Diavik Closure Water Quality Workshop

Dettah, Northwest Territories
3-5 December 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
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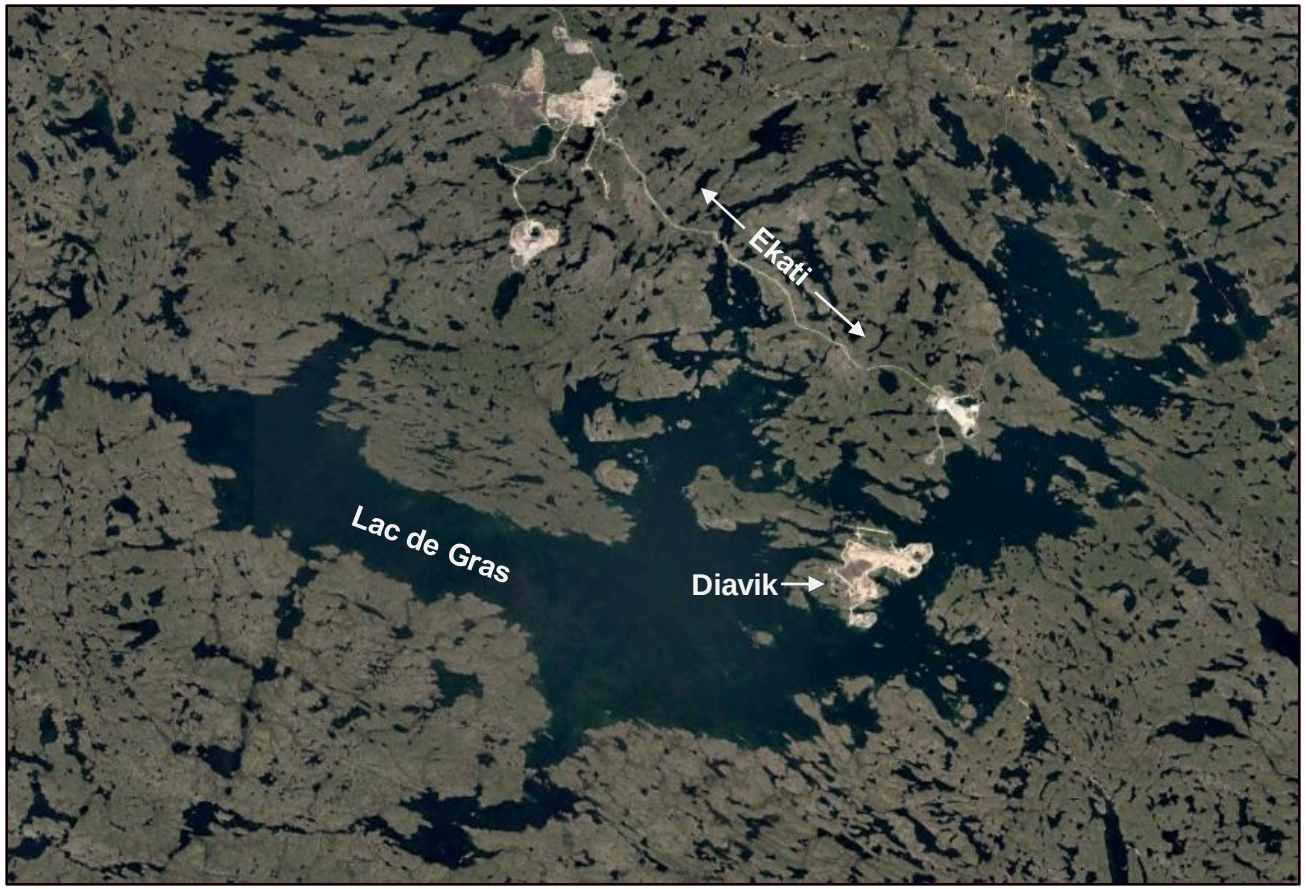
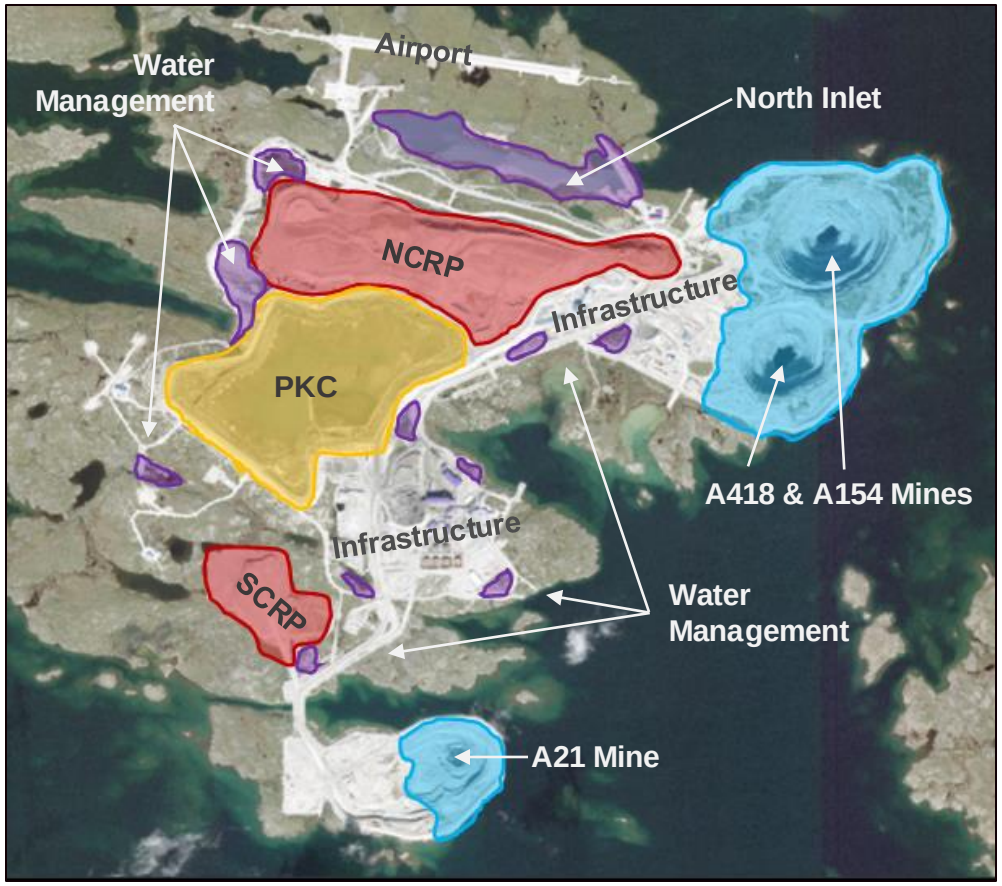
Closure planning





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; wildlife access ramp for safe passage on South Country Rock Pile.

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

- Environmental Assessment in 1998 and Comprehensive Study Report 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 and 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 approved.
- Emphasis is shifting from planning and predicting, to executing and monitoring.
- Diavik wants to work with governments and communities to demonstrate what successful closure looks like.

Diavik's closure strategy has included the integration of progressive reclamation into the operational mine plan since 2017. We continue to focus on reducing the closure schedule through progressive reclamation.

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 consider people and socio-economic effects.
- 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 want to ensure Diavik becomes a modern positive example of a closed mine, which would be a significant benefit to the North, Canada, and Rio Tinto.
- We look forward to continuing this journey with regulators, governments, and Indigenous Government Organizations (IGOs).

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Topic A
Waste Rock Storage Area – South Country Rockpile

Topic A: Overview

In this section we will:

- Present the proposal for closure of the Waste Rock Storage Area – South Country Rockpile (WRSA-SCRP)
- Discuss the differences in the closure approach between the Waste Rock Storage Area – North Country Rockpile (WRSA-NCRP) and WRSA-SCRP and associated rationale
- Discuss the trade-offs between slope, height and overall footprint
- Describe how the proposed closure activities will achieve the closure objectives (W2, SW9, SW10)

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Proposed closure of WRSA-SCRP

- The size and shape of the WRSA-SCRP is changing as Diavik re-mines the area to source rock for reclamation work.
- Passive revegetation planned based on what we heard: "Let nature heal itself"
- Wildlife access: One caribou access ramp (3:1 slope and 40 m wide) and an existing post-closure road
- Final height will be lower than Final CRP design due to more re-remining than planned.
- Side slopes to remain in final state (no modifications) at end of operations.
- Cover not required; built with non-potentially acid generating (PAG) rock.
- ~4.6 million m^3 of waste rock will remain at closure
- Average final height ~ 6-15 m (WRSA-NCRP is ~60 m)

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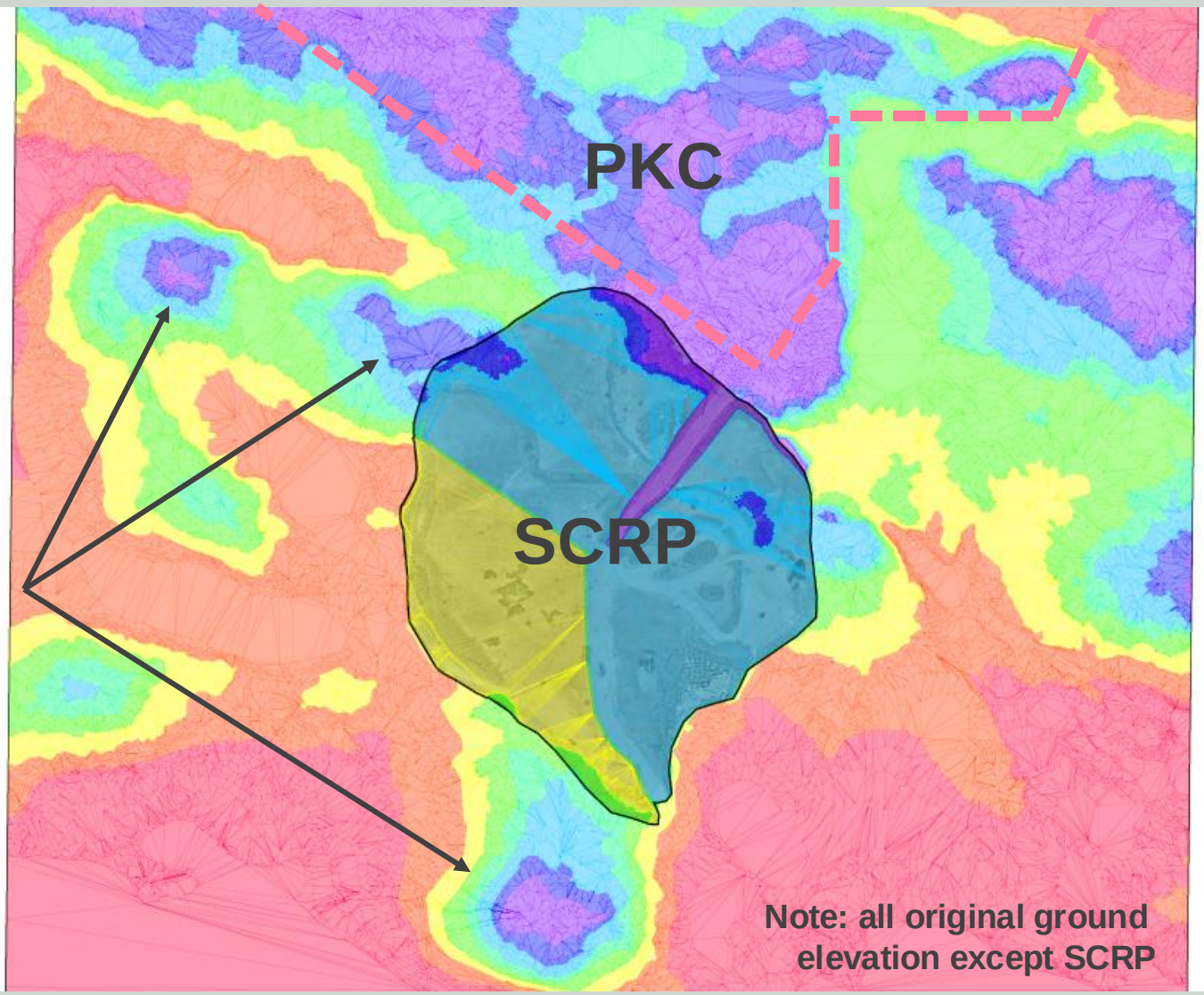
WRSA-SCRP Landscape

Not anticipated to be significant post-closure feature relative to original ground and other closed features of the mine

Elevations Table			
Number	Minimum Depth	Maximum Depth	Color
1	415.90	424.00	
2	424.00	430.00	
3	430.00	433.70	
4	433.70	437.00	
5	437.00	439.00	
6	439.00	441.40	
7	441.40	443.00	
8	443.00	455.55	

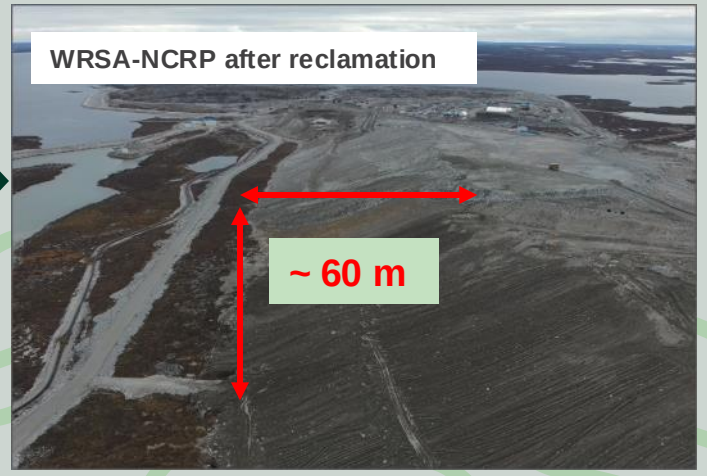


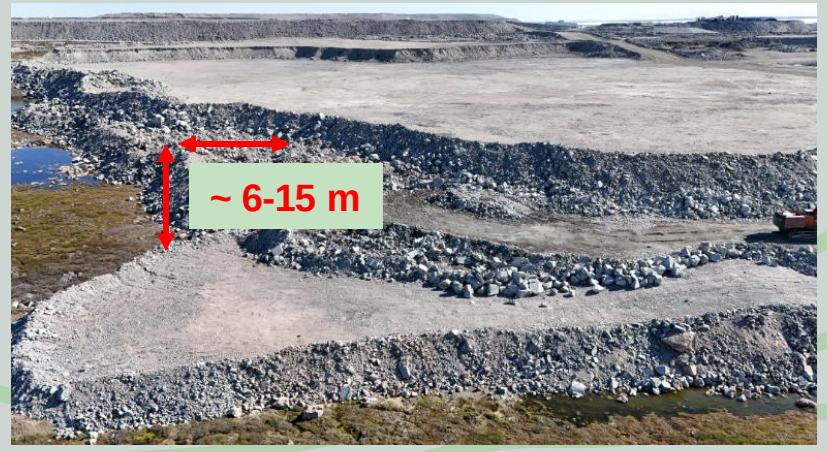
WRSA-NCRP

- Footprint = 1.75M m^2
- Max height = 60 m
- 96% progressive reclamation complete
- Type I, Type II/III potentially acid generating (PAG) rock from A154/A418/A21and till
- PAG material encapsulated by Type I waste rock and till cover
- Leaching risk to receiving environment mitigated by cover; PAG remains frozen and benefit from reduced cover permeability
- Geotechnical Instrumentation to monitor performance
- Major east-west structure; wildlife access improved by 3:1 slope

WRSA-SCRP

- Footprint = 0.5M m^2
- Max height = 20 m (average 6-15 m)
- Type I waste rock mined from the A21 mine
- No PAG rock (Type lll)
- No cover required
- No geotechnical instrumentation
- Slide slopes planned to remain in final state (no modifications) at end of operations
- Wildlife access: haul access on north and south, 3:1 wildlife ramp and post closure road
- Re-mining for closure work continues
- Estimating that 4.6 million m^3 of waste rock to remain in pile at closure





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WRSA-SCRP appearance

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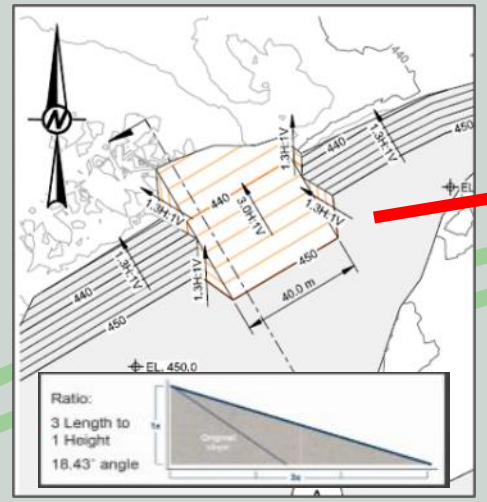
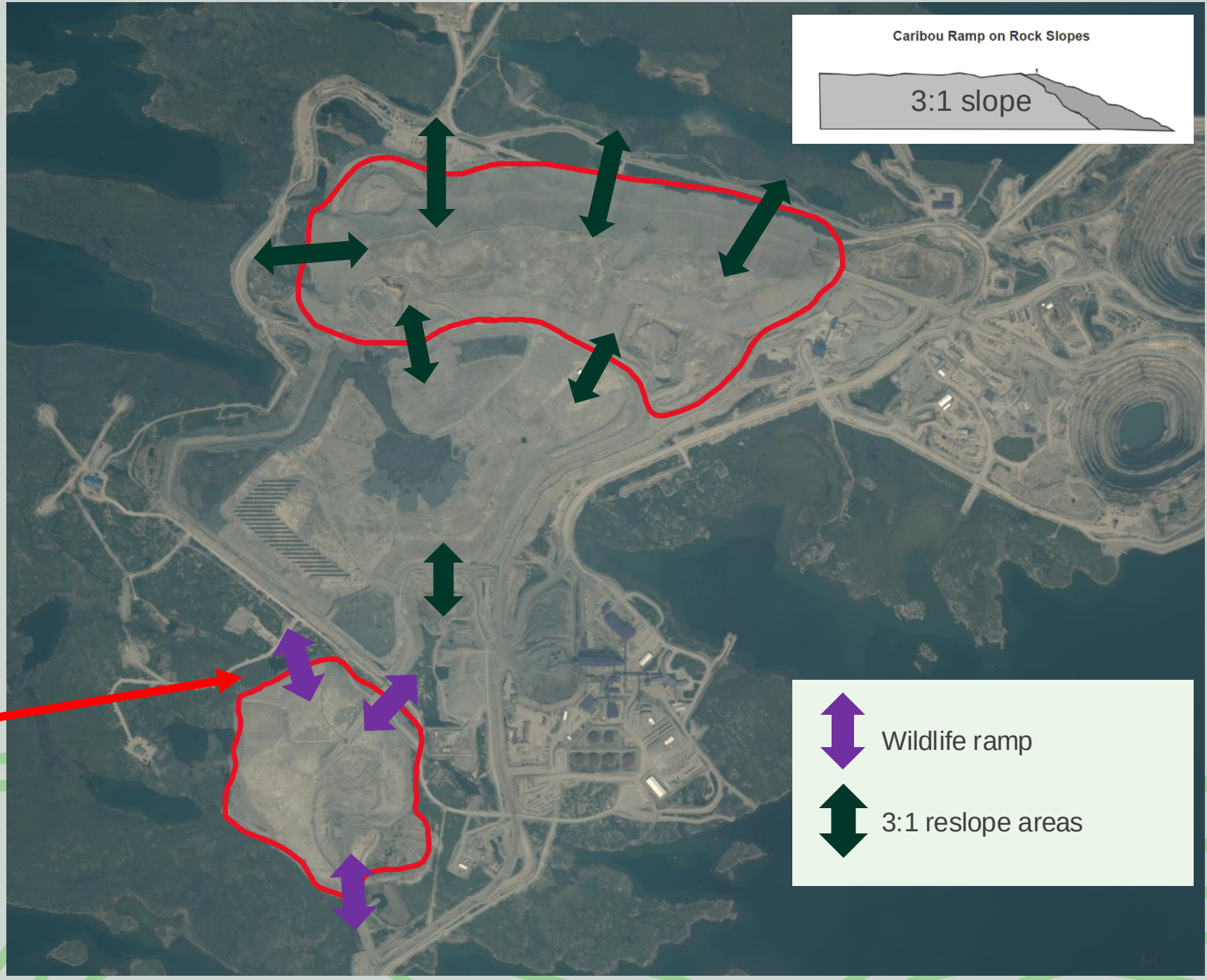
Potential caribou and other wildlife movement

- Post-closure roads
- 3:1 slopes on WRSA-NCRP
- 3:1 slopes on Processed Kimberlite Containment Facility (PKCF) East Dam
- Wildlife access ramp on northwest WRSA-SCRP





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Meeting closure objectives

Closure Objectives	Proposed Closure Activities to Meet Objective
W2. Rock and till pile features (shape and appearance) that matches aesthetics of the surrounding natural area	▪ Surface left to revegetate naturally (passive) ▪ Leave surfaces of materials native to the area (rock, till, etc.) ▪ Remove equipment, buildings and other materials ▪ Slopes remain angle of repose (no modification) at end of operations
SW9. Landscape features (topography and vegetation) that matches aesthetics and natural conditions of the surrounding natural area	
SW10. Safe passage and use for caribou and other wildlife	▪ Haul road access remains on North and South ▪ Caribou access ramp on Northwest ▪ Post-closure road across pile

Topic A: Summary

The key differences between the WRSA-SCRP and the WRSA-NCRP are:

- Size: The WRSA-SCRP is much smaller than the NCRP in both height and footprint.
- Type of rock: The WRSA-SCRP does not contain PAG (potentially acid-generating) rock. The WRSA-NCRP does.

Closure plans for the two WRSAs (rock piles) have some similarities and some differences.

- Similarities: Both have wildlife access – WRSA-NCRP has 3:1 slope and WRSA-SCRP has 3:1 ramp and post-closure road.
- Differences: Because the WRSA-SCRP does not have PAG rock, it does not require a cover. The WRSA-NCRP requires a cover to protect the environment from any PAG rock. The placement of this cover is what allowed Diavik to achieve the 3:1 slope on the entire WRSA-NCRP. The WRSA-SCRP will not be re-sloped at closure because it does not require a cover, and is much smaller than the WRSA-NCRP.

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Thank you

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Topic B

Site-wide Revegetation Strategy

Topic B: Overview

In this section we will:

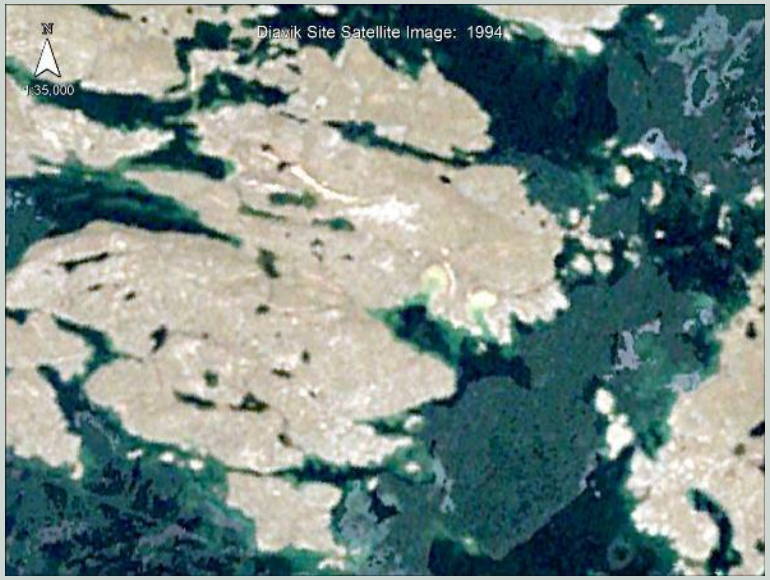
- Present baseline vegetation conditions pre-mining
- Discuss principles considered in the development of revegetation approach (e.g., aesthetics, stability)
- Share Diavik's goal for site revegetation and anticipated timelines to reach this goal
- Discuss relevant closure objectives
- Share the proposed revegetation strategy, including purpose, key activities, locations, plant species for revegetation (for both active and/or passive revegetation), and associated timelines
- Present the proposed criteria and associated monitoring and evaluation approach, including frequency and duration of monitoring
- Discuss how the University of Alberta revegetation report and reclamation research being done on site is being integrated
- Discuss contingency options and the trigger for implementation

Pre-development vegetation conditions

"*Vegetation cover is characterized by shrub tundra, including dwarf birch, northern Labrador tea, blueberry and mountain cranberry species. Depressional sites are dominated by willow, sphagnum moss and sedge tussocks. Exposed bedrock and boulder fields occur over a large proportion of the landscape.*" - Diavik Environmental Assessment (EA) (1998)

"*The predominant vegetation type/land cover type within the proposed project area is heath tundra, heath tundra with boulders and tussock/hummocks.*"
- Comprehensive Study Report (1999)

Environmental conditions in the local study area, which are typical of Arctic areas, would result in **slow recovery of vegetation cover following the closure of the mine** – Diavik EA (1998)



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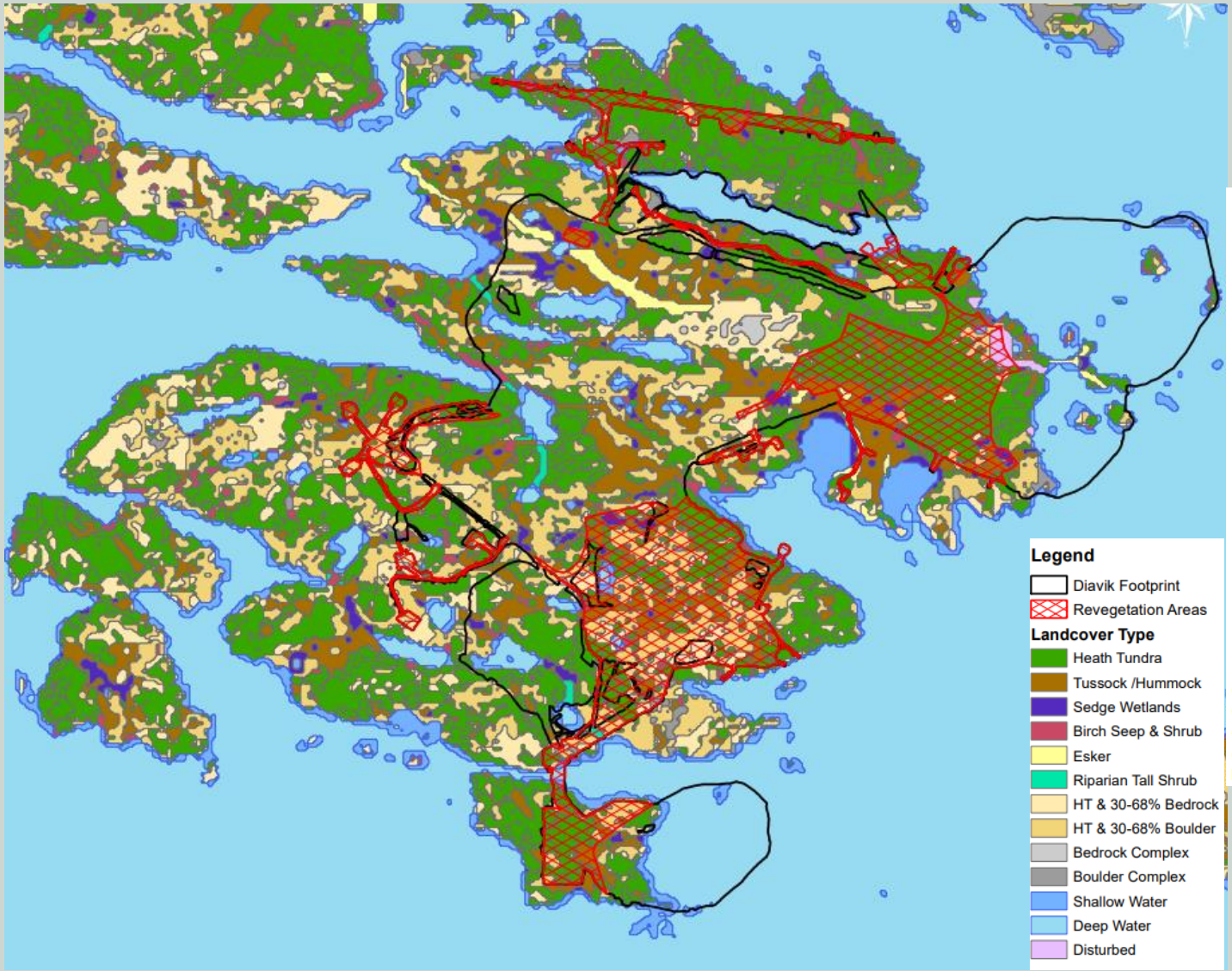
Affected landcover to date



ELC Type	Construction and Open Pit Mining (2000 to 2005)	Open Pit Mining (2006 to 2009)	Underground Mining (2010 to 2016)	Underground and Open Pit Mining and A21 Underground Development (2017 to 2023)[a]	Predicted[b]
Heath Tundra	2.60	2.94	3.28	3.67	3.68
Heath Bedrock (30% to 80%)	0.45	0.56	0.61	0.66	0.78
Heath Boulder (30% to 80%)	1.06	1.47	1.64	1.77	1.89
Tussock/Hummock	1.19	1.41	1.50	1.62	1.64
Sedge Wetland	0.16	0.21	0.22	0.25	0.26
Riparian Shrub	0.03	0.03	0.03	0.04	0.03
Birch Seep and Shrub	0.08	0.09	0.10	0.11	0.11
Boulder Complex	0.03	0.04	0.05	0.05	0.05
Bedrock Complex	0.05	0.06	0.06	0.07	0.07
Esker Complex	0.17	0.17	0.17	0.17	0.16
Disturbed[c]	0.05	0.06	0.06	0.06	0.06
Shallow Water	0.29	0.34	0.40	0.44	0.48
Deep Water	1.93	2.12	2.63	2.71	3.46
Total[d]	**8.10**	**9.50**	**10.75**	**11.61**	**12.67**

(a) Also represents cumulative loss to 2023.
(b) From DDMI 1998a.
(c) Disturbed includes areas that were already disturbed by exploration activities when the ELC was created.
(d) Any discrepancies in totals across the rows results from the rounding of numbers in annual columns for presentation purposes.
km² = square kilometres; % = percent.

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Goal for site-wide revegetation

It is Diavik's goal to ensure short term efforts are conducive to the longer-term vision of site revegetation through natural means. This will be measured through achievement of closure objectives:

- **SW5.** Revegetation targeted to priority areas: this objective is central to the selection of options and is consistent with the input from land users of the site.

- **SW9.** Landscape features (topography and vegetation) that match aesthetics and natural conditions of the surrounding natural area: revegetation can aid in establishing aesthetics and land uses that are typical of the region.

Principles in revegetation approach

Aesthetics (how it looks) to people and wildlife

- A final landscape that is neutral to wildlife
- A final landscape that supports natural re-growth

Exclusion (to not attract wildlife)

- Exclude areas where chemical or waste storage occurs (WTA and fuel tank farms)
- Exclude rock piles and PK containment areas where engineered covers have been built

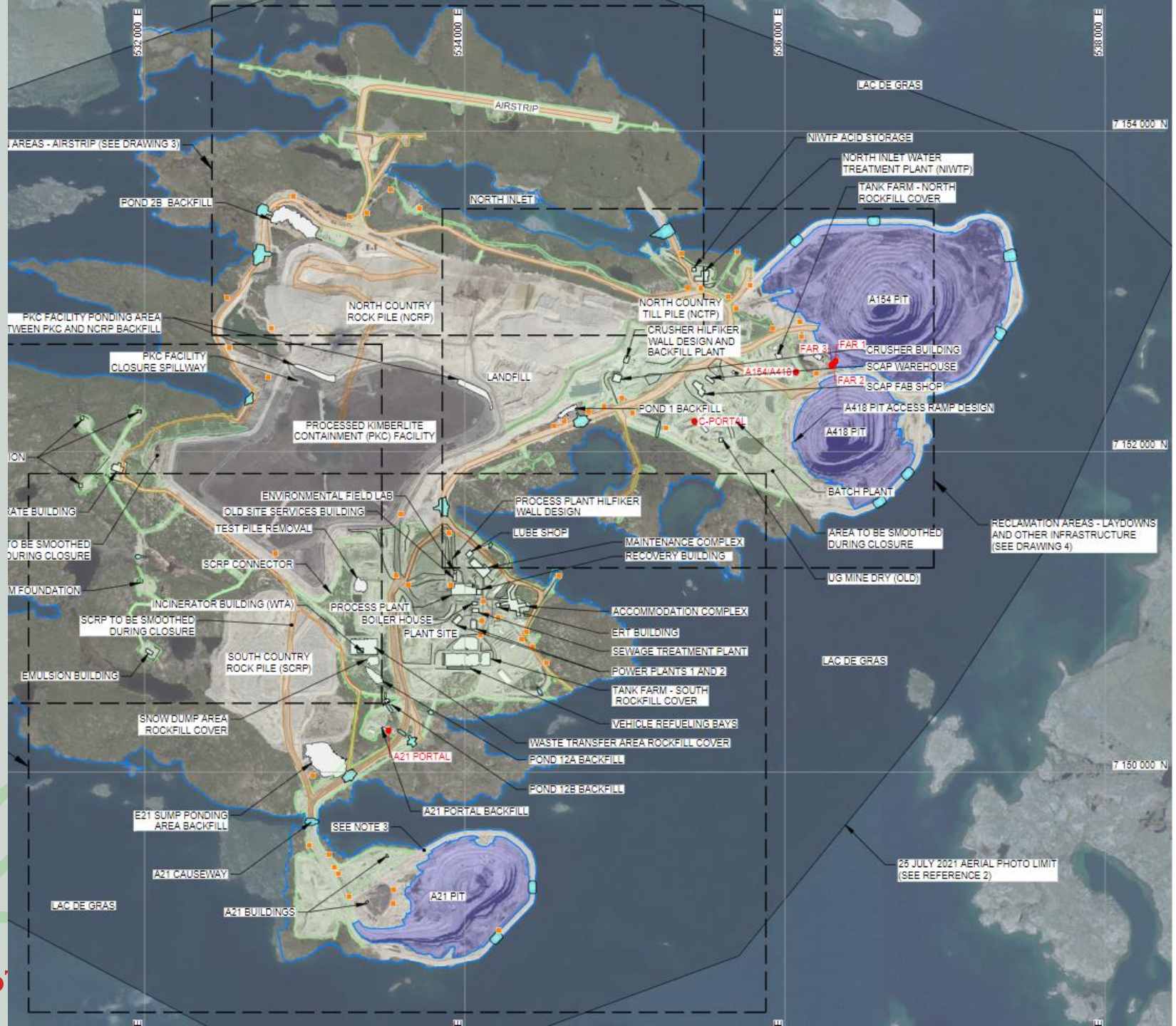
Stability

- Revegetation is not required for erosion control, or for appearance or "aesthetics"

Proposed revegetation strategies

Location	Area (ha)	Surface Material	Scarification (Recontouring and Deep Ripping)	Seeding	Natural Revegetation with Moss and Lichen
Airstrip	27	Waste Rock	Yes	Yes	No
Laydowns and Other Infrastructure	103	Waste Rock	Yes	Yes	No
Main Infrastructure Areas	171	Waste Rock	Yes	Yes	No
Potentially Contaminated Areas (high to very high likelihood)	12.8-[(a)]	Coarse Waste Rock	No	No	Yes
Other infrastructure	23	Waste Rock	Yes	Yes	No
North Country and South Country Rock Piles	270	Coarse Waste Rock	No	No	Yes
Processed Kimberlite Containment Area	204	Coarse Waste Rock	No	No	Yes
North Inlet	38	n/a			
Open Pit, Underground, and Dike Areas	291	n/a			

The proposed areas to be seeded were established through consultation with communities in Traditional Knowledge Panels



LEGEND

- PIT, POND, NORTH INLET DIKE, AND CAUSEWAY BREACH
- GRADING CUT AND FILL AREA
- POST CLOSURE ROAD
- RECLAMATION AREA - SCARIFY AND SEED
- LAC DE GRAS WATER LEVEL AT CLOSURE (EL. 416.0 m)
- PIT LAKE WATER LEVEL AT CLOSURE (EL. 416.0 m)
- OPENINGS TO SURFACE LOCATION
- PIPE CULVERT INLET/OUTLET LOCATION (SEE NOTE 3)

NOTES

1. ALL UNITS ARE IN METRES UNLESS OTHERWISE NOTED.
2. COORDINATES ARE IN MINE GRID.
3. PIPE CULVERT LOCATED UNDER ROAD CROSSING, MATERIAL TO BE PUSHED TO COVER THE PIPELINE INLET/OUTLET.

REFERENCES

1. LAC DE GRAS BASE AERIAL PHOTO PROVIDED BY DDMI, FILE NAME: "DIAVIK_31AUG2018_2M_U12N83_COLR_MOSAIC.tif", RECEIVED: 18 JANUARY 2019, FLOWN: 31 AUGUST 2018.
2. SITE INFRASTRUCTURE AERIAL PHOTO PROVIDED BY DDMI, FILE NAME: "Diavik_2021_SPOT_Archive_25Jul2021_150cm_U12N83_Colr.tif", RECEIVED: 02 DECEMBER 2021, FLOWN: 25 JULY 2021.

Post-closure roads (orange) planned to remain for post-closure monitoring and wildlife access, but berms planned to be removed while other roads are proposed to be scarified and revegetated (green)

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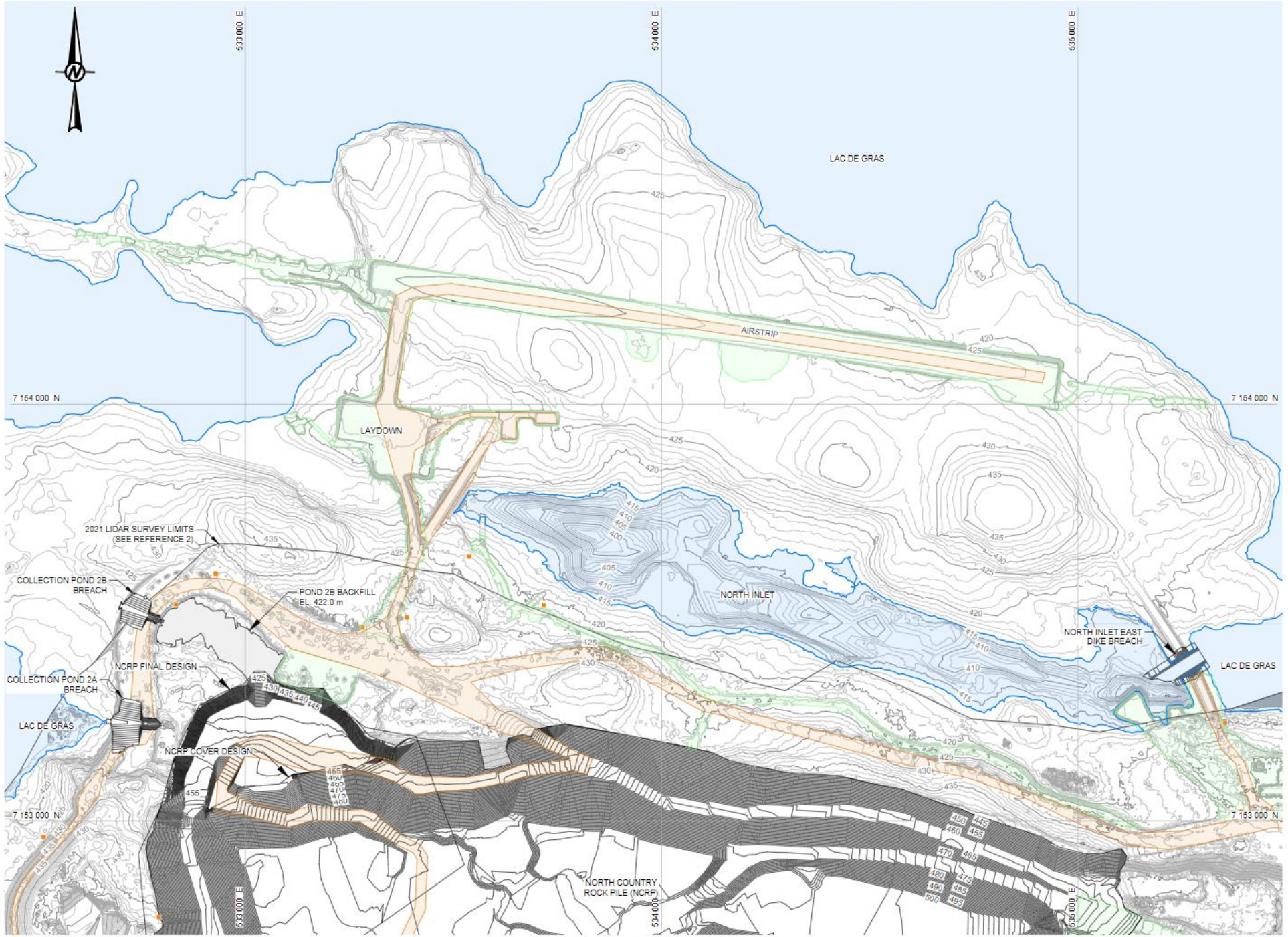

LEGEND

- EXISTING GROUND CONTOURS (SEE NOTE 4)
- GRADING FILL AREA
- CLOSURE DESIGN CONTOURS
- POST CLOSURE ROAD
- RECLAMATION AREA - SCARIFY AND SEED
- WATER LEVEL AT CLOSURE (EL. 416.0 m)
- PIPE CULVERT INLET/OUTLET LOCATION (SEE NOTE 5)

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4. EXISTING GROUND REPRESENTING COMPOSITE SURVEYS (SEE REFERENCE 1), AND JULY-AUGUST 2021 LIDAR SURVEY (SEE REFERENCE 2).
5. PIPE CULVERT LOCATED UNDER ROAD CROSSING, MATERIAL TO BE PUSHED TO COVER THE PIPELINE INLET/OUTLET.

REFERENCES

1. BASE TOPOGRAPHY PROVIDED BY DDMI REPRESENTING COMPOSITE SURVEY OF CURRENT 2020 CONDITIONS, APRIL 2021 SURVEY FOR A21 PIT AND ORIGINAL GROUND. RECEIVED: 06 JANUARY 2021. FILE NAME: "SRF-Comp-asb-pg-Current-2020+SRF-210421-A21-EG.xml".
2. ADDTIONAL TOPOGRAPHY PROVIDED BY DDMI REPRESENTING JULY AND AUGUST 2021 CONDITIONS AND COMPILED FROM MULTIPLE .las FILES, RECEIVED: 31 JANUARY 2022.

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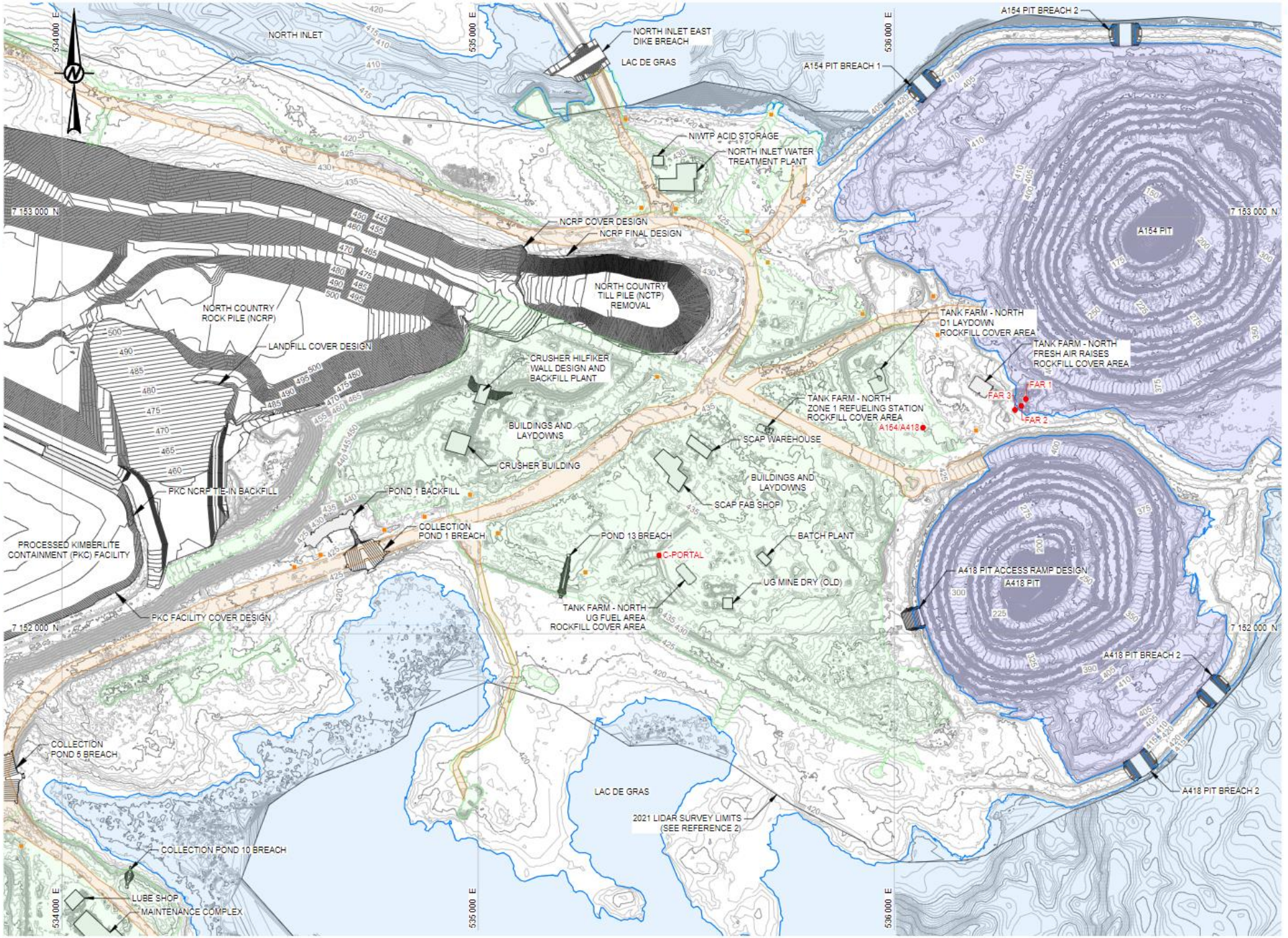

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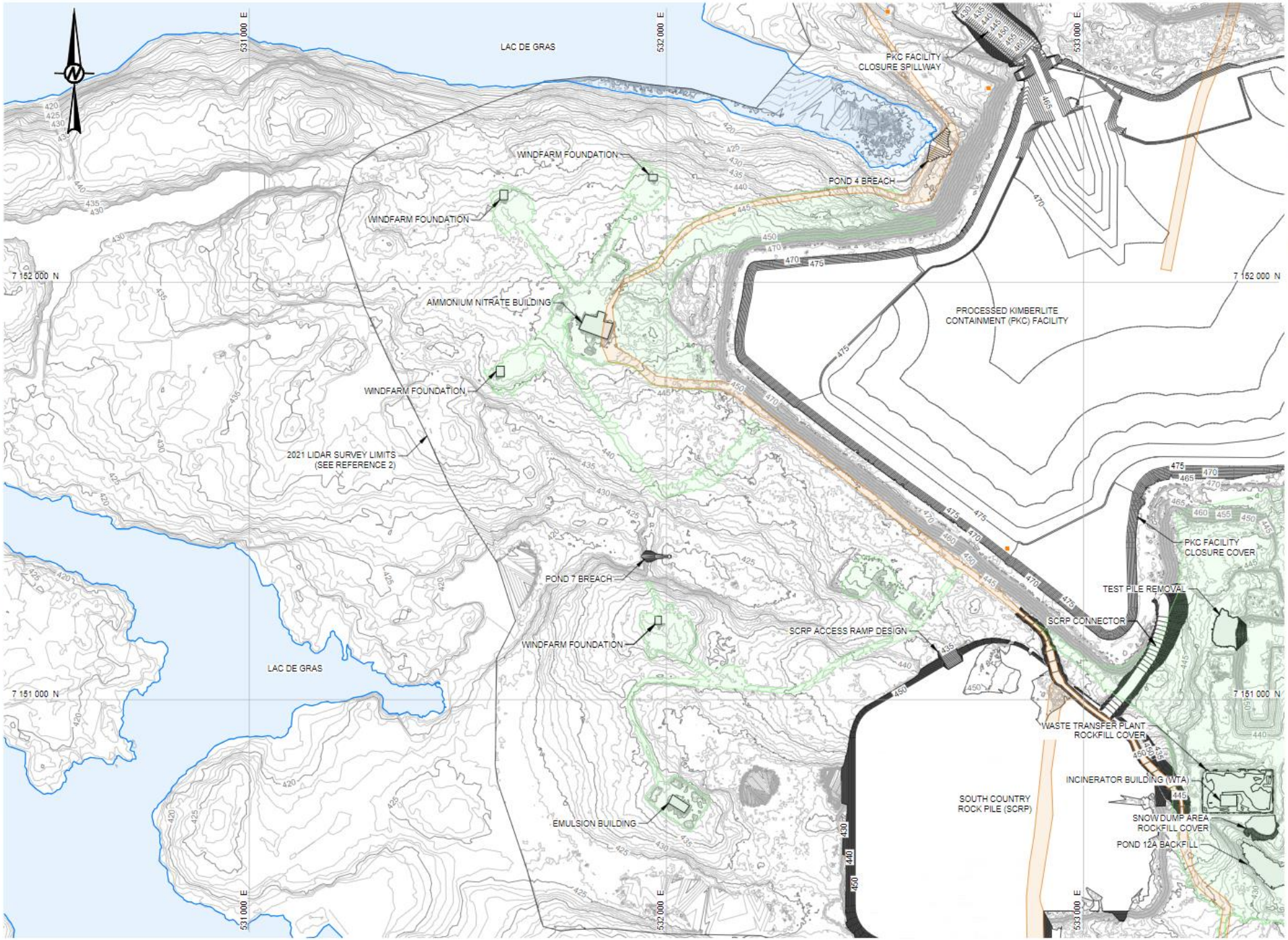

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Proposed seed selection

Scientific Name	Common Name	% by Weight
Grasses		
Poa glauca	Glaucous bluegrass	10
Poa alpina	Alpine bluegrass	15
Puccinellia nuttalliana	Nuttal's alkaligrass	10
Agrophyron (Elymus) violaceum	Slender wheatgrass	20
Agrophyron (Elymus) pauciflorum		
Festuca saximontana	Rocky mountain fescue	15
Deschampsia caespitosa	Tufted hairgrass	10
Trisetum spicatum	Spike trisetum	10
Forbs		
Heysarum mackenzii	Bear root, sweet pea / sweet-vetch	5
Hedysarum alpinium	Liquorice root	
Oxytropsis splendens	Showing locoweed	5
Oxytropsis deflexa	Nodding locoweed	
	Total	**100**

- Diavik proposes to use a seed mixture that has both native NWT and subarctic tundra grasses and forbs
- Selected based on availability from commercial suppliers and ability to revegetate more rapidly
- Selected grasses shown to establish quickly and build soil development
- Selected forbs shown to establish successfully on crushed rock and is recommended for species diversity
- The seed mixture will have a minimum 4 grasses and 2 forbs species

The aim of the reclamation design is to produce self-sustaining plant communities. These plant communities will be early pioneer successional communities dominated by graminoids (i.e., grass species) that will allow for natural succession over time into plant communities more similar to those found naturally at Diavik. Results from progressive reclamation monitoring have shown that grass and forb seeding is an effective way to accelerate reclamation success.

Proposed grasses

Glaucous bluegrass

Alpine bluegrass

Nuttal's alkaligrass

Arctic Wheatgrass (Elymus violaceum)

Rocky mountain fescue

Tufted hairgrass

Spike trisetum

Slender wheatgrass (Agropyron pauciflorum)

Proposed forbs

Bear root, sweet pea / sweet-vetch

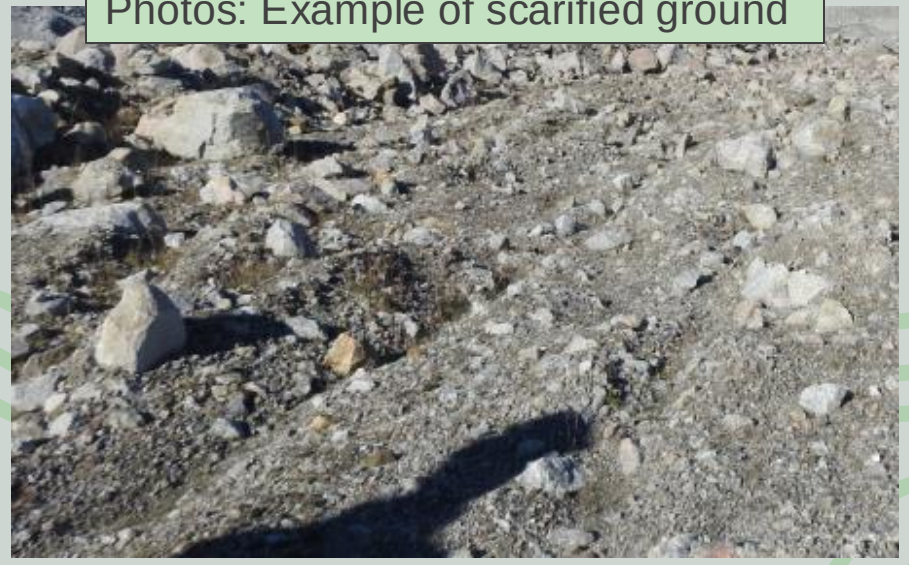
Liquorice root

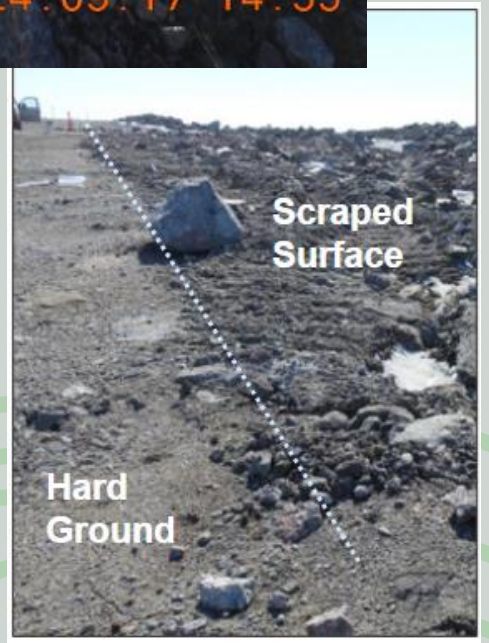
Showing locoweed

Nodding locoweed

Scarification methods - roads and laydowns

Photos: Example of scarified ground





- Hard ground in selected areas proposed to be scraped and loosened (scarification) to prepare for seeding
- Scarification ~0.5 m deep with heavy equipment (e.g., CatD10 dozer)
- Progressive (pre-closure) scarification and seeding can be completed as closure landforms are completed
- Select roads left in passable condition (berms removed) to serve as wildlife routes and to allow access for post-closure monitoring

Diavik received recent feedback that shallower scarification may be preferred – balance risk to wildlife and people with revegetation success.

Methods: Passive revegetation

- Waste Rock Storage Areas, Processed Kimberlite Containment Facility (PKCF), and other infrastructure are proposed to be left to revegetate naturally
- WRSA-NCRP and PKCF have completed cover and Diavik does not want to rip them up, encourage erosion and infiltration and risk long term performance
- Revegetation research conducted with university partner 2004-2017 found crushed rock was suitable for plant growth
- Revegetation is not required for erosion control or to improve water quality
- Plant growth is very slow (decades +++)

Vegetation cycle

Natural Tundra

Waste Rock Infrastructure

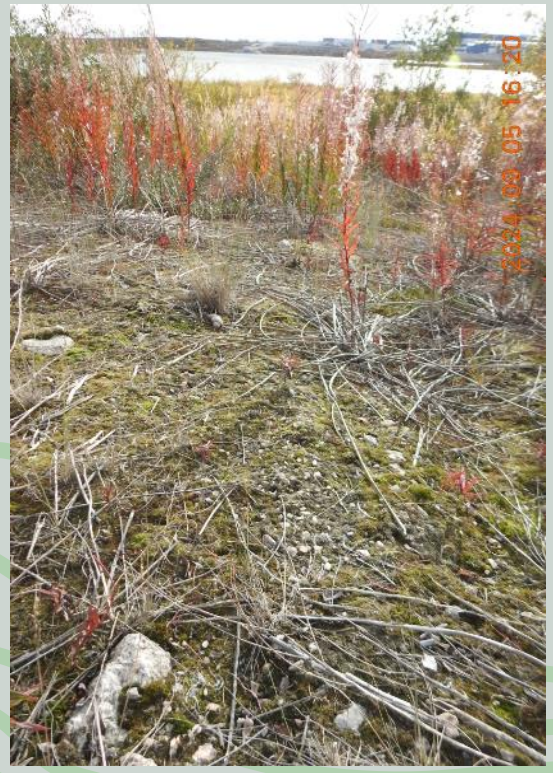
Seeding + 1 year

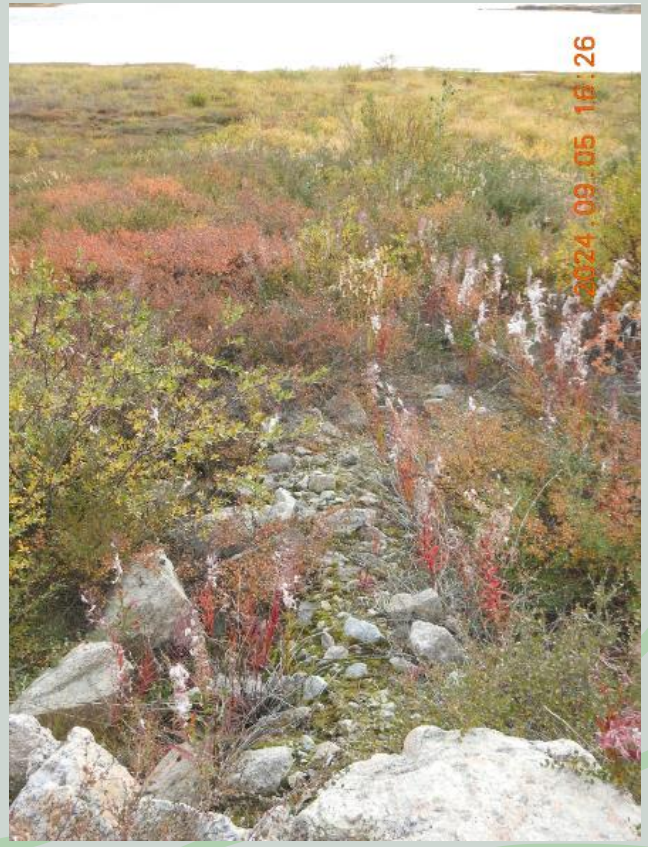
Seeding + 5-10 years

Seeding + 10-15 years

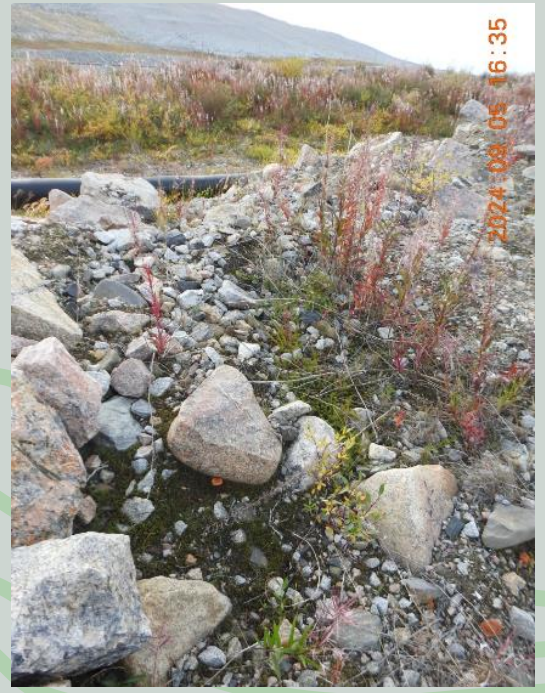
Decades +++

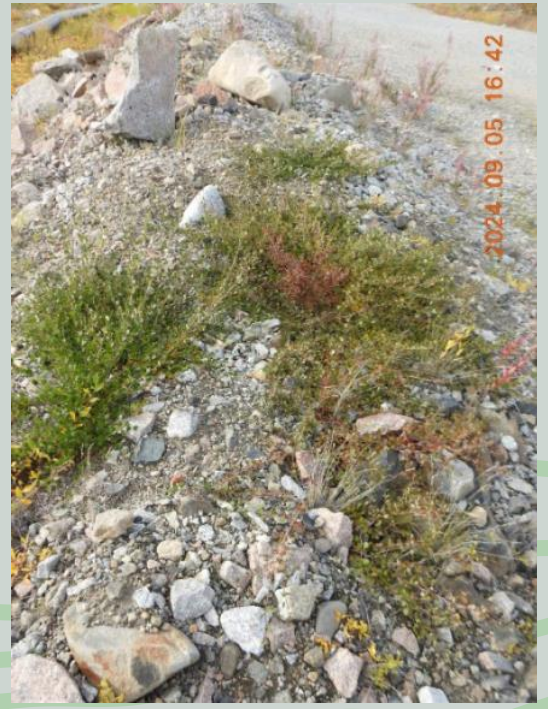
Example – Shallow Bay road





Example – Pipe bench





Evaluating success of SW5: Revegetation

Closure Objective	Proposed Closure Criteria – FCRP Version 1.0	Performance Assessment Period	Monitoring
SW5. Re-vegetation targeted to priority areas.	**SW5-1** – Final re-vegetation procedures applied to priority areas as established with communities and approved by WLWB.	N/A	Checklist of methodology for each area Confirmation of seed application at approved rate for each area
	SW5-2 – Native seed applied at a minimum rate of 25 kg/ha.	N/A	
	SW5-3 – Seed germination, measured in stems/m^2, observed at a rate of 10 stems/m^2 .	2 years	Annual monitoring of germination (stems/m2) in monitored plots

Closure Monitoring (2026-2029)

- 1 m by 1 m monitoring plots established at a density of 1 plot per 10 ha in areas that have been contoured and seeded
- Plots monitored annually (every year)

Post-Closure Monitoring (2030+)

- Annual monitoring of plots continued until SW5-3 criterion has been met
- Expected to be achieved within two years of entering post-closure
- Performance Assessment Report submitted to the WLWB after 2 year
- Germination success = monitoring discontinued

Closure criteria for SW5 met once priority areas have been re-seeded with native seed at the approved rate for each area and germination rate is confirmed.

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Evaluating success of SW9: Aesthetics

Closure Objective	Proposed Closure Criteria – FCRP Version 1.0	Performance Assessment Period	Monitoring
SW9. Landscape features (topography and vegetation) that match aesthetics and natural conditions of the surrounding natural area.	**SW9-1** – Satisfactory final inspection of construction by a professional engineer, confirming that works have been carried out in accordance with the final approved detailed designs.	N/A	Final inspection by professional engineer Survey of the ground surface
	SW9-2 – Annual inspections to verify that landscape features continue to conform to design, and that there are no visible buildings, equipment, residual construction waste or other non-local materials on site. See SW5 for revegetation criteria.	5 years	Annual inspection for landscape features.

Closure Monitoring (2026-2029)

- Visual inspections to verify areas conform to design (e.g., no buildings, construction materials, equipment etc.)
- Scarified areas inspected to confirm no construction or operational waste present
- Monitoring of revegetated areas plots

Post-Closure Monitoring (2030 +)

- Annual inspections over 5 years
- Monitoring of revegetated areas until successful germination
- Performance Assessment Report (PAR) submitted to the WLWB after 5 years

The closure and post-closure monitoring could be complemented by the Traditional Knowledge Monitoring Program

Research on vegetation reclamation

- University of Alberta Research (2013-2017) on vegetation reclamation – Appendix X-16 CRP V4.1
- Considered previous vegetation reclamation research at Diavik .
- Crushed rock found as an effective option for revegetation, performing like till and better than processed kimberlite (PK).
- Soil (black earth) and organics (sewage), while beneficial, deemed to be impractical at large scale. Biochar not recommended. Sewage had limited effect on species richness.
- Erosion control findings relevant to PK only and PKCF will be covered by waste rock.
- Revegetation of seeded native grasses readily established on crushed rock. Grasses shown to provide wildlife cover and food, and facilitate soil development over time.
- Micro topographic variability enhanced reclamation – important in retention of lichens.
- Salvaging (cuttings) / transplanting (seedlings) not considered practical, would be destructive of undisturbed ground, low likelihood of success at a significant effort.
- Shrub cutting root development after 60 days was insufficient (few and very small) to support establishment and survival over winter across all treatments and all species
- Bryophyte cover expected to return after 5+ years with best performance on crushed rock.

FCRP Revegetation Plan

Vegetation Selection: Native grasses and forbs seeds. No shrubs.
Substrate: crushed rock
Amendments: none
Micro Topography: scarification of hard ground
Erosion Control: not required for crushed rock surfaces

Revegetation contingencies

- Revise revegetation methods and report the effort, if appropriate, to correct the cause of unsuccessful revegetation
- The trigger would be the inability to meet SW5-3 criteria with initial consideration after the 2-year Performance Assessment Report; decision to pivot plan anticipated within 5 years
- **Diavik recommends not repeating the revegetation effort as a contingency if initial efforts prove to be unsuccessful after 5 years and to let passive revegetation progress instead**

Topic B: Summary

- Diavik's revegetation strategy is based on input from communities and relies on both active and passive revegetation strategies.
- Roads and laydowns will be scarified and re-seeded with natural grasses and forbes.
- Waste rock storage areas, PKCF, and other areas will be left to revegetate passively.
- Diavik is proposing monitoring until revegetation has met closure criteria including an established germination rate for re-seeded areas, and visual aesthetics in accordance with design.
- Contingencies include consideration of revised revegetation methods. If active revegetation not successful, Diavik is proposing passive revegetation for those areas.

Masì Cho
Thank you

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Topic C
Dust

Topic C: Overview

In this section we will:

- Describe the dust sources and anticipated levels during closure and post-closure, and potential effects
- Present closure objective SW4 and discuss considerations and rationale for the proposed closure criteria for SW4
- Discuss proposed monitoring and evaluation approach for SW4 criteria
- In consideration of input-to-date on additional criterion for SW4, discuss how this input will be considered moving forward (i.e., requirement to propose additional SW4-1 criterion in FCRP Version 1.1)

Potential sources of dust

Closure activities (2026-2029)

- Road traffic (e.g., equipment, trucks)
- Blasting
- Earth works (e.g., site-wide grading)
- Wind erosion of landforms (waste rock stockpiles and PKCF)
- Demolition of buildings
- **Dust emissions expected to be significantly lower in closure than in operations**

Post-closure activities (2030+)

- Post-closure monitoring people activities (e.g., ATV)
- Wind erosion of landforms (e.g., waste rock stockpiles and PKCF)
- **Dust emissions expected to be negligible**

Wind-blown dust from WRSA-NCRP and PKCF likely to be negligible due to size and composition of the cover materials (i.e., granitic gravels) and will likely become dust-limited over time. Any vegetation growth over time further reduces potential for wind erosion.

Dust sources from closure phases of the mine include fugitive wind-blown dust. The effects of wind-blown dust are usually localized near their emission sources (i.e., tens of meters to a few hundred meters)

Does dust have an effect?

No strong, adverse temporal patterns in plant (lichen and bryophyte) species abundance or composition from mine dust have been detected (WSP 2022) throughout operations. The lichen program 2010 risk assessment demonstrated no adverse effects to caribou health. In the last decade lichen metals have decreased below 2010 concentrations and are expected to continue to decrease relative to operations and remain within safe levels in closure.

SW4 - Proposed closure criteria

SW4. Dust levels do not affect palatability of vegetation to wildlife

SW4-1 – Monitoring evidence of post-closure wildlife use of area (approved WLWB 2021)

- DDMI understands that confirmation of wildlife use of the area to be sufficient evidence of meeting SW4
- No significant risks to wildlife from dust were identified during operations including through risk assessments
- Confirmation of post-closure dustfall decrease would mean the negligible risk to wildlife is stable or improving

Closure Activities:

- Add rock cover as protection from wind erosion to processed kimberlite surfaces
- Scarify and seed roads and laydown areas

SW4 – Monitoring and reporting

SW4. Dust levels do not affect palatability of vegetation to wildlife

How will success of SW4 be measured?
Incidental wildlife observations of the post-closure reclaimed site will be used to determine the success of SW4-1. Monitoring data collected during closure will be used to support the assessment. **The closure and post-closure wildlife use monitoring could be complemented by the Traditional Knowledge Monitoring Program**.

SW4-1 – Monitoring evidence of post-closure wildlife use of area (approved WLWB 2021)

Reporting:

- Annual Wildlife Management Monitoring Report (during closure)
- Performance Assessment Report after 5 years post-closure
- Reclamation Completion Report

Alternative ways to measure success

During the FCRP review Diavik received feedback from TG and EMAB on potential additional criteria to measure the success of SW4

- TG would like to work with Elders on criterion
- EMAB: Zone of Influence (ZOI) monitoring (caribou)
- EMAB: Assessment of metals in lichen at far-field vegetation plots (i.e., near-field sites not significantly higher than far-field sites)
- Other?

- The Traditional Knowledge monitoring program could complement the incidental wildlife use monitoring SW4-1 criterion
- Poor local habitat (island and lake) and confounding effects of Ekati make using ZOI challenging

Question: Are there additional criterion to evaluate whether dust is affecting palatability of vegetation to wildlife?

Topic C: Summary

- Dust levels during closure are expected to be lower than during operations. Dust levels during post-closure are expected to be negligible.
- Closure objective for dust (SW4) is “dust levels do not affect palatability of vegetation to wildlife”. Approved criteria for meeting this objective include wildlife use of post-closure area.
- Opportunity for Traditional Knowledge Monitoring program to compliment monitoring wildlife use of the area.
- Diavik is open to input on additional criteria for evaluating whether dust is affecting palatability of vegetation to wildlife.

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Thank you

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Topic D

North Inlet Sediments

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Topic D: 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

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

Closure Criteria Met

- Diavik 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
  2) propose contingency option

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Sediment influence on fish habitat

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

- Current sediment potentially harmful 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), unlike the 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 Lac de Gras-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 Human Health and Ecological Risk Assessment (FCRP Appendix X-25) identified associated risks were low and acceptable or negligible.

Additional closure criteria proposals

Sheen

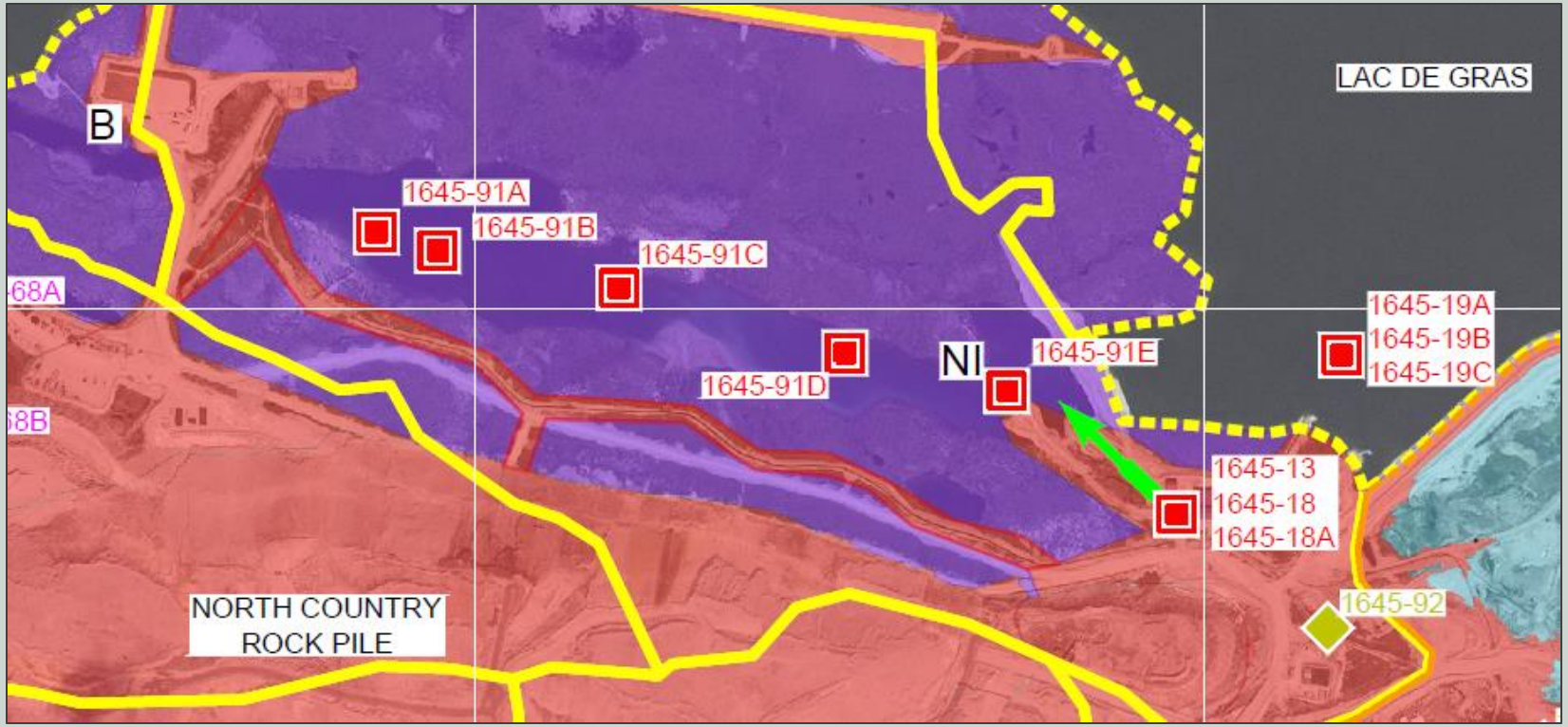
- Diavik is not opposed to discussing visible sheen as a closure criteria
- Potentially may be more appropriate under Traditional Knowledge Monitoring Program (cultural water use criteria)

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
- Diavik 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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Topic D: Summary

- If closure criteria are met, Diavik will notify the GNWT-ECC Lands Inspector and the WLWB, and reconnection will occur.
- If criteria are not met, Diavik 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 hazardous 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 does not recommend toxicity testing sediments as criteria – it too difficult to get the clear answers all parties would need.

Masì Cho
Thank you

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Topic E

Contaminated Surficial Materials

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Topic E: Overview

In this section we will:

- Discuss potential sources of hydrocarbon contamination that will remain on site post-closure
- Describe the understanding of contaminated soils onsite and sources of soil contamination (hydrocarbon and non-hydrocarbon) that will remain post closure
- Discuss the success of landfarming at the Diavik site to date and anticipated feasibility of landfarming moving into closure
- Share the proposed closure criterion for hydrocarbon-contaminated soils (I3-3)
- Describe the proposed remedial strategies for contaminated soils onsite that do not meet the criteria
- Discuss the pros and cons associated with remedial strategy
- Discuss how exposure pathways were considered in the proposed management framework
- Describe the proposed closure activities for non-hydrocarbon contaminated soils
- Describe the approach for determining which parameters require closure criteria
- Provide rationale for why no closure criteria are proposed beyond glycol and hydrocarbons

Potential surficial material contamination

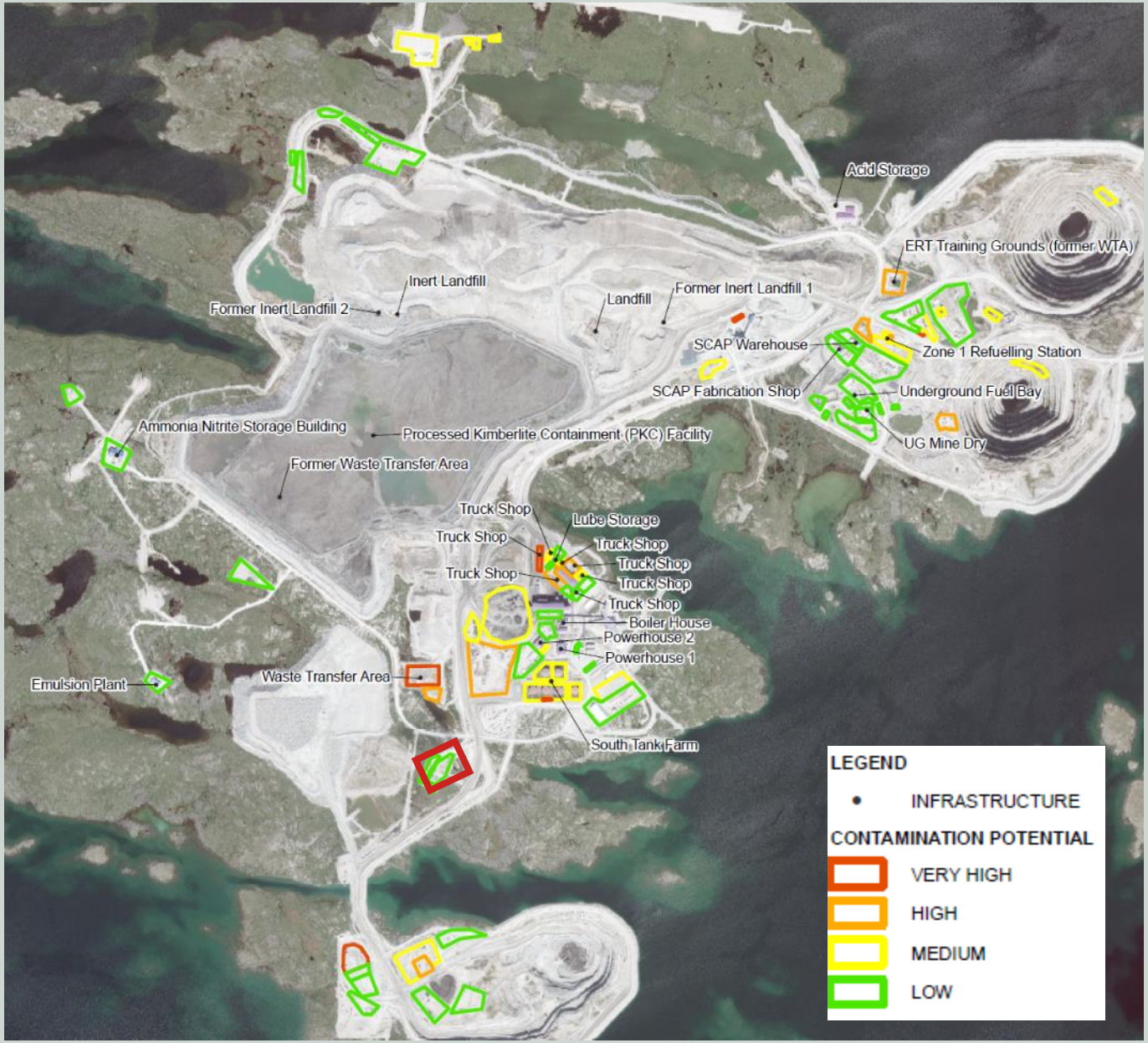
The term "surficial materials" refers to the waste rock used to construct the mine.

Diavik maintains a record of spill location, including historic spills that have been remediated or areas which may need follow-up assessment (e.g., 2024 A21 Mine Air Heater spill area); all spills are managed and closed out by the GNWT Inspector.

There is a potential for surficial material contamination in areas where hazardous materials are stored and used on site:

- Bulk fuel storage areas
- Waste transfer areas, including the landfarm
- Explosive storage and manufacturing areas
- Chemical storage areas
- Equipment parking/storage areas

These areas are called "areas of potential environmental concern" and many of them will remain inaccessible for sampling and assessment until mine operations cease.



Areas of potential environmental concern

A contamination potential ranking system was developed based on the following primary factors:

- History of operational activities
- Type and volume of chemicals stored
- Spills recorded
- Results of investigations completed in 2021

Petroleum hydrocarbon (PHC) contamination is expected to be the predominant contaminant of potential concern on the site

No known contaminated materials are being proposed to remain on site post-closure.

Landfarming

Landfarming is a waste treatment process using oxygen to degrade organic contaminants present in soils and sediments. It involves excavating and spreading contaminated soils on large surfaces to stimulate biodegradation reactions. Landfarming is an accepted method of PHC remediation in the North.

- The landfarm is in the Waste Transfer Area (WTA)
- Engineered design lined with high-density polyethylene material
- Constructed as a ~ 62 m x 43 m x 2.5 m cell
- Graded to collect runoff and drainage in a sump in the southeast corner of the cell
- Not connected hydrologically to the rest of the WTA
- Receives hydrocarbon impacted fine grained materials

Landfarm to date

- Diavik recently starting active landfarming
- Significant portion of material is from the 2024 A21 MAH diesel spill
- No material has been removed to date
- Landfarm activities include turnover of materials with equipment in 2022 and 2023
- Information gathered during operations/closure used to further evaluate the effectiveness and application of remedial strategy under site specific conditions and potential strategy improvements

Potential contaminants of concern

- Potential contaminants of concern are determined through Environmental Site Assessment (ESA)
- An ESA will review various operational and historical documents to identify all potential contaminants of concern which may have been released to the subsurface
- ESA information is then used to develop comprehensive list of parameters below the applied screening values
- Remedial strategy report provides high-level summary of potential contaminants of concern which may be present based on background information

Closure objective

I3. Prevent remaining infrastructure from contaminating land or water

- **I3-3** – Surficial material (top 20 cm) quality in infrastructure areas has hydrocarbon levels below Table 3 and glycol levels below 960 mg/kg following infrastructure demolition and waste removal.

Choosing parameters that require closure criteria at Diavik based on background information

- Hydrocarbons and glycol represent most spills at Diavik and have potential to be present above screening values
- Specific closure criteria for other potential contaminants of concern not specified as none have been identified at concentrations exceeding regulatory guidance on-site to date
- Closure site assessments may identify other potential contaminates of concern (e.g., metals, ammonium nitrate), which may also require assessment and/or remediation. Screening values for these parameters may be established as closure criteria once additional information is available

Table 3 Hydrocarbon contaminated material quality closure criteria

Parameter	Closure Criteria (mg/kg dw)
CCME F1 (C6-C10)	210
CCME F2 (C10-C16 Hydrocarbons)	150
CCME F3 (C16-C34 Hydrocarbons)	300
CCME F4 (C34-C50 Hydrocarbons)	2800

Proposed remedial strategy: Closure

During closure, remediation of identified contaminated surficial materials will be undertaken following a risk management approach. Depending on the degree of contamination of both PHC or non-PHC Diavik may:

- Leave in-situ and cover with rockfill cap
- Excavate, landfarm and re-use/landfill disposal
- Excavate and dispose in landfill (non-PAH)
- Transport off site

Selection of preferred remedial strategy will be based on the results of the site characterization data, and the comparison of data to applicable screening values.

In absence of site characterization data, it is important to keep remedial strategy options available to evaluate against once sampling/assessment results do become available.

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Proposed remedial management strategy: Closure

PHC Screening Values	Surface Area	Proposed Remedial Strategy
Less than agricultural	N/A	No action
Between agricultural and management limit	Less than 50 to 100 m^2 (a)	Excavate, landfarm, and return to site or landfill
Between agricultural and management limit	More than 50 to 100 m^2 (a)	Rockfill cap
Greater than management limit	N/A	Excavate, landfarm and landfill or dispose off site
Unknown (below slab) but contamination risk due to history of building and/or spill records.	N/A	Leave in-situ

(a) Decision on remedial strategy will be results of site investigation and proximity to surface water.

PHC Contaminated Surficial Materials

- Proposed management framework identified during the site characterization activities at closure
- Considers both surface area and concentration of PHC fractions compared to CCME guidelines and management limits

Non-PHC Screening Value	Proposed Remedial Strategy
Less than agricultural	No action
Between agricultural and industrial	Excavate and landfill disposal or rockfill cap
Greater than industrial	Transport off site or rockfill cap
Unknown (below slab) but contamination risk due to history of building and/or spill records.	Leave in-situ

Non-PHC Contaminated Surficial Materials

- Similar to PHC contaminated surficial materials; however, uses agricultural and industrial guidelines to help guide remedial strategy

Proposed remedial strategy: Closure

Strategy	Pros	Cons
Leave in-situ and cover with rockfill cap	▪ Prevent direct contact ▪ Mitigate access by plant roots and burrowing animals ▪ Does not disturb contaminated ground	▪ Requires downstream monitoring ▪ Cover material movement
Excavate, landfarm, and re-use	▪ Reduction of contamination ▪ Material may be returned to site for general use ▪ No downstream monitoring	▪ Disturbs contaminated ground ▪ Double handling of material ▪ Schedule risk on remediation timelines
Excavate and landfill	▪ Prevent direct contact ▪ Eliminate access by plant roots and burrowing animals ▪ Permanently frozen in place	▪ Disturbs contaminated ground ▪ Requires downstream monitoring
Off-site disposal	▪ Elimination of contamination on site ▪ No downstream monitoring	▪ Highest cost ▪ Disturbs contaminated ground ▪ Downstream impacts (road traffic, GHGs, etc.)

Proposed remedial management strategy: Post-closure

- There are no known contaminated materials currently proposed to remain on site post-closure
- The post-closure phase will focus on monitoring to confirm performance of remedial strategy
- Monitoring of downstream ground water wells, and seepage and runoff quality at representative locations where human or wildlife consumption of water, vegetation or surficial material is likely
- It is expected that after 5 years of post-closure monitoring Diavik will be able to demonstrate performance against criteria
- Frequency of monitoring beyond will depend on performance results

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Contaminated surficial material exposure pathways

- No pathways to surface exposure with implementation of remedial strategies
- The outcomes of the Human Health and Ecological Risk Assessment (HHERA) were considered when preparing the remedial strategies management framework. The HHERA considered the potential exposure pathways.
- Diavik will expand remedial stage report to further describe how it will evaluate the potential remedial options. This will include a preliminary conceptual site model which will incorporate the results of the HHERA.

Topic E: Summary

- Sources of potentially contaminated soils on site could include:
  - Bulk fuel storage areas
  - Waste transfer areas, including the landfarm
  - Explosive storage and manufacturing areas
  - Chemical storage areas
  - Equipment parking/storage areas
  - Areas with historical spill records
- The main contaminates of concern are hydrocarbons and glycol. Diavik will conduct Environmental Site Assessments of these areas once operations cease to determine the amount of remediation needed at each site.
- Other parameters may be established as closure criteria once additional info available
- Remediation activities may include: a) landfarming, b) rock-cap, c) excavation and landfill or ship offsite, d) leave/freeze in place. Activities will be selected once level of contamination confirmed through site assessments.
- There are no known contaminated sites that Diavik is proposing will remain at post-closure.
- Diavik will measure the success of the remediation strategies through monitoring during post-closure.

Masì Cho
Thank you

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Topic F

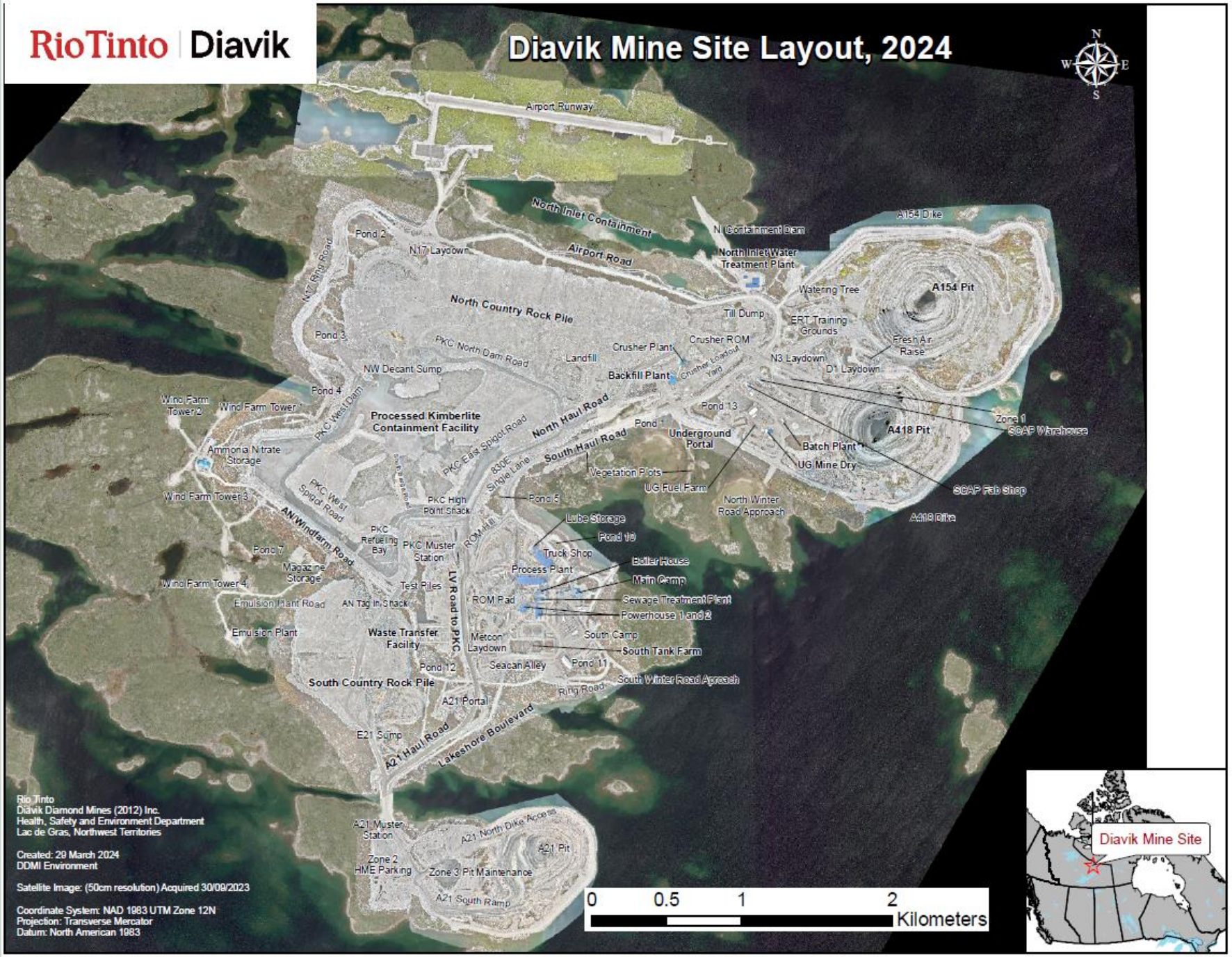
Post-Closure Infrastructure

Topic F: Overview

In this section we will:

- Describe the proposal for infrastructure to be left on site
- Describe how the proposal aligns with objective SW9

Post-closure infrastructure



Infrastructure remaining at post-closure

- Equipment storage warehouse
- Temporary camp

SW9. landscape features (topography and vegetation) that match aesthetics and natural conditions of the surrounding natural area

Post-closure infrastructure would be temporary, and removal would be required to meet SW9


South Camp: Active Closure Camp
SCAP Area: Active Closure Maintenance and Warehouse Facility
Most likely location for post-closure equipment storage warehouse and temporary camp

Topic F: Summary

Post-closure infrastructure will include:

- Monitoring equipment storage warehouse and temporary camp
- Infrastructure would be removed once no longer required
- Timing of removal will depend on performance assessment outcomes and may include staged reduction of remining infrastructure
- Removal would be required to meet SW9

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Thank you

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