Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochton et Affaires du Nord Canada

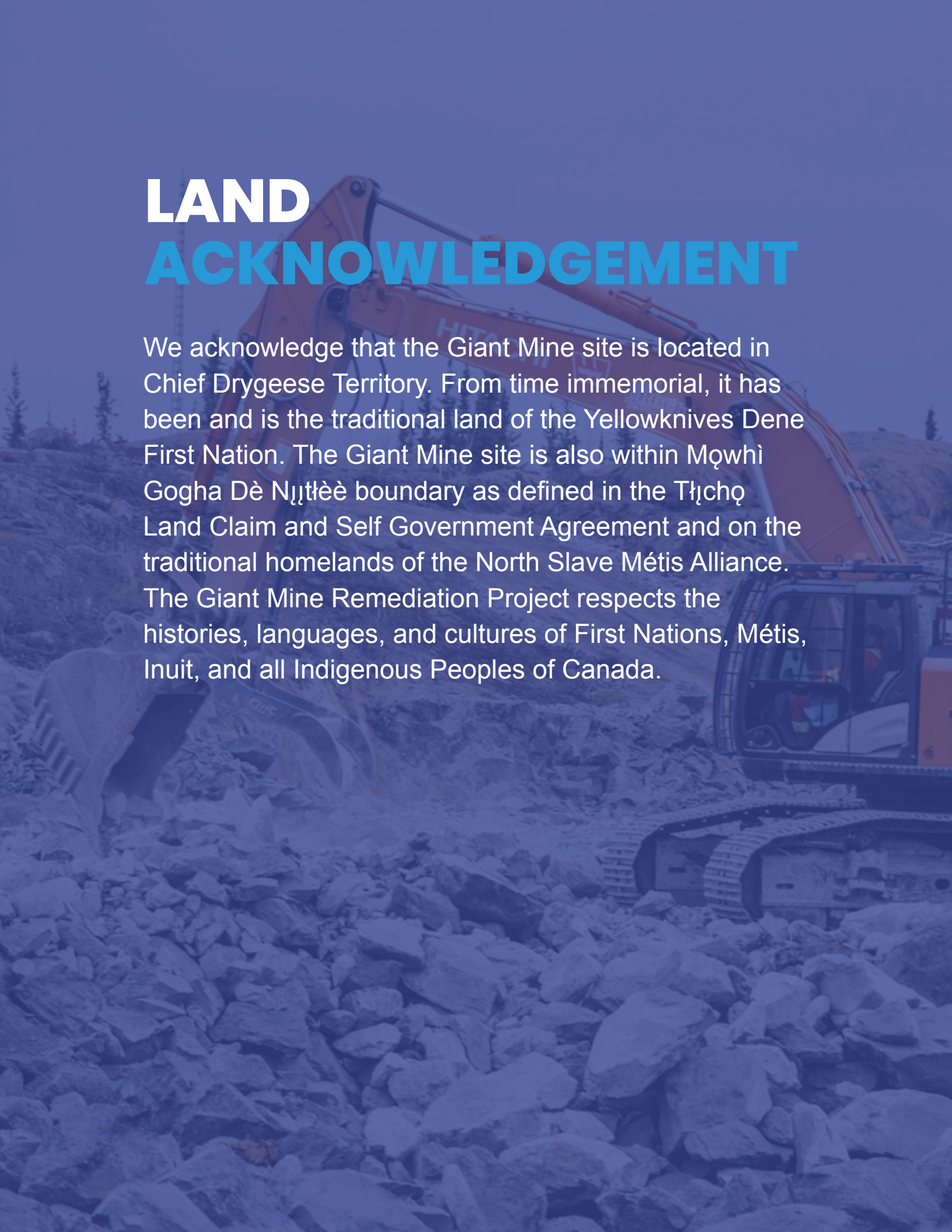
GIANT MINE REMEDIATION PROJECT

ANNUAL REPORT 2023-24

2024

Government of Northwest Territories
Gouvernement des Territoires du Nord-Ouest

Canada



LAND ACKNOWLEDGEMENT

We acknowledge that the Giant Mine site is located in Chief Drygeese Territory. From time immemorial, it has been and is the traditional land of the Yellowknives Dene First Nation. The Giant Mine site is also within Mǫwhì Gogha Dè Nı̨ı̨tłèè boundary as defined in the Tłı̨chǫ Land Claim and Self Government Agreement and on the traditional homelands of the North Slave Métis Alliance. The Giant Mine Remediation Project respects the histories, languages, and cultures of First Nations, Métis, Inuit, and all Indigenous Peoples of Canada.

ABOUT THIS REPORT

Welcome to the eighth Annual Report of the Giant Mine Remediation Project (GMRP). The report provides an overview of the GMRP's key activities and performance for the 2023-24 reporting year[1], focusing on environmental management, health and safety (H&S), and community involvement. The report's purpose is to verify that:

- defined project objectives are being met;
- the GMRP meets the requirements of the Environmental Agreement; and
- interested rights holders and stakeholders, members of nearby communities, and the broader public have accurate and timely information on the GMRP.

The report is provided to the Giant Mine Oversight Board (GMOB), the independent oversight body established through the Environmental Agreement, which is then responsible for posting on their website (for additional information, see Environmental Agreement – Report Alignment (Appendix A).

The report's content is largely shaped by the Environmental Agreement signed in June 2015, as well as GMOB's feedback on previous reports and input from the GMRP team. The report aligns with the GMRP reporting obligations in the Environmental Agreement.

For additional information on the GMRP, please visit: **giant.gc.ca**.

[1] April 1, 2023 – March 31, 2024

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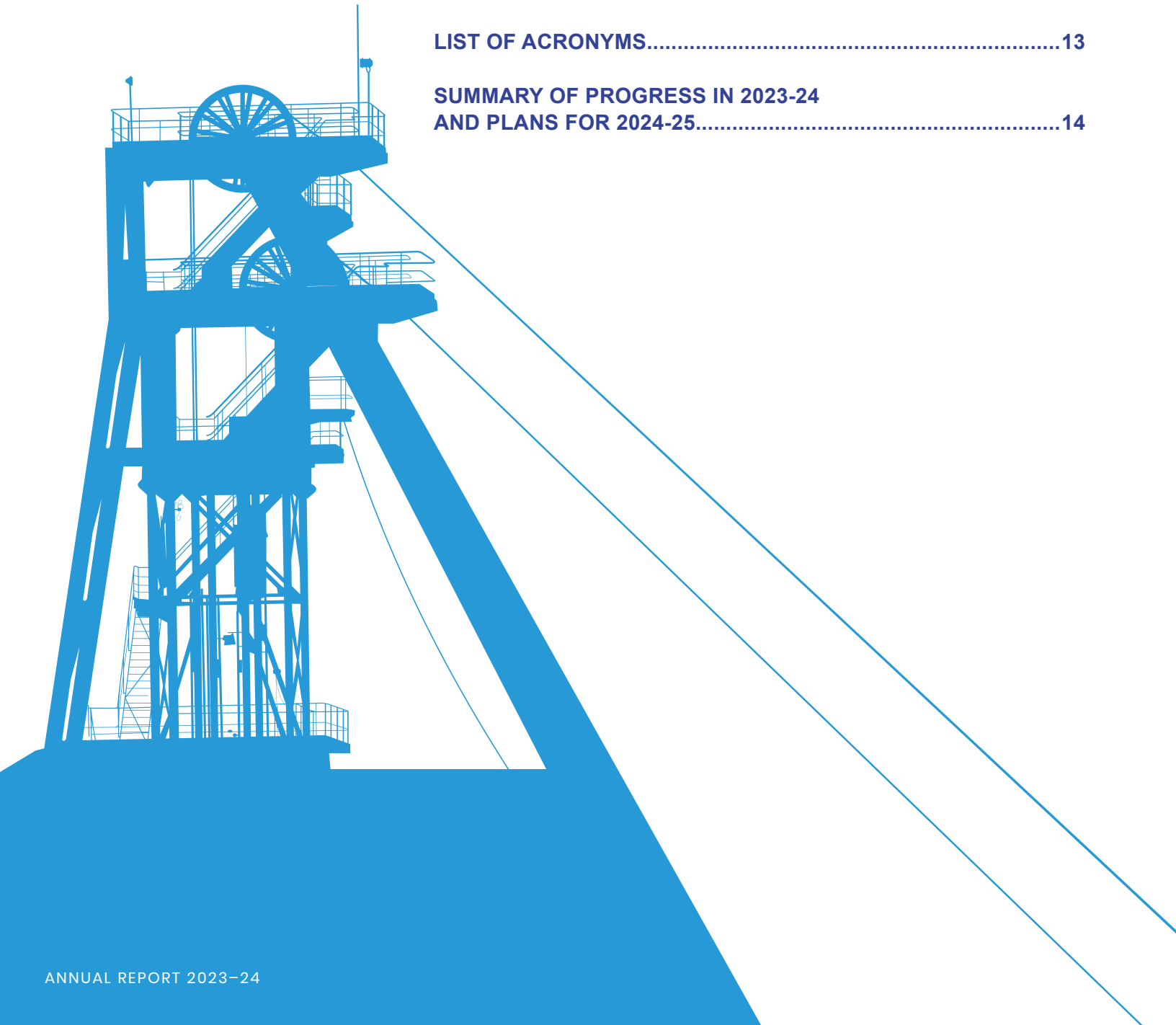

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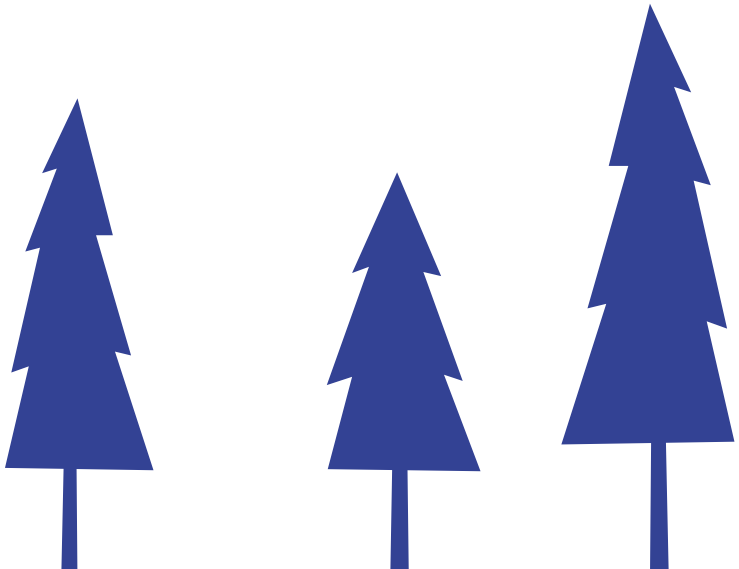

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MESSAGE FROM THE ASSISTANT DEPUTY MINISTER

ADM, Northern Affairs Organization

On behalf of the entire Giant Mine Remediation Project (GMRP) team, I am pleased to present the ninth Annual Report to the Giant Mine Oversight Board (GMOB). This report provides Rights holders, stakeholders, and the public with a comprehensive record of progress over the last year. We are committed to following the Government of Canada mandate to maintain strong partnerships with provincial, territorial and municipal governments and Indigenous Rights holders.

This ninth Annual Report builds on prior submissions, with the benefit of input and advice from GMOB, Rights holders, and stakeholders. The GMRP reached several significant milestones **in 2023-24** including the completion of Townsite decontamination and deconstruction, as well as the initiation of the water treatment plant construction.

The remediation work completed to date has resulted in positive socio-economic results including, but not limited to, the following:

- From 2005 to March 2024, $466 million out of approximately $1.4 billion (or 34%) of contract values awarded went to Indigenous contractors.
- In the 2023–2024 fiscal year, $3 million was provided through contribution agreements to the Yellowknives Dene First Nation, North Slave Métis Alliance, Tłı̨chǫ Government, City of Yellowknife, and Alternatives North for capacity building initiatives. Examples of initiatives funded include training programs, economic and business development, and salary for positions, supporting professional development, engagement activities.

It is anticipated that the planned remediation work in the years to come will continue to strengthen the socio-economic benefits and results for Indigenous peoples and northerners.

Emergency measures and activities on site have returned to pre-COVID health and safety management approaches and the Project transitioned to more in-person engagement sessions while still utilizing virtual or hybrid meeting approaches. In response to recent

wildfires, the team has also integrated wildfire preparedness and response strategies into health and safety management. The team will continue leverage these flexible approaches to share information, hear feedback and seek new input in 2024-25 and beyond, as engagement is a core component of the Project.

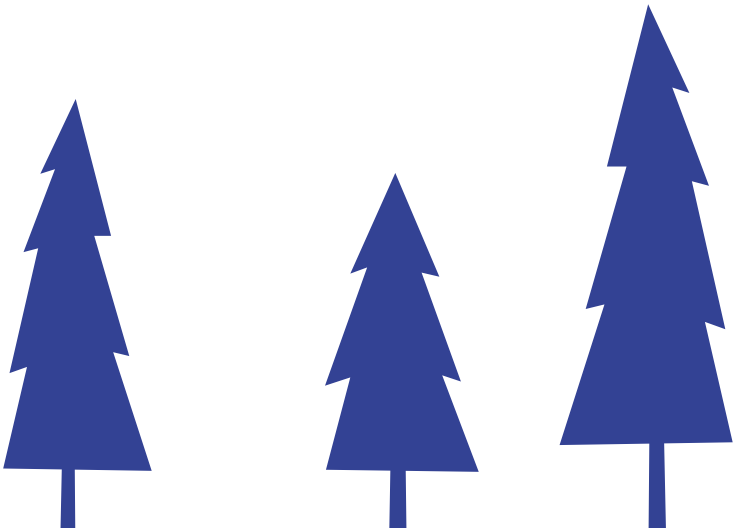
We remain committed to transparently sharing progress and enhancing engagement with Indigenous peoples, Northerners and all Canadians. Constructive feedback is encouraged as we advance the planning, operations and management of the GMRP. Our ultimate vision is to work together to address the legacy left by Giant Mine. Doing so will result in a renewal of the relationship between Canada and affected Indigenous peoples and will shape a brighter future for all.

Georgina Lloyd
Assistant Deputy Minister –
Northern Affairs Organization
Crown-Indigenous Relations and
Northern Affairs Canada


WARNING
AVERTISSEMENT
POLAR TECH
RECREATION
HEATER
flagro

ACRONYMS

AEMP	Aquatic Effects Monitoring Program
AMSL	Above Mean Sea Level
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
DFO	Department of Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
EEM	Environmental Effects Monitoring
ETP	Effluent Treatment Plant
FTE	Full-time equivalency
GHG	Greenhouse Gas
GMOB	Giant Mine Oversight Board
GMRP	Giant Mine Remediation Project
GNWT	Government of the Northwest Territories
IOC	Indigenous Opportunities Considerations
LKDFN	Łutsel K'e Dene First Nation
MCM	Main Construction Manager
MDMER	Metal and Diamond Mining Effluent Regulations
MVLWB	Mackenzie Valley Land and Water Board
NCSP	Northern Contaminated Sites Program
NSMA	North Slave Métis Alliance
OMP	Operational Monitoring Program
OMS	Operations, Maintenance and Surveillance Manual
PM	Particulate matter
PSIB	Procurement Strategy for Indigenous Business
PSPC	Public Services and Procurement Canada
SEAB	Socio-Economic Advisory Body
SEWG	Socio-Economic Working Group
SNP	Surveillance Network Program
TK	Traditional Knowledge
WTP	Water Treatment Plant
YKDFN	Yellowknives Dene First Nation
YKHEMP	Yellowknife Health Effects Monitoring Program



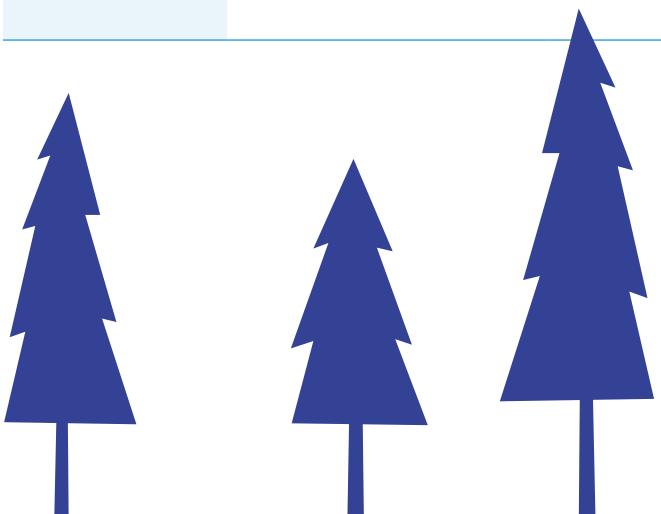
SUMMARY OF PROGRESS IN 2023–24 & PLANS FOR 2024–25

The table below summarizes key activities planned for 2023-24 (as identified in the 2022-23 Annual Report), provides a brief description of progress made, and identifies activities planned for 2024-25. This summary enables readers to see at a high level whether the GMRP team achieved what it planned and, where it did not, to understand why not.

ADVANCEMENT OF REMEDIATION ACTIVITIES

Component	Plans for 2023-24	Progress in 2023-24	Plans for 2024-25
Freeze [Section 3.1]	Continue with freeze pad design work for B1 Pit **in 2023-24**. Conduct field investigations to assist in detailed design of B1 pit.	**Ongoing** Progressed design for B1 pit. **Completed** Completed field investigations for detailed design of B1 pit.	Progress design for the thermosyphons for AR1. Continue design for B1 pit.
Non-Hazardous Waste Landfill Construction [Section 3.2]	The Non-Hazardous Waste Landfill will be scheduled to receive waste in accordance with the Waste Management and Monitoring Plan. Phase 1 construction is anticipated to be completed in Spring/ Summer 2023.	**Completed** Completed Phase 1 construction of the Non-Hazardous Waste Landfill.	Continue waste placement operations at the Non-Hazardous Waste Landfill during the 2024 construction season.
Underground Backfill [Section 3.3]	Continue underground stabilization **in 2023-24**. Plan to complete in 2024-25. Continue work to gain access to ice-filled areas of the mine below A1 and A2 pits. Initiate ground support installations to make safe access to the remainder works mine stabilization. Prepare for the abandonment of the underground at the north end of the mine, including decommissioning the 750-level pump station, removing hazardous materials, and completing the necessary modifications to the high-test line.	**Ongoing** Backfilled the underground over the 2023-24 construction season. The subcontractor completed only 80% of the planned backfilling volume for the 2023-24 season due to the wildfire evacuations. **Completed** Completed ice melting and ground support at A1 decline and connecting ramp from A1 to A2. Completed safe access into A2 pit portal and established through access from A2 portal to A1 portal. Completed modifications to the high-test line to discharge to the central section of the mine pool. Completed phase 1 of hazardous material removal at central / north sections of mine 575 and 750 levels.	Complete underground backfilling (both the carryover from FY 2023/24 and the planned 2024/25 volumes) in FY 2024-25. Complete the A2 electrical installation required for ice melting at A2. Complete ice melting and ground support installation throughout the A2 decline. Melt ice within the A2 sublevels and in the A2 stopes in preparation for remainder works mine stabilization. Remove Dynalene antifreeze from the Freeze Optimization Study infrastructure. Close off ramp accesses to the underground mine upon completion of paste-filling and hazardous material removal.

ADVANCEMENT OF REMEDIATION ACTIVITIES			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Underground Backfill [Section 3.3]	Continue underground stabilization in 2023-24. Plan to complete in 2024-25. Continue work to gain access to ice-filled areas of the mine below A1 and A2 pits. Initiate ground support installations to make safe access to the remainder works mine stabilization. Prepare for the abandonment of the underground at the north end of the mine, including decommissioning the 750-level pump station, removing hazardous materials, and completing the necessary modifications to the high-test line.	**Ongoing** Backfilled the underground over the 2023-24 construction season. The subcontractor completed only 80% of the planned backfilling volume for the 2023-24 season due to the wildfire evacuations. **Completed** Completed ice melting and ground support at A1 decline and connecting ramp from A1 to A2. Completed safe access into A2 pit portal and established through access from A2 portal to A1 portal. Completed modifications to the high-test line to discharge to the central section of the mine pool. Completed phase 1 of hazardous material removal at central / north sections of mine 575 and 750 levels.	Complete underground backfilling (both the carryover from FY 2023/24 and the planned 2024/25 volumes) in FY 2024-25. Complete the A2 electrical installation required for ice melting at A2. Complete ice melting and ground support installation throughout the A2 decline. Melt ice within the A2 sublevels and in the A2 stopes in preparation for remainder works mine stabilization. Remove Dynalene antifreeze from the Freeze Optimization Study infrastructure. Close off ramp accesses to the underground mine upon completion of paste-filling and hazardous material removal.
Townsite Deconstruction [Section 3.4]	Complete hazardous materials abatement and demolition of Townsite structures. Complete structural and hazardous materials inspections of the Core Industrial Area buildings to support demolition scope and planning.	**Completed** Removed the remainder of the buildings in the Townsite Area. Sent hazardous materials offsite to be disposed of at a licensed disposal facility. Sent non-hazardous building materials to the onsite Non-Hazardous Waste Landfill or shipped offsite for recycling.	No plans in 2024-25 as the Townsite deconstruction is now complete.
Legacy Debris Piles [Section 3.5]	N/A	**Ongoing** Started the removal of legacy debris piles on site (included the segregation of recyclable items).	Complete the removal of legacy debris piles in the fall of 2024.



ADVANCEMENT OF REMEDIATION DESIGN AND PREPARATION			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Water Treatment Plant (WTP) [Section 4.1.1]	Finalize procurement and award Water Treatment Plant (WTP) construction contract in April 2023. Initiate construction activities in late Spring 2023.	**Completed** Received approval of the WTP Design Plan. Awarded contract in April 2023 to Aecon Water Infrastructure Inc. (AWI). Started construction late June 2023.	Continue WTP construction throughout the entirety of 2024-25.
Site-Specific Passive Treatment System [Section 4.1.2]	Prepare and submit summary of the Research and Reclamation Plan, outlining research undertaken to date on engineered wetlands to the Mackenzie Valley Land and Water Board (MVLWB).	**Ongoing** Conducted additional analysis to develop/support the rationale for whether to proceed with next steps in the wetland treatment system reclamation research plan.	Include a summary of Wetland Treatment System Reclamation and Research Memo as an appendix to the Baker Creek Design Plan to the MVLWB in 2024-25.
Waste Disposal and Management [Section 4.2]	Continue detailed design for contaminated soils. Continue detailed design for highly arsenic-contaminated waste removal, soil washing, and Chamber 15 backfill. Submit the Contaminated Soils and Sediment Design Plan to the MVLWB.	**Ongoing** Progressed detailed design for soil and sediment (highly arsenic-contaminated waste removal, soil washing, and Chamber 15 backfill).	Continue detailed design for highly arsenic-contaminated waste removal, soil washing, and Chamber 15 backfill. Submit the Contaminated Soils and Sediment Design Plan to the MVLWB. Engage with the YKDFN-Giant Mine Advisory Committee on the Dam 3 Reclamation Research Plan.
Tailing Containment Areas [Section 4.3]	Begin the development of procurement documents for the Tailings Containment Areas.	**Ongoing** Progressed detailed design, which helped inform the procurement documents. **Completed** Received approval from MVLWB for Version 1.1 of the Tailings Design Plan.	Progress detailed designs for Tailings Containment Areas. Begin detailed design for foreshore/nearshore tailings remediation.

ADVANCEMENT OF REMEDIATION DESIGN AND PREPARATION			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Open Pits Closure [Section 4.4]	Commence field program to characterize existing pit fill in C1 in Fall 2023. Commence field program to define and characterize overburden around the pits (used to store contaminated granular fill material). Complete further assessments of water flows within pits containing contaminated granular fill, using data obtained from field program. Progress Open Pits Design Plan. Hold engagement with Giant Mine Working Group on Open Pits Closure Criteria in June 2023.	**Completed** Completed drilling and sampling of the C1 pit fill in the fall of 2023. Completed field program and characterization of overburden around pits. Completed assessment of water drainage within pits containing contaminated granular fill. Held engagement with Working Group on Open Pits Closure Criteria.	Complete the analysis of the C1 pit fill location to inform detailed design for C1 pit. Submit Open Pits Design Plan to the MVLWB in 2024/25. Progress detailed design for the closure of pits.
Other Design Works [Section 4.5]	Commence Part 2 of the Site Infrastructure Design Plan.	**Ongoing** Commenced Part 2 of the Site Infrastructure Design Plan.	Submit Part 2 of the Site Infrastructure Design Plan in 2025. Continue detailed design for site communications infrastructure. Continue detailed design for the demolition of buildings outside the townsite and Core Industrial Area.
	Complete the Power Line Implementation.	**Ongoing** Progressed the Power Line Implementation.	Complete Phase 1 of power line implementation and begin detailed design of Phase 2.
	Scope and complete the geotechnical investigation to support Baker Creek design. Complete site-wide investigative drilling program to provide geotechnical data to support several work packages.	**Ongoing** Geotechnical Investigation to support Baker Creek Design. **Ongoing** Progressed the Investigative Drilling program to support several work packages.	Implement the closure of four openings to surface. Progress detailed design for the closure of other openings to surface. Finalize and complete site-wide investigative drilling program.
	Complete and submit the Borrow Design Plan.	**Completed** Submitted the Borrow Design Plan.	N/A

OPERATIONS			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Care and Maintenance [Section 5.1]	Continue care and maintenance in accordance with contract, regulatory requirements (e.g., Water Licence conditions), and site conditions. Continue to monitor air quality, conduct ongoing dust management activities. Prepare for 2023 and 2024 spring freshets, discharge treated effluent at Baker Pond, conduct maintenance of roads and site infrastructure, and provide site security.	**Ongoing** Continued care and maintenance in accordance with contract, regulatory requirements (e.g., Water Licence conditions), and site conditions. Completed air quality monitoring, dust management, road and site infrastructure maintenance and the provision of site security. Discharged treated effluent to Baker Pond.	Continue care and maintenance in accordance with contract, regulatory requirements (e.g., Water Licence conditions), and site conditions. Continue to monitor air quality, conduct ongoing dust management activities. Prepare for 2025 and 2026 spring freshets, discharge treated effluent at Baker Pond. Conduct maintenance of roads and site infrastructure and provide site security.
	Continue improvements to the stench gas emergency warning system and replacement of the propane mine air heater burner. Continue improvements to the communications system underground.	**Completed** Completed installation of A1 stench warning system. Completed repairs to the communications system underground. Replaced B Shaft mine air heating plant propane regulator.	Install stench warning system at A2. Extend into A2 ramp system. Decommission B Shaft mine air heating plant upon exiting the mine.
	Conduct the 2023 annual geotechnical inspection (dams) and submit the report to the MVLWB.	**Completed** Completed the 2023 annual geotechnical inspection (dams). Submitted report to the MVLWB.	Conduct the 2024 annual geotechnical inspection (dams) and submit the report to the MVLWB.
	Continue work by the surface care and maintenance contractor to monitor and maintain dams in accordance with Operations, Maintenance and Surveillance Manual (OMS).	**Ongoing** Continued work (as and when required) by the surface care and maintenance contractor to maintain dams in accordance with OMS. **Completed** Conducted ongoing monitoring of all dams in accordance with the OMS.	Continue work by the surface care and maintenance contractor to maintain dams in accordance with OMS. Continue ongoing monitoring of all dams on site in accordance with the OMS.
	N/A	**Completed** Conducted surveying of well casing, down hole piping, and installation procedures. Conducted maintenance and operation of the pumping system. Procured and installed the spare pump for Northwest Pumping System.	Continue maintenance and operation of the pumping system.

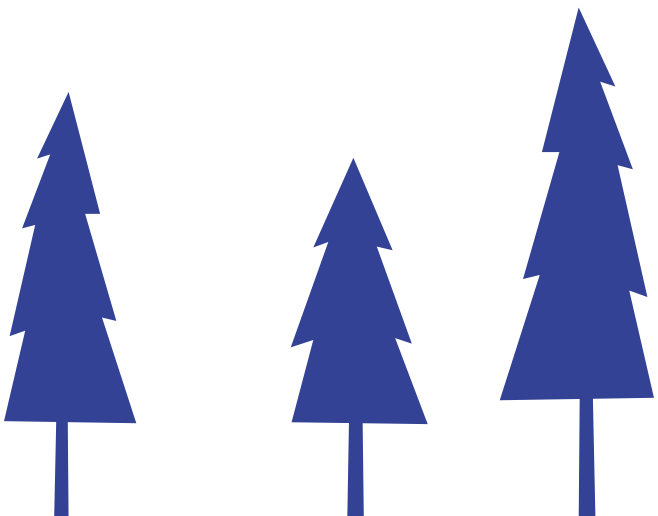
OPERATIONS			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Immediate Risk Mitigation [Section 5.1.1][2]	Implement corrective measures to the Northwest Pumping System (NWPS) resulting from the review of the system. Commission an independent review of the design for the pumping system of the new WTP.	**Ongoing** Implementing corrective measures resulting from the review of the NWPS. Progressed the independent review of the design for the pumping system of the new WTP.	Complete implementation of corrective measures resulting from the review of the NWPS. Complete independent review of WTP pumping system design.

ENVIRONMENT			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Air [Section 6.2]	Continue air quality monitoring, as outlined in the Air Quality Monitoring Plan.	**Ongoing** Continued air quality monitoring activities in 2023-24, as outlined in the Air Quality Monitoring Plan.	Continue air quality monitoring, as outlined in the Air Quality Monitoring Plan.
	Continue to treat the Tailing Containment Areas, road network, and active work areas for dust as needed.	**Ongoing** Continued ongoing dust management for Tailings Containment Areas, road network, and active work areas, as per the approved Dust Management and Monitoring Plan.	Continue ongoing dust management for Tailings Containment Areas, road network, and active work areas, as per the approved Dust Management and Monitoring Plan.
Water [Section 6.3]	Continue managing water in accordance with the Water Management and Monitoring Plan.	**Ongoing** Continued to manage water on site in accordance with the Water Management and Monitoring Plan.	Continue managing water in accordance with the Water Management and Monitoring Plan.
	Continue operation of the Effluent Treatment Plant (ETP). Construction of the WTP in Spring 2023 and will be operational in Spring 2026.	**Ongoing** Continued operation of the ETP.	Continue operation of the ETP until the WTP is fully commissioned.
	Continue existing water quality monitoring: Surveillance Network Program (SNP), Aquatic Effects Monitoring Program (AEMP), Metal and Diamond Mining Effluent Regulations (MDMER)/ Environmental Effects Monitoring (EEM), Operational Monitoring Program (OMP).	**Ongoing** Continued existing water quality monitoring (SNP, AEMP, MDMER/EEM, OMP).	Continue existing water quality monitoring (SNP, AEMP, MDMER/EEM, OMP).

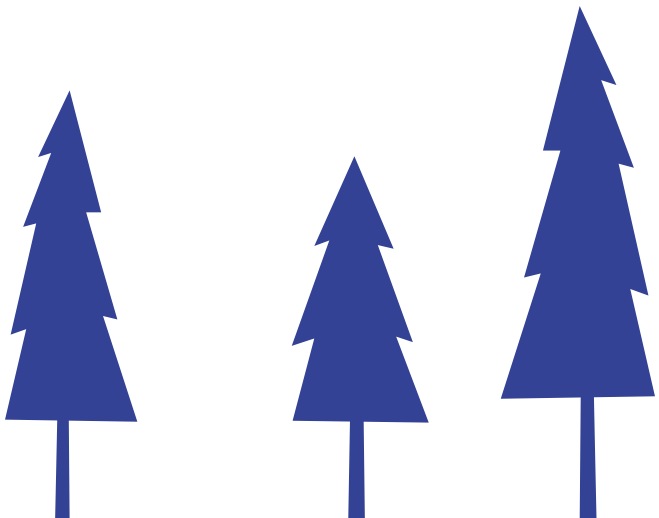
[2] Note: Building demolition is no longer managed by operations and is now considered part of remediation activities (see Townsite deconstruction details in Remediation section above)

ENVIRONMENT			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Water [Section 6.3]	Submit Phase 7 EEM report to Environment and Climate Change Canada (ECCC) in June 2023.	**Completed and Ongoing** Submitted the Phase 7 EEM report to ECCC in June 2023.	No further plans for 2024-25 (the GMRP anticipates receiving Closed Mine Status in fall 2024 from ECCC).
	Carry out monitoring in accordance with the AEMP Design Plan.	**Completed** Conducted monitoring in accordance with the AEMP Design Plan.	Continue monitoring in accordance with the AEMP Design Plan. Submit the AEMP Re-evaluation and Yellowknife Bay Baseline Report in summer/fall 2024. Submit the AEMP Design Plan focussed on Yellowknife Bay to the MVLWB.
	Submit Annual Reports, as per water licence requirements (on a calendar year).	**Completed** Submitted the 2022 Annual Water Licence Report and the 2022 AEMP Annual Report to the MVLWB in April 2023.	Submit Annual Reports, as per water licence requirements (on a calendar year).
Land [Section 6.4]	Continue managing waste in accordance with the Waste Management and Monitoring Plan.	**Ongoing** Continued to manage wastes on site in accordance with the Waste Management and Monitoring Plan.	Continue managing waste in accordance with the Waste Management and Monitoring Plan.
	Commission and operate the Non-Hazardous Waste Landfill. Continue operations of the Waste Transfer Station for operational waste.	**Ongoing** Commissioned the Non-Hazardous Waste Landfill. The Non-Hazardous Waste Landfill received waste for the duration of the 2023 construction season. Continued to manage operational waste using the Waste Transfer Station.	Continue to accept waste at the Non-Hazardous Waste Landfill. Continue operations of the Waste Transfer Station for operational waste.
	Submit a revised Wildlife and Wildlife Habitat Management and Monitoring Plan to the MVLWB for information in 2023/2024.	**Ongoing** Continued to implement the existing Wildlife and Wildlife Habitat Management and Monitoring Plan on site.	Update the Wildlife and Wildlife Habitat Management and Monitoring Plan in 2024/25.
	Continue to log and report wildlife sightings and interactions including the bird survey.	**Ongoing** Continued to log and report wildlife sightings and interactions including the bird survey.	Continue to log and report wildlife sightings and interactions including the bird survey.

ENVIRONMENT			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Climate Change [Section 6.5]	N/A	**Ongoing** Continued to monitor and track GHG emissions from the site. Completed AR6 climate projections with 2023 regional data. Compared to AR5 and integrated existing climate change considerations into the design. Engaged with the Giant Mine Working Group on climate change projections and design.	Continue to monitor and track GHG emissions from the site. Engage with the Giant Mine Working Group on the review of AR6 projections and comparison to the current design assumptions based on AR5 projections. Continue to evaluate climate change considerations and GHG emission reductions and mitigative actions where relevant. Initiate the development of a framework for a GHG Reduction and Innovation Plan.



HEALTH AND SAFETY			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Occupational Health & Safety [Section 7.1]	Continue to track and report on occupational health and safety through tracking of training and incidents.	**Ongoing** Continued to track and report on occupational health and safety incidents and training.	Continue to track and report on occupational health and safety through tracking of training and incidents.
Public Health and Safety [Section 7.2]	Yellowknife Health Effects Monitoring Program (YKHEMP) initiate the five-year follow up study for children and youth in Spring 2023 for biological metal sampling in residents.	**Completed** Completed the five-year follow up study for children and youth June 2023.	N/A



COMMUNITY			
Component	**Plans for 2023-24**	**Progress in 2023-24**	**Plans for 2024-25**
Engagement [Section 8.1]	Continue engagement on the Management and Monitoring Plans and Design Plans and relevant closure criteria for various site requirements. Continue engagement with the Aquatic Advisory Committee, with a focus on the AEMP and the *Fisheries Act* Authorization. Engage with the YKDFN broader community on borrow areas and plans for blasting, and aquatics including the *Fisheries Act* Authorization. Develop an internal project revegetation task force to determine the next steps for engagement on revegetation. Revise the scope of work for the Perpetual Care Plan based on feedback received from the Request for Information. Issue the Request for Proposal and award contract for Perpetual Care Plan work and begin work.	**Completed and Ongoing** Completed engagement with the YKDFN regarding borrow areas and plans for blasting, in January 2023. Held a Site tour of specific borrow areas with select members from the YKDFN in Fall 2023. Engaged with the Aquatic Advisory Committee in June 2023 on the AEMP reference area reconnaissance for the forthcoming AEMP Design Plan focussed on Yellowknife Bay. Developed an internal project revegetation task force. Issued the Request for Proposals for the Perpetual Care Plan work April 2023. Revised the scope of work for the Perpetual Care Plan. Completed and shared the Acute Health Risk Assessment on September 23, 2023.	Engage the Aquatic Advisory Committee on the AEMP Re-evaluation and Yellowknife Bay Baseline report and the AEMP Design Plan focussed on Yellowknife Bay. Draft and Implement Revegetation Engagement Strategy. Award Perpetual Care Plan contract and begin work.
Socio-economic (Procurement, Employment and Training) [Section 8.2]	Continue to track employment, procurement, and training statistics.	**Ongoing** Continued to track suppliers, employment, and workforce training on a quarterly and annual basis.	Continue to track employment, procurement and training statistics.
	Continue to work with the Socio-Economic Working Group (SEWG) and Socio-Economic Advisory Body (SEAB) to advance and adjust actions identified within the Socio-Economic Implementation Plan.	**Completed** Met with the SEWG. Did not hold a SEAB meeting in the 2023-2024 fiscal year.	Continue to work with the SEWG and SEAB to advance implementation of the Socio-Economic Implementation Plan.
	Begin development of the online performance tracking and reporting tool.	**Ongoing** Began development of the online performance tracking and reporting tool.	Continue the development of the online performance tracking and reporting tool. that is scheduled to roll out in 2025-26.
	Parsons to hold Industry Day in the fall of 2023.	**Completed** Parsons held an in-person Industry Day between December 5 – 6, 2023, in Yellowknife.	Parsons to hold Industry Day in November 2024.

1.0 PROJECT OVERVIEW

The GMRP is more than a major construction project. The GMRP works to minimize health, safety, and environmental risks at the site, reduce Canada's liability associated with the contamination, and renew the relationship between Canada and the Indigenous people affected by the legacy of the mine.

OVERALL GOALS OF THE GMRP

- Minimize public and worker health and safety risks.
- Minimize the release of contaminants from the site to the surrounding environment.
- Remediate the site in a manner that instills public confidence.
- Implement an approach that is cost effective and robust over the long term.

Successful remediation of the Giant Mine will yield the following outcomes:

- Safeguard the health and safety of Northerners;
- Protection of water, soils, flora and fauna at, and adjacent to, the Giant Mine site;
- Reduction of the federal liability associated with the site by using industry best practices for remediation in a cost-effective manner;
- Improved relationships with local Indigenous groups;
- Demonstration of federal commitment, which illustrates how economic development can be carried out without adversely affecting the environment;
- Demonstration of federal leadership in complying with all applicable environmental Acts, Regulations, and standards;
- Demonstration of the government of Canada commitment to implement the United Nations declaration on the rights of Indigenous peoples and to work in partnership with Indigenous peoples to advance their rights and to create more economic opportunity and a higher quality of life in the north of Canada, by using public investments to spur economic growth and job creation for northern and indigenous peoples and businesses;
- Demonstration of the support of self-determination, improving service delivery, advancing reconciliation and the renewed relationship between Canada and indigenous peoples based on recognition, rights, respect, co-operation, and partnership;
- Strengthened local remediation capacity and transferable skills through support to Indigenous and local capacity development programs, provision of Project Information to training providers, and delivery of Project related training;
- Maximization of Indigenous and Northern participation through supportive Northern Indigenous procurement processes, proactive communication of opportunities, and collaboration; and,
- Ensure that the voices of Rights holders are heard, through ongoing engagement, incorporation of traditional knowledge into the Project, and collaborative input into decision making with other stakeholders/affected parties and the GMRP team.

PHASES OF THE GMRP

The past, current, and planned activities of the GMRP are illustrated in Figure 1 below. The Project has transitioned into the remediation phase, which was extended to 2038 (from an original end date of 2030) in response to logistical as well as Rights holder and stakeholder considerations.

Figure 1: GMRP Timeline

GOVERNANCE OF THE GMRP

The GMRP is jointly managed through a Cooperation Agreement between the Government of Canada and the Government of the Northwest Territories (GNWT). The GMRP Team consists of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and the Government of the Northwest Territories – Environment and Climate Change (GNWT-ECC) acting as co-proponents with respect to the Environmental Assessment and other regulatory considerations. Public Services and Procurement Canada (PSPC) provides contracting services, contract management, and technical support services to CIRNAC. PSPC awarded the Main Construction Manager (MCM) contract to Parsons Incorporated. The MCM is responsible for care and maintenance and emerging risks on site and managing and implementing the Project Implementation Plan for full remediation.

While CIRNAC is ultimately accountable, a joint CIRNAC – PSPC project governance structure provides oversight, direction, and advisory services to the Project team. The governance and management of the GMRP is also supported by external, independent, and technical reviews provided by multiple groups, such as GMOB, which was formed in 2015. Figure 2 shows the governance structure of the GMRP.

OTHER GOVERNANCE BODIES

Other governance bodies that provide advice and/or inputs to the GMRP on all topics include:

- Deputy Ministers Committee (Deputy Ministers of PSPC and CIRNAC)
- Senior Project Advisory Committee (CIRNAC Assistant Deputy Minister Northern Affairs Organization; PSPC Assistant Deputy Minister Real Property; PSPC Assistant Deputy Minister Acquisitions; PSPC Regional Director General Western Region)
- Senior Project Committee (CIRNAC Director General NCSP; GNWT Assistant Deputy Minister Environment and Natural Resources)
- GMOB (CIRNAC, GNWT, YKDFN, NSMA, City of Yellowknife, Alternatives North)
- Giant Mine Working Group (CIRNAC, GNWT, NSMA, YKDFN, City of Yellowknife, Alternatives North, Environment and Climate Change Canada (ECCC), Department of Fisheries and Oceans Canada, Health Canada)
- Giant Mine Advisory Committee (YKDFN representatives)

Figure 2: Governance Structure of the GMRP

2.0 2023–2024 YEAR IN REVIEW

2.1 OVERVIEW

Remediation of the Giant Mine site commenced in July 2021, with the first full year (January to December) of remediation taking place in 2022.

Major accomplishments and activities from 2023-24 included:

- Received approval of the Water Treatment Plant (WTP) Design Plan and advanced construction of the WTP (Section 4.1);
- Finalized an internal Master Project Schedule;
- Completed deconstruction of the Townsite area (Section 3.4);
- Completed removal of some legacy debris piles (Section 3.5);
- Submitted Version 1.1 of the Tailings Design Plan to the MVLWB (Section 2.3); and
- Submitted the Borrow Design Plan (Section 4.5).

The Project also focused activities in these areas:

1. Ensured ongoing care and maintenance of the site (Section 5.1);
2. Undertook additional immediate risk mitigation activities (Sections 5.1.1 and Appendix C);
3. Undertook environmental monitoring studies (Section 6 and Appendix B); and,
4. Continued to implement the Socio-Economic Strategy (Section 8).

Engagement is a core component of the Project and is described in more detail in Section 8.1. In addition, the GMRP team maintained an active risk identification and management program (described in Appendix C).

WILDFIRE EVACUATIONS

The City of Yellowknife's wildfire evacuation order took place from August 18 until September 6, 2023. Prior to the order, the Project team had already suspended all on-site work to allow contractors to assist with wildfire suppression efforts and comply with City directives. Due to proactive risk planning, the Project team was able to close the site and have site personnel evacuate without issues. While the Project operations were suspended, the site was secured, with the gates closed, for the duration of the evacuation. All operations fully resumed the week of September 25, 2023. Additional fire safety measures are being developed and implemented for FY 2024-25.

In addition to suspending all work on site, the Project supported the region by lending the City of Yellowknife and the Government of the Northwest Territories equipment to help protect the City. This equipment included sprinklers, hoses, and water cannons, heavy equipment including a Caterpillar D8 bulldozer, as well as fuel for wildfire suppression equipment (Giant Mine Remediation Project, 2023b).

GMOB ARSENIC SAMPLE DRILLING EXTRACTION ACTIVITIES

As mandated by the Giant Mine Remediation Project Environmental Agreement, GMOB is overseeing research into emerging technologies toward finding a permanent solution for dealing with the arsenic trioxide dust. To support this research, the Project completed arsenic sample drilling activities to provide GMOB with research materials directly from the site.

The contract to undertake this work was awarded to Nahanni Construction Ltd. They extracted approximately 600 kilograms of arsenic trioxide dust from the underground chambers on site, using a sonic drill to complete the extraction through existing borehole locations above the underground chambers. Once extracted, the samples were stored in a Transportation of Dangerous Goods certified double containment system, transferred to the GMOB packaging container located onsite, and transferred to offsite labs (Giant Mine Remediation Project, 2023b).

For information about the arsenic sample drilling program and research, or for information about what steps will follow the extraction of the arsenic trioxide samples, please contact GMOB.

2.1.1. Project Implementation Plan

The Main Construction Manager, Parsons, produced the Project Implementation Plan for the GMRP in 2022. The Project Implementation Plan is the operational plan the Project will use for the duration of active remediation and includes the schedule and the sequencing of work packages for the implementation phase through to 2038.

The Project Implementation Plan outlines thirteen (13) major ongoing/upcoming projects as design work packages, which will be broken down further into approximately forty-three (43) individual construction work packages for procurement purposes. The thirteen design work packages are:

1. Tailings
2. Contaminated Surficial Materials
3. Water Treatment Plant
4. Baker Creek Realignment
5. Surface Water Management
6. Stabilization and Remediation of Underground
7. Demolition and Debris Removal
8. Open Pit Closures
9. Freeze
10. Openings to Surface
11. Non-Hazardous Waste Landfill
12. Borrow
13. Common Site Services

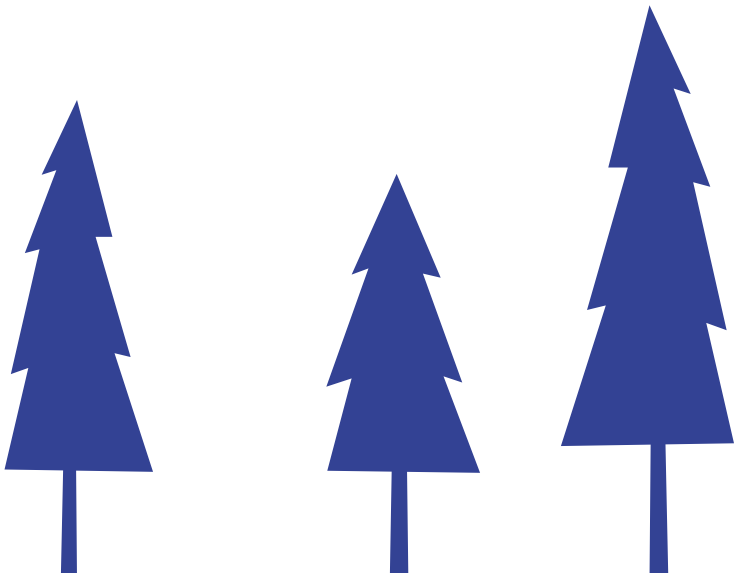
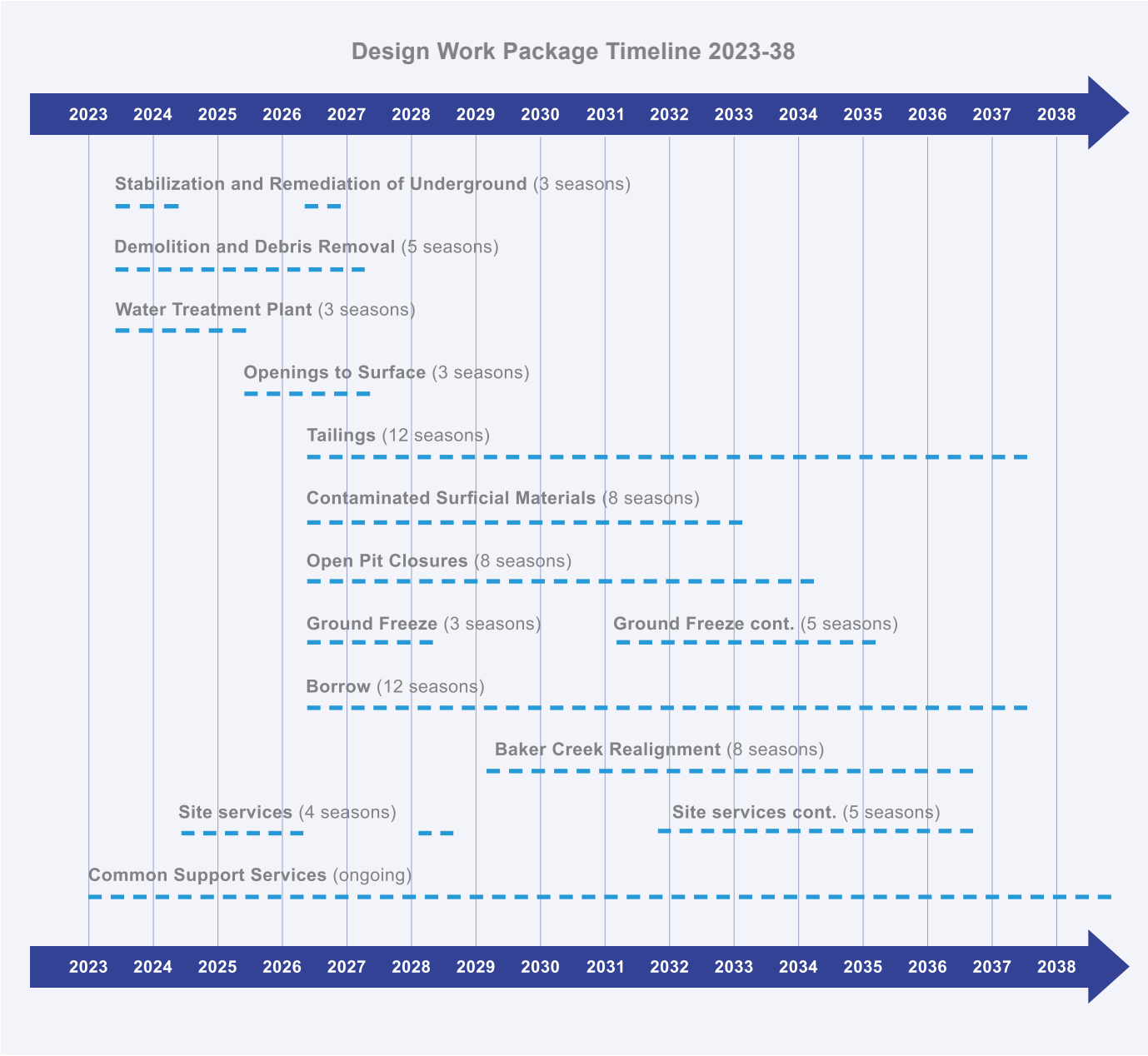


Figure 3, below, highlights the approximate schedule and duration of implementation of work packages with the labour resource estimates graph in the background.

Figure 3: Approximate Schedule and duration of Design Work Packages in the Project Implementation Plan



Note: *the timelines indicated above have not changed for 2023-24. Although, it is important to note that a new work package (Earthworks Remediation) has been developed that consists of Tailings, Contaminated Soils, and Open Pits and will be tendered as one work package. Further schedule reviews are expected for the Earthworks Remediation package.*

2.2. PROGRESS ON ENVIRONMENTAL ASSESSMENT MEASURES

The *Report of Environmental Assessment and Reasons for Decision* (Mackenzie Valley Review Board, 2013) listed 26 Measures that must be addressed, as well as 16 suggestions that may be implemented at the GMRP team's discretion. The Team's focus has been to address the Measures with set timelines, and those with the biggest impact on the Project scope. Table 1 provides a brief summary of progress, while Appendix D provides a complete summary of progress against all Environmental Assessment Measures and Suggestions **in 2023-24**, as well as plans for the 2024-25 year.

Table 1: Status of Environmental Assessment Measures and Suggestions (as of March 2024)[3]

STATUS	MEASURES	SUGGESTIONS
Completed	3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 18, 19, 22, 23	8, 13, 15
Underway	9, 17, 20, 21, 25, 26	1, 2, 3, 9, 10, 11, 12, 14, 16
Future Action Required	2, 24	
No Action Required / Outside Scope of Project	1	4, 5, 6, 7

In 2023-24, the Project focused on progressing the following measures:

- **Measure 9:** In June 2023, the Health Effects Monitoring Program Advisory Committee completed the five-year follow up resampling and sampling of new groups of arsenic and other metals for children and youth aged 3-19. The results of the 5-year follow-up will be available in 2024.
- **Measure 23: In 2023-24**, the Project team completed the engagement process and submission of version 2.1 of the Tailings Management and Monitoring Plan to the MVLWB.
- **Measure 26: In 2023-24**, the Perpetual Care Plan Advisory Task Force developed and released a Request for Information and subsequent Request for Proposal for the Perpetual Care Plan. The contract for the Perpetual Care Plan work will be awarded in 2024.

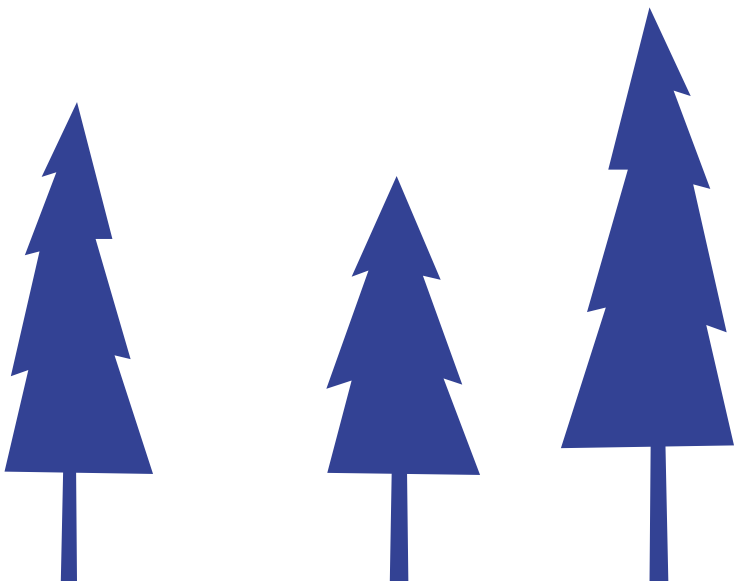
[3] Measure 10: In June 2022, the Yellowknives Dene First Nation advised the GMRP they were withdrawing from the Stress Study. In September, the Project team met with the remaining members of the study's advisory committee to seek advice with respect to how to proceed. After careful deliberation, the committee unanimously decided to advise the Project team it should no longer proceed with the study. As such, the Project team has made the difficult decision to discontinue the Stress Study.

PERPETUAL CARE PLAN

As part of the GMRP Environmental Agreement, the GMRP is required to develop a Perpetual Care Plan that must address improvements in post-closure considerations for records management, communication with future generations, long-term access to funds for the Project, and analysis of different possible scenarios that might affect the perpetual care of the Project. In 2019, the GMRP conducted an initial desktop study to review the work that has been done to date on topics related to the perpetual care of the Giant Mine site. Following the completion of this study, the GMRP retained a consultant to conduct a series of independent interviews with representatives of the signatories to the Environmental Agreement to better understand perpetual care needs at the Giant Mine site. The results of the desktop study and independent interviews informed the development of a draft preliminary framework for the Giant Mine Perpetual Care Plan.

During the 2020-21 fiscal year, the Perpetual Care Plan Advisory Task Force (formed with members of the signatories of the Environmental Agreement) further refined the framework and established key assumptions for the Perpetual Care Plan. In November 2020, the GMRP submitted the preliminary framework to the Giant Mine Oversight Board.

In 2022-23, the Perpetual Care Plan Advisory Task Force supported the development of a statement of work for a Request for Information and a subsequent Request for Proposal to retain a consultant to support the next phase of work on version 1 of the Perpetual Care Plan. In June 2023, PSPC released a request for information to receive input on the statement of work, and in January 2024, PSPC released the subsequent Request for Proposal to tender. The contract is scheduled to be awarded in 2024.



3.0 ADVANCEMENT OF REMEDIATION ACTIVITIES

3.1. FREEZE

The GMRP remediation includes freezing the chambers and stopes that contain the arsenic trioxide dust. The Project team will also freeze part of the B1 pit, as it will contain some arsenic-impacted materials. The frozen zone established around these areas will be maintained at a minimum of -5°C throughout the year. The Project team will monitor temperatures to make sure the areas remain frozen (CIRNAC, 2022a).

In 2022-23, the Project team completed the AR1 freeze pad installation, requiring the removal of nearly 65,000m^3 of rock and the placement of approximately 12,000m^3 of aggregate to complete the pad. This pad will provide a level surface where thermosyphons can be installed as part of the overall freeze program and serve as the base for over 200 thermosyphons, which will freeze four of the arsenic chambers. Thermosyphons will maintain the temperature of the ground below the freeze pad and enhance the cooling process by providing a means of natural convection to circulate through the freeze pad (CIRNAC, 2022a).

In 2023-24, the Project team further prepared for the implementation of the freeze program by collecting data and conducting visual inspections throughout the B1 Pit Area, including above the arsenic stopes in the arsenic bulkhead areas (WSP, 2023). In addition, the Project team conducted Dam 1 Thermal Stabilization monitoring to compare field data with model projections. Due to the wildfire evacuation in Yellowknife in August and September 2023, there was no field data collected for several weeks (AECOM, 2024). However, there was still adequate information collected for the purpose of completing the comparison.

No major concerns were identified during the 2023-24 inspections or review of the monitoring data. There was no evidence of any pressure loss in any thermosyphons; however, inspectors recommended that regular inspections of the thermosyphons take place to look for evidence of paint peeling, erosion around the pipes where they enter the ground, or any bending or tilting of the thermosyphons.

Next steps:

- Continue design for the thermosyphons for AR1;
- Continue design for the freeze pads and thermosyphons for AR2, AR3, and AR4;
- Continue quarterly monitoring of the B1 pit in the 2024-25 fiscal year; and
- Continue to conduct periodic maintenance inspections of the thermosyphons for Dam 1.

3.2. NON-HAZARDOUS WASTE LANDFILL CONSTRUCTION

Under the Project's Closure and Reclamation Plan, the Project planned to develop a Non-Hazardous Waste Landfill to contain non-hazardous legacy wastes produced on site during remediation. In 2021-22, the Project received approval from the MVLWB for the Non-Hazardous Waste Landfill Design Plan and updated Waste Management and Monitoring Plan. Construction of the Non-Hazardous Waste Landfill began in summer 2021 (CIRNAC, 2022b).

In 2022-23, the Non-Hazardous Waste Landfill began receiving waste from the townsite demolition, including asbestos waste that has been double-bagged following proper disposal protocols (CIRNAC, 2022b). In 2023, the Project team completed Phase 1 construction of the Non-Hazardous Waste Landfill, and the landfill received waste throughout the 2023 construction season (Spring-Fall).

Next steps:

- Continue waste placement operations at the Non-Hazardous Waste Landfill during the 2024-25 construction season in accordance with the Waste Management and Monitoring Plan.

3.3. UNDERGROUND BACKFILL

An important element of the Giant Mine Closure and Reclamation Plan includes stabilizing stopes and other voids, which are underground areas that were excavated during mining operations as ore and rock material was removed. As part of the GMRP's ongoing risk management process, the GMRP team identified underground areas that required immediate action to reduce risks to staff, the public, and the environment. Underground stabilization work started in 2013.

The Project's paste backfill program has involved both underground and surface work. The underground work included the construction of barricades to contain the paste in the required areas and the installation of monitoring cameras to monitor the placement of the paste. Surface work involved drilling holes for paste fill delivery and monitoring. A paste plant produces the paste, which is a mixture of tailings, sand, cement, and water.

In 2023-24, the underground paste backfilling continued to take place over the construction season, as per the Underground Stabilization Design. The subcontractor completed 80% of the planned backfilling volume for the 2023-24 season before ceasing operations due to wildfire evacuations. Additional progress included ice melting and ground support at the A1 decline and connecting ramp between A1 and A2, establishing safe access through the A2 pit portal to A1, and advancing the removal of hazardous materials from the north end of the mine. Backfilling will resume in Spring 2024 and is expected to be completed at the end of the 2024 work season.

FINAL EXIT OF THE UNDERGROUND

Exiting and closure of the underground mine is scheduled for January 2025. The Project team will develop an approach to close off the underground mine's access ramps before completing the work of closing the remaining openings to surface with connections to the underground, such as boreholes, raises, and shafts.

Next steps:

- Complete the A2 electrical installation required for ice melting at A2;
- Complete the ice melting and ground support installations at A2 required for Remainder Works Mine Stabilization;
- Complete the Phase 2 hazardous materials removal from remaining areas of central, north, and south sections of the mine;
- Exit the underground mine upon completion of mine stabilization and hazardous materials removal activities in early 2025;
- Complete the removal of hazardous materials from the North end of the mine;
- Remove Dynalene antifreeze from the Freeze Optimization Study (FOS) infrastructure; and,
- Continue underground stabilization in 2024 with anticipated completion of the program in 2024-25. This will include construction of barricades, installation of monitoring cameras and filling of select underground voids with paste backfill.

3.4. TOWNSITE DECONSTRUCTION

The Townsite was originally constructed to provide accommodation for workers and their families during the operational life of the Giant Mine. As part of the ongoing efforts to address concerns about potential adverse impacts to public health associated with the presence of hazardous materials, including asbestos, the Project conducted a comprehensive decontamination and deconstruction project. This project involved the systematic abatement of hazardous materials and the safe demolition of all structures within the Townsite.

In 2022-23, the Project removed and took off-site for disposal hazardous materials, such as fire suppression chemicals and used oils. Abatement and demolition of structures present on the Townsite and surrounding area also progressed. **In 2023-24**, the Project team removed the remainder of the buildings in the Townsite Area. All materials containing asbestos and other non-recyclable building materials were sent to the onsite Non-Hazardous Waste Landfill or offsite disposal for proper handling.

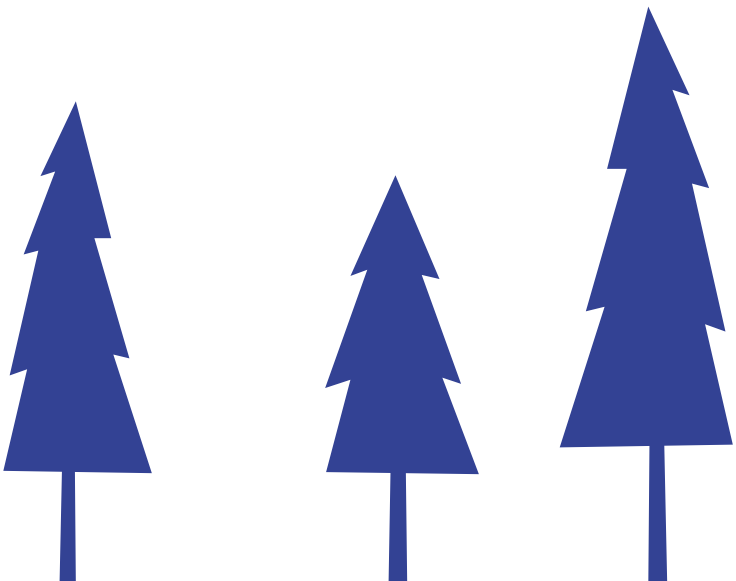
This activity is now complete.

3.5. LEGACY DEBRIS PILES

In 2023-24, the Project team started the removal of legacy debris piles on site. This removal included the segregation of recyclable items. Several working assets are currently stored in debris piles and will be gifted or sold. Currently, all debris processed is either recycled for metals at off-site scrap yards, sent to the onsite non-hazardous waste landfill, or sent to off-site hazardous material processing facilities. The removal of legacy debris piles is ongoing and will be completed in the fall of 2024.

Next Steps:

- Complete the removal of legacy debris piles on site.



4.0 ADVANCEMENT OF REMEDIATION DESIGN & PREPARATION

4.1. WATER TREATMENT PROJECTS

4.1.1. Water Treatment Plant (WTP)

Management of contaminated water within the site boundary is a key activity to reduce its impact on the environment. Over the past several years, the Project has explored Effluent Treatment Plant (ETP) upgrade options, finalized the preliminary design for the new WTP, completed a siting assessment of the new WTP, and updated the three-dimensional groundwater model to provide predictions for potential future conditions in the Water Licence period from 2020 to 2040 (AECOM Canada Ltd., 2019b; AECOM Canada Ltd., 2019c; AECOM Canada Ltd., 2019d; AECOM Canada Ltd., 2020b; Golder Associates Ltd., 2020d).

In 2022-23, the Project team developed the WTP work package and completed and submitted the Design Plan to the MVLWB. The MVLWB directed the Project team to revise the Design Plan prior to approval, which was received in May 2023. In November 2022, the Project released the WTP Request for Proposal to four pre-qualified bidders.

In 2023-24, the WTP construction work package was awarded to AECON Water Infrastructure Inc.

In late June 2023, construction activities for the WTP commenced; These activities consisted of grubbing, contaminated soil removal, blasting, rock crushing, well drilling and other various civil construction activities. Construction completion is anticipated in Spring 2026. The WTP is expected to treat contaminated water, with arsenic levels and all other parameters treated to adhere to GMRP's Type A Water Licence effluent quality criteria.

Next steps:

- Continue construction of the WTP throughout the entirety of 2024-25, including:
  - Complete building foundations and erect both WTP and Biomass building structures;
  - Complete contaminated soils and fill removal within the WTP project area;
  - Complete rock removal via blasting; and,
  - Complete WTP outfall construction both on land and in water.

4.1.2. Site-Specific Passive Treatment System

The GMRP team assessed the feasibility of treating contaminants via wetlands or other applicable passive and semi-passive surface water treatment technologies under a Research and Reclamation Plan. This plan is appended to the Closure and Reclamation Plan and outlines the research undertaken to date on engineered wetlands. In 2019-20, the GMRP completed an off-site pilot-scale Passive Treatment System study to inform full-scale system design (Contango, 2019). The study concluded that removal of arsenic from water of similar composition to that at the site is possible through passive or semi-passive wetland applications. All parameters of potential concern exhibited some treatment. The study also identified potential risks for arsenic treatment, to be further assessed and addressed. The GMRP team analyzed the results from the pilot-scale testing (i.e., Phase 3) to determine possible locations and

requirements for the maintenance of the treatment structure (Giant Mine Remediation Project, 2021a).

In 2023-24, the Project team conducted additional analysis to develop/support the rationale for whether to proceed with wetland treatment, including an analysis of operational considerations such as costs and monitoring/maintenance requirements. The Project team worked on a Wetland Review Research and Reclamation Memo to be included as an appendix to the Baker Creek Design Plan submission to the MVLWB in 2024/25. The Memo will include background information and results of the additional analysis, as well as information regarding other operational considerations including monitoring/maintenance requirements to support the Project teams' decision-making process on wetland treatment.

Next Steps:

- Submit Wetland Reclamation and Research Plan Memo as an appendix to the Baker Creek Design Plan to the MVLWB (2024/25).

4.2. WASTE DISPOSAL AND MANAGEMENT

4.2.1. Remedial Strategy for Contaminated Soil and Sediment

The GMRP team has continued refining strategies for managing contaminated soil and sediment at the site. Over the years this work has involved:

- An options analysis workshop (2017);
- The selection of preferred remedial/risk management options for areas of deep contaminated materials based on (i) technical feasibility, (ii) project objectives, and (iii) long-term performance; and,
- The production of a report on a closure option for pond-water impacted areas downstream of Dam 3 (Golder Associates Ltd., 2019a; Golder Associates Ltd., 2019b; AECOM Canada Ltd., 2020a; Giant Mine Remediation Project, 2021a).

In 2023-24, the Project team continued the detailed design for contaminated soils and design for highly arsenic-contaminated waste removal (including the B1 area), soil washing, and Chamber 15 backfill. No new studies on B1 were conducted during this period.

Next steps:

- Continue the detailed design for contaminated soils and for highly arsenic-contaminated waste removal, soil washing, and Chamber 15 backfill;
- Submit Design Plan for soils to the MVLWB; and,
- Engage the YKDFN - Giant Mine Advisory Committee on the Dam 3 Reclamation Research Plan.

4.3. TAILING CONTAINMENT AREAS

Over the operating life of the mine, most tailings were deposited into four Tailing Containment Areas (Northwest, North, Central and South). The Project team developed a Tailings Management and Monitoring Plan to outline the approach for managing these areas post-closure (Giant Mine Remediation Project, 2019b). This plan was informed by design plans confirmed through investigative drilling and is supported by the annually reviewed and updated Operations, Maintenance, and Surveillance (OMS) Manual (Golder Associates Ltd., 2019d) (CIRNAC, 2019b).

In 2022-23, the Project team submitted the Tailings Management and Monitoring Plan and the Tailings Design Plan to the MVLWB. The scope of design included the Foreshore Tailings and Nearshore Sediment Area covers, as well as post-closure dams.

In 2023-24, the team continued detailed design work, and received approval from the MVLWB for the Tailings Management and Monitoring Plan (v.2.1) and the Tailings Design Plan (v.1.1). Given the strong linkages and sequencing required, some of the Tailings Containment Areas will be remediated under a new work package named the Earthworks Remediation Work Package, which will include contaminated soils remediation and the A1, A2, B2, and B3 open pits remediation.

Next steps:

- Progress the Contaminated Soils and Sediment Design Plan for submission to the MVLWB;
- Begin remediation as per the Earthworks Remediation Work Package in 2026/27;
- Continue monthly elevation measurements of water in the Tailings Containment Areas; and,
- Begin detailed design for foreshore/nearshore tailings remediation.

4.4. OPEN PIT CLOSURE

There are eight open pits on the Giant Mine site. These open pits pose potential safety risks to workers and the public and risks to the environment from future flooding in Baker Creek and the subsequent potential flow into the pits. Floods may also compromise underground stability. To address this risk, the Project has decided to fill the pits. To support this work, the Project conducted studies to identify potential options and suitable on-site material for pit fill with some recommendations for additional investigations (sampling, testing, and modeling) for consideration (AECOM Canada Ltd., 2019a; Giant Mine Remediation Project, 2020; Golder Associates Ltd., 2019c; Golder Associates Ltd., 2020a; Golder Associates Ltd., 2020b; Golder Associates Ltd., 2020c).

In 2023-24, the Project team completed drilling and sampling of the C1 pit fill in the fall of 2023 as well as the field program and characterization of overburden around the pits. Additionally, the team finalized the assessment of water drainage within pits that are planned to receive contaminated granular fill. This information will inform the detailed design.

Next steps:

- Complete analysis of the C1 pit fill to inform detailed design for C1 pit; Progress detailed design for the closure of pits; and,
- Submit the Open Pits Design Plan to the MVLWB in 2024.

4.5. OTHER DESIGN WORKS

Site Infrastructure Design Plan

In 2022-23, the Project team received approval from the MVLWB for the Site Infrastructure Design Plan – Part 1. The Project team commenced Part 2 of the Site Infrastructure Design Plan and plans to submit to the MVLWB in 2025.

Geotechnical Investigations

In 2023-24, the Project team scoped and progressed the geotechnical investigation to support Baker Creek design.

Borrow Materials and Explosives Management and Monitoring Plan

The Project received approval from MVLWB in 2022-23 on the borrow geochemical acceptance criteria through the Borrow Materials and Explosives Management and Monitoring Plan. These criteria define the quality of rock used on site for borrow. Approval of criteria is the culmination of more than three years of work, including lab testing and modelling. The Project Team submitted the Borrow Design Plan to the MVLWB in March 2024.

Next Steps:

- Submit Part 2 of the Site Infrastructure Design Plan in 2025;
- Continue detailed design for site communications infrastructure;
- Continue detailed design for the demolition of buildings outside the townsite and Core Industrial Area;
- Finalize and complete the geotechnical investigation;
- Complete phase 1 of the power line Implementation and begin detailed design of phase 2 for the power line implementation;
- Complete site-wide investigative drilling program;
- Progress the implementation for the closure of four openings to surface; C-Ore, 2-12, 2-33, and 2-34, which are all located in the Core Industrial Area. Three of these openings were used primarily to bring arsenic dust to the underground chambers, while C-Ore was used for ore processing; and,
- Continue detailed design for the closure of other openings to surface.

5.0 OPERATIONAL SUMMARY

5.1. CARE AND MAINTENANCE (C&M)

Ongoing care and maintenance at the Giant Mine site is critical to ensure current hazards at the site are managed to prevent harm to staff, surrounding communities, and the environment, to maintain compliance with the Water Licence and other regulatory requirements. **In 2023-24**, the Project continued care and maintenance activities to keep the site stable and safe during remediation.

Completed / progressed activities in 2023/24:

- Conducted ongoing air quality monitoring, dust management, road and site infrastructure maintenance and the provision of site security;
- Conducted regular ramp maintenance, pump checks, and refuge station checks;
- Conducted surveying of well casing, down hole piping, and installation procedures;
- Procured and installed the spare pump for Northwest Pumping System;
- Installed a new regulator in the B-shaft heating system and to address high NO2 levels; no further issues observed;
- Prepared for the 2024 spring freshet (managing potential flooding and ensuring infrastructure can handle increased water flow); treated water and discharged treated effluent into Baker Pond;
- Maintained the underground travel ways, including repairing existing chutes and head covers to reduce hazards to workers. These travel ways lead to the future construction areas that will contain the paste backfill in openings leading into the slopes;
- Completed installation of A1 stench warning system;
- Completed the 2023 annual geotechnical inspection (dams) and submitted the report to MVLWB;
- Conducted ongoing monitoring of all dams and continued work, as in when required, to maintain dams in accordance with the OMS;
- Completed repairs to the underground communication system, which provides radio and wireless communication underground; and,
- Progressed the removal of hazardous materials from the North end of the mine.

Next Steps / Ongoing Activities:

- Continue care and maintenance in accordance with contract, regulatory requirements (e.g., Water Licence conditions) and site conditions, including:
  - conducting ongoing monitoring and sampling of air quality;
  - conducting dust management activities;
  - treating water and discharging treated effluent into Baker Pond;
  - preparing for 2025 and 2026 spring freshets;
  - maintaining site infrastructure and roads;
  - providing fulltime on-site emergency medical services, and site security activities including new signage and security fencing upgrades; and,
  - conducting underground care and maintenance activities with sumps, pumps, ventilation, and refuge chambers.

- Continue work on improvements to the stench gas emergency warning system and replacement of the propane mine air heater burner;
- Extend A2 ramp system;
- Decommission B Shaft mine air heating plan upon exiting the mine;
- Continue Waste Transfer Station operations[5];
- Conduct ongoing monitoring of the dams (as instructed through annual geotechnical inspections or dam safety reviews) and the water elevations at the original Tailings Containment Areas and Baker Creek;
- Conduct the 2024 annual geotechnical inspection (dams) and submit the report to the MVLWB;
- Continue work (as and when required) to maintain and conduct ongoing monitoring of all dams on site in accordance with the OMS Manual;
- Investigate and remove Dam 2 decant structure; and,
- Continue weekly monitoring of beaver activity, ponding, ice dam development, and potential for surface water flooding at Baker Creek and Trapper Creek.

5.1.1.1.Geotechnical Inspection of Dams

At the Giant Mine site, dams are used for mine water management, surface water management, and tailings solids retention. Dams are inspected annually to assess water level restrictions and geotechnical integrity to comply with the Canadian Dam Association Guidelines.

The Project team continued ongoing maintenance and monitoring of the dam areas (Golder Associates Ltd, 2022a). The recommendations from those geotechnical inspections are either completed, ongoing, or have been part of the ongoing operation, maintenance, and surveillance activities of the site.

In 2023-24, the geotechnical inspection of dams and dykes included all dams associated with the Tailings Containment Areas, and other dams and structures, including B2 Dam, DWC Dam, C1 Clay Borrow Dam, M&M Dam, and Mill Pond Structure. The Project team submitted the geotechnical inspection report to the MVLWB as required by the water licence.

In general, the inspected structures appeared to be performing as designed. At the time of the 2023 inspection, the general condition of the dams appeared to be similar to that observed during the last inspection done in 2022. The 2023 inspection found surface erosion features and rutting on dam crests that were not yet addressed from the 2022 inspection. Many of the observed erosion features recorded in the 2023 inspection do not currently constitute a hazard to the integrity of the structures but do pose geotechnical concerns and will require remedial action if they continue to spread.

Also noted in the 2023 inspection findings was the presence of vegetation that continued to grow on dam crests and slopes in some dam locations. This finding is similar to previous findings from the 2022 inspection. The inspection recommended that the Project remove rejected/unused materials from the dam structure to support with the removal of vegetation.

As part of the Canadian Dam Association Guidelines, tailings facility dams are to be reviewed for safety reasons on a recurring basis. The frequency of these reviews is based on the classification of each dam. Some dams on site require a maximum of 5-year period before another review is required. The previous Dam Safety review was completed in 2019 which indicates that during the 2024-25 season another review will be required.

[5]The Giant Mine Waste Transfer Station is used for the temporary storage of non-mineral, non-hazardous, non-legacy operational waste prior to off-site disposal. The facility accepts project-generated operational waste from the active remediation works. Wastes include food wastes, administrative wastes, uncontaminated wood, plastics, waste building construction materials, steel waste, packaging, containers, totes, non-contaminated PPE, and empty containers used to transport water treatment reagents and media. Animal carcasses may also need to be managed.

Next Steps:

- Continue to inspect and maintain the dam and dyke structures and implement remedial action in the future if the erosion continues;
- Continue to assess storage capacity and hazard levels of the Mill Pond;
- Conduct the 2024 Annual Geotechnical Inspection (dams) and submit the report to the MVLWB;
- Continue to implement dam safety recommendations on site where possible to reduce risks to dams and include updates in the OMS manual;
- Continue work towards removing all unused/ rejected materials from the dam structures to support with the removal of vegetation; and,
- Conduct and complete the 2024 Dam Safety Review.

5.1.2. Immediate Risk Mitigation

5.1.2.1.Infrastructure Review

The GMRP conducts structural reviews of buildings at the Giant Mine site to assess risks and determine whether immediate action is required to mitigate those risks. Structural reviews occurred in 2019 and 2021. The Project has implemented the recommendations from these reviews.

In May 2023, an infrastructure assessment of the Core Area was conducted. The purpose of the assessment was to identify types of structural defects, signs of structural distress and deformation, and signs of material deterioration within the eight buildings in the Core Area. Findings included:

- **1 building categorized as "Green"** – the structural element has not been noticeably damaged and is expected to last for at least 10 years.
- **5 buildings categorized as "Yellow"** – the structural element has been affected but is expected to last for 5 years before being re-categorized as 'Red'.
- **2 buildings categorized as "Red"** - the structural element has been significantly affected. The structural system is not in imminent danger but is likely to deteriorate and is expected to last for no more than 5 years before being re-categorized as 'Black'.
- **No buildings categorized as "Black"** – the structural element has been significantly affected and one or more structural element has deteriorated to the point where failure is possible and likely (AECOM, 2023).

5.1.2.2.Maintaining the Mine Water Pool

In 2017, the Project team completed pumping station upgrades using two deep well submersible pumps located near the Northwest shaft (AECOM Canada Ltd., 2017). In 2019-20, the new deep well pump station came into operation and was used to pump mine water during freshet. The new pumping system, the Northwest Pumping System, consists of two submersible pumps installed in steel-cased boreholes drilled from the surface into the mine pool. One pump stopped operating after a brown-out situation in August 2019. In 2020-21, the Project team investigated the system to understand how the issue emerged and re-installed the pump, which then worked as designed. The pump stopped operating again following a power outage on August 20th, 2022.

In 2022-23, the Project team conducted an additional system-wide review, to understand how the issue emerged. The review was conducted and completed by third-party experts. Additional surveying of well casing, down hole piping, and installation procedures was conducted **in 2023-24** along with installation of the redundant pumping system back into mine pool near the end of 2023-24 or as weather permits.

In 2023-24, The Project team has initiated an additional inspection, from the same expert, for the WTP pumping system design to ensure there are no flaws to this system. The investigation of the WTP pumping station design is expected to be completed in 2024-25.

Key activities in 2023-24 for maintaining the mine pool included:

- Maintenance and operation of the pumping system; and
- Procurement of the spare pump for the Northwest Pumping System.

Next Steps:

- Complete inspection and review report for the WTP pumping system design.

5.2. INSPECTIONS AND AUDITS IN 2023–24

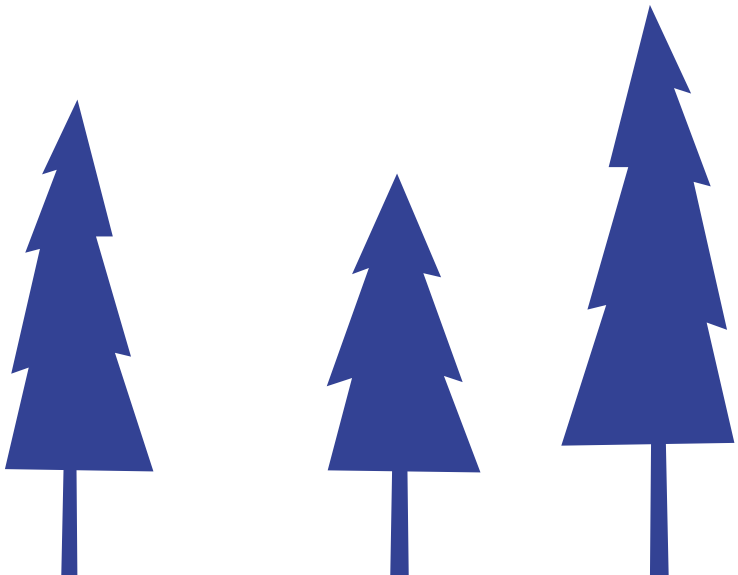
The number of external inspections per year is determined by the Inspectors (e.g., land use inspector), based on a variety of factors including the nature of work being undertaken at the site. The following number of inspections have been conducted at the site since 2021-22:

YEAR	INSPECTIONS
2020-21	6
2021-22	13
2022-23	4
2023-24	3

In 2023-24, the external inspections consisted of general inspections of Site activities, including waste storage locations, drilling locations, water treatment plant construction, and effluent treatment and discharge. Two of the inspections found all inspection items and locations acceptable. A third inspection found inspection items and locations acceptable except for a delay in reporting a pH exceedance in treated effluent in the Polishing Pond. This was reported as a spill. Corrective actions included streamlined communications with the Inspector.

In addition to these external inspections, the MCM and their subcontractors conduct their own internal inspections on a regular basis to ensure safe operation at the site and compliance with various regulatory and contractual documents, including the Water Licence, Land Use Permit, and Management and Monitoring Plans. These internal inspections include daily site inspections and regular inspections of major structures (e.g., dams, arsenic chamber bulkheads) and equipment.

In 2023-24, the MCM and its subcontractors conducted a total of 171 internal inspections, which identified 19 non-conformances with Project requirements. The increase in non-conformances, was a result of increased work activities and, consequently, more people and equipment onsite. The Project has completed or is in the process of completing all identified corrective actions for each of the non-conformances reported.



5.3. SUMMARY OF FISCAL YEAR 2023–24 EXPENDITURES

Table 2 outlines the planned (i.e., expenditure totals by categories) versus actual expenditures for 2023-24 while Table 3 outlines the planned expenditures in 2024-25. Planned expenditures in every fiscal year include the full annual contingency allocation for the project. Not all contingency is typically required. Beyond contingency, there were some delays associated with the WTP construction such that scope activities and budget were deferred to FY2024-25. Additionally, there were lower operational costs for small items such as travel and training.

Table 2: Planned Versus Actual Expenditures in 2023-24

CATEGORY	PLANNED	ACTUALS	% DIFFERENCE
Care and Maintenance	$25,936,965	$24,279,218	-6.39%
Regulatory	$613,800	$516,284	-15.89%
Engagement and Consultation	$5,289,950	$3,130,246	-40.83%
Investigation and Assessment	$1,610,461	$3,818,600	137.11%
Remediation	$171,856,256	$156,366,799	-9.01%
Monitoring	$6,702,404	$5,152,180	-23.13%
Program & Project Management	$13,103,415	$15,007,545	14.54%
Totals	**$225,113,251**	**$208,270,871**	**-7.48%**

Table 3: Planned Expenditures in 2024-25

CATEGORY	OPERATING EXPENDITURES	GRANTS AND CONTRIBUTIONS	SALARY AND EBP	TOTALS
Care and Maintenance	$29,451,901			$29,451,901
Regulatory	$ 820,065			$820,065
Engagement and Consultation	$372,207	$4,887,294		$5,259,501
Investigation and Assessment				
Remediation	$268,738,530	$728,295		$269,466,825
Monitoring	$6,353,396			$6,353,396
Program & Project Management	$9,611,694		$4,397,842	$14,009,536
Totals	**$315,347,793**	**$5,615,589**	**$4,397,842**	**$325,361,224**

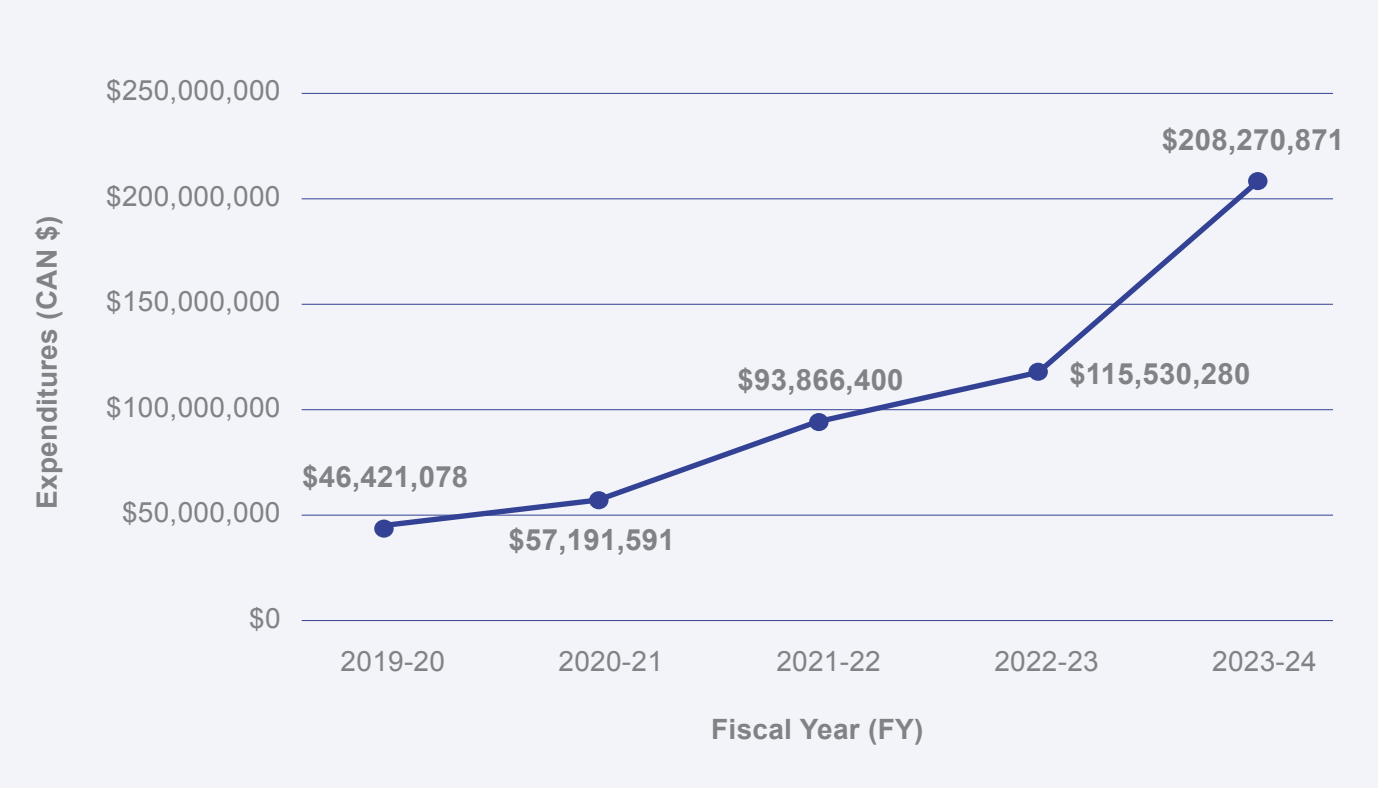
5.4. SUMMARY OF EXPENDITURES TREND 2019–2024

Table 4 and Figure 4 outline the Project's expenditures trend from fiscal years 2019-2020 to 2023-2024. The project has entered the implementation phase and annual expenditures will be increasing significantly as construction and earth moving activities ramp up. Figures presented in this section are not cumulative.

Table 4: Project Expenditures 2019-2024

CATEGORY	2019-20	2020-21	2021-22	2022-23	2023-24
Care and Maintenance	$18,808,143	$22,166,327	$27,095,659	$28,919,581	$24,279,218
Regulatory	$1,214,925	$1,134,420	$730,733	$608,230	$516,284
Consultation	$1,747,380	$1,345,500	$3,210,463	$3,294,542	$3,130,246
Investigation &Assessment	-	-	-	$23,370	$3,818,600
Remediation	$11,047,596	$14,941,948	$46,328,945	$64,683,491	$156,366,799
Monitoring	$2,905,555	$3,727,700	$5,395,981	$5,623,059	$5,152,180
Program Management	$ 10,697,479	$13,875,697	$11,104,618	$12,378,007	$15,007,545
Total	**$46,421,078**	**$57,191,591**	**$93,866,400**	**$115,530,280**	**$208,270,871**

Figure 4: Project Expenditures 2019-2024



6.0 ENVIRONMENT

6.1. ENVIRONMENTAL MANAGEMENT

The following report sub-sections (**Air, Water**, and **Land**) describe key activities and results of existing environmental management programs, additional assessments and monitoring programs (as described in the Site-Wide Monitoring Program summary below).

SITE-WIDE MONITORING PROGRAM

The Site-Wide Monitoring Program is a combination of all monitoring components currently ongoing or that will be required at Giant Mine site. This monitoring includes environmental components and structural monitoring required on site. This monitoring is used to determine baseline conditions, monitor existing performance, and inform the design process for remediation activities.

The components of the Site-Wide Monitoring Program include regulatory and due diligence monitoring and can be grouped into the following components:

ENVIRONMENTAL

- Surveillance Network Program (SNP)
- Metal and Diamond Mining Effluent Regulations (MDMER) including Environmental Effects Monitoring (EEM) Program
- Operational Monitoring Program (OMP) (ETP, underground, annual site-wide bird survey)
- AEMP
- Wildlife and Wildlife Habitat management and Monitoring Plan
- Air quality – site perimeter & community
- Noise

STRUCTURAL

- Freeze
- Dams and seeps
- Landfill
- Pit stability
- Tailings covers
- Underground Structures
- Baker Creek (icing)

The Site-Wide Monitoring Program is structured in three phases: pre-remediation, remediation, and post-remediation. The intent is for the Program to be operational for the lifetime of the project (100 years); the Program will change as remediation progresses. Appendix E provides additional information on the individual components of the monitoring program. The new Type A Water License includes conditions related to monitoring and reporting for many of the above components.

6.1.1. Status of Environment Report

The Status of Environment Report is a requirement of the GMRP Environmental Agreement. The first report was submitted 7 years after the agreement was signed (2015) and a subsequent report is due every 3 years until the 15-year mark, at which the report is due every 5 years. The purpose of the report is to summarize:

- Key operational activities and planned key operational activities for the upcoming reporting period;
- Methods and results from environmental monitoring;
- Actions taken if conditions on the site were not going as planned (adaptive management) and whether the actions taken were effective; and,
- Effects of the remediation and other human activities (cumulative effects).

The Project team is currently working on the second Status of Environment Report, which will provide a high-level overview of the project's key activities and the status of the environment on the site for mid-June 2021 to mid-June 2024.

6.2. AIR

Activities undertaken at the Giant Mine site have the potential to release contaminants from the site into the air. Of primary interest are particulates carrying arsenic, antimony, iron, lead, or nickel. If these contaminants become airborne, they may be transported off-site and deposited elsewhere. To monitor and minimize air quality impacts, the Project team has established an ambient air quality monitoring program, as outlined in the GMRP Air Quality Monitoring Plan – including ongoing air quality monitoring on-site and in nearby communities – and actively manages air quality through dust suppression.

2023-24 HIGHLIGHTS

- Results of the ambient air quality monitoring program indicated the air quality of the local airshed was not significantly impacted by activities associated with the Project in 2023 and was representative of regional and local air quality.
- The Project team applied Soiltac, used for soil stabilization and used as a dust suppressant at the Tailing Containment Areas, throughout spring and summer as needed.
- The Project team suppressed dust on roads and tailing contaminant areas using water trucks and cannons, and during blasting by employing mats.

6.2.1. Air Quality Monitoring

The GMRP air quality monitoring stations provide data to monitor potential adverse effects to the local airshed during remediation activities. This data also helps the Project team to determine whether additional mitigation measures are required if air quality results exceed established Action Levels in the Dust Management and Monitoring Plan and ambient air quality criteria (summarized in Appendix E).

The GMRP ambient air quality monitoring program continued to measure what is in the dust, both from stations on-site and at community stations located in Yellowknife and Ndilǫ. The Project team uses conservative criteria, in alignment with national and territorial standards. If real-time monitors detect dust levels are above criteria, more actions are taken to control the dust. Monitoring helps to ensure residents are not exposed to unacceptable levels of contaminants from the activities occurring at the Giant Mine site (Giant Mine Remediation Project, 2024a). The Project team will continue to develop positive and proactive approaches to community

concerns. To this end, a Frequently Asked Questions handout on dust and air quality was developed as a communication and engagement tool.

The GMRP team conducts ambient air quality monitoring during non-snow-covered months, and as site activities warrant, at locations on-site as part of the site perimeter air quality monitoring network. The monitoring locations measure real-time total suspended particulate (TSP) and particulate matter (PM) measuring less than 10 microns in diameter (PM10). Additionally, the Project team measures total suspended particulate, PM10, total inorganic trace metals, and PM10 arsenic from filters collected at the site perimeter monitoring stations and submitted for analytical analysis.

Three GMRP community stations are located off-site in the community of Ndilǫ, Niven Lake, and at Yellowknife Bay, in the vicinity of the GSSC marina. The community stations measure continuous PM10, and particulate matter measuring less than 2.5 microns in diameter (PM2.5). The Project team measures integrated total suspended particulate, PM10, total inorganic trace metals, and PM10 arsenic from filters collected at the community stations. Nitrogen dioxide is also measured at the Niven Lake community station. In addition, asbestos concentrations are measured when deemed warranted based on site activities.

In 2023-24, the results of the air quality monitoring showed that local project activities did not significantly impact air quality in the area. The air quality in the region remained consistent with both local and regional standards. However, local and regional wildfires from late May to late October 2023 had a significant impact on air quality, causing higher levels of particulate matter in the air.

During 2023, there were 41 days when the 15-minute average levels of PM10 at the site perimeter exceeded the risk-based action levels outlined in the Dust Management and Monitoring Plan and the Air Quality Monitoring Plan. These exceedances were mostly due to smoke from regional wildfires or fog. On 34 days, the 15-minute average levels of total suspended particulate matter also exceeded the action levels, primarily because of wildfire smoke or fog, except on July 25th, when wind-blown dust from the North and Central Ponds was the main cause.

At the Site Perimeter Monitoring Stations, arsenic levels exceeded program criteria on four occasions due to wind-blown dust during high wind periods. Additionally, 24-hour filter samples from these stations showed that PM10 levels were above the criteria on 14 days, total suspended particulates on 10 days, arsenic on 4 days, and iron on 1 day. Most of these exceedances were due to wildfire smoke, with some also caused by a mix of wind-blown dust and smoke.

In the community, six days saw levels of total suspended particulates or trace metals exceed their respective criteria in 24-hour samples. Continuous monitoring showed that 24-hour average PM2.5 concentrations were above the Ontario Ministry of the Environment's criteria on 62 days, all due to wildfire smoke. Similarly, PM10 levels were above the criteria on 45 days, also due to smoke. Heavy fog or ice fog led to higher levels of total suspended particulates on a few days in January, April, May, and November.

Overall, while regional wildfires significantly impacted air quality, local project activities did not significantly contribute to poor air quality in the area.

As reported in the GMRP 2023 Annual Water Licence Report, a Low Action Level exceedance was reported for visible dust resulting from high winds across the North and Central Ponds on 25 July 2023. Multiple discussions were held in advance of the high wind activity, including reviewing forecasts and mitigations. However, mitigations were not sufficient for the high gusts of wind experienced. Activities in North Pond were temporarily suspended, and additional mitigation measures were implemented including watering of roads and work areas in the North Pond. Discussions were held with subcontractors regarding the need to apply additional mitigation measures in advance of forecasted high winds.

Next Steps:

- Continue air quality monitoring, as outlined in the Air Quality Monitoring Plan.

More details on the air monitoring program, including real-time data and weekly reports, are available on the **NWT Air Quality Monitoring Network**. You can also receive the weekly reports via email by requesting to be added to the distribution list by writing to giantmine@rcaanc-cirnac.gc.ca

6.2.2. Dust Suppression

The Project team takes active measures to reduce dust from the site's tailings ponds and roads. These measures include communicating daily wind forecasts to team members each morning, applying dust control products to the tailings ponds and road network, reducing road speeds when wind speeds are elevated, and wetting the tailings ponds as needed. Dust suppression decisions on site are driven, in part, by a combination of measured 15-minute average concentrations at site perimeter monitoring stations compared to risk-based action levels and observed visible dust.

In 2023-24, the Project team diligently continued their efforts in managing dust for the Tailings Containment Areas and road network, as well as active work areas. Key activities included;

- Supressed dust along the roads and the Tailings Containment Areas using water trucks, water cannons, EcoSoil, and Soiltac;
- Employed mats during blasting to manage dust;
- Discussed wind conditions, weather forecasts, and dust suppression for each construction project and ongoing compliance;
- Continued to monitor wind speed monitoring and wind forecasting;
- Received approval of Version 3.1 of the Dust Management and Monitoring Plan by the MVLWB on May 12, 2023; and,
- Utilized a total of 88m^3 of Soil Tac and 21m^3 of Eco Soil (GNWT, CIRNAC, 2024a). Additionally, for the purpose of dust suppression on roads, Tailings Containment Areas, and other areas of site, water was withdrawn from the Polishing Pond and Yellowknife Bay. Water was also withdrawn from the Tailings Containment Areas for dust suppression within the Tailings Containment Areas (GNWT, CIRNAC, 2024a).

Next Steps:

- Continue ongoing dust management for the following areas, as needed, with application of approved dust suppressants and water:
  - – Tailings Containment Areas;
  - – Road network; and,
  - – Active work areas.

6.3. WATER

To monitor and minimize water quality impacts, the GMRP undertakes ongoing effluent and water quality monitoring on-site.

2023-24 HIGHLIGHTS

- Continued existing water quality monitoring (SNP, AEMP, MDMER/EEM, OMP).
- Submitted the Phase 7 EEM report to ECCC in June 2023.
- Conducted monitoring in accordance with the AEMP Design Plan V2.3.
- Submitted the 2022 Annual Licence Report and the 2022 AEMP Annual Report to the MVLWB in April 2023.
- Submitted the Annual Water Licence Report in April 2024.

6.3.1. Effluent, Surface Water and Groundwater Quality Monitoring

To protect the health and safety of workers, the public, and the environment, water from the Giant Mine site is treated at the on-site ETP before being seasonally discharged to the environment. The ETP system consists of various components including reaction tanks, a settling pond, and a polishing pond that are used – in this order – to treat the mine water. Discharged effluent water is released into Baker Creek and must meet standards set by the Metal and Diamond Mining Effluent Regulations (MDMER) under the Fisheries Act and the GMRP Type A Water Licence (MV2007L8-0031). Mine water is pumped to surface throughout the year and stored on-site in the Northwest Pond. Treatment of this water typically begins in June of each year, with discharge to the environment typically occurring between July and September each year. This timing also avoids the Arctic Grayling spawning window in Baker Creek.

The volume of mine water pumped to surface and seasonally treated and discharged depends on several factors, including available surface storage volumes, runoff, and precipitation events. In 2023, the ETP discharged 179,296 m3 of treated effluent to Baker Creek. This discharge is notably lower than the previous year (547,118 m3 in 2022), and considerably lower than that of 2021 (589,700 m3) (Giant Mine Remediation Project, 2024a). The highest discharge volume in 2023 occurred in July, with a total of 27 discharge days and total volume of 153,770 m3.

The Project team undertakes effluent and water quality monitoring in and around the Giant Mine site via different programs to report on surface water, groundwater and underground mine water. These programs track parameters such as the volume of water pumped or discharged, water quality and the performance of the ETP. The effluent and surface water quality monitoring encompass the programs outlined below. These programs are used to monitor existing performance and to inform the design process for remediation activities:

- Surveillance Network Program (SNP);
- Aquatic Effects Monitoring Program (AEMP);
- MDMER including the EEM Program;
- Operational Monitoring Program (OMP); and,
- Supplemental surface water and groundwater baseline data collection to support the surface water quality and Yellowknife Bay models and the AEMP.

Parameters tested at all stations include standard general parameters (e.g., temperature, pH, conductivity, hardness), major ions, nutrients, and total and dissolved metals. There are also specific station requirements for other tests such as total cyanide, sulphide, hydrocarbons, and radium-226.

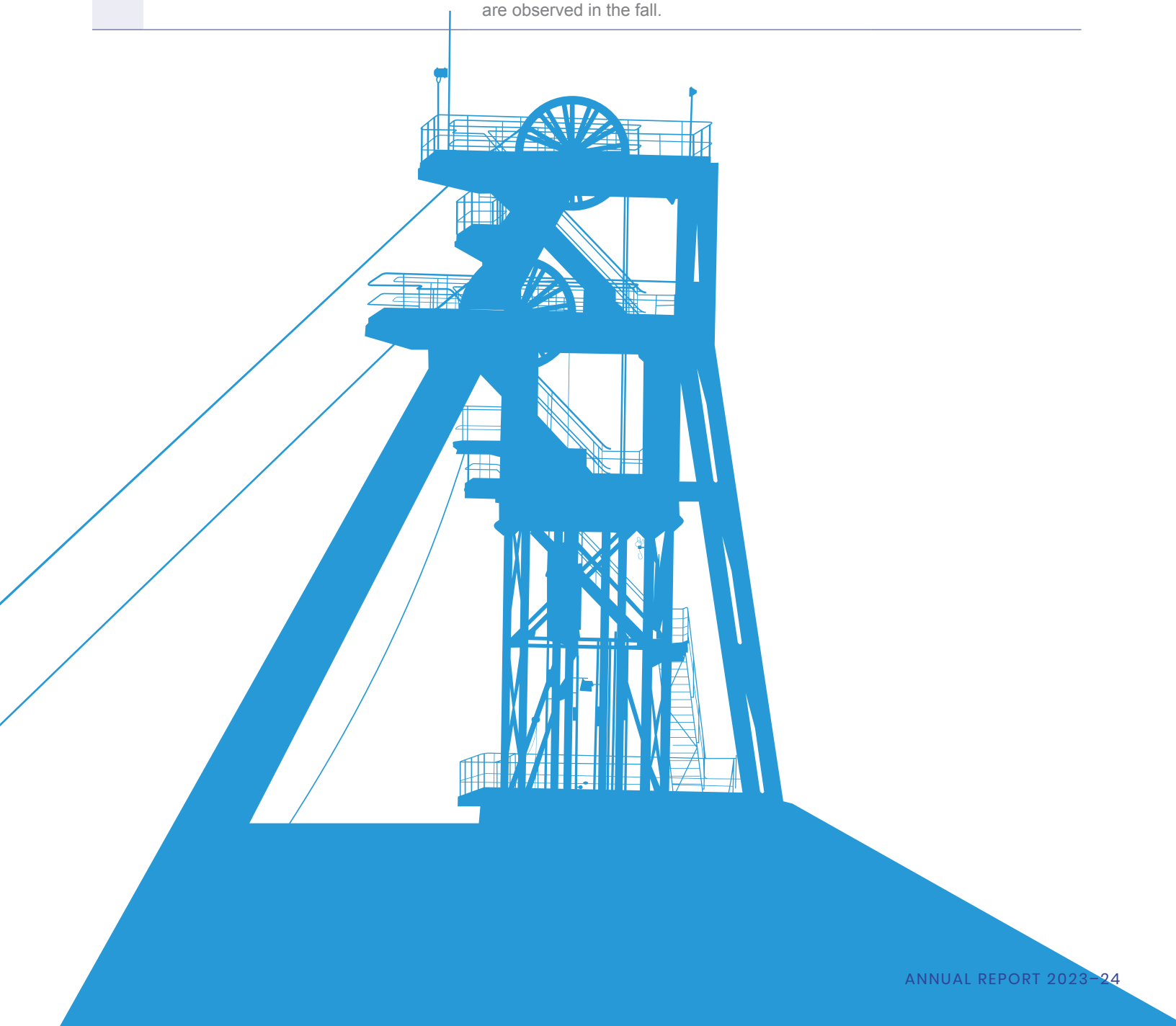
Annual Water Monitoring

The section below summarizes the monitoring activities conducted **in 2023-24** (Table 5). Appendix E provides a detailed table of the monitoring stations (Table 22). For further information, please see the GMRP 2023 Annual Water Licence Report (Giant Mine Remediation Project, 2024a).

Table 5: Annual Water Quality Monitoring 2023-24

	ACTIVITIES	RESULTS	RECOMMENDATIONS / NEXT STEPS
Hydrology (water quantity)	Water level surveys and flow measurements to establish a time series of seasonal streamflow. Comparison of modelled and measured streamflow for Baker Creek, Northwest Pond, and Polishing Pond. Streamflow data was collected at five hydrometric stations between 5 May and 3 October 2023. Streamflow data from the month of September were not collected due to the wildfire-related evacuation of Yellowknife. Operation of hydrometric stations for continuous water level measurements through the open water season (May/ June-October). Water surveys, including mine water levels, contact water, water elevations at tailing containment areas and wastewater management ponds, toxicology.	The estimated water yield for Baker Creek from the water balance method is slightly lower than the yield from monitoring at Baker Pond outlet, which included stream measurements and estimated flows affected by beaver activity. This matches the findings from 2022. The water balance closely matches the actual flow data, showing it is a good representation of runoff amounts and timing. For Northwest Pond and Polishing Pond, the water balance accurately predicted the pumped water quantities, indicating it can estimate runoff well enough to meet demand. Overall, 2023 was a dry year with an average winter and dry summer. The water balance method has been effective in predicting water quantities at the site and is well-calibrated for water management planning.	Continue hydrology monitoring program to support operational and regulatory requirements.
Surface water and minewater quality	Surface water sampling to meet regulatory and operational requirements. Surface water stations that were sampled included lakes, creeks, sumps, ponds, and Tailing Containment Areas, along with mine water that is sampled from the surface at the Northwest Pumping System. Treated effluent was sampled weekly at SNP 43-1 per Water Licence and MDMER requirements during the 31-day discharge period (5 to 31 July and 25 to 28 September). Underground mine water sampling as part of the OMP. Mine water sampling from the Northwest Pumping System. Withdrawal of water from the Polishing Pond, Yellowknife Bay, and the North Pond in 2023 for dust suppression, drilling, paste production, aggregate compaction, and decontamination. All water usage adhered to the Water Management and Monitoring Plan.	Water quality results for sumps, mine water, and groundwater wells were generally consistent with previous years. Average concentrations from 2023 at SNP 43-1 (discharge location to Baker Creek) were below the required maximum average concentrations in the Water Licence and MDMER, Seasonal variations in effluent discharge timing from June to September affected select parameters in the monitoring stations of Baker Creek. Concentrations of most parameters in lower Baker Creek were lowest before discharge, increased in July during discharge, and remained elevated through to October. Nitrate, total nickel, and total zinc concentrations followed the same trend as other parameters until August but increased in late September through the end of the open-water season. Some parameter concentrations (arsenic, copper, and total and dissolved organic carbon) were highest in lower Baker Creek in late-June and early-July, prior to effluent discharge. Water quality in lower Baker Creek exhibited seasonal and spatial variations linked to effluent discharge, most concentrations were within the historical range, with some exceptions for SNP 43-23 and SNP 43-5, such as pH, total dissolved solids, chloride, sulphate, nitrate, and some total metals. For more information on the spatial and temporal trends of water quality in Baker Creek, refer to the 2023 AEMP report by WSP (Giant Mine Remediation project, 2024b).	Continue sampling mine water from surface, groundwater, and surface water as per operational and regulatory requirements.

	ACTIVITIES	RESULTS	RECOMMENDATIONS / NEXT STEPS
Groundwater	Monitoring of groundwater monitoring wells at various locations around the site as part of the SNP and OMP and include both shallow and deep multiport wells. Monitoring of water levels in the Non-Hazardous Waste Landfill sumps during operation of the Non-Hazardous Waste Landfill (GNWT, CIRNAC, 2023).	Groundwater flow directions estimated from hydraulic head monitoring were consistent with previous years, showing a downwards gradient suggesting drainage toward the underground development. Water quality results from groundwater wells were generally consistent with previous years. Hydraulic heads for the wells in 2023 were generally consistent with the last few years of monitoring. Generally, lower hydraulic heads are observed in spring and higher hydraulic heads are observed in the fall.	Continue operational (OMP) and regulatory (SNP) groundwater well sampling.



6.3.2. Metal and Diamond Mining Effluent Regulations (MDMER) / Environmental Effects Monitoring (EEM)

The MDMER under the Fisheries Act requires metal mines to conduct environmental effects monitoring. This monitoring includes monitoring of effluent and surface water quality, toxicological testing of the treated effluent, and biological monitoring. These results are used to assess and identify any effects that may be caused by the treated effluent. The overall objective of these studies is to protect fish and fish habitat and maintain the safe use of fish by people.

Effluent and water quality are monitored during periods of effluent discharge as part of Environmental Effects Monitoring (EEM). This data is used to interpret the effects observed in the fish and benthic invertebrates from Baker Creek (i.e., the results from the biological program that is completed every three years). An EEM program has been conducted since 2003, with seven phases of monitoring completed to date. In 2021, GMRP submitted its intention to become recognized as a closed mine. The Phase 7 EEM report is expected to be the last report in this series.

In 2023-24 activities included:

- Weekly, monthly, quarterly water quality and effluent characterization sampling, including toxicity testing. Reports submitted quarterly and annually to ECCC; and,
- Submission of the Phase 7 EEM report to ECCC in June 2023.

The Project team anticipates receiving Closed Mine Status in Fall 2024 from ECCC.

Next Steps:

- Continue existing water quality monitoring (SNP, AEMP, MDMER/EEM, OMP) as applicable; and,
- Submit Annual Reports (on a calendar year).

6.3.3. Aquatic Effects Monitoring Program (AEMP)

The GMRP submitted the completed AEMP Design Plan (focused on Baker Creek) and the Draft Conceptual AEMP Design Plan (focused on Yellowknife Bay) as part of the Water Licence application package in 2020. Four different types of documents are required under the AEMP: Design Plan, Annual Report, Re-evaluation Report, and Response Plan (as applicable). The AEMP Design Plan focussed on Baker Creek and current condition with discharge from the ETP. The Yellowknife Bay Special Study concluded in 2023 to assess baseline conditions in Yellowknife Bay prior to discharge from the WTP. The results of the Yellowknife Bay Special Study will be presented in the Yellowknife Bay Baseline Report in 2024.

Until the new WTP is operational, the existing ETP will be used. The two different treatment plants will discharge to different locations, with the AEMP shifting focus from the current discharge into Baker Creek to the future discharge location in Yellowknife Bay with the WTP.

In 2023-24, the Project completed monitoring for the AEMP in accordance with the approved AEMP Design Plan V2.3. The main site activities related to the AEMP in 2023-24 included the collection, treatment, and subsequent release of water as treated effluent into Baker Creek (GNWT, CIRNAC, 2024a).

In 2024-25, the Project team will submit to the MVLWB the 2023 AEMP Annual Report (Giant Mine Remediation Project, 2024a; WSP, 2024). The 2023 AEMP Report highlights will include:

- Monitoring was conducted in accordance with the AEMP Design Plan V2.3;
- Treated effluent that was released from the site met the Water Licence and federal government regulatory MDMER limits;
- Total arsenic concentrations were elevated in treated effluent in 2023 compared to 2022, but remained within the historical range;
- Concentrations of total and dissolved metals have shown an incremental rise from 2022 to 2023. However, these levels did not trigger the AEMP water quality Low Action Level, as were not potentially linked to remediation activities conducted by the GMRP;
- Acute toxicity tests were conducted on samples of treated effluent monthly during discharge, and sublethal toxicity tests were conducted quarterly during discharge;
- Treated effluent was not acutely lethal in 2023; and,
- In 2023, long-term tests showed that treated effluent reduced reproduction in water fleas, aquatic plants, and algae, but did not affect minnow survival and growth. The long-term impact on aquatic plants and minnows was the same as or lower than in previous years, while the impact on algae and water fleas was higher.

Next Steps:

- Continue AEMP monitoring as per the approved Design Plan;
- Submit Annual Report on the calendar year to the MVLWB;
- Submit the AEMP Re-evaluation and Yellowknife Bay Baseline Report to the MVLWB; and,
- Submit the AEMP Design Plan focussed on Yellowknife Bay to the MVLWB.

6.4. LAND

The GMRP team undertook several activities to monitor and minimize impacts to land and protect the health and safety of the public, on-site workers, and wildlife.

2023-24 HIGHLIGHTS

- Continued to manage wastes on site in accordance with the Waste MMP.
- Commissioned the Non-Hazardous Waste Landfill, which has began accepting waste.
- Continued to manage operational waste using the Waste Transfer Station.
- Continued to implement the existing Wildlife Habitat MMP on site.
- Continued to log and report wildlife sighting and interactions including the bird survey.

6.4.1. Waste Management

The Waste Management and Monitoring Plan Version 3.2, approved by the MVLWB in May 2023, provides an overview of the waste management strategy for active remediation. The plan explains why waste must be managed and how it is managed and provides the guiding procedures for collection, decontamination, storage, characterization, and on-site or off-site disposal that will be followed during remediation.

Temporary waste storage areas on site include the Material Storage Area, which contains shipping containers storing arsenic impacted building materials. Runoff water is collected within the tailings containment area and subsequently treated in the Project's ETP. Until the material can be disposed of in its final location within the B1 Pit frozen area, the Project will store the material on-site, in a safe area where water and people will not be exposed (GNWT, CIRNAC, 2024a) (CIRNAC, 2022a) (CIRNAC, 2022b) (CIRNAC, 2022c).

All wastes that are generated during the demolition of the onsite structures are classified, handled, and disposed in a manner that is consistent with the Waste Management and Monitoring Plan (AECOM, 2023).

In 2022, the non-hazardous landfill began receiving waste, in accordance with the Waste Management and Monitoring Plan.

In 2023-24, the Project team:

- Relocated the on-site Waste Transfer Station; and,
- Monitored ten shallow groundwater wells identified in the Non-Hazardous Waste Landfill Design Plan as part of the OMP (Giant Mine Remediation Project, 2024a). Monitoring in spring and fall allows analysis of temporal and seasonal trends commissioned an additional sampling study for the Core Industrial Area Demolition Program, to develop a more comprehensive inventory of hazardous materials (including asbestos) (AECOM, 2023).

Some of the findings from the additional sampling study included:

- All building materials that are classified as containing asbestos are eligible to be disposed in the onsite landfill provided, they are not impacted with other contaminants such as arsenic;
- Wood samples that were submitted testing had concentrations less than the reported detection limits. These stained wood products would be classified as non-hazardous waste and would be eligible for disposal in the onsite non-hazardous waste landfill; and,
- All mineral waste samples in the Mill Plant were analyzed for total arsenic.
  - 19 of the samples collected from the tanks and process equipment contained total arsenic greater than the 4,500 mg/kg, with the exceedances ranging between 7,200 mg/kg to 120,000 mg/kg total arsenic.
  - All but one of the samples of the spilled mineral waste from the floor exceeded the disposal standard of 4,500 mg/kg.

  - concentrations of total arsenic in the mineral waste on the floor ranged between from 8,500 mg/kg to 37,000 mg/kg.

Next steps:

- Continue managing waste in accordance with the Waste Management and Monitoring Plan;
- Continue to accept waste at the Non-Hazardous Waste Landfill; and,
- Continue operations of the Waste Transfer Station for operational waste.

6.4.2. Wildlife Monitoring and Research

The Project team submitted the Wildlife and Wildlife Habitat Management and Monitoring Plan as part of the Water Licence package in April 2019. An updated plan was submitted in March 2021. All activities and interactions with wildlife are conducted in accordance with the plan. The Project team maintained all wildlife logs on-site, which are available to Inspectors upon request.

In 2023-24, the Project team:

- Continued to implement the Wildlife and Wildlife Habitat Management and Monitoring Plan on site;
- Continued to log and report wildlife sightings and interactions (including the bird survey);
- Obtained a General Wildlife Permit from the GNWT to remove a beaver dam at the outlet of Baker Pond into Baker Creek. Partial removal of the dam occurred in September. Beaver dam dismantling efforts have been conducted in accordance with DFO Code of Practice for Beaver Dam Removal;
- Applied mitigations and worked with ECCC and GNWT-ECC when a Horned Grebe was spotted in a pond;
- Obtained individual General Wildlife Permits from the GNWT throughout 2023, as required;
- Reported injured or deceased birds and animals to GNWT-ECC and ECCC, as applicable;
- Increased inspections at the ETP to prevent nesting;
- Deployed bird deterrents at the Townsite in May 2023; and,
- Completed bear monitoring and bird surveys, as applicable, based on season and work activities.

Next steps:

- Update the Wildlife and Wildlife Habitat Management and Monitoring Plan in 2024-25; and,
- Continue to log and report wildlife sightings and the interactions (including the bird survey).

CONSTRAINTS MAP

The Project finalized a constraints map to support future land use planning/ considerations. The Project agreed to develop a ‘constraints map’ to describe aspects of the site that will be important to know post closure – including location of underground workings and the expected end state of the environment after remediation (e.g., soil will meet specific criterion). The Project completed the map and shared it with GNWT, the Giant Mine Working Group, and City of Yellowknife staff members in 2022

6.4.3. Spills Accidents, and Significant Malfunctions

There were a total of twenty-eight (28) environmental spills, including 3 reportable spills[6] in 2023 (reportable spills consisted of treated effluent, aggregate material, and propane vapours). Minor spills that were non-reportable consisted of small amounts of antifreeze, diesel, oil, lubricant, slurry of cuttings and water, unknown yellowish-green liquid drops, and hydraulic fluid. The number of reportable environmental spills and incidents remained constant over the past three years.

6.5. CLIMATE CHANGE

This section summarizes the Project's GHG emissions, climate conditions at Site of note, information on how climate considerations are incorporated into designs, and what next steps GMRP is taking to address climate change.

2023-24 HIGHLIGHTS

- Continued to monitor and track GHG emissions from site.
- Hosted two Giant Mine Working Group meetings on climate change projections and design.
- Completed calculations of updated climate projections with regional data that became available in 2023.

6.5.1 Greenhouse Gas Emissions

The GMRP is taking several steps to proactively reduce Greenhouse Gas (GHG) emissions and implement Federal and GNWT climate action plans and policies. The GMRP is fully committed to finding opportunities to reduce its GHG emissions during implementation. The principal source of GHG emissions from implementation activities will be through the operation of heavy construction equipment. Given that heavy construction equipment must be used for a remediation project of this nature, the principal tool available to minimize GHG emissions will be to minimize fuel use and reduce haul distances where possible. After remediation, the main source of emissions would be operation of the Water Treatment Plant and fuel use for vehicles for inspections and care and maintenance.

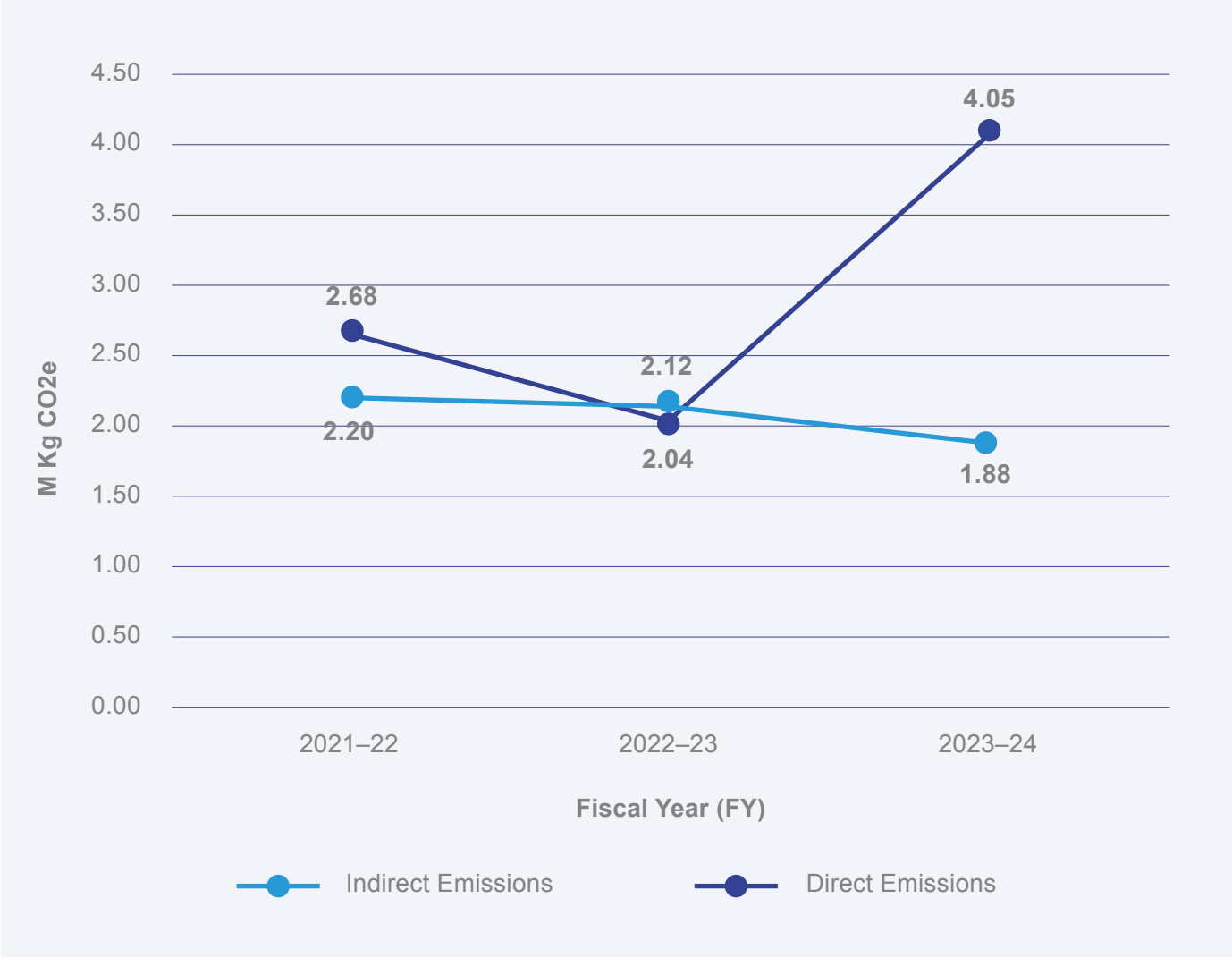
The MCM monitors and tracks three key GHG's (i.e., carbon dioxide, methane, and nitrous oxide) monthly on Site. Emissions of these GHG's can be from vehicles, buildings, industrial activities, and water treatment (i.e., direct emissions), or from the purchase and consumption of electricity (i.e., indirect emissions).

Table 6 and Figure 5 below show the trend information over the last 3 years (2021-22 to 2023-24).

Table 6: GHG Emissions Trend (2021-22 to 2023-24)

	2021-22 (M Kg CO2e)	2022-23 (M Kg CO2e)	2023-24 (M Kg CO2e)
Direct	2.68	2.04	4.05
Indirect	2.20	2.12	1.88

Figure 5: GHG Emissions Trend (2021-22 to 2023-24)



The direct emissions emitted on site were 4.05M Kg CO2e, which is higher than the last two years (2.04M Kg CO2e in 2022-23 and 2.68M Kg CO2e in 2021-22). This increase can be explained by the increase in site activity during remediation. The indirect emissions generated by the site **in 2023-24** (April 2023 to March 2024) were 1.88M Kg CO2e , which is lower than the last two years (2.12M Kg CO2e in 2022-23 and 2.20M Kg CO2e in 2021-22).

See Appendix F – Greenhouse Gas Emissions for additional data, including the monthly breakdown.

[6] A reportable spill is any spill that is above the reportable limit in the NWT.

6.5.2 Climate Conditions at Site

The Project continues to monitor climate conditions at site, including wind speed, temperature & precipitation, streamflow, and extreme events, like wildfires. The section below summarizes noteworthy conditions in the reporting year. See Appendix F – Climate Change and GHG Emissions for more detailed information.

In 2023-24, noteworthy conditions included:

- The annual precipitation amount was less than the long-term average (i.e., 1943 to 2023);
- Streamflow at Baker Creek was lower in 2023 than in previous years;
- The streamflow peak during freshet was approximately two weeks earlier than average (i.e., occurred in early May rather than late May); and,
- The wildfires impacted many monitoring programs during the evacuation period. Fires contributed to a change in air quality on site.

The GMRP uses this information, as well as updated climate change predictions, to make decisions on whether immediate action is required, or whether changes to Management and Monitoring Plans, Design Plans, etc. are required. This defined process was presented to the Giant Mine Working Group in June 2023, which provided a comparison of the AR5 to AR6 and looked at the new climate projections (AR6).

6.5.3 Incorporation of Climate into Design

The GMRP has assessed climate conditions and future climate change into design engineering of the remediation and continues to do so as design plans are finalized for approval for the MVLWB. Examples of climate reviews and how design incorporated climate considerations are outlined below.

The **Freeze Program** incorporated considerations from many third-party experts as well as ensuring that the freeze criteria would be met based on AR5 freeze predictions. Further, the design includes monitoring of freeze and includes triggers for when to act if monitoring shows this is not functioning as designed (known as action levels).

Quantitative Risk Assessment - As part of the GMRP's Quantitative Risk Assessment, numerous meetings and workshops were held with Rights holders and stakeholders to understand risks at the site after remediation. This work included understanding climate concerns and doing a climate analysis and a Climate Resilience Risk Review following Public Infrastructure Engineering Vulnerability Committee Protocol for Infrastructure Vulnerability Assessment and Adaptation to a Changing Climate consistent with an ISO 31000 Risk Management approach and Climate Lens Guidance. There was also identification of risk to Way of Life by Indigenous Knowledge holders that included information on climate risks. Climate-related recommendations were provided to support design (e.g., avoid areas of permafrost where possible) and construction (e.g., consideration of heavy rains and heavy snowfalls, changes in freeze/thaw cycle). The Project team adopted most of the climate-related recommendations provided to support design and construction, such as avoiding areas of permafrost where possible. Heavy rains, snowfalls, and changes in the freeze/thaw cycle were also considered, particularly when addressing erosion concerns.

[7] Carbon dioxide equivalent or CO2e is defined by the US Environmental Protection Act as the number of metric tons of CO2 emissions with the same global warming potential as one metric ton of another greenhouse gas.

Baker Creek – The Project team identified concerns related to climate change and possible flooding and icing that could potentially cause overflow of the creek where it could then enter the underground mine pool and cause the water level to rise underground and potentially lead to flooding of the arsenic trioxide chambers. Elders from the YKDFN have shared their observations of icings and identified specific areas of concern. The GMRP proposed to realign and widen the creek to reduce flooding risk and has included accommodation for icing in this. The creek will be designed to accommodate the probable maximum flood, including allowance for climate change in the flood calculations. Further, the design includes monitoring of the flood plain and icing and triggers for when to act if monitoring shows a component is not functioning as designed (action levels). Specific details will be outlined in the Baker Creek and Surface Water Design Plan for 2024/25.

Water Treatment Plant - As required for all new federal buildings, the GMRP has incorporated the results of the GHG assessment of the new WTP into the final design that was approved by the MVLWB in 2023. The WTP is being built to include an alternate fuel source (biofuel) to reduce emissions after remediation is complete. Further, the WTP is being built on bedrock, away from areas of potential permafrost to avoid issues of structural integrity with the building in the long-term.

Review of Updates to Climate Projections – Designs that incorporated Climate projections in relation to precipitation indicated that designs based on AR5 would not be affected by the new projections. Designs that incorporated climate projections in relation to temperature require further review. Draft reports of these analyses are to be provided to the Giant Mine Working Group for review in 2024.

Next Steps:

- Continue to monitor climate-related conditions on site (e.g., temperature, streamflow, site stability) as remediation progresses;
- Present the 2023 draft reports outlining the climate projections and implications for final design, and address any comments;
- Continue to evaluate climate change considerations and GHG emission reductions and mitigative actions where relevant (e.g., use on-site borrow to reduce haul traffic and emissions versus bringing off-site material to site);
- Develop the framework for a GHG Reduction and Innovation Plan;
- Support the general public in understanding how GMRP remediation includes climate considerations through different engagement mechanisms (e.g., pamphlets);
- Review and update the Climate Resilience Risk Review; and,
- The GMRP will engage on a memo which contains a review of AR6 projections and compares them to the assumptions used in the design to date, which were based on the AR5 projections. The project will determine if further actions are required.

7.0 HEALTH & SAFETY

7.1 OCCUPATIONAL HEALTH AND SAFETY

CIRNAC provides oversight for occupational health and safety, while PSPC provides oversight and manages engineering design consultants to ensure that they have in place a health and safety plan, health and safety procedures, and emergency response plans, and that they follow the procedures and report any health and safety incidents.

The Main Construction Manager maintains overall health and safety responsibility as the Mine Manager at the Giant Mine site. To ensure that on-site safety plans are implemented, there is a designated MCM occupational health and safety manager who organizes ongoing training and occupational health and safety support for managers, supervisors and other employees and subcontractors. Additionally, there is a GMRP committee, as well as an on-site safety committee, that collaborate to oversee and enhance health and safety measures across the Project.

2023-24 HIGHLIGHTS

- There were 0 major safety incidents, 3 moderate safety incidents, and 19 minor incidents **in 2023-24**.
- The number of reported near misses decreased to 25 **in 2023-24** from 29 in 2022-23, 71 in 2021-22, and 56 in 2020-21.
- 0.86 % of urinalysis samples were above the action level of 35 micrograms of arsenic per litre of urine (µg/L) **in 2023-24**, a significant decrease from 3.35% in 2022-23.

7.1.1 Health & Safety Incidents

The GMRP tracks the number of major incidents, moderate incidents, minor incidents, and near misses on a monthly basis. Table 7 summarizes the number of health and safety incidents and near misses **in 2023-24**.

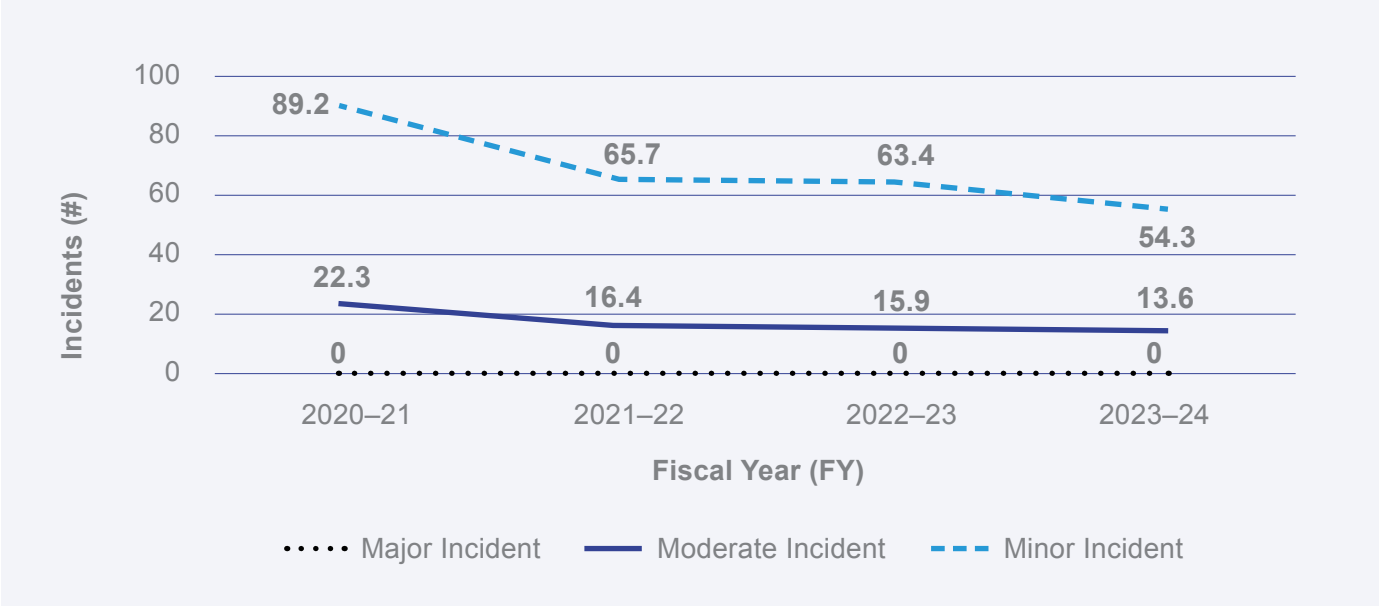
Consistent with previous years, there were no major safety incidents on site. There were 3 moderate incidents, which is higher than last year (1 in 2022-23) but consistent with or lower than the two previous years (3 in 2021-22, 7 in 2020-21)). The number of minor incidents in 2022-23 (19) is higher than previous years (10 in 2022-23, 9 in 2021-22, and 3 in 2020-21).

Table 7: Health and Safety Incidents and Near Misses in 2023-24.

INCIDENTS AND NEAR MISSES	2023-24 TOTAL
Major Incident: An incident resulting from activities performed at the site that results in a severe and irreversible disability, impairment, injury, illness or fatality to an individual or individuals.	0
Moderate Incident: An incident resulting from activities performed at the site that results in a reversible disability, impairment, injury or illness that temporarily alters the lives of an individual or individuals.	3
Minor Incident: An incident resulting from activities performed at the site that results in injury or illness that inconveniences an individual or individuals.	19
Near Misses: An unplanned incident resulting from activities performed at the site that did not result in any disability, impairment, injury, illness or fatality, but had the potential to do so.	33

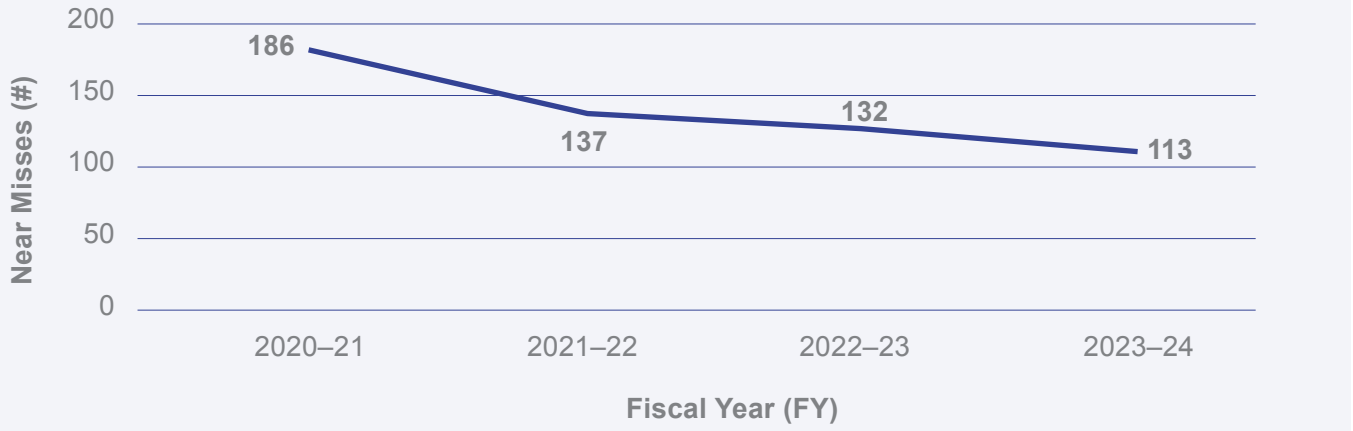
Figure 6 below illustrates the number of incidents normalized by person-hours worked to enable comparison across years, when the amount of activity on site may differ. When normalized, the number of minor incidents has trended down since 2020-21. Moderate incidents have also trended down but at a less pronounced rate. The normalization does not account for differences in the nature of activities undertaken from one year to another.

Figure 6: Health and Safety Incidents per 200,000 Person-hours Worked, by year (2020-21 to 2023-24)



There was a decrease in the number of reported near misses **in 2023-24** (25), when compared with previous years: 29 in 2022-23, 71 in 2021-22, and 56 in 2020-21 (Figure 7). When normalized by person-hours worked, there is a clear downward trend. Incidents and near misses are discussed at daily safety meetings to review lessons learned, root causes, and corrective measures.

Figure 7: Health and Safety Near Misses per 200,000 Person-hours Worked from 2020-2021 to 2023-24



Next Steps:

- The GMRP team will continue to track and report health and safety incidents and implement any necessary changes.

7.1.2 Monitoring of Arsenic Levels in Workers

In 2013, the Roaster demolition Project team (Parsons, AECOM, Golder, PSPC and CIRNAC) developed a medical monitoring framework to monitor arsenic levels in workers, which includes an Action Level of 35 (µg/L). Samples are compared against the Action Level of 35 micrograms of arsenic per litre of urine (µg/L). This framework was accepted by the Workers' Safety & Compensation Commission.[8] Monitoring includes baseline urinalysis sampling when workers start on site and then subsequent regular urinalysis sampling depending on frequency on site and activities performed (e.g., weekly samples if on-site full-time). For any urinalysis sample above the Action Level, the MCM notifies Workers' Safety & Compensation Commission, CIRNAC, and PSPC and investigates the root cause (e.g., diet, poor hygiene practices, inadequate procedures). The MCM then takes immediate actions to reduce exposure to workers, such as improvement of dust control measures, adoption of more rigorous Personal Protective Equipment procedures, re-training of staff on proper procedures, placing affected workers on limited duty to limit exposure to higher risk activities, or reassigning personnel to other duties (in the rare case of continued / recurring high levels of arsenic).

In the **2023-24** reporting year, the GMRP team monitored arsenic levels in workers. Table 8 shows the total number of samples and the number of samples above the Action Level of 35 micrograms of arsenic per litre of blood. The percentage of samples above the action level (0.86%) is significantly lower than last year (3.35% in 2022-23). The decrease in the number of samples above the Action Level could be due to the evacuation order and subsequent site closure in response to the wildfires that took place form August 18, 2023, until September 6, 2023.

Table 8: Summary of Urinalysis Sampling and Results between 2020-21 and 2023-24

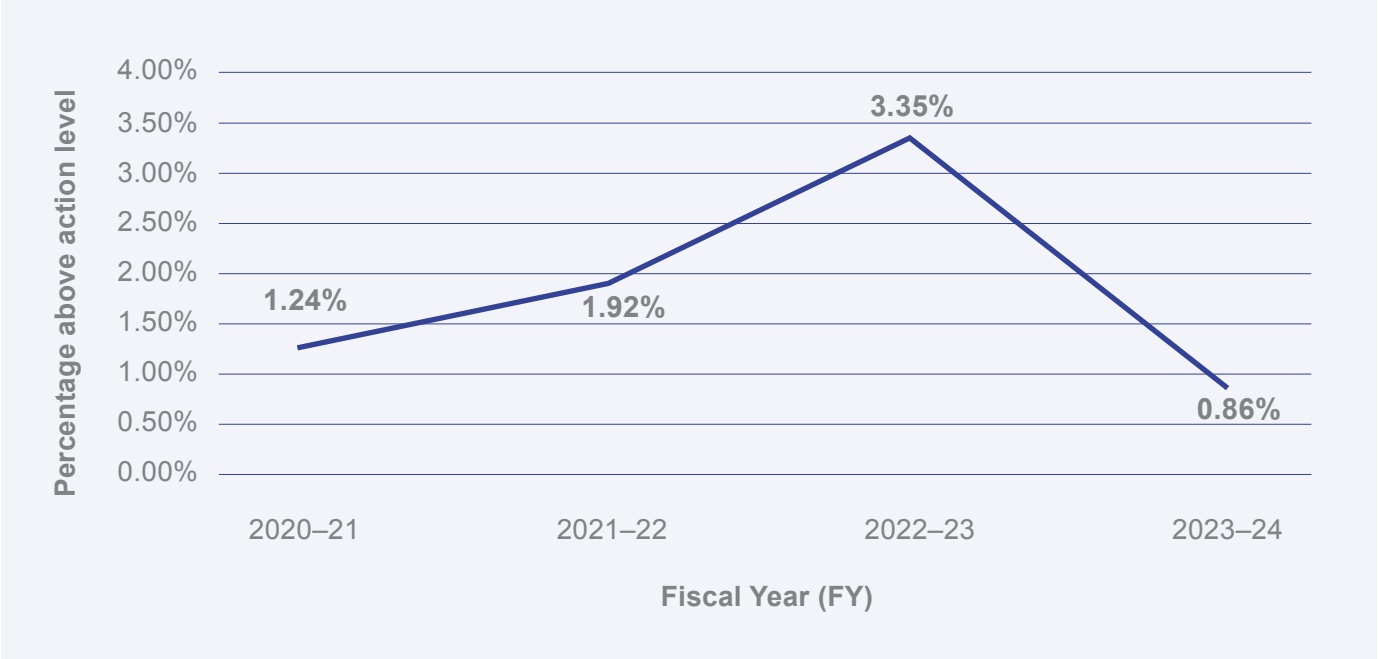
Year	Total samples	Number of samples above the action level (35 µg/l)	Percentage of samples above the action level (35 µg/l)
2023-24	2671	23	0.86%
2022-23	2181	73	3.35%
2021-22	1305	25	1.92%
2020-21	728	9	1.24%

[8]The analytical approach, the analytes, and the action level (i.e., the exposure limit) were documented by Senes & Arcadis and peer-reviewed by Stantec in 2014.

Tracking of results that are below but nearing the Action Level also allows for identification of those workers who could benefit from preventive interventions, to avoid reaching the Action Level.

Figure 8 below highlights the key trends in the percentage of samples above the action level from 2020-21 to 2023-24.

Figure 8. Percentage of samples above the Action Level (35 µg/L) from 2020-21 to 2023-24 Figure 8. Percentage of samples above the Action Level (35 µg/L) from 2020-21 to 2023-24



Next Steps:

- The GMRP team will continue to provide oversight for the health and safety of its employees and contractors through the established management system and associated health and safety procedures, including urinalysis for on-site workers.

7.1.3. Health and Safety Training

The MCM's Occupational Health and Safety manager ensures that employees and sub-contractors receive relevant health and safety training, including first aid, wildlife safety, water safety, and fire response, as required by applicable regulations. Each year, all new employees are assessed to ensure they have the required training to complete their jobs safely and effectively. Health and safety training also includes site orientations provided by the MCM to new employees as well as annually for all employees.

PSPC/CIRNAC and the MCM track the number of person-hours that employees and sub-contractors receive in training. **In 2023-24**, a total of 5,190 health and safety training hours were provided, including 1,870 hours of general Environment, Health and Safety awareness training on policy and procedures.

Next Steps:

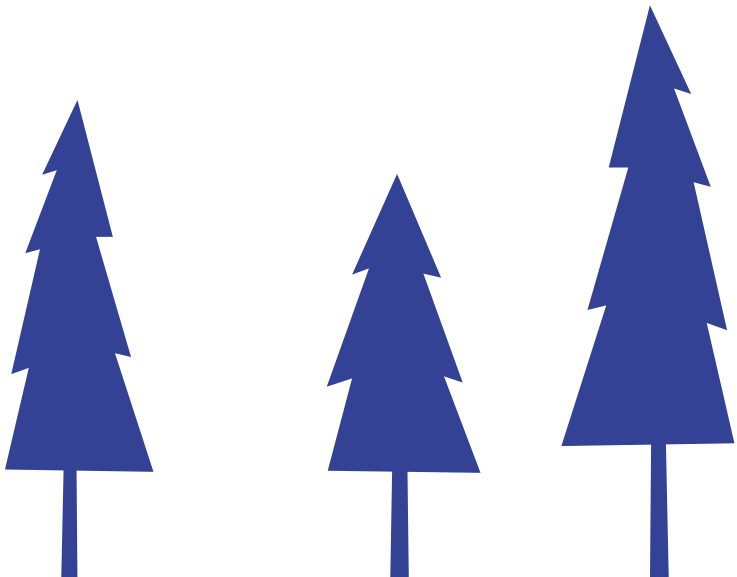
- The GMRP will continue to provide funding for training of employees and contractors;
- The GMRP team will continue to track the type and amount of training received by employees and contractors to ensure that all employees receive the required training;
- The GMRP team will share this information with interested parties and stakeholders – such as GMOB, Socio-Economic Working Group and Socio-Economic Advisory Body and the community – to assure them that on-site personnel are appropriately trained to do their job safely and effectively and are getting training that is potentially transferable to other employment; and,
- The GMRP team will track training provided to community members to prepare them for employment at the site.

7.2. PUBLIC HEALTH AND SAFETY

Since the Government of Canada took over responsibility in 1999, the GMRP team has monitored the site and ensured it is kept safe and secure through 24-hours-a-day presence and care and maintenance activities. This work involves ensuring public safety through site security, dust suppression, and mine water and effluent management.

2023-24 HIGHLIGHTS

- Conducted child and youth re-sampling and new group sampling in June 2023.
- Continued ongoing YKHEMP Advisory Committee meetings to provide updates on relevant publications, genetic analysis, and communication strategies for the revised website.



7.2.1. Health Effects Monitoring Program

In response to Measure 9 of the Report of Environmental Assessment, the GMRP commits to working with other federal and territorial departments to design and implement a broad Health Effects Monitoring Program. The Health Effects Monitoring Program in Ndilǫ, Dettah, and Yellowknife focuses on effects in people related to arsenic and other contaminants that might result from monitoring effects of the site and/or from the remediation activities.

The monitoring includes studies of baseline health and ongoing periodic monitoring, in accordance with Measure 9 of The Report of Environmental Assessment and Reasons for Decision (Mackenzie Valley Review Board, 2013). Dr. Laurie Chan, based at the University of Ottawa, is leading the monitoring program. A Health Effects Monitoring Program Advisory Committee ('committee') was established for the program with representatives from GNWT Health and Social Services, Health Canada, the City of Yellowknife, the Yellowknives Dene First nation (YKDFN), the North Slave Métis Alliance (NSMA), GMOB and the Project team. The committee meets monthly and provides advice to the program (Health Effect Monitoring Program, 2024).

The timeline for the monitoring program is as follows:

- **2017-2018:** Baseline sample collection in 2018. There was a total of 2037 participants between Fall 2017 and Spring 2018. Individual results were reported back to all the participants by mail, and a progress report summarized key results.
- **2019-2020:** Public engagement was undertaken in May 2019 to report back on the initial results of the study.
- **2021-2022:** The committee continued to provide updates on relevant publications, genetic analysis, and communication strategies for the revised website.
- **2022-2023:** The committee completed the third progress report and developed plain language booklets that showed the results from the 2017-18 baseline study.
- **2023-2024:** Between April and June 2023, the Project conducted re-sampling of arsenic and other metals for children aged 3-19.

In 2027-2028, the re-sampling will occur for adults, children, and youth, when remediation is occurring.

Next Steps:

- Complete adult, children, and youth re-sampling in 2027-28.

For more information on the Health Effects Monitoring Program, please refer to the Frequently Asked Questions on the program's public-facing website: **Health Effects Monitoring Program (ykhemp.ca)**

[9] Including antimony, cadmium, lead, manganese, and vanadium, which are being measured because other research and studies have shown that they are present at the Giant Mine site.

8.0 COMMUNITY

This section provides an overview of the relevant management and performance information that applies to the community engagement and socio-economic elements of Giant Mine.

8.1. ENGAGEMENT

Project engagement is guided by an Engagement Plan, submitted to the Mackenzie Valley Land and Water Board in March 2021 (**GMRP Engagement Plan link**). The overall GMRP engagement goals are:

- Affected parties have increased trust in the Project, the Project team, the overall project management, and are confident in the direction the Project is taking moving forward;
- The GMRP is operating in an open, inclusive and transparent manner; and,
- Affected parties feel increased ownership and optimism with respect to the future remediation of the mine site, as the result of collaborative input into decision making with stakeholders/affected parties and the GMRP team.

The Project team developed an Engagement Evaluation Plan in 2022, which incorporated feedback from the Giant Mine Working Group. The Project team will implement planned evaluation activities going forward, including asking standard questions to gather feedback at meetings. The Project team continues to maintain a media log to track inquiries and topics and an engagement log to track the number and type of engagement activities planned and achieved.

Working groups are an important way for the GMRP team to engage with key affected parties in a meaningful way, both to provide information and to solicit input. There are numerous working groups, ranging from those focused on specific areas, such as socio-economic issues, to those focused on the Project as a whole (e.g., the Giant Mine Working Group). The full list of committees/working groups and regular meetings with Rights holders and stakeholders is summarized in the Engagement Plan.

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2023-24 HIGHLIGHTS

- Continued engagement with Rights holders and stakeholders through the established working groups (e.g. GMRP Working Group, Aquatic Advisory Committee (AAC), Socio-Economic Working Group).
- Conducted public outreach via in-person and online Annual Public Forums held in March 2024.
- Continued regular communications (e.g., e-newsletter; website, including dedicated notification page; X (formerly known as Twitter), notices sent via the distribution list, public service announcements, media briefings, and responses to inquiries).

8.1.1 Engagement and Events

In 2023-24, the GMRP team undertook or participated in 31 engagement activities and events, aligned with and in support of the Project or related activities. This represents fewer events compared to 2022-23 (78), 2021-22 (87), and 2020-21 (84). The reduction in engagement events **in 2023-24** is due to the wildfire evacuations in NWT that took place from August 18 until September 6, 2023.

Key GMRP engagement activities **in 2023-24** included:

Open Pits Closure Criteria

The Project team presented on the Open Pits Closure Criteria at the Giant Mine Working Group meeting in June 2023. The presentation included the confirmation that Giant Mine Working Group comments, from a previous Giant Mine Working Group meeting in November of 2023, and feedback were incorporated into the updated criteria. The criterion will be updated with any further comments and will be submitted to the MVWLB in Fall 2024 (Giant Mine Remediation Project, 2023).

Quantitative Risk Assessment (Environmental Assessments)

The Quantitative Risk Assessment engagement has been a phased approach, beginning in 2018. The process has involved the Giant Mine Working Group, the Giant Mine Advisory Committee, the YKDFN, the NSMA, the City of Yellowknife, Alternatives North, and Yellowknife residents (CIRNAC, 2019c; CIRNAC, 2019a). (CIRNAC, 2019c; CIRNAC, 2019a) In 2022, the Project team completed the draft Acute Health Risk Assessment and presented the findings to the Giant Mine Working Group. The Project team shared the final, completed Acute Health Risk Assessment on September 23, 2023. Any questions or concerns regarding the assessment have been logged and addressed.

Perpetual Care Plan

As part of the Environmental Agreement, the GMRP is required to develop a Perpetual Care Plan that must address improvements in records management, communication with future generations, long-term access to funds for the Project, and analysis of different possible scenarios that might affect the perpetual care of the Project. The GMRP established a Perpetual Care Plan Advisory Task Force in October 2019 to provide support and recommendations to the Giant Mine Working Group regarding the development of a comprehensive Perpetual Care Plan. The Task Force includes representatives from all signatories to the Environmental Agreement (Giant Mine Remediation Project, 2024a).

The Task Force worked through various Perpetual Care Plan components (e.g., governance, communicating with future generations) to identify the specific goals, tasks, deliverables, and subsequent experience required. The Final Statement of Work was prepared at the end of March 2023. In June 2023, a request for information was released to receive input on the statement of work, and in January 2024 the Request for Proposal was released to tender. The contract is expected to be awarded in 2024.

Socio-Economic Engagements

The GMRP continued socio-economic engagement efforts, including three (3) meetings with the Socio-Economic Working Group, as well as bilateral meetings with YKDFN, Tłı̨chǫ and NSMA. The purpose and outcomes of these meetings are further discussed in Section 8.2. There were no meetings held with the Socio-Economic Advisory Body **in 2023-24**.

In addition, Parsons hosted an Industry Day in December 2023 to provide information on upcoming work for 2024-25.

Aquatic Engagement

In 2020, the Project established an Aquatic Advisory Committee that includes all signatories to the Environmental Agreement along with additional members from the YKDFN and the NSMA. The Committee was established to allow for participants with a keen interest in the GMRP aquatic environment to actively participate in meaningful conversations and exploration of concepts. The objective of the Aquatic Advisory Committee is for participants to develop a deeper knowledge of the Project, the regulatory framework, the aquatic environment, and environmental monitoring concepts. Furthermore, the Aquatic Advisory Committee and associated engagement was designed to meet the engagement requirements of Fisheries and Oceans Canada Fisheries Act Authorization for the GMRP. **In 2023-24**, the Aquatic Advisory Committee met in June 2023, to continue discussions on AEMP reference areas under consideration for the forthcoming AEMP Design Plan which focusses on Yellowknife Bay and discharge from the WTP.

Site-Wide Revegetation Plan

In early July 2022, the GMRP engagement team held separate sessions with YKDFN Elders and youth, and North Slave Métis Alliance Elders to gather their perspectives on revegetation as part of the remediation process. **In 2023-24** the Project, in collaboration with the Revegetation Task Force, initiated the development of a draft Engagement Strategy. Further engagement is scheduled in 2024, and the Project will continue to engage with Rights holders on revegetation implementation.

Management and Monitoring Plans, Design Plans, and Closure Criteria

The Project team worked with the Giant Mine Working Group to develop a staggered approach to sharing revised Management and Monitoring Plans. The Closure Remediation Plan has 125 proposed closure criteria, a subset of which were identified as under development. In 2022, the Project team engaged the Giant Mine Working Group on closure criterion for contaminated soils and open pits. **In 2023-24**, the Project team integrated the results of this workshop into the respective Design Plans for submission to the MVLWB.

Townsite (Boat Launch and Marina Area)

In the summer of 2022, the GMRP team engaged Rights holders and stakeholders, including the Giant Mine Working Group, the Yellowknife Historical Society, and the Great Slave Sailing Club, with respect to how the Townsite and marina area might look in the future. The engagement allowed participants to review the conceptual drawings of the design and provide feedback into what the townsite and marina area could look like during each phase of the remediation as well as after remediation is complete. The Project has committed to ensuring access will remain available to both the Yellowknife Historical Society's museum building and the lake at all times, through the construction of a new interim boat launch in the GSSC marina area (CIRNAC, 2022c). Further engagements are planned for June 2024.

Public Boat Launch

The Project's current schedule has remediation work at the public boat launch starting in Summer 2028. Activities that are currently being conducted include WTP construction, outfall installation, freshwater intake-water, and water trucks for on-site dust management (Giant Mine Remediation Project, 2023b). Future engagement related to the boat launch is scheduled for June 2024.

Site Visits

A site tour of borrow areas with select members for the YKDFN was also completed in Fall 2023 as part of the Borrow Management and Monitoring Plan engagement.

School Visits

Meetings will continue to take place with Rights holders in 2024 to include community consultation and engagement to develop curriculum resources. Classroom visits have already taken place, and the Project team will continue these visits and student site tours as requested.

Annual Public Forum

Since 2010-11, the GMRP team has held Annual Public Forums to discuss general Project updates and key studies or initiatives for that respective year.

In 2023-24 the Annual Public Forum was held, in-person and online, on March 5, 2024. The Project officials provided an update on:

- A brief history of the site and overview of the Remediation Project;
- Wildfire and evacuations;
- Regulatory, monitoring, and reporting;
- Completed and upcoming work; and
- Socio-economic achievements.

The Project team will continue to hold the Annual Public Forums for the general community, NSMA, and YKDFN.

Trade Shows and Industry Day

The Yellowknife Spring Trade Show took place as an in-person event on May 13 and 14, 2023 and aimed to inform the local community about the new active remediation work being carried out on site. The next Tradeshow will take place in May 2024 (Giant Mine Remediation Project, 2023b).

The Project team (lead by the MCM) also held Industry Day on December 5 and 6, 2023 in Yellowknife. The next Industry Day is set to occur in the Fall of 2024.

Other Engagements

In addition to the regularly scheduled meetings listed above, the Team provides updates on GMRP activities and progress through multiple communication techniques (Giant Mine Remediation Project, 2019a), including:

- E-newsletter: Sent regularly to more than 305 email addresses and posted on the GMRP website;
- Website (**www.giant.gc.ca**);
- X account (**@GiantMine**)
- Media briefings and responses to media requests;
  - There were 32 media interactions (media requests for interview, information/responses) in fiscal year 2023-24.
- Responses to unforeseen events;
- Topic-specific public service announcements, as required; and,
- Topic-specific engagements, as appropriate

Key Stakeholder and Rights holder Concerns

The GMRP team captures stakeholder and Rights holder concerns through their meeting minutes, the GMRP's Consultation Log, emails, and other correspondence. The GMRP team endeavours to respond in a timely manner. Key concerns raised **in 2023-24** were as follows:

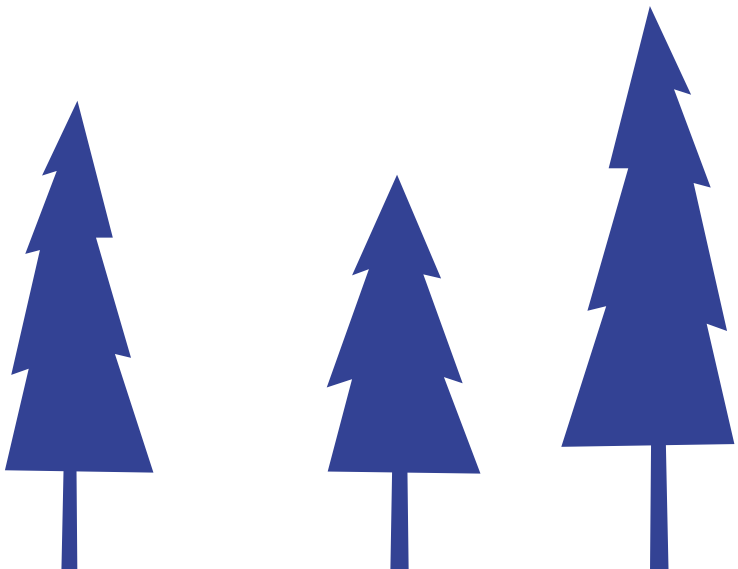
CONCERN	GMRP RESPONSE
Dust Management Rights holders and stakeholders have expressed concerns over the tailings dust and the management of the dust.	As per the MVLWB directive, the GMRP developed a Dust Communications Strategy, submitted with the updated Engagement Plan in August 2022. Water cannons were added to the site and have been used as a pre-emptive measure in times of high wind expectancy and at other times as warranted by site conditions. **In 2023-24**, the GMRP updated its website with Frequently Asked Questions (FAQ) related to dust suppression. The FAQ provides information that addresses topics of concern related to dust, dust management and the effects of dust at the Giant Mine site (CIRNAC, 2024).
Impact of Wildfires Rights holders and stakeholders have expressed concerns over the impact of wildfires on arsenic in the environment.	The GNWT-ECC has funded a 3-year project to investigate the impact of wildfires on the mobility of arsenic. With respect to the possibility of wildfire impacting the site, the safety and health of staff, of the public, and the environment continue to be top priorities for the Project team. In the event of area wildfires, the greatest and most immediate risk is the fire itself. The Project team takes action to reduce the risk of area wildfire impacting the site. Actions include collecting brush, clearing materials from recent construction, and moving materials away from structures and onto the tailings ponds. The Project team will continue to monitor and manage the risks on and to the site, considering all information, research, and expertise available to them, to keep the public and environment safe.
Climate Change Rights holders and stakeholders have expressed concerns that climate assumptions by the project are too conservative.	The GMRP has assessed climate conditions and future climate change into design engineering of the remediation and continues to review new climate change projections (see Section 6.5.3).
Apology and Compensation The YKDFN have requested an apology and compensation regarding the historical operation of the Giant Mine site.	CIRNAC worked on the apology and compensation file in coordination with the YKDFN. Two agreements were signed in 2021: The Collaborative Process Protocol Agreement and the Community Benefits Agreement. CIRNAC has committed to providing $2.2 million over two years (2022-23 and 2023-24) to support the YKDFN's continued participation in the collaborative process.
Mine Water Elevation Rights holders and stakeholders have expressed concern about the potential impacts of water rising in the mine and how the Project will control the mine water.	The GMRP provided detailed information including a plain language video to help Rights holders and stakeholders understand the mine water management and associated risks. The mine pool level was maintained between -76.94 and -77.56 m above mean sea level (amsl). The GMRP established mine water elevation action levels for the existing Water Management and Monitoring Plan and will continue to develop mine water elevation action levels acceptable to the MVLWB for future-case water management.

CONCERN	GMRP RESPONSE
Local jobs and contracts not staying in the North An ongoing concern that contracts issued by the Main Construction Manager for on-site work and associated employment will not remain predominantly in the NWT.	There are several activities consistently applied by the MCM to try to maximize Northern employment and procurement. In advance of tendering, the MCM always assesses existing local-area business capacity. To increase awareness of contract opportunities, the MCM holds an annual Industry Day in Yellowknife (or virtually when in-person restrictions are in effect) and informs the local business community of upcoming opportunities. The MCM also meets with Indigenous business development corporations to determine future interests / capacities and to encourage them to prepare for upcoming contracting opportunities either on their own or via Joint Ventures. If there are two or more Indigenous businesses in the local area that can do the work, Parsons releases work packages via the Procurement Strategy for Indigenous Business (PSIB information provided below on recent PSIB changes (section 8.2)), which restricts bidding on the contract only to Indigenous businesses across Canada. Though the MCM cannot tell its contractors who to hire, they do establish mandatory local Indigenous training, employment, and procurement requirements for each contract, called Indigenous Opportunity Considerations (IOC). IOCs are local because they are geographically restricted to the GMRP's contract area, which is within the combined territories of Mǫwhì Gogha Dè Nı̨ı̨tłèè , as defined in the Tłı̨chǫ Land Claims and Self-Government Agreement, and the Akaitcho Asserted Territory, as defined in the Akaitcho Interim Measures Agreement. When bids are evaluated, bidders receive points for committing to train and employ local Indigenous persons. Prior to starting work and throughout the contract's length, the MCM works closely with each contractor to make sure that they meet or exceed their commitments.
Safety of Workers on Site Members of the public along with Rights holders and stakeholders have raised questions about how safe they and their loved ones will be should they be hired on site. The Project has determined this concern is regarding both exposure to arsenic trioxide, as well as general construction/mine workplace safety.	**Arsenic:** Workers on site are required to participate in routine urinalysis for the purpose of screening arsenic levels. Mitigation measures are in place and enforced by the MCM should a worker's levels start trending higher. The MCM has implemented an "Arsenic Awareness Week" annually to provide workers with more information. **Operational Health & Safety:** The MCM is responsible for setting the site standards that all subcontractors on site are expected to achieve. A Daily Mine Manager's meeting is held for all subcontractor leadership to discuss workflow for the day, including sharing of incidents/near miss/ hazard identification learnings and generally ensure there is open communication site wide. All subcontractors hold their own daily and weekly safety meetings that are mandatory for all personnel on site. A large television was installed in the C-Dry building foyer, above the safety board, with rotating site notifications and safety messages. The GMRP has a joint Health and Safety Committee with representatives from all contractors (employees and management) to address any safety concerns and bring ownership to the field, encouraging a proactive safety culture. The Site Safety Manager for the MCM is currently drafting a PPE and Site Safety presentation that will be brought to Rights holders who have expressed concern.

Next Steps

The GMRP will continue to host community forums for YKDFN, NSMA, and residents of Yellowknife to engage with the external advisory bodies, and to communicate in a frequent and transparent manner via the established channels (e.g., e-newsletter, website, radio, school outreach). Some meetings will continue to be held virtually (e.g., Giant Mine Working Group meetings), while some meetings will be in-person (e.g., YKDFN Community Meeting). Engagement activities for 2024-25 will focus on:

- **Borrow Engagement** – a site blessing will be held in the area prior to blasting taking place.
- **Aquatic Engagement** – engagement with the Aquatic Advisory Committee planned for spring 2024 and winter 2024-25 includes meetings on the AEMP and monitoring conducted under the Fisheries Act Authorization.
- **Management and Monitoring Plan, Design Plans, and Closure Criteria** – engagement will continue on these items for various site requirements, as applicable.
- **Site-Wide Revegetation** – the Project team plans to continue collaboration with the Revegetation Task Force. Future engagement is scheduled for July 2024 and will continue as decided on by the internal task force.
- **Education Initiatives** – the Project team will continue classroom visits and student site tours as requested.
- **Community Events** – the Project team will have a booth set up at the Yellowknife Spring Tradeshow in May 2024 and will hold the annual public forums for the general community, NSMA, and YKDFN.



8.1.2. Incorporation of Traditional Knowledge (TK)

The YKDFN and the NSMA have developed and shared extensive knowledge of the Giant Mine site and surrounding area. Engagement with Indigenous Organizations (Rights holders) is part of the 26 measures listed in the Report of Environmental Assessment and Reasons for Decision (Mackenzie Valley Review Board, 2013) to mitigate negative environmental impacts, and address public concerns. As a result, incorporating TK into planning and work on-site was a requirement for obtaining the Water Licence. While some TK has been incorporated in GMRP activities to date (e.g., to help determine the best time of year to deconstruct buildings), the Team acknowledges that there is always a need for continual improvement for the incorporation of TK and community perspectives within Project initiatives.

- **In 2018-19**, YKDFN Lands and Environment completed a TK Study, which aimed to document YKDFN knowledge, values, priorities, concerns, perceptions of risk, and understanding of impacts to past and current land use (Yellowknives Dene First Nation & Trailmark Systems, 2019).
- **In 2019-20**, the NSMA completed a TK study "Summary of Traditional Land-Use by the Indigenous Métis People in the Yellowknife Bay Area" (Shin Shiga Consulting, 2020).
- **In 2020-21,** the Project team completed an Archaeological Impact Assessment. The YKDFN participated in a multi-day walkthrough of the site, providing TK on areas of Traditional Land Use. An NSMA elder provided TK via telephone and an NSMA member did a one-day visit to key areas. In addition, the GMRP gathered traditional and local knowledge through the Aquatic Advisory Committee, which has influenced Project remediation activities.
- **In 2021-22**, the Project team collaborated with the YKDFN to develop and finalize the YKDFN TK brochure that depicts history of the YKDFN around the Giant Mine, as well as Yellowknife Bay. With permission from the YKDFN, the TK brochure is now being utilized as a cultural awareness component of the Giant Mine site orientation and in various locations around the communities.
- **In 2022-23**, the Project team began discussions with YKDFN members to support the creation of a TK video that will discuss the way the land at site was used prior to mining activities. This video will be used in orientations for new members at the GMRP site.

In 2023-24, a Traditional Knowledge Study for the Tłı̨chǫ was funded by GMRP and completed in early 2023. The findings of the study were presented to Elders and youth on April 6th, 2023, by Two Worlds Consulting.

8.2. SOCIO-ECONOMIC

The Project team has been guided by a Socio-Economic Strategy (the Strategy) since 2016. The purpose of the Strategy is to provide guidance to the GMRP team for identifying and delivering socio-economic benefits to the region, while minimizing and mitigating potential negative social impacts associated with the Project. The Project team led a comprehensive update to the Strategy in 2022-23, integrating feedback from Rights holders and stakeholders from the past five years. The overall aim of the updated 5-year (2023-2028) Strategy is to maximize socio-economic benefits for Northerners and Indigenous Peoples and to deliver on regional socio-economic commitments and requirements. This socio-economic aim is supported by three pillars:

EMPLOYMENT & PROCUREMENT

TRAINING & CAPACITY DEVELOPMENT

SOCIAL IMPACT MANAGEMENT

The Strategy describes the objectives, focus areas, desired outcomes, indicators, and targets under each pillar. A Plain Language Summary of the Strategy can be found here: **https://www.rcaanc-cirnac.gc.ca/eng/1566487546150/1618357081011.**

The Strategy is dynamic and will continue to evolve as the Project changes over time and responds to successes and challenges. The Project anticipates a full Strategy review and revision leading up to March 2028. The Project may also make additional revisions part-way through the five-year timeline as part of its adaptive management approach.

2023-24 HIGHLIGHTS

- The Project team advanced the first Procurement Framework Agreement Annual Report to YKDFN, for submission June 2024.
- The Socio-Economic Working Group continued to provide expertise and support to advance implementation of the Socio-Economic Strategy.
- Funding for training has been committed by the Project as part of the Community Benefit Agreement for YKDFN's Dechı̨ta Nàowo program and most recently for the NSMA. The Project currently provides annual funding to Tłı̨chǫ Government for training initiatives. Long-term funding for training is being considered with the Tłı̨chǫ Government.
- Northern employment reached 37% (person hours), which is slightly above the 2022/23 percentage (36%), but lower than the 2021/22 percentage (46%). This increase in employment coincides with a 55.5% rise in activity (using employment person hours) in 2023/24 compared to the five-year average (2018/19 to 2022/23), highlighting the current strength of Northern employment statistics.
- Northern Indigenous employment reached 19% (person hours), which is higher than the 2022-23 percentage (16%).
- Out of the 50% of Northern supplier expenditures on contracts ($94,609,849), 45% were Northern Indigenous ($84,136,499) and 5% were Northern non-Indigenous ($10,473,349).
- For training, Northerners made up 94% of total training provided, measured in person-hours.

8.2.1. Socio-Economic Governance

To enhance coordination and preparedness for socio-economic benefits, the Project team established the following advisory and coordinating bodies in 2018-19:

- **Socio-Economic Advisory Body:** The Socio-Economic Advisory Body provides strategic advice to the Socio-Economic Working Group and acts as senior government champions for the implementation of the Socio-Economic Working Group's approach. The Advisory Body is chaired by the Northern Contaminated Sites Program Director General and is comprised of senior level representatives from Alternatives North, Canadian Northern Economic Development Agency, CIRNAC, City of Yellowknife, GNWT (Environment and Climate Change, Industry Tourism and Investment, and Education, Culture and Employment), PSPC, Service Canada, NSMA, YKDFN, and Tłı̨chǫ Government. The Giant Mine Oversight Board acts as an observer.

- **Socio-Economic Working Group:** The Socio-Economic Working Group coordinates and integrates socio-economic activities for the Project. This working group shares information and seeks opportunities to improve collaboration, as well as reports to and seeks advice from the Socio-Economic Advisory Body on the implementation approach. It usually meets every two months. Its membership includes representatives of, CIRNAC, City of Yellowknife, GNWT (Environment and Climate Change, Industry Tourism and Investment, and Education, Culture and Employment), Parsons (MCM), PSPC, NSMA, Tłı̨chǫ Government, and YKDFN. The Project engages representatives of the Canadian Northern Economic Development Agency, and GNWT Health and Social Services on a case-by-case basis. The Giant Mine Oversight Board continues to act as an observer at the Socio-Economic Working Group.

In 2023-24, the Socio-Economic Working Group met once in December 2023 in Yellowknife (hybrid meeting) and 2 times virtually, via MS Teams. The Socio-Economic Advisory Body did not meet **in 2023-24**.

8.2.2 Community Benefits Agreements

The GMRP worked with the YKDFN to develop a Community Benefits Agreement. This Agreement was signed in August 2021 and outlines how the Project team and the Yellowknives Dene are working together to help the First Nation achieve socio-economic benefits from the Project, including a commitment to negotiate a future Procurement Framework Agreement. The Community Benefits Agreement also details how the Project team and the YKDFN will work together to enable training and capacity building activities; healing of the land; socio-economic development; community-based environmental monitoring; and perpetual care planning.

In March 2023, a Community Benefits Agreement was also signed with the North Slave Métis Alliance (NSMA) and GMRP. This agreement outlines how the Project team and the NSMA are working together to help them achieve socio-economic benefits from the Project. The Community Benefits Agreement also details how the Project team and the NSMA will work together to enable training and capacity building activities.

In 2023-24, negotiations with Tłı̨chǫ Government continued.

On April 5, 2023, Canada and the YKDFN signed a Procurement Framework Agreement (PFA). A requirement of the PFA is an Annual Report for Canda to share with the YKDFN every year. The First PFA Annual Report, for April 1, 2023, to March 31, 2024, was to be shared with the YKDFN in Spring 2024.

An additional requirement of the PFA is a Socio-Economic Framework developed by the MCM with support from Canada, the Socio-Economic Working Group, and the Advisory Body. The purpose of the Socio-Economic Framework is to better understand how the requirements outlined in the PFA are being fulfilled and reported on. The Socio-Economic Framework is set to be finalized by the end of the fiscal year 2024-2025.

8.2.3 Online Performance Tracking and Reporting

The Project team began the development of an online performance tracking and reporting tool in June 2023. This tool is meant to support the Project team and its subcontractors by modernizing and simplifying socio-economic data collection and retention processes. It is being developed in-house by PSPC. Delays were encountered **in 2023-24** due to staffing shortages that impacted the ability to code. However, the Project team continued planning how the tool will function, including submitting an application to allow limited external access for contractors to upload their data directly into the tool and avoid submitting spreadsheets.

Next Steps:

- Continue to work on obtaining approval for external access; and,
- Continue the development of the tool that is scheduled to roll out in April 2025.

8.2.4 Employment and Procurement

Providing access to employment and procurement opportunities is one of the Projects' key approaches to maximize Northern and Indigenous benefits. The table below (Table 9) summarizes the employment and procurement activities that the Project advanced and/or completed **in 2023-24**, reorganized to align with the revamped implementation plan (organized now by focus area).

Table 9: Key Actions and Deliverables Advanced in 2023-24 – Employment and Procurement

Action	Deliverable
Objectives: Maximize Indigenous and Northern participation through Northern and Indigenous-centered procurement processes, proactive communication of opportunities, and collaboration.	
Procurement Approaches and Tools	• **Regional Procurement Strategy for Indigenous Business (PSIB):** The GMRP adjusted the PSIB by adding a regional component to it in April 2023. In the past, contracts issued as PSIB were open to Indigenous businesses across Canada. However, a regionally restricted PSIB is open only to Indigenous businesses within the Project's Area of the Contract, which is a combination of Mǫwhì Gogha Dè Nıı̨tłèè area, as defined in the Tłı̨chǫ Land Claim and Self Government Agreement, and the Akaitcho Asserted Territory, as defined in the Akaitcho Interim Measures Agreement. **In 2023-24**, the Project team assigned the Demolition and Debris Removal – Core Industrial Area work package as Regional PSIB. The advanced notice and pre-qualification was issued December 2023. The contract is expected to be awarded in summer 2024. • **Procurement Strategy for Indigenous Business (PSIB): In 2023-24**, the Project team awarded several contracts via PSIB. Details are provided under Section 8.3.4.4 below. • **Master Service Agreements: In 2023-24**, the Project team introduced Master Services Agreements (MSAs) as a new procurement tool. MSAs are similar to the Federal Government's Standing Offer process whereby contractors are prequalified, and prices are determined in advance, in anticipation of work to happen. Work is not guaranteed, and full details of the work or timing is not known at time of prequalification. However, prequalifying contractors avoids lengthy tender processes that can be a barrier to entry for smaller contractors. • **In 2023-24** the Civil Works package was tendered under a MSA. The package was intended to supplement the Care and Maintenance contract by enabling an additional contractor to undertake similar activities on-site. These activities involve preparatory work ahead of initiating various remediation efforts. Although the MSA has been established, it has not yet been utilized.

Labour Capacity Updates and Communication	• **Labour Demand Forecast:** Parsons' Constructability Review Team completed the Labour Demand Forecast for the Project's Implementation Phase; the Project team has been sharing this forecast with the public since the Summer of 2022. The Giant Mine Oversight Board (GMOB) completed their own estimates and shared them with the Project team. While both forecasts provide valuable insights, some high-level differences were noted between the two. Comparison of actual results versus estimates is ongoing and will be used to update the Labour Demand Forecast in the future, if necessary.
Outreach and Engagement with Communities and Businesses	• **Recruitment Support:** The Project team and Parsons attended the Yellowknife Spring Trade Show. Parsons attended YKDFN's Annual Career Fair and the NWT Chamber of Commerce Trade Show **in 2023-24**. • **Enhance Apprentice / Trainee Uptake:** The Project team continually works with GNWT's Department of Employment, Culture and Education and training institutions to stay up to date on availability of apprentices in the Territory. Parsons reviews this information and recommends the inclusion of apprentices in upcoming contracts where appropriate. • **Industry Day:** Parsons held a multi-day in-person Business Preparedness Conference (Industry Day) on December 5 and 6, 2023 in Yellowknife; the session focused on upcoming work packages, including scope, labour & equipment requirements, and tentative schedule. The next conference is scheduled for November 2024 at Northern United Place. • **Bilateral meetings:** Parsons' Economic Development Manager met with a variety of Indigenous business development arms throughout 2023-24. Parsons continues to maintain a physical office in Yellowknife where people drop by regularly, from those looking for employment to business owners looking for partnerships.

8.2.4.1 2023-24 Employment Results and Performance Compared to Target Ranges

The GMRP tracks several employment statistics, including total employment and employment by certain categories, including Northern, Northern Indigenous, Indigenous, Indigenous Opportunity Considerations (IOC)[10], and Female employees.

The Project reports the combined employment statistics for Parsons as the Main Construction Manager and its contractors as well as CIRNAC contractors. Parsons and its contractors provide on-site/local employment, while CIRNAC contractors tend to be large engineering and consulting firms that provide Project design support. The employment statistics do not include Federal or Territorial employees. There are several indicators for which data is only available from the MCM and its subcontractors.

In 2019-20, the Project approved a set of employment target ranges for the Implementation Phase of the Project, through extensive engagement with the Socio-Economic Working Group and the Socio-Economic Advisory Body. The annual report compares actual employment performance to target ranges. In December 2023, the Project team reviewed target performance and potential updates with the Socio-economic Working Group. Consensus within the Working Group was to maintain the current targets for now and focus on activities that can boost results.

EMPLOYMENT TARGETS

- **Northern* employees:** 55–70% person-hours
- **Northern Indigenous employees:** 25–35% person-hours
- **Female employment:** 15–30% person-hours

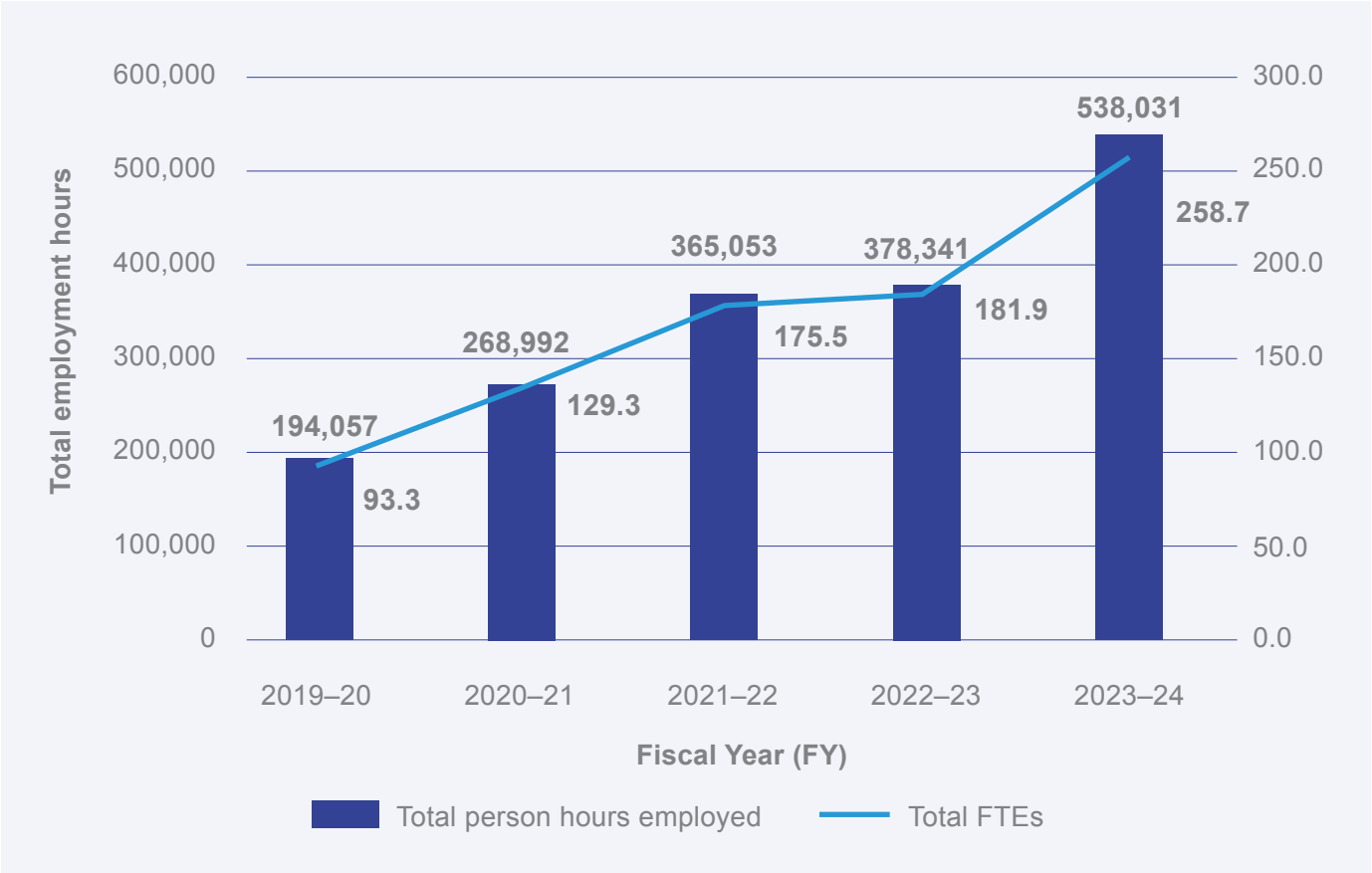
**Northern: resident of the North for a minimum of six months.*

[10] IOCs consist of point-rated evaluation criteria used within a solicitation process. These criteria evaluate bidders based on the type and extent of commitments made to maximize Indigenous participation within the resulting contract work. GMRP considers to be IOC eligible any Indigenous peoples residing in (longer than 6 months) and businesses located within the Area of the Contract.

Total Employment

In 2023-24, the Project employed a total of 1,533 people, for a total of 538,032 hours (or 258.7 FTEs[11]). Employment has steadily increased over the past five years (194,057 hours, 93.3 FTEs in 2019-20; 268,992 hours, 129.3 FTEs in 2020-21; 365,053 hours, 175.5 FTEs in 2021-22; 378,341 hours, 181.9 FTEs in 2022-23). Figure 9 below shows the total employment trend since 2019-20.

Figure 9: Total Employment 2019-20 to 2023-24 (# of people hours and FTEs)



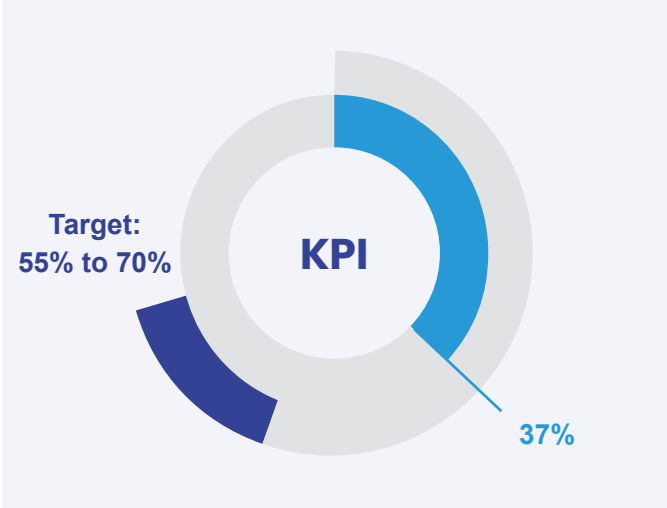
Northern Employment

As indicated in Figure 10, **in 2023-24**, the percentage of person-hours worked by Northern employees was 37%, which is higher than the 2022-23 percentage (36%), but lower than the 2021-22 percentage (46%). The results are still below the lower end of the target range (55-70%).

Northern Employment results for 2023-24:

- 37% of total hours (199,834 hours)

Figure 10: Northern Employment Results for 2023-24 (person hours)



[11] FTE – Full Time Equivalent, at 2,080 hours per year.

Northern Employment Breakdown

Figure 11 highlights employment statistics broken down by Northern sub-category, including Indigenous (Indigenous and non-Indigenous persons residing in any of the three Territories) and whether they represent female or male employees.

Northern Employment Breakdown for 2023-24:

- Northern Indigenous Women: 34 people, 14,075 hours
- Northern Indigenous Men: 216 people, 90,260 hours
- Northern Non-Indigenous Women: 29 people, 7,599 hours
- Northern Non-Indigenous Men: 145 people, 87,897 hours

Figure 11: Northern Employment Breakdown results for 2023-24

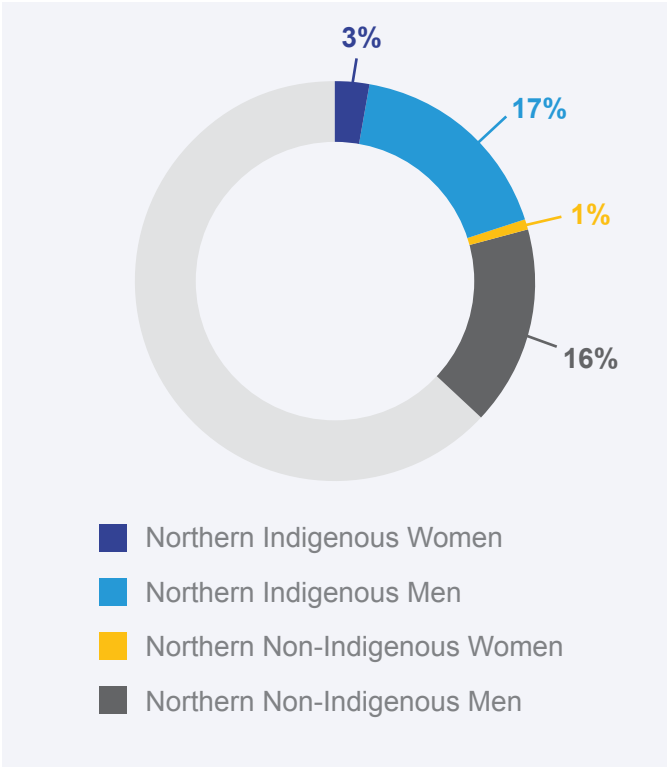
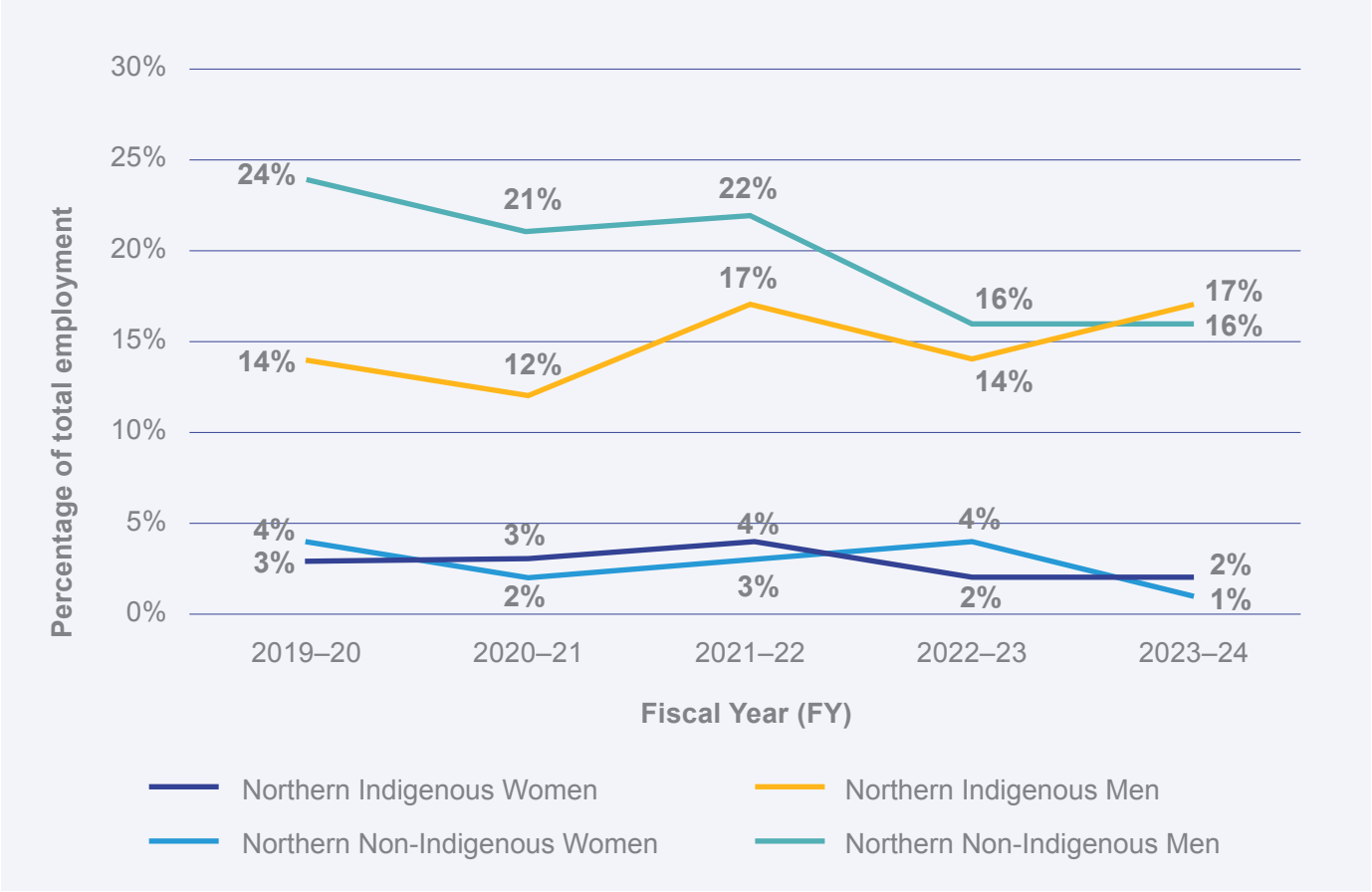


Table 10 and Figure 12 presents key trends for employment across Northern Indigenous/non-Indigenous women and men working on the project for the past five years (percentage of employment by Northern sub-category). The employment (% p-hrs) of Northern Indigenous women and men, as well as Northern non-Indigenous women has stayed relatively constant over the past five years. However, there has been a decrease in the percentage of employment hours by Northern non-Indigenous men (24% in 2019-20 to 16% **in 2023-24**). There has been a 56% rise in activity (in total p-hrs) in 2023/24 compared to the previous five-year average (2018/19 to 2022/23), highlighting the current strength of Northern employment statistics overall. In other words, the number of hours that Northern employees are working has increased, but the percentage compared to southern employees has stayed constant or decreased.

Table 10: Percentage of employment by Northern sub-category, from 2019-20 to 2023-24.

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Person Hours	**194,057**	**268,992**	**365,053**	**378,341**	**538,031**
Northern Indigenous Women	3%	3%	4%	2%	2%
Northern Indigenous Men	14%	12%	17%	14%	17%
Northern non-Indigenous Women	4%	2%	3%	4%	1%
Northern non-Indigenous Men	24%	21%	22%	16%	16%

Figure 12: Percentage of employment by Northern sub-category from 2019-20 to 2023-24.



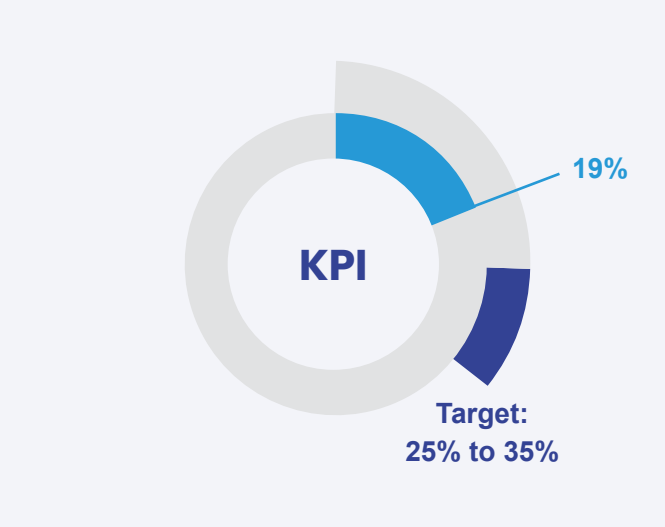
Northern Indigenous Employment

As indicated in Figure 13, **in 2023-24**, the percentage of person-hours worked by Northern Indigenous employees was 19%, which is higher than the 2022-23 percentage (16%) and lower than the 2021-22 percentage (20%). The results are still below the lower end of the target range (25-35%).

Northern Indigenous Employment results for 2023-24:

- 19% of total hours (104,335 hours)
- 16% of total employees (250 people)

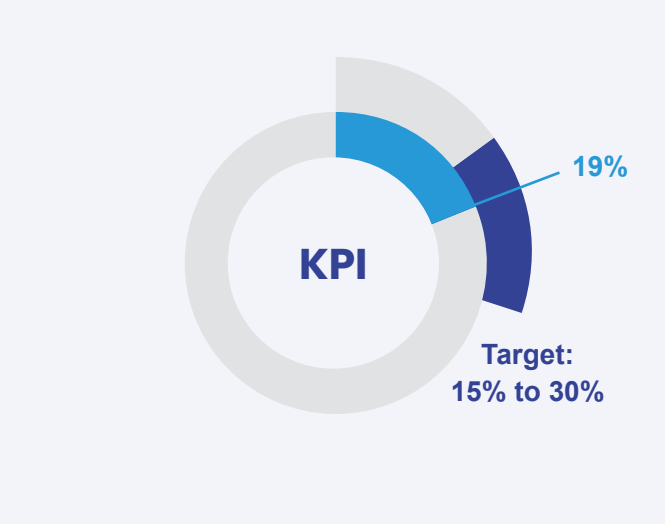
Figure 13: Northern Indigenous Employment Results for 2023-24 (person hours)



Female Employment

As shown in Figure 14, **in 2023-24**, the percentage of person-hours worked by female employees was 19%, which is lower then the 2022-23 percentage (22%) and the 2021-22 percentage (20%). Employment of women is within the target range of 15-30%.

Figure 14: Female Employment Results for 2023-24 (person hours)



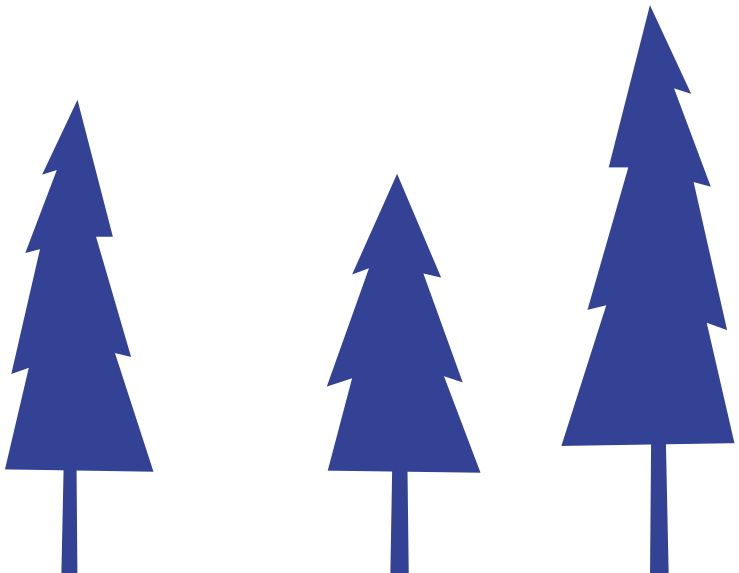


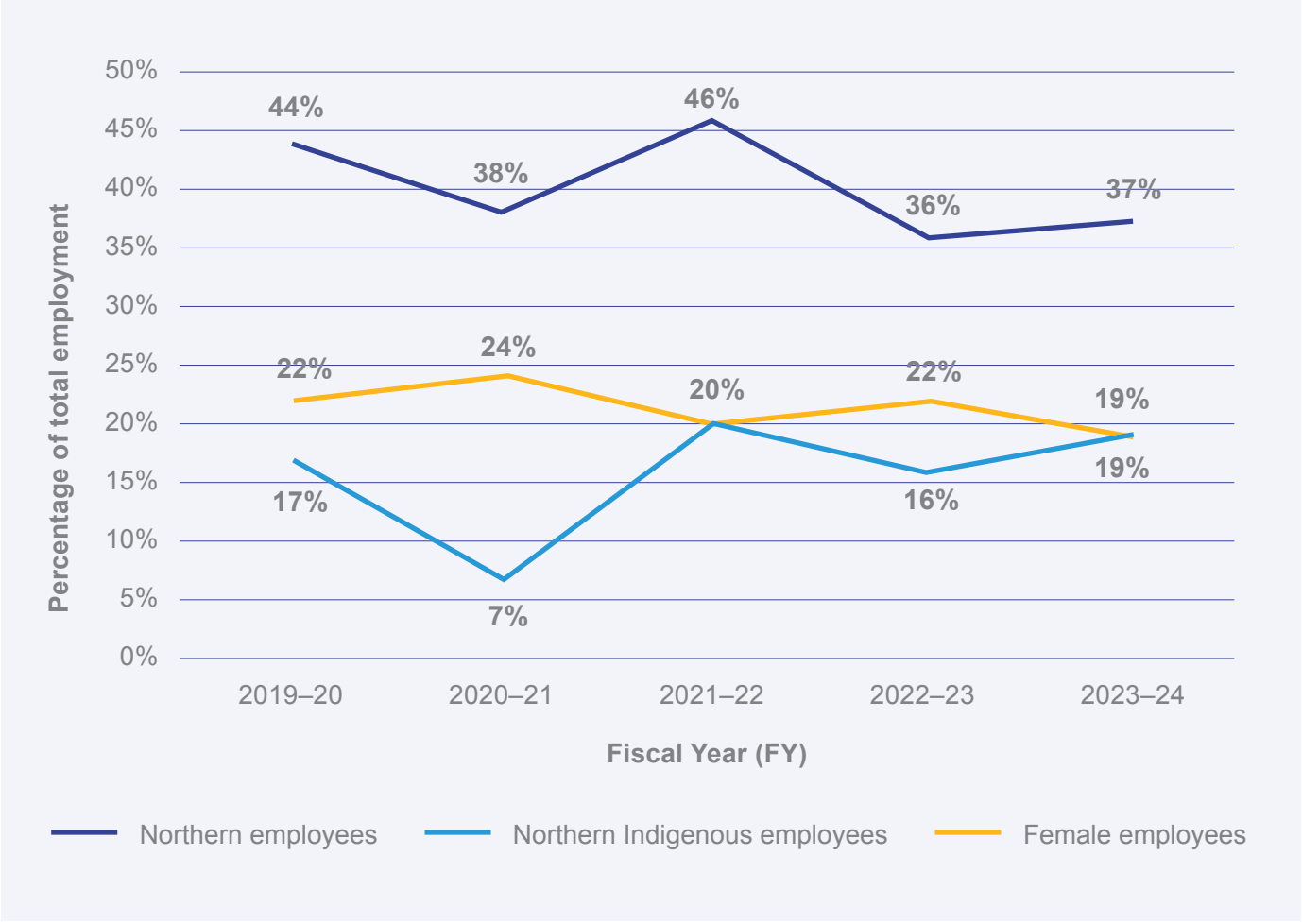
Table 11 and Figure 15 below provide information on key trends of the total percentage of persons hours, by category, since 2019-20. These results represent the combined data reported by both CIRNAC and Parsons. As shown in below, the percentage of Northern employees increased to 37% **in 2023-24**. This result is comparable or lower than the previous four years. The percentage of Northern Indigenous employees is 19% of all employees (an increase from the previous year), and the percentage of female employees is 19% of all employees, which is a moderate decrease from the previous four years.

Table 11: Person hours as % of all Employees by Target Category from 2019-20 to 2023-24

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Person Hours*	**194,057**	**268,993**	**365,053**	**378,341**	**538,032**
Northern employees	44%	38%	46%	36%	37%
Northern Indigenous employees	17%	7%	20%	16%	19%
Female employees	22%	24%	20%	22%	19%

**Employee categories might overlap – each category is a subset of Total Person Hours (e.g., the same person may be represented here three times if they are Indigenous from the North).*

Figure 15: Percentage of employment by Northern sub-category from 2019-20 to 2023-24.



PARSONS AND PARSONS' CONTRACTORS

In 2023-24, the employment statistics for Parsons and its subcontractors, which include key operational and construction roles, provide a focused look at the workforce contributing directly to on-the-ground project activities. These figures, which represent only the Parsons-led portion of the project, are distinct from the broader project statistics that encompass all contractors and consulting firms involved in the work. Specifically, Parsons and its subcontractors accounted for the following portion of total employment:

- **Northern -** 48% of all employee hours (target range: 55 – 70%)
- **Northern Indigenous -** 25% of all employee hours (target range: 25 – 35%)
- **Female -** 14% of all employee hours (target range: 15 – 30%)

These statistics demonstrate that nearly all the Northern and Northern Indigenous employees are contracted under Parsons rather than under CIRNAC contracts, which focus on engineering and design and are held by southern-based consulting companies.

The Project also tracks indicators related to overall Indigenous employment, IOC employment, NWT residential status, and skill levels. Results for 2023-24 are summarized below.

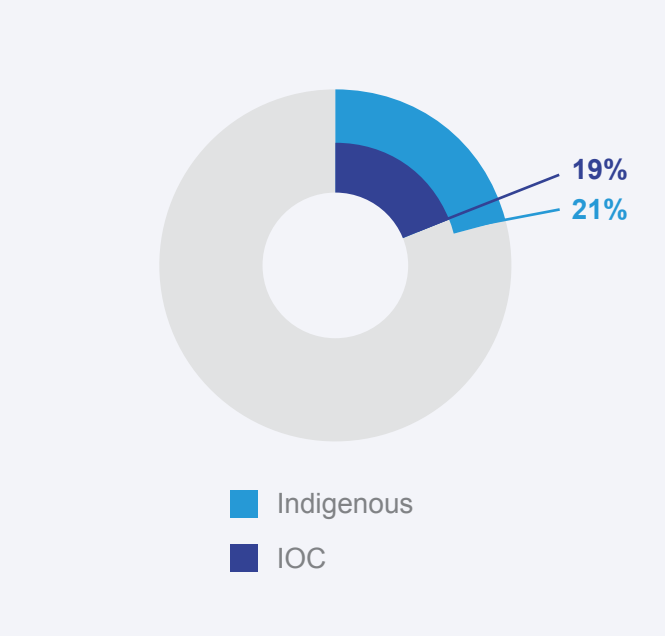
Indigenous and IOC Employment

As shown in Figure 16, overall Indigenous employment accounted for 21% (113,108 hours) of total person-hours worked **in 2023-24**, which is a 3% increase compared to the 2022-23 results (18%; 67,676 hours) and the same as in 2021-22 (21%; 77,103 hours). Specifically, within the Area of Contract (Figure X), Indigenous employment (IOC)[12] accounted for 19% of total person-hours worked **in 2023-24**. This reflects a 4% increase from the 2022-23 results (15%; 55,272 hours) and a 2% increase from 2021-22 (18%; 64,538 hours).

Indigenous and IOC Employment results for 2023-24:

- Indigenous: 21% of total hours (113,108 hours)
- IOC: 19% of total employees (102,608 hours)

Figure 16: Indigenous and IOC Employment Results for 2023-24

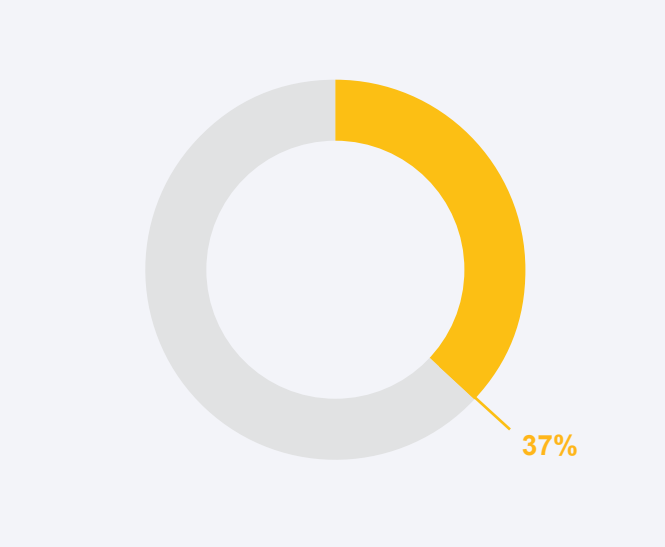


[12] IOC includes any Indigenous person residing within the Area of the Contract.

NWT Residential Status (Parsons and their sub-contractors)

Figure 17 highlights employment statistics broken down by NWT residential status specifically for Parsons and their subcontractors **in 2023-24**. The number of NWT residents accounted for 37% of total employees (312 people), while non-NWT residents made up 63% (531 people) of the workforce. This breakdown provides a more accurate representation of the Territorial workforce, focusing on Parsons and its contractors, rather than including southern firms that may only contribute short-term, specialized labor.

Figure 17: NWT Residential Status Results for 2023-24 (% of # persons hours)



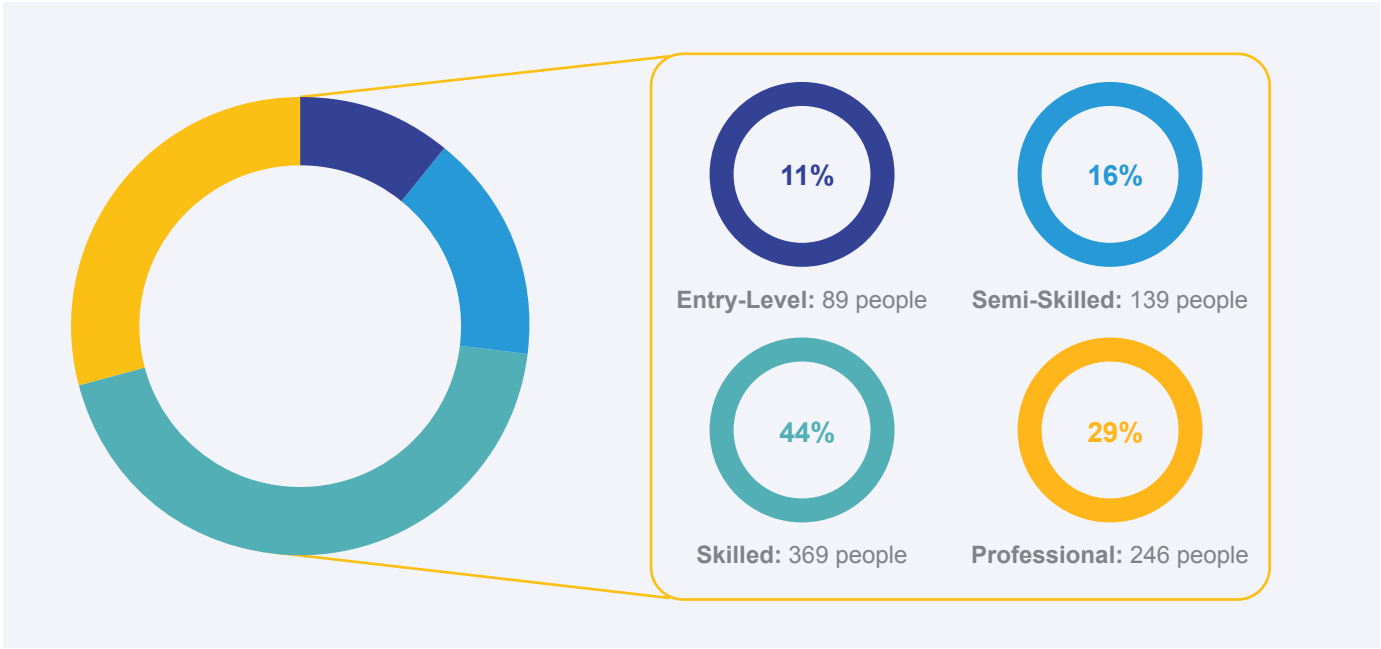
NWT Residential Status results for 2023-24:

- NWT Resident: 37% of total employees (312 people)
- Non-NWT Resident: 63% of total employees (531 people)

Employment by Skill Level (Parsons and their subcontractors)

Figure 18 highlights the employment statistics broken down by skill level for total employment for Parsons and their subcontractors only ('on-site'). **In 2023-24**, the total number of entry level employees on-site made up 11% (89 people) of the total employment. Semi-skilled employees made up 16% (139 people) of total on-site employment. Skilled employees constituted the largest segment, comprising 44% (369 people) of the total workforce. Professional employees made up 29% (246 people) of total employment. These figures provide a snapshot of the skill level distribution among the workforce for Parsons and their subcontractors during the 2023-24 period.

Figure 18: Employment by Skill Level results for 2023-24 (% of # persons hours) (Parsons and their subcontractors only)



8.2.4.2 2023-2024 Procurement Results and Performance Compared to Targets

8.3.4.3 Suppliers Statistics

The GMRP tracks the total number of suppliers and the total value of contracts by four categories: Northern, Southern, Indigenous, and IOC. It is important to note that these categories might overlap in some instances. For example, a single supplier may simultaneously be counted as Northern, Indigenous, and IOC – or a combination thereof. There is one target range associated with procurement, outlined to the right.

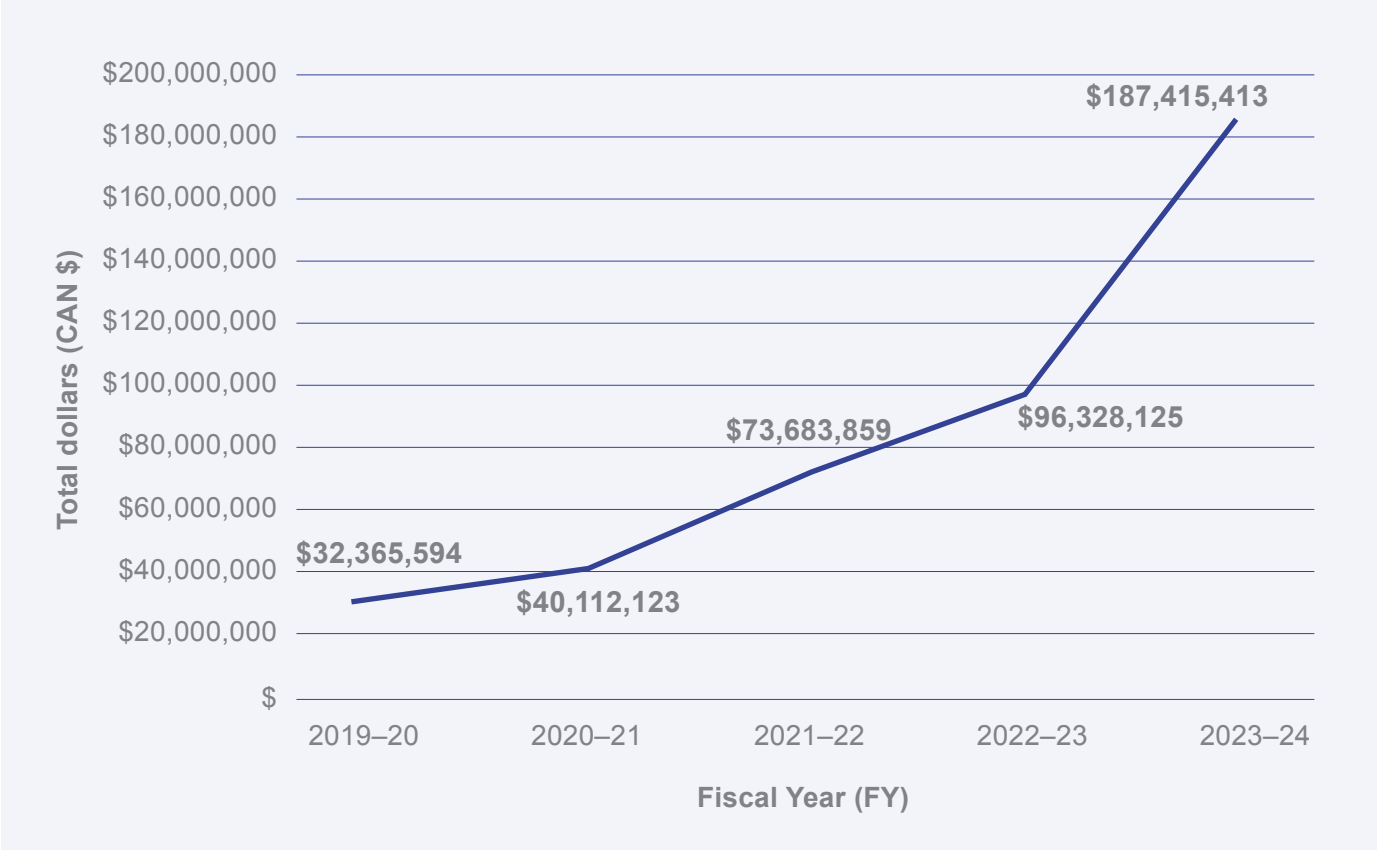
PROCUREMENT TARGET

Northern expenditures: 65-75% amount spent.

Total Expenditures on Contracts

In 2023-24, the Project team spent a total of $187,415,413 on contracts. Expenditures on contracts has increased steadily since 2019-20 ($32,365,594 in 2019-20; $40,112,123 in 2020-21; $73,683,859 in 2021-22; and $96,328,125 in 2022-23). Figure 19 below shows the total amount spent on contracts since 2019-20.

Figure 19: Total Amount ($) Spent on Contracts since 2019-20



Northern Supplier Expenditures on Contracts

In 2023-24, the proportion of expenditures with Northern suppliers reached 50% of all the Projects expenses. This result is lower than 2022-23 (61%) and 2021-22 (59%) but is higher than 2020-21 (32%) and 2019-20 (44%) (Figures 20 and 22, Table 12 below). Despite the significant increase in procurement through Northern suppliers observed **in 2023-24**, values are still below the target range (65-75%).

Northern Supplier Expenditure on Contracts results for 2023-24:

- $94,609,849; 50% of total contract expenditures

Figure 20: Northern Supplier Expenditures on Contracts results for 2023-24

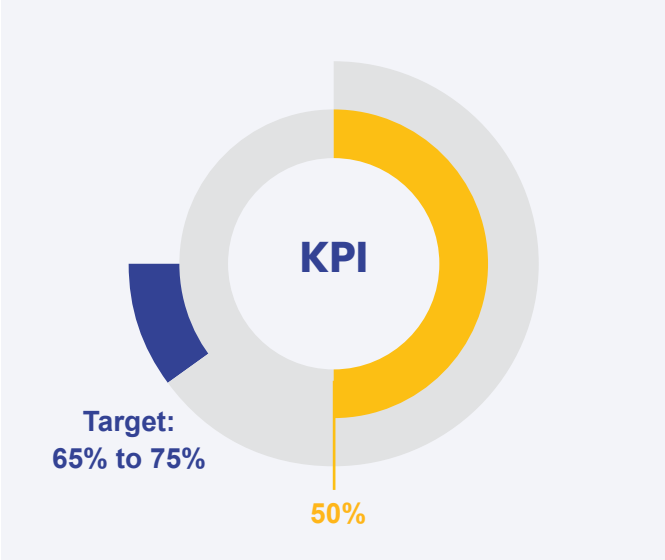


Table 12: Percent of Total $ Value Spent from 2019-20 to 2023-24

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Spent ($)	**$32,365,594**	**$40,112,123**	**$73,683,859**	**$96,328,125**	**$187,415,413**
Northern suppliers	44%	32%	59%	61%	50%

Northern Supplier Expenditures Breakdown

Figure 21 highlights the procurement accounted for by Northern Indigenous and by Northern non-Indigenous suppliers for 2023-24. **In 2023-24**, out of the 50% of Northern supplier expenditures on contracts ($94,609,849), 45% were Northern Indigenous ($84,136,499) and 5% were Northern non-Indigenous ($10,473,349).

The total expenditures to Indigenous suppliers increased to $84,136,499 **in 2023-24** compared to $50,714,487 in 2022-23 and $30,564,330 in 2021-22; however, the total percentage spent decreased when compared to 2022-23, but was higher than 2021-22 (45% **in 2023-24**, 53% in 2022-23, and 41% in 2021-22). There are no targets set for expenditures with Indigenous suppliers.

Northern Supplier Expenditures on Contracts Breakdown for 2023-24:

- Northern Indigenous: 45%, $84,136,499
- Northern Non-Indigenous: 5%, $10,473,349

Figure 21: Northern Supplier Expenditures on Contracts results for 2023-24

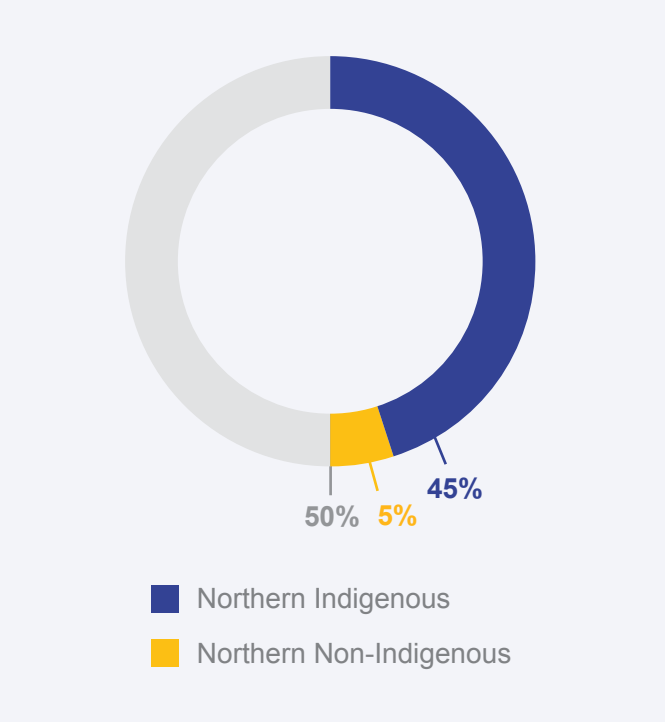
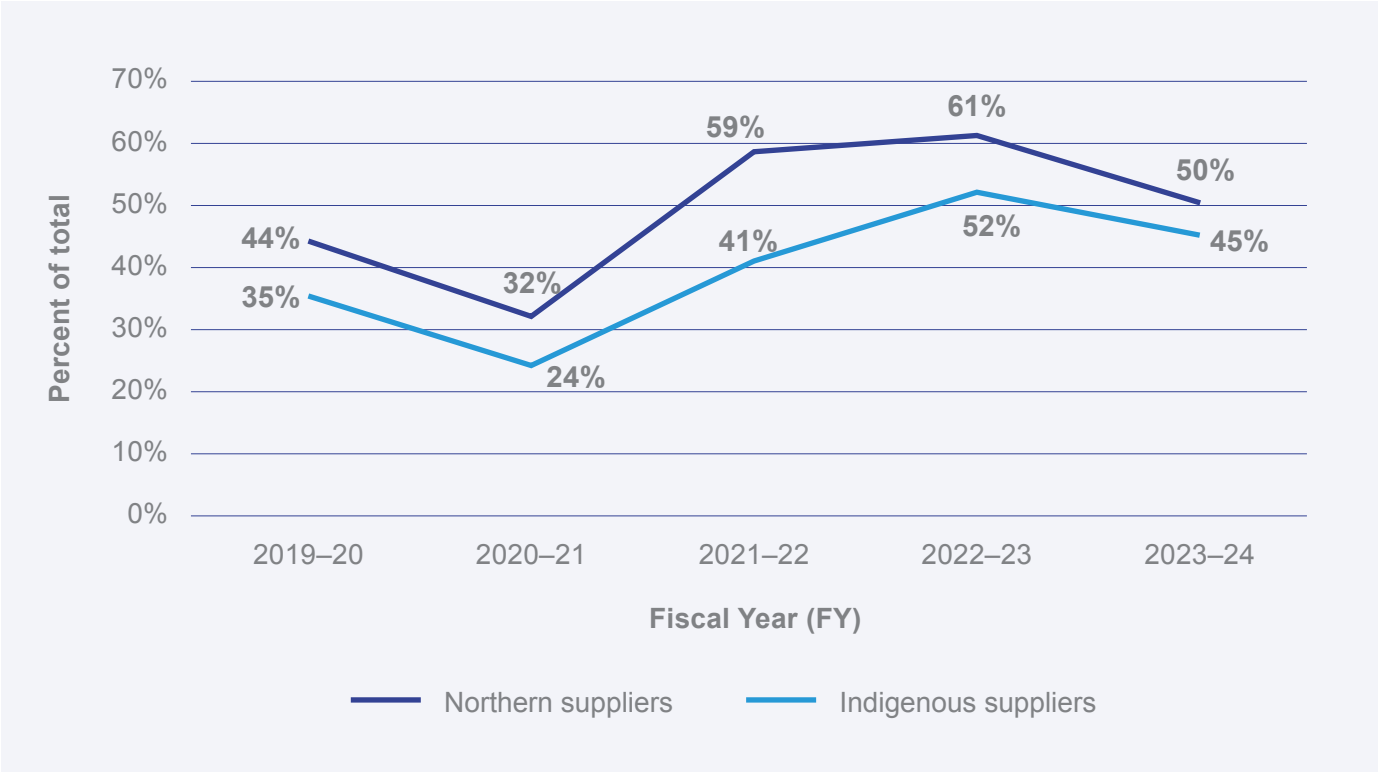


Figure 22: Percent of Total $ Value Spent from 2019-20 to 2023-24



IOC Supplier Expenditures on Contracts

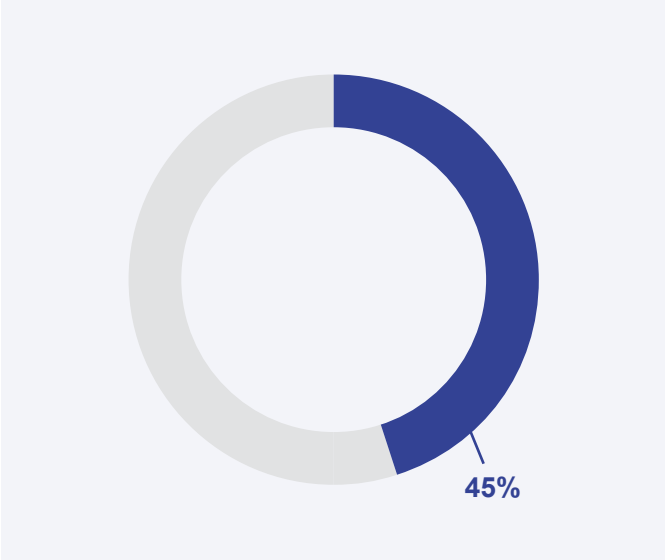
Spending with IOC suppliers reached 45% **in 2023-24**, matching the proportion spent with Indigenous suppliers (Figure 23).

No specific targets are set for spending with Indigenous or IOC suppliers; however, it is a component of the Northern Expenditures target (i.e., if IOCs expenditures are high, it will help boost the Northern expenditures results). As noted in Section 8.2.4, the Project team is focusing expenditures on the region through the introduction of Regional PSIB.

Indigenous and IOC Supplier Expenditure on Contracts results for 2023-24:

- Indigenous: $84,136,499; 45% of total contract expenditures
- IOC: $84,049,430; 45% of total contract expenditures

Figure 23: IOC Supplier Expenditures on Contracts results for 2023-24



8.3.4.4 Major Procurements

The major procurements awarded between April 1, 2023, and March 31, 2024, are included in Table 13 below. Some of the values are contract extension amounts (i.e., a contract had been awarded in a previous fiscal year, and it includes the most recent value and duration including the extension), while others are for single or multi-year contracts starting **in 2023-24**.

Table 13: Major work packages awarded by Parsons in 2023-24

Value	Scope of work	Awarded to
$242,398,117.85	**Water Treatment Plant Construction:** May 2023 to June 2026	AECON Water Infrastructure Inc.
$23,719,018.26	**Surface Care & Maintenance*:** June 2023 to May 2026	Forward Mining LP
$15,262,176.17	**Investigative Drilling:** June 2023 to August 2024	Nahanni Construction Ltd.
$11,398,512.72	**Legacy Debris Piles*:** June 2023 – October 2024	True North Environmental
$7,983,251.56	**Site Security*:** April 2023 to March 2026	Denesoline Scarlet Security Services
$3,585,550.70	**Sample Drilling:** June 2023 to November 2023	Nahanni Construction Ltd.
$1,880,797.76	**Surface Water Groundwater Monitoring:** May 2023 to March 2026	SLR Consulting
$1,501,788.71	**Waste Transfer Station Operator:** November 2023 to October 2026	True North Environmental
$901,928.74	**(Sole Source) Pump 201 Installation:** May 2023 to June 2024	Nahanni Construction Ltd.

**Note: Awarded via PSIB*

8.3.4.5 IOC Bonuses and Deductions

In addition, the Project has committed to report on the total IOC bonuses issued for surpassing IOC commitments and total IOC deductions issued for not meeting them, as specified in contracts. 2022-23 is the first year of reporting. Results for the 2023-24 reporting year are (Figure 24):

- A total of **$156** was **issued in bonuses** to sub-contractors.
- A total of **$175,677** in **deductions** was paid by sub-contractors.

Figure 24: IOC Bonuses and Deductions results for 2023-24

8.3.4.6 Next Steps: Employment and Procurement

The revised Socio-Economic Strategy has identified four focus areas to advance Employment and Procurement, which include:

- **Procurement approaches and tools –** identifying, using, and modifying procurement approaches and tools to increase Indigenous and local participation in the Project;
- **Labour updates and communication –** assessing labour capacity to determine capacity for regional businesses and communities to support Project activities;
- **Outreach and engagement with communities and businesses –** holding meetings with communities and businesses to raise awareness of procurement processes and upcoming opportunities; and,
- **Participation in major projects coordination –** participating in and supporting collaborative approaches to major project coordination.

The Project will identify, with the Socio-Economic Working Group, specific actions to support the above focus areas through implementation planning in Fall 2024.

8.3.5 Training and Capacity Building

In addition to the mandatory occupational health and safety training, GMRP contractors are required to ensure that employees are properly trained to perform their responsibilities. Contractors deliver workforce training, including site orientations. The inclusion of IOC in contracts ensures Indigenous employment and capacity building is considered and implemented, where possible, by all GMRP contractors.

The table below summarizes the training and capacity development activities from the Implementation Plan that the Project advanced and/or completed **in 2023-24**.

Table 14: Key Actions and Deliverables Advanced in 2023-24 – Training & Capacity Development

Focus Areas	Deliverable
Objectives: Strengthen local remediation capacity transferable skills through support to Indigenous and local capacity development programs, provision of Project information to training providers, and delivery of Project-related training.	
Development of Skills and Capacity	• **In 2023-24**, the Project team and its contractors issued 7 scholarships for a total value of $25,000. One scholarship ($5,000 in value) was issued to the YKDFN, one was issued to NSMA ($5,000 in value), and 5 others were issued by Parsons, the Main Construction Manager ($15,000 total value). • The Project team also supported 1 electrical apprentice with a total of 1,149 hours towards the completion of their apprenticeship program.
Funding Support for Indigenous Communities to Deliver Training	Funding for training has been committed by the Project as part of the Community Benefits Agreement for YKDFN's Dechįta Nàowo program and most recently for the NSMA. Project provides annual funding to Tłı̨chǫ Government for training and long-term training plans. Long term training plans are currently part of negotiations with the First Nation. • **In 2023-24**, the Project team funded $3,037,301 via contribution agreements. The contributions were provided for capacity building initiatives, such as training programs, economic and business development, salary for positions, supporting professional development, engagement activities, etc. Recipients of this funding included Yellowknives Dene First Nation, North Slave Métis Alliance, Tłı̨chǫ Government, City of Yellowknife, and Alternatives North.
Information Sharing with Training Providers and Program Support	Parsons meets regularly with training providers to receive updates on the training offered and information on recent graduates. Parsons includes in all tenders a list of local training institutions, the training they offer, and their contact information. Parsons also meets with contractors prior to and after issuing contracts to ensure they are aware of training providers and what is offered. The Project team also shares information (e.g., labour estimates, contract schedules, gaps in skillsets) to training providers and regional coordinators, including GNWT (ECE), to keep them informed of the anticipated needs on the site.

2023–2024 Training Results

The GMRP tracks workforce training by number of people who have participated in training exercises, as well as the number of person hours. Based on statistics reported by both CIRNAC and the MCM, workforce training for 2023-24 is organized by the following categories: Northern, Northern Indigenous, Indigenous, Indigenous Opportunity Considerations (IOC), Women and Total. It is important to note that the total presented does not reflect the sum of its categories due to intersectionality between the categories. Training targets are listed to the right.

TRAINING TARGETS

- **Northern Indigenous and Northern Non-Indigenous Apprenticeships:** a minimum of 1 Northern apprentice supported per year.
  - Contribute a minimum of 25% of on-the-job hours required for an apprentice to complete their apprenticeship program.
- **Professional Development Scholarships:** 1 scholarship issued per year.

Training

- **Professional development scholarships funded** (# of scholarships, $ amount of each, and # filled by priority groups).
  - **In 2023-24**, Project issued 7 scholarships for a total of $25,000.
    - CIRNAC issued 1 scholarship ($5,000) to YKDFN and 1 scholarship ($5,000) to NSMA
    - Parsons issued 5 scholarships ($3,000 each)
- **Northern Indigenous and Northern Non-Indigenous apprentices supported** (#, % out of total apprentices).
  - **In 2023-24**, Project supported 1 electrical apprentice for a total of 1,149 hours.

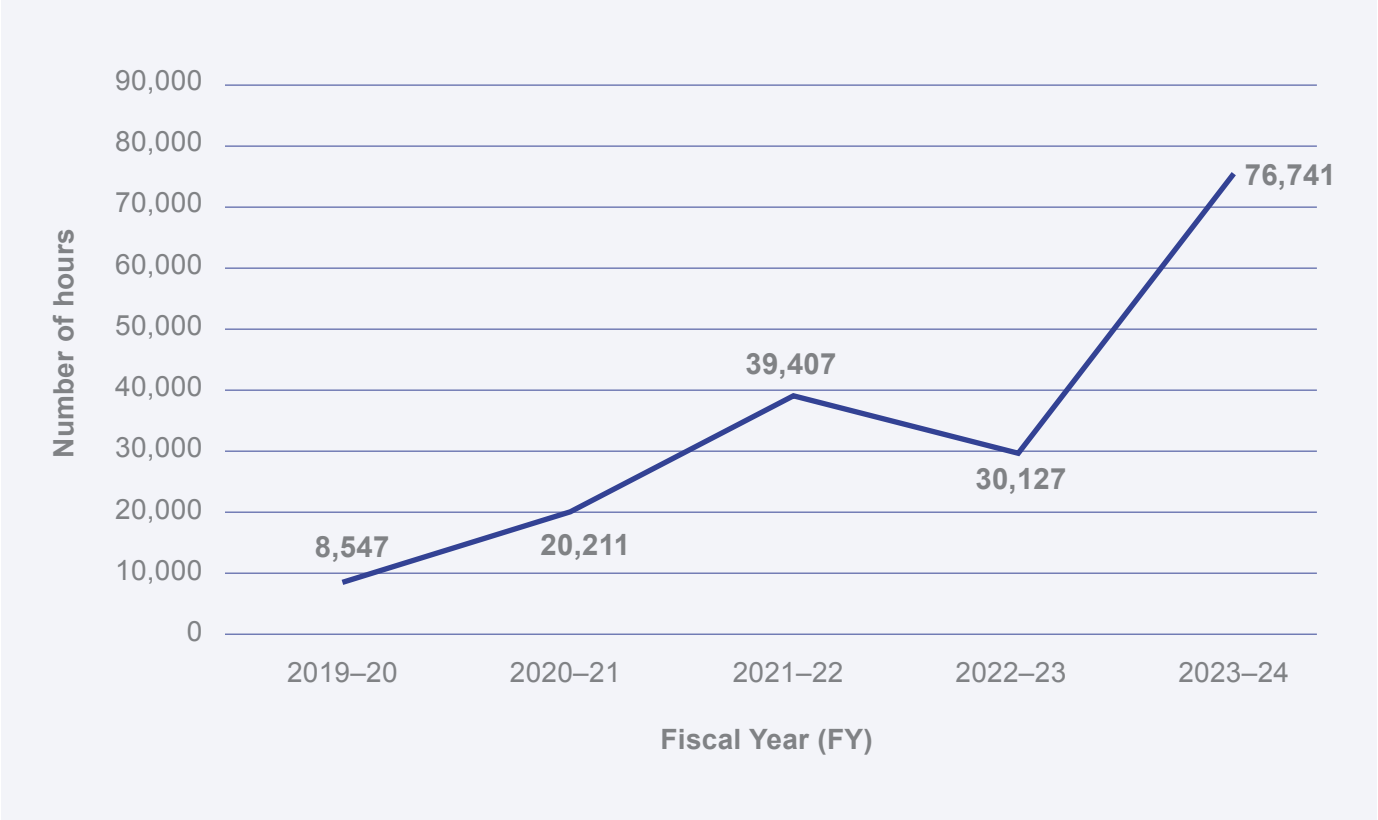
Total Training

In 2023-24, the total number of training hours (76,741 hours) is significantly higher than previous years (e.g., 250% higher than 2022-23) (Table 15 and Figure 25 below). The increase in training hours is due to more activity on site as well as a significant increase in the number of training hours completed by the Dechįta Nàowo program, which offered more back-to-back training **in 2023-24**.

Table 15: Total Training 2019-20 to 2023-24 (# p-hrs)

	2019-20	2020-21	2021-22	2022-23	2023-24
Total person hours of training	8,547	20,211	39,407	30,127	76,741

Figure 25: Total Training 2019-20 to 2023-24 (# p-hrs)



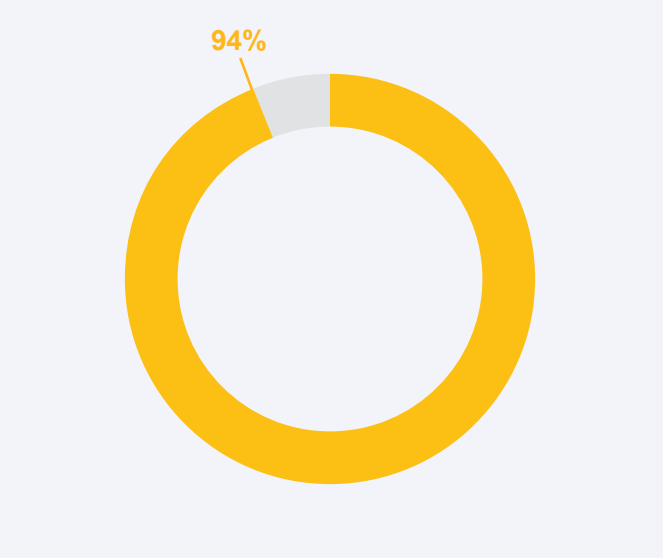
Northern Training

As shown in Figure 26, **in 2023-24**, Northerners made up 94% (72,294 hours) of total training hours. This is an increase from the previous years (22,413 in 2022-23 and 34,531 in 2021-22). There is no target set for Northern training.

Northern training results for 2023-24:

- 94% of total training-hours; 72,294 hours.

Figure 26: Northern Training results for 2023-24



Northern Training Breakdown

Figure 27 highlights training statistics broken down by Northern sub-categories, including Northern Indigenous (Indigenous and non-Indigenous) and whether they represent female or male employees.

Northern Training Breakdown for 2023-24:

- Northern Indigenous Women: 14,117 hours
- Northern Indigenous Men: 50,238 hours
- Northern Non-Indigenous Women: 282 hours
- Northern Non-Indigenous Men: 7,657 hours

Figure 27: Northern Training Breakdown results for 2023-24

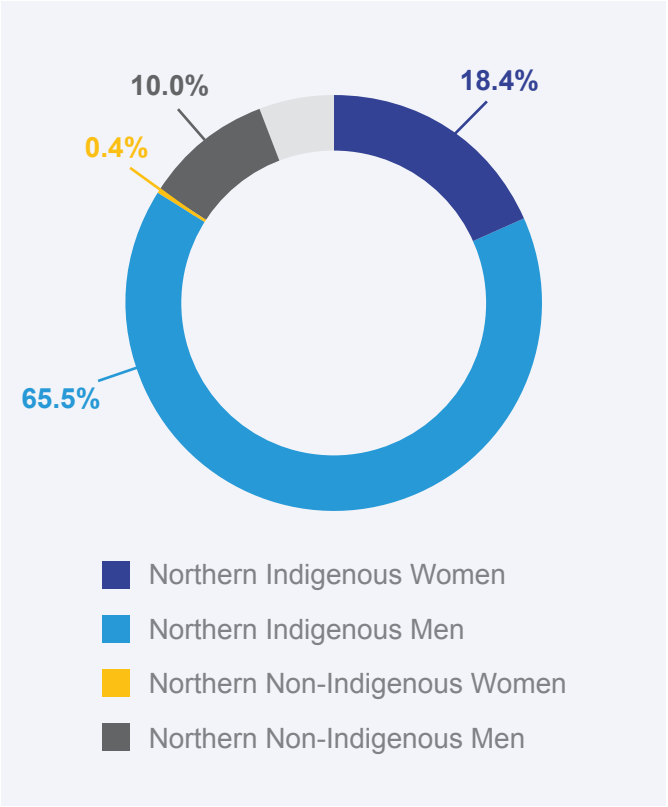
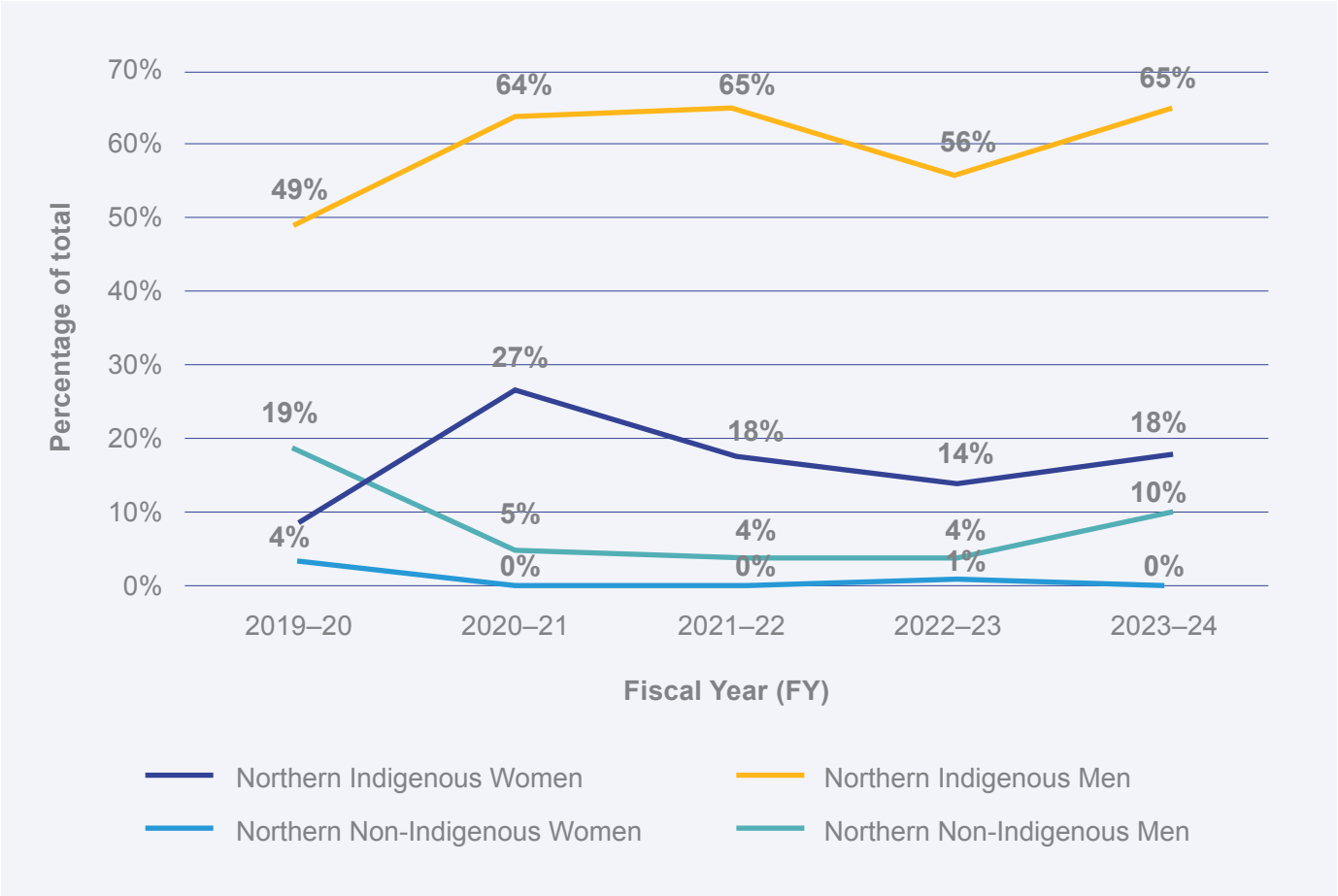


Table 16 and Figure 28 presents key trends for training across Indigenous/non-Indigenous women and men working on the Project for the past three years.

Table 16: Percentage of training by Northern sub-category from 2020-21 to 2023-24 (person hours).

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Training Hours	**8,547**	**20,211**	**39,407**	**30,127**	**76,741**
Northern Indigenous Women	8%	27%	18%	14%	18%
Northern Indigenous Men	49%	64%	65%	56%	65%
Northern non-Indigenous Women	4%	0%	0%	1%	0%
Northern non-Indigenous Men	19%	5%	4%	4%	10%

Figure 28: Percentage of training by Northern sub-category, from 2020-21 to 2023-24.



Indigenous Training

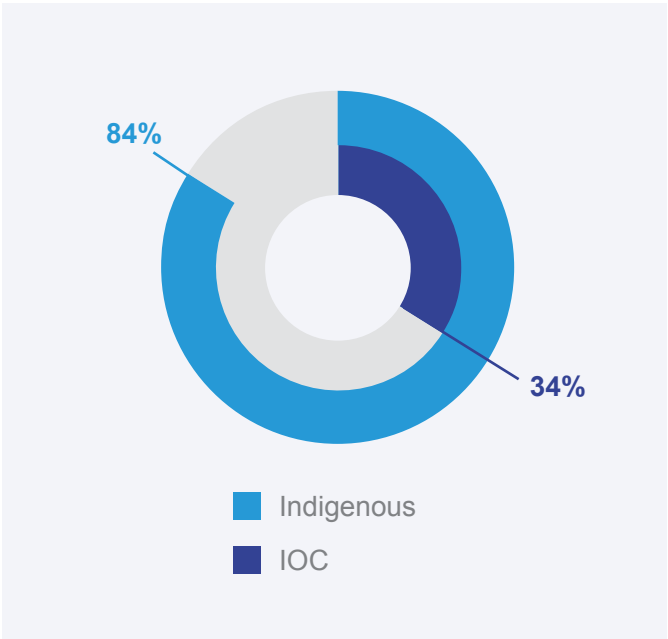
As shown in Figure 29, **in 2023-24**, Indigenous Peoples (northern and southern) made up 84% (64,358 hours) of total training hours. This is a moderate or slight increase from the previous years (73%, 22,032 hours in 2022-23 and 83%, 32,705 hours in 2021-22).

In 2023-24, IOCs made up 34% (26,417 hours) of total training-hours. This is an increase in total hours, but variable percentage from the previous years (31%, 9,227 hours in 2022-23 and 54%, 21,278 hours in 2021-22). There are no targets set for IOC training. There is no target set for Indigenous or IOC training.

Indigenous and IOC training results for 2023-24:

- Indigenous; 84% of total training-hours; 64,358 hours.
- IOC: 34% of total training hours; 26,417 hours.

Figure 29: Indigenous and IOC Training results for 2023-24



Female Training

As shown in Figure 30, **in 2023-24**, training of women made up 20% (15,069 hours) of total training hours. This result is slightly higher than the previous years (17%, 5,040 hours in 2022-23 and 19%, 7,513 hours in 2021-22). There is no target set for training of women.

Female training results for 2023-24:

- 20% of total training hours; 15,069 hours.

Figure 30: Female Training results for 2023-24

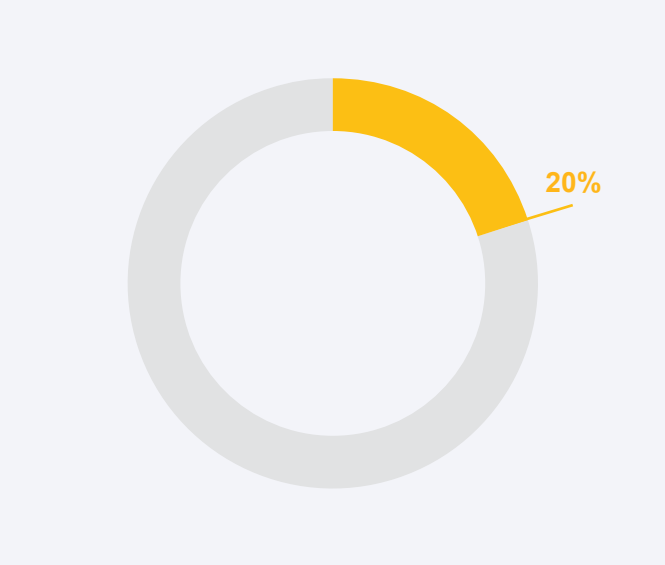


Table 17 and Figure 31 below provides trend information on the percentage of training hours by sub-category since 2019-20.

Table 17: Percentage of person-hours by Employee Group from 2019-20 to 2023-24

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Person Hours	**8,547**	**20,211**	**39,407**	**30,127**	**76,741**
Northern employees	80%	97%	88%	74%	94%
Indigenous (Northern and Southern) employees	63%	91%	83%	73%	84%
IOC employees	30%	16%	54%	31%	34%
Female employees	19%	28%	19%	17%	20%

Figure 31: Percentage of person-hours by Employee Group from 2019-20 to 2023-24

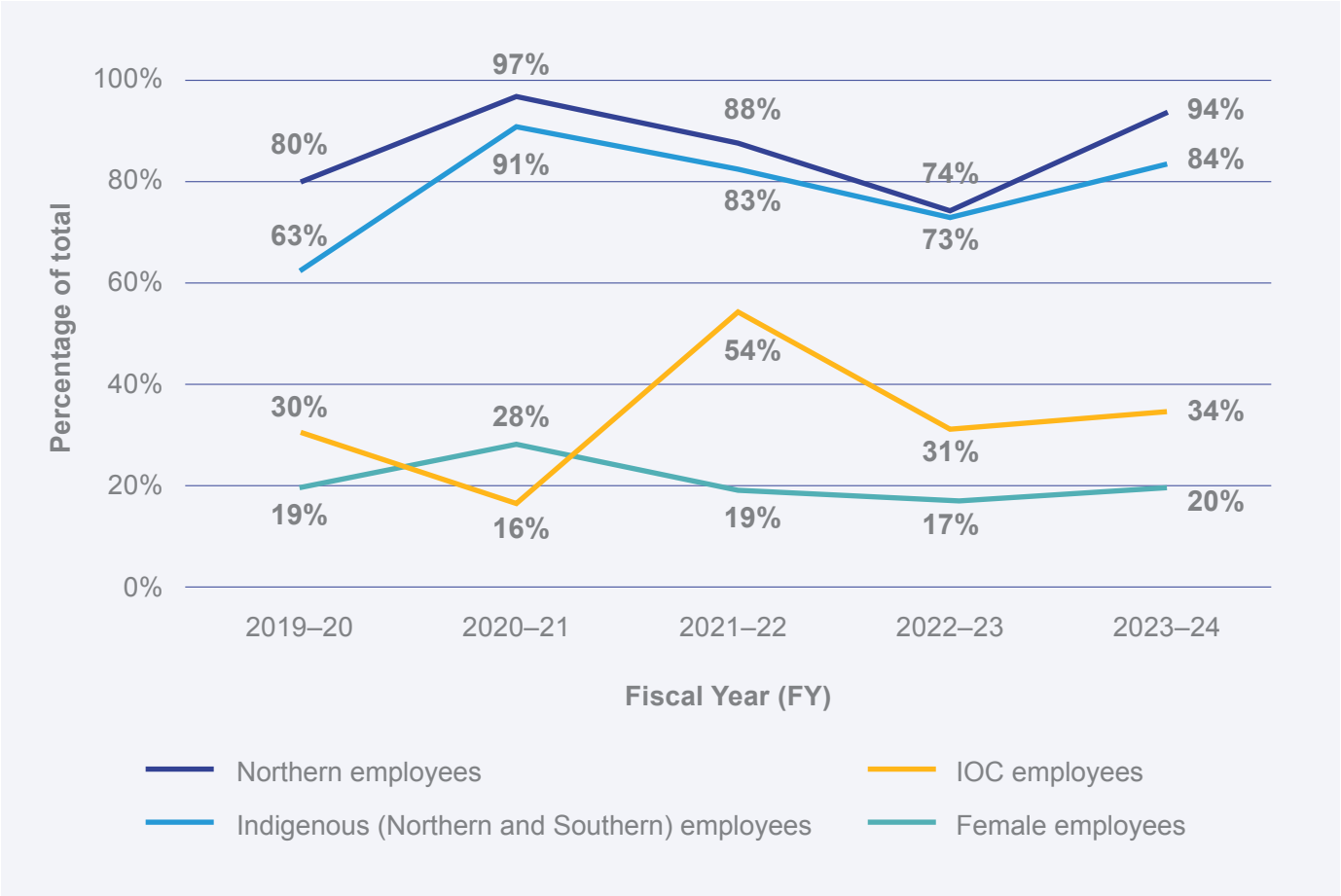
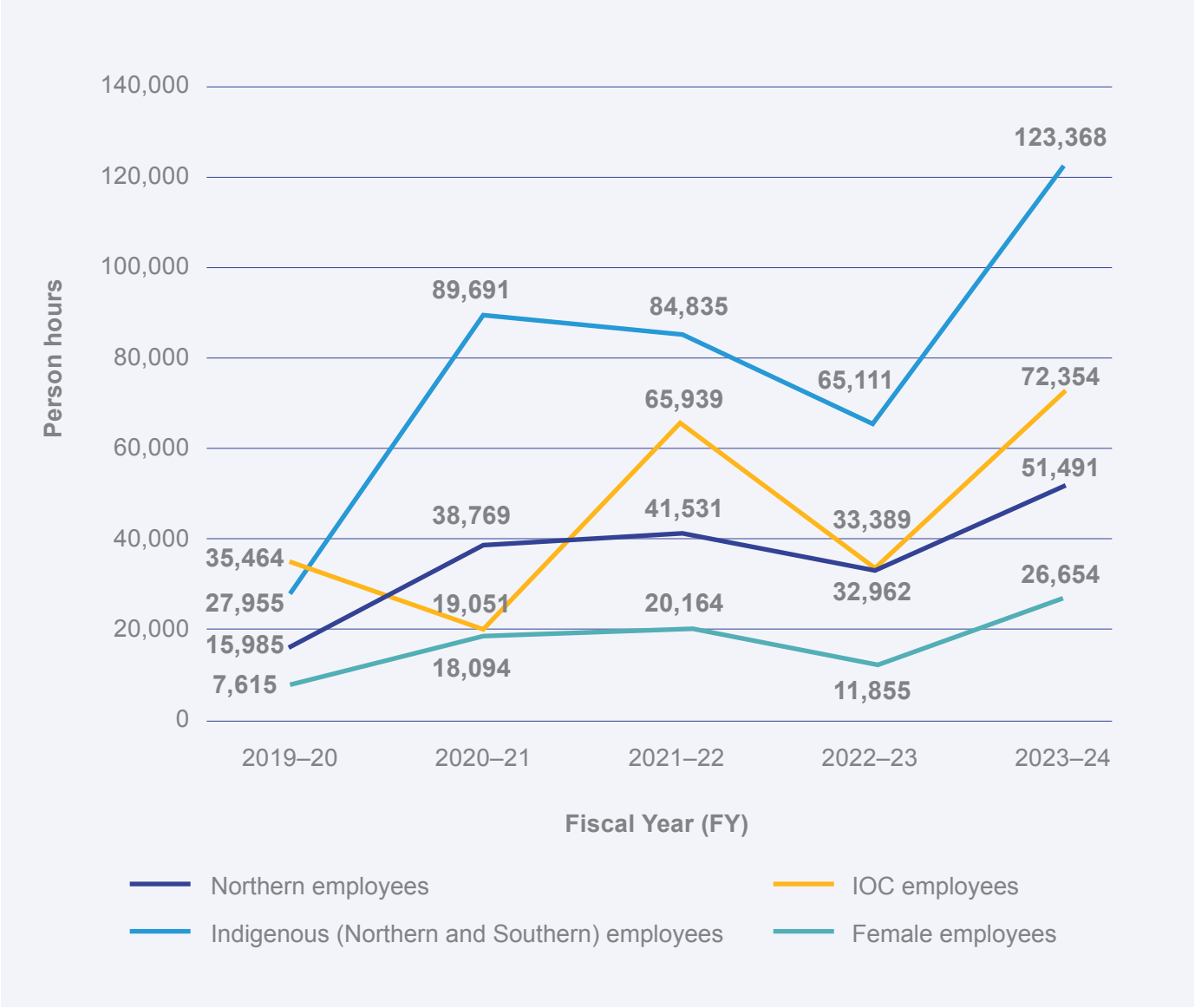


Figure 32 below highlights the number of normalized person-hours of training by employee group from 2019-20 to 2023-24. The number of person-hours of training is normalized by person-hours worked to enable comparison across years, since the total number of training hours may significantly differ over the years.

Figure 32: Number of Person Hours of Training per 200,000 Person-hours Worked by Employee Group from 2019-20 to 2023-24



8.3.5.4 Dechįta Nàowo

Through a Contribution Agreement, the GMRP funded the YKDFN Dechįta Nàowo Training Program **in 2023-24**. Information regarding the 2023-24 training programs and number of participants was not provided for summary in this report.

8.3.5.5 Next Steps: Training

The revised Socio-Economic Strategy has identified three focus areas to advance Training & Capacity Building, which include:

- **Development of skills and capacity** – supporting workforce skills and capacity development, incentivising apprenticeships, and providing funding for scholarships;
- **Funding support for Indigenous communities to deliver training** – providing funding support through Contributions Agreements for training program as identified by the YKDFN, Tłı̨chǫ Government, and North Slave Métis Alliance; and,
- **Information sharing with training providers and program supports** – providing project information (e.g., labour demand forecasts) to training providers and coordinators, as well as engaging with partners to identify and communicate other training and supports available to workers.

The Project will identify specific actions to support the above focus areas through implementation planning with the Socio-Economic Working Group in fall 2024.

8.3.6 Social Impact Management

There is potential for negative social impacts associated with large-scale projects, such as impacts related to health, infrastructure (e.g. housing), social services, crime and violence, culture, and money management. Several factors influence the realization and extent of impacts, including the location of the Project and associated work schedules and whether there is an influx of permanent or temporary workers to the region. In 2021, GMRP worked with its rights holders and stakeholders to identify potential social impacts of the Project, as well as associated mitigation measures.

The table to the right provides a summary of actions and deliverables related to social impact management that were advanced or completed.

Focus Areas	Deliverable
Objectives: Advance reconciliation with local Indigenous communities.Monitor and mitigate potential negative social impacts associated with the Project.	
Information Sharing and Review	Advanced, in collaboration with GNWT Health and Social Services (HSS), a list of health and wellness indicators to be tracked and reported on by HSS. The list of indicators is scheduled to be finalized in 2024.
Health Effects Monitoring	In 2024, the Project team continued to fund the Health Effects Monitoring Program.
Supporting Reconciliation	In 2024, the Project team continued to fulfill commitments identified in Community Benefits Agreements.

8.3.6.4 Next Steps: Social Impact Management Actions

The revised Socio-Economic Strategy has identified three focus areas to advance Social Impact Management, which include:

- **Information sharing and review** – sharing of project information to local service providers (e.g., City staff), including projected labour demand and planned increases in site activity;
- **Health effects monitoring** – funding University of Ottawa's research team that is monitoring levels of arsenic in people to understand if remediation activities are affecting community exposure and to share this information transparently with the community; and
- **Supporting reconciliation** – actions and progress by the Project and its responsible organizations to advance reconciliation with local Indigenous communities, including establishing agreements as well as providing cultural awareness training at site.

The Project, in collaboration with the Socio-Economic Working Group identified specific actions to support the above focus areas through implementation planning. These actions include:

- Working in collaboration with GNWT Health and Social Services (HSS) to develop a list of health and wellness indicators to be tracked and reported on by HSS. The list of indicators is scheduled to be finalized in 2024;
- Continue to fund the Health Effects Monitoring Program;
- Fulfill commitments identified in Community Benefits Agreements; and,
- Provide cultural awareness training during site orientation.

9.0 IN CLOSING

In 2023-24, the Project team progressed remediation work on site while continuing site operations and monitoring, immediate risk mitigation activities, community engagement, and progressing work on the review and resubmission of applicable Management and Monitoring Plans and other requirements under the Water Licence.

In 2024-25, the Project expects to start or continue the following activities:

Advancement of Remediation

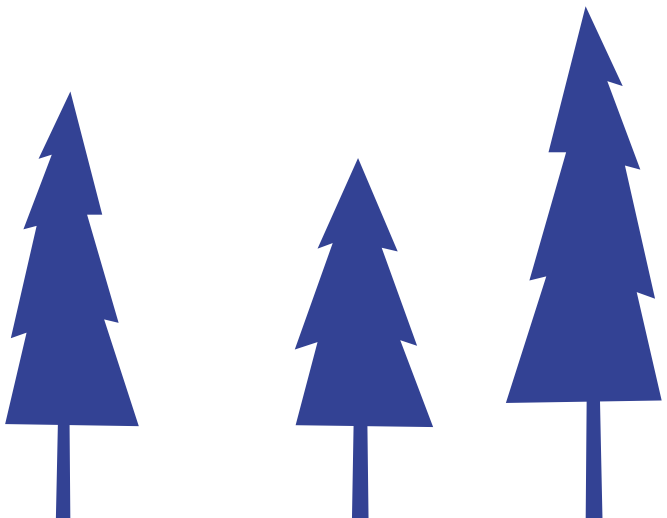
- **Thermosyphons:** Continue design for AR1 thermosyphons; conduct periodical maintenance inspections for Dam 1 thermosyphons.
- **Stabilization:** Continue underground stabilization in preparation for the final underground exit in early 2025.
- **Water Treatment Plant:** Continue construction of the water treatment plant facility and complete in-water construction of outfall.
- **Reporting & Cleanup:** Complete the removal of legacy debris piles on site.

Advancement of Remediation Design and Preparation

- **Detailed Design:** Continue detailed design for contaminated soils, arsenic-contaminated waste removal, soil washing, and Chamber 15 backfill.
- **C1 Pit & Power Line:** Complete C1 pit fill analysis and begin detailed design for Phase 2 of Power Line implementation.
- **Site Infrastructure:** Continue detailed design for site communications, demolition of buildings outside the townsite and Core Industrial Area, and closure of other surface openings.

Operations

- **C&M Activities:** Continue C&M activities and monitoring per contract, regulatory requirements, and site conditions.
- **Installations & Removals:** Complete ice melting, ground support installations, electrical installation at A2, and Phase 2 hazardous materials removal from central, north, and south mine sections.
- **Systems & Services:** Improve stench gas emergency warning system, provide Emergency Medical Services and monitoring for staff, and continue Waste Transfer Station operations.
- **Dams Monitoring and Maintenance:** Continue ongoing monitoring of dams in accordance with the OMS Manual. Continue to maintain dams as needed and remove all unused/rejected dam materials.
- **Inspections:** Submit 2024 Annual Geotechnical Inspection of Dams report to MVLWB.



Environment

- **Air Quality & Dust Management:** Continue air quality monitoring as per the Air Quality Monitoring Plan and manage dust with approved suppressants and water.
- **Climate Monitoring and Reporting:** Continue to monitor climate-related conditions (temperature, streamflow, site stability) as remediation progresses. Address GMWG comments on 2023 climate projections and design implications. Prepare GMOB Status of Environment Report (mid-2025) with climate information.
- **Hydrology & Sampling:** Continue hydrology monitoring, mine water sampling, groundwater well sampling, and existing water quality monitoring. Submit Annual Reports as required.
- **Waste & Wildlife Management:** Continue to manage waste per the Waste Management and Monitoring Plan and document wildlife sightings, including bird surveys per the Wildlife and Wildlife Habitat Management and Monitoring Plan.

Health and Safety

- **Incident Tracking:** Continue to track and report health and safety incidents.
- **Oversight & Procedures:** Continue to oversee health and safety of employees and contractors through established management systems and health and safety procedures, including urinalysis.
- **Training:** Continue to track and ensure training for employees and contractors. Share training information with stakeholders and track community member training for site employment.

Community

- **Engagement:** Continue to engage and collaborate with Rights holders and stakeholders.
- **Socio-economic Strategy:** Continue to implement the revised Socio-economic Strategy.
- **Procurement:** Continue to engage Northern and Indigenous businesses ahead of formal procurement processes, including Industry Day 2024 and additional bidder meetings/ conferences.

The GMRP will continue to prepare Annual Reports that describe the progress and performance of the GMRP. In the spirit of continual improvement, we welcome your comments on this Report and how it can be enhanced in the future.

For more information or to provide comments on the Report, please contact:

Natalie Plato, GMRP Deputy Director
natalie.plato@rcaanc-cirnac.gc.ca
867-669-2838

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APPENDICES

Appendix A: Environmental Agreement – Report Alignment

Appendix B: List of 2021-22 Studies / Reports

Appendix C: Project Risks

Appendix D: Progress on Environmental Assessment Measures and Suggestions

Appendix E: Additional Information on Monitoring Parameters

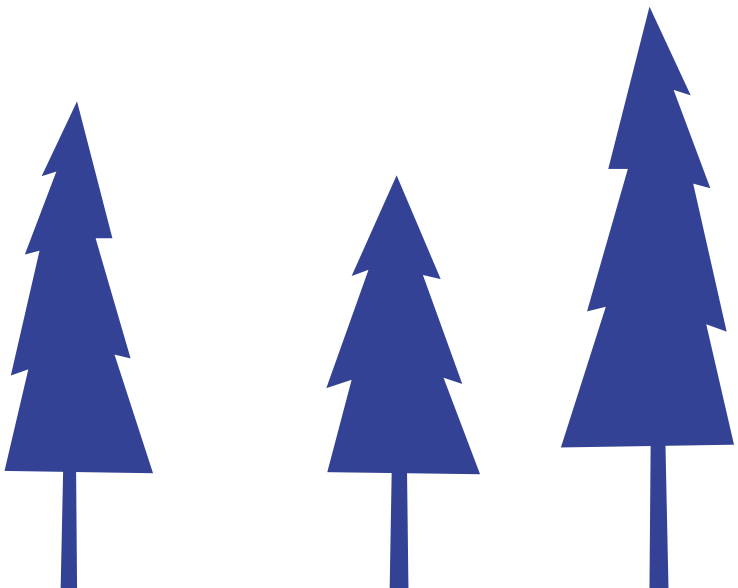
Appendix F: Climate Change and Greenhouse Gas Emissions

APPENDIX A – ENVIRONMENTAL AGREEMENT – REPORT ALIGNMENT

A significant driver for the development of the GMRP Annual Report is the Environmental Agreement, the signing of which is a mandatory requirement per Measure 7 of *The Report of Environmental Assessment and Reasons for Decision* (Mackenzie Valley Review Board, 2013). This agreement establishes an independent oversight body (i.e., GMOB) for the GMRP, and was signed in June 2015 by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC; formerly Aboriginal Affairs and Northern Development Canada [AANDC]), the Government of the Northwest Territories (GNWT), the City of Yellowknife, the Yellowknives Dene First Nation (YKDFN), Alternatives North, and the North Slave Métis Alliance (NSMA).

Article 5 of the Environmental Agreement stipulates that "the Co-Proponents shall prepare, provide to GMOB and make available to the public an Annual Report on the Project each year," to be submitted to GMOB "no later than October 1 in each year," starting October 1, 2016 (the report addressing the 2015-16 fiscal year).

The Environmental Agreement specifies what content must be included in each Annual Report. The table below outlines each requirement and where the content can be found in this 2023-24 report.



Environmental Agreement Requirement	Section of Report
A summary of the Project's key operational activities and associated expenditures	Operational Summary
A summary of any other significant developments relating to the Project	2023-24 Year in Review Health and Safety Community
A summary of the results or findings of all monitoring done for the Environmental Programs and Plans and a description of actions taken or planned to implement Adaptive Management	Environment Health and Safety
An assessment of the effectiveness of actions already taken to address the results or findings of all monitoring completed for the Environmental Programs and Plans	Environment:
A summary of any environmental or engineering studies conducted by the Co-Proponents in relation to the Project	Advancement of Remediation Design and Preparation Operational Summary Environment Appendix B: Studies
A summary of any changes to, or plans for changes to, the Environmental Program and Plans	Annual Plan and Program Review
A summary of the environmental audits of the Project, and the Co-proponents' response to the audit	Operational Summary
A summary of any reportable spills, accidents or significant malfunctions, and a summary of the Co-Proponents' responses	Operational Summary Environment
A listing of regulatory inspections, reports or directions, and a summary of the Co-Proponents' response to any issues arising therefrom	Operational Summary
An analysis of trends in environmental effects data over time	Environment Health and Safety Community
A summary of significant public engagement activities, or matters raised as public concerns, and the Co-Proponents' responses	Community
A summary of the Project's planned key operational activities for the coming year and associated planned expenditures, subject to the need to protect commercially sensitive financial information	Operational Summary In Closing
A summary of the progress of the Project, including the Mackenzie Valley Resource Management Act (MVRMA) Measures, Mackenzie Valley Environmental Impact Review Board Suggestions, and Co-Proponents' Commitments	Progress on Environmental Assessment Measures Appendix D
References to all sources relied on by the Co-Proponents in coming to conclusions in the Annual Report	References
A plain language summary of the Annual Report	Plain Language Summary provided under separate cover.

Addressing GMOB Recommendations

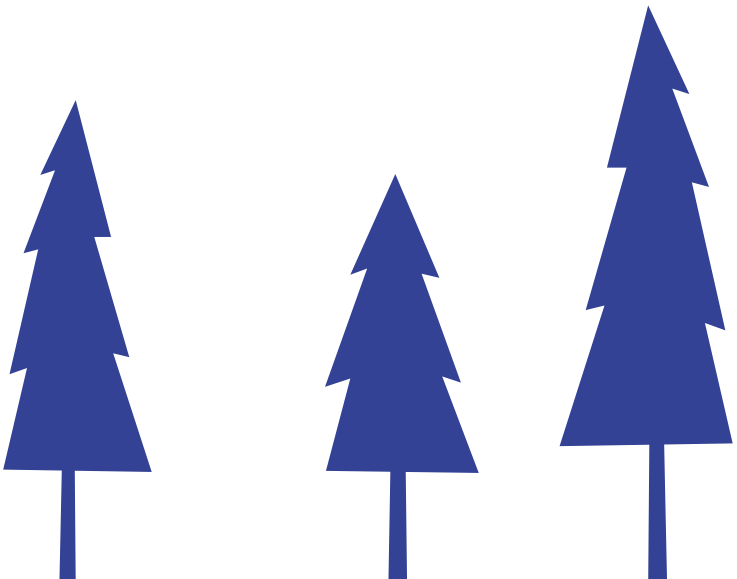
In the GMOB feedback on the 2022-23 Report, GMOB identified several questions and areas for improved clarity. The table below provides GMOB's report recommendations and the Project team's responses.

GMOB Comment	GMOB Recommendation	GMRP Response
Nowhere in the Summary of Progress for 2022-23 or the report itself is Climate Change mentioned.	The GMRP Team (the Project Team) include an update in the Report as to what standards for Climate Change adaptation are being used and where they are being applied to the Project.	The Project team will consider including additional information on Climate Change as it relates to the GMRP in the next annual report.
The approval of the WTP Design plan requires authorizations from other Departments. This is not fully explained in the report. An explanation of the 'passive treatment assessment' and the need to provide a 'research summary' to the MVLWB is not provided in the report.	The Project Team update the status of the authorizations needed for the approval of the WTP Design plan. The Project Team provide an explanation of the 'passive treatment assessment' and confirm that the research summary has been submitted to the MVLWB.	The WTP Design Plan was approved by the MVLWB in May 2023. For clarity, the MVLWB is the only regulator that approves the WTP Design Plan; it does not require authorizations from other Departments. The GMRP has obtained its Fisheries Act Authorization from DFO and approval from Transport Canada under the Canadian Navigable Waters Act, both in April 2024, related to construction of the outfall. This information will be reflected in the 2024-25 annual report. In the 2020 GMRP Annual Water Licence Report, it was noted that an evaluation of the research to date would be completed to determine whether to proceed with Phases 4 and 5 of the Passive/semi-passive wetland treatment RRP. This evaluation is still underway.
This bullet identifies the following outcome "Maximization of Indigenous and Northern participation through Northern Indigenous- centered procurement processes, proactive communication of opportunities, and collaboration". It is not clear how the Project Team is maximizing Northern non Indigenous participation.	The Project Team clearly lay out how it is achieving the goal of maximizing opportunities for all Northerners and provide all relevant data regarding Indigenous and non-Indigenous related to this subject.	Indigenous Opportunity Considerations (IOC) are used in all procurement processes to maximize northern Indigenous participation and there is a Procurement Framework Agreement that has been signed with the YKDFN. In addition, the Project reports on Northern participation overall as well as showing a breakdown between Northern Indigenous and Northern Non-Indigenous persons and businesses. Table 13, on page 80, shows Northern Indigenous and Northern Non-Indigenous Employment statistics. Table 20, on page 85, shows Northern Indigenous and Northern Non-Indigenous Supplier statistics. Table 23, on page 89, shows Northern Indigenous and Northern Non-Indigenous Training statistics. The Project would be open to discussing ways to improve the presentation of this data with representatives from GMOB.

GMOB Comment	GMOB Recommendation	GMRP Response
The Report identifies several factors that have impacted the project budget: "However, the environmental assessment significantly changed the scope and scale of the remediation plan, resulting in the approved Closure and Reclamation Plan, which contributed to additional cost considerations. The updated cost estimate relates to the increased scope and is more holistic; it includes factors such as projected inflation, contingencies, and Canada's operational costs for managing the Project until 2038."	The Project Team clarify the inflation projections that have been incorporated into the GMRP budget estimates.	The escalation factors applied in the 2022 cost estimate were primarily based on the July 2022 Bank of Canada anticipated inflation for 2022, 2023, and 2024 and beyond. Specifically, that inflation was "high and broadening", and that the Bank was "projecting inflation to decline to about 3% by the end of 2023, and to return to the 2% target by the end of 2024."
The final sentence in the first paragraph identifies the 'right-sizing' of work packages as one reason for the increased cost of the Project. However, right-sizing is not mentioned in other sections related to maximizing northern participation such as the bullet list on page 24 or the Project Team's response to the concern that local jobs and contracts are not staying in the North (provided in the Table on page 71). GMOB's discussions with local contractors did not identify significant examples of "right-sizing".	The Project Team include examples that illustrate the application of the various procurement enhancements currently in place.	The "right sizing" of contracts falls under the following Key Performance Indicator we have under the "Other" category: • "12. Modifications to procurement procedures to increase Indigenous participation (e.g. advanced communications of procurement, set asides) (description and #)." An example of a contract that was "right sized" is the Bear Monitoring. This has been kept as a standalone contract instead of the work being combined with a site security or another one. Another example of right sizing is Parsons working with the local business community to understand if the eligibility to bid on a contract can be limited to the Project's "Area of the Contract" (AOC), which is called the Regional Procurement Strategy for Indigenous Businesses (PSIB). To do this, Parsons spends a lot of time understanding the current and upcoming capacity and interests of all the Indigenous businesses in this AOC to be confident in limiting the tender. Thus far, Parsons has used Regional PSIB twice, for the Surface Care and Maintenance contract, and the contract for the Core Industrial Area work package (not yet awarded).
This section makes no reference to the circumstances regarding Measure 10 which is marked as "Completed". This work was cancelled by the Project Team after the YKDFN removed its support.	The Project Team clearly address the stated the circumstances and status of Measure 10 as a footnote to this Table.	The updated status, and explanation thereof, of Measure 10 was provided in Appendix D which outlines the status of all Environmental Assessment Measures and Suggestions.

GMOB Comment	GMOB Recommendation	GMRP Response
This section refers to a Corrective and Preventative Action Plan (CPAP) that apparently documents the Project Team's response to issues identified in an EH&S underground audit. The final CPAP report was reportedly submitted in the summer of 2023, but the GMRP Annual Report does not specify the entity that received this report.	The Project Team clarify whether this is an internal document, or whether it is to be posted publicly. In any case, GMOB requests a copy of the final document. Access to this information will assist GMOB in carrying out its mandate related to monitoring environmental aspects of the project.	The Corrective and Preventative Action Plan is intended to be an internal document and not posted publicly. The Project can provide a copy for GMOB.
128 waste segregation audits were apparently conducted in 2022 and a summary of the waste audits was provided in the Annual Water Licence Report. GMOB is not certain whether the audit results are summarized internally on a regular basis.	GMOB requests copies of any interim summaries of the waste audits that the Project Team may generate. Access to this information will assist GMOB in carrying out its mandate related to monitoring the environmental aspects of the project.	The GMRP does not currently generate interim summaries of waste inspections/audits. The reference to the 128 Waste Audits is in reference to the summary provided in the 2022 Annual Water Licence Report. A summary of the results of waste segregation inspections and a summary of lessons learned is provided to the MVLWB in Table 2.1.2- 1 in the Annual Water Licence Report.
The calculations for the positive percentages are right but the percentage total for program management is a negative but recorded as a positive. It has a bearing on the final 19.33% difference. The Project appears to be underspent. GMOB is uncertain whether this will have any impacts on the overall project schedule.	The Project Team update the data in the table. The Project Team identify the reasons for underspending and explain any impact it will have on the overall schedule.	The GMRP agrees that the table is incorrect – specifically that the percentage total for program management should be recorded as a negative. Early drafts in fact had the negative sign, but this must have been inadvertently dropped during final report design. Regarding having a bearing on the final 19.33% difference shown in the table, the GMOB comment is incorrect. The 19.33% difference is still accurate overall as the calculation is simply the difference in the totals computed as |planned – actuals | / planned, which is (143,230,289 - 115,530,280) / 143,230,289 = 19.33%. As part of the government annual funding cycle, planned expenditures always include contingency. Of the $143.2M in planned expenditures in 2022-23, approximately $16.1M represented budgeted contingency funding. Therefore, annual expenditures that are less than planned expenditures do not necessarily directly equate to work that was not completed as planned. Accordingly, GMOB is discouraged from making inferences from expenditure data. Some work packages did not proceed according to planned execution and budget. Most notably, approximately 80% of underground backfill planned for the year was completed due to the limited field season, with the balance slated for the next field season. Additionally, the newly constructed non-hazardous waste landfill was operated for 4 months instead of the planned 6 months, which resulted in cost savings.

GMOB Comment	GMOB Recommendation	GMRP Response
The line item “Program Management” covers a range of items, and it is not clear what is included in this category, e.g. does the salary portion include CIRNAC and PSPC?	The Project Team provide a clear breakdown of the expenditures allocated to “Program Management”.	Program Management expenditures include CIRNAC salaries and associated costs for employee benefit plans (“EBP”), PSPCs fees for both technical staff and the acquisitions team, employee travel, project legal fees, administration of the socio-economic strategy and the environmental health and safety and community monitoring system, as well as office supplies and software.
The report states that “The GMRP is taking several steps to proactively reduce Greenhouse Gas (GHG) emissions and implement federal climate action policies.”	The Project Team identify which federal climate actions are being followed and detail the steps that have been taken to apply them to the Project.	The GMRP is committed to align with government priorities and policies related to climate change, including the Federal Government Climate Plan, and the Greening Government Strategy. Both require action to reduce Greenhouse gas emissions, and to increase the resilience of assets, services and activities by adapting to the changing climate. In addition, the Federal Contaminated Sites Action Plan committed to considering the potential impacts of climate change and including climate change adaptation measures in remediation activities. This was done to align with the priorities related to climate change in the Government of Canada’s climate plan, the Greening Government Strategy, and the Federal Sustainable Development Strategy. While the GMRP is no longer part of the FCSAP program, the Project still takes these priorities into consideration. The recent response to comments on how the GMRP has incorporated Climate Change predictions into the Project, sent to the Parties on May 7th, provides a more detailed response.



GMOB Comment	GMOB Recommendation	GMRP Response
There is no mention in this section of the mine water elevation LAL exceedance from May 19 to June 2022. This contrasts with the air quality AL exceedances which are all reported in the GMRP Annual Report. There is no specific section in the report regarding underground mine-water.	The Project Team report all water elevation LAL exceedances in a separate section specifically reporting on the underground mine-water.	The GMRP agrees similar language was included in the 2022 Annual Water Licence Report that could have been included here. It should be noted that the Annual Water Licence Report is based on calendar year, which differs from this report which reports based on fiscal year. This language was: The underground mine water low action level (as per Version 3.0 of the Water MMP) was reached on 18 May 2022 and ended 20 June 2022, as per notifications sent to the MVLWB and Inspector on 19 May and 20 June 2022. On 18 May 2022, the underground mine pool elevation was measured at –73.99 m amsl, exceeding the low action level of –74 m amsl. The site experienced greater infiltration into the underground mine pool in 2022 as a result of the overflow conditions of Baker Creek, also reported to the MVLWB and Inspector earlier in 2022. The pumps that relay minewater to the surface had been turned off to mitigate water levels in the Northwest Pond from reaching critical levels, which also contributed to an increase in minewater levels. In response, the site prepared the ETP for seasonal discharge commencing in early June. The maximum mine water level of -69.99 m amsl was reached in June 2022. In future reports, the GMRP will include information on Action Level exceedances in the applicable sections.
This Table shows that the incidents of elevated levels of arsenic occurring in the onsite workforce is increasing. An addition of another column in the Table showing where these workers are being exposed would be of benefit. This is of a concern for the current and future workforce. An explanation of what is being done to prevent this exposure should also be included.	The Project Team include a column in the table showing the location of where workers are being exposed and the measures being taken to prevent this exposure be included.	The GMRP will review this section for the 2023-2024 annual report in an effort to improve and expand information reported, while maintaining the privacy of workers.

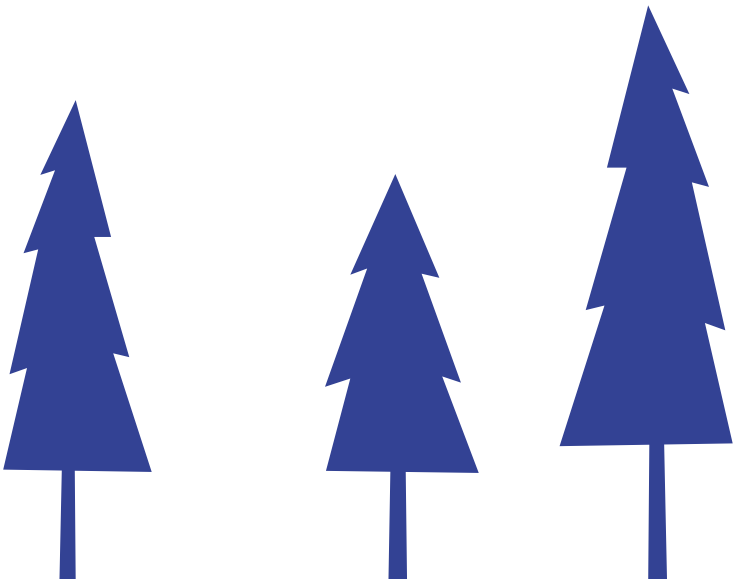
GMOB Comment	GMOB Recommendation	GMRP Response
In 2022, the Yellowknives Dene First Nation withdrew its participation from the Stress Study (the Study). Wording in the second paragraph in Section 7.2.2 implies that the Project Team decided to discontinue the Study on the advice of the Study's Advisory Committee. While the Advisory Committee did agree that the Stress Study be discontinued, this agreement came after the Project Team had obtained legal advice indicating that the Project Team had met its obligations under Measure 10 of the EA, and did not need to proceed with the Study, and consequently did not intend to proceed with the Study. The wording in the paragraph should be updated to reflect the true processes that led to the discontinuation of the Stress Study.	The Project Team update the wording in Section 7.2.2 to reflect that the Advisory Committee agreed that the Stress Study be discontinued, but this agreement came after the Project Team had obtained legal advice indicating it was not obligated to proceed per the requirements of EA Measure 10.	GMRP can consider providing further context in subsequent reports where relevant, but legal advice was not the main factor in the GMRP advancing the study without YKDFN support. The decision was primarily based on the feedback from the Advisory Committee. The updated status, and explanation thereof, of Measure 10 was provided in Appendix D which outlines the status of all Environmental Assessment Measures and Suggestions.
The table entry related to Mine Water Elevation indicates that a full backup pump is being maintained on-site. GMOB's understanding, based upon discussions in fall 2023, is that a backup pump has been procured, but is stored with the manufacturer in Leduc, Alberta. This detail should be corrected in the table.	The Project Team correct this omission.	The back-up pump was received by PSPC on behalf of CIRNAC on March 27, 2023. It was deemed preferable to store the pump on the supplier's premises until installation. The main reason being that the supplier is required to be on site for the pump's installation and it is more efficient to have the supplier transport the pump with them when mobilizing to install the pump. The GMRP will ensure that the location of any spare pumps is clear in future reports.
A link to the GMRP Engagement Plan is provided but does not work.	The Project Team correct this in the GMRP Annual Report to GMOB.	All links will be corrected in subsequent Annual Reports.
The Annual Report indicates that a second draft of the Acute Health Risk Assessment will be completed in 2023/24 and will address review comments. The first opportunity parties were given to see the results of this study occurred through a PowerPoint Presentation, and then a final version was released. The Parties were not provided an opportunity to provide comments on a draft report.	The Project Team update the wording to reflect how the Acute Health Risk Assessment was provided to the Parties, The Project Team seek comments on the final draft of the Acute Health Risk Assessment from the Parties and that these comments be tracked and addressed in the final document.	The GMRP acknowledges that the Working Group/Parties did not have the opportunity to provide written comments on the Final Acute QRA and apologizes for the confusion caused by the statement in the report. Comments provided verbally through the presentation to the Working Group were considered in the final report.

GMOB Comment	GMOB Recommendation	GMRP Response
This paragraph includes the statement “The engagement sessions were successful in building trust and understanding…”. Was there an objective measure of success that could be used here?	The Project Team include objective examples as measures of success and avoid broad subjective statements.	The engagement sessions gathered information and traditional knowledge which were incorporated into the selection of species for revegetation. The Project considers this an excellent measure of success and will continue to engage with Rights holders to ensure satisfaction with design plans. A revegetation Engagement Strategy is being developed and will be shared with the Giant Mine Working Group on June 13th, 2024, prior to finalization.
The GMRP response to a recommendation in the 2022 GMOB Annual Report was a commitment to host a public meeting of the boating community to discuss the design and plans and access for the new community boat launch. This has not yet been organized.	The Project Team list and report on commitments it has made to all parties and community interests.	The Project team hosted a public meeting of the boating community to discuss design plans and access for the new community boat launch on June 11th, 2024. All commitments to parties and interested community members will be logged in the Engagement Log.
The Status of the Environment Report is mentioned as a bullet point identifying items discussed at the Annual Public Forum. This is the only mention of the Status of Environment Report in the GMRP Annual Report. The Status of the Environment Report should serve as a useful communications and engagement tool going forward and should be described in more detail.	The Project Team expand the explanation and importance of the Status of Environment Report.	The GMRP appreciates GMOB’s comment, however, does not agree that additional information is required in the Annual report, in order to avoid duplication of material.
A summary of the work done with YKDFN is provided but the NSMA is not mentioned.	The Project Team include engagement work done with the NSMA.	The GMRP appreciates GMOB’s comment, however, the NSMA has not requested Apology and Compensation, therefore, CIRNAC is not engaging with the NSMA on that topic.
This paragraph indicates that the Project Team had successfully installed visual bird deterrents. For clarity - was it just that the installation was successful, or are the visual bird deterrents having a measurable effect?	The Project Team explain the efficacy of the bird deterrents as installed.	The context of ‘successfully installed visual bird deterrents’ in this section was indicating the deterrents were installed successfully. Deterrents, including both visual and auditory, can lead to habituation over time. As such, their use is in combination with other mitigations including bird sweeps, early vegetation removal, and removing nesting opportunities (e.g., by boarding up holes in buildings ahead of nesting season) to deter birds from nesting in active or planned work areas on site.

GMOB Comment	GMOB Recommendation	GMRP Response
The Project Team response to this concern includes the statement that the "...MCM always assesses existing local area business capacity…". GMOB notes that local incentives are primarily available for Indigenous-owned businesses or joint ventures. GMOB believes that all northern businesses should benefit from the Project.	The Project Team include a summary of any incentives that apply to non-Indigenous-owned northern businesses.	In 2023 – 2024, the MCM modified the Procurement Strategy for Indigenous Businesses (PSIB) tool by further limiting its geographic footprint. The MCM refers to this tool as Regional PSIB. If capacity exists, the MCM will limit bidding on solicitations to Northern Indigenous businesses located within Project's Area of the Contract – the same geographic footprint as the IOC area. The Project team will continue to examine other ways to provide benefits to Northern Non-Indigenous businesses, for example by encouraging joint ventures with Northern Indigenous businesses.
GMOB notes that a FAQ on dust and air quality was developed as a communications and engagement tool. It is not clear where this document is located. There is a link to an FAQ document on the GNWT's GMRP webpage, but the link does not work.	The Project Team update the project webpage to ensure that links to information documents work correctly.	The GMRP will ensure that all references and links are correct in subsequent reports.
A link to the Plain Language Summary of the Strategy is provided: https://www.rcaanc-cirnac.gc.ca/eng/1566487546150/1618357081011. This link does not work.	The Project Team correct this in the GMRP Annual Report to GMOB.	The GMRP will ensure that all references and links are correct in subsequent reports.
Section 8.2 contains many tables and numbers, which many readers may find challenging to interpret. There are highlights listed at the beginning of the section, but these do not really provide an assessment of the overall performance of the Project. Providing a high-level summary of the projects overall social and economic performance would help to ensure more people understand how the project is performing in this key area.	The Project Team implement more accessible methods of communicating information that is contained within tables and figures. This could potentially be achieved by including high level summaries at the beginning of sections where substantial amounts of data are provided.	The intent of the Annual Report is to provide detailed reporting on all the socioeconomic Key Performance Indicators. However, in the snapshot, that is shared publicly in Project's engagement sessions, it is easier to communicate high level socio-economic performance. The snapshot was recently visually overhauled to improve how information is displayed. The GMRP will consider applying some of the lessons learned from the recent snapshot update to the next fiscal year's annual report.
The table identifies that "The project updated and summarized a list of existing and anticipated major projects based on information provided by the City of Yellowknife and light research." GMOB notes that "light research" is subjective.	The Project Team correct the wording.	The GMRP is appreciative of GMOB's attention to detail in their review and will consider the recommendation in future reports.

GMOB Comment	GMOB Recommendation	GMRP Response
Table 10 shows the combined statistics for the project's employment with target ranges set for Northerners, Northern Indigenous and female employees. The Table incorrectly connects Indigenous employees to Northern and Southern. It is not clear from this table that Indigenous is a different count.	The Project Team define Northern, Southern, and Indigenous (Northern and Southern) to make the data clearer.	The statistical information provided is correct but the GMRP agrees that information could be visually represented better. The Project will consider this in the next fiscal year report.
Table 10 includes a target range, but the basis for this range is not provided.	The Project Team add context to the data, by providing the rationale for using a Target Range.	Future reports will have a footnote explaining why ranges are used.
Figures 9 and 10 show annual changes in employment. An additional table could be used to provide the numbers these graphics are based on.	The Project Team provided an additional source table to add context to the data and allow useful data analysis.	Table 10, on page 77, provides the source data for 2022 – 23 statistics used in Figures 9 and 10. Data for previous fiscal years was reported in respective annual reports. For future fiscal year reports, will consider adding numerical data labels so it is easier to see trends.
Total # Persons is 628 however, the sum of northern and southern employee numbers in the table is 428.	The Project Team correct this discrepancy.	This is a typo in the total Southern employees for CIRNAC contractors and it total should be 594 not 394.
"Employers" should be "Employees"	The Project Team correct this error.	The GMRP will ensure that this is corrected in future reports.
GMOB notes that the data in Table 15 does not match the data in Table 10.	The Project Team correct this error.	The statistics shown in Tables 15 and 10 are correct. The error that GMOB is referring to is perhaps due to 6 employees not reporting on their residential status and therefore were not included in the calculations of Table 15. In future fiscal year reports, if such discrepancy exists, the GMRP will add a footnote to address it.
As with Table 10, it is not clear that Indigenous (Northern and Southern) is different from Northern and Southern numbers.	The Project Team present North and South numbers separately from Indigenous.	The GMRP agrees that information could be visually represented better. The Project will consider this in the next fiscal year report.
As with Figures 9 and 10, year over year data is provided in a graphic. GMOB acknowledges that annual change is shown in the graphic, but a table would be useful for conducting data analyses.	The Project Team include an additional table to provide the numbers and the sources that the graphics are based on.	For future fiscal year reports, the GMRP will consider adding numerical data labels so it is easier to see trends.

GMOB Comment	GMOB Recommendation	GMRP Response
Mandatory training is included in the training statistics. While mandatory training is important, it differs from training that will result in greater employability or career advancement. The two types of training are reportedly combined to “streamline the process”. Career development training statistics should be separated from mandatory training statistics as career development training will provide a larger long-term benefit to northern workers would be a useful metric for tracking benefits from the project.	The Project Team track and report mandatory and career development training separately.	For future fiscal year reports, the GMRP will examine how best to show a distinction between mandatory and general training (e.g., on the job training).



GMOB Comment	GMOB Recommendation	GMRP Response
This section provides a summary of training provided by the Dechıta Nàowo Training Program including the type of training, number of participants and total hours.	The Project Team answer the following questions: 1. Are all of the courses delivered through Dechıta Nàowo? 2. Is there documentation available describing the course work and how the training is delivered? 3. How does the NEO program offered by Dechı ta Nàowo differ from the HEO course offered by Aurora College (GMOB notes that the HEO course provides 185 hours of training per individual piece of heavy equipment)? 4. What is included in the "Regulatory" training course (approximately 2.5 months)? 5. What is included in the "Research Skills" course (approximately 1 month)? 6. Why are Project Management and Drone Training combined? How much time is allocated to each of these topics? 7. What is the time allocation between On-the-Job Training and Post-Secondary Preparation?	1. It is correct that courses are delivered through Dechıta Nàowo. They utilize contractors, such as Det'on Cho, for delivery of Heavy Equipment training. They also have partnerships with organizations such as ECO Canada that provide them with additional support. 2. Please contact Dechıta Nàowo for detailed information on the training they provide. Their contact information can be found at: https://ykdene.com/government/education/dechita-naowo/ 3. As above, please contact Dechıta Nàowo for specific details on programs that they offer. 4. Examples of topics covered by Environmental Monitoring Regulatory program are: Legislative and non-legislative environmental requirements that apply to development activities; Identification of environmental effects and the related monitoring and reporting requirements at different phases; role of local knowledge and Western science in identifying risks, mitigation measures, and further monitoring requirements. For additional information, please contact Dechıta Nàowo. 5. The following topics were covered in the "Research Skills" course: protocols in environmental sampling, principles of good research and preparing for field research. Examples of the different types of environmental media and how they could be sampled, including air, water, snow, soil, vegetation and wildlife tissues were also covered. The importance of understanding environmental monitoring objectives for a particular program and the quality assurance and quality control requirements for a sampling program was emphasized in the class. Other topics included standard equipment and tools typically used in Environmental Monitoring fieldwork, how to take a good field notes, how to navigate using GPS and types of communication equipment available for the field. 6. Use of drones in Project Management was included to help in program planning and to support in communicating information. 7. Please contact Dechıta Nàowo for the requested details.
Results from the HHRA are to be action items under the Social Impact Management pillar. It is not clear to GMOB how HHRA results will apply to Social Impact issues.	The Project Team provide a rationale for including HHRA results under the Social Impacts Management Pillar.	This is a typo and should have only referenced Yellowknife Health Effects and Monitoring Program.

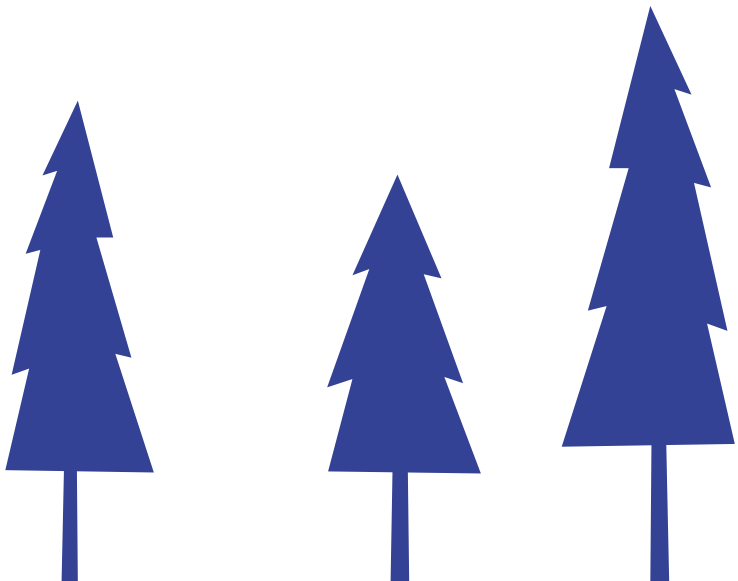
GMOB Comment	GMOB Recommendation	GMRP Response
This section indicates that the pump was re-installed in 2021-22 and it then worked as designed. The description of this work in the main body of the report is that the pump worked until August 2022, at which point it failed again.	The Project Team correct this error.	The GMRP agrees that the plain language summary did not fully explain the pumping issues. The GMRP is appreciative of GMOB's attention to detail in their review and will work to avoid these errors in future reports.
The footnote refers to the 2022-2023 reporting year as "April 1, 2021 - March 31, 2022" this should be "April 1, 2022 - March 31, 2023".	The Project Team correct this error.	The GMRP is appreciative of GMOB's attention to detail in their review and will work to avoid these errors in future reports.
Broken link to Figure 4.	The Project Team correct this error.	The GMRP will ensure that all references and links are correct in subsequent reports.
The last bullet in the table includes" (335 in 2021-22, 228 in 2022-21, and 230 in 2019-20)". This should likely be "(335 in 2021-22, 228 in 2020-21, and 230 in 2019- 20).	The Project Team correct this error.	The GMRP is appreciative of GMOB's attention to detail in their review and will work to avoid these errors in future reports.
The second paragraph includes "(335 in 2021-22, 228 in 2022-21, and 230 in 2019- 20)". This should likely be "(335 in 2021- 22, 228 in 2020-21, and 230 in 2019-20).	The Project Team correct this error.	The GMRP is appreciative of GMOB's attention to detail in their review and will work to avoid these errors in future reports.
The second last bullet after the first paragraph is "Air Quality - & community". There is text missing from this entry.	The Project Team correct this error.	The GMRP is appreciative of GMOB's attention to detail in their review and will work to avoid these errors in future reports.

APPENDIX B – LIST OF 2023-24 STUDIES/REPORTS

Table 19 lists environmental or engineering studies conducted **in 2023-24** by the GMRP. It includes studies that were completed, as well as several that are still underway. Many of these studies are intended to provide information needed to inform closure design, while others are monitoring programs to ensure the safety of the surrounding communities during current site operations. Additional details on these studies can be found throughout the report.

Table 19: Studies Undertaken in 2023-24

Theme	Study / Report
Design	• 2023 Annual Geotechnical Inspection of Dams • Geotechnical Monitoring Annual Report - 2023
Air	• Ambient Air Quality Monitoring Program Annual Report 2023
Water	• Aquatic Effects Monitoring Program (AEMP) 2023 Annual Report • Annual Water Licence Report 2023 • Phase 7 Environmental Effects Monitoring Program Results
Land	• Additional Sampling for Core Industrial Area Demolition Program
Health & Safety	• CIRNAC and MCM Incidents Reports • Health Effects Monitoring Program (Health Study – ongoing)



APPENDIX C – PROJECT RISKS AND MITIGATION

Risk management has been an important and ongoing management activity for the GMRP since 2002-03. Risk is about uncertainties, or unknowns, and how these could impact the objectives of the GMRP, such as the objective to minimize impacts to the environment. Risk management involves identifying and understanding risks, ranking them (which ones are low or high), and taking steps to prevent risk events from happening or to reduce their impact if they do happen. Organizations with strong risk management processes are better prepared to anticipate, avoid or reduce the impact and/or likelihood of risk events, should they occur.

The GMRP has a risk management procedure and process[13] which it uses to reduce risks to acceptable levels (e.g., legacy risks; see text box) and to manage risks which may increase with increased project activity (e.g., project activity risks; see text box)

Examples of GMRP Risks

Legacy Risks: risks related to the infrastructure (e.g., dams) and environmental conditions (e.g., underground chambers) left by the former mining operation that could have human health and environmental impacts. Examples include: the release of arsenic trioxide from the underground chambers, or the injury or death of a trespasser from falling into a mine opening.

Activity Risks: risks related to the remediation project and the activities involved in reducing the legacy risks. These risks include risks to scope, budget, schedule, health and safety of workers and the surrounding environment. Examples include delays in advancing work (and associated cost impacts), health and safety impacts to workers while conducting remediation activities (e.g., moving earth), and air pollution due to dust from remediation work.

There are many examples of how risk management has informed project decision-making. When the risk management process was first implemented in 2002-03, the identification of various public access risks led to the implementation of a range of site security measures to prevent unauthorized entry to the site. More recently, the identification of significant risks related to the Roaster Complex, Baker Creek, and underground chamber instability led to the development of a Site Stabilization Plan (SSP)– a set of remediation measures (including the demolition of the Roaster Complex) that were approved and implemented ahead of schedule to minimize impacts to human health and safety and the environment. An overview of current legacy and activity risks for the GMRP, and associated risk treatment activities, is presented below.

[13] GMRP's risk management procedure and process aligns with best practice and the international risk management standard CAN/CSA-ISO 31000-10 (R2015).

Risk Profile Summary – 2023-24

This section provides a summary of the GMRP 2023-24 risk profile. The information is from the GMRP Risk Register (a large excel file) and summarizes the number of risks by status (i.e., active, closed), number of risks by category (e.g., dams), the distribution of risks across levels (e.g., low, moderate), the distribution of risks across types (active vs legacy), the active risk drivers, and the historical profile since 2010.

NUMBER OF RISKS BY STATUS	
Total Active Risks	100
Total Closed Risks	190
Total Issues	2

Figure 33: Active Risks by Category

Figure 34: Active Risks by Category

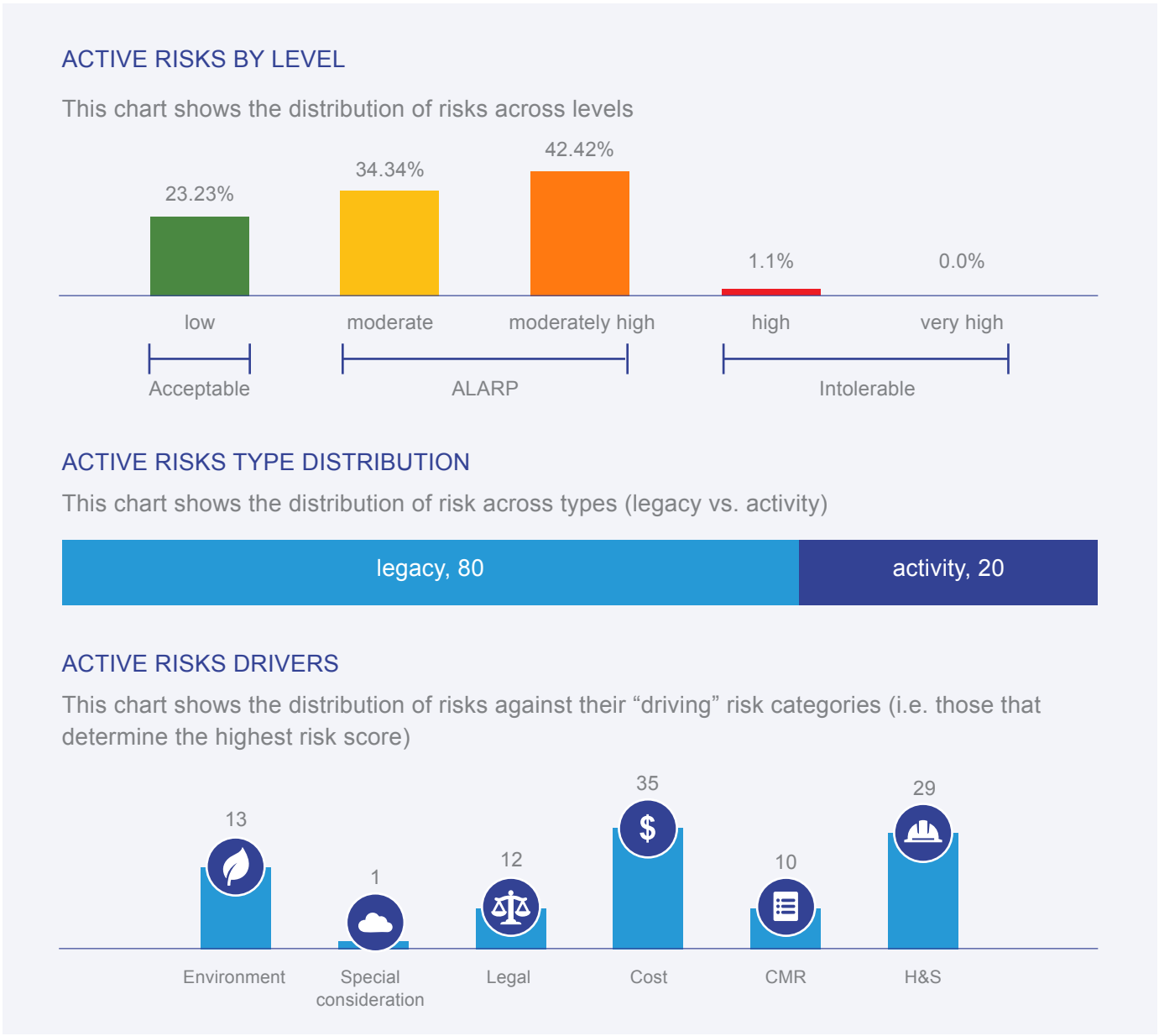
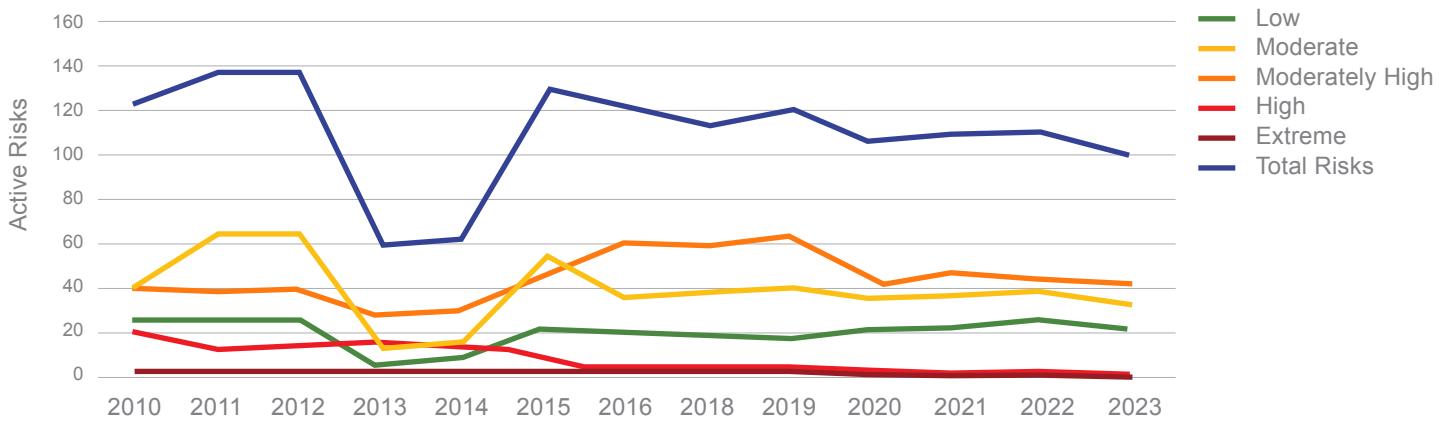


Figure 35: Historical Risk Profile



APPENDIX D – PROGRESS ON ENVIRONMENTAL ASSESSMENT MEASURES AND SUGGESTIONS – DETAILED TABLES

This appendix provides supplemental details about progress toward achieving the Measures stipulated via The Report of Environmental Assessment and Reasons for Decision (Mackenzie Valley Review Board, 2013), and plans for 2023-24. Throughout these tables, "the Project" refers to the GMRP. The language in the Measure column is drawn directly from The Report of Environmental Assessment and Reasons for Decision (Mackenzie Valley Review Board, 2013).

Table 20: Giant Mine EA Measures Tracking Table (as of March 31, 2024)

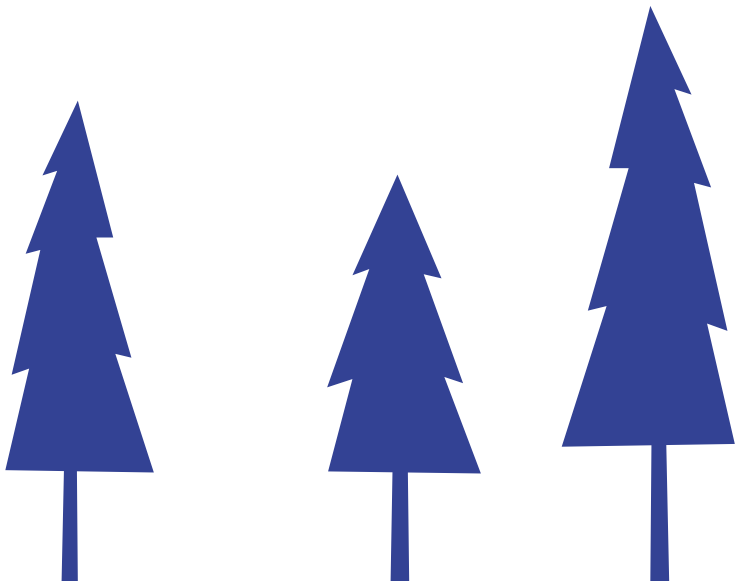
#	Measure	Status	GMRP Comments on Status
1	To prevent the significant adverse impacts on environment and the significant public concern from the proposed perpetual timeframe, the Project will proceed only as an interim solution, for a maximum of 100 years.	**No Action Required**	The closure period is 100 years as outlined in the CRP.
2	Every 20 years after the beginning of Project implementation, the Developer will commission an independent review of the Project to evaluate its effectiveness to date, and to decide if a better approach can be identified. This will: • consider results of the ongoing research • be participatory in nature • follow the requirements of procedural fairness and be transparent in nature. If the periodic review identifies a better approach that is feasible and cost-effective, the Developer will further study it, and make the study and its results of the study public.	**Future action required**	Article 8 of the June 9, 2015 Environmental Agreement further formalized the process through which the future Independent Project Review will be conducted. The Agreement ensures the independent review of the Project is conducted in a manner that considers ongoing research results, is participatory and transparent in nature and follows the requirements of procedural fairness.
3	To facilitate active research in emerging technologies towards finding a permanent solution for dealing with arsenic at the Giant mine site, the Developer will fund research activity as advised by stakeholders and potentially affected Parties through the GMOB. The ongoing funding for this research activity, and additional resources required to manage its coordination, will be negotiated and included as part of the Environmental Agreement specified in Measure 7 and will make best use of existing research institutions and programs. The GMOB will ensure through the research activity that, on a periodic basis: • reports on relevant emerging technologies are produced; • research priorities are identified; • research funding is administered; • results of research are made public, and • results of each cycle are applied to the next cycle of these steps.	**Complete**	Articles 7 & 11 of the June 9, 2015 Environmental Agreement provide a commitment of funding for the Oversight Body (which will be known publicly as the Giant Mine Oversight Board, or GMOB) to manage a research program as required by Measure 3. Initial funding flowed for this Measure in 2016-17 and will be ongoing.

#	Measure	Status	GMRP Comments on Status
4	The GMOB will provide the results of the research funded by the Developer to the periodic reviews of the Project described in Measure 2. If better technological options are identified through the funded research in-between these periodic 20-year reviews, these will be reported publicly by the GMOB to the Parties, the Developer and the Canadian public. The Developer will consider these technologies and make decisions regarding their feasibility. The Developer will make any such decisions public.	**Complete**	The Giant Mine Oversight Board (GMOB) hosted a research workshop in March 2018 and negotiated an MOU with the University of Waterloo for TERRE-NET researchers to establish a formal research relationship with respect to alternate technological options for the permanent remediation solution for the arsenic trioxide dust stored at the Giant Mine site. Currently, the research focus is on stabilization of the dust; the safe extraction of the dust will be a future focus.
5	In order to mitigate significant adverse impacts that are otherwise likely, the Developer will commission an independent Quantitative Risk Assessment to be completed before the Project receives regulatory approvals. This will include: • explicit acceptability thresholds, determined in consultation with potentially affected communities • an examination of risks from a holistic perspective, integrating the combined environmental, social, health and financial consequences. • possible events of a worst-case/ low frequency high consequence nature • additional considerations specified in Appendix D of the Report of Environmental Assessment From this, the Developer will identify any appropriate Project improvements and identify management responses to avoid or reduce the severity of predicted unacceptable risks.	**Complete**	An independent consultant (Wood) was retained in 2018 to complete the Quantitative Risk Assessment. A separate consultant was retained to develop the engagement component (Stratos). The report and findings will be presented during engagement sessions in Spring / Summer 2020. The completed report was submitted to the MVLWB in June 2020. Design Plan submissions to the MVLWB in 2022/23 included sub sections specific to the outcomes of the Quantitative Risk Assessment and how these have been addressed.
6	The Developer will: • investigate long-term funding options for the ongoing maintenance of this Project and for contingencies, including a trust fund with multi-year up front funding, • involve stakeholders and the public in discussions on funding options; and, • make public a detailed report within three years that describes its consideration of funding options, providing stakeholders with the opportunity to comment on the report.	**Complete**	The Measure 6 report on long term funding options for Giant Mine was finalized in July 2019 (Deloitte LLP, 2019a).

#	Measure	Status	GMRP Comments on Status
7	The Developer will negotiate a legally-binding environmental agreement with, at a minimum, the members of the Oversight Working Group, and other appropriate representative organizations, to create an independent Oversight Body (GMOB) for the GMRP. These negotiations will build on the existing discussion paper and draft environmental agreement of the Giant Oversight Working group. This GMOB will exist for the life of the Project unless otherwise agreed by the Parties to the Environmental Agreement. Every effort will be made to have the GMOB in place as early as possible. The negotiations will make significant progress within six months of the Ministers' Environmental Assessment decision or proceed to mediation. The Developer will cover any mediation costs. The environmental agreement will include a dispute resolution mechanism to ensure compliance with the agreement and a stable funding mechanism for the GMOB.	**Complete**	Through negotiations with the six affected parties (GNWT, CIRNAC, Alternatives North, the NSMA, the YKDFN, the City of Yellowknife) an Environmental Agreement was signed in June 2015. This Agreement established the mandate for GMOB. Details of the Board's mandate are included in the Giant Mine Environmental Agreement and Society's by-laws found on the GMOB's website.
8	The activities of the oversight body will include: • keeping track of monitoring activities by the Developer and the results of those activities, including water quality and aquatic effects monitoring, health monitoring and other monitoring; • considering the adequacy of funding for the Project and ongoing research; • providing advice to the Developer, regulators and government on ongoing improvements in monitoring and Project management to prevent risks and mitigate any potential impacts; • sharing the oversight body's conclusions with the general public and potentially affected communities in a culturally appropriate manner	**Complete**	The Environmental Agreement provides for the creation of the Oversight Board and funding to fulfill these obligations going forward. Article 3 of the Environmental Agreement outlines the mandate of the GMOB. The GMRP continues engaging with GMOB staff and directors through various engagement initiatives and venues, further described in the Engagement Plan.
9	The Developer will work with other federal and territorial departments as necessary to design and implement a broad health effects monitoring program in Ndilǫ, Dettah and Yellowknife focusing on arsenic and any other contaminants in people which might result from this Project. This will include studies of baseline health effects of these contaminants and ongoing periodic monitoring. This will be designed with input from: • Health Canada, GNWT Health and Social Services and the Yellowknife medical community; and • The Yellowknives Dene and other potentially affected communities. The organization conducting the monitoring will provide regular plain language explanations of the monitoring results in terms that are understandable to lay people, and communicate this to potentially affected communities in a culturally appropriate manner.	**Underway**	The Health Effects Monitoring Program was established in 2017. The Program is carried out by University of Ottawa's Dr. Laurie Chan and his team. It is a long-term monitoring program to establish levels of arsenic and other contaminants of concern in residents of Ndilǫ, Dettah and Yellowknife. The results of baseline data collection phase (two waves in 2017 and 2018) indicated: that overall arsenic levels in urine are similar between the overall Yellowknife population and the Canadian Health Measures Survey (CHMS) levels, which represent the general Canadian population. An illustrated, plain language brochure that provides information on the YKHEMP study, reasons for the study, results from the 2017-2018 sample collection, and some background on arsenic and Giant Mine was published in 2021. The 5 year follow-up study for children and youth was completed in 2023. Results will be available in 2024.

#	Measure	Status	GMRP Comments on Status
10	The Developer will commission a comprehensive quantitative human health risk assessment by an independent, qualified human health risk assessor selected in collaboration with Health Canada, the Yellowknives Dene, the City of Yellowknife, and the Developer. This human health risk assessment will be completed before the Project receives regulatory approvals. It will: • Include a critical review of the 2006 Tier II human health risk assessment and the previous screening reports; • Consider additional exposures and thresholds (as specified in Appendix F of the Report of Environmental Assessment); • Decide whether a Tier III risk assessment is appropriate; • Provide a plain language explanation of the results in terms that are understandable to the general public, and communicate this to potentially affected communities in a culturally appropriate manner; • Provide interpretation of results and related guidance; and • Inform the broad health effects monitoring program (described in Measure 9 above). The Developer may conduct the human health risk assessment concurrently with the Quantitative Risk Assessment described in Measure 5. Based on the results of this human health risk assessment, and on any existing results of the health effects monitoring program (described in Measure 9 above), the Developer will, if necessary in response to this information, identify, design and implement appropriate design improvements and identify appropriate management responses to avoid or reduce the severity of any predicted unacceptable health risks. Also, footnote #133 in the Report of Environmental Assessment (Appendix D) is revised to read, in its entirety, "Including inference of causality and pathologies deducted from any available health studies."	**Complete**	The Human Health Ecological Risk Assessment (HHERA) was completed by Canada North Environmental Services. The HHERA was carried out with significant input from stakeholders, community members and traditional knowledge holders. This input included both the scope of the assessment and the implementation to better assess risks considering differences in traditional land use, food consumption, and lifestyles for residents living in Yellowknife, Ndilǫ and Dettah. The final report was released in January 2018. Additional considerations for communications are underway to ensure residents understand the outcomes which have informed public health advisories through the GNWT Department of Health and Social Services. The GMRP developed the Hoèla Weteèst'eèdeè study (formerly called the Stress Study) via an independent research team through the University of Wilfred Laurier. Wilfred Laurier were the principal investigators of the study which has been co-designed with the YKDFN. The requirement of this study was identified in Appendix F to the Report of Environmental Assessment noting the requirement to "evaluate indirect effects of potential exposures to arsenic on wellness, including stress effects. On June 6, 2022, the Yellowknives Dene First Nation advised the GMRP they were withdrawing from the study. In September 2022, the GMRP met with the remaining members of the study's advisory committee to seek advice with respect to how to proceed. After careful deliberation, the committee unanimously advised that the Study should not proceed; as such, the Study has been discontinued.

#	Measure	Status	GMRP Comments on Status
11	The Developer, with meaningful participation from the Oversight Body and other parties, will thoroughly assess options for, and the environmental impacts of, diversion of Baker Creek to a north diversion route previously considered by the Developer or another route that avoids the mine site and is determined appropriate by the Developer. Within one year of the project receiving its water license, a report outlining a comparison of options including the current on-site realignment will be provided to the appropriate regulatory authorities, the Oversight Body and the public. Once informed by the advice of the Oversight Body and regulatory authorities, the Developer will determine and implement the preferred option. In doing so, the Developer will consider the advice of the Oversight Body, regulatory authorities, and the public, and will ensure that the primary considerations in selecting an option are to: • minimize the likelihood of Baker Creek flooding and entering the arsenic chambers, stopes and underground workings, and • minimize the exposure of fish in Baker Creek to arsenic from existing contaminated sediments on the mine site, surface drainage from the mine site or tailings runoff. If off-site diversion is selected, the Developer will seek required regulatory approvals to implement the diversion within five years of receiving its water license.	**Complete**	A comprehensive evaluation of diversion alternatives was undertaken and documented in the Baker Creek Diversion Alternatives Evaluation Report. The assessment included an evaluation of alignment options based on environment, society and feasibility. The Draft Report was engaged on with GMOB, the GMRP Working Group, and the YKDFN Giant Mine Advisory Committee. Engagement details are documented in the engagement log. Overall support for the recommendations provided for alignment option. The Final report was provided as Appendix 5.5A to the Closure and Reclamation Plan in the Water Licence Package. Actions taken as part of the Baker Creek design to address a) include: • providing Baker Creek with geomorphic channel including floodplain conveyance; • designing closure channel and floodplain conveyance for floods up to and including the Probable Maximum Flood (PMF), sealing underground mine openings to surface to mitigate potential for inundation and uncontrolled flow to the underground mine during extreme events and placing pit fills in a manner to provide additional flood protection. Actions taken as part of the Baker Creek design to further address b) include: removing tailings, where present from Baker Creek and removing fine sediments, where present, from Baker Creek.



#	Measure	Status	GMRP Comments on Status
12	To prevent significant adverse impacts on Great Slave Lake from contaminated surface waters in the existing or former channel of Baker Creek, should it be re-routed to avoid the mine site, the Developer will ensure that water quality at the outlet of Baker Creek channel will meet SSWQO based on the CCME *Guidance on the Site-Specific Application of Water Quality Guidelines in Canada*.	**Complete**	Water quality objectives specific to and protective of Yellowknife Bay were developed based on CCME Guidance and are presented in the Effluent Quality Criteria (EQC) report. Extensive modelling including a site model in GoldSim, a near field model of the mixing zone (CORMIX) and a 3D Model of Yellowknife Bay (GEMSS) were developed to support the development of EQC and demonstrate the Project's ability to meet Water Quality Objectives. Modelling documentation is included in the EQC report along with prediction of future water quality in Yellowknife Bay. The Water Quality Objectives will be met upon completion of the GMRP active remediation phase and will be met in the vicinity of the outlet of Baker Creek (see Measure 13), at the edge of a 200 m mixing zone (see Measure 15) that includes the Project's new WTP outfall and the influence of Baker Creek. Site Specific Water Quality Objectives (WQO) were presented as part of pre-engagement and submitted in the EQC Report to the MVLWB for approval in April 2019. These were discussed at the first technical session in July 2019, hosted by the MVLWB, in support of the Water Licence application process and approved by the MVLWB in July 2020. Final EQC were determined by the MVLWB and included in the GMRP Water Licence MV2007L8-0031 issued September 18, 2020.
13	The Developer will design and, with the applicable regulators, manage the Project to ensure that, with respect to arsenic and any other contaminants of potential concern, the following water quality objectives are achieved in the vicinity of the outlet of the existing or former channel of Baker Creek, should it be re-routed to avoid the mine, excluding Reach 0: • Water quality changes due to discharge from the former channel of Baker Creek will not reduce benthic invertebrate and plankton abundance or diversity; • Water quality changes due to discharge from the former channel of Baker Creek will not harm fish health, abundance or diversity; • Water quality changes due to discharge from the former channel of Baker Creek will not adversely affect areas used as drinking water sources, • Water quality changes due to discharge from the former channel of Baker Creek will not adversely affect any traditional or recreational users; and, • There is no increase in arsenic levels in Great Slave Lake due to discharge from the former channel of Baker Creek beyond the parameters described in Measure 12.	**Complete**	Measure 13 a) through d) are satisfied by selecting Water Quality Objectives for Yellowknife Bay that are protective of aquatic life and drinking water. Arsenic concentrations in Great Slave Lake, beyond the edge of the mixing zone (200 m from breakwater), will not increase from present-day concentrations as demonstrated in the EQC report and supporting documentation (see Measure 12).

#	Measure	Status	GMRP Comments on Status
14	The Developer will add an ion exchange process to its proposed water treatment process to produce WTP effluent that at least meets Health Canada drinking water standards (containing no more than 10µg/L of arsenic), to be released using a near shore outfall immediately offshore of the Giant mine site instead of through the proposed diffuser. The Developer will achieve this concentration without adding lake water to dilute effluent in the treatment plant.	**Complete**	The new WTP will include ion-exchange technology as part of the treatment process and will discharge effluent meeting the criteria of 10 ug/L of Arsenic. The outfall location was identified through stakeholder engagement and options analysis and will be located nearshore of the Giant site in the vicinity of Baker Creek. No diffuser is proposed. Final EQC were determined by the MVLWB and included in the GMRP Water Licence MV2007L8-0031 issued September 18, 2020.
15	The Developer and regulators will design and manage the Project so that, with respect to arsenic and any other contaminants of potential concern: • Water quality at the outfall will meet the Health Canada Guidelines for Canadian Drinking Water Quality; and, • The following water quality objectives in the receiving environment are met: — Water quality changes due to effluent discharge will not reduce benthic invertebrate and plankton abundance or diversity at 200 metres from the outfall; — Water quality changes due to effluent discharge will not harm fish health, abundance or diversity; — Water quality changes due to effluent discharge will not adversely affect areas used as drinking water sources; and, — There is no increase in arsenic levels in Yellowknife Bay water at 200 metres from the outfall: and, — There is no increase in arsenic levels in Yellowknife Bay sediments at 500 metres from the outfall.	**Complete**	All parameters of potential concern (POPC) will meet relevant Canadian Drinking Water Guidelines (DWG) at the edge of the mixing zone. Water Quality Objectives specific to Yellowknife Bay have been developed to be protective of aquatic life and drinking water and all Water Quality Objectives will be met at the edge of the mixing zone. Arsenic concentrations in Great Slave Lake, beyond the edge of the mixing zone will not increase from present-day concentrations due to effluent discharge. See Measure 12 for more details on Water Quality Objectives and supporting evidence. Final EQC were determined by the MVLWB and included in the GMRP Water Licence MV2007L8-0031 issued September 18, 2020.
16	Before construction, the Developer will model re-suspension of arsenic from sediments and resulting bioavailability in the vicinity of the outfall. If the modeling results indicate that the outfall may re-suspend arsenic from sediments, the Developer will modify the outfall design until operation does not cause resuspension of arsenic from sediment.	**Complete**	The GMRP is taking a more protective approach and mitigating the potential of sediment resuspension through design of a sediment cover, rather than modelling. The design criteria for the outfall will include the requirement to avoid resuspension of arsenic from sediments. During design of the WTP outfall, modelling of the outfall to predict scour and potential resuspension of sediment was completed and the design was completed to prevent any resuspension of sediment at the outfall. In December 2022, details of the design were submitted to the MVWLB in the WTP Design Plan.

#	Measure	Status	GMRP Comments on Status
17	Before operating the outfall, the Developer will design and implement a comprehensive aquatic effects monitoring program that is sufficient to determine if the water quality objectives listed in Measure 15 are being met. This program will: • at a minimum, be able to identify any accumulation of arsenic over time in the water, sediment or fish in the receiving environment; • include appropriate monitoring locations near N'dilo, in Back Bay and in Yellowknife Bay, with a focus on areas in the vicinity of the outfall and areas used by people; • include the establishment of a baseline for aquatic effects in Back Bay before beginning Project construction and installation of the outfall; • be developed according to AANDC Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the Northwest Territories, June 2009, with corresponding action levels and management response framework.	**Underway**	The AEMP Design Plan will be updated prior to operation of the WTP, as required by the Water Licence.
18	Prior to preparing chambers and stopes for freezing, the Developer will conduct a comprehensive Quantitative Risk Assessment evaluating both wet and dry methods for the initial freezing design, with respect to current risks and implications for future removal. This will include an evaluation of potential effects of the proposed freezing and wetting method on the thawing or frozen excavations, and potential impacts of ongoing design changes prior to implementing the Project. The Developer will release a plain language report to the public describing its considerations and the resulting design.	**Complete**	The Freeze Design Basis Report was finalized in 2016 and included an evaluation of wet versus dry methods, resulting in the selection of the dry method. The plain language report was finalized and distributed to the Giant Mine Working Group, YKDFN Giant Mine Advisory Committee, and email distribution list (June 2019).
19	Considering the results of the risk assessment described in Measure 18, the Developer will not adopt any method of freezing that significantly reduces opportunities for future arsenic removal or other remediation by future technologies.	**Complete**	The Freeze Design Basis Report was finalized in 2016 and included an evaluation of wet vs dry. The Project is proceeding with the dry method, which combined with a passive freezing approach will allow for reversibility if needed. Closure Objective F2 and associated closure criteria address reversibility in the Closure and Reclamation Plan.

#	Measure	Status	GMRP Comments on Status
20	The Developer will conduct all major demolition and construction activities with the potential to release large amounts of dust or contaminants into the air when wind directions will minimize the chances of dust and contaminants blowing into the City of Yellowknife, Dettah and N'dilo.	Underway	The Dust Management and Monitoring Plan takes into account Measure 20 and outlines mitigations to minimize the generation of dust, particularly when wind is blowing towards Yellowknife, Ndilǫ, and Dettah. As well, the site wide Air Quality Monitoring Plan is an existing and ongoing program that was designed to adapt to changing activities on site, and incorporates applicable measures and activities to mitigate the risks of exposure to contaminated dust throughout the life of the Project. The Air Quality Monitoring Plan is an appendix to the Dust Management and Monitoring Plan.
21	The Developer will collect dust and contaminant level data from soil and vegetation in the vicinity of major reclamation activities before and after major demolition or construction activities to serve as a baseline for any related adaptive management activities that may follow.	Underway	The GMRP conducts ambient air quality monitoring, as required by Measure 25 and as outlined in the Air Quality Monitoring Plan. during non-snow-covered months and when warranted by remediation activities during snow covered months. This allows for additional mitigation and adaptive management options to be implemented in a timely manner. Wildlife surveys will be completed post-remediation, which include a vegetation monitoring component.
22	The Developer will conduct a study to determine appropriate depth of the tailings cap and B1 pit cover, in consultation with Environment Canada and responsible regulators, to verify that the depth proposed will ensure the tailings cap and B1 pit cover are not compromised by vegetation growth. The Developer will provide a report of this study to the MVLWB before it issues a water license for the Project.	Complete	During Surface Design Engagement some affected parties preferred the selection of a non-vegetated tailings cover. The selection of a rock cover as outlined in the Closure and Reclamation Plan addresses the concern of the cover being compromised by vegetation growth. As a result of input received during engagement and the selection of a rock cover, this measure has been addressed.
23	The Developer will work cooperatively with responsible regulatory authorities and interested Parties in the development and submission of a Tailings Management and Monitoring Plan prior to receiving regulatory approvals. This plan will not only identify potential issues for the management of tailings but will also identify mitigation measures to prevent problems related to the tailings cap failure, and will include consideration of the B1 pit cover as applicable.	Underway	A Tailings Management and Monitoring Plan (Version 1.0) was developed as part of the Water Licence application and approved. In September 2022, GMRP submitted an updated version (2.0) of the Tailings Management and Monitoring Plan to the MVLWB. Comments from MVLWB led to an engagement process that resulted in a revised version (version 2.1), which was submitted March 31st 2023 and approved in April of 2023. As with all GMRP Management and Monitoring Plans, the Tailings Management and Monitoring Plan will be reviewed annually and updated as required during remediation.
24	The Developer will physically prevent all-terrain vehicle access to the tailings cap and B1 pit cover to prevent the surface from being eroded or otherwise compromised. The Developer will monitor the effectiveness of this prevention, and will take any additional management measures as necessary to prevent all-terrain vehicle access.	Future Action Required	The selection of a coarse rock cover will prevent the surface from being eroded or comprised through ATV access. Closure objective T6 addresses this in the Closure and Reclamation Plan.

#	Measure	Status	GMRP Comments on Status
25	The Developer will work cooperatively with responsible regulatory authorities and interested Parties in the development and submission of an Air Quality Management Plan which incorporates an ongoing Air Quality Monitoring Plan. This ongoing monitoring program will include all previously identified on-site air quality monitoring stations and one off-site air quality monitoring station near Niven Lake. At a minimum, ambient concentrations of NO2 and PM2.5 will be monitored at the Niven lake site. Total suspended particulate and metal concentrations will be monitoring at the on-site locations. This Air Quality Monitoring Plan will identify action levels and trigger additional management and mitigation activities, if required.	**Underway**	The GMRP maintains an Air Quality Monitoring Plan. The Air Quality Monitoring Plan comprises site perimeter stations and community stations. PM2.5 is measured at the community stations, with the Niven community station also measuring NO2. The Air Quality Monitoring Plan, in conjunction with the Dust Management and Monitoring Plan, identifies action levels which trigger additional management and mitigation measures as required. The Air Quality Monitoring Plan will be reviewed and updated as required as remediation progresses.
26	In conjunction with Measure 10 above, the Developer will consider the results of the comprehensive human health risk assessment, and consult with the YKDFN and City of Yellowknife when determining suitable end uses of the site, to ensure that those proposed uses do not pose a health risk to people, including toddlers.	**Underway**	The Human Health Ecological Risk Assessment (HHERA) was completed in 2018. The results were presented to the communities of YKDFN, the NSMA, the City of Yellowknife and other affected parties. The GMRP Engagement Plan outlines the extensive engagement sessions held to inform the Human Health Ecological Risk Assessment, including a Dietary Survey and a Voluntary Country Food Sampling Program. The outcome of the HHERA informed post-closure land use constraints. The GMRP has shared the details of the post-closure land use constraints with GNWT Lands, and the City of Yellowknife. The GMRP will continue to work with its municipal, territorial and federal counterparts to communicate post-closure risks, and their consideration within the Perpetual Care Plan.

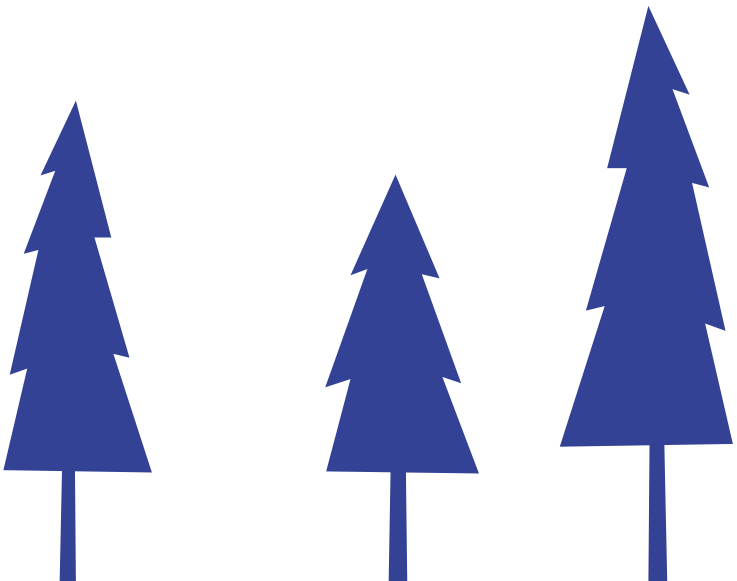


Table 21: Giant Mine Environmental Assessment Suggestions Tracking Table (as of March 2024)

#	Suggestion	Status	GMRP Comments on Status
1	The Developer should consult with surrounding communities, including Dettah, Ndilǫ and the City of Yellowknife, prior to finalizing its Project design, so that design improvements may be incorporated to address any remaining concerns.	**Underway**	The extensive engagement completed since the EA is documented in the Closure and Reclamation Plan. Engagement Plan and the Engagement Log. This includes the Surface Design Engagement process and regular ongoing engagement through the Giant Mine Working Group, the YKDFN GMAC and other engagement venues which are outlined in the Engagement Plan.
2	The Developer should create a monument as a memorial to the impacts of past contamination from Giant Mine on Indigenous communities and the environment.	**Underway**	The Project has committed to a monument as this was widely supported by affected parties during Surface Design Engagement, however the details of exactly what and where the monument would go were not discussed during Surface Design Engagement. The Project will engage on this with affected parties prior to finalizing the details of the monument and communicate this decision to the public.
3	To encourage widespread learning from and remembering of the experiences of the Giant Mine, the Developer, in conjunction with the GNWT Department of Education, Culture and Employment, should: • develop an education resource unit on the impacts of Giant Mine on the land and on people, including impacts on Indigenous peoples, and • distribute this resource unit for use within the school curriculum across Canada	**Underway**	GMRP worked with a committee comprised of members from the YKDFN, NSMA, GMOB and AN on the initial stages of a Giant Mine education resource. General themes were explored and a draft framework was created to offer for scope development. GMRP supports and encourages a developer to advance an education resource to promote widespread learning on the experiences of Giant Mine.
4	The Federal Contaminated Sites Action Program should develop a policy framework and guidance for the perpetual care and management of remediated contaminated sites.	**Outside of the Project scope**	This suggestion is outside the mandate of the GMRP, however, a Perpetual Care Plan is a requirement under the Environmental Agreement. A Perpetual Care Task Force (the Task Force) has been established to assist in the development of the Perpetual Care Plan. The Task Force is made up of representatives from each signatory to the GMRP Environmental Agreement. Under the Agreement, a draft was to be available to GMOB by June 2020; however, GMRP requested a formal extension from GMOB. GMRP submitted a Perpetual Care Plan framework to GMOB in November 2020. The GMRP, with significant input from the Task Force, have developed a Scope of Work (SOW) which outlines the requirements of version 1 of the Perpetual Care Plan. The Request for Proposal was put out for tender January 2023. Contract award is anticipated for Spring 2024.

#	Suggestion	Status	GMRP Comments on Status
5	To ensure long-term funding throughout the life of the Project, the Developer should create an independently managed self-sustaining trust fund with multi-year up-front funding for the ongoing maintenance of this Project and for contingencies. A third-party expert should independently manage this trust fund. Annual reports on the condition of the fund should be provided to stakeholders and the public.	**Outside of the Project scope**	Measure 6. A final report as required under Measure 6 was completed in 2019/20. A response to this suggestion is outside the be mandate of the GMRP, however the Project team will ensure the report is provided to the relevant department(s) in the Government of Canada and continue to work with our counterparts in the federal system to ensure funding is in place throughout the life of the Project.
6	To reduce public concern about the multiple roles of AANDC in this Project and to increase public confidence, AANDC should produce guidelines to clarify reporting structures to ensure that Project inspectors, advisors and managers employed by the federal government can perform their duties objectively and without undue pressure from within the federal government. These should be made available to the public within six months of Ministerial acceptance of this Report of Environmental Assessment.	**Outside of the Project scope**	A response to this suggestion is outside the mandate of the GMRP, however the existing Treasury Board Values and Ethics Code for the Public Sector is available to the public at http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=25049
7	Based on the results of the health risk assessment described in Measure 10, the appropriate government authorities should remediate garden and playground soils where arsenic concentrations exceed current guidelines for urban soils in Canada.	**Outside of the Project scope**	The remediation of garden and playground soils is out of scope of the GMRP. The Project continues to cooperate with relevant federal and territorial agencies to share information.
8	The Developer should consider the Trail Human and Environmental Health Committee as a model for the development of the health program.	**Complete**	The Health Effects Monitoring Program has incorporated lessons learned and similar concepts from that of the Trail BC Monitoring Program.

#	Suggestion	Status	GMRP Comments on Status
9	During its review of the diversion of Baker Creek, the Department of Fisheries and Oceans should consider the habitat loss of the existing Baker Creek and decide on any habitat design requirements for the diversion to the extent it deems appropriate. Any resulting habitat compensation requirements should be applied on the new diversion.	**Underway**	The GMRP is working with the Department of Fisheries with respect to habitat loss and compensation. Discussions began in 2018 and continued in 2023. The GMRP calculated habitat loss associated with construction and remediation activities in Yellowknife Bay and Baker Creek as well as predicted habitat gains based on the design of Baker Creek and the Nearshore/ Foreshore cover in Yellowknife Bay. These details were engaged on with Rights holders and stakeholders, and submitted to DFO as part of the Fisheries Act Authorization for the full scope of the closure and reclamation activities associated with the GMRP (with some minor exceptions) on March 17, 2023. GMRP will consider this Measure complete upon receipt of the Fisheries Act Authorization.
10	The Developer should investigate the potential advantages and disadvantages of adding an engineered wetland to the Project to reduce arsenic in surface drainage. This investigation should include possible locations in the channel that formerly contained Baker Creek and in the Baker Creek diversion. On completion, the Developer should make a public report of the results of this investigation and of any resulting changes to Project design. This should be completed before a water license is issued for the Project.	**Underway**	A Research and Reclamation Plan entitled Passive and Semi Passive Treatment systems is an Appendix to the Closure and Reclamation Plan.. This plan outlines research undertaken to date on engineered wetlands and the proposed further steps to investigate the feasibility and potential effectiveness of applying passive and semi-passive treatment systems on the Giant site. This evaluation is still underway; evaluation results will be provided when available through an Annual Water Licence Report.
11	To manage the risks of airborne exposure of contaminated dust from deconstruction of buildings or other structures on site, the Developer should: • prepare a dispersion model of dust plume given typical wind direction and speed • define the meteorological window of opportunity to describe acceptable wind conditions to eliminate the potential for a dust cloud release and transport of surrounding communities. • consult a meteorologist to develop a sound model of weather conditions, to indicate when winds are steady and not gusting, blowing to the north • stop if winds change or any dust controlling equipment fails	**Underway**	The Air Quality Monitoring Plan is an existing and ongoing program that was designed to adapt to changing activities on site, and incorporates suitable measures and activities to mitigate the risks of exposure to contaminated dust throughout the life of the Project. The Dust Management and Monitoring Plan includes Action Levels which include a number of potential mitigations and contingencies, up to and including work stoppage.

#	Suggestion	Status	GMRP Comments on Status
12	To prevent impacts on people from potentially harmful contaminant releases from deconstruction of buildings or other structures on site at the Giant Mine site, the Land and Water Board should specify allowable wind directions and wind speeds in degrees, to ensure that contaminated structures are not demolished during blustery multi-directional winds at ground level.	**Underway**	The Air Quality Monitoring Plan is an existing and ongoing program that was designed to adapt to changing activities on site, and incorporates suitable measures and activities to mitigate the risks of exposure to contaminated dust throughout the life of the Project. The Dust Management and Monitoring Plan includes Action Levels which include a number of potential mitigations and contingencies, up to and including work stoppage.
13	The Developer should investigate options for filling in the pits, in consultation with the City of Yellowknife and YKDFN.	**Complete**	The option to fill pits was investigated and outlined in the Open Pits Options Assessment Report. Pit filling options were evaluated and engaged on during the Surface Design Engagement, where there was support from most affected parties to fill pits. As outlined in the Closure and Reclamation Plan, the pits were to be either filled or partially filled. As per the Open Pits Design Plan the Project will completely fill all pits.
14	The Developer should consider the baseline conditions for existing fish habitat in Back Bay (including a fish habitat assessment in the area of the foreshore tailings and the aquatic effects baseline required in Measure 17) and develop a foreshore tailings cover design and foreshore tailings monitoring and mitigation plan for review by the Department of Fisheries and Oceans pursuant to habitat provisions of the Fisheries Act.	**Underway**	Fish Habitat surveys of the foreshore tailing areas, the near shore contaminated sediments and the outfall area in Yellowknife Bay began in 2018 and continued in 2020/21. This work informed the Project's application for Department of Fisheries and Oceans Canada Fisheries Act Authorization. Yellowknife Bay baseline condition surveys began in 2018 and will inform a future AEMP Design Plan focused on Yellowknife Bay.
15	The Developer should consult with the City of Yellowknife in the design of any landfill on the Giant Mine site.	**Complete**	Engagement sessions occurred with the City of Yellowknife through the Giant Mine Working Group and in the City-GMRP monthly meetings to present the proposed locations and other details of the on-site landfill, resulting in support of the proposed location in the Closure and Reclamation Plan.. The Non Hazardous Waste Landfill Design Plan was approved by the MVLWB on April 26, 2022. Construction of the landfill began in 2021.
16	The Developer should consult with Indigenous groups with respect to reduced traditional use cumulatively resulting from the proposed Project in combination with contamination from Giant Mine. This should occur prior to finalizing Project design, so that design improvements may be used to address any remaining concerns.	**Underway**	The extensive engagement completed by the Project is documented in the Closure and Reclamation Plan., Engagement Plan and Engagement Log. The GMRP has supported Traditional Knowledge studies and continues to incorporate community and Traditional Knowledge across programs and plans, as available.

APPENDIX E – ADDITIONAL INFORMATION ON MONITORING PARAMETERS

E.1 Air Quality Monitoring Program

The GMRP team is committed to maintaining air quality parameters below the protective thresholds set by the Ambient Air Quality Monitoring Program and listed below.

Table 22: AAQMP Air Quality Criteria (SLR Consulting (Canada) Ltd, 2021)

Analyte	Source[14]	Averaging Period	Guideline / Standard Concentration (µg / m^3 unless otherwise specified)
Total suspended particulates	[3]	24 hr	120
	[3]	Annual	60
Particular matter less than 10µm (PM10)	[1]	24 hr	50
Particular matter less than 2.5µm (PM2.5)	[2]	24 hr	28
		Annual	10
Nitrogen dioxide	[3]	1 hr	213 (ppb)
	[3]	24 hr	106 (ppb)
Arsenic (As)	[1]	24 hr	0.3
	[4]	Annual	0.011
Iron (Fe)	[1]	24 hr	4
Lead (Pb)	[1]	24 hr	0.5
Nickel (Ni)	[1]	24 hr	0.2
Antimony (Sb)	[1]	24 hr	25
Asbestos as fibre > 5µm in length	[1]	24 hr	0.04 fibres/cm^3
Site Perimeter – Total suspended particulates Risk Based Action Level*	[4]	15-minute	333
Site Perimeter – PM10 Risk Based Action Level*	[4]	15-minute	159

* Derived from toxicological references for the hypothetical on-site worker/trespasser, chronic criterion based on protection against an incremental carcinogenic risk of 1 x 10-5 (Health Canada, 2004) using the Health Canada Inhalation Unit Risk Factor.

[14] SOURCES: [1] Ontario Ambient Air Quality Criteria (December 2016), [2] Canadian Council for Ministers of the Environment (2015) Canadian Ambient Air Quality Standards, [3] Guideline for Ambient Air Quality Standards in the Northwest Territories (February 2014), [4] Health Canada 2004.

E.2 Water Quality Monitoring

The GMRP team undertakes effluent and water quality monitoring in and around the Giant Mine site via different programs to report on surface water, groundwater and underground minewater. These programs track parameters such as the volume of water pumped or discharged, water quality, and the performance of the ETP.

Parameters tested at all stations include standard general parameters (e.g., temperature, pH, conductivity, hardness), major ions, nutrients, and total and dissolved metals and metalloids. There are also specific station requirements for other tests such as cyanide, sulphide, hydrocarbons, and radium-226. Samples collected at SNP 43-1 must meet federal requirements under MDMER as well as the discharge criteria defined in the GMRP Water Licence MV2007L8-0031.

The figures below highlight the locations of surface water quality monitoring stations as well as groundwater monitoring wells and well status.

Figure 36: Surface Water Quality Monitoring Stations

Figure 37: Groundwater Monitoring Wells and Well Status

APPENDIX F – CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

This appendix summarizes more detailed information on climate conditions at site as well as detailed tracking for GHG emissions.

Climate Conditions at Site

Wind

- Wind speed is measured and reported by ECCC in Yellowknife[15]. In 2023, the hourly wind speed ranged from 0.0 to 45.0 km/h, with an average of 14.7 km/h. Daily maximum wind gust speed is also reported by ECCC in Yellowknife. In 2023, the range in maximum gust speed was 31 to 71 km/h, with the average maximum gust speed being 40 km/h.

Temperature and Precipitation

- Climate in the North has been changing over the last several decades. Some of these changes include average annual air temperatures and patterns of precipitation in the region. Air temperature is measured and reported by ECCC in Yellowknife at meteorological stations. The average annual temperature in 2023 was -0.9 °C (ECCC 2024).

- The range in monthly precipitation (snow or rain) from January to December 2023 was 2.6 to 31.4 mm, with a total annual precipitation of 139 mm.

- The 2023 annual precipitation amount is less than the long-term average (i.e., 1943 to 2023) of 267 mm (ECCC 2024).

Streamflow

- Streamflow data were collected at five hydrometric stations: Pocket Lake, Trapper Creek, A2 Pit Diversion, Upper Baker Creek, and Baker Pond / Lower Baker Creek. Flows ranges from 0.000 (dry conditions) to 0.200 m3/s in 2023. Additional streamflow data for Baker Creek was available from the Water Survey of Canada (WSC) Station at the outlet of Lower Martin Lake (07SB013 – Baker Creek at Outlet of Lower Martin Lake) (WSC 2024a), which reported a 0.000 to 0.151 m3/s average range in 2023.

- Streamflow at Baker Creek was lower in 2023 than in previous years. Further, the streamflow peak during freshet was approximately two weeks earlier than average (i.e., occurred in early May rather than late May). The streamflow magnitude was slightly above the historical lower quartile leading up to mid-May, and below the lower quartile until early July, when Water Survey of Canada began to report a streamflow of zero. A streamflow of zero was reported for the rest of 2023. The last time a streamflow of zero was reported by Water Survey of Canada was in the late summer of 2017 (WSC 2024b).

- Additional details on monitoring data are included in the 2023 Annual Water Licence Report.

[15]From August 19 to September 6, 2023, the ECCC Yellowknife A station did not report any data, likely due to the wildfire evacuation.

Permafrost

- Permafrost is at risk of degradation in the North. As outlined in the Closure and Reclamation Plan, permafrost conditions are evaluated on site including site inspections and formal investigations. This information is used in two ways: 1) care and maintenance activities to confirm if infrastructure monitoring or repairs are needed (for example, a sinkhole on a road), and 2) incorporated into the engineering design of project components. In terms of care and maintenance, some minor repairs are needed around UBC Bridge on a regular basis due to traffic and sinkage (due to settlement). Mitigations and management actions for encountering permafrost on site, are outlined in the GMRP's Management and Monitoring Plans. In 2023 a drill program was conducted in the Baker Creek area in the centre of site. As expected, and discussed with the Aquatic Advisory Committee, the program confirmed presence of ice lenses in some areas near Baker Creek; details of the investigation will be provided in the upcoming Baker Creek Design Plan.

Wildfires

- A state of emergency was declared by the City of Yellowknife on 15 August 2023 due to the wildfires in the area, followed by a state of emergency declared by the GNWT on 16 August 2023. The Giant Mine Site was evacuated at this time and did not permit re-entry until mid-September 2023.
- The wildfires impacted many monitoring programs over this period. They contributed to a change in air quality on site.
- The GMRP has revised the Emergency Management and Spill Response Plan with the following based on GNWT guidance and learnings from the 2023 wildfire and evacuation:
  - Clarify communication plan and contacts in the event of a wildfire.
  - New Incident Action Plan to provide guidance and operational responses for evacuation notices, alerts, or orders.

GHG Emissions

Table 23 below provides the summary of monthly consumption on site and Table 24 provides the summary of GHG emissions summary for the year.

Table 23: Summary of Monthly Consumption for 2023-24 Fiscal Year

		Month												
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual (FY)
Indirect Emissions														
Purchased Electricity	**Unit of Measure**	**Monthly Usage (kWh)**												
Purchased Electricity	kWh	435,000	472,500	459,000	472,500	324,000	364,500	450,000	513,000	504,000	571,500	472,500	499,500	**5,538,000**
Direct Emissions														
Fuel Combustion (for heating or otherwise)		**Fuel consumed**												
Fuel Type	**Unit of Measure**													
Natural Gas	m^3	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Propane	L	99,326	0	0	0	0	1,288	59,250	134,068	55,158	146,865	134,587	76,247	**706,789**
Diesel Fuel	L	63,160	61,053	53,970	75,433	3,925	179,478	127,942	75,502	91,791	105,708	138,950	116,423	**1,093,336**
Gasoline	L	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Mobile Transportation		**Fuel consumed**												
Vehicle Type	**Fuel Type (Unit of Measure)**													
Light-Duty Vehicle (excluding trucks SUVs and minivans)	Gasoline (L)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Diesel (L)	0	0	0	0	0	0	0	0	0	3,000	0	400	**3,400**
	Propane (L)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Natural Gas (kg)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Light-Duty Truck (<3,900 kg GVWR, including SUVs and minivans)	Gasoline (L)	1,802.0	0	184.0	2,113.0	3,702.0	5,574.0	4,942.2	3,966.3	7,672.6	1,709.0	3,000.3	4,168.0	**38,833.4**
	Diesel (L)	8,824.0	9,076.0	9,847.0	20,544.0	8,150.0	7,124.4	12,261.0	12,020.4	8,412.0	2,597.0	20,006.0	11,645.0	**140,506.8**
	Propane (L)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Natural Gas (kg)	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Heavy Duty Truck (>3,900 kg GVWR)	Gasoline (L)	0	0	0	0	0	160	2,930	35	35	35	32	32	**3,259**
	Diesel (L)	221	240	302	766	14,808	8,387	31,387	13,019	406	5,015	5,678	3,134	**83,363**
Off-Road Vehicle/ Construction Equipment (including ATVs and snowmobiles)	Gasoline (L)	0	0	60	0	0	0	0	0	0	0	0	0	**0**
	Diesel (L)	9,274	9,257	51,112	153,049	76,740	74,060	84,846	39,227	9,603	9,050	31,463	18,659	**566,340**
Mobile Air Conditioning		**# in fleet**												
Vehicles (including haul trucks and construction equipment)		38	38	48	48	48	48	59	90	40	35	23	58	**48 (Avg)**

Comments:

1. Mobile Air Conditioning Vehicles include light-duty vehicles
2. Propane consumption is the actual propane received on-site rather than used as there are no flow meters installed on them

Table 24: GHG Emission Summary for 2023-24 Fiscal Year

GHG Emission Summary	Total Emission (Kg CO_{2e})												
Month	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Annual**
Indirect Emissions													
Purchased Electricity	147,830.4	155,986.6	160,574.4	110,108.2	123,871.7	152,928.0	174,337.9	171,279.4	194,218.6	194,218.6	160,574.4	169,750.1	**1,882,033.9**
Direct Emissions													
Stationary Fuel Combustion by fuel type													
Natural Gas	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Propane	153,756.6	0	0	0	0	1,993.1	91,719.8	207,536.9	85,384.6	227,347.0	208,340.7	118,030.4	**1,094,109.1**
Diesel Fuel	170,847.8	165,148.4	145,988.6	204,046.3	10,617.1	485,488.0	346,084.2	204,233.5	248,294.7	285,940.1	375,859.8	314,924.2	**2,957,472.8**
Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Mobile Transportation by Vehicle Type													
Light-Duty Vehicle (excluding trucks, SUVs and minivans)	0	0	0	0	0	0	0	0	0	8,271.0	0	1,102.8	9,373.8
Light-Duty Truck (<3,900 kg GVWR, including SUVs and minivans)	28,823.8	25,022.5	27,607.3	61,911.7	31,706.0	33,549.1	46,134.3	43,036.1	42,335.1	38,993.9	62,642.2	42,054.4	484,266.5
Heavy Duty Truck (>3,900 kg GVWR)	605.1	657.1	826.9	2,097.3	40,544.3	23,343.9	92,902.8	35,730.0	1,194.8	13,814.3	15,622.4	8,657.0	235,995.9
Off-Road Vehicle/ Construction Equipment (including ATVs and snowmobiles)	27,747.8	27,696.6	152,927.1	457,923.4	229,606.1	221,586.9	253,859.2	117,367.5	28,732.2	27,077.6	94,137.3	0	1,638,661.7
Mobile Air Conditioning	1,358.5	1,358.5	1,716.0	1,716.0	1,716.0	1,716.0	2,109.3	3,217.5	1,430.0	1,251.3	822.3	2,073.5	20,484.8

Crown-Indigenous Relations and Northern Affairs Canada
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2024

Government of Northwest Territories
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