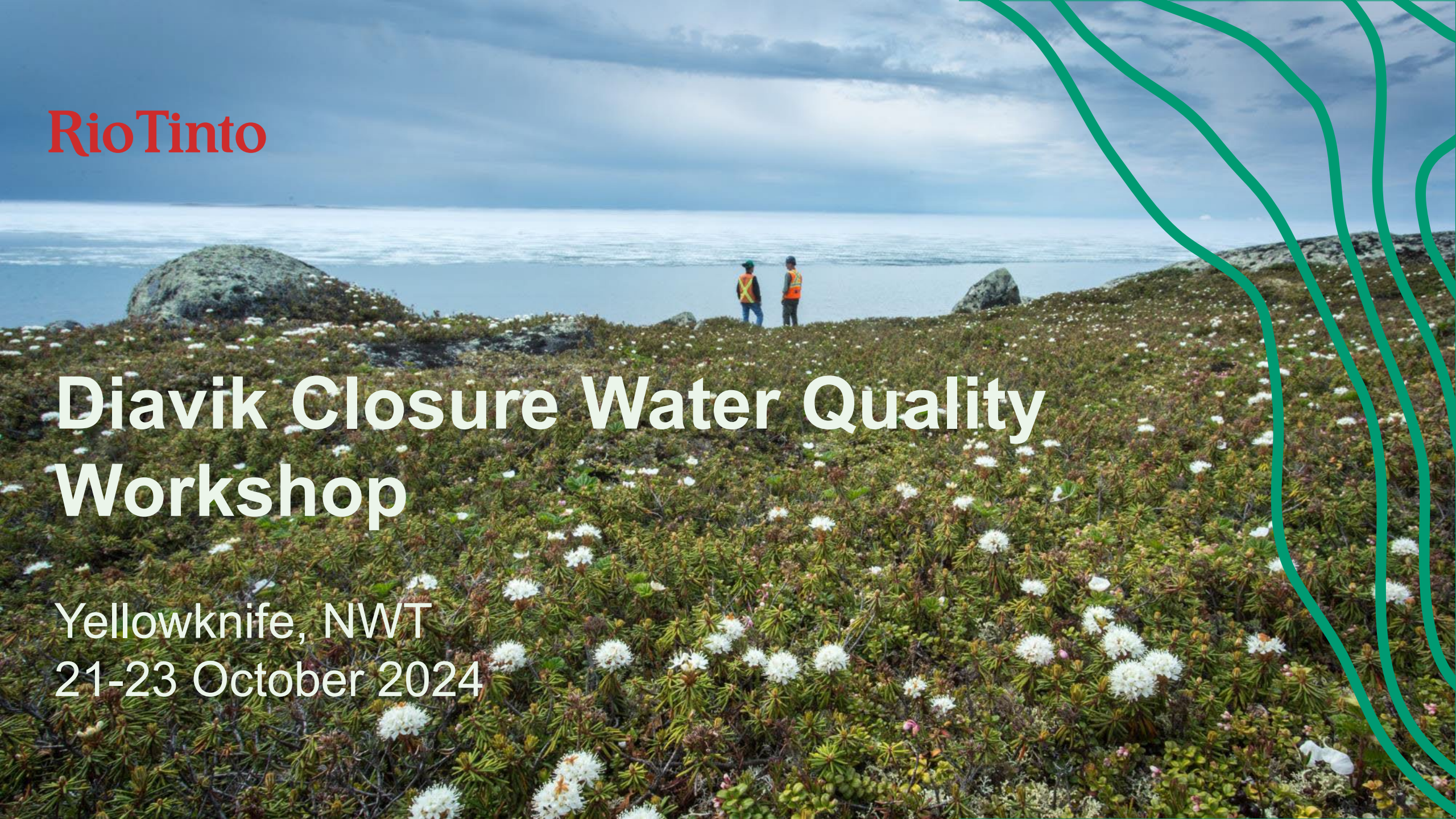

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Diavik Closure Water Quality Workshop

Yellowknife, NWT
21-23 October 2024

Land acknowledgement

Diavik respectfully acknowledges that we work and operate on the traditional territories and homeland of the Dene, Inuit, and Métis peoples of the Northwest Territories and West Kitikmeot. We are grateful to the many Indigenous peoples of the NWT and Nunavut for allowing us the opportunity to learn, work and live on their lands. We are also deeply grateful for the generous sharing of Traditional Knowledge, wisdom, and ways of knowing, being and doing.

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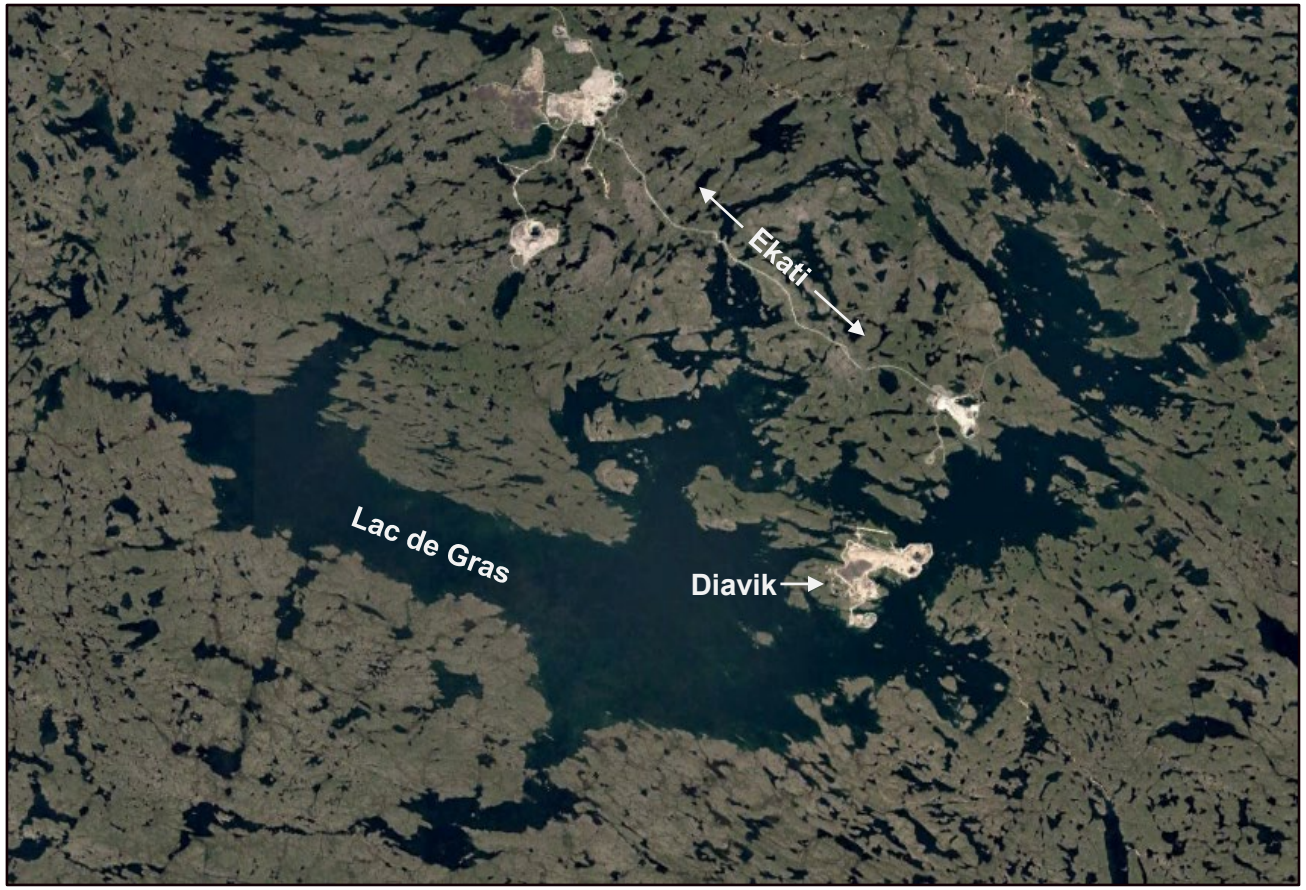
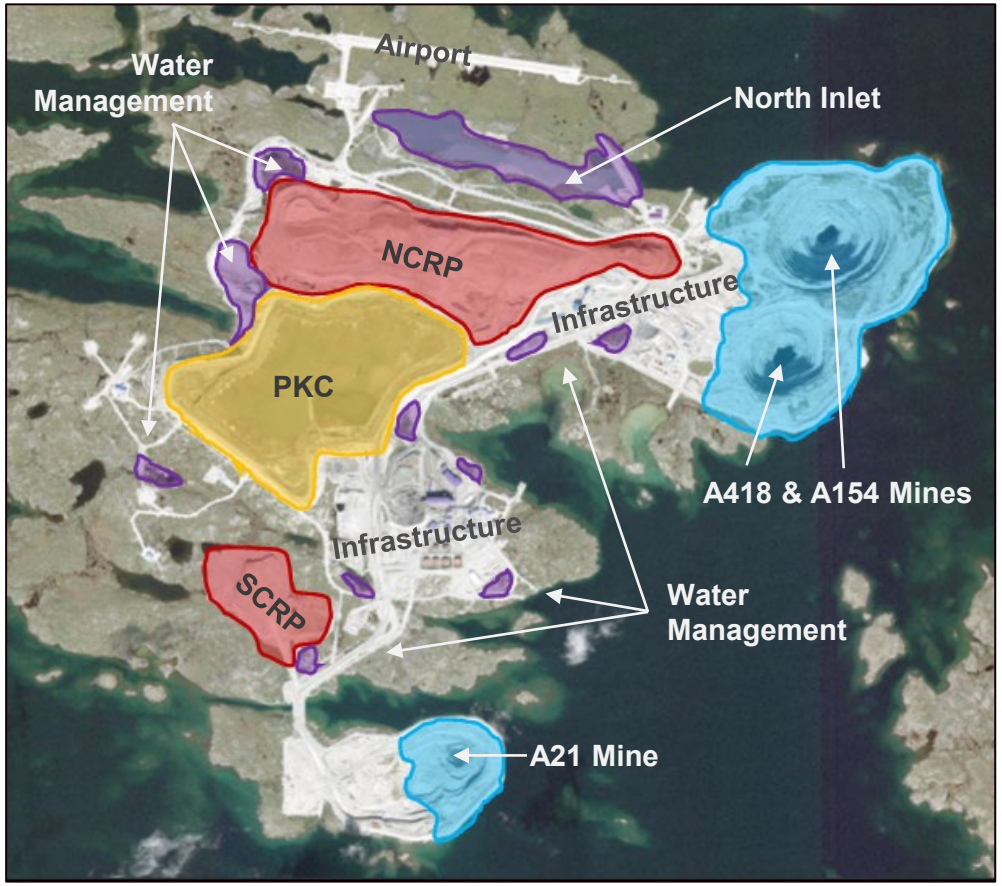
Diavik team

Sean Sinclair – Manager of Closure
Nicole Goodman – Superintendent, Environment and Closure
Kyla Gray – Advisor, Environment
Amanda Annand – Senior Advisor, Communities and Social Performance
&
Rainie Sharpe – WSP Technical Consultant

Closure planning overview





Mine Workings: Remove mobile equipment and hazardous materials, flood mines with water from Lac de Gras; dikes to be breached to allow full reconnection with big lake.

Rock Piles: Sloped sediment/till + rock cover to freeze potentially acid generating rock within North Country Rock Pile (NCRP); wildlife access ramps for safe passage on South Country Rock Pile (SCRP).

Processed Kimberlite Containment: Rock cover to separate Processed Kimberlite (PK) from people and wildlife and create a stable surface.

North Inlet and Water Management: Reconnect natural drainages to allow surface runoff flow into Lac de Gras. Allow natural bioremediation of hydrocarbon impacted sediments for as long possible before North Inlet reconnection takes place.

Infrastructure: Removal of all mine infrastructure, disposal of all inert materials in on-site landfill unless they can be practically recycled, donated or sold; targeted revegetation; investigate alternative options where some infrastructure left behind to fulfill alternative future use.

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Our regulatory journey

- EA in 1998 and CSR in 1999 which considered closure
- Initial Abandonment and Restoration Plan approved in 2001
- Interim Closure and Reclamation Plan (CRP) versions 2 & 3 between 2006 and 2011
- Interim CRP version 4 final CRP for North Country Rock Pile in 2017
- Final CRP in 2022 with Board decision in 2024
- Licence Amendment processes between 2021-2024 to advance closure approvals and facilitate progressive reclamation
- Licence Renewal and Final CRP v1.1 in 2025
- Regulatory closure criteria have been broadly discussed and debated for years but many are not yet agreed
- Emphasis has shifted from planning and predicting, to executing and monitoring, and attempting to bring governments and communities to work together and want to demonstrate what successful closure looks like

Early identification of strategy of value driven progressive reclamation integrated into the operational mine plan since 2017 continues, with an expanded target of compressing the closure schedule

Visual execution schedule

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Shared vision

Successful mine closure requires a shared vision between companies, governments and communities.

- We are working against a difficult legacy of mine closure in the North
- Modern mine closure is not a distinct or separate “remediation economy”; successful closure plans must be fully integrated into life of mine planning processes and must consider our people and socioeconomics
- Companies require clear regulatory pathways to give them the certainty they need to invest, deliver progressive reclamation and complete closure work
- Demonstrated positive mine closure is becoming necessary to obtain the social licence to open new mines
- We are motivated to ensure Diavik becomes a modern positive example of a closed mine, which would be a significant benefit to the North and Canada
- We look forward to continuing this journey with our Northern Partners

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Topic 1
Long-term Chemical Stability

Knowing that the site is safe in the future

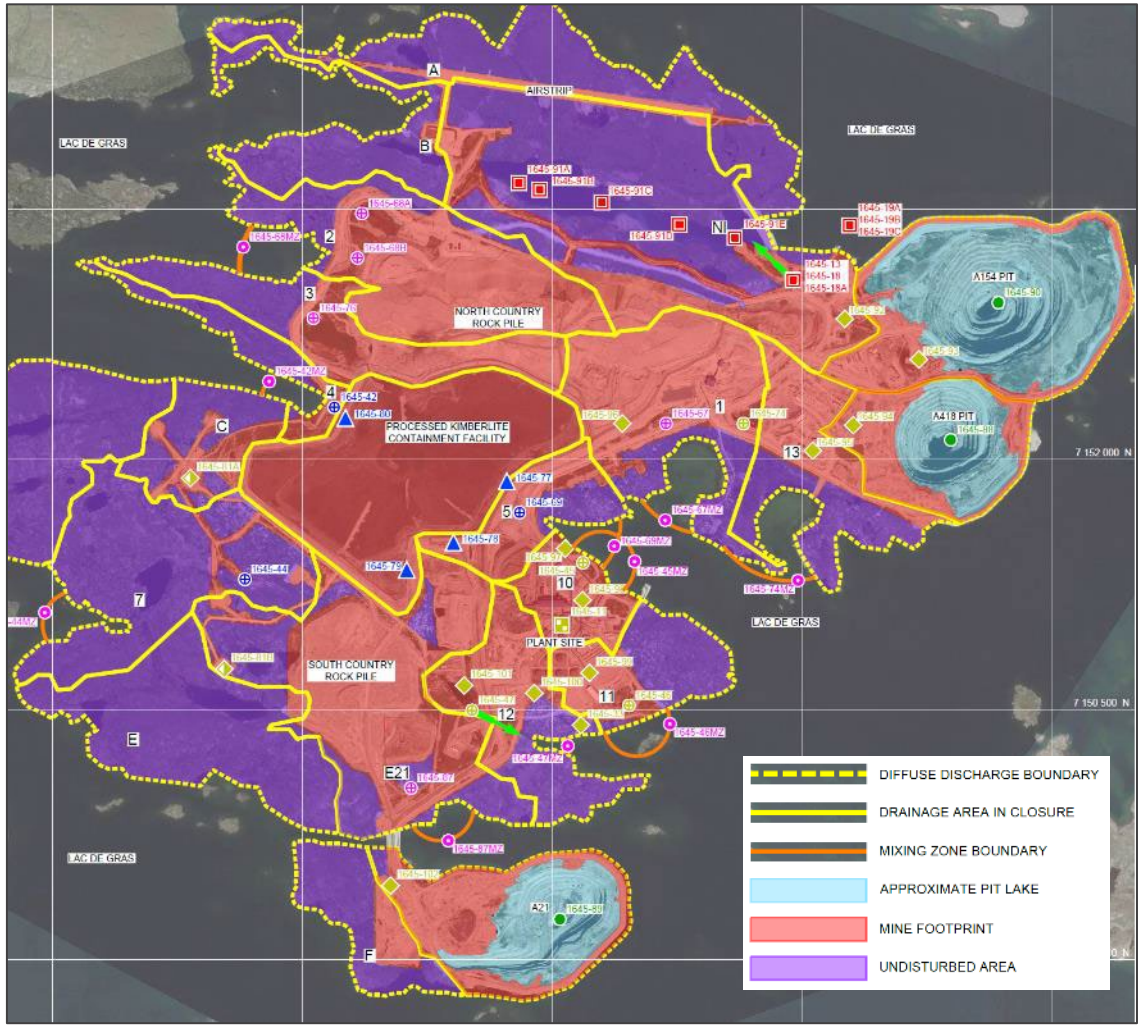
Topic 1: Overview

Understanding and defining long-term chemical stability of water quality will help Diavik, regulators, and Parties understand whether monitoring trends are meeting closure criteria.

This section will cover:

- The purpose of Diavik's proposed closure monitoring programs and how the results will be used.
- The approach for Performance Assessment Report (PAR) submissions and evaluation of closure criteria.
- The approach for long-term monitoring and evaluation of chemical stability, as well as how to incorporate this into the Final Closure and Reclamation Plan (FCRP) and closure monitoring.

Closure Monitoring Sampling Locations for Closure Performance Assessment



Diavik's closure monitoring programs include:

- **The Surveillance Network Program (SNP) Runoff** at pond breach locations
- **The SNP Mixing Zones** at greater of 100m from shore or first 5m depth
- **The Aquatic Effects Monitoring Program (AEMP)** at near field, mid field & far field stations

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Purpose and Duration of Proposed Monitoring

5+ years

Closure Criteria on the Land

Discharge Criteria for pond decommissioning and surface runoff will be monitored by:

- **Weekly water quality (WQ)**
- **Monthly Toxicity tests**
- **Toxicity** – if Surface Water Action Level Framework (SWALF) AL2 triggered

2+ years

Supporting data in the Water

Validate Closure Criteria assumptions as Supplemental Information

- **Monthly WQ**
- **Toxicity** – if SWALF AL2 trigger

Up to 25 years

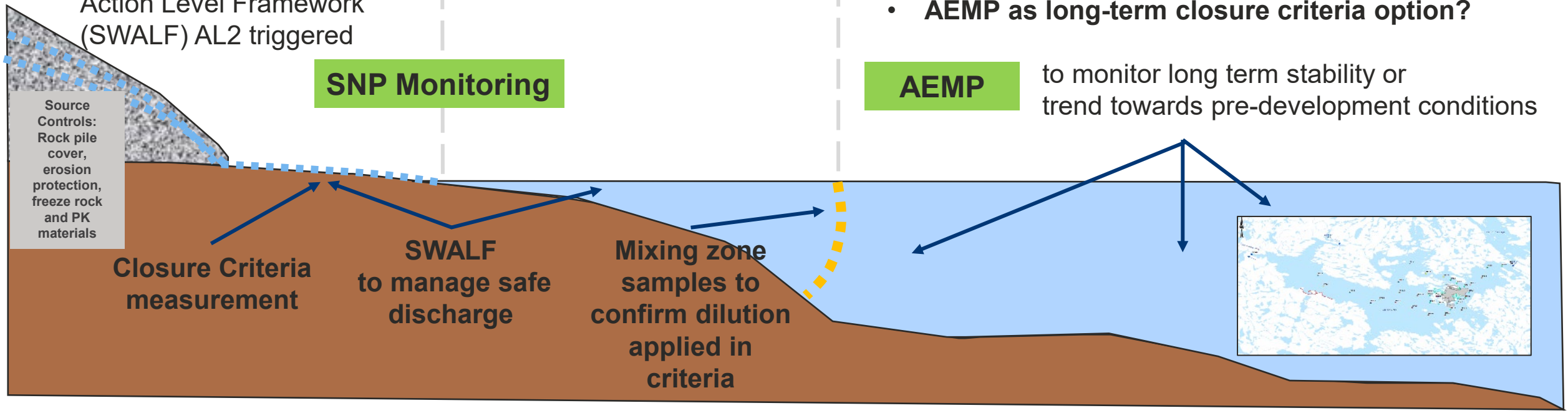
Lac de Gras (long-term monitoring)

AEMP under ice and open water

- Year **0, 1, 2 & 3**
- Years **6, 9 & 12**
- Years **18 & 24**
- Design updates and duration determined through adaptive management process
- **AEMP as long-term closure criteria option?**

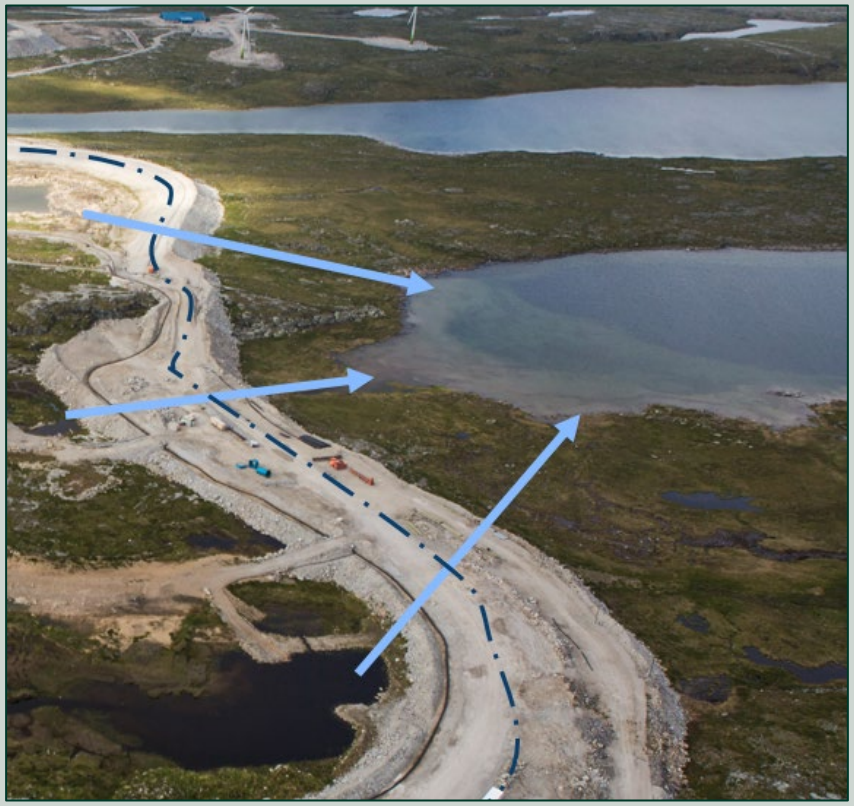
SNP Monitoring

AEMP to monitor long term stability or trend towards pre-development conditions



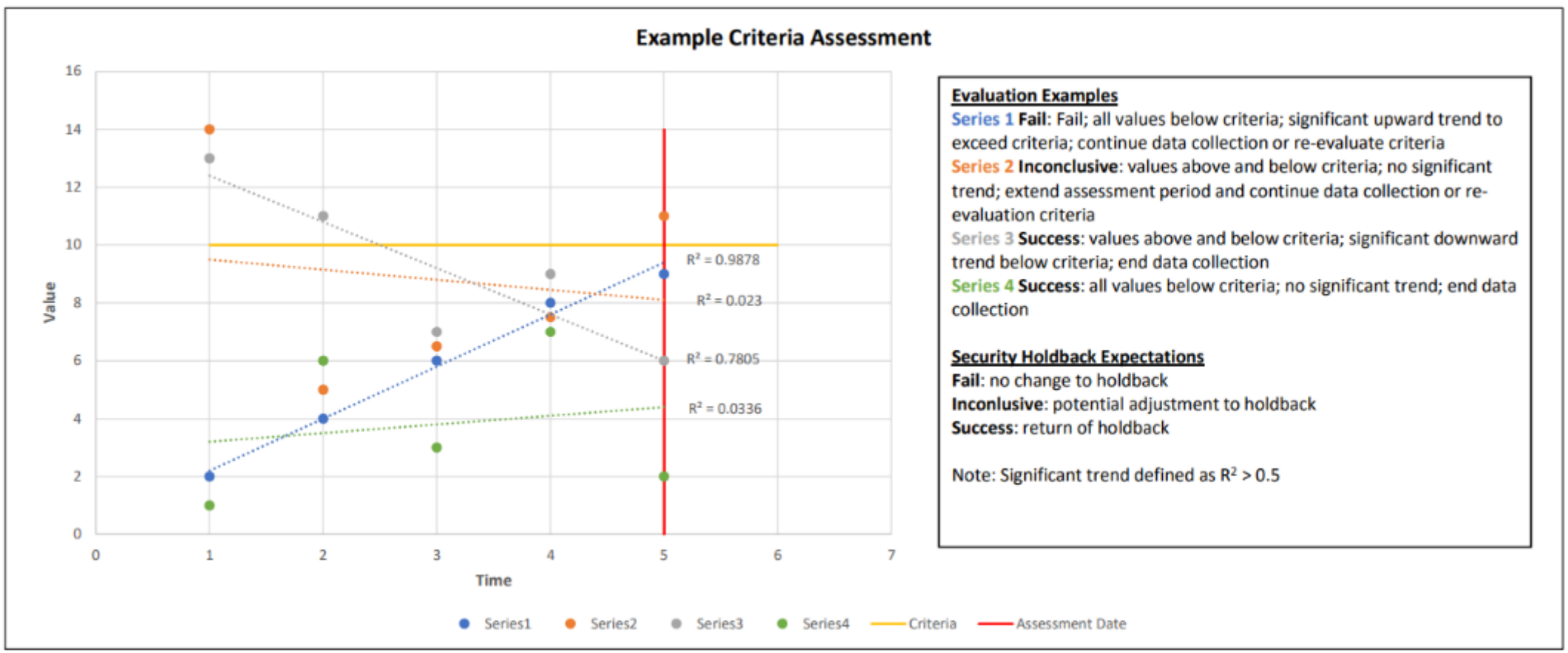
Evaluating Chemical Stability of Closure Criteria

Knowing that the results of the water quality monitoring data will be stable over time



- After 5 years of monitoring post-closure runoff, DDMI may submit a Performance Assessment Report (PAR) to the Wek'èezhìi Land and Water Board (WLWB).
- The PAR will evaluate monitoring data against Closure Criteria and may consider historical pond data.
- Pre-defining performance assessment data analysis methods prior to having any runoff monitoring data may not be beneficial; however, should the WLWB decide assessment methods are required upfront it could be added to FCRP criteria table.
- DDMI is confident that the weight-of-evidence at completion of the performance assessment period will allow for decision on success to meet Closure Criteria.
- A significant trend indicating a reasonable future exceedance is not expected, based on what we already know for historical data and modelling.
- DDMI submitted **Attachment C with FCRP responses** (WLWB 10) as a conceptual basis for evaluating the chemical stability of Closure Criteria
- A similar assessment could be considered in the AEMP for long term assessment; e.g., AEMP data indicates stable or improving conditions in Lac de Gras (LDG).

Evaluating Chemical Stability of Closure Conditions



FCRP Response to Comments Attachment C includes examples of data series DDMI expects would result in success against criteria, failure against criteria, or an inconclusive decision against criteria.

Long-term Chemical Stability - Summary

Water sampling through monitoring programs (runoff, mixing zones, AEMP) at Diavik will provide data that can be compared against closure criteria to assess whether or not Diavik is meeting its closure objectives.

- Understanding the long-term chemical stability of what is being measured in the monitoring programs will help Diavik, the WLWB, and the Parties understand whether or not we can expect the monitoring results to get better or worse over time.
- Based on the evidence from historical pond sampling data and closure model predictions, Diavik does not expect that there will be any adverse effects to uses of Lac de Gras.
- Diavik is proposing that the SNP (runoff) can house the short-term closure criteria and that the AEMP (lake) will monitor long-term stability and/or improvement.
- Diavik has proposed that detailed performance assessment methods should be developed once monitoring results have been obtained. Methods can then be reviewed and refined with the PAR. If Parties suggest methods should be fully established upfront, Diavik suggests the framework on the previous slide as a starting point for discussions. Diavik sees value in either approach.

Masi Cho
Thank you

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Topic 2
Site-wide Closure Criteria for Surface Runoff and Seepage

Closure Objective SW1: Surface runoff and seepage water quality that is safe for humans and wildlife

Closure Objective SW2: Surface runoff and seepage water quality that will not cause adverse effects on aquatic life or water uses in Lac de Gras or the Coppermine River

Topic 2: Overview

Diavik has proposed closure criteria for SW1 and SW2 closure objectives. In this section Diavik will:

- Share the assumptions about the future use of the site area which informed the conclusion that near shore areas in Lac de Gras would be safe for people (SW1-1).
- Present the methodology for determining the proposed mixing zone sizes and calculating the discharge criteria for surface run-off.
- Describe how the proposed SW2-1 criteria were evaluated to be both achievable and protective.
- Describe how our closure plan reflects the objective of waste minimization.

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The FCRP proposed updates to SW1 and SW2 criteria supported by a comprehensive assessment of potential risks to human health, wildlife, and aquatic life.

- **Wildlife**: Water quality guidelines are based on livestock watering guidelines
- **Human health**: Recreational use guidelines are based on human health drinking water guidelines x 20 to account the potential incidental consumption
- **Aquatics**: No sublethal toxicity in any catchment runoff analyzed at 12.5% strength. If runoff tests meet 12.5% criteria = no chronic effects in LDG after runoff mixes to an 8x dilution
- DDMI developed a comprehensive and adaptive SWALF to manage runoff through closure and post-closure

SW1 Proposed Closure Criteria – FCRP Version 1.0
SW1-1 – Surface runoff and seepage water quality that meets Human Health – Recreation Use Guidelines
SW1-2 – Surface runoff and seepage water quality that meets Wildlife Direct Consumption

SW2 Proposed Closure Criteria – FCRP Version 1.0
SW2-1 – No sublethal toxicity at 12.5% strength of surface runoff with *Ceriodaphnica dubia* toxicity test
SW2-2 – No acute toxicity (96-hr Rainbow Trout, 48-hr Daphnia magna) observed

DDMI has since developed catchment-specific numeric closure criteria based on feedback from Parties and the WLWB

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Human Health Recreational Use Criteria (SW1-1)

Human Health Risk Assessment (HHRA) FCRP Appendix X-25

- The human health component (HHRA) of the Human Health and Ecological Risk Assessment (HHERA) included the evaluation of exposure to constitutes of potential concern (COPCs) in soil, sediment, surface water, food (terrestrial plants, fish, birds, small and large animals) by human receptors of potential concern
- Considered the use of LDG surface water for canoeing and fishing, as a source of drinking water, and for bathing/swimming.
- Evaluated the chronic (i.e., lifetime) risk to receptors
- Assessed risks to potential Indigenous land-users and recreational users of the site (e.g., hikers, recreational hunters)
- HHRA concluded water use on the post-closure island would be safe for recreational use by people – risks are low or negligible

HHRA Assumptions

- People would visit the site in the summer months (for up to 8 weeks) and year-round consumption of food sourced from the site.
- Ingestion of surface water runoff was not included because the volume of surface water runoff is considered insufficient as a drinking water source.

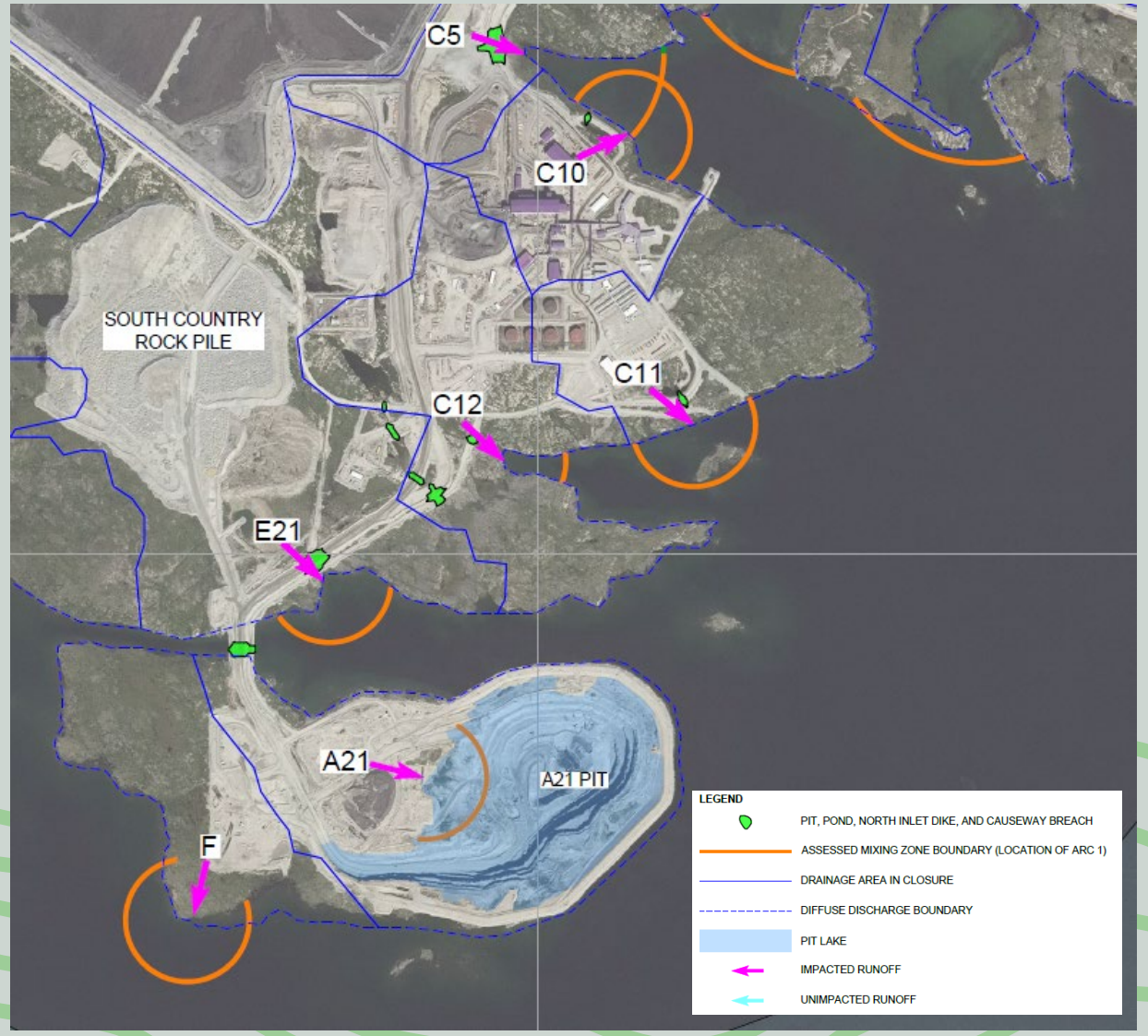
Basis of Recreational Criteria for Surface Water Runoff (SW1-1)

Closure Objective SW1: Surface runoff and seepage water quality that is safe for humans and wildlife.

- Drinking water guidelines x 20 to obtain recreational criteria and applied to surface water runoff per World Health Organization (WHO, 2021)
- 20x factor based on incidental ingestion of water while swimming or wading relative to the amount of drinking water consumed on an annual basis (32-38 L or 5% of annual consumption)
- Recreational closure criteria for exposure to surface water runoff considered to be a more realistic assumption for a relatively infrequent exposure
- Exceedances would not indicate that a problem exists, rather, they would suggest the need for specific evaluation of the chemical considering local circumstances and conditions of the recreational water area
- HHRA is expected to be sufficiently conservative and protective of incidental consumption of runoff from Site
- DDMI does not recommend people consume site runoff nor is DDMI suggesting or assuming people will consume up to 38 L of site runoff per year; this is a conservative risk modelling assumption

Application of Drinking Water Guidelines to Collection Pond Mixing Zones

- Predictions indicate that drinking water criteria will always be met at the edge of the mixing zones
- Depending on the time of year the mixing zone size will fluctuation from the shoreline (potentially not measurable) to the mixing zone boundary (orange lines)
- Signage may be appropriate to prevent establishment of drinking water supplies within mixing zones
- Incidental consumption within the mixing zones would be safe

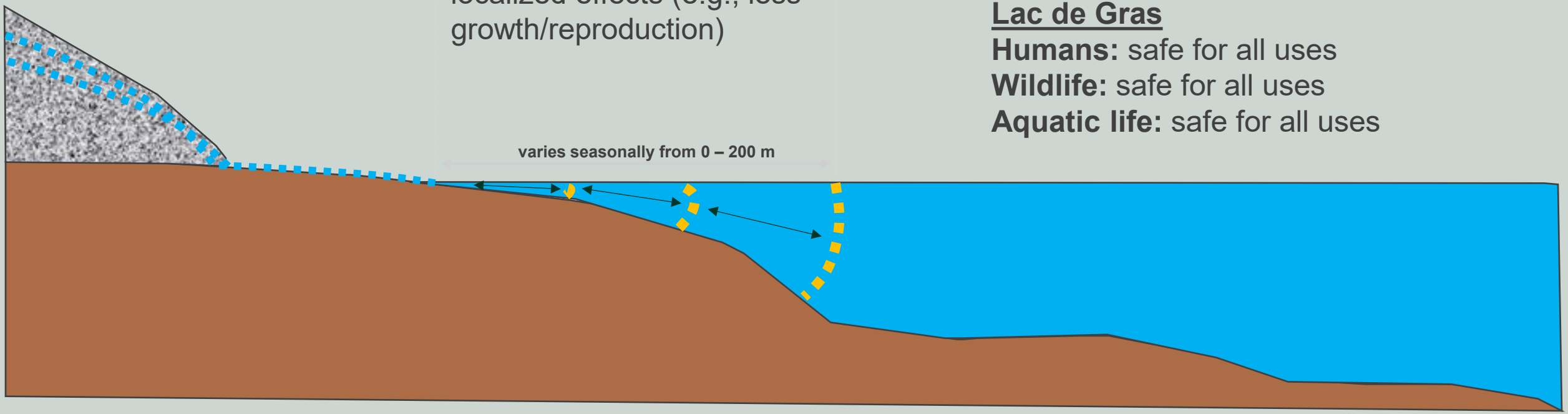


Land and Water Uses

On the Land
Humans: camp, swim, wash, hunt
Wildlife: safe for all uses
Aquatic life: N/A

Mixing Zones
Humans: swim, wash, fish, swallow sometimes
Wildlife: safe for all uses
Aquatic life: potential localized effects (e.g., less growth/reproduction)

Lac de Gras
Humans: safe for all uses
Wildlife: safe for all uses
Aquatic life: safe for all uses



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Mixing Zones and the size of Lac de Gras

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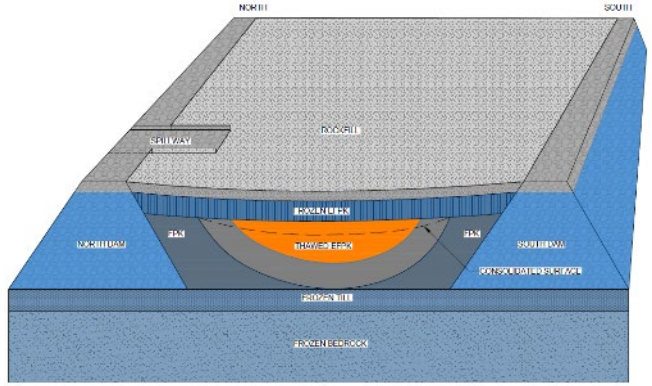
Catchment-specific Numeric Discharge Criteria for the Protection of Aquatic Life (SW2-1)

FCRP includes designed Closure Source Controls to ensure water is safe without active management

Freeze Potentially Acid Generating (PAG) Rock

+



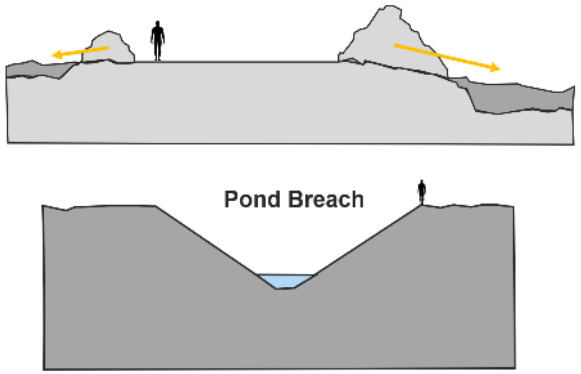
Isolate Processed Kimberlite

+

Fill mines with lake water

Demolition, landfill and hazardous waste removal

+



Site grading and re-connecting natural drainages

Waste Minimization at the Source

Closure Criteria SW2-1 is proposed as a measure of source control performance assessment and is not intended to further improve waste minimization beyond closure controls

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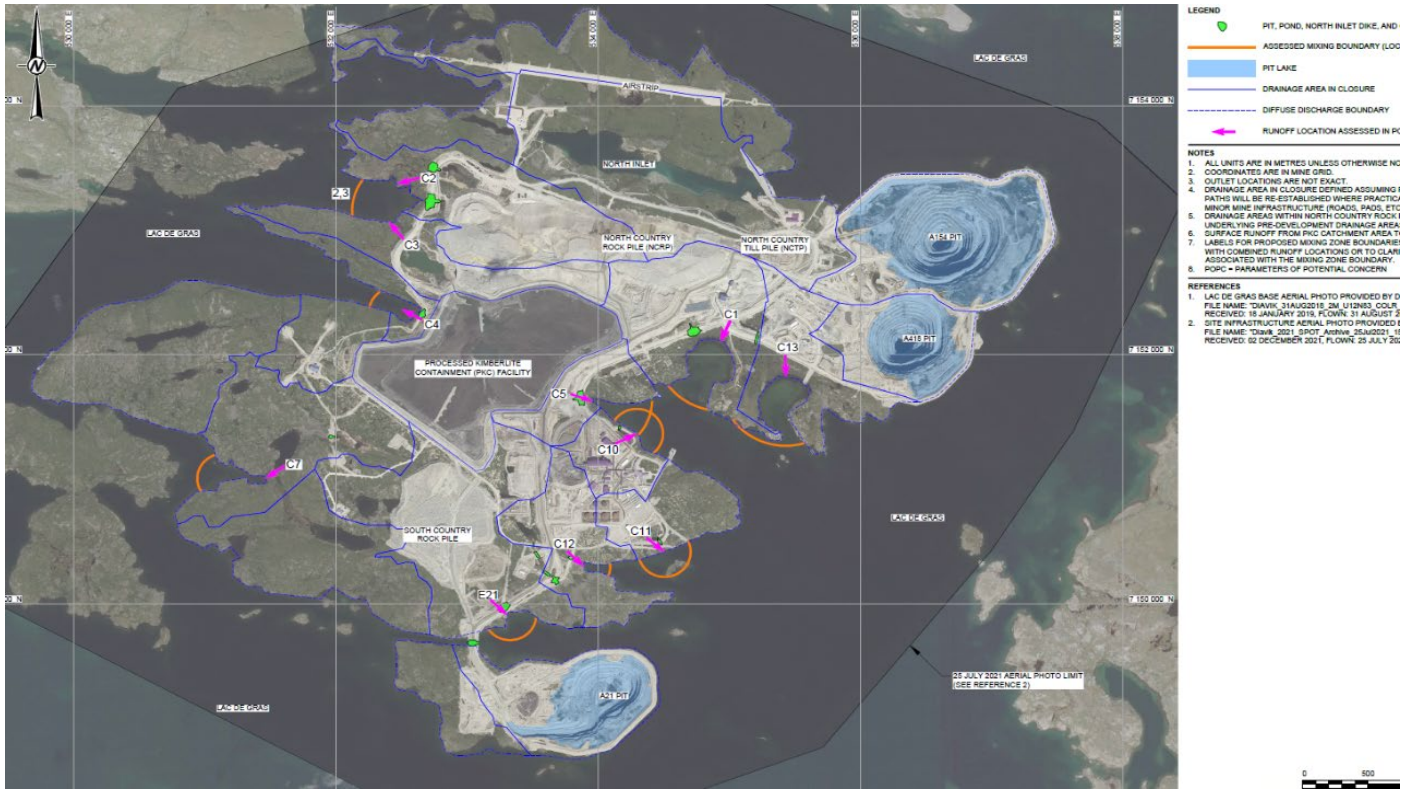
Identifying Mixing Zone Sizes

Predicted size based on concentrations and volumes of runoff during post-closure and the modelled mixing capacity of LDG using the LDG three-dimensional hydrodynamic and water quality model (FCRP Appendix X-21); Mixing zones meet guidelines (FCRP X-22); minimum predicted size constrained by 3D model mesh.

Actual size to be as close to DDMI's modeled Arc 1 as feasible for each catchment but to be determined in the field; size required to be at least 100 m from the point of discharge into Lac de Gras and have a minimum of 5 m water depth; size will fluctuate through the year based on runoff volumes and meteorological conditions.



Catchment-Specific Criteria Were Selected and Calculated based on LWB Guidance

1. Output of previously reviewed Diavik Closure parameters of potential concern screening **excluding final screening steps.**

Step 1: Predicted maximum runoff off concentration above: Acute Benchmark, AEMP Effects Benchmark or FEQG, Health-based Drinking Water Guideline	**Step 2:** Predicted maximum runoff concentration above baseline median runoff concentration	**Step 3:** Predicted 95th percentile or estimated concentration at the assessed mixing zone boundary (MXB) above baseline normal range concentration	**Step 4:** Predicted 95th percentile or estimated concentration at the assessed MXB above AEMP effects benchmark, Federal Environmental Quality Guidelines (FEQG) or health based-drinking water guideline

2. For screened in parameters, Land and Water Board best practice derivation method of utilizing hydrodynamic model results and applying a back-calculation approach to achieve Water Quality Objectives (AEMP benchmarks) at the edge of each mixing zone (Arc 1 in DDMI's hydrodynamic and Water Quality Modelling of Pit Lakes and LDG) under reasonable worst case mixing conditions (5th percentile dilution factor); back-calculation approach accounts for background concentrations in LDG.
3. Where back-calculated criteria exceeded an acute benchmark, DDMI has set the criteria to the acute benchmark based on understanding of Board requirements.

A greater risk of criteria exceedance where criteria defaulted to acute guidelines (e.g., uranium); SW2-2 directly addresses acute toxicity.

Note: with Step 3 & 4, <u>all parameters would be screened out;</u> however, at this time mixing zones are not authorized

SW2-1 Achievability & Level of Protection

Closure Objective SW2: Surface runoff and seepage water quality that will not cause adverse effects on aquatic life or water uses in Lac de Gras or the Coppermine River

Achievability

- Back calculated criteria were compared to historical SNP data and model predictions
- Most criteria are expected to be reasonably and consistently achievable while recognizing that periodic upsets may occur with management applied through the Surface Water Action Level Framework
- Criteria set at uranium acute benchmark have significant risk of exceedance; site-specific test results from Diavik suggested this uranium benchmark may be unnecessarily low
- DDMI has been clear that there is no reasonable expectation that any Diavik closure discharges would be acutely toxic to regulatory test species and DDMI continues to question the purpose of defaulting discharge criteria to these numeric acute benchmarks rather than rely on acute toxicity testing (as already required) which is a direct measure of toxicity

Level of Protection

- FCRP X-22 (Rationale for Assessed Runoff Mixing Zones During Post-Closure) provides technical rationale to support that mixing zones meet the 13 criteria outlined in Section 3.0 of the LWB Guidelines for Effluent Mixing Zones.
- FCRP X-25 (Human Health and Ecological Risk Assessment) determined that risk to aquatic life was negligible or low and acceptable.
- Importantly for the protection of aquatic life, DDMI expects that acute toxicity will continue to be regulated through enforcement of acute toxicity testing as currently required under WL2015L2-0001.
- Further reduction of criteria is suggested as not necessary based on assessment outcomes and SWALF; DDMI understands some stakeholders would prefer criteria to be a low as reasonably achievable even if already protective

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Notes:
A. Value is an AEMP Effects Benchmark for the protection of aquatic life from the AEMP Design Plan, V6 (WSP Golder 2022a) or an FEQG (i.e., cobalt and vanadium), or both (i.e., aluminum, iron and strontium)
B. Final Closure and Reclamation Plan (DDMI 2022) Appendix X-25 Human Health and Ecological Risk Assessment
C. Reference Condition Report v2.2
D. Average of data collected at all stations within LDG (excluding LDS-4) for all depths open water AEMP 2021 as this was background used in the FCRP water quality model
E. Criteria = (Mixing zone *(Dilution factor + 1))-(Dilution factor * LDG background); when LDG Background is not available the mean of lower and upper LDG normal range is used
F. Maximum grab = 2 * Maximum average
G. Benchmark of 0.00070 mg/L adjusted based on 95th percentile of concentrations which passed both standard LC50 acute toxicity tests for rainbow trout and daphnia magna from Environment and Climate Change Canada (ECCC) database for the Metal and Diamond Mining Effluent Regulations per June 2023 ECCC Response to Copper Information Request
Shaded cells were identified as POCP (Technical Session IR #7, March 2023)
Bolded values have defaulted to Acute Benchmarks
5th Percentile Dilution Factors output from hydrodynamic model Arc 1: "Sump E21: 12.74419
Pond 1: 14.16932
Pond 2 & Pond 3: 7.89598
Pond 4: 5.447407
Pond 5: 12.59763
Pond 7: 7.106539
Pond 10: 12.20312
Pond 11: 14.16276
Pond 12: 5.689206
Pond 13: 27.23562"

Parameter	Units	AEMP Benchmarks [A]	Acute Benchmarks [B]	Baseline normal in Lac de Gras [C]		LDG background [D]	Pond 1		Pond 2		Pond 3	
				Lower Limit	Upper Limit		Max Avg [E]	Max Grab [F]	Max Avg	Max Grab	Max Avg	Max Grab
Conventional Parameters												
Total Dissolved Solids	mg/L	500	5000	2.9	6.5	15.4			4328.34	**5000**	4328.34	**5000**
Major Ions												
Chloride	mg/L	120	640	0	1	3.5						
Fluoride	mg/L	0.12	1.9	0.02	0.03	0.034	1.34	**1.90**	0.80	1.60	0.80	1.60
Sulphate	mg/L	100	3000	1.9	2.5	3.9	1464.62	2929.24	859.19	1718.38	859.19	1718.38
Calcium	mg/L	60	-	0.9	1.3	-	896.4	1792.8	525.3	1050.6	525.3	1050.6
Sodium	mg/L	52	-	0	1	3.1					438	877
Nutrients												
Total Ammonia	mg-N/L	4.7	3.1	0.0143	0.023	0.06						
Nitrate	mg-N/L	3	124	0	0.0152	0.055	44.8	89.6			26.3	52.5
Nitrite	mg-N/L	0.06	0.06	0	0.002	0.00078						
Phosphorus	mg-P/L	0.0075	-	0.002	0.005	-	0.0643	0.1286				
Metals												
Aluminum	mg/L	0.043	0.1	0.0023	0.0039	0.0063						
Antimony	mg/L	0.033	3	0	0.00002	0.000033						
Arsenic	mg/L	0.005	0.005	0.00015	0.00022	0.00028						
Barium	mg/L	1	0.11	0.00174	0.00218	0.0035						
Beryllium	mg/L	-	0.035	0	1	-						
Boron	mg/L	1.5	29	0	0.005	0.0029						
Cadmium	mg/L	0.0001	0.0077	0	0.000005	0.0000028	0.00148	**0.00770**	0.00087	0.00174	0.00087	0.00174
Chromium	mg/L	0.001	0.016	0	0.00006	0.00005						
Cobalt	mg/L	0.00078	0.11	0.00001	0.00002	-	0.01164	0.02329	0.00682	0.01365	0.00682	0.01365
Copper	mg/L	0.002	0.031 [G]	0	0.0008	0.00059	0.0220	**0.0310**	0.0131	0.0263	0.0131	0.0263
Iron	mg/L	1.2	0.35	0	0.005	0.0041						
Lead	mg/L	0.001	0.42	0	0.000007	0.0000033						
Lithium	mg/L	-	0.26	0.0012	0.0015	-						
Manganese	mg/L	0.19	15	0.0006	0.00195	-	2.870	5.740				
Molybdenum	mg/L	0.073	46	0.00006	0.00009	0.00088					0.643	1.285
Nickel	mg/L	0.025	3.1	0.00083	0.0011	0.00077	0.369	0.738				
Selenium	mg/L	0.001	0.0099	0	0.00004	0.00002	**0.0099**	**0.0099**	0.0087	**0.0099**	0.0087	**0.0099**
Silicon	mg/L	2.1	210	0	0.05	0.186	29.3	58.6	17.2	34.4	17.2	34.4
Silver	mg/L	0.00025	0.003	0	0.000005	0.0000025	**0.00300**	**0.00300**	0.00221	**0.00300**	0.00221	**0.00300**
Strontium	mg/L	2.5	15	0.0067	0.00878	0.035						
Thallium	mg/L	0.0008	0.11	0	0.000002	0.0000011						
Tin	mg/L	0.073	2.7	0	0.00001	0.000011						
Titanium	mg/L	-	2	0	0.0005	0.00051						
Uranium	mg/L	0.015	0.033	0.000027	0.00003	0.00012	**0.033**	**0.033**	**0.033**	**0.033**	**0.033**	**0.033**
Vanadium	mg/L	0.12	0.28	0	0.0001	-						
Zinc	mg/L	0.0058	0.17	0.00037	0.00153	0.00021	0.085	0.170	0.050	0.100		

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E. Criteria = (Mixing zone *(Dilution factor + 1))-(Dilution factor * LDG background); when LDG Background is not available the mean of lower and upper LDG normal range is used
F. Maximum grab = 2 * Maximum average
G. Benchmark of 0.00070 mg/L adjusted based on 95th percentile of concentrations which passed both standard LC50 acute toxicity tests for rainbow trout and daphnia magna from Environment and Climate Change Canada (ECCC) database for the Metal and Diamond Mining Effluent Regulations per June 2023 ECCC Response to Copper Information Request
Shaded cells were identified as POCP (Technical Session IR #7, March 2023)
Bolded values have defaulted to Acute Benchmarks
5th Percentile Dilution Factors output from hydrodynamic model Arc 1: "Sump E21: 12.74419
Pond 1: 14.16932
Pond 2 & Pond 3: 7.89598
Pond 4: 5.447407
Pond 5: 12.59763
Pond 7: 7.106539
Pond 10: 12.20312
Pond 11: 14.16276
Pond 12: 5.689206
Pond 13: 27.23562"

Parameter	Units	AEMP Benchmarks [A]	Acute Benchmarks [B]	Baseline normal in Lac de Gras [C]		LDG background [D]	Pond 4		Pond 5		Pond 7	
				Lower Limit	Upper Limit		Max Avg	Max Grab	Max Avg	Max Grab	Max Avg	Max Grab
Conventional Parameters												
Total Dissolved Solids	mg/L	500	5000	2.9	6.5	15.4						
Major Ions												
Chloride	mg/L	120	640	0	1	3.5						
Fluoride	mg/L	0.12	1.9	0.02	0.03	0.034			1.20	**1.90**		
Sulphate	mg/L	100	3000	1.9	2.5	3.9			1310.86	2621.72		
Calcium	mg/L	60	-	0.9	1.3	-						
Sodium	mg/L	52	-	0	1	3.1						
Nutrients												
Total Ammonia	mg-N/L	4.7	3.1	0.0143	0.023	0.06						
Nitrate	mg-N/L	3	124	0	0.0152	0.055			40.1	80.2		
Nitrite	mg-N/L	0.06	0.06	0	0.002	0.00078						
Phosphorus	mg-P/L	0.0075	-	0.002	0.005	-	0.0291	0.0582	0.0579	0.1158		
Metals												
Aluminum	mg/L	0.043	0.1	0.0023	0.0039	0.0063						
Antimony	mg/L	0.033	3	0	0.00002	0.000033						
Arsenic	mg/L	0.005	0.005	0.00015	0.00022	0.00028						
Barium	mg/L	1	0.11	0.00174	0.00218	0.0035						
Beryllium	mg/L	-	0.035	0	1	-						
Boron	mg/L	1.5	29	0	0.005	0.0029						
Cadmium	mg/L	0.0001	0.0077	0	0.000005	0.0000028			0.00132	**0.00770**		
Chromium	mg/L	0.001	0.016	0	0.00006	0.00005						
Cobalt	mg/L	0.00078	0.11	0.00001	0.00002	-	0.00491	0.00982	0.01042	0.02084		
Copper	mg/L	0.002	0.031 [G]	0	0.0008	0.00059	0.0096	0.0192	0.0198	**0.0310**	0.0120	0.0240
Iron	mg/L	1.2	0.35	0	0.005	0.0041						
Lead	mg/L	0.001	0.42	0	0.000007	0.0000033						
Lithium	mg/L	-	0.26	0.0012	0.0015	-						
Manganese	mg/L	0.19	15	0.0006	0.00195	-			2.568	5.136		
Molybdenum	mg/L	0.073	46	0.00006	0.00009	0.00088						
Nickel	mg/L	0.025	3.1	0.00083	0.0011	0.00077			0.330	0.661		
Selenium	mg/L	0.001	0.0099	0	0.00004	0.00002			**0.0099**	**0.0099**		
Silicon	mg/L	2.1	210	0	0.05	0.186			26.2	52.4		
Silver	mg/L	0.00025	0.003	0	0.000005	0.0000025	0.00159	**0.00300**	**0.00300**	**0.00300**		
Strontium	mg/L	2.5	15	0.0067	0.00878	0.035						
Thallium	mg/L	0.0008	0.11	0	0.000002	0.0000011						
Tin	mg/L	0.073	2.7	0	0.00001	0.000011						
Titanium	mg/L	-	2	0	0.0005	0.00051						
Uranium	mg/L	0.015	0.033	0.000027	0.00003	0.00012			**0.033**	**0.033**		
Vanadium	mg/L	0.12	0.28	0	0.0001	-						
Zinc	mg/L	0.0058	0.17	0.00037	0.00153	0.00021	0.036	0.072	0.076	0.152		

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Notes:
A. Value is an AEMP Effects Benchmark for the protection of aquatic life from the AEMP Design Plan, V6 (WSP Golder 2022a) or an FEQG (i.e., cobalt and vanadium), or both (i.e., aluminum, iron and strontium)
B. Final Closure and Reclamation Plan (DDMI 2022) Appendix X-25 Human Health and Ecological Risk Assessment
C. Reference Condition Report v2.2
D. Average of data collected at all stations within LDG (excluding LDS-4) for all depths open water AEMP 2021 as this was background used in the FCRP water quality model
E. Criteria = (Mixing zone *(Dilution factor + 1))-(Dilution factor * LDG background); when LDG Background is not available the mean of lower and upper LDG normal range is used
F. Maximum grab = 2 * Maximum average
G. Benchmark of 0.00070 mg/L adjusted based on 95th percentile of concentrations which passed both standard LC50 acute toxicity tests for rainbow trout and daphnia magna from Environment and Climate Change Canada (ECCC) database for the Metal and Diamond Mining Effluent Regulations per June 2023 ECCC Response to Copper Information Request
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Pond 10: 12.20312
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Pond 12: 5.689206
Pond 13: 27.23562"

Parameter	Units	AEMP Benchmarks A	Acute Benchmarks B	Baseline normal in Lac de Gras C		LDG background D	Pond 10		Pond 11		Pond 12	
				Lower Limit	Upper Limit		Max Avg	Max Grab	Max Avg	Max Grab	Max Avg	Max Grab
Conventional Parameters												
Total Dissolved Solids	mg/L	500	5000	2.9	6.5	15.4						
Major Ions												
Chloride	mg/L	120	640	0	1	3.5						
Fluoride	mg/L	0.12	1.9	0.02	0.03	0.034					0.61	1.22
Sulphate	mg/L	100	3000	1.9	2.5	3.9						
Calcium	mg/L	60	-	0.9	1.3	-						
Sodium	mg/L	52	-	0	1	3.1						
Nutrients												
Total Ammonia	mg-N/L	4.7	3.1	0.0143	0.023	0.06						
Nitrate	mg-N/L	3	124	0	0.0152	0.055						
Nitrite	mg-N/L	0.06	0.06	0	0.002	0.00078						
Phosphorus	mg-P/L	0.0075	-	0.002	0.005	-						
Metals												
Aluminum	mg/L	0.043	0.1	0.0023	0.0039	0.0063						
Antimony	mg/L	0.033	3	0	0.00002	0.000033						
Arsenic	mg/L	0.005	0.005	0.00015	0.00022	0.00028						
Barium	mg/L	1	0.11	0.00174	0.00218	0.0035						
Beryllium	mg/L	-	0.035	0	1	-						
Boron	mg/L	1.5	29	0	0.005	0.0029						
Cadmium	mg/L	0.0001	0.0077	0	0.000005	0.0000028						
Chromium	mg/L	0.001	0.016	0	0.00006	0.00005						
Cobalt	mg/L	0.00078	0.11	0.00001	0.00002	-	0.01011	0.02023	0.01164	0.02329	0.00514	0.01028
Copper	mg/L	0.002	0.031 G	0	0.0008	0.00059	0.0192	**0.0310**	0.0220	**0.0310**	0.0100	0.0201
Iron	mg/L	1.2	0.35	0	0.005	0.0041						
Lead	mg/L	0.001	0.42	0	0.000007	0.0000033						
Lithium	mg/L	-	0.26	0.0012	0.0015	-						
Manganese	mg/L	0.19	15	0.0006	0.00195	-						
Molybdenum	mg/L	0.073	46	0.00006	0.00009	0.00088						
Nickel	mg/L	0.025	3.1	0.00083	0.0011	0.00077						
Selenium	mg/L	0.001	0.0099	0	0.00004	0.00002						
Silicon	mg/L	2.1	210	0	0.05	0.186					13.0	26.0
Silver	mg/L	0.00025	0.003	0	0.000005	0.0000025	**0.00300**	**0.00300**	**0.00300**	**0.00300**		
Strontium	mg/L	2.5	15	0.0067	0.00878	0.035						
Thallium	mg/L	0.0008	0.11	0	0.000002	0.0000011						
Tin	mg/L	0.073	2.7	0	0.00001	0.000011						
Titanium	mg/L	-	2	0	0.0005	0.00051						
Uranium	mg/L	0.015	0.033	0.000027	0.00003	0.00012						
Vanadium	mg/L	0.12	0.28	0	0.0001	-						
Zinc	mg/L	0.0058	0.17	0.00037	0.00153	0.00021						

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Notes:
A. Value is an AEMP Effects Benchmark for the protection of aquatic life from the AEMP Design Plan, V6 (WSP Golder 2022a) or an FEQG (i.e., cobalt and vanadium), or both (i.e., aluminum, iron and strontium)
B. Final Closure and Reclamation Plan (DDMI 2022) Appendix X-25 Human Health and Ecological Risk Assessment
C. Reference Condition Report v2.2
D. Average of data collected at all stations within LDG (excluding LDS-4) for all depths open water AEMP 2021 as this was background used in the FCRP water quality model
E. Criteria = (Mixing zone *(Dilution factor + 1))-(Dilution factor * LDG background); when LDG Background is not available the mean of lower and upper LDG normal range is used
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Pond 10: 12.20312
Pond 11: 14.16276
Pond 12: 5.689206
Pond 13: 27.23562"

Parameter	Units	AEMP Benchmarks [A]	Acute Benchmarks [B]	Baseline normal in Lac de Gras [C]		LDG background [D]	Pond 13		E21 Sump	
				Lower Limit	Upper Limit		Max Avg	Max Grab	Max Avg	Max Grab
Conventional Parameters										
Total Dissolved Solids	mg/L	500	5000	2.9	6.5	15.4			**5000**	**5000**
Major Ions										
Chloride	mg/L	120	640	0	1	3.5				
Fluoride	mg/L	0.12	1.9	0.02	0.03	0.034	**1.90**	**1.90**	1.21	**1.90**
Sulphate	mg/L	100	3000	1.9	2.5	3.9			1320.47	2640.94
Calcium	mg/L	60	-	0.9	1.3	-			808.0	1616.1
Sodium	mg/L	52	-	0	1	3.1				
Nutrients										
Total Ammonia	mg-N/L	4.7	3.1	0.0143	0.023	0.06				
Nitrate	mg-N/L	3	124	0	0.0152	0.055				
Nitrite	mg-N/L	0.06	0.06	0	0.002	0.00078				
Phosphorus	mg-P/L	0.0075	-	0.002	0.005	-				
Metals										
Aluminum	mg/L	0.043	0.1	0.0023	0.0039	0.0063				
Antimony	mg/L	0.033	3	0	0.00002	0.000033				
Arsenic	mg/L	0.005	0.005	0.00015	0.00022	0.00028				
Barium	mg/L	1	0.11	0.00174	0.00218	0.0035				
Beryllium	mg/L	-	0.035	0	1	-				
Boron	mg/L	1.5	29	0	0.005	0.0029				
Cadmium	mg/L	0.0001	0.0077	0	0.000005	0.0000028			0.00133	**0.00770**
Chromium	mg/L	0.001	0.016	0	0.00006	0.00005				
Cobalt	mg/L	0.00078	0.11	0.00001	0.00002	-	0.02159	0.04318	0.01050	0.02099
Copper	mg/L	0.002	0.031[G]	0	0.0008	0.00059	**0.0310**	**0.0310**	0.0199	**0.0310**
Iron	mg/L	1.2	0.35	0	0.005	0.0041				
Lead	mg/L	0.001	0.42	0	0.000007	0.0000033				
Lithium	mg/L	-	0.26	0.0012	0.0015	-				
Manganese	mg/L	0.19	15	0.0006	0.00195	-				
Molybdenum	mg/L	0.073	46	0.00006	0.00009	0.00088				
Nickel	mg/L	0.025	3.1	0.00083	0.0011	0.00077				
Selenium	mg/L	0.001	0.0099	0	0.00004	0.00002			**0.0099**	**0.0099**
Silicon	mg/L	2.1	210	0	0.05	0.186	54.2	108.3	26.4	52.8
Silver	mg/L	0.00025	0.003	0	0.000005	0.0000025			**0.00300**	**0.00300**
Strontium	mg/L	2.5	15	0.0067	0.00878	0.035				
Thallium	mg/L	0.0008	0.11	0	0.000002	0.0000011				
Tin	mg/L	0.073	2.7	0	0.00001	0.000011				
Titanium	mg/L	-	2	0	0.0005	0.00051				
Uranium	mg/L	0.015	0.033	0.000027	0.00003	0.00012			**0.033**	**0.033**
Vanadium	mg/L	0.12	0.28	0	0.0001	-				
Zinc	mg/L	0.0058	0.17	0.00037	0.00153	0.00021			0.077	0.154

Ultimate Contingency (water treatment in perpetuity)

- The FCRP currently includes all practical Closure Engineered Source Controls to ensure water is safe without active management; the ultimate contingency remains to be long-term water treatment
- To Diavik, successful closure means designing and constructing a safe and stable site with no requirement for long-term maintenance or an active presence of staff
- Requiring long-term water treatment for low or negligible risk closure runoff at Diavik would not be a good closure precedent, unless it was determined with monitoring evidence and analysis, to be absolutely necessary
- The approved SWALF includes a Level 3 Response to initiate Environmental Trade-off-Study to consider in perpetuity water treatment

Closure Plan	Aspect	Water Treatment In-Perpetuity
Meets	**Project Environmental Assessment & Closure Goals**	Does not meet
Forever unless stopped by lake monitoring	**Time**	Forever unless expectations/requirements change
>$100M (based on current security)	**Cost**	~$35M NPV
More	**Monitoring**	Less
Multiple – low flow runoff	**Mixing Areas in the Lake**	One – high flow pipeline
None	**Infrastructure on the Island**	Treatment plant, ponds, pumps and pipelines, camp, powerhouse, powerlines, warehouse, airfield, diesel fuel storage, winter roads
None	**Waste Generation on the Island**	Sludge composed of sediments, precipitated metal hydroxides, metal sulfides and calcium sulfate, landfill and incinerator facilities, dust, NOx + SOx emissions
Negligible	**Zone of Influence on Wildlife**	Continues, but smaller than Operations
Negligible	**Impact on Human Use**	Permanent loss of active site

Closure Criteria for SW1 and SW2 – Summary

- The criteria for SW1-1 assumes that people will use the near-shore area for swimming, fishing, boating, etc. Incidental consumption may occur and this is safe.
- Modelling was used to estimate the maximum size of mixing zone at any time of year, and monitoring will be used to identify the actual size (which will vary).
- Criteria for SW2-1 were developed based on modelling results. The level of protection for aquatic life was verified through the ecological risk assessment. Additionally, the SWALF will be used to adaptively manage discharges.
- The FCRP currently includes all practical Closure Engineered Source Controls to ensure water is safe without active management; the ultimate contingency remains to be long-term water treatment. To Diavik, successful closure means no requirement for long-term active water treatment.

Masi Cho
Thank you

RioTinto

RioTinto

Topic 3

Closure and Post-Closure Aquatic Effects Monitoring Program (AEMP)

- FCRP Appendix VI-2

Topic 3: Overview

The Closure and Post-Closure Aquatic Effects Monitoring Program (AEMP) is an integral piece to monitoring success of Diavik's FCRP.

In this section we will:

- Share the purpose of a post closure AEMP and how the results will be used.
- Present the proposed monitoring locations and associated purpose / rationale.

Closure and Post-closure AEMP Purpose

Key objective is to track the response of measurable environmental characteristics over the duration of closure and post-closure monitoring, and relative to the conditions at the end of commercial operations – the AEMP has not been proposed as a direct measure of closure performance assessment.

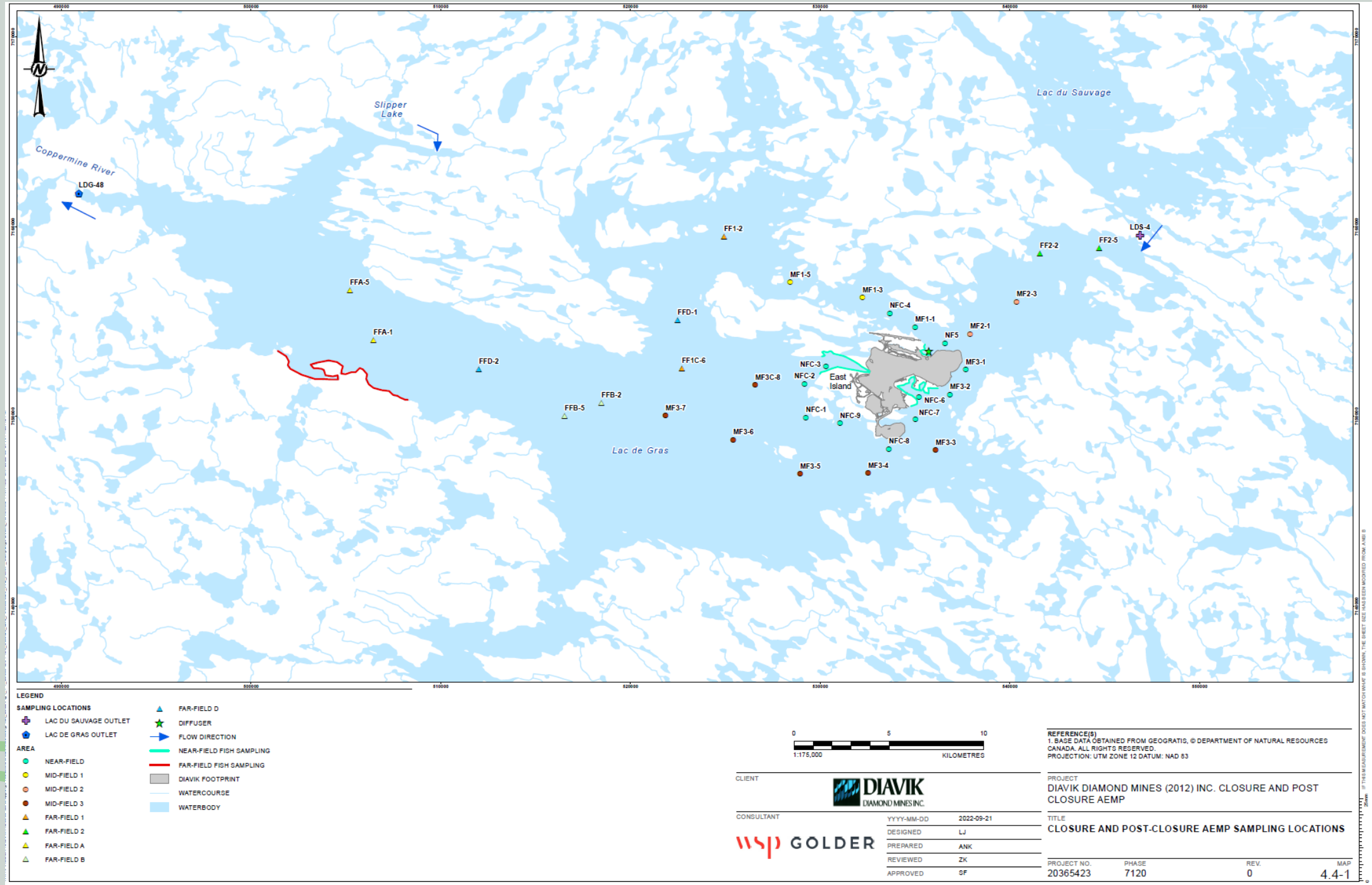
The AEMP monitors:

- Water chemistry
- Eutrophication indicators
- Sediment chemistry
- Zooplankton and phytoplankton (tiny animals and plants)
- Benthic invertebrates (bugs in sediment)
- Fish health and tissue chemistry
- Dust

How will the data be used?

- Analysis of data will continue to include evaluation of spatial and temporal trends in AEMP measurement endpoints throughout Lac de Gras.
- Spatial gradients evaluated using visual assessment and statistical analysis
- Time series plots to evaluate temporal trends in endpoints followed by statistical trend analysis
- Detailed spatial and temporal trend evaluation in newly established AEMP stations
- The AEMP could be used for long term closure performance assessment (e.g., AEMP data indicates stable or improving conditions in LDG as a long-term criteria); failure to meet long-term criteria could trigger adaptive management

Closure and post-closure AEMP station locations



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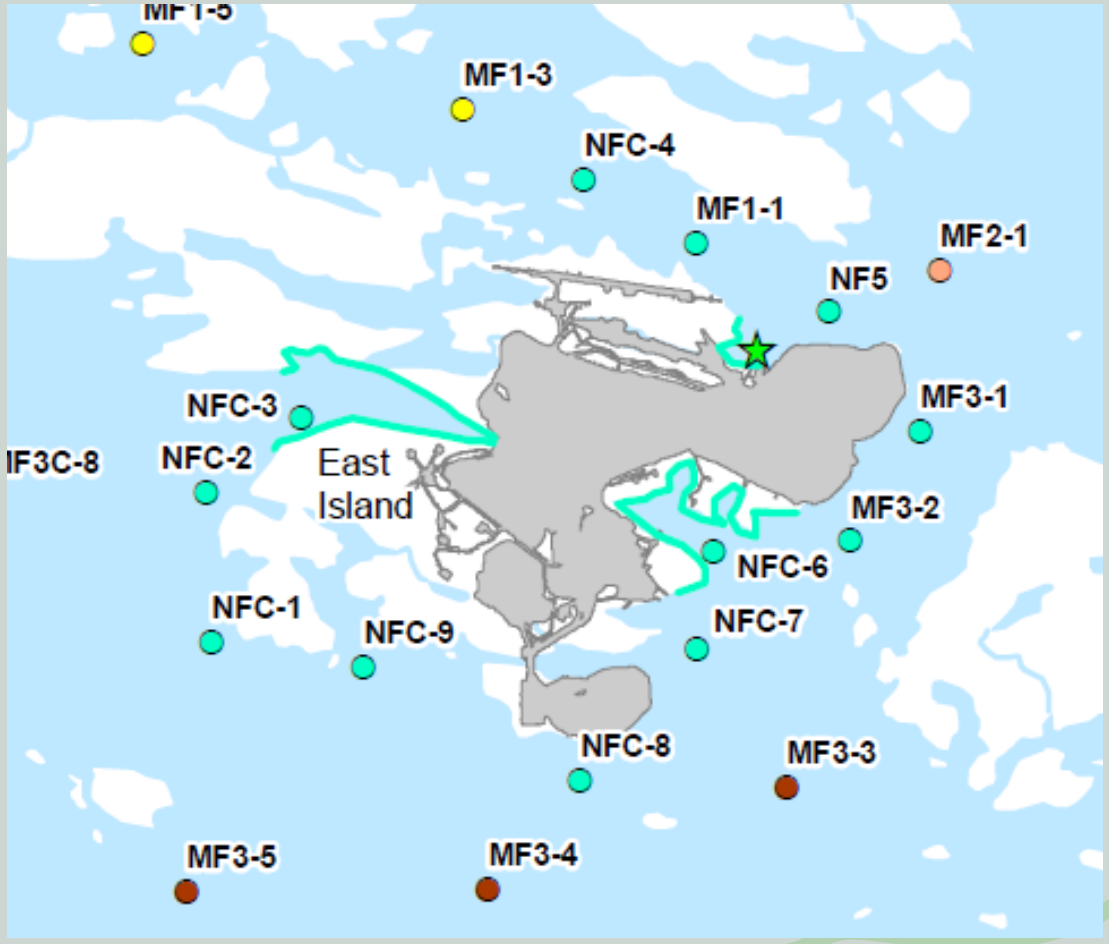
New NFC Station Locations

Represent the area of Lac de Gras potentially most affected by source waters discharged via drainages on the East Island during closure and post-closure

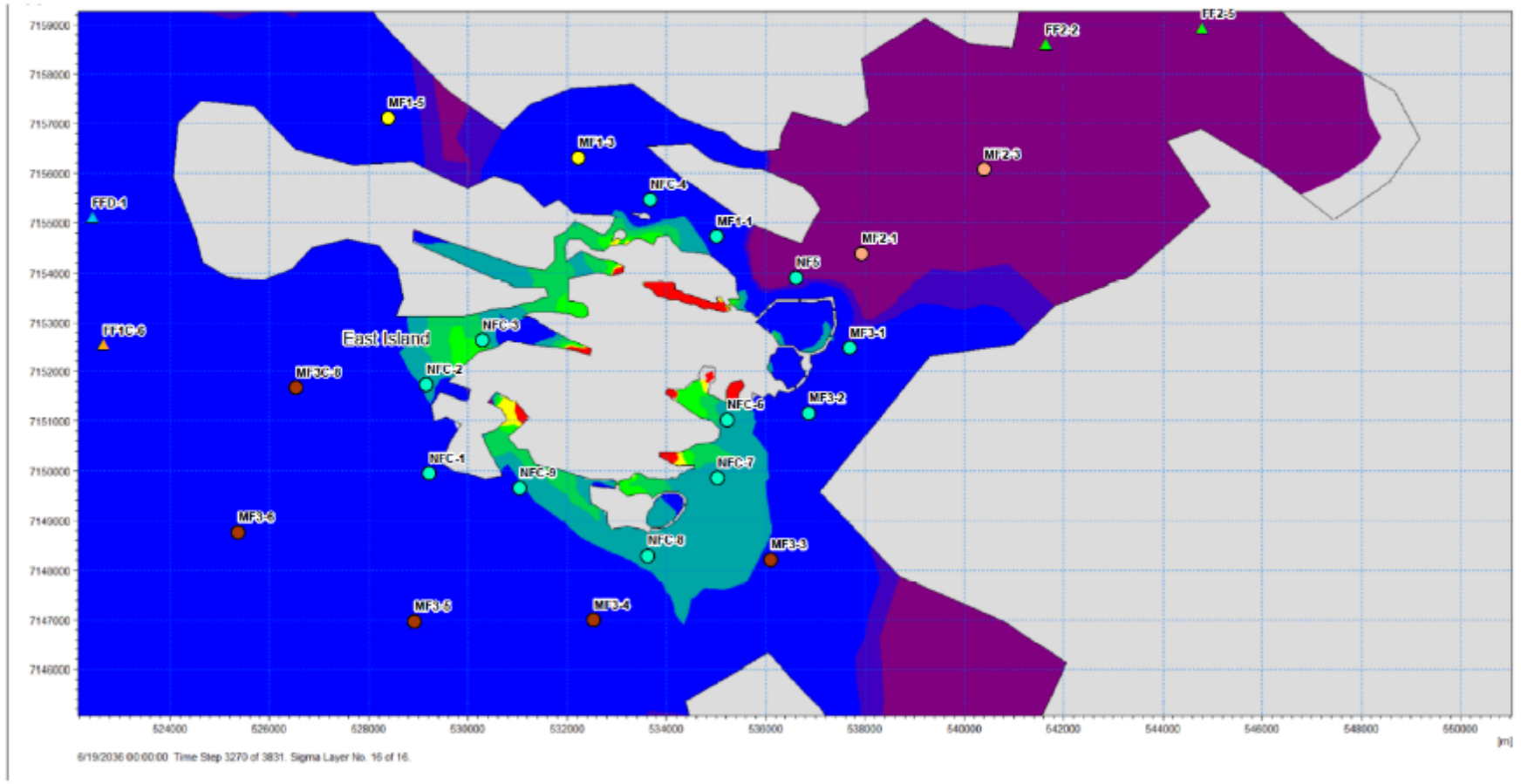
Near Field Closure (NFC) locations based off water quality modelling in Lac de Gras for post-closure and lake bathymetric data

- Simulation of mine water tracer to estimate dilution rates in the receiving environment
- Depth contour data for the 18 to 22 m depth range to select suitable sampling locations

The exact locations of the new AEMP stations will be confirmed in the field.



Simulation of mine water tracer from 3D model used to estimate dilution rates in the receiving environment to select suitable AEMP sampling locations



LEGEND

SAMPLING LOCATIONS

EXPOSURE

- NEAR-FIELD
- MID-FIELD 1
- MID-FIELD 2
- MID-FIELD 3
- FAR-FIELD 1
- FAR-FIELD 2
- FAR-FIELD 0

MINE WATER TRACER CONCENTRATION %

- ABOVE 15
- 10 - 15
- 5 - 10
- 2 - 5
- 1 - 2
- 0.5 - 1
- 0.4667 - 0.5
- BELOW 0.4667
- LAND

CLIENT

DIAVIK DIAMOND MINES INC.

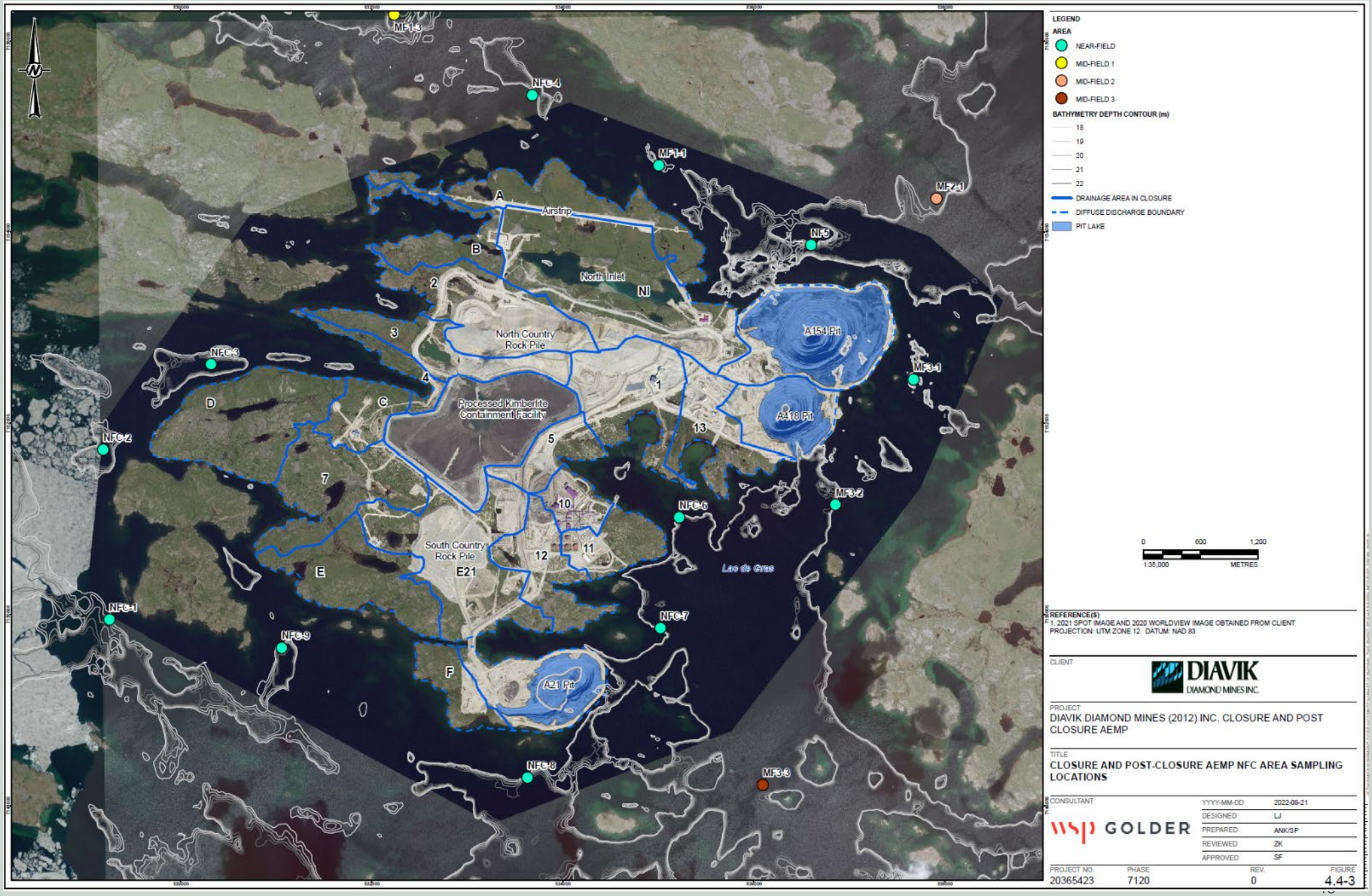
PROJECT

DIAVIK DIAMOND MINES (2012) INC. CLOSURE AND POST CLOSURE AEMP

TITLE

ESTIMATED MINE WATER TRACER CONCENTRATION IN THE AREA OF EAST ISLAND – JUNE 2036

Depth contour data for the 18 to 22 m depth range to select suitable AEMP sampling locations



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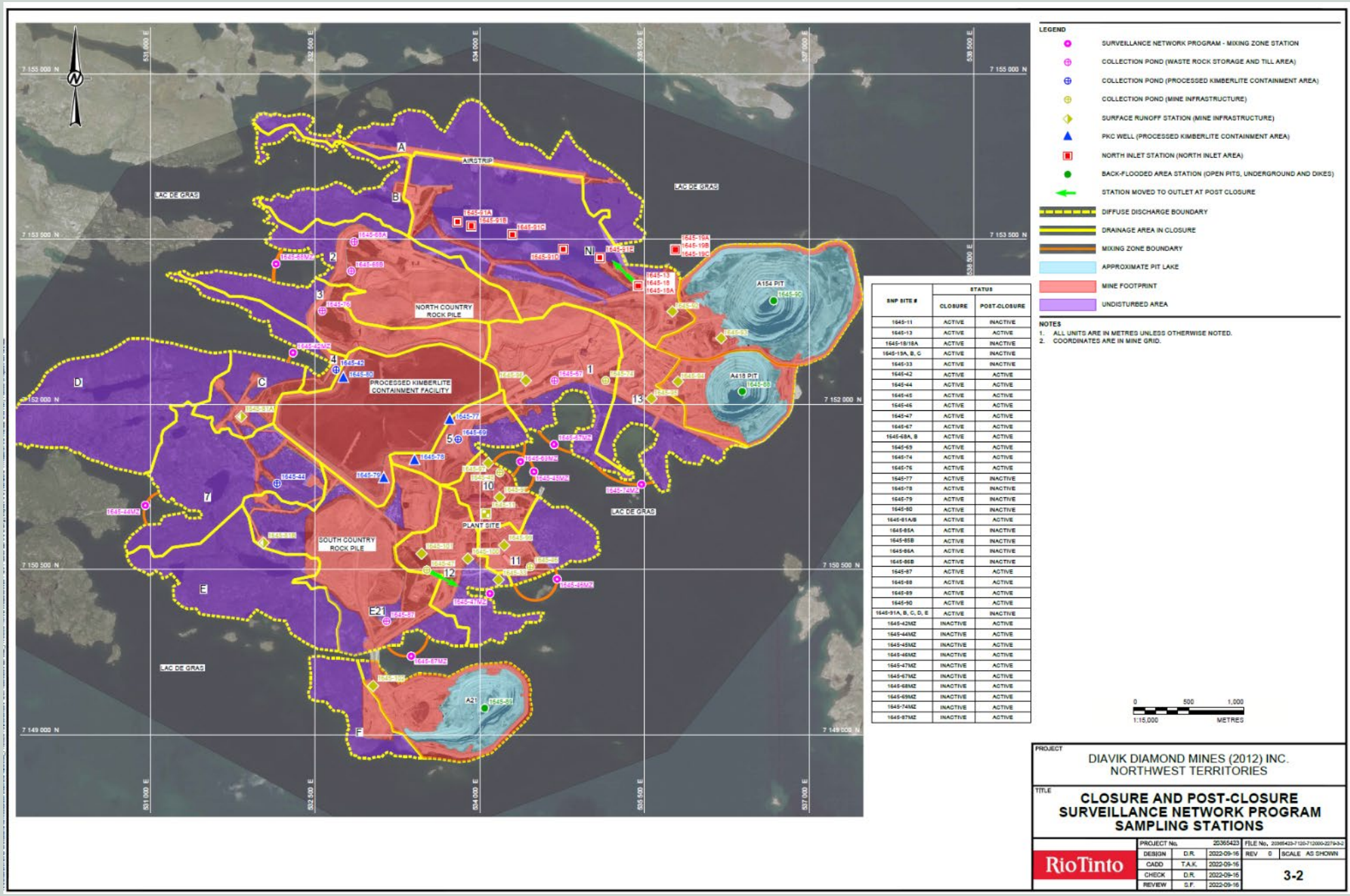
Additional Closure and Post-closure Monitoring includes Mixing Zones



Closure and Post-Closure AEMP – Summary

AEMP has been in place for over 20 years. The Closure and Post-Closure AEMP will be used to track the response of the receiving environment in Lac de Gras to Diavik's closure.

The AEMP could be used for long term closure performance assessment (e.g., AEMP data indicates stable or improving conditions in LDG as a long-term criteria); failure to meet long-term criteria could trigger adaptive management

RioTinto

Masi Cho
Thank you

RioTinto

RioTinto

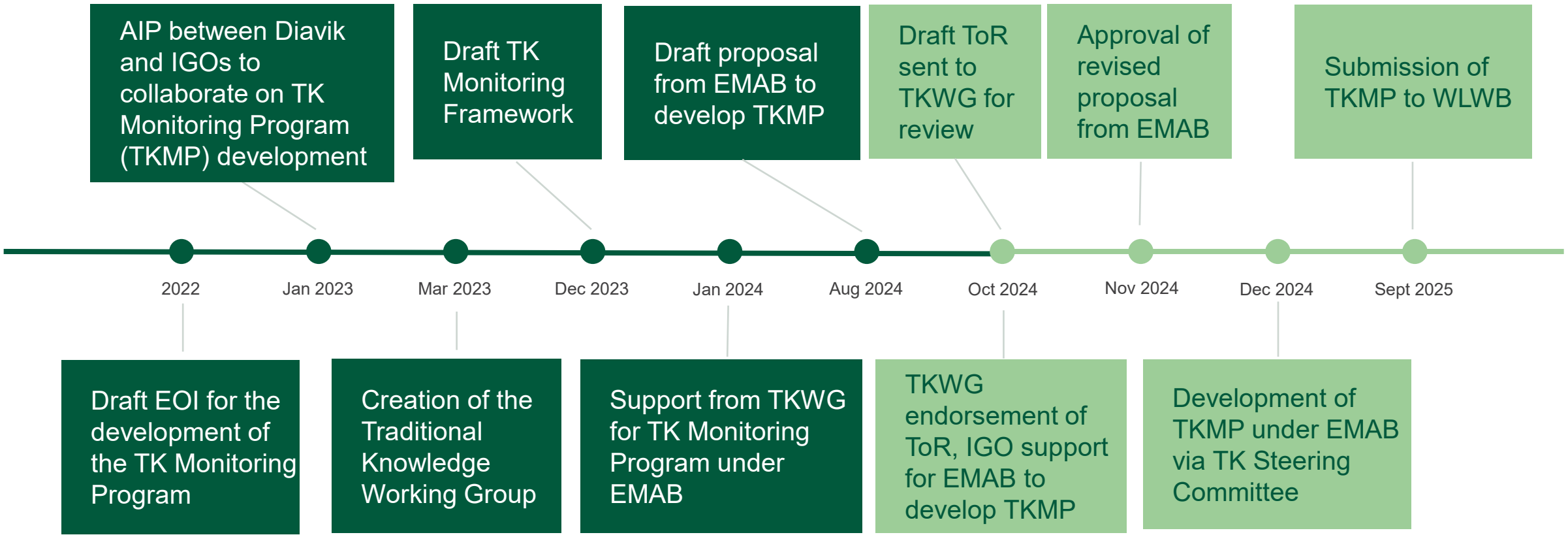
Topic 4
Cultural Use Criteria and Traditional Knowledge Monitoring/Watching Program

Topic 4: Overview

The development of the TK Monitoring Program is integral to the FCRP. In this section we will:

- Share current status of TK Monitoring Program design and anticipated submission date and how DDMI proposes these results will be used.
- Share in what regulatory instrument DDMI proposes cultural use criteria will be housed (e.g., water license, closure plan).
- Where does DDMI propose water quality cultural use criteria will apply (e.g., beyond pits with processed kimberlite)

Development of the Traditional Knowledge Monitoring Program (TKMP) – Overview



Traditional Knowledge Monitoring

How will it look during closure?

- The TK Monitoring Program still needs to be developed.
- The TK Panel provided extensive guidance on what the TK Monitoring Program should include in *TK Panel #15,* including:
  - Elder and youth participation
  - Seasonal observations
  - Allowing natural processes to bring the land back to its natural state
  - Focus on observing wildlife, vegetation, water, fish and sediment
  - Program should be adaptive and able to change based on observations
  - Additional methods like fly-overs and remote cameras could also be used
  - What the focus of monitoring should be at 5, 10, 20 years post-closure
- Additional feedback has been provided by the TK Monitoring Working Group over 2023-2024.
- It is Diavik's expectation that this existing feedback will be incorporated into the TK Monitoring Program design. The Terms of Reference for the development of a TK Monitoring program are meant to help guide the final scope and budget for completing this work.

Traditional Knowledge Monitoring

How will it be used in closure monitoring?

- Diavik is proposing that Cultural Use Criteria and a Traditional Knowledge Monitoring Plan be housed as a plan under the FCRP (as opposed to a License condition or otherwise).
- This aligns with how other monitoring plans are managed (e.g., AEMP) and allows for adaptive management of the TK Monitoring program as recommended by both the TK Panel and TK Working Group.
- Cultural use criteria has only been developed for water in pit-lakes with PK (under the PKMW EA and WL amendment). To date the expanded application of cultural use criteria has not been proposed by Diavik, but this could change through the development of the TK Monitoring program.
- Diavik has acknowledged that the existing Cultural Use Water Quality Criteria may be applicable to assessment in Lac de Gras in addition to water in any pit-lake with PK.
- Diavik anticipates that the results of the TK Monitoring program will be used to verify whether Diavik is meeting its closure objectives from a TK-perspective.

Cultural Use Criteria and TK Monitoring – Summary

- The TK Monitoring Program still needs to be developed. Diavik has been working with the TK Monitoring Working Group since 2023 advance this work.
- A draft Terms of Reference has been circulated to the TK Monitoring Working Group to inform a revised proposal from EMAB.
- Diavik proposes that Cultural Use Criteria and the TK Monitoring Plan be part of the FCRP, which allows for adaptive management.
- Currently, Cultural Use Criteria have only been developed for water in pit-lakes with PK. Additional Cultural Use Criteria could be developed through the TK Monitoring program.
- Diavik anticipates that the results of the TK Monitoring program will be used to verify whether Diavik is meeting its closure objectives from a TK-perspective.

Masi Cho
Thank you

RioTinto

Topic 5

North Inlet Closure

RioTinto

Topic 5: Overview

How Diavik closes the North Inlet is an important component of the FCRP. In this section we will:

- Outline the approved closure activity and contingency options for the North Inlet.
- Highlight the pros and cons, including consideration of timeline-implications and feasibility, for each contingency option.
- Discuss North Inlet Closure Objective 3 (NI3 - suitable fish habitat in the North Inlet) and discuss how it would apply to contingency options.

Closing the North Inlet

- Some sediments contain hydrocarbons
- Bioremediation of sediments ongoing – bacteria consume hydrocarbons turning it into water and carbon dioxide
- Confirmed to be enough nutrients and oxygen to support current natural community of hydrocarbon-eating bacteria
- Fully reconnect the North Inlet with LDG by breaching East Dam, allowing passage of water, fish, and boats
- This will only happen when water treatment on site is no longer needed and sediment in the North Inlet meets closure criteria

NI3. Suitable fish habitat in the North Inlet (is this value add?)

- Lac de Gras already has an abundance of rearing and spawning habitat; not a limiting feature in region; no critical habitat
- The North Inlet was assumed to be permanently lost fish habitat in the Diavik EA
- Is introducing fish to the North Inlet and the associated risk an improvement or is it better to prevent fish access?

In 2016, DDMI completed a detailed Options Assessment for the North Inlet (ICRP 4 Appendix X-6) and four options were evaluated:

Option 1: install flow-through structure in East Dam (i.e., permanent use of a permeable fish barrier)

Option 2: dredge contaminated sediment/sludge from North Inlet and breach East Dam

Option 3: cover contaminated sediment/sludge in North Inlet and breach East Dam

Option 4: combine dredge and cover (i.e., hybrid of Options 2 and 3)

DDMI selected **Option 1** as the closure activity for the North Inlet and removed Closure Objective NI3 (ICRP V4/4.1)

WLWB request DDMI re-include Closure Objective NI3 (ICRP 4.1 RFD, 2021)

DDMI re-included NI3 and created new full reconnection concept as preferred option and flow-through as contingency in FCRP V1.0

	Full Re-connection	Option 1 – Install Flow Through	Option 2 – Dredge Sludge	Option 3 – Cover Sludge	Option 4 – Combine Dredge with Cover
Technical Feasibility/ Constructability	Confirmed to be enough nutrients and oxygen to support natural community of hydrocarbon-eating bacteria	Mostly feasible in 2016. More likely to achieve closure design than Option 2 and 3	Considered partially feasible in 2016; More feasible than Option 3, but less feasible than Options 1 and 4; PKC would have likely been maintained open for disposal	Lowest technical feasibility in 2016	Highest technical feasibility in 2016; PKC would have likely been maintained open for disposal
Design Uncertainty	Uncertainty related to degradation timelines	Least amount of additional engineering studies	Expected to require more effort to refine the design than Option 1 but less than Options 3 and 4	Most design uncertainty relating to ability to successfully place a cover over the sludge	Some design uncertainty and is expected to require more effort to refine the design than Options 1 and 2, but less than Option 3
Cost	Low cost	Low cost	Medium cost	Highest cost	High cost
Timeline Implications	Wait time for bioremediation of soils; in FCRP schedule	Within FCRP schedule	Would require engineering studies, designs, construction of new engineered storage facility or substantially delay flooding of mines and increase WQ risk; potentially impacting closure timeline by years; progressive reclamation not possible	Would require engineering studies, designs; progressive reclamation not possible; potentially impacting closure timeline by years	Would require engineering studies, designs, construction of new engineered storage facility or substantially delay flooding of mines and increase WQ risk; potentially impacting closure timeline by years; progressive reclamation not possible
Closure Objective NI3 (i.e., suitable fish habitat in the North Inlet)	Fish habitat gain	No fish habitat – would require Objective change	Fish habitat gain	Fish habitat gain	Fish habitat gain

Approved

Contingency

Other Contingencies - no longer feasible without very significant impacts

NI3. Suitable fish habitat in the North Inlet (is this value add?)

North Inlet Closure – Summary

- Bacteria will consume hydrocarbons in the sediments, turning them into water and carbon dioxide.
- Plan is to reconnect with Lac de Gras by breaching the East Dam, allowing water, fish, and boats to pass through, once water meets closure criteria (~2028).
- This is <0.1% of Lac de Gras volume.
- The North Inlet was considered permanently lost fish habitat in the Diavik Environmental Assessment (EA).
- Diavik evaluated four options for the North Inlet in 2016:
  1. Install a flow-through structure in the East Dam (permanent use of a permeable fish barrier).
  2. Dredge contaminated sediment/sludge from the North Inlet and breach the East Dam.
  3. Cover contaminated sediment/sludge in the North Inlet and breach the East Dam.
  4. Combine dredging and covering (a hybrid of options 2 and 3).
- Option 1 is preferred by Diavik as it eliminates risk to fish

Masi Cho
Thank you

RioTinto

Topic 6

North Inlet Sediments

RioTinto

Topic 6: Overview

In this section we will:

- Discuss the proposed regulatory process for reconnection of the North Inlet, including whether board approval is needed.
- Discuss how sediment quality would influence fish habitat (closure objective NI3) and whether additional parameters require closure criteria to evaluate.
- Discuss pros and cons of including a sheen closure criteria.
- Discuss pros and cons of including a closure criteria for sediment toxicity.
- Discuss what evidence will be collected through the final sediment investigation and how it will be used.

Proposed regulatory process for reconnection of the North Inlet

Factual comparison of sampling results against "Prior to breach" closure criteria

Closure Criteria Met

- DDMI provides notification to GNWT-ECC Lands Inspector of scheduled reconnection activities; cc WLWB
- No public review or approval processes for reconnection
- Reconnection occurs

Closure Criteria Not Met

- DDMI re-evaluates closure options: 1) delay reconnection and continue monitoring; or 2) propose contingency option

RioTinto

Sediment Influence on Fish Habitat

The North Inlet sediment quality (including physical properties) are not anticipated to produce quality fish habitat

- Current sediment/sludge potentially toxic to benthic invertebrates because of operational hydrocarbon concentrations
- Hydrocarbon concentrations are expected to decline due to ongoing natural bioremediation processes with a more rapid decline once operational inputs cease
- The sediment is physically very soft (sludge) and unlike better quality natural fish habitat near Diavik or in Lac de Gras
- Overall poor habitat for benthic invertebrates which are a source of food for large body fish
- Based on North Inlet characterization Diavik has not identified a LDG scale ecological benefit to re-introducing fish

No closure criteria proposed for chemical parameters other than hydrocarbons (1,500 mg/kg). The 2016 report screened out all parameters other than F3 for the ecological risk assessment. Recent metals analysis was completed on North Inlet sediments (FCRP Appendix X-18) and concentrations were also considered safe. The recent HHERA (FCRP Appendix X-25) identified associated risks were low and acceptable or negligible.

Additional Closure Criteria Proposals

Sheen

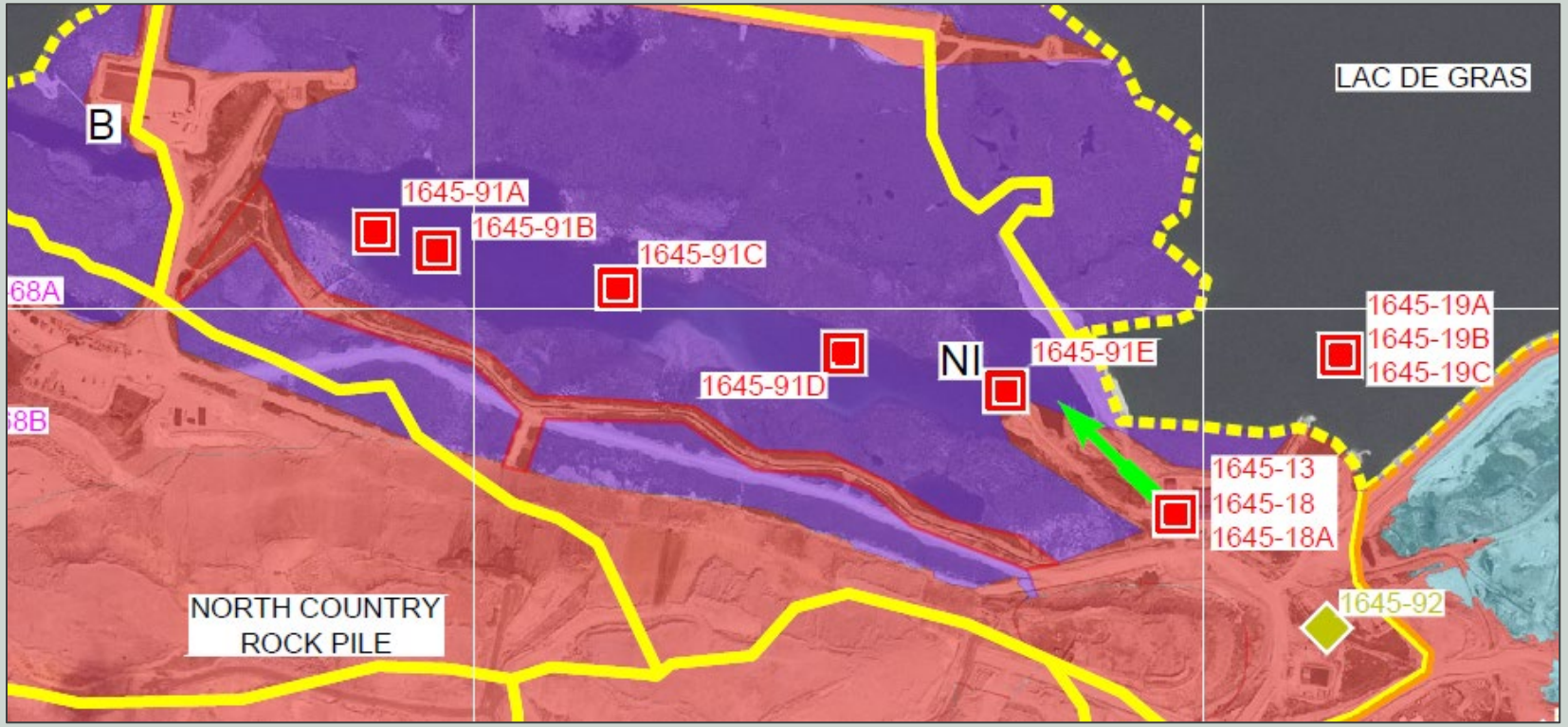
- DDMI is not opposed to discussing visible sheen as a closure criteria
- Potentially may be more appropriate under TK program (cultural water use criteria)

Sediment Toxicity

- Toxicity testing is not a versatile tool as a “prior to breach” criteria; largely because of unclear drivers for the test
- As a criteria it could create significant uncertainty around timelines for starting closure work
- It is generally impossible to extricate the influence of chemistry from the physical characteristics of the sediment
- DDMI does not recommend adding toxicity testing as a new criteria because the 2016 report identified the thresholds for effects and sediment chemistry can be relied on for confirmation of effects from hydrocarbons

Final Sediment Investigation

- Annual monitoring of North Inlet sediment to track attenuation of hydrocarbons in sediment
- A final sediment investigation would take place before breach (anticipated in 2028)
- Investigation results will be used to confirm “prior to breach” closure criteria are met
- Straightforward pass / fail



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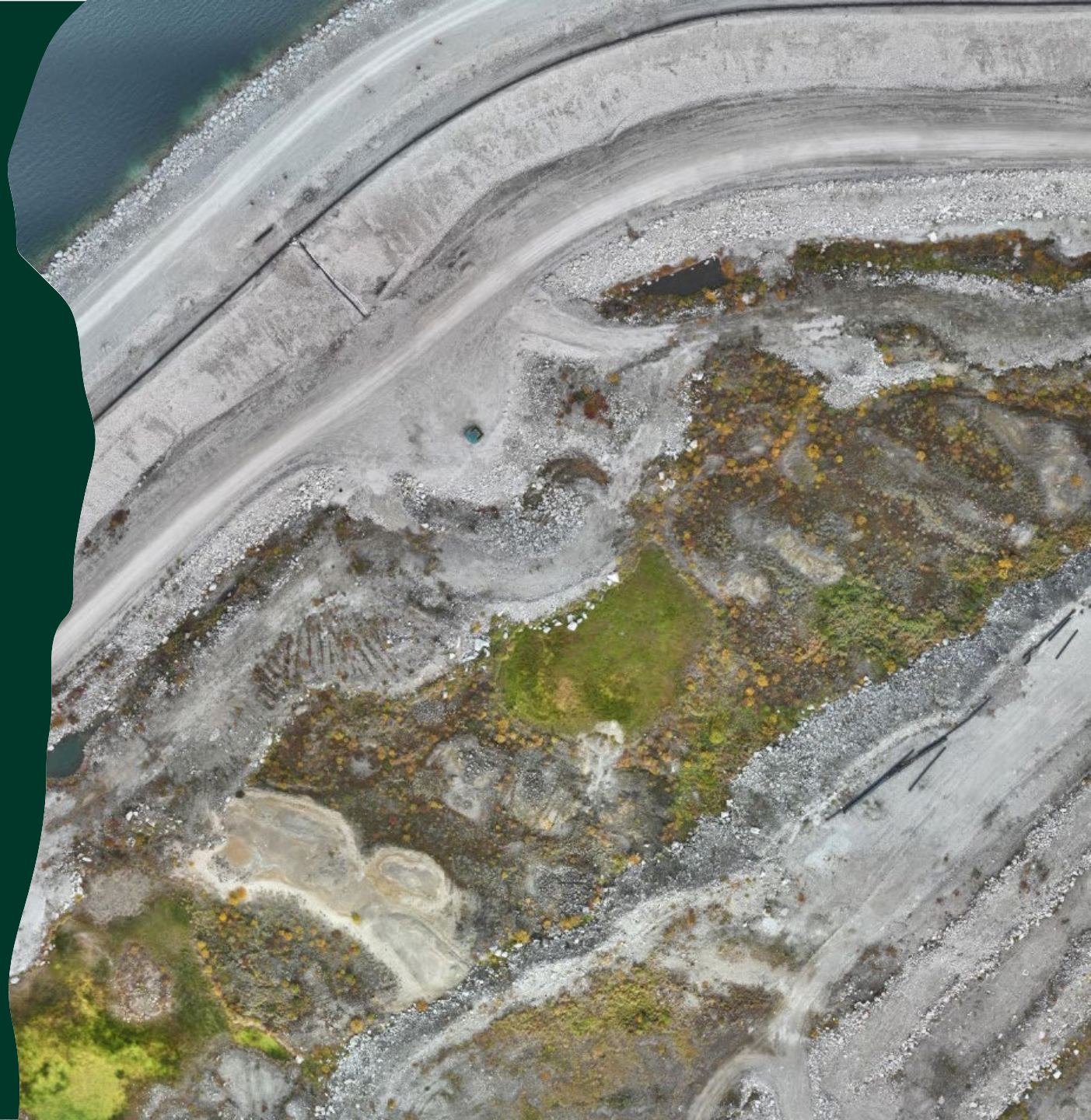
North Inlet Sediments – Summary

- If closure criteria are met, DDMI will notify the GNWT-ECC Lands Inspector and the WLWB, and reconnection will occur.
- If criteria are not met, DDMI will either delay reconnection and continue monitoring or propose another plan.
- The North Inlet sediment is not expected to provide quality fish habitat due to its current condition.
- Sediment may be toxic to bugs because of hydrocarbons, but natural process (bioremediation) is expected to reduce these concentrations over time.
- Diavik has not identified a scientific benefit to reintroducing fish to the North Inlet.
- Annual monitoring of sediment will track hydrocarbon reduction, with a final investigation before breaching the dam to confirm criteria are met – either pass or fail.
- Diavik not opposed to “sheen” under cultural use criteria,
- Diavik opposed to toxicity testing sediments as criteria – too difficult to get clear answers we all need.

Masi Cho
Thank you

RioTinto

Topic 7
Fish Habitat in Pits



RioTinto

Topic 7: Overview

In this section we will:

- Explain the current and future state of fish habitat in the pits post-closure
- Explain the new fish habitat rehabilitation work occurring at Frame Lake in Yellowknife

Fish Habitat Compensation

- There is already suitable fish habitat in pit in-fields
- No construction work is required to create fish habitat – previous plans included construction of additional bathymetric ‘enhancements’ through placement of more waste rock in the pit in-fields
- Lac de Gras already has an abundance of rearing and spawning habitat; not a limiting feature in region; no critical habitat

FCRP Appendix X-2 Fisheries Act Habitat Accounting

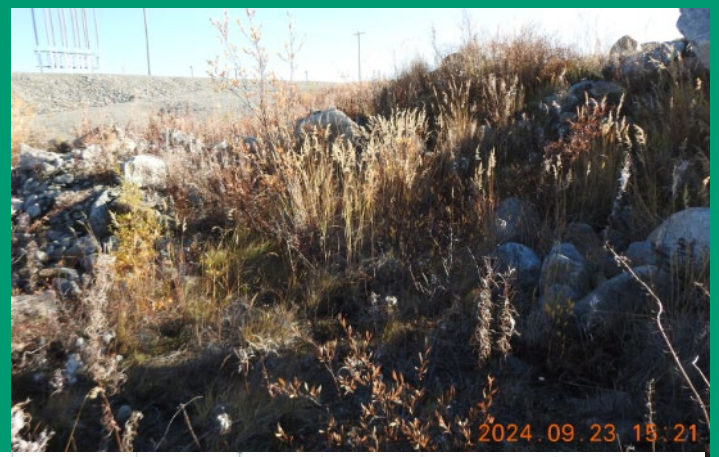
Table 1: Offsetting Equivalency Summary

Category	Habitat Unit (HU)
Total Lost in Lac de Gras	70.5
Total Offsetting Gains Target[a]	84.6
Total Offsetting Gains (preliminary calculations)	89.8
In-pit Fish Habitat	62.4
A154	*37.0*
A418	*11.8*
A21	*13.6*
Complementary Measures	8.5
Frame Lake Phase 2 (North Basin)	18.9
Frame Lake Phase 2 (South Basin Habitat Bank – to be confirmed)	24.0

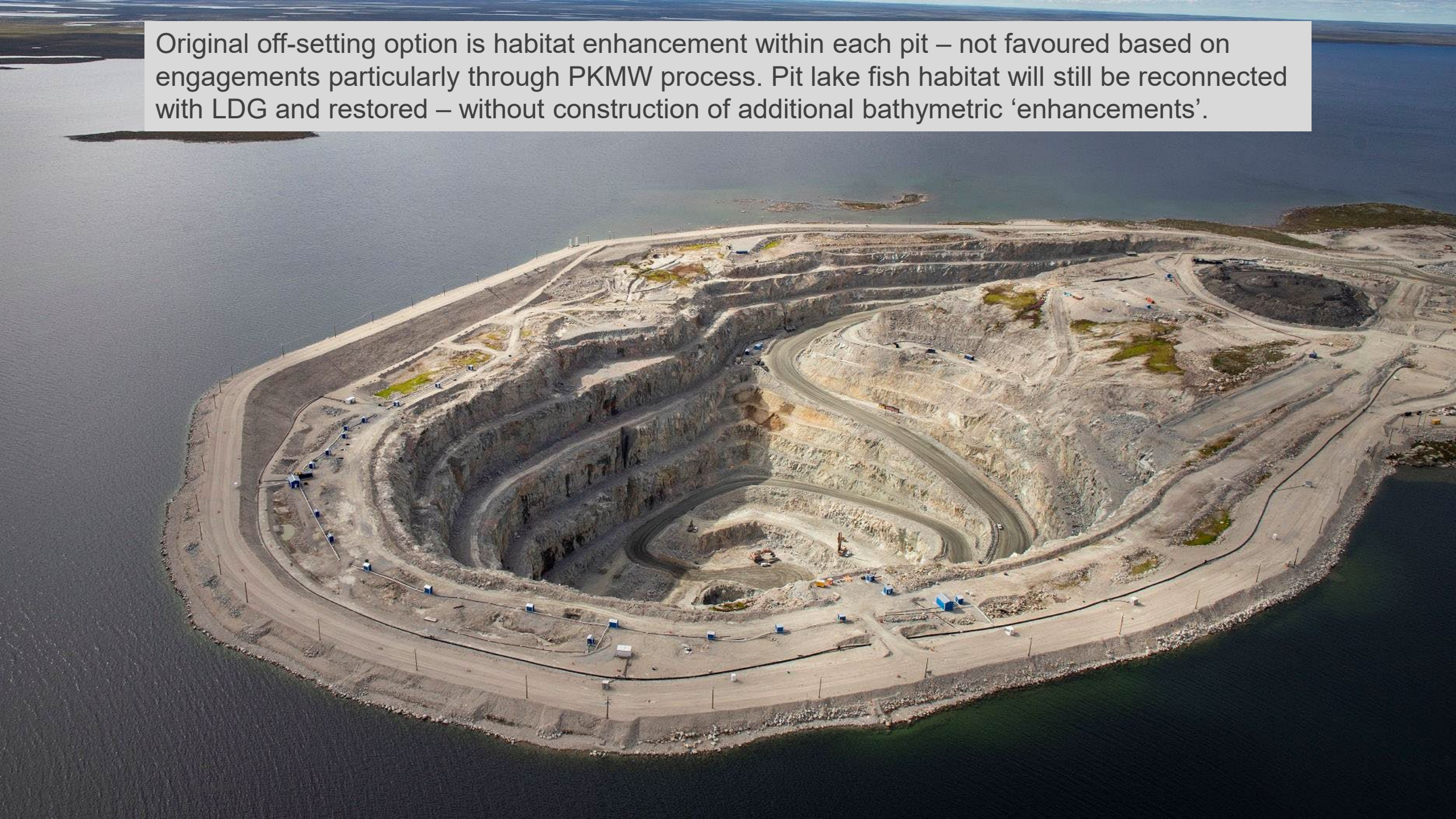
a) Target offsetting goal calculated using a ratio of 1.2:1 of gains to losses.

Original off-setting option is habitat enhancement within each pit – not favoured based on engagements, particularly through PKMW process. Pit lake fish habitat will still be reconnected with LDG and restored – without construction of additional bathymetric ‘enhancements’.

A154/A418 In-Fields

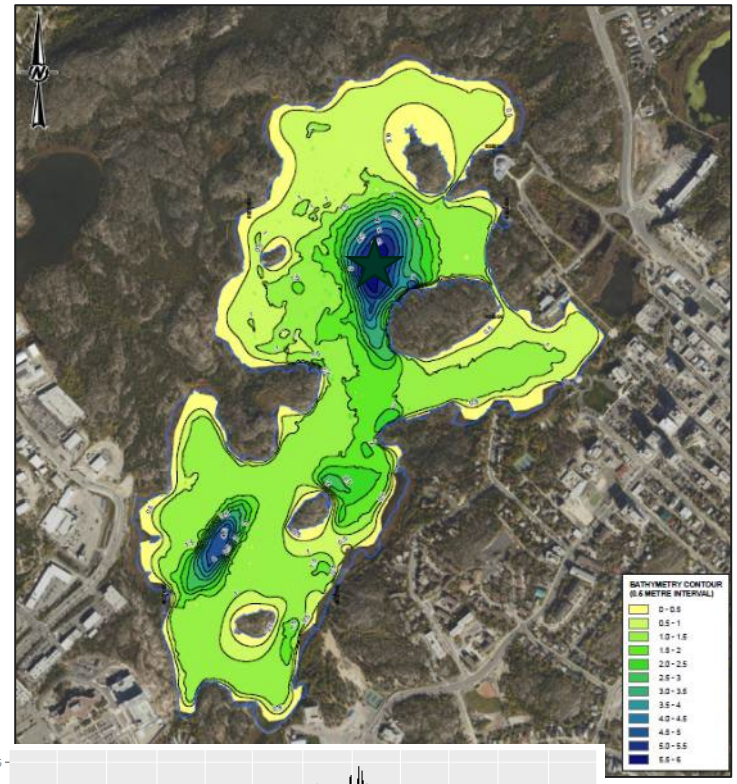


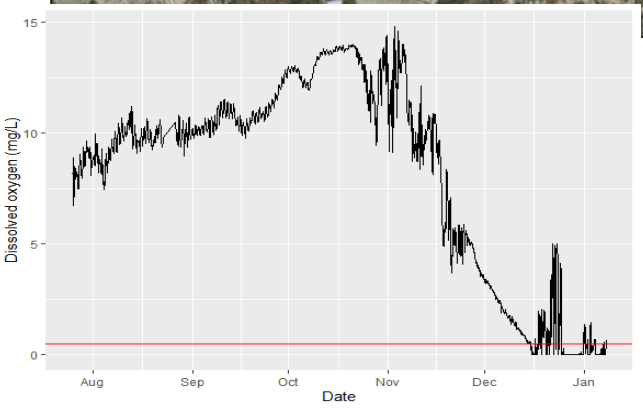
Original off-setting option is habitat enhancement within each pit – not favoured based on engagements particularly through PKMW process. Pit lake fish habitat will still be reconnected with LDG and restored – without construction of additional bathymetric ‘enhancements’.



A21 In-Field

Diavik Fisheries Act Offsetting Plan – Frame Lake





Original off-setting option is habitat enhancement within each pit – not favoured based on engagements particularly through PKMW process. Pit lake fish habitat will still be reconnected with LDG and restored – without construction of additional bathymetric 'enhancements'.

Rehabilitating Frame Lake by installing an aerator so that it can support a fish population – fish re-introduction to follow after aeration success demonstrated.

The project would significantly increase fish habitat within the City of Yellowknife and have a positive impact on locals and tourists alike, who could enjoy increased recreational opportunities.

Project monitoring and maintenance opportunity with easy access within the City.

Project lessons learned could inform rehabilitation of other lakes with similar human induced oxygen limitations.

Offset amendments managed by DFO – included in FCRP for completeness.

2024	2025	2026	2027 - 2030	~2031
Monitor Water Quality + Install Aerator	Monitor WQ	Monitor WQ + Add Fish	Monitor Fish	Handover to partner

RioTinto

Fish Habitat in Pits – Summary

- Suitable fish habitat already exists in the pit in-fields, so no construction is needed to create habitat.
- Lac de Gras has plenty of spawning habitat – we would not be creating something fish need.
- The original plan to create more fish habitat within each pit was not favored based on risk and feedback, but fish habitats in the pit lakes will still be reconnected with Lac de Gras without additional construction.
- Frame Lake Project to restore fish habitat in Yellowknife and provide more recreational opportunities. Diavik is amending offsetting plans through DFO.
- Lessons learned from Frame Lake could help rehabilitate other lakes with similar oxygen issues and has created a flourishing research community.

Masi Cho
Thank you

RioTinto