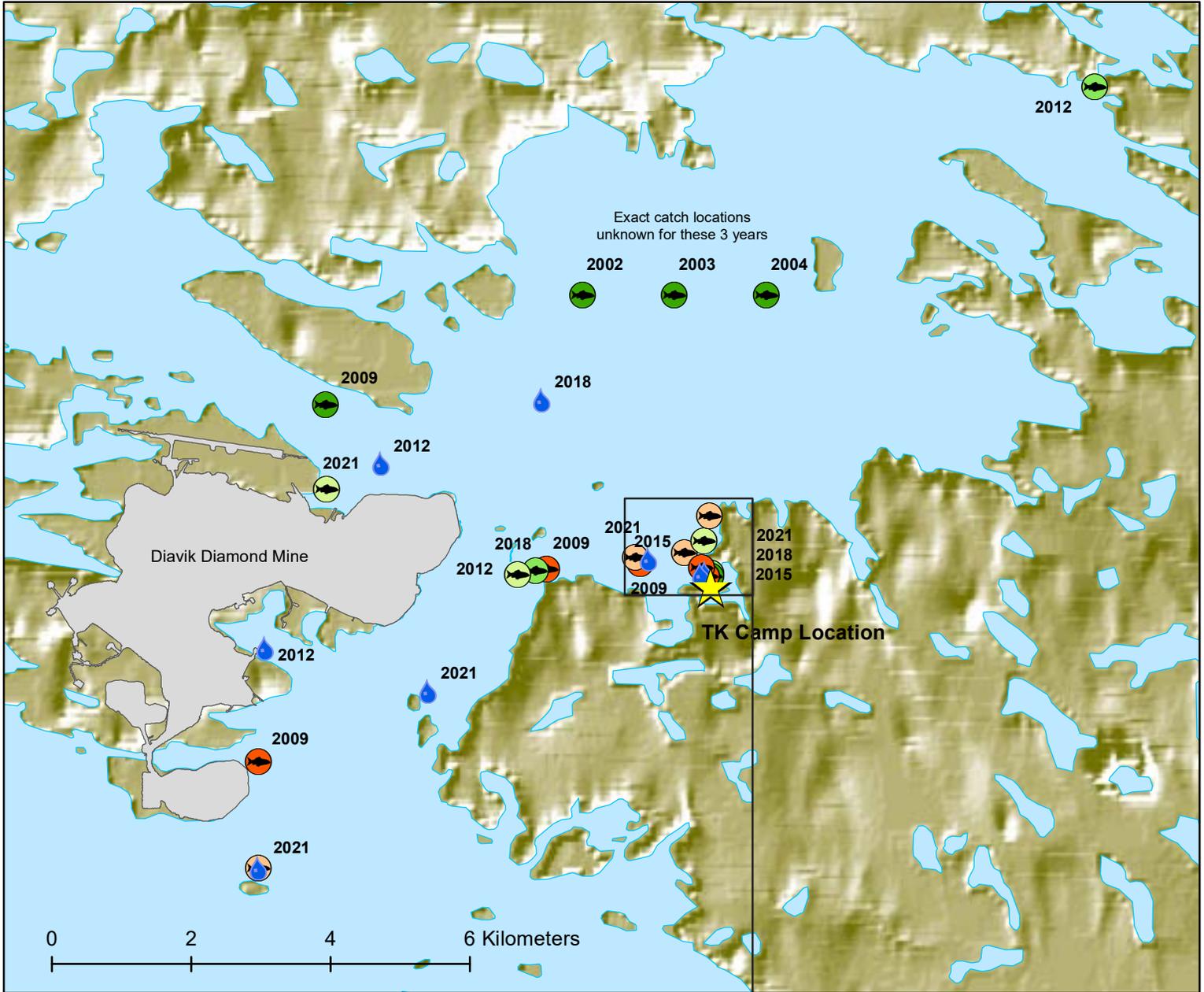
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# Fish Catch and Water Sample Locations



*Diavik Traditional Knowledge Camp: 2002 to 2021*



Year	Total Fish Caught	Lake Trout	Lake Whitefish	Round Whitefish	Cisco	Long Nose Sucker
2002	46	43	0	1	2	0
2003	32	32	0	0	0	0
2004	39	37	0	1	0	1
2009	23	19	3	1	0	0
2012	35	27	6	0	0	2
2015	27	15	8	2	1	1
2018	36	35	1	0	0	0
2021	19	19	0	0	0	0





**GOLDER**  
MEMBER OF WSP

# Responses to Parasite Information Requests

2021 DIAVIK DIAMOND MINE AEMP TRADITIONAL KNOWLEDGE CAMP FOLLOW-UP INFORMATION

Golder Reference No. 21452119-2208-PP-RevA-8000

Diavik Work Plan No. 703 Rev.0

Diavik PO No. 3104699646

19 November 2021

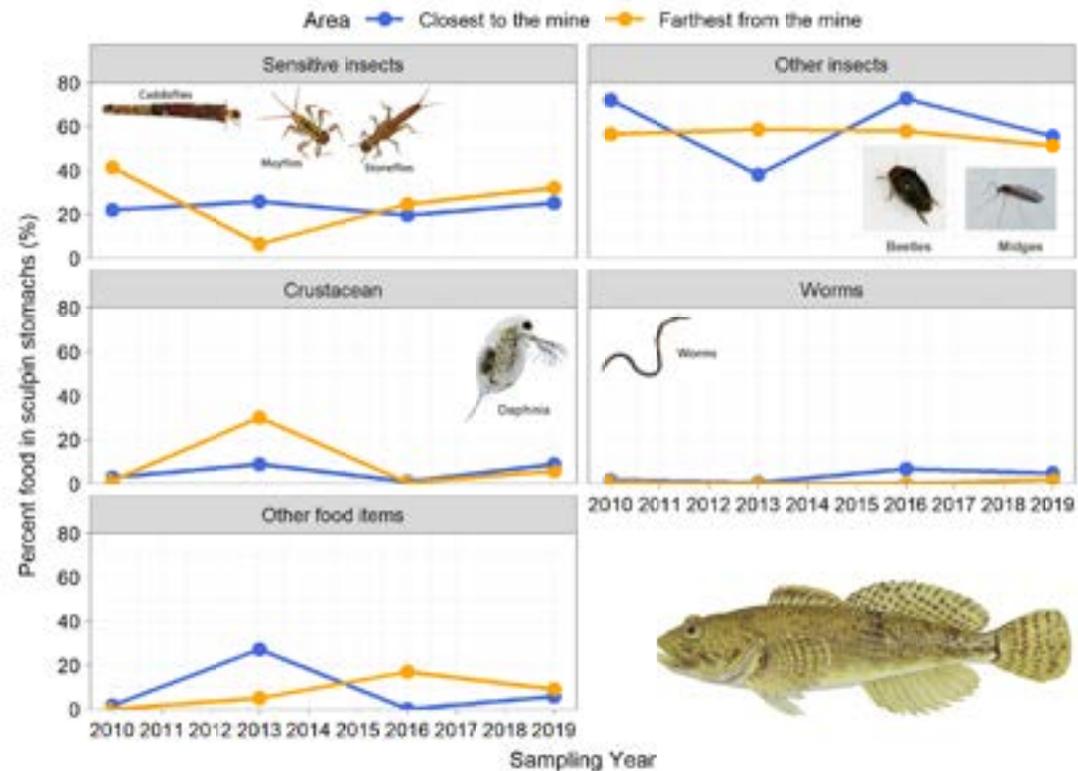
Prepared By: Rainie Sharpe

Reviewed By: Zsolt Kovats

# Stomach Content Analysis of All Fish Processed under AEMP

## SLIMY SCULPIN STOMACH CONTENTS OVER TIME

- Food near the mine = food far away from the Mine
- Sensitive insects are present in Lac de Gras, indicating clean water
- Slimy Sculpin ≠ Lake Trout
  - ✗ where they live
  - ✗ how they spend time
  - ~ what they eat
    - ✓ insects
    - ✗ fish



# Stomach Content Analysis of All Fish Processed under AEMP

## LAKE TROUT – TK CAMP

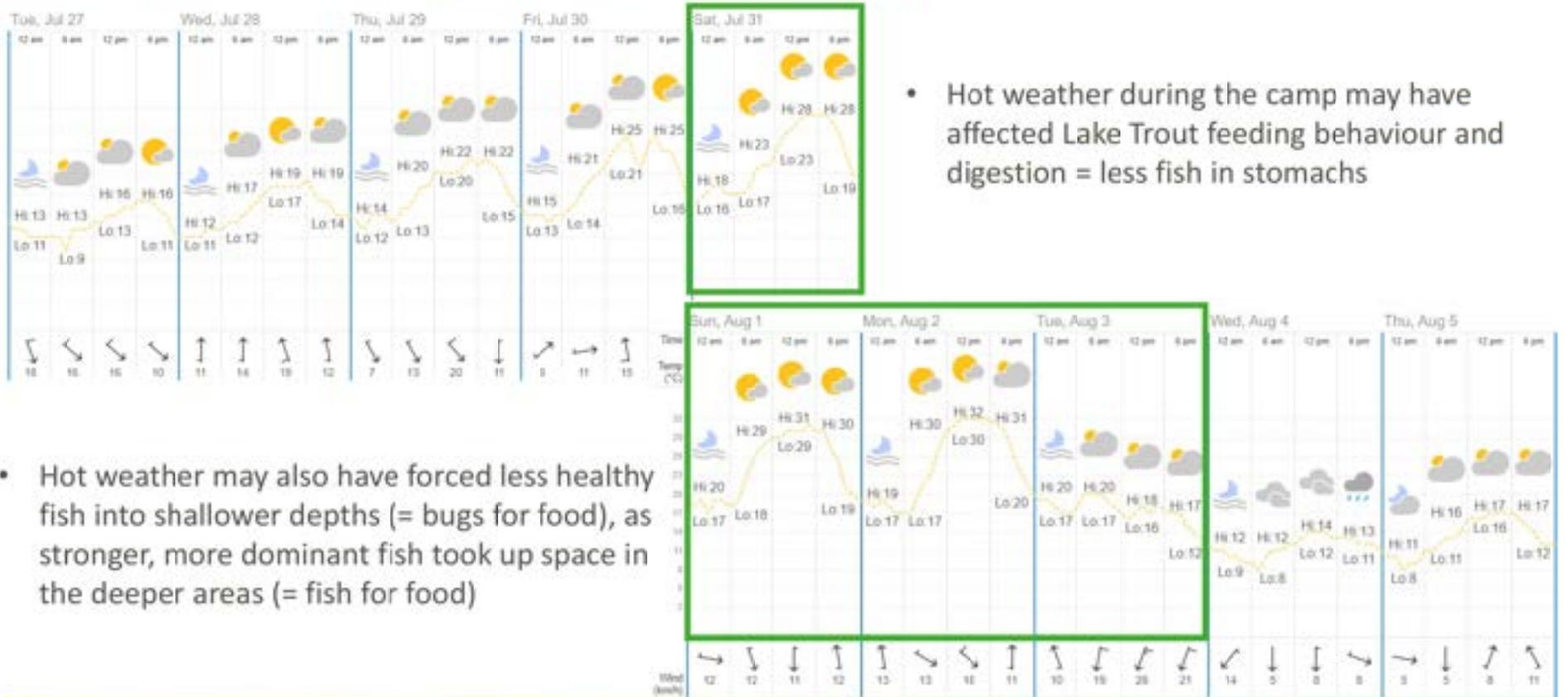
- Lake Trout eat whatever is most available:
  - ✓ Insects
  - ✓ Fish
  - ✓ Insects and fish
- Stomach contents reflect recently eaten food items
- Warm water temperature = slower digestion in cold-water fish + less active feeding behaviour



Photos of Lake Trout 3 (LT3) from the 2021 Traditional Knowledge Camp showing (1) external condition, (2) dissection in progress, and (3) insides after being removed from the fish (including stomach contents). This was the only Lake Trout that had fish in its stomach in 2021.

# Stomach Content Analysis of All Fish Processed under AEMP

## LAKE TROUT – TK CAMP (SUPPORTING INFORMATION)



- Hot weather may also have forced less healthy fish into shallower depths (= bugs for food), as stronger, more dominant fish took up space in the deeper areas (= fish for food)

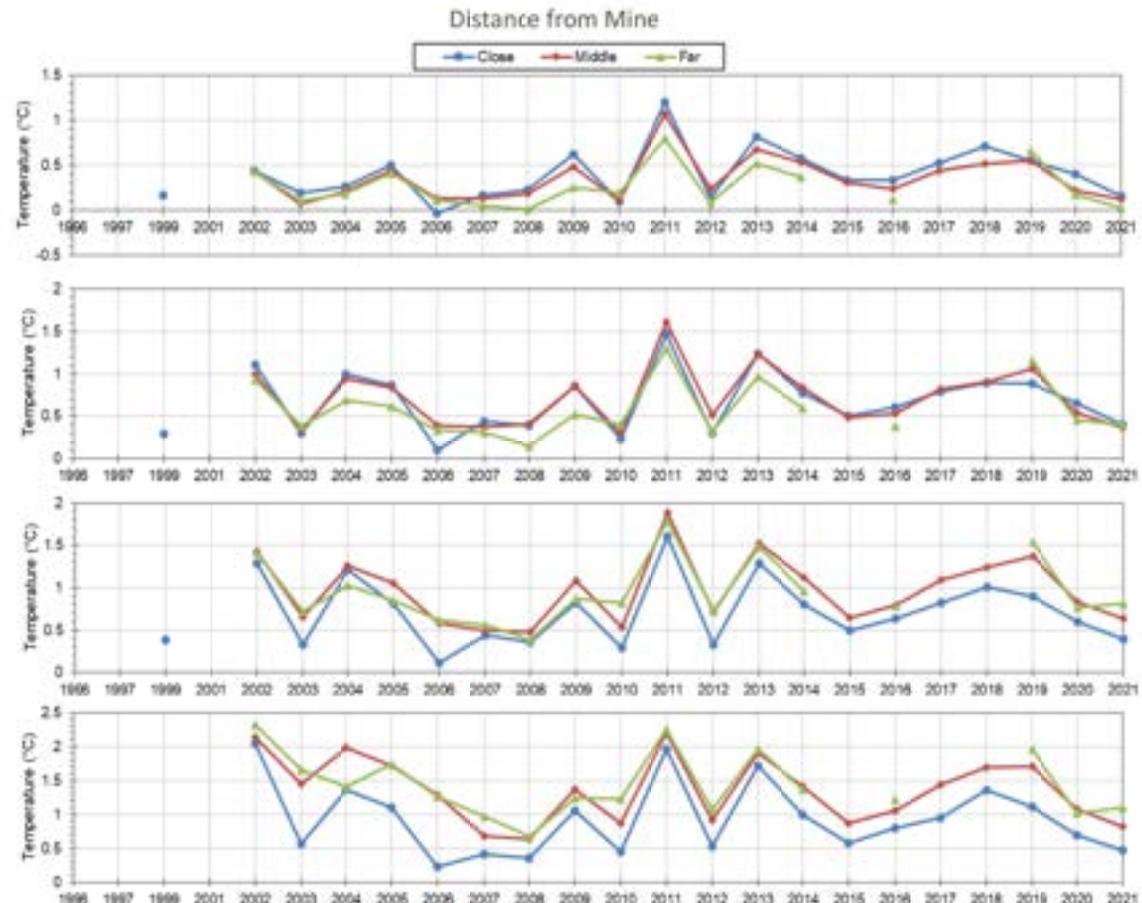
- Hot weather during the camp may have affected Lake Trout feeding behaviour and digestion = less fish in stomachs

# Temperature of Lac de Gras over Time and Distance from Mine

## ICE-COVER SEASON



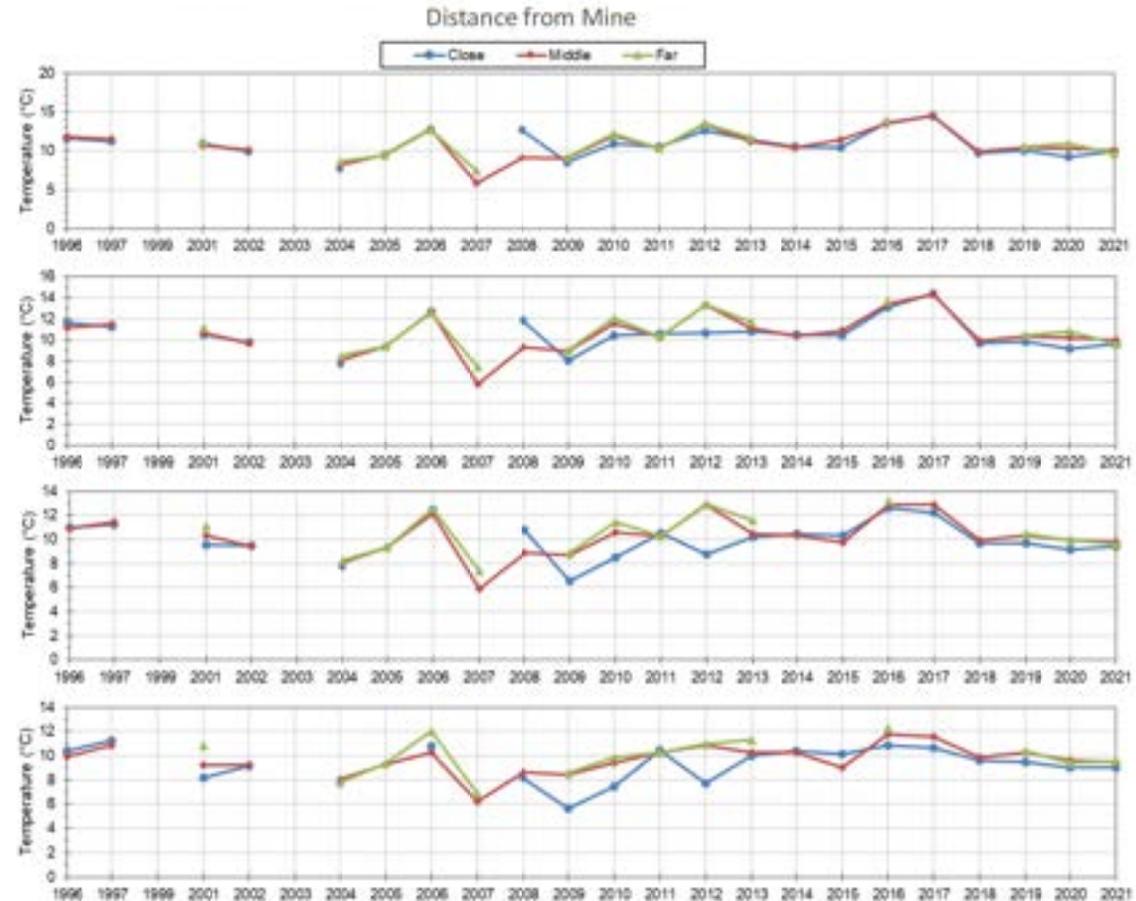
- Variation over time with climate and timing of program
- No trend at any depth or location over time
- Deep temperature near the mine lower than middle and far from the mine in ice-cover only



# Temperature of Lac de Gras over Time and Distance from Mine

## OPEN-WATER SEASON

- Variation over time with climate and timing of program
- No trend at any depth or location over time
- Deep temperature near the mine lower than middle and far from the mine in ice-cover only

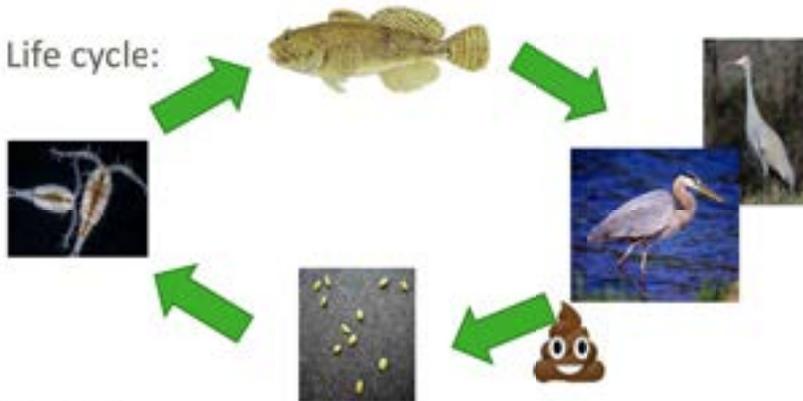


# Results from Small Fish Studies - Parasites

## SLIMY SCULPIN – HISTORICAL PARASITE INFORMATION UNDER AEMP

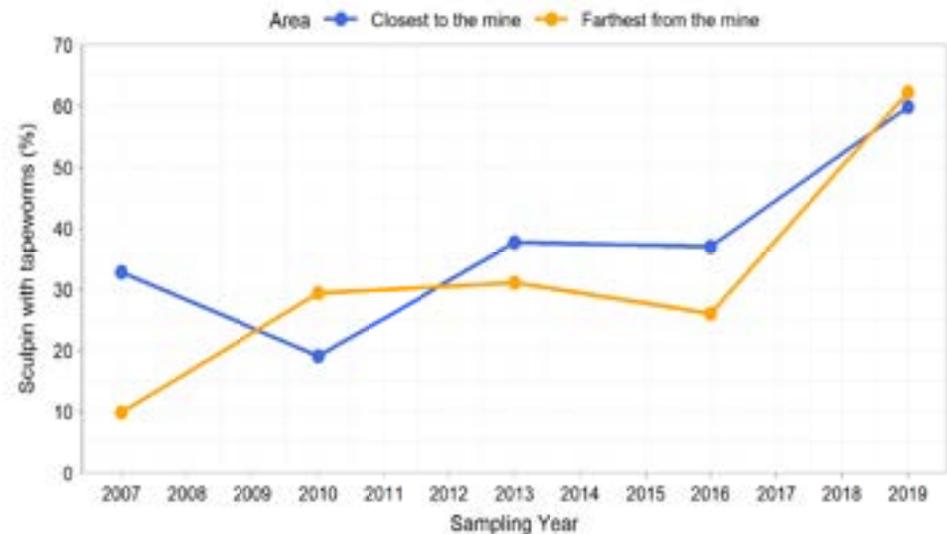
- Tapeworms (*Ligula intestinalis*, a flatworm) are common in Slimy Sculpin

- Life cycle:



- Possible reasons:

- Favourable conditions for parasite
- Favourable conditions for hosts
- AEMP sampling protocol



# Toxicity of Surrounding Lakes and Streams

## POSSIBLE INPUTS FROM SURROUNDING ENVIRONMENT

- Lac du Sauvage and surrounding lakes are safe for aquatic life and people
  - Concentrations of parameters below AEMP Effects Benchmarks in all samples collected since 2010 with only 2 exceptions:
    - pH – below Effect Benchmark but was normal for Northern lakes, water remains safe to drink
    - Manganese – only 2 samples above aesthetic guideline (= taste, colour not good), but water remains safe to drink
  - One sample documented with lead concentrations slightly above Effects Benchmark (Jay Project) believed to be a sample/analytical quality issue
- Streams not influenced by Mine activities are not monitored (no data)

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

- Parasites observed in 2021 (field ID):

- Cestodes (Tapeworms):

- Diphyllobothrium* (cyst obs)
- Triaenophorus* (cyst, worm obs)

- Nematodes (Roundworms):

- Raphidascaris acus* (cyst obs)
- Other (worms obs)

- Trematode (Fluke):

- Ichthyocotylurus* (cyst obs)

- Crustacean

- Salmincola edwardsii* (adult obs)

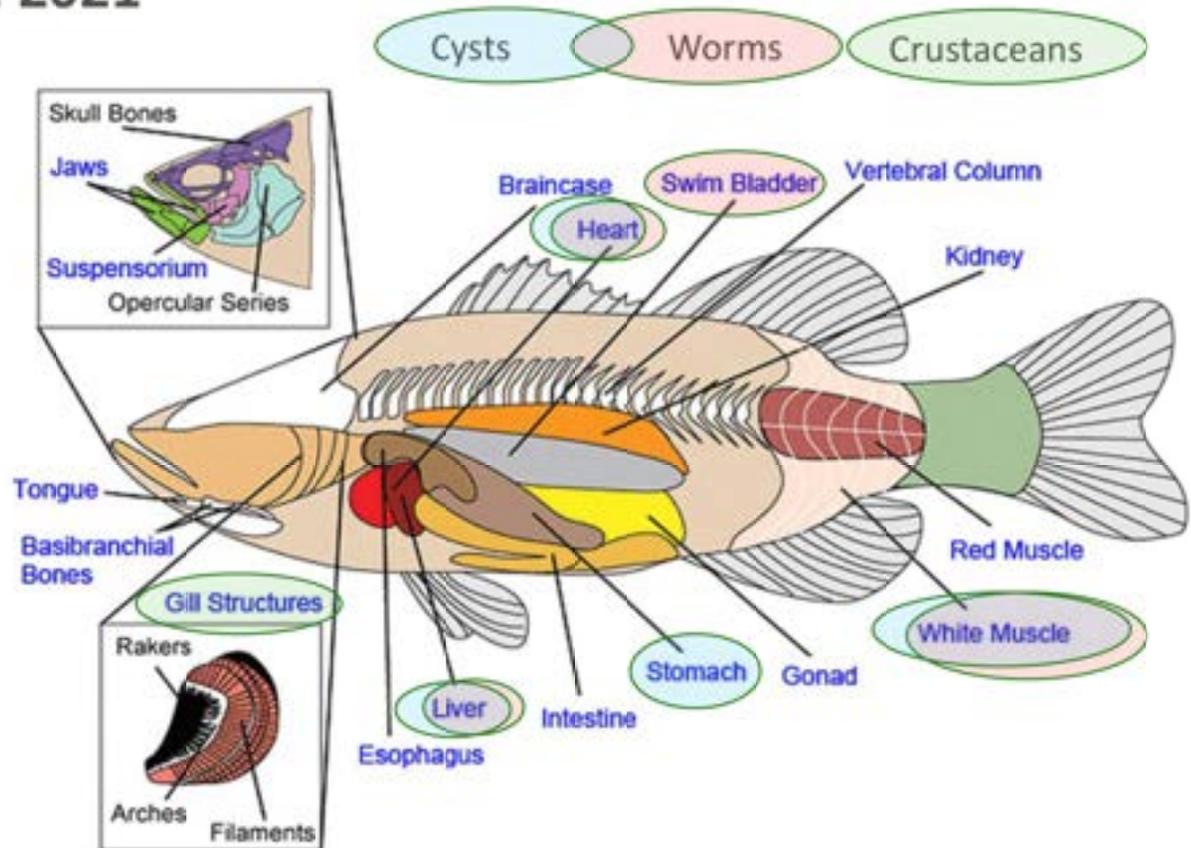


Image credit: [The Anatomy of Fish \(thesprucepets.com\)](http://TheAnatomyofFish.com)

# Parasites and Cysts found in 2021

## 2021 COMPARED TO PREVIOUS YEARS

- Cestodes, Nematodes, Trematodes and Crustaceans were documented in fish before the Mine started operating (1996)
  - Consistent with early years of operation (2002, 2003, 2005)
  - Consistent with subsequent TK camps (2008, 2012, 2015, 2018)

*"The stomach, which is typically cooked and consumed, was not eaten from the fish because of large numbers of parasitic cysts."*

*- 2009 Community-based Monitoring Camp Report*

*"Cysts along the outer stomach wall and esophagus. I see this a lot and it is ok. This is very normal."*

*- Paul Vecsei, Golder*

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*"We saw yesterday one of the ones that had the big head and tapered body. There was no mass to it whatsoever. When we opened it up, it had no fat on the stomach, an enlarged gallbladder, and a lot of worms. My overall impression is that it would not be too favourable as the proportions were all wrong."*

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*"Bigger fish are generally skinner."*

- **Elder Madelaine Drybones, Łutsel K'e Dene First Nation**
- 2012 AEMP Traditional Knowledge Study Report

# Caribou - Parasites

## DISCUSS PARASITES IN CARIBOU

- Caribou parasites = warble and bot flies, worms
  - Parasite life-cycle includes a stage that occurs outside of the caribou's body
  - Warming climate/weather patterns may increase the abundance or the length of time when caribou can become infected
- Increasing numbers of muskoxen in the NWT (who's territory and parasite species overlap with caribou) could increase the infection risk to caribou
- Any increasing trend in caribou with parasites would be driven by natural factors, such as weather and muskox numbers, operating over very large areas and long periods of time



*Photo credit: Rainie Sharpe*



**GOLDER**  
MEMBER OF WSP

# Responses to Parasite Information Requests

2021 DIAVIK DIAMOND MINE AEMP TRADITIONAL KNOWLEDGE CAMP FOLLOW-UP INFORMATION

Golder Reference No. 21452119-2208-PP-RevA-8000

Diavik Work Plan No. 703 Rev.0

Diavik PO No. 3104699646

19 November 2021

Prepared By: Rainie Sharpe

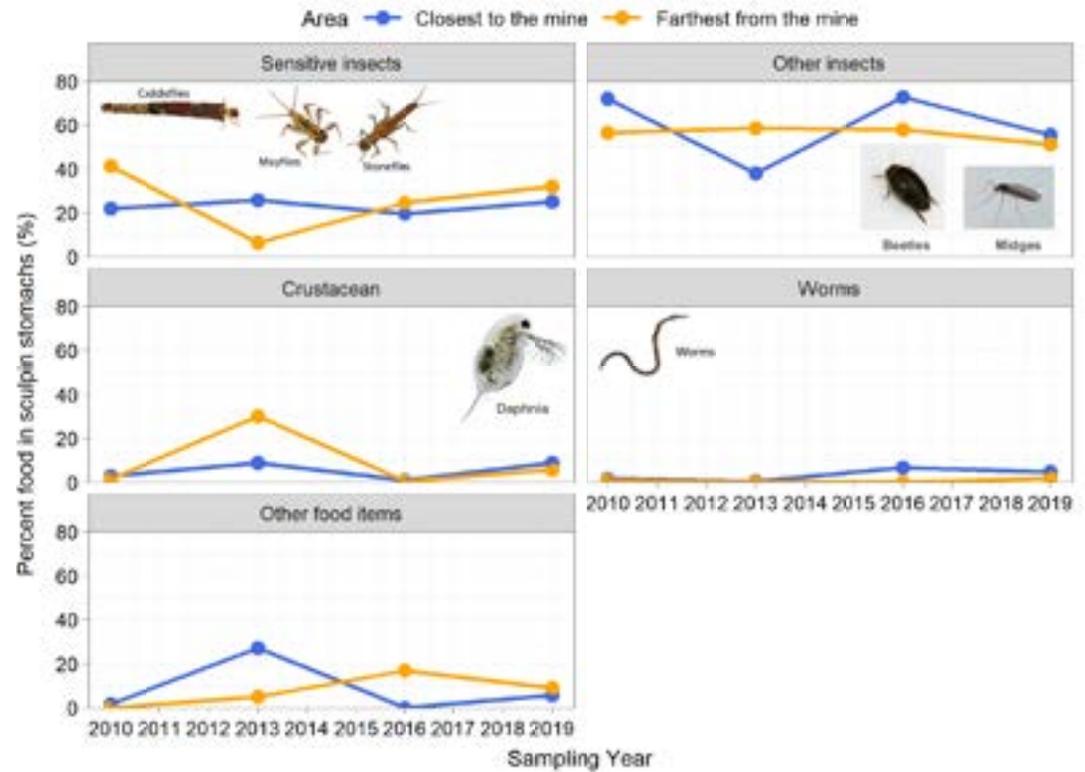
Reviewed By: Zsolt Kovats

# Stomach Content Analysis of All Fish Processed under AEMP

## IS THERE A LINK BETWEEN SLIMY SCULPIN STOMACH CONTENTS AND LARGE BODIED FISH DIET AND/OR HEALTH?

The diet of Slimy Sculpin consisted mostly of insects, including several sensitive species such as mayflies, stoneflies and caddisflies. The second most common food item was crustaceans (for example, copepods and water fleas), followed by worms and other food items (Figure 1). The relative amount of each food item was similar close to and far from the mine, and was fairly consistent over time, with the exception of some minor differences in 2013.

There wouldn't be a direct link between the stomach contents of Slimy Sculpin and large-bodied fish species such as Lake Trout. These species live in different habitats and have different life histories, and while both species prey on invertebrates, Slimy Sculpin do not eat other fish (with the exception of fish eggs).



# Stomach Content Analysis of All Fish Processed under AEMP

## SLIMY SCULPIN STOMACH CONTENTS OVER TIME

Golder. 2011. Aquatic Effects Monitoring Program 2010 Annual Report for the Diavik Diamond Mine, NT. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada.

Golder. 2014. Aquatic Effects Monitoring Program 2013 AEMP Annual Report for the Diavik Diamond Mine, NT. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada. March 2014.

Golder. 2017. Aquatics Effect Monitoring Program 2016 AEMP Annual Report Version 1.1 for the Diavik Diamond Mine, NT. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada. March 2017.

Golder. 2020a Aquatic Effects Monitoring Program 2019 Annual Report. Prepared for Diavik Diamond Mines (2012) Inc. Yellowknife, NT, Canada. April 2020.

# Stomach Content Analysis of All Fish Processed under AEMP

## LAKE TROUT – TK CAMP

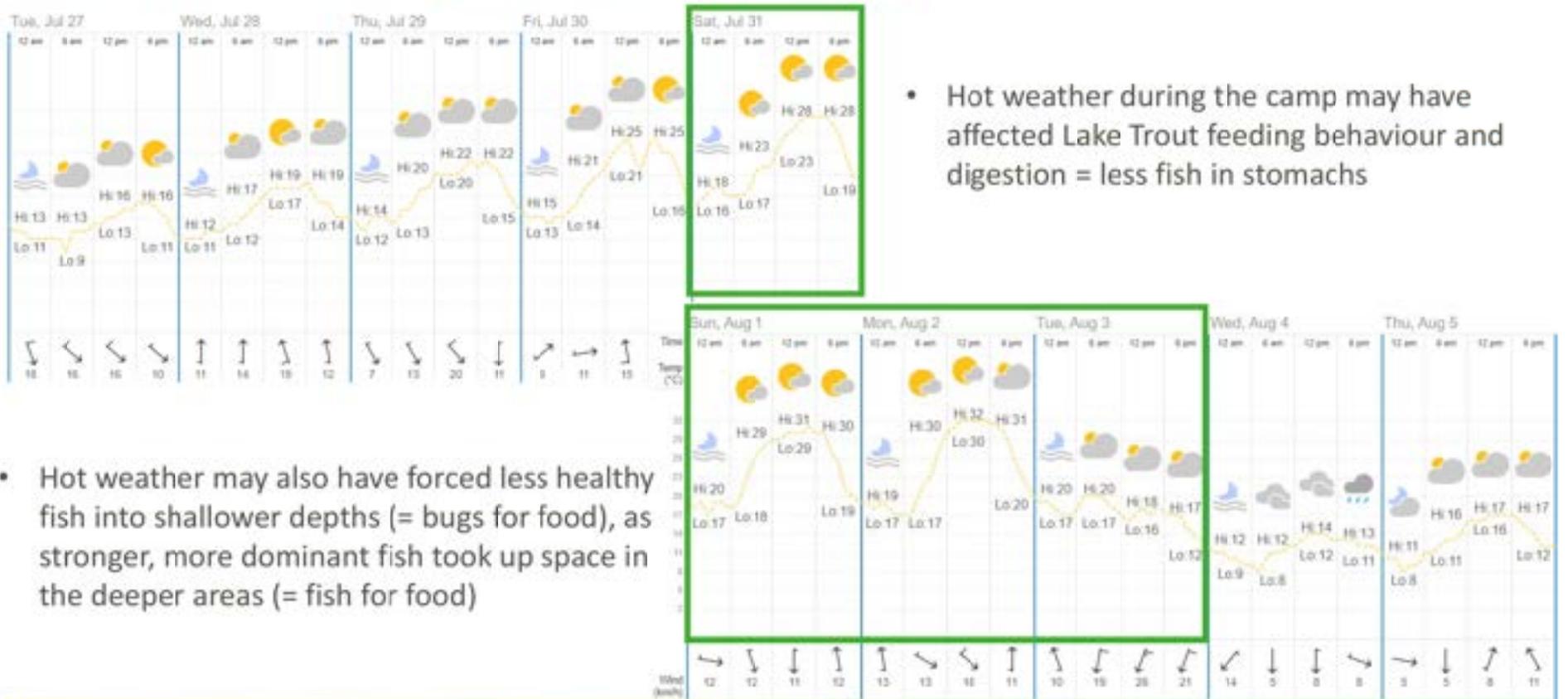
Lake Trout are adaptable predators that feed on a variety of organisms, including invertebrates (i.e., bugs) and smaller fish. Their diets are based on the catchability of different prey species, with bugs being an important component of their diet in northern lakes, where food availability is seasonal and less predictable (e.g., Chavarie et al. 2014). If the majority of Lake Trout sampled during the fish tasting event contained bugs, this would suggest that bugs were the most available prey item prior to capture (please note that photographs from the tasting event indicate that at least one Lake Trout did have fish in their stomach [Photo 1]). The numbers of small fish in the stomachs of Lake Trout does not suggest there has been an impact on fish populations in Lac de Gras, or subsequent impacts on the health of Lake Trout in this system, only that bugs were the most readily available prey prior to capture.

The weather during the camp was very warm, which may also have impacted Lake Trout by altering feeding behaviour and digestion times. Less healthy individuals may have been forced into shallower water (therefore, making them more catchable by camp participants), because healthier stronger individuals took the deep holes.



# Stomach Content Analysis of All Fish Processed under AEMP

## LAKE TROUT – TK CAMP (SUPPORTING INFORMATION)



- Hot weather may also have forced less healthy fish into shallower depths (= bugs for food), as stronger, more dominant fish took up space in the deeper areas (= fish for food)

- Hot weather during the camp may have affected Lake Trout feeding behaviour and digestion = less fish in stomachs

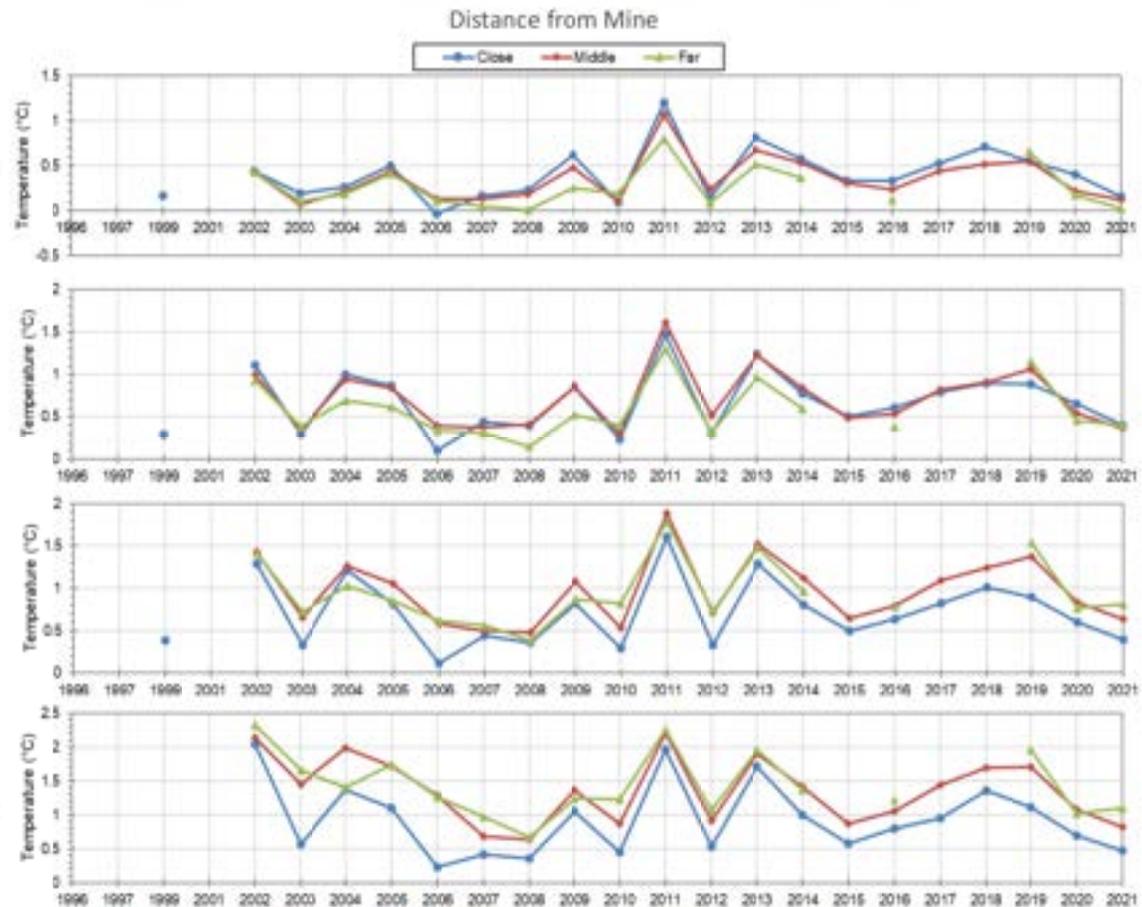
## Temperature of Lac de Gras over Time and Distance from Mine

### OPEN-WATER AND ICE-COVER SEASON WATER TEMPERATURE

- Water temperature in Lac de Gras has been measured every year since 2002 (see following figures):
  - There is some variation among years, probably reflecting the timing of the measurements; for example, temperature would be colder in late September compared to early August
  - There is no obvious increasing or decreasing trend in temperature over time at any depth or location, in either season.
  - Close to the Mine, temperature in deep waters tends to be colder than in other areas of the lake during winter, by about 0.5°C. There isn't enough baseline data to tell whether this is mine-related.

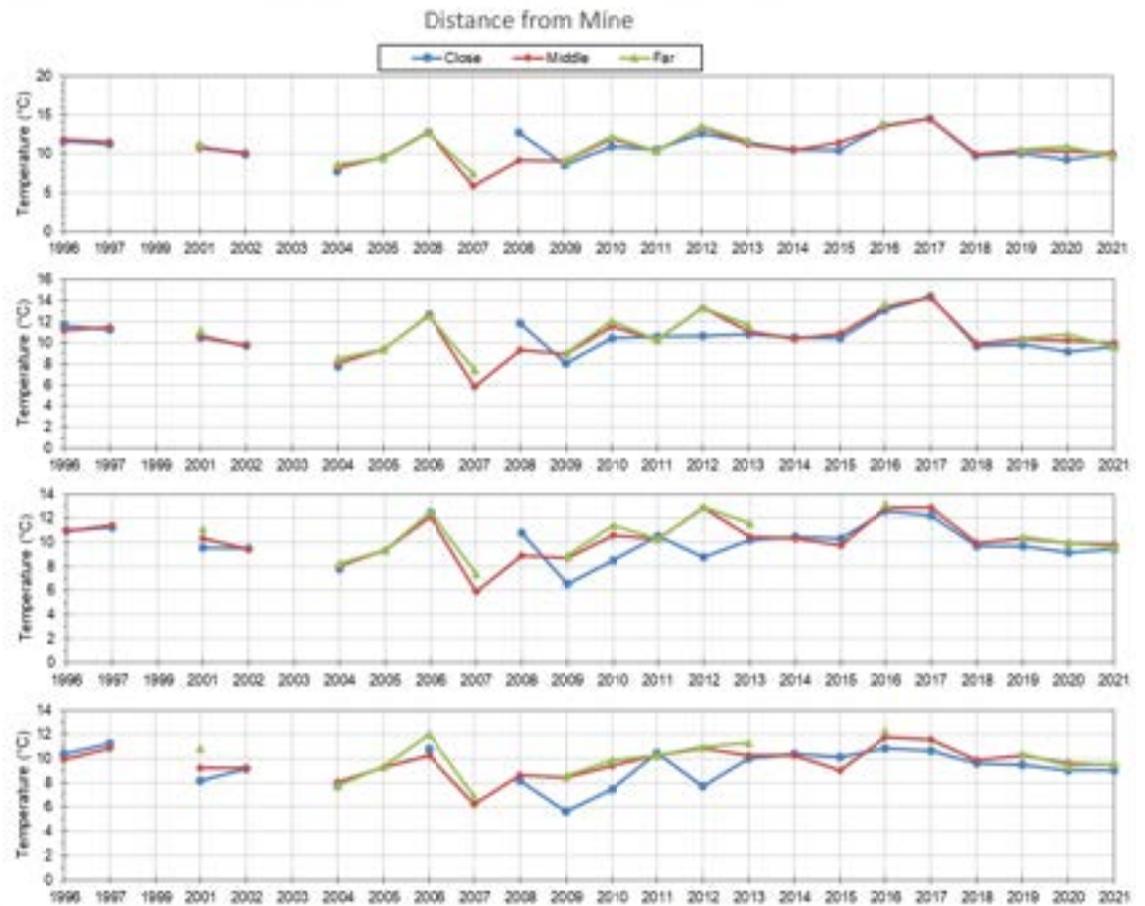
# Temperature of Lac de Gras over Time and Distance from Mine

ICE-COVER SEASON



# Temperature of Lac de Gras over Time and Distance from Mine

OPEN-WATER SEASON



# Results from Small Fish Studies - Parasites

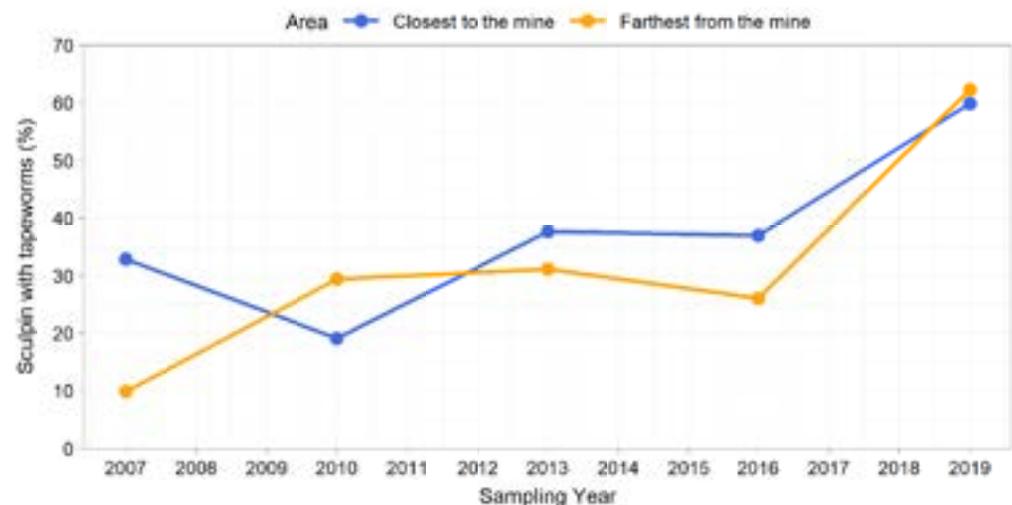
## SLIMY SCULPIN – HISTORICAL PARASITE INFORMATION UNDER AEMP

Information on internal parasites was documented for Slimy Sculpin sampled during the Diavik AEMP in 2007, 2010, 2013, 2016, and 2019 (Golder 2008, 2011, 2014, 2017, 2020a), with trends over time evaluated during the 2017-2019 AEMP Re-evaluation report (Golder 2020b, Section 10.2.2.4).

Slimy Sculpin in Lac de Gras were commonly infected with tapeworms (specifically, the plerocercoid form of *Ligula intestinalis* [CRI 2006]). These tapeworms have a complex life history, first infecting copepods (small crustaceans), then small-bodied fish (such as Slimy Sculpin), and finally fish-eating birds. Once they infect a fish-eating bird, the parasites release their eggs into the water through the bird's feces, repeating the cycle.

The number of Slimy Sculpin infected with tapeworms has changed over time, both near the Mine and far from the Mine in Lac de Gras (Figure 2). The number of infected fish varied from 10% to 40% between 2007 and 2016 and then increased to around 60% in both areas in 2019. As similar patterns were observed in both near and far from the Mine, it does not appear to be related to Mine activities. Instead, recent increases in the number of infected fish may reflect more favorable conditions for these parasites in recent years, such as environmental conditions or an increase in the numbers and condition of available hosts (that is, copepods or fish eating birds).

It is unlikely there would be a direct link between parasitism in Slimy Sculpin and large-bodied fish species such as Lake Trout. Most parasites have complex life-histories and require specific host species to reproduce, with the tapeworms found in Slimy Sculpin requiring a fish-eating bird to complete their life cycle, and are unlikely to infect Lake Trout. However, if conditions in recent years have been more favorable for tapeworms infecting Slimy Sculpin, the same may be the case for other species of parasites.



# Toxicity of Surrounding Lakes and Streams

## POSSIBLE INPUTS FROM SURROUNDING ENVIRONMENT

- DDMI has collected water quality data in Lac du Sauvage since 2010. Stream data are not available. Concentrations of all samples from lakes were below guidelines (referred to as Effect Benchmarks) for the protection of aquatic life and drinking water except for:
  - Laboratory pH values were below the drinking water Effects Benchmark of 7 in the majority of samples and below the aquatic life Effects Benchmark of 6.5 in seven samples. This is a normal condition for northern lakes.
  - Total manganese concentrations in two samples were greater than the drinking water Effects Benchmark of 20 µg/L, which is an aesthetic guideline applied to prevent undesirable tastes in beverages and staining of plumbing fixtures and laundry.
- Additional water quality data is also available for Thonokied Lake, Afridi Lake, and Lac du Sauvage for 2016 and 2017 from the Jay Project (Reference Lake Report for the Jay Project):
  - The data for these lakes show that total metals were either below detection limits or, if detected, below AEMP benchmarks, with the exception of lead. A total lead concentration was slightly above the AEMP benchmark of 1 µg/L in one sample collected from Lac du Sauvage. This result is likely anomalous, given the consistency of all other sample results.
- Overall, the data for surrounding lakes indicates that surface waters in the area of the Diavik Mine are non-toxic to aquatic life and people.

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

- Parasites observed in 2021 (field ID):

- Cestodes (Tapeworms):

- Diphyllobothrium* (cyst obs)
- Triaenophorus* (cyst, worm obs)

- Nematodes (Roundworms):

- Raphidascaris acus* (cyst obs)
- Other (worms obs)

- Trematode (Fluke):

- Ichthyocotylurus* (cyst obs)

- Crustacean

- Salmincola edwardsii* (adult obs)

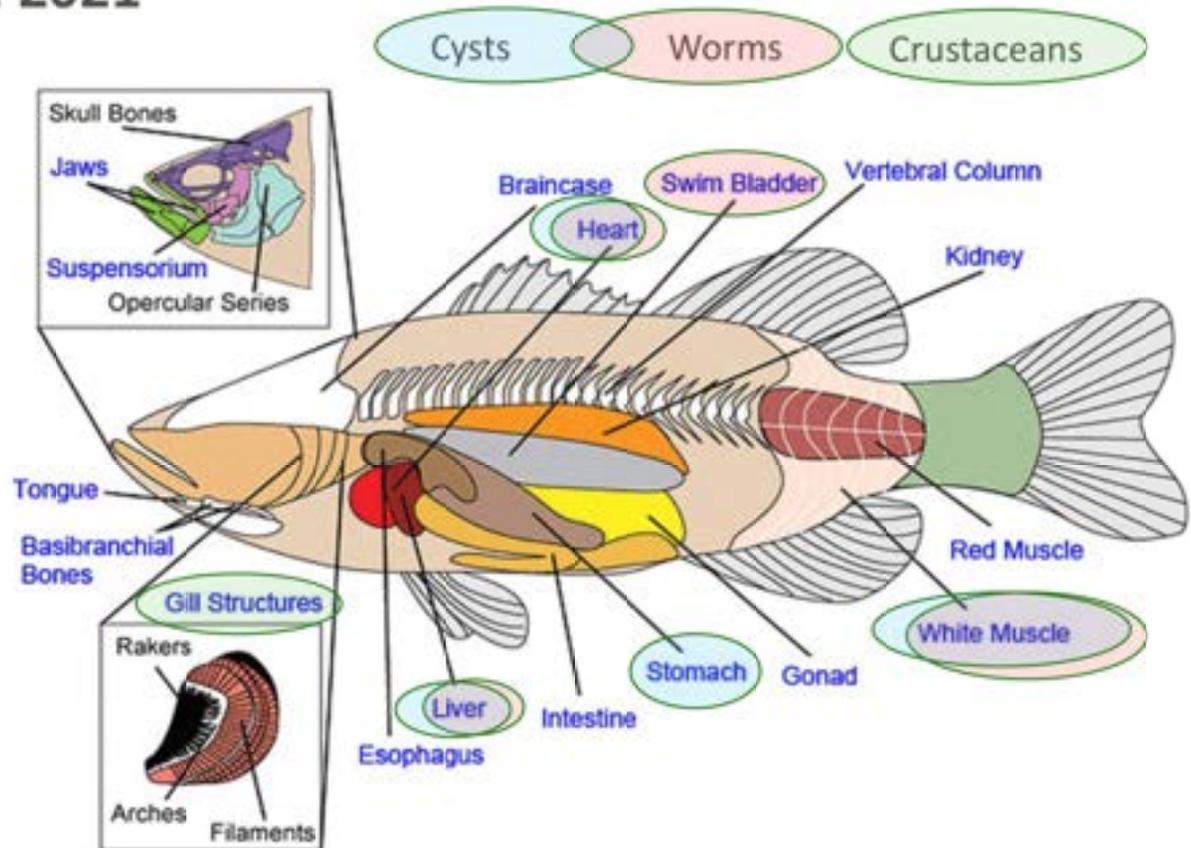


Image credit: [The Anatomy of Fish \(thesprucepets.com\)](http://TheAnatomyofFish.com)

# Parasites and Cysts found in 2021

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# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Cestodes (Tapeworm)

- *Diphyllobothrium* are taken up by fish after eating infected planktonic copepods (e.g., *Cyclops*, *Diaptomus*). Two of the three possible *Diphyllobothrium* species in the NWT may infect humans and dogs; *D. dendriticum* is more common and short-lived, *D. latum* is longer lasting but easily treated – neither is life threatening. Cysts are normally found in fish muscle and are killed with thorough cooking or freezing to -21°C.
- *Triaenophorus* are taken up by fish after eating infected planktonic copepods (e.g., *Cyclops*) and are common in freshwater fish species in the Northwest Territories and are harmless to humans but can affect the value of infested fish. Larvae of *T. crassus* encyst in the muscle of a variety of salmonids. Larvae inside the cysts are thin, ribbon-like worms several cm in length.



Photos of Lake Trout 22 (LT22) muscle parasites (suspected Cestodes).

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Nematodes (Round worm)

- *Raphidascaris acus* is in Class Nematoda (round worms). They are found in the digestive tract, body cavity, swimbladder, gonads and liver. Most salmonids are infected by adult worms which cause limited tissue damage. Migrating larvae can cause considerable damage to organs (e.g., liver). These parasites do not infect humans or dogs, but they can affect fish health.
- **Other** - These transparent or white, unsegmented worms are widely distributed in freshwater fishes in the Northwest Territories and Nunavut. Common representative genera include *Cystidicola*, *Hysterothylacium*, *Philonema*, and *aphidascaris*. They are found in the digestive tract, body cavity, swimbladder, gonads and liver. Most salmonids are infected by adult worms which cause limited tissue damage. Migrating larvae can cause considerable damage to organs. These parasites do not infect humans or dogs, but they can affect fish health.



Photo of Lake Trout 12 (LT12) internal organs and parasites (Cysts).

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Trematodes (Flukes)

- *Ichthyocotylurus* is in Class Trematoda (flukes). These small parasites infect the internal organs of a variety of salmonids in the Northwest Territories and Nunavut. Their occurrence is likely widespread, geographically and in terms of fish species but, because of their small size, they are seldom seen. The adults attach to their hosts using suckers on their front end and belly (anterior and ventral surfaces). Representatives of the genera, *Crepidostomum*, *Diplostomum*, and *Ichthyocotylurus* infect freshwater fishes in the region. They have an indirect life cycle with at least one intermediate host, typically a snail or clam. Larvae (metacercaria) of *I. erraticus* form tiny cysts, usually on the heart, of least cisco and broad and lake whitefish in the western Arctic. These larvae develop into adults in fish-eating birds. **These parasites do not infect humans or dogs but can affect fish health.**



Photo of Lake Trout 21 (LT21) heart and parasites (Cysts).

# Parasites and Cysts found in 2021

## HUMAN HEALTH CONCERNS?

### Crustaceans (Copepods)

- *Salmincola edwardsii* (Subphylum Crustacea) - The genus *Salmincola* has a circumpolar distribution and its members are relatively common on salmonids in the region. *S. edwardsii* attach to the gills of lake trout and do not have an intermediate host. *Salmincola* have free-swimming larvae that attach themselves to the outer surface of the fish. These larvae move and shed (molt) their outer surface several times before maturing to adults. During the final larval stage the larger female attaches itself permanently to the fish using a large, circular anchor or *bulla*. Sexual reproduction occurs during this stage or as an adult. The tiny male then disappears, and the female remains to feed on gill and/or skin tissue and to shed eggs into the water from her two egg sacs. The adult females are typically about a centimetre in body length. Heavy *Salmincola* infestations can lead to secondary infections that kill the fish. Some lake trout have over 50 *S. edwardsii* on their gills. These parasites do not infect humans or dogs but can affect fish health and the value of infested fish.



Photo credit: [Salmincola edwardsii on the gills of an Arctic charr photo credit DB Stewart.png \(720x506\) \(researchgate.net\)](#)

# Caribou - Parasites

## DISCUSS PARASITES IN CARIBOU

Parasite species such as warble and bot flies and different worms are common in caribou and occur naturally (GNWT 2017). Caribou cows are believed to be susceptible to some worm parasites during calving because cows are more concentrated and closer together at this time and calving and milk production lowers the immune response that inhibits parasite egg production and increases the risk of infection (Gunn and Dragon 2002).

Caribou parasites such as flies and worms have a life-cycle stage that occurs outside the animal's body. Weather conditions that are more favorable to survival of either adults or larval parasite stages may increase the abundance of infectious parasites or the length of time when caribou can become infected (Gunn and Dragon 2002). For example, Gunn and Dragon (2002) suggested that the predicted increase in global temperatures may favour the emergence and survival of worm larvae and increase caribou exposure to infection. Alternatively, increasing trends in muskoxen abundance in the NWT (Culyer et al. 2020), who's range and parasite species overlap with caribou, could also increase the infection risk to caribou (Hughes et al 2009). These suggestions are consistent with an increasing trend in parasites noted by Traditional Knowledge holders at the 2021 Traditional Knowledge camp. An increasing trend in caribou with parasites would be driven by natural factors, such as weather and muskox numbers, operating over very large areas and long periods of time and not the result of the Diavik Mine.

# Caribou - Parasites

## REFERENCES

Cuyler C, Rowell J, Adamczewski J, et al. 2020. Muskox status, recent variation, and uncertain future. *Ambio* 49: 805-819. [doi.org/10.1007/s13280-019-01205-x](https://doi.org/10.1007/s13280-019-01205-x)

GNWT (Government of the Northwest Territories). 2017. A field guide to common wildlife diseases and parasites in the Northwest Territories. 6<sup>th</sup> edition. Government of the Northwest Territories.

Gunn A, Dragon J. 2002. Prevalence and intensity of gastro-intestinal nematode parasitism in the Bathurst caribou herd 1998-99. Final Report to the West Kitikmeot Slave Study Society.

Hughes J, Albon SD, Irvine RJ, Woodin S. 2009. Is there a cost of parasites to caribou?. *Parasitology* 136: 253-265. [doi.org/10.1017/S0031182008005246](https://doi.org/10.1017/S0031182008005246)

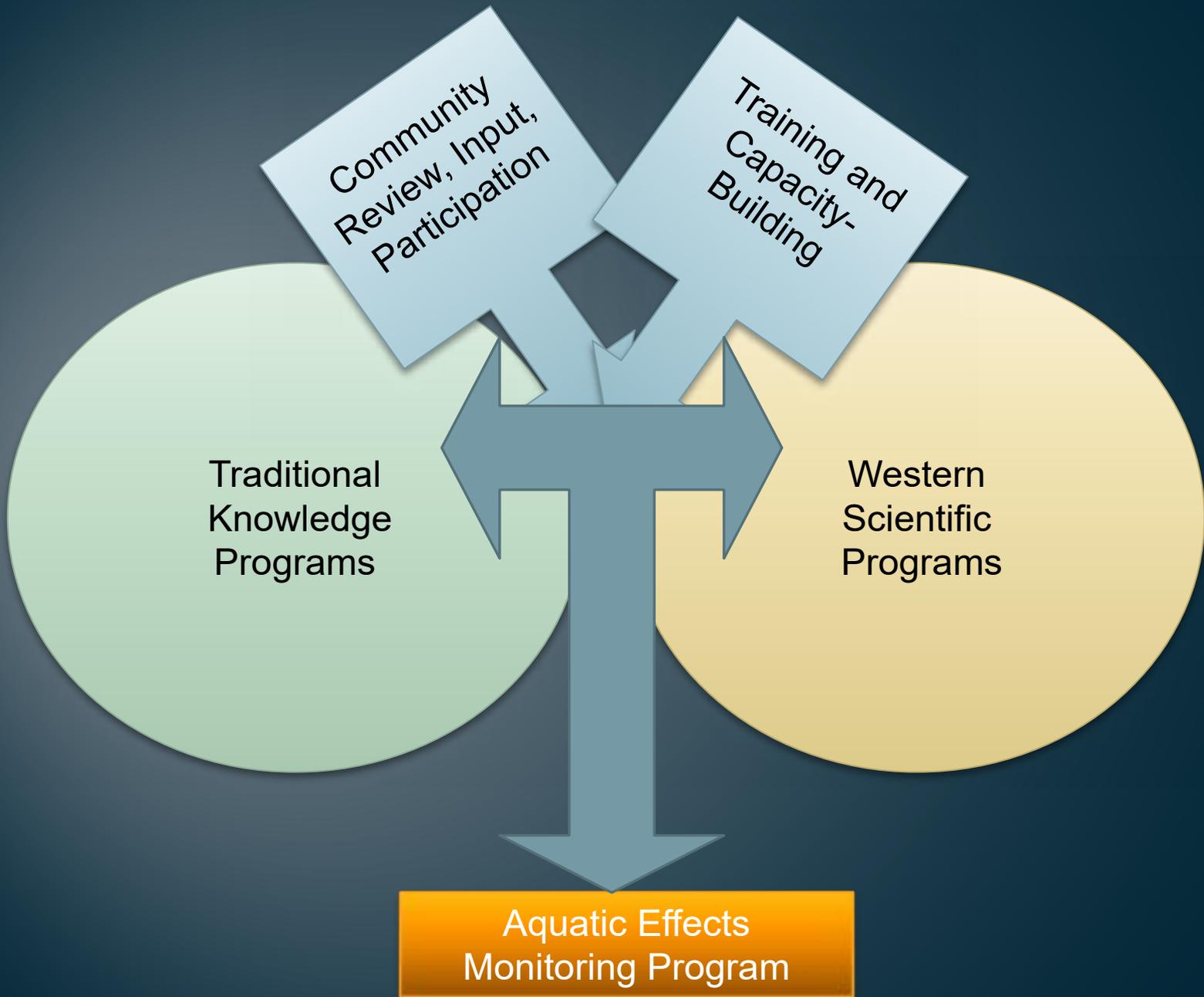


# Diavik Diamond Mine Aquatic Effects Monitoring Program: Report Update (2021)

December 14-16, 2021



Joanne  
Barnaby  
Consulting





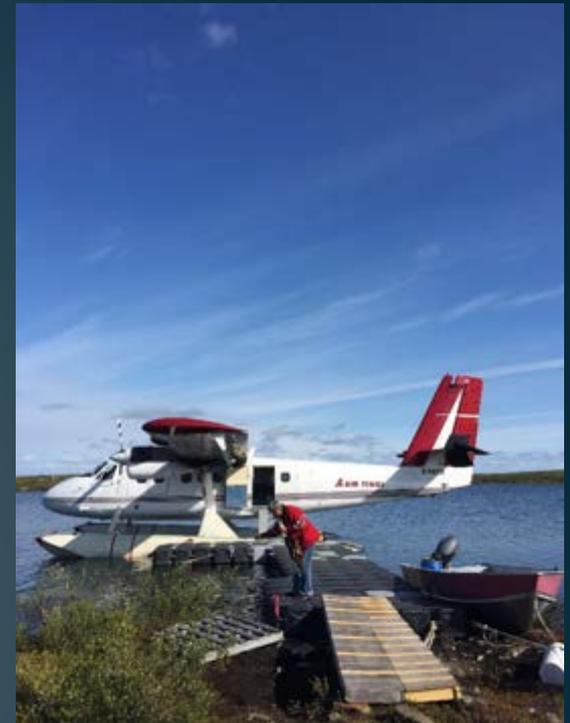


*Our Elders told us in the past to really respect the land, and the ancestors respect the land no matter where we are. The animals, caribou, water, respect the water, the fish. When you go out on the land to the lake, we pay the water out of respect, we are thankful we have water. ... That's the Dene way we were taught. Now we are going to the camp and we have to treat the children in the soft way, not to say you have to do it, but show them what you have to do. [Albert Boucher]*

# Report Overview



1. Introduction
2. Approach and Methods
3. Results (Observations, Learning, Outcomes)
4. Lessons, Storytelling, and Reflections
5. Recommendations



### 3. Results and Observations

*This is our land and our ancestors, our forefathers have been here before us and we are just walking on the trails that they have walked on before us. [Peter D. Sangris]*



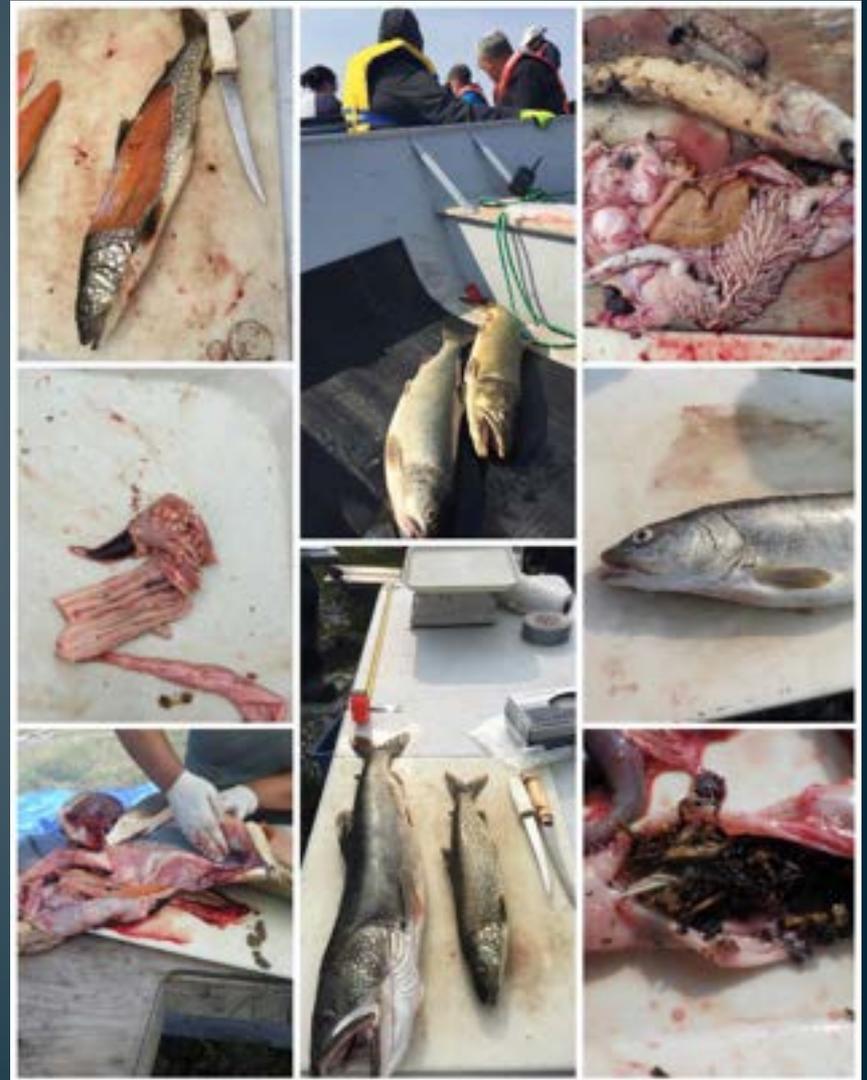
# Fish



*Our TK says from previous [years] - from how we used to be when we were kids growing up, we didn't see much of that kind. We hardly, rarely have seen cysts or parasites on our fish. When the water starts getting warmer, that's when we got an increase. But at the same time, you have to think about other factors that come into play, so for me my main concern would be the metals that are in the fish, the area of the fish, how much of these we get out of this lake. [Gloria Enzo]*

# Fish

*Six years ago, I was here the first time, all the fish had little fish [in their stomachs]. Three years ago, more fish with parasites, a few bugs. This year, no baby fish of any kind. I want to come in September to see what the fish are eating. This year, only bugs and only one with fish spines. ...this is our land. ... seems like the fish are starving, all the small fish are leaving.*  
[Nancy Kadlun]



# Water



# Water

*The water is really important. Not only to me, but to other people, our people, and water is life and we want it clean and fresh and we want it healthy for other generations to come. ...*

*It's a lot of knowledge, it's good to learn. The fish is getting sick, and if the water is not healthy, the fish is not healthy. It's good to learn. I wouldn't eat the fish, no way I would eat the fish. I used to think about it, I'm not going to eat fish here, no way. [Kelsey Martin]*

*And for me, why it's really important for me to be here, I really wanted to see how things are not the same now, like since the mine started until today. I really like to monitor things and see with my own eyes how things are changing. The thing I've seen is the fish are not the same anymore. And the water, it used to be just clear. Like you could see the bottom of the lake, now it's dark... [Doris (Terri) Enzo]*

# 4. Lessons, Storytelling, and Reflections



# Lessons, Storytelling, and Reflections



# Lessons, Storytelling, and Reflections

- Cultural use of Lac de Gras (before/after mines);
- Land connection and intergenerational knowledge (relationships);
- Meaningful contribution to the monitoring or “watching” conversation;
- Joy of the land, the connection and community health;
- Collaborative approaches to monitoring and the value of TK;
- Indigenous guardians, observers and caretakers of the land; and
- Diversity of care for the caribou and the land, and hope for the return of the caribou.

# Lessons, Storytelling, and Reflections

*To be involved in this work for the youth and the Elders is to take care of our land, to make sure there's no more damage for the youth and, maybe in the future, for their great, great grandchild. Then, they'll teach their children how to take care of their land and learn from the Elders. Like when the Elders tell them stories about this, then maybe they'll listen and pick it up, and them, too, can continue on taking care of their land... [Marie Adele Football]*



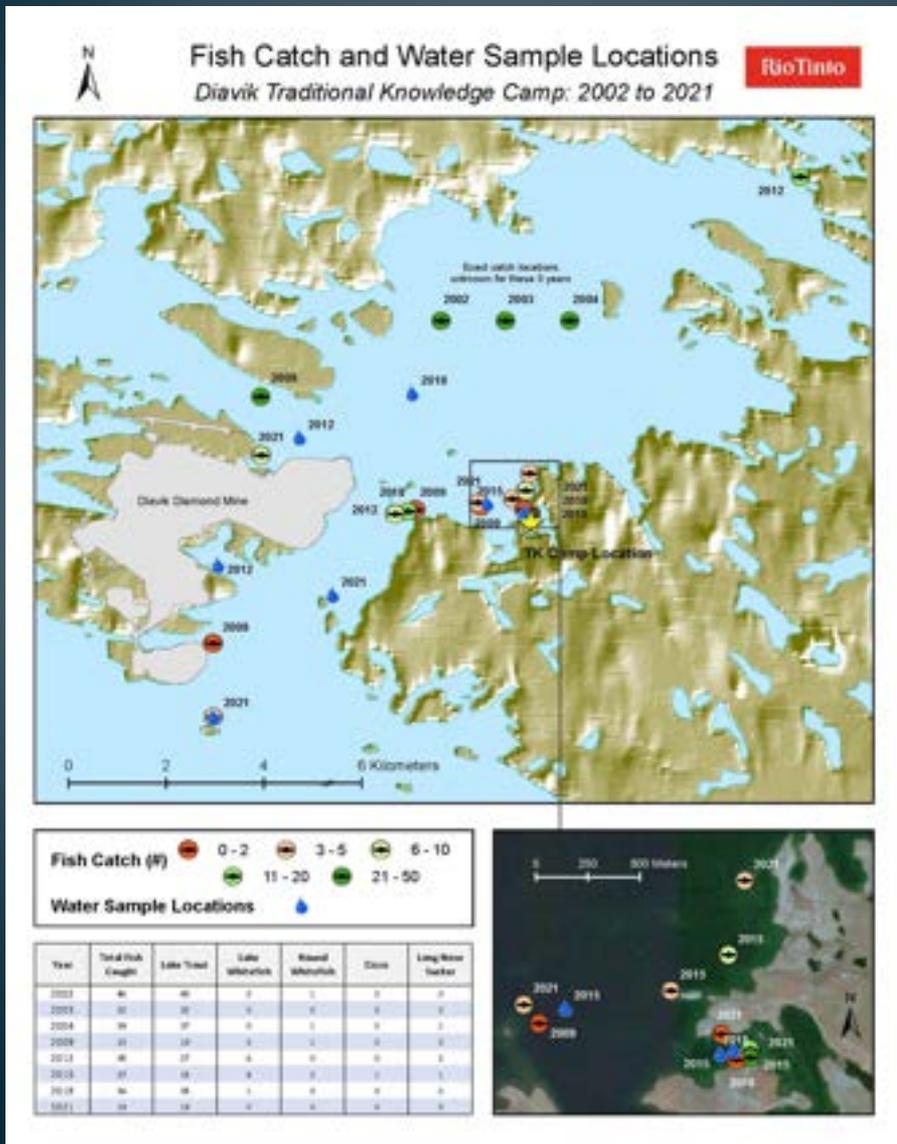
# Lessons, Storytelling, and Reflections



*That Diavik stays, shares with the community, stays there. Like right now we have a great working relationship with them. They listen, they take all our concerns and they say, yes, we can do this and remain with the community.*

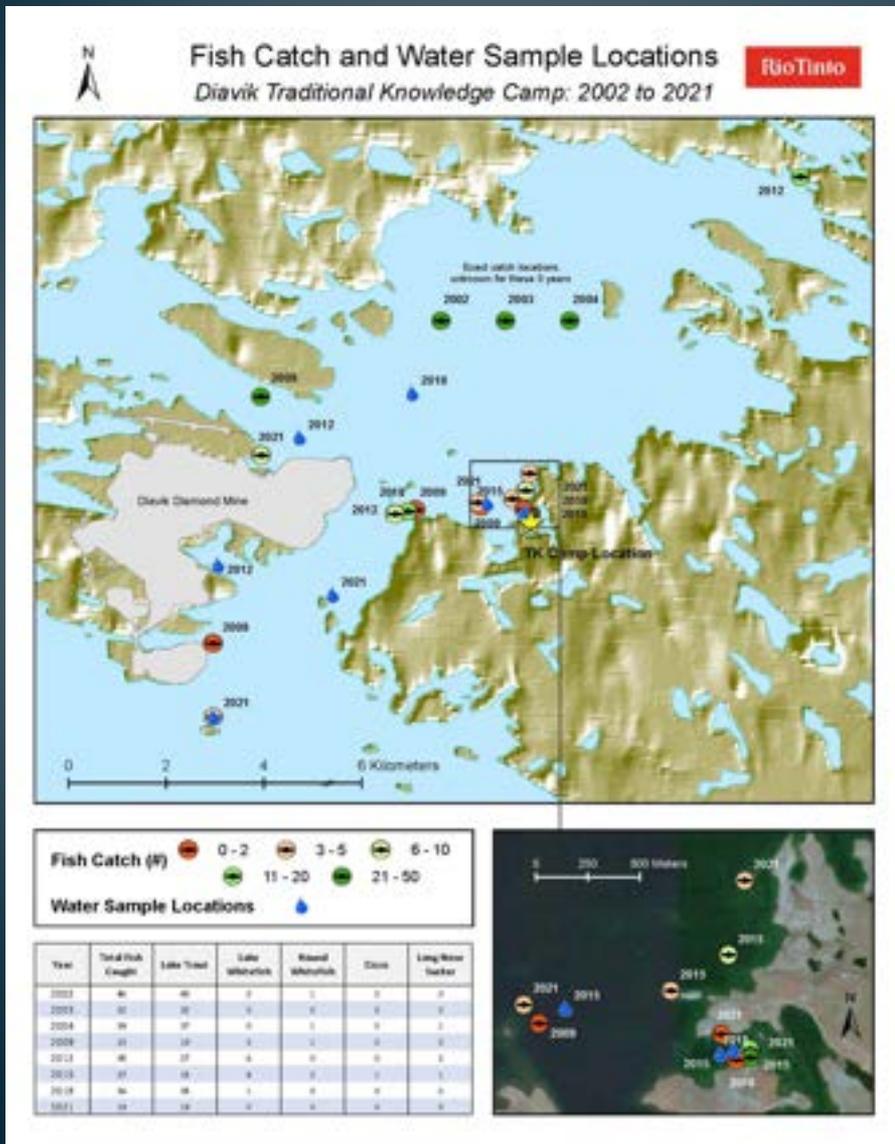
*Like I said, they've developed a relationship with us, try and keep it after. Don't just walk away and say, okay we're done. See you later, here's your monitoring programme. That kind of thing. So stay with the community and the community, the people will be happy to do that. Maybe have a feast in the community and dance and sing and share. That's what I'd like to see. [Kathy Arden]*

# 5. Recommendations from 2021



- Increase frequency of fish and water sampling (to every month)
- Results from past testing, in plain language, by year – highlight change and variation
- Identify source of contaminants in water samples
- Test stomach contents of fish throughout year (identify types of bugs)

# 5. Recommendations from 2021



- Develop a clear understanding of parasites and cysts found – identify which ones are of concern to human health
- Discussion who selects members of the AEMP and TK Panel from each group
- Discuss increased parasites in caribou – how should this be addressed?

# Discussion





# Diavik Diamond Mine Aquatic Effects Monitoring Program: Report Update and Video Verification

Monday, June 6, 2022 | Tree of Peace, Yellowknife, NT

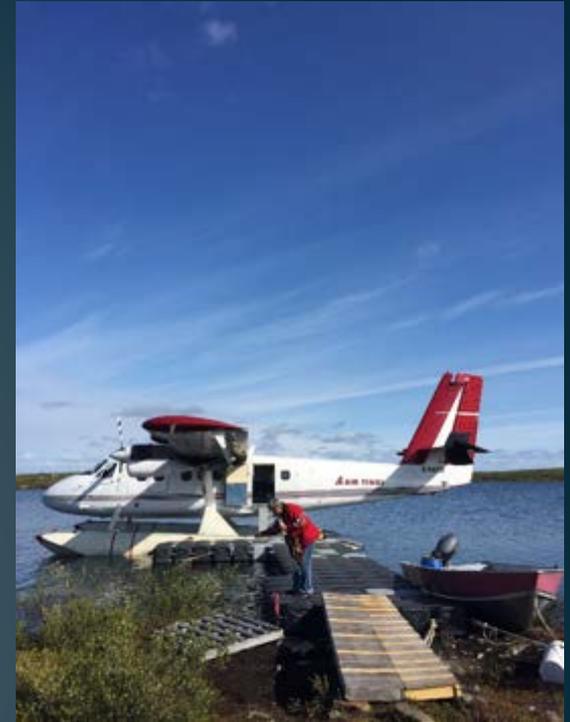


Joanne  
Barnaby  
Consulting

# AEMP Report Overview



1. Introduction
2. Approach and Methods
3. Results (Observations, Learning, Outcomes)
4. Lessons, Storytelling, and Reflections
5. Recommendations



# 1. Updates to Introduction

- Updates to author biographies made, where asked – some still need to be verified 😊



# 3. Updates to Results and Observations

- Final parasite analysis added, Appendix G



# 5. 2021 Recommendations

Recommendation	Rationale	Response (Provided December 2021)
Increase frequency of fish and water sampling to every month.	People want to understand the degradation of the fish.	DDMI considers the established/existing frequency for fish and water sampling for assessing mine-related impacts to fish as appropriate as it is informed by WLWB-led public review processes. DDMI will continue to follow the established frequency for water and fish sampling in the WLWB-approved AEMP Design Plan.
Results from past testing, in plain language, by year—highlight change and variation.	Clear visuals.	DDMI compiles plain language summaries of AEMP results, including changes from previous years, in the AEMP Annual Reports and AEMP Three Year Re-Evaluation Reports. These reports are submitted to the WLWB and undergo a public review. WLWB-approved Annual AEMP Reports can be found on the WLWB's public registry.
Identify source of contaminants in water samples.	How is water changing?	The main driver of mine-related contaminant loading to Lac de Gras is the treated effluent discharge from the onsite water treatment plant. Results of water quality sampling and analyses and discussion of sources of contaminants are presented in the Annual AEMP Reports and in the 3-year AEMP Re-evaluation Reports. These reports are subject to public review and WLWB-approval processes. Other than natural run-off, no untreated water is discharged from the mine into the lake.
Test stomach contents of fish throughout year (identify types of bugs).	Not provided.	DDMI will continue to follow the established frequency for fish sampling in the WLWB-approved AEMP Design Plan. However, DDMI will commit to conducting stomach content analysis for fish caught at the next TK camp.

# 5. 2021 Recommendations

Recommendation	Rationale	Response (Provided December 2021)
Develop a clear understanding of parasites and cysts found –identify which ones are of concern to human health.	Traditionally people will not eat fish with parasites unless they are desperate.	This recommendation has been addressed as part of responses to information requests presented by Golder Associates; specifically, that parasite lifecycles are complex and may involve different hosts/intermediate hosts that can influence parasite numbers.
Discuss who selects members of the AEMP and TK Panel.	Aimed at Indigenous Organizations).	The selection of representatives for TK Camp and TK Panel sessions is completed by Diavik’s five Participation Agreement Partners.
Discuss increased parasites in caribou – how should this be addressed?	Since diamond mines, people are seeing more parasites in caribou.	This recommendation has been addressed as part of responses to information requests presented by Golder Associates i.e., warming climate, changing weather patterns and increased numbers of muskoxen may influence presence of parasites in caribou.



**2011 to 2013 AQUATIC EFFECTS  
RE-EVALUATION REPORT  
VERSION 3.2  
FOR THE DIAVIK DIAMOND MINE,  
NORTHWEST TERRITORIES**

Submitted to:

Diavik Diamond Mines (2012) Inc.  
PO Box 2498  
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X1A 2P8, Canada

**DISTRIBUTION**

1 Copy – Diavik Diamond Mines (2012) Inc., Yellowknife, NT  
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April 2016  
1522041

Doc No. RPT-1468 Ver. 0  
WP 460 Rev 1, PO No. D03176 line 1



## PLAIN LANGUAGE SUMMARY

This summary is intended for both technical and non-technical readers.

### Section 1 – Introduction

This 2011 to 2013 Aquatic Effects Re-Evaluation Report provides a summary of all data collected under the Aquatic Effects Monitoring Program for the Diavik Diamond Mine. In this report the Aquatic Effects Monitoring Program is also called “the AEMP”, and the Diavik Diamond Mine is referred to as “the Mine”. The AEMP consists of monitoring the following components: dust; effluent; water quality; eutrophication indicators (for example, the nutrient phosphorus and the algal pigment chlorophyll *a*); plankton; sediment quality; benthic invertebrates; and fish. This report shows trends over time that may be occurring in these AEMP components. For example, data collected from 1995 to 2013 are shown in a graph. As well, this report compares the AEMP results each of these components back to the predictions of Mine effects made in the original 1998 Environmental Assessment (EA), to see if they were accurate.

### Section 2 – Study Design

The AEMP is the main program described in the Water Licence for monitoring the aquatic environment of Lac de Gras. Mine water discharged into Lac de Gras is the main focus of the AEMP program.

Most components of the AEMP have been monitored every year during both the summer and winter. More recently, under the latest AEMP study design (Version 3.5) approved by the Wek'èezhii Land and Water Board (also called “the WLWB” in this report) the nutrients and plankton are now sampled every year in only the areas where effluent is known to be present in Lac de Gras – this area is called the exposure area. The nutrients and plankton are then sampled every three years throughout the rest of the lake – this area is called the reference area. Water quality is measured monthly at the point where the effluent flows into the lake. Water is also sampled every year in the exposure areas and then every three years in the rest of the lake. Bottom sediments, benthic invertebrates (small animals that live in the sediments) and small-bodied fish are monitored once every three years.

### Section 3 – Dust

The amount of dust coming off the Mine site is measured at several locations around the Mine and offsite. The amount of dust that is collected at these measurement locations has been going down in the last few years. Now that mining activities have gone underground, the amount of dust coming from the site should go down even more.

The amount of dust from the Mine was higher than the amount predicted in the EA. Starting in September 2012, all mining activities conducted at the Mine moved underground, which has led to a decrease in the amount of dust coming off the Mine.

### Section 4 - Effluent

Treated water from the open pits, underground workings and mine infrastructure is called effluent. Effluent was evaluated to see if the amount of chemicals discharged from the Mine is increasing over time. The amount of chemicals entering the lake is called the “loading rate”. Water was also collected near the point where effluent enters Lac de Gras (also called the mixing zone boundary) to see if the amount of effluent chemicals in the lake is increasing.

Sampling of treated effluent is conducted approximately every six days. In addition to the chemical analysis conducted on these samples, the effluent is tested for toxicity (which means the effluent is tested in the lab to see if it harms laboratory-grown fish and plankton). In these tests, freshwater test organisms are exposed to whole effluent and/or effluent dilutions for a pre-determined time period to determine the effluent's effect on the organisms. Water quality sampling at the mixing zone boundary is conducted monthly at three stations, which are located along a semi-circle, 60 metres from the diffusers (pipe from which effluent is released into Lac de Gras).

The assessment of chemicals in the effluent was focused on the 24 chemicals that were identified as Substances of Interest (also called "SOIs" in this report). The focus was also on nutrients (nitrogen and phosphorus, Section 6), which are chemicals that promote the growth of algae in lakes.

The annual loading rate of total dissolved solids (a measure of the amount of dissolved salts in effluent) and several associated salts (calcium, chloride, fluoride, magnesium and sodium) increased from 2002 to approximately 2010. Since about 2010, the loading rate of these chemicals has decreased. Effluent loads and/or concentrations of some metals (molybdenum and strontium) have increased over time; however, most have either decreased (aluminum, barium, copper, manganese) or have remained at relatively similar levels over time (antimony, chromium, silicon, uranium). The annual loading rate and concentration of nitrogen peaked in the Mine effluent in 2006 and then declined until approximately 2010. The annual loading rate of phosphorus to Lac de Gras has generally increased over time. The concentrations of these SOIs and nutrients at the mixing zone boundary followed the same patterns described in the annual loads for these variables.

Effluent tested between 2002 and 2013 was generally non-toxic to aquatic test organisms as shown in over 500 toxicity tests conducted during this period. Mine effluent continues to meet the requirements for quality described in the Water Licence.

No predictions were made in the EA for effluent quality.

## **Section 5 - Water Quality**

The goal of the water quality assessment was to provide a summary of changes and effects observed on the water chemistry of Lac de Gras over time. The importance of an effect was determined by comparing water chemistry concentrations in exposure areas to concentrations in reference areas, to lake background values or to benchmark values. Background values for Lac de Gras are those that fall within what is called the normal range. The normal range describes the natural variability within Lac de Gras. A concentration that is greater than the normal range is not considered normal for Lac de Gras, but it doesn't mean that it is harmful. Benchmark values are a better measure of when a chemical may be harmful to aquatic life.

A total of 25 different chemicals in samples analyzed from 2007 to 2013 had concentrations that were greater in exposure areas compared to the rest of the lake (that is, the reference areas). Fourteen of these chemicals also had exposure area concentrations that were greater than the normal range for Lac de Gras. No water quality variables had concentrations that were close to benchmark values.

Nine SOIs identified earlier in the "Effluent section" showed patterns of increasing concentration over time at most exposure areas. These SOIs included electrical conductivity, water hardness, total dissolved solids, several dissolved salts (sulphate, calcium, magnesium, sodium), and two metals (molybdenum and strontium). Statistical tests found these increases to be statistically significant, meaning that it was

unlikely that these results would occur by chance. These nine SOIs were also found in each of the reference areas.

The EA predicted that water quality concentrations at the mixing zone would be below guidelines for the protection of aquatic life. With the exception of chromium in 2004 and 2006, all water quality concentrations were less than the guidelines.

## **Section 6 – Eutrophication Indicators**

Eutrophication indicators consist of nutrients (phosphorus, nitrogen) chlorophyll *a* (the green pigment in algae, which are tiny plants) and zooplankton (tiny animals). Nutrients are a key component of the AEMP, because one of the predicted effects of the discharge of effluent was an increase in productivity in Lac de Gras. This can be seen by the growth of the algae, which is determined by measuring the chlorophyll *a*.

Concentrations of nutrients and chlorophyll *a*, as well as zooplankton biomass, in exposure areas have been greater than the normal range since 2007. The concentrations of nitrogen have been greater than the normal range in over 20% of the lake since 2008, and the concentrations of chlorophyll *a* were greater than the normal range in over 20% of the lake in 2009 and 2013.

Concentrations of phosphorus and nitrogen in the exposure areas have remained at similar levels during the open-water season since 2008. During the 2013 ice-cover season, total phosphorus concentrations in the exposure area increased outside of the normal range. The recent increase in 2013 may be related to effluent. Concentrations of nitrogen have been decreasing since 2009, again reflecting trends observed with effluent concentrations and loadings.

Concentrations of Chlorophyll *a* in the exposure areas have been similar over the years. Zooplankton biomass in all exposure areas peaked in 2011 and has decreased since then. Zooplankton biomass values were still above the normal range in the exposure area and at some mid-field stations in 2013.

The EA predicted that phosphorus concentrations would not go over 5 micrograms per litre in more than 20 percent of the area of Lac de Gras. So far, this prediction has been exceeded twice when the lake has been covered in ice (2008 and 2013), but it has never been exceeded during the ice-free period.

## **Section 7 - Sediment Quality**

A total of 15 metals analyzed from 2007 to 2013 had an average concentration in the exposure area that was statistically significantly greater than in the reference areas. However, none of the 15 metals had concentrations above guideline values. The guideline values are concentrations meant to protect the animals living in the sediments. The number of sediment SOIs showing an effect has not increased over time. The concentrations of the SOIs have not increased with time in recent years. However, the concentrations of three metals (bismuth, lead, and uranium) did increase in the exposure areas from 2001 or 2002 until approximately 2006 to 2008. The concentrations of these three SOIs have remained at similar levels since then. Results of the dike monitoring studies (separate studies to monitor the effect of the dikes) indicate that, in addition to Mine effluent, factors such as dike construction and possible leaching from the dikes may have contributed to the increases in concentrations of bismuth, lead and uranium.

No predictions were made in the EA for sediment quality.

## **Section 8 – Plankton**

The plankton component of the AEMP evaluated whether there were any changes happening to the small plants (phytoplankton) and animals (zooplankton) in Lac de Gras. These small plants and animals together are referred to as plankton. Changes in plankton can affect fish in the lake, because plankton are part of the food chain upon which fish rely. Such changes can happen before fish are affected.

Differences in the plankton between exposure and reference areas have been seen every year from 2007 to 2013. The amount of phytoplankton (measured as “biomass”) in 2009 and 2011 was greater than the normal range in more than 20% of the lake.

The AEMP has shown that the Mine is not having a harmful effect (called a toxicological effect) on phytoplankton and zooplankton communities in Lac de Gras. The plankton communities in the exposure areas of Lac de Gras continue to be exhibiting a Mine-related nutrient enrichment effect. Although changes in the composition of the plankton communities are being seen from one year to another, similar changes are also being seen in the areas of the lake not exposed to effluent (for example, in the reference areas), indicating a natural change.

No predictions were made in the EA for plankton.

## **Section 9 – Benthic Invertebrates**

The benthic invertebrate section of the AEMP evaluated whether the discharge of effluent into Lac de Gras has caused changes over time in the numbers and types of small animals that live on the bottom of Lac de Gras. These animals are referred to as benthic (bottom-dwelling) invertebrates (animals without backbones) and include snails, clams, worms and insects. These organisms provide food for fish. Changes in the numbers and types of bottom-dwelling invertebrates can cause changes in the numbers and types of fish in the lake.

The findings of the three-year re-evaluation were that the density of benthic invertebrates is greater in the exposure area compared to the reference area, and has been consistently greater since 2008. This effect was confirmed as being Mine-related, because the density of benthic invertebrates in Lac de Gras declines with distance away from the effluent.

Statistical analysis of community composition indicated a change in the types of benthic invertebrates observed over the years. The types of invertebrate animals varied, but the change with time was seen in both the exposure areas and the reference areas, suggesting that the community structure undergoes natural changes over time.

Consistent changes with time were not seen in the benthic invertebrates, although densities in the exposure area and mid-field areas have decreased and are now within the normal range for the lake.

No predictions were made in the EA for benthic invertebrates.

## **Section 10 – Fish Health and Fish Tissue**

The goal of the fish chapter is to provide a summary of changes and effects observed to both the health and tissue chemistry of small fish (called Slimy Sculpin), and the mercury concentration in Lake Trout. These fish have been monitored every three years in Lac de Gras since 2007.

Overall, there were differences found in some Slimy Sculpin traits between the fish exposed to mine effluent, and the fish in reference areas, but there was no consistent trend in these differences among years. In 2007 there were few differences observed. In 2010, differences were found that indicated that the fish were responding to nutrient enrichment. For example, fish in the exposure areas were bigger and had bigger livers. In 2013, the effect seen was similar to what we see when fish are exposed to harmful chemicals (called a toxicological response). For example fish in the exposure areas were smaller in size and they had smaller reproductive organs (called gonads). This response is not the same as that seen in previous years, and no chemicals were measured in water or fish tissue that would indicate the fish are being harmed.

Concentrations of bismuth, lead, strontium and uranium have consistently been elevated in Slimy Sculpin in the exposure area, and concentrations of bismuth, strontium and uranium increased outside the normal range in recent years. The concentrations of these metals in water are consistently below guideline values.

Mercury in Lake Trout has increased over time in Lac de Gras; however, a similar increase has also been observed in Lake Trout captured in Lac du Sauvage.

There was one prediction made in the EA for fish tissue, and it was associated with the texture of the fish. The EA predicted that the texture of the fish would not change because of metals in the fish flesh related to the Mine effluent. Based on the findings of the fish tasting program conducted as part of the Traditional Ecological Knowledge Program (Section 12), there have been no changes to the taste or texture of the fish from Lac de Gras.

## **Section 11 – Weight of Evidence**

The weight of evidence (WOE) section of the AEMP combines the information and conclusions of the water quality, eutrophication indicators, sediment chemistry, plankton, benthic invertebrate community, fish health and fish tissue chemistry sections. A qualitative process was used to estimate the strength (or weight) of evidence for nutrient enrichment or toxicological impairment from 2011 to 2013. There was strong evidence for nutrient enrichment in Lac de Gras and weak evidence for toxicological impairment.

## **Section 12 – Traditional Ecological Knowledge**

Traditional ecological knowledge (TEK) is intended to be an integral component of the AEMP for the Mine. During late 2010, DDMI proposed a new approach to working with each of the five Aboriginal Parties that were part of the Environmental Agreement. This was an effort to expand on the previous fish palatability component of the AEMP and incorporate more discussion and documentation of TEK relating to fish and water quality. Diavik proposed to fund the use of a third-party consultant, Thorpe Consulting Services (TCS), to engage with the Aboriginal working groups. Participants for these working groups were to be selected by the Aboriginal organizations. This process was supported by the Tlicho Government, Yellowknives Dene First Nation, Kitikmeot Inuit Association, Lutsel K'e Dene First Nation, and the North Slave Metis Alliance. Work to develop the program began in early 2011, with a goal of implementing the TEK program at the community-based monitoring camp on Lac de Gras during the summer of 2012.

Overall, camp participants noted that the status of the fish and water in Lac de Gras near the Diavik mine is good. Two fish were identified as being of poorer condition, noting that the fish were skinny and, in the case of one, had a larger head. Another fish was also observed as having some intestinal worms and being of poorer condition. Participants noted that this tends to occur in all fish populations and that the

fish are not eaten. Those that were tasted as part of the palatability study resulted in scores of 1 (excellent for eating, looks better than fish usually caught) or 2 (good for eating, looks similar to fish usually caught) from all participants).

Camp participants noted the environmental indicators that they use to assess water quality, such as condition of the shoreline and clarity of the water. Additionally, a tea test was used to assess water quality, and participants noted that tea made from water of a poor quality results in film or scum on the surface of the cup. None of the water samples from Lac de Gras had this scum or film, and all the samples tasted acceptable to participants.

During the planning sessions, it was identified that TEK is best captured and shared through video rather than written reports. A small camera crew was hired to conduct a training session for youth from the communities to film and record the camp activities while learning from their Elders. A written report and documentary video were produced and approved by all participants; these capture the process undertaken and the results from the water quality and fish palatability studies. Recognizing the sensitivity of TEK and acknowledging that some information cannot be shared publicly, each Aboriginal organization will also receive a copy of the raw, unedited video footage of their members sharing their traditional stories and knowledge, for use by the community organization. DDMI is currently planning to conduct the AEMP TK program again in 2015.

The EA predicted that there would be no change to the taste or texture of the fish in Lac de Gras as a result of metals in the fish flesh. Based on the fish tasting program, this prediction is true, as there have been no changes in taste noted so far.

### **Section 13 – AEMP Summary of Effects**

The type of effect being observed in Lac de Gras is consistent with that of nutrient enrichment over approximately 20% of Lac de Gras. This is what was predicted in the EA in 1998.



# GOLDER

**2014 to 2016 AQUATIC EFFECTS RE-EVALUATION REPORT  
FOR THE DIAVIK DIAMOND MINE,  
NORTHWEST TERRITORIES**

Submitted to:

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## DISTRIBUTION

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June 2019  
1771843-4000

Doc No. RPT-1621 Ver. 1.1  
PO No. D03868 WP 623



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## PLAIN LANGUAGE SUMMARY

This summary is intended for both technical and non-technical readers.

### Section 1 – Introduction

The 2014 to 2016 Aquatic Effects Re-Evaluation Report provides a summary of all data collected under the Aquatic Effects Monitoring Program for the Diavik Diamond Mine. In this report, the Aquatic Effects Monitoring Program is also called “the AEMP”, and the Diavik Diamond Mine is referred to as “the Mine”. The AEMP consists of monitoring the following components: dust, effluent, water quality, eutrophication indicators (for example, the nutrient phosphorus and the green algal pigment called chlorophyll *a*), plankton, sediment quality, benthic invertebrates, and fish. This report shows trends over time that may be occurring in these AEMP components, from 1995 to 2016. As well, this report compares the AEMP results for each of these components back to the predictions of Mine effects made in the original 1998 Environmental Assessment (EA), to see if they were accurate.

### Section 2 – Study Design

The AEMP is the main program described in the Water Licence for monitoring the aquatic environment of Lac de Gras. Treated Mine water discharged into Lac de Gras is the main focus of the AEMP program, but it is designed to monitor all aquatic impacts from the Mine, including as dust deposition and runoff.

Most components of the AEMP have been monitored every year, during both ice-cover and open-water seasons. More recently, under the AEMP study design Version 3.5 (which was approved by the Wek’èezhì Land and Water Board, also called “the WLWB” in this report), water, nutrients and plankton (i.e., algae and small crustaceans in lake water) are now sampled every year in only the areas where effluent is discharged to Lac de Gras – this area is called the near-field area. The nutrients and plankton are then sampled every three years throughout the rest of the lake – these areas are called the mid-field and far-field areas. Water quality is also measured monthly at the point where the effluent flows into the lake. Bottom sediments, benthic invertebrates (which are small animals that live in the sediments) and small-bodied fish (Slimy Sculpin) are monitored once every three years throughout the lake.

### Section 3 – Dust

Dust deposition rate (also called dustfall) is measured quarterly along transects that extend away from the Diavik mine boundary. With the transition to underground mining in 2012, dust deposition has decreased. The amount of observed dustfall is greater than that predicted in the EA. Evaluation of dust deposition results identified a few exceedances of the British Columbia lower dust deposition objective, but only in a small area southeast of the Mine boundary. However, dust deposition rates drop quickly to levels similar to background rates, within approximately 4 kilometres (km) from the centre of the Mine footprint, or within approximately 1.5 km of the Mine boundary.

## Section 4 – Effluent and Water Quality

Treated water from the open pits, underground workings and mine infrastructure is called effluent. Effluent was evaluated to see if the amount of chemicals discharged from the Mine is increasing over time. The amount of chemicals entering the lake is called the “loading rate”. Water was also collected near the point where effluent enters Lac de Gras (also called the mixing zone boundary) to see if the amount of effluent-related chemicals in the lake is increasing.

Treated effluent is sampled approximately every six days. In addition to chemical analysis of these samples, the effluent is tested for toxicity (which means the effluent is tested in the lab to see if it harms laboratory-grown fish and plankton). In these tests, freshwater test organisms are exposed to whole effluent and/or effluent dilutions for a pre-determined time period to evaluate the effluent’s effect on the organisms. Water quality sampling at the mixing zone boundary is conducted monthly at three stations, which are located along a semi-circle, 60 metres from the diffusers (pipes from which effluent is released into Lac de Gras).

The assessment of chemicals in the effluent was focused on the 31 chemicals that were identified as Substances of Interest (also called “SOIs” in this report). The annual loading rate of total dissolved solids (which is a measure of the amount of dissolved salts in effluent) and several associated salts (i.e., calcium, chloride, fluoride, potassium, and sodium) increased from 2002 to approximately 2010, then remained at about the same level or declined slightly, until increasing again in 2015 and/or 2016, reflecting the increases in the amount of effluent discharged in recent years. Sulphate, fluoride and potassium also showed increases in loads due to increases of concentrations in the effluent. Effluent loads and/or concentrations of some metals have increased over time (strontium and vanadium); however, most have decreased (copper, manganese), fluctuated over time (barium, chromium, iron, lead, molybdenum, thallium, and uranium) or remained at relatively similar levels (aluminum, antimony, cobalt, and silicon). The concentrations of these SOIs at the mixing zone boundary generally followed the same patterns described in the annual loads for these variables.

Effluent tested between 2002 and 2016 was generally not toxic to aquatic test organisms as shown in over 700 toxicity tests conducted during this period. Mine effluent continues to meet the requirements for quality described in the Water Licence.

The goal of the AEMP water quality assessment was to provide a summary of changes and effects observed on the water quality of Lac de Gras over time. The importance of an effect was determined by comparing water chemistry concentrations in different areas in the lake to background values or to Effect Benchmarks and evaluating trends to see if concentrations were increasing or decreasing over time. Background values for Lac de Gras are those that fall within what is called the “normal range”. The normal range describes the natural variability within Lac de Gras. A concentration that is greater than the normal range is not considered normal for Lac de Gras, but it doesn’t mean that it is harmful. Effect Benchmarks (similar to water quality guidelines) are a better measure of when a chemical may be harmful to aquatic life.

Concentrations of total dissolved solids, chloride, fluoride, calcium, potassium, sodium, and sulphate in Lac de Gras were greater than the normal ranges in both the ice-cover and open-water seasons, and are generally increasing over time. Molybdenum and strontium were also found in Lac de Gras at concentrations above the normal range, particularly in the near-field and mid-field areas, which are closest to the Mine; concentrations of these two metals were generally increasing over time in all areas, although the concentration of molybdenum in the near-field area has begun to decrease in recent years.

The increases in the concentrations of these various chemicals match trends in the loadings of these chemicals in the effluent.

Water quality results from 2015 and 2016 also showed the effects of the A21 dike construction on water quality in the mid-field areas. Concentrations of total suspended solids, turbidity, aluminum, bismuth, chromium, cobalt, copper, iron, lead, manganese, silicon, thallium, titanium, uranium, vanadium, and zirconium were greater at the mid-field stations closest to the A21 dike in 2016 than in past years. Several of these SOIs (aluminum, cobalt, iron, manganese, silicon, and titanium) had greater concentrations in 2015 at the same mid-field stations, which may also have been related to the A21 dike construction.

Greater concentrations of total dissolved solids, calcium, chloride, potassium, sodium, sulphate, molybdenum and strontium at Station LDG-48 (which is the lake outlet of Lac de Gras) and/or the far-field A area, compared to areas closer to the Mine (i.e., far-field B) indicate that cumulative effects may be occurring in this area because of the Diavik and Ekati mine discharges. While these results suggest cumulative effects may be occurring in the western region of Lac de Gras, concentrations of these chemicals in the affected area of Lac de Gras remained low, with additive effects being minor and not obvious in all years of monitoring.

The EA predicted that water quality at the mixing zone would be below ecological guidelines for the protection of aquatic life and drinking water guidelines. The Effects Benchmarks used for the AEMP are similar to the ecological thresholds established during the EA, but have been updated and revised over time for the Lac de Gras environment. The majority of chemicals with Effects Benchmarks had concentrations or levels that were consistently below Effects Benchmarks at the mixing zone boundary during the AEMP monitoring period from 2002 to 2016. Between 2014 and 2016, total copper and total manganese had concentrations above Effects Benchmarks at the mixing zone boundary; however, the concentrations of these chemicals in the effluent were below the Effects Benchmarks at the time. The pH of the water at the mixing zone boundary was below the lower Effects Benchmark of 6.5 on several occasions in 2015 and 2016, but pH values are frequently less than 6.5 throughout Lac de Gras, in both ice-cover and open-water seasons, at various depths, and over time.

## **Section 5 – Eutrophication Indicators**

Eutrophication indicators consist of nutrients (phosphorus and nitrogen), phytoplankton, chlorophyll *a* and zooplankton. Nutrient monitoring is a key component of the AEMP because one of the predicted effects of the discharge of effluent was an increase in phytoplankton from more nutrients in Lac de Gras.

Nutrient concentrations remain low throughout Lac de Gras, but chlorophyll *a* and plankton show effects related to increased nutrients in the near-field and mid-field areas. The large increases in annual loadings of all forms of phosphorus from the Mine effluent did not result in increasing trends in phosphorus concentrations in lake water, even in the near-field area. The dike construction affected phosphorus concentrations in the mid-field 3 area in 2015 and 2016, but the effect was small and seen only in decreased zooplankton biomass in 2016.

Loadings of nitrogen from the Mine effluent have declined since the maximum loads observed between 2006 and 2008, and no trends, or only slight increasing trends were observed in the near-field and mid-field areas. Greater increases in TN were seen in the far-field areas and near the outlet of Lac de Gras, where concentrations are now slightly above the normal ranges.

Nitrogen concentrations have been above the normal range in over 20 percent (%) of the lake since 2008. The extent of lake area affected increased above 20% from 2007 to 2016, with 2016 having 84.7% of lake area considered affected. The area with greater chlorophyll *a* concentrations has also increased between 2007 and 2016, to over 40% of lake area. Phosphorus concentrations have been low and variable (either below or just above the normal range). Overall, phosphorus was above the normal range in less than 20% of the lake area. The amount of phytoplankton and zooplankton (measured as “biomass”) has been more variable, but in 2016, biomass was above the normal range in less than 20% of the lake.

Relationships between chlorophyll *a*, nutrients and total dissolved solids were examined. The relationship between phosphorus and chlorophyll *a* was weak, but a strong relationship between total dissolved solids and chlorophyll *a* was identified, suggesting that phytoplankton may be responding to a Mine-related increase in micronutrients associated with total dissolved solids, in addition to phosphorus. There was also a moderate to strong relationship between nitrogen and chlorophyll *a*, but that is likely the result of the strong relationship between nitrogen and total dissolved solids.

The EA predicted that phosphorus concentrations would not exceed 5 micrograms per litre in more than 20% of the area of Lac de Gras. So far, this prediction has been exceeded twice during the ice-cover season (2008 and 2013), but it has never been exceeded during the open-water season.

## **Section 6 – Sediment Quality**

The sediment quality component of the AEMP measures chemicals in mud at the bottom of the lake. Seventeen chemicals measured in sediment from 2007 to 2016 had greater average concentrations in the near-field area compared to the far-field areas. However, none of these had concentrations above guideline values for protecting plants and animals that live in or near the sediments. The number of sediment substances of interest, or SOIs, showing effects have not increased over time. However, the concentrations of bismuth, lead and uranium increased in the near-field and mid-field areas from 2001 or 2002 until approximately 2006 to 2008. These three metals have remained at similar concentrations since then, and do not represent a concern to aquatic life in the lake.

## **Section 7 – Plankton**

The plankton component of the AEMP evaluated whether there were any changes happening to phytoplankton and zooplankton in Lac de Gras. Changes in plankton can affect fish in the lake, because plankton are part of the food chain upon which fish rely. Changes in plankton can happen before fish are affected.

Differences in the plankton communities between near-field and far-field areas have been seen every year between 2007 to 2016. The amount of phytoplankton from 2009 to 2011 and 2016 was greater than the normal range but in 2015, biomass was below the normal range. Zooplankton biomass has been more variable than phytoplankton biomass, but in the near- and mid-field areas it has generally stayed within the normal range, with the exception of 2016 where it was below the normal range. Changes in the types of small plants and animals that make up the phytoplankton and zooplankton communities have also been

occurring in the near-field area since 2007. In 2016, the biggest changes were seen in the zooplankton community in the mid-field 3 area, likely because of changes in water conditions caused by the dike construction.

Conditions in Lac de Gras are suitable for growth of healthy plankton communities. Overall, the plankton communities in Lac de Gras continue to show a Mine-related nutrient enrichment effect in the near-field and mid-field areas.

### **Section 8 – Benthic Invertebrates**

The benthic invertebrates component of the AEMP evaluated whether the discharge of effluent into Lac de Gras has caused changes over time in the numbers and types of small animals that live on the bottom of Lac de Gras. Benthic invertebrates include snails, clams, worms, crustaceans and insects. These organisms provide food for fish. Changes in the numbers and types of benthic invertebrates can eventually cause changes in the numbers and types of fish in the lake.

Effects of nutrient enrichment have also been observed on the benthic invertebrate community, but recent results suggest a weakening of this effect. Total invertebrate density and densities of most major invertebrate groups were greater in the near-field and mid-field areas compared to the far-field areas before 2013. In 2013 and 2016, returns to within the normal ranges were observed in the near-field and mid-field areas for total density, richness (which is the number of different types of invertebrates), and densities of most of the dominant invertebrates. Indices that measure community health have remained within their normal ranges throughout the monitoring period, although evenness in the near-field area and at some mid-field stations has declined in 2016. The types of benthic invertebrates observed over the years has also changed, but the change over time was seen in both the near-field and far-field areas, suggesting that the community undergoes natural changes over time.

### **Section 9 – Fish Health and Fish Tissue**

The fish component of the AEMP provides a summary of changes to the health and tissue chemistry of Slimy Sculpin (a small fish), and mercury concentration in Lake Trout. Slimy Sculpin have been monitored every three years in Lac de Gras since 2007. Lake Trout are monitored through the fish tasting program every two years.

Slimy Sculpin closer to the mine (in the near-field area) are smaller than fish farther from the mine (in the far-field area). The fish in the near-field area are, however, staying the same size over time. This suggests other factors like fish habitat are responsible for the differences in size between fish near and far from the Mine. For example, water temperature is colder in the near-field than the far-field area and this might make some fish grow more slowly in the near-field area. In general, while there are some small differences in fish size, fish are healthy overall, and able to grow and reproduce.

Concentrations of molybdenum and uranium have consistently been elevated in Slimy Sculpin in the near-field area and are outside of the normal range. While this is likely a Mine-related effect, fish are still healthy and concentrations of these metals in water are consistently below guideline values. Mercury in Slimy Sculpin is not different closer to the Mine and is not increasing over time.

The original EA prediction was that mercury would remain below an average of 0.2 milligrams per kilogram wet weight. In many years of monitoring this prediction was met, but in six years it was exceeded. Older (longer) Lake Trout have mercury concentrations that occasionally exceed the Federal mercury guideline of 0.5 milligrams per kilogram wet weight. This is similar to what is seen in larger Lake Trout in other lakes in the north.

### **Section 10 – Weight-of-Evidence**

The weight-of-evidence section of the AEMP combines the information and conclusions of the effluent and water quality, eutrophication indicators, sediment quality, plankton, benthic invertebrates, and fish (fish tissue chemistry and fish health) sections. A semi-quantitative process was used to estimate the strength (or weight) of evidence for nutrient enrichment or toxicological impairment occurring in Lac de Gras from 2007 to 2016. Overall, there is strong evidence for nutrient enrichment in Lac de Gras and weak evidence that toxicological impairment is occurring.

### **Section 11 – Traditional Ecological Knowledge**

Traditional Knowledge (TK) is intended to be an integral component of the AEMP for the Mine. In response to feedback received from communities, DDMI proposed a new approach to working with each of the five Aboriginal Parties that are part of the Environmental Agreement to improve the fish palatability component of the AEMP, by incorporating more discussion and documentation of TK relating to fish health and water quality. Diavik proposed to fund the use of a third-party consultant, Thorpe Consulting Services, to engage with Aboriginal working groups. Participants for these working groups were to be selected by the Aboriginal organizations. This process was supported by the Tłı̄chǫ Government, Yellowknives Dene First Nation, Kitikmeot Inuit Association, Łutsel K'e Dene First Nation, and the North Slave Métis Alliance. Work to develop the program began in early 2011, with a goal of implementing the TK program at the community-based monitoring camp on Lac de Gras. The AEMP TK study design was successfully implemented in 2012 and 2015.

In both years, camp participants noted that the overall status of the fish and water in Lac de Gras near the Diavik mine is good. Those fish that were tasted as part of the palatability study resulted in scores of 1 (excellent for eating, looks better than fish usually caught) or 2 (good for eating, looks similar to fish usually caught) from all participants.

Camp participants described the environmental indicators that they use to assess water quality, such as condition of the shoreline and clarity of the water. Additionally, a tea test was used to assess water quality, and participants noted that when tea is made from water of poor quality, it results in film or scum on the surface of the cup. None of the water samples from Lac de Gras had this scum or film, and all the samples tasted acceptable to participants.

During the planning sessions, it was identified that TK is best captured and shared through video rather than written reports. A small camera crew was hired to conduct a training session for youth from the communities to film and record the camp activities while learning from their Elders. Written reports and documentary videos were produced and approved by all participants in both years. These videos captured the overall process and the results of the water quality and fish palatability studies. Recognizing the sensitivity of TK and acknowledging that some information cannot be shared publicly, each Aboriginal organization also received a copy of the raw, unedited video footage of their members sharing their

traditional stories and knowledge, for use by the community organization. DDMI is currently planning to conduct the AEMP TK program again in 2018.

The EA predicted that there would be no change to the taste or texture of the fish in Lac de Gras as a result of metals in the fish flesh. Based on the fish tasting program, this prediction is true, as there have been no changes in taste noted so far.

## **Section 12 – AEMP Summary of Effects**

As predicted by the EA, Lac de Gras is showing evidence of mild nutrient enrichment, as indicated by water quality and non-fish biological monitoring components. While the fish component results may be showing early warning changes consistent with toxicological impairment, the strength of evidence for nutrient enrichment from most components is moderate to strong, while the strength of evidence for toxicological impairment remains weak to moderate for biological communities.

## **Section 13 – Updates to Effect Predictions**

After 15 years of monitoring under the AEMP, the primary effects predicted by the EA are often either being observed as predicted, or observed effects are less than predicted. No recommendations are provided for updates to predictions of Mine-related aquatic effects based on AEMP results to date.

## **Section 14 – Proposed Updates to AEMP Design Plan**

This re-evaluation report has identified a few areas in the AEMP design that require updating. Recommended changes to individual monitoring components are provided in this document. The overall AEMP study design recommendation is that the AEMP should largely be converted to a gradient design, with sampling along three transects that extend across the lake in different directions, with corresponding changes to sampling locations and data analysis methods, where applicable. The AEMP design already had a gradient component, so this change only results in relocating a few stations in the lake, which will allow continued evaluation of long-term trends.

## **Section 15 – Assessment of Response Framework Performance**

The Response Framework for the DDMI AEMP has been effective at identifying early Mine-related changes in water and biological variables during the period of 2014 to 2016. Five Response Plans were prepared in response to Action Level triggers during this time: one for each of water quality, eutrophication indicators, plankton, benthic invertebrates, and fish. Minor updates to the Action Levels are recommended to maintain or improve the effectiveness of the Response Framework to detect early Mine-related changes in Lac de Gras and allow timely response actions.



# GOLDER

## 2017 to 2019 AQUATIC EFFECTS RE-EVALUATION REPORT FOR THE DIAVIK DIAMOND MINE, NORTHWEST TERRITORIES

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December 2020  
20136424-7000

Doc No. RPT-1971 Ver. 1.0  
PO No. D03868 WP 662 Rev. 2



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## PLAIN LANGUAGE SUMMARY

This summary is intended for both technical and non-technical readers.

### Section 1 – Introduction

The 2017 to 2019 Aquatic Effects Re-Evaluation Report provides a summary of all data collected under the Aquatic Effects Monitoring Program for the Diavik Diamond Mine. In this report, the Aquatic Effects Monitoring Program is also called “the AEMP”, and the Diavik Diamond Mine is referred to as “the Mine”. The AEMP consists of monitoring the following components: dust deposition, effluent, water quality, eutrophication indicators (for example, the nutrient phosphorus and the green algal pigment called chlorophyll *a*), plankton, sediment quality, benthic invertebrates, and fish. This report summarizes trends over time in these AEMP components, from 1995 to 2019. As well, this report compares the AEMP results for each of these components to the predictions of Mine effects made in the original 1998 Environmental Assessment (EA).

### Section 2 – Study Design

The AEMP is required by the Water Licence for monitoring the aquatic environment of Lac de Gras. Treated Mine water discharged into Lac de Gras is the focus of the AEMP, but it is designed to monitor all aquatic impacts from the Mine, including dust deposition.

Most components of the AEMP have been monitored every year, during both ice-cover and open-water seasons. Under the *AEMP Design Plan Version 4.1*, which was approved by the Wek’èezhìi Land and Water Board (called “the WLWB” in this report), water, nutrients, and plankton (algae and small crustaceans in lake water) have been sampled every year in the area where effluent is discharged to Lac de Gras—this area is called the near-field area. Water, nutrients, and plankton have also been sampled every year at some more distant stations—these areas are called the mid-field and far-field areas. Nutrients and plankton are sampled every three years throughout the lake, at all stations in all the mid-field and far-field areas. Water quality is also measured monthly at the point where the effluent flows into the lake. Bottom sediments, benthic invertebrates (small animals that live in the sediments) and small-bodied fish (Slimy Sculpin) are monitored once every three years throughout the lake.

### Section 3 – Dust

Dust deposition rates (also called dustfall rates) were measured quarterly using dust deposition gauges along transects that extend away from the Mine boundary. Accumulated snow samples were collected once in the spring (along similar transects as the dust deposition gauges) and snow water was analyzed for dust, nutrients, and metals concentrations. Snow water concentrations were converted to dust, nutrient, and metal deposition rates using ancillary data. There was good correlation between wintertime dust gauge observations and wintertime snowdust observations. Seasonal dust gauge data demonstrated that dust deposition has low seasonal variability at Diavik. Consequently, wintertime snowdust, nutrient and metal deposition rates can be extrapolated to estimate annual deposition rates in units of milligrams per square decimetre per year (mg/dm<sup>2</sup>/yr).

Dust emitted by Mine-related activities was observed in the dust monitoring samples. Although there are no dustfall standards for the Northwest Territories, individual stations occasionally exceeded the Alberta residential dustfall guideline; there has not been an exceedance of the Alberta non-residential dustfall guideline since 2010. Deposition rates decreased exponentially as a function of distance from the Mine and were spatially interpolated to predict deposition rates locally. Since 2010, the 3-year average dust loadings within 1.5 km of the Mine have decreased, and only a small area southeast of the Mine boundary is predicted to exceed Alberta residential dustfall guideline.

Nutrients and metals contained in dust have shown exponentially decreasing deposition rates with distance away from the Mine. Good correlation between dust and total phosphorus, orthophosphate, aluminum and lead enabled estimation of annual loadings from Mine activities within 1.5 km of the Mine boundary (i.e., near-field region), for the surface of Lac de Gras, and the Lac de Gras watershed.

Background deposition rates of dust, nutrients, and metals were variable, and deposition of Mine-related dust was episodic. A comparison of the observed deposition rates relative to the natural deposition rates was an effective way of evaluating Mine effects. Total phosphorus loadings were 8.8 times background values in 2010 to 2013 in the near-field region but were approximately 3.5 times the natural deposition rate during the two most recent 3-year periods (i.e., 2014 to 2016 and 2017 to 2019). From 2010 to 2013, near-field orthophosphate loadings from the Mine were approximately 3.2 times larger than the natural loadings. In more recent years (i.e., 2017 to 2019), near-field orthophosphate loading from the Mine declined to one third of the natural loading.

Aluminum loadings in the near-field region were highest in the 2014 to 2016 period and lowest from 2017 to 2019, representing a 3.0 to 5.5-fold increase compared to natural deposition rates. Lead loadings from mining activities were highest in the 2010 to 2013 period, and lowest from 2017 to 2019, representing a 2.6 to 8.0-fold increase compared to natural deposition rates in the near-field region.

#### **Section 4 – Special Study Dust**

A Special Effects Study (SES) was conducted in August 2019 to provide additional information to support the evaluation of the potential for dust-related effects on water quality and aquatic life in the AEMP.

The main conclusions of the SES are as follows:

- Effluent and dustfall samples have distinct geochemical fingerprints.
- The geochemical fingerprint of lake water is similar to that of Mine effluent. Dustfall is likely to have little influence on lake water quality, with some degree of uncertainty, as the concentrations are so low that they are “masked” by effluent water quality.
- Although the SES stations were located closer to potentially high dust generating areas than the MF3 stations sampled by the AEMP, there was no indication that the SES stations were impacted by dust deposition on top of the effect of the Mine effluent.
- Dissolution of phosphorus-bearing minerals in dustfall is unlikely under the pH and redox conditions in lake water.

Based on the results of the SES, the AEMP provides sufficient and appropriate data to evaluate the influence of Mine-related effects on the water quality of Lac de Gras, and additional sampling effort in Lac de Gras to further investigate dust-related effects is not warranted.

## Section 5 – Effluent and Water Quality

Treated water from the open pits, underground workings and Mine infrastructure is called effluent. Effluent was evaluated to see if the amount of substances discharged from the Mine is increasing over time. The amount of substances entering the lake is called the “load”. Water was also collected near the point where effluent enters Lac de Gras (also called the mixing zone boundary) to comply with Water Licence requirements.

Treated effluent was sampled every six days. In addition to chemical analysis of these samples, the effluent was tested quarterly for toxicity in the laboratory, to see if it harms laboratory-grown organisms (e.g., fish and plankton). In these tests, selected fish and plankton species were exposed to whole effluent, or effluent dilutions<sup>1</sup>, for a pre-determined time period to evaluate the effluent’s effect on them. Water quality sampling at the mixing zone boundary was conducted monthly at three stations, which were located along a semi-circle, 60 metres from the diffusers (i.e., the pipes from which effluent is released into Lac de Gras).

The assessment of substances in the effluent was focused on the 24 substances that were identified as Substances of Interest (also called “SOIs” in this report). The annual loading rate of total dissolved solids (which is a measure of the amount of dissolved salts in effluent) and several associated salts (calcium, chloride, potassium, and sodium) increased from 2002 to approximately 2010, then remained at about the same level or declined slightly, until increasing again in 2015 or 2016, reflecting the increases in the amount of effluent discharged in recent years. Loads of these variables then decreased or remained within a similar range in 2017 and 2018, and increased in 2019, reflecting trends in the effluent chemistry. Magnesium and sulphate also showed increases in loads due to increases of concentrations in the effluent. Loads or concentrations of strontium in effluent have been increasing over time; however, concentrations of other variables remained similar (aluminum, antimony, silicon, and uranium), decreased (barium and copper), or fluctuated (chromium, manganese, and molybdenum) over time. The concentrations of these SOIs at the mixing zone boundary generally followed the patterns in annual loads over time.

Effluent tested between 2002 and 2019 was not acutely toxic and generally not chronically toxic to aquatic test organisms as shown in over 850 toxicity tests conducted during this period. Mine effluent continues to meet the requirements for quality described in the Water Licence.

The goal of the AEMP re-evaluation was to provide a summary of changes and effects observed on the water quality of Lac de Gras over time. The importance of an effect was determined by comparing water chemistry concentrations in different areas in the lake to background values and Effect Benchmarks, and evaluating trends over time. Background values for Lac de Gras are those that fall within what is called the “normal range”. The normal range describes the range of natural variability within Lac de Gras. A concentration that is greater than the normal range is not considered normal for Lac de Gras, but it does

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<sup>1</sup> Some tests completed prior to 2016 used effluent dilutions (e.g., dilution tests were used in December 2015 and March 2016 for *C. dubia* tests and March 2016 and November 2016 for *D. magna* tests).

not mean that it is harmful. Effect Benchmarks (similar to chronic or long-term water quality guidelines) are a better measure of when a substance may be harmful to aquatic life.

Concentrations of total dissolved solids, chloride, calcium, magnesium, potassium, sodium, and sulphate in Lac de Gras were greater than the normal ranges in both the ice-cover and open-water seasons, and are generally increasing over time. Molybdenum and strontium were also found in Lac de Gras at concentrations above the normal range, particularly in the near-field and mid-field areas, which are closest to the Mine; concentrations of these two metals were generally increasing over time in all areas, although the concentration of molybdenum in the near-field area has begun to decrease in recent years. The increases in the concentrations of these substances match trends in loading from the effluent.

Construction of the A21 Dike occurred between 2015 and 2017 and dewatering of the dike occurred during the 2018 reporting period. Concentrations of several sediment-associated variables (turbidity, aluminum, antimony, boron, chromium, copper, iron, lead, manganese, tin, titanium, and vanadium) demonstrated spatial trends consistent with an effect related to the dewatering of the A21 dike. Increased concentrations of these variables may reflect re-suspension of sediment deposited during direct dewatering of the A21 Pit to Lac de Gras in November 2017. There was no dike effect evident for any water quality variable in 2019, indicating that effects have not persisted in Lac de Gras.

Greater concentrations of total dissolved solids, calcium, chloride, magnesium, potassium, sodium, sulphate, aluminum, barium, copper, iron, manganese, molybdenum, silicon, strontium, and uranium were observed at Station LDG-48 (which is the lake outlet of Lac de Gras) or the far-field A area, compared to areas closer to the Mine (i.e., far-field B). These results indicate that cumulative effects may be occurring in this area because of the Diavik and Ekati mine discharges. While these results suggest cumulative effects may be occurring in the western region of Lac de Gras, concentrations of these substances in the affected area of Lac de Gras remained low, with additive effects being minor and not obvious in all years of monitoring.

The EA predicted that water quality at the mixing zone would be below water quality guidelines for the protection of aquatic life and drinking water which have been adopted as AEMP Effects Benchmarks. The Effects Benchmarks used for the AEMP are like the ecological thresholds established during the EA but have been updated and revised over time for the Lac de Gras environment. Most substances with Effects Benchmarks had concentrations or levels that were consistently below Effects Benchmarks at the mixing zone boundary during the AEMP monitoring period from 2002 to 2019. Between 2017 and 2019, total aluminum (one sample) and total chromium (two samples) had concentrations above Effects Benchmarks at the mixing zone boundary; however, dissolved concentrations associated with these samples were well below the Effects Benchmarks, indicating that these values were the likely result of sampling or analytical errors. The pH of the water at the mixing zone boundary was below the lower Effects Benchmark of 6.5 on several occasions in 2017 to 2019, but pH values are frequently less than 6.5 throughout Lac de Gras, in both ice-cover and open-water seasons, at various depths, and over time.

## **Section 6 – Sediment Quality**

The sediment quality component of the AEMP measures chemicals in mud at the bottom of the lake. Eighteen chemicals measured in sediment from 2007 to 2019 had greater average concentrations in the near-field area compared to the far-field areas for at least one year, but none of these had concentrations above CCME or OMOEE guidelines for protecting plants and animals that live in or near the sediments in

2019. Total phosphorus was also retained as a substance of interest to assess a potential effect of nutrient discharges to Lac de Gras in sediments. The number of sediment substances of interest showing effects have not increased over time. Three of these substances (bismuth, lead, and uranium) have, however, increased in concentration at the near-field and mid-field areas from 2001 or 2002 until approximately 2006 to 2008. These three metals have remained at similar concentrations since 2008. Two substances of interest, molybdenum, and strontium, have shown an increasing trend in recent years in the near-field area. None of these five metals were reported in sediment at concentrations that represent a concern to aquatic life in the lake based on comparisons to guidelines and/or information from the primary literature.

## **Section 7 – Eutrophication Indicators**

Eutrophication indicators consist of nutrients (phosphorus and nitrogen), chlorophyll *a*, phytoplankton, and zooplankton. Nutrient monitoring is a key component of the AEMP because one of the predicted effects of the discharge of Mine effluent was an increase in phytoplankton as a result of increased nutrient concentrations in Lac de Gras.

Monthly and annual total phosphorus loadings from the Mine effluent were consistently below the Water Licence load limits from 2002 to 2019. Annual loadings of total phosphorus from Mine effluent have declined in the last three years (from 2017 to 2019), returning to loads comparable to those observed from 2006 to 2008.

Total phosphorus concentrations have decreased in recent years, although concentrations in the near-field area were still higher than those in other areas of Lac de Gras. Similarly, chlorophyll *a* concentrations also decreased in recent years. Chlorophyll *a* concentrations were greater in the near-field area and generally exceeded the normal range in all years with the exception of 2019.

Annual loads of total nitrogen from Mine effluent have increased in the last three years (from 2017 to 2019), with 2019 loads comparable to those in 2007 and 2008. Total nitrogen concentrations have increased in all sampling areas of Lac de Gras. Greater increases in total nitrogen were seen in the far-field areas and near the outlet of Lac de Gras, where concentrations are now above the normal range.

Nitrogen concentrations have been above the normal range in over 20% of the lake since 2008. The extent of lake area affected was greater than 20% from 2007 to 2019, with 100% of lake area affected in 2019 during open-water and 85% of lake area affected during the ice-cover season. The area with chlorophyll *a* concentration above the normal range increased between 2007 and 2016 to over 40% of lake area, however, more recently, the affected area decreased with only 0.1% of the lake area affected in 2019. Phosphorus concentrations have been low and variable (either below or just above the normal range); overall, phosphorus concentrations were above the normal range in less than 20% of the lake area in all years. The amount of phytoplankton and zooplankton (measured as biomass) has been more variable, but in 2019, zooplankton biomass was above the normal range in more than 29% of the lake area and phytoplankton biomass was not above the normal range anywhere in the lake.

Relationships between chlorophyll *a*, nutrients and total dissolved solids were examined. The relationship between phosphorus and chlorophyll *a* was weak, but a stronger relationship between total dissolved solids and chlorophyll *a* was identified, suggesting that phytoplankton may be responding to a Mine-related increase in micronutrients associated with total dissolved solids, in addition to phosphorus. There was also a moderate to strong relationship between nitrogen and chlorophyll *a*, but that is likely the result of the

strong relationship between nitrogen and total dissolved solids. The results of this monitoring component and the Plankton component are in agreement and indicate mild Mine-related nutrient enrichment in the eastern part of Lac de Gras.

The effect of nutrient inputs from Mine-related dust deposition was re-evaluated based on updated dust deposition results, and additional analysis of the effect of the largest annual dust load during spring ice break-up. The overall conclusion from dust and biological monitoring under the AEMP is that there is no indication that nutrient concentrations and biological communities are measurably impacted by dust deposition on top of the enrichment effect resulting from the Mine effluent discharge.

The EA predicted that phosphorus concentrations would not exceed 5 micrograms per litre in more than 20% of the area of Lac de Gras. So far, this prediction has been exceeded twice during the ice-cover season (2008 and 2013), but it has never been exceeded during the open-water season.

Lac de Gras remains a phosphorus-limited, clear-water, oligotrophic lake. The increases in chlorophyll *a* concentrations appear to be associated with inputs of phosphorus from the Mine discharge and increases in micronutrients associated with increased TDS concentrations in Lac de Gras. Cumulative effects resulting from both the Diavik and Ekati mines were not detected based on AEMP results.

## **Section 8 – Plankton**

The plankton component of the AEMP evaluated potential changes in phytoplankton and zooplankton communities in Lac de Gras. Changes in plankton can affect fish in the lake, because plankton are part of the food chain upon which fish rely. Plankton communities are important early-warning indicators of Mine effects, because changes in plankton can occur before fish are affected.

Differences in the plankton communities between near-field and far-field areas have been seen every year between 2007 to 2019. Phytoplankton biomass from 2013 to 2019 was either within or above the normal range. Zooplankton biomass has been more variable than phytoplankton biomass, but in the near-field and mid-field areas, it has generally stayed within the normal range, with the exception of 2016 when it was below the normal range.

Conditions in Lac de Gras are suitable for growth of healthy plankton communities. Overall, the plankton communities in Lac de Gras continue to show a Mine-related nutrient enrichment effect in the near-field and mid-field areas.

## **Section 9 – Benthic Invertebrates**

The benthic invertebrate community component of the AEMP evaluated whether the discharge of Mine effluent into Lac de Gras has caused changes over time in the numbers and types of invertebrates (crustaceans, snails, clams, insects, and worms) that live on the bottom of Lac de Gras. Benthic invertebrates provide food for fish. Therefore, changes in the numbers and types of benthic invertebrates can eventually cause changes in the numbers and types of fish in the lake.

In recent years, differences in benthic community characteristics among different areas of Lac de Gras were less pronounced compared to the period before 2012, when greater densities of invertebrates were common in the near-field area compared to the far-field areas. Total invertebrate density and densities of many common invertebrates were above normal ranges before 2012 but have mostly declined to within

normal ranges. Exceptions were densities of fingernail clams (Pisidiidae), and two midges (*Microtendipes* and *Stictochironomus*), which increased above their normal ranges in recent years. Community indices generally stayed within their normal ranges throughout the monitoring period and showed no trends or only minor changes over time.

Summary of AEMP results over time shows that benthic invertebrate monitoring results are consistent with mild nutrient enrichment resulting from the Mine discharge into for Lac de Gras, combined with natural, year-to-year variation. This enrichment effect has resulted in larger numbers of invertebrates in areas closer to the Mine in some years, without adverse effects on the benthic community.

### **Section 10 – Fish Health and Fish Tissue**

The fish component of the AEMP provides a summary of changes to the health and tissue chemistry of Slimy Sculpin (a small fish), and mercury concentrations in Lake Trout. Slimy Sculpin have been monitored every three years in Lac de Gras since 2007. Lake Trout were monitored in the past as part of the AEMP and are now monitored through the fish tasting program every three years.

Female Slimy Sculpin close to the mine (i.e., in the near-field area) were relatively small and had smaller livers than fish captured further from the Mine (i.e., in the far-field area); however, these fish were similar in size to those caught in previous years and do not appear to be changing over time. This suggests differences in habitat may be responsible for these differences, rather than the Mine. For example, water temperatures were cooler in the near-field area than the far-field area and this may have caused fish to grow more slowly in the near-field area. In general, while there are some small differences in fish size, fish are healthy overall, and can grow and reproduce.

Concentrations of lead and uranium were greater in Slimy Sculpin from the mid-field area compared to near-field and far-field areas and were outside the range of concentrations considered normal for Lac de Gras (i.e., the normal range). As concentrations were greatest in the mid-field area (instead of the near-field area), it was unlikely these changes were caused by Mine effluent, but may have been related to other factors, such as dike construction. The small increase in concentration of these metals was considered unlikely to affect the health of fish in Lac de Gras. Mercury concentrations in Slimy Sculpin close to the Mine were similar to other regions of Lac de Gras and do not appear to be increasing over time.

For Lake Trout, mercury concentrations in muscle increased in Lac de Gras from 2002 to 2010 but have decreased since. Mercury concentrations exceeded the Environmental Assessment prediction of 0.2 µg/g of wet weight in 7 of 12 years that Lake Trout were sampled. Mercury concentrations increased with size of the fish, and larger fish occasionally exceed the Canadian Food Inspection Agency guideline of 0.5 µg/g of wet weight. This was not unexpected, as larger fish typically have higher mercury concentrations and these results are similar to other lakes in the north.

## **Section 11 – Fish Salvage Program**

A fish salvage program in the area of the A21 dike occurred in 2015 and 2016 during the open-water season. The main goals were achieved for program: local communities were engaged and actively involved in the fishing and processing effort, and fish were successfully transferred to Lac de Gras. Results for the de-fishing included removal of 309 fish weighing a total of 46.7 kg. Of the 309 fish captured, 148 fish were transferred and released into Lac de Gras. In total, 16.7 kg of fish were sacrificed and frozen for distribution to local communities, and 30 kg of fish were transferred live to Lac de Gras. The total catch and biomass removed from the A21 area was less than predicted. As a result, only a few fish could be distributed to the local communities. A possible explanation for the observed fish density is that the dike perimeter remained open to the rest of Lac de Gras for an extended period prior to completion of in-water work in 2016, allowing fish the opportunity to leave the construction zone and move to the main body of the lake. As a result, only a small percentage of the fish population that would have originally been present remained isolated within the dike perimeter.

## **Section 12 – Weight-of-Evidence**

The weight-of-evidence section of the AEMP combines the information and conclusions of the effluent and water quality, eutrophication indicators, sediment quality, plankton, benthic invertebrates, and fish (fish tissue chemistry and fish health) sections. A semi-quantitative process was used to estimate the strength (or weight) of evidence for nutrient enrichment or toxicological impairment occurring in Lac de Gras from 2007 to 2019. Overall, there is strong evidence for nutrient enrichment in Lac de Gras and weak evidence that toxicological impairment is occurring.

## **Section 13 – Traditional Ecological Knowledge**

Traditional Knowledge (TK) is an integral component of the AEMP for the Mine. Thorpe Consulting Services worked directly with each of the five Aboriginal Parties that are part of the Environmental Agreement: the Tłı̄ch̄ Government, Yellowknives Dene First Nation, Kitikmeot Inuit Association, Łutsel K'e Dene First Nation, and the North Slave Métis Alliance. The AEMP TK study design was successfully implemented in 2012, 2015, and 2018.

In all years, camp participants noted that the overall status of the fish and water in Lac de Gras near the Diavik mine is good. Fish that were tasted as part of the palatability study resulted in scores of 1 (excellent for eating, looks better than fish usually caught) or 2 (good for eating, looks similar to fish usually caught), and few 3 ratings (okay for eating, looks not as good as fish we usually eat).

Camp participants described the environmental indicators that they use to assess water quality, such as condition of the shoreline and clarity of the water. Additionally, tea tests were used to assess water quality, and in 2018 cold water (straight from the lake) and boiled water (straight from the lake, boiled and then cooled) were tasted. In all cases, the taste of the water was said to be good or average. In 2018, it was noted that water “taken too close to the land” was described as “fishy” or “swampy”. Water collected at depth in open water was much preferred, and water collected at the surface did not taste as good as deep water. Overall, it was determined that the water remains “good” in Lac de Gras.

During the planning sessions, it was identified that TK is best captured and shared through video rather than written reports. In 2012, 2015, and 2018, a small camera crew was hired to conduct a training session for youth from the communities to film and record the camp activities while learning from their Elders. Written

reports and documentary videos were produced and approved by all participants in both years. These videos captured the overall process and the results of the water quality and fish palatability studies. Recognizing the sensitivity of TK and acknowledging that some information cannot be shared publicly, each Aboriginal organization also received a copy of the raw, unedited video footage of their members sharing their traditional stories and knowledge, for use by the community organization. DDMI is currently planning to conduct the AEMP TK program again in 2021.

The EA predicted that there would be no change to the taste or texture of the fish in Lac de Gras because of metals in the fish flesh. Based on the fish tasting program, this prediction is true, as there have been no changes in taste noted so far.

### **Section 14 – AEMP Summary of Effects**

As predicted by the EA, Lac de Gras is showing evidence of mild nutrient enrichment, shown by results of water quality and non-fish biological monitoring components. While the fish component results may be showing early-warning changes consistent with toxicological impairment, the strength of evidence for nutrient enrichment from most components is moderate to strong, while the strength of evidence for toxicological impairment remains weak to moderate for biological communities.

### **Section 15 – Updates to Effect Predictions**

After 19 years of monitoring under the AEMP, the primary effects predicted by the EA are often either being observed as predicted, or observed effects are less than predicted. No recommendations are provided for updates to predictions of Mine-related aquatic effects based on AEMP results to date.

### **Section 16 – Proposed Updates to AEMP Design Plan**

The *AEMP Design Plan Version 4.1* (Golder 2017b) was in effect for the 2017 to 2019 monitoring period; however, an updated AEMP design document (Version 5) was submitted concurrently with the *2014 to 2016 Aquatic Effects Re-evaluation Report* (Golder 2019a) and has been through the WLWB review process during the 2017 to 2019 time period. The *AEMP Design Plan Version 5.2* (Golder 2020a) is currently pending approval from the WLWB at the time of writing this report. Few updates have been proposed herein because of these recent review activities, and recommendations for updates have been limited to the following:

- items directed for DDMI's consideration by the WLWB in reviews of previous AEMP documents (e.g., updates to AEMP effects benchmarks, updates to the WOE exposure endpoints because of WLWB-approved AEMP design changes for the fish component that were implemented in 2019)
- eliminating redundancy in AEMP analysis (e.g., organic matter should be removed from the list of analytical variables for sediment quality)
- maintaining best practices and scientific standards over time (e.g., dust ZOI stations for water quality analyses will be tied to those identified by the dust component instead of pre-defined MF stations)

### **Section 17 – Assessment of Response Framework Performance**

The Response Framework for the DDMI AEMP has been effective at identifying early Mine-related changes in water and biological variables during the period of 2017 to 2019. One Response Plan was prepared during this time: an Effects Benchmark for calcium was developed in response to an Action Level 2 trigger in 2018. Updates to the Action Levels were recommended, approved by the WLWB, and implemented during this re-evaluation period to improve the effectiveness of the Response Framework to detect early Mine-related changes in Lac de Gras. The AEMP Response Framework has been effective at preventing the occurrence of significant adverse effects to water, sediment, eutrophication indicators and biological components of the ecosystem in Lac de Gras, and the Action Level definitions have been appropriate for evaluating Mine effects observed to date.

## Appendix K Fish Species and Parts in Different Dialects

Aboriginal Terms for Fish Parts									
Aboriginal Dialect	Gills	Heart	Liver	Fin	Gall Bladder	Pylorus	Stomach	Guts	Scales
Inuinnaqtun (old spelling / new spelling)	mahik	omat (uummat)	tingok (tinguk)	huluk	hongak (hungaq)	nigvik	akiagok (aqiaruq)	hunagak (hunagaq)	kapihik
Wìilìdeh Yatì	ḥwek'aà	ḥwedzeè	ḥwewò	ḥwet'aà	ḥwet'òò	ḥwets'ìì	ḥwebò	ḥwets'jì	ḥwet'ìì
Tḥjchq Yatì	ḥwek'aà	ḥwedzeè	ḥwewò	ḥwet'aà	ḥwet'òò	ḥwets'ìì	ḥwebò	ḥwets'ìì	ḥwet'ìì

Aboriginal Terms for Fish Parts								
Aboriginal Dialect	Eggs	Head	Kidney	Swim Bladder	Intestine	Muscle	Skin	Anus
Inuinnaqtun (old spelling / new spelling)	hovak (huvak)	niaquq	taktonak (taqtuk)	mamingoyak	ingaloak (ingaluaq)	nokik (nukik)	amik (amiraq)	Itik (itìq)
Wìilìdeh Yatì	ḥwek'jì	ḥwekwì	ḥwets'oo	ḥwet'ahsò	ḥwets'ìì	ḥwekwò	ḥwet'ìì	ḥwets'ò
Tḥjchq Yatì	ḥwek'jì	ḥwekwì	ḥwets'oo	ḥwet'ahsò	ḥwets'ìì	ḥwekwò	ḥwet'ìì	ḥwets'ò

Note: Terms provided by interpreters during the December Verification Session and reviewed by: Inuinnaqtun by Gwen Angulalik and Margo Kadlun; Wìilìdeh Yatì by Maro Sundberg; Tḥjchq Yatì by Margaret Mackenzie and Dené Sḥinè by Bertha Catholique.

Related Dene terms can be found in: <http://www.ssdec.nt.ca/ablang/ablanguge/chiptionary/Chipewyan%20Dictionary.pdf>; [http://www.ssdec.nt.ca/ablang/ablanguge/lkchipdictionary/Chipewyan\\_Dictionary-Linked/Chipewyan\\_Dictionary.pdf](http://www.ssdec.nt.ca/ablang/ablanguge/lkchipdictionary/Chipewyan_Dictionary-Linked/Chipewyan_Dictionary.pdf); and Inuinnaqtun terms from: [http://nbes.ca/wp-content/uploads/2014/03/inuinnaqtun\\_english\\_dictionary.pdf](http://nbes.ca/wp-content/uploads/2014/03/inuinnaqtun_english_dictionary.pdf).

# Fish Species in Aboriginal Dialects

Aboriginal Terms for Fish Parts							
Aboriginal Dialects	Lake Whitefish	Round Whitefish	Lake Trout	Burbot	Jackfish	Coney	Cisco
Inuinnaqtun (old spelling / new spelling)	Aanaakhiak aannakhiq	Kapihilik	Ehoak (ihuuq)	Nataanak (Nataarnak)			Kapihilik
Wìlìideh Yatì	łìh	łìh	łìwezq̄q̄	Nq̄hkwèe	łhdaà	Wìlìì	łìwetsòa
Tł̄chq̄ Yatì	łìh	łìh	łìwezq̄q̄	Nq̄hkwèe	łhdaà	Wìlìì	łìwetsòa
Dené Sq̄híné							

Note: Terms provided by interpreters. In addition, some terms from: (<http://www.ssdec.nt.ca/ablang/ablanguag/chiptionary/Chipewyan%20Dictionary.pdf>) [http://www.ssdec.nt.ca/ablang/ablanguag/lkchipdictionary/Chipewyan\\_Dictionary-Linked/Chipewyan\\_Dictionary.pdf](http://www.ssdec.nt.ca/ablang/ablanguag/lkchipdictionary/Chipewyan_Dictionary-Linked/Chipewyan_Dictionary.pdf) and some Inuinnaqtun terms from: ([http://nbes.ca/wp-content/uploads/2014/03/inuinnaqtun\\_english\\_dictionary.pdf](http://nbes.ca/wp-content/uploads/2014/03/inuinnaqtun_english_dictionary.pdf)).

Note: Terms provided by interpreters during the December Verification Session and reviewed by: Inuinnaqtun by Gwen Angulalik and Margo Kadlun; Wìlìideh Yatì by Maro Sundberg; Tł̄chq̄ Yatì by Margaret Mackenzie and Dené Sq̄híné by Bertha Catholique.

Lac de Gras – Ek’atì

The RioTinto logo is displayed in white text on a red rectangular background. The background of the entire slide is a photograph of a coastal landscape with green vegetation and white flowers in the foreground, and a body of water under a blue sky with clouds in the background.

**RioTinto**

# DDMI Response to Traditional Knowledge Camp Recommendations

Diavik Diamond Mines (2012) Inc.

Kofi Boa-Antwi (DDMI)

2021-12-15

Document Control #: ENVI-1267-1221 R0  
Template #: DCON-029-1010 R8

# 2021 Traditional Knowledge Camp Recommendations and Responses

Recommendation	Rationale	Response
Increase frequency of fish and water sampling to every month	People want to understand the degradation of the fish	DDMI considers the established/existing frequency for fish and water sampling for assessing mine-related impacts to fish as appropriate as it is informed by WLWB-led public review processes. DDMI will continue to follow the established frequency for water and fish sampling in the WLWB-approved AEMP Design Plan.

# 2021 Traditional Knowledge Camp Recommendations and Responses

Recommendation	Rationale	Response
<p>Results from past testing, in plain language, by year – highlight change and variation</p>	<p>Clear visuals</p>	<p>DDMI compiles plain language summaries of AEMP results, including changes from previous years, in the AEMP Annual Reports and AEMP Three Year Re-Evaluation Reports. These reports are submitted to the WLWB and undergo a public review. WLWB-approved Annual AEMP Reports can be found on the WLWB’s public registry.</p>

# 2021 Traditional Knowledge Camp Recommendations and Responses

Recommendation	Rationale	Response
Identify source of contaminants in water samples.	How is water changing?	The main driver of mine-related contaminant loading to Lac de Gras is the treated effluent discharge from the onsite water treatment plant. Results of water quality sampling and analyses and discussion of sources of contaminants are presented in the Annual AEMP Reports and in the 3-year AEMP Re-evaluation Reports. These reports are subject to public review and WLWB-approval processes. Other than natural run-off, no untreated water is discharged from the mine into the lake.

# 2021 Traditional Knowledge Camp Recommendations and Responses

Recommendation	Rationale	Response
Test stomach contents of fish throughout year (identify types of bugs)	Not provided	DDMI will continue to follow the established frequency for fish sampling in the WLWB-approved AEMP Design Plan. However, DDMI will commit to conducting stomach content analysis for fish caught at the next TK camp.

# 2021 Traditional Knowledge Camp Recommendations and Responses

Recommendation	Rationale	Response
<p>Develop a clear understanding of parasites and cysts found – identify which ones are of concern to human health</p>	<p>Traditionally people will not eat fish with parasites unless they are desperate</p>	<p>This recommendation has been addressed as part of responses to information requests presented by Golder Associates; specifically, that parasite lifecycles are complex and may involve different hosts/intermediate hosts that can influence parasite numbers.</p>

# 2021 Traditional Knowledge Camp Recommendations and Responses

Recommendation	Rationale	Response
Discussion who selects members of the AEMP and TK Panel	Aimed at Indigenous Organizations	The selection of representatives for TK Camp and TK Panel sessions is completed by Diavik's five Participation Agreement Partners.

# 2021 Traditional Knowledge Camp Recommendations and Responses

Recommendation	Rationale	Response
Discuss increased parasites in caribou – how should this be addressed?	Since diamond mines, people are seeing more parasites in caribou	This recommendation has been addressed as part of responses to information requests presented by Golder Associates i.e., warming climate, changing weather patterns and increased numbers of muskoxen may influence presence of parasites in caribou.

**THANK YOU**