

# 2017 ANNUAL REPORT

GIANT MINE  
**Oversight Board**



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**Oversight Board**



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# Table of Contents

Message from the Chair. . . . .	1
Introduction . . . . .	2
What We Heard . . . . .	3
GMOB Observations and Recommendations . . . . .	4
<b>Theme 1: Project Impacts on Community Opportunities and Wellness.</b> . . . . .	4
Socio-Economic and Community Development Opportunities . . . . .	5
Capacity . . . . .	6
Communication and Engagement. . . . .	7
Public Concern and Legacy . . . . .	8
<b>Theme 2: Project Management and Planning</b> . . . . .	8
Critical Path, Integration, and Performance Measures . . . . .	9
Main Construction Manager . . . . .	10
Independent Peer Review Panel Advice . . . . .	10
Remediation Studies and Plans . . . . .	11
Regulatory Process. . . . .	12
<b>Theme 3: Environment and Health</b> . . . . .	13
Environmental Monitoring Studies . . . . .	13
Human Health-related Studies . . . . .	14
Offsite Legacy Contamination Issues . . . . .	15
GMOB 2017 Research Program. . . . .	16
 <b>APPENDICES</b>	
APPENDIX 1	
Glossary . . . . .	18
APPENDIX 2	
Table of GMOB Recommendations from 2015-2016 Establishment Report and Giant Mine Remediation Project Team Responses . . . . .	19
APPENDIX 3	
GMOB Performance Measures Table . . . . .	28



## Message from the Chair

I am pleased to introduce the second annual report of the Giant Mine Oversight Board (GMOB). GMOB was established as a condition of the *Giant Mine Remediation Project Environmental Agreement* (Agreement) signed in June 2015 by the federal and territorial governments (the Project Team), the Yellowknives Dene First Nation, North Slave Métis Alliance, Alternatives North, and the City of Yellowknife (the Parties). GMOB's publication of an annual report is required pursuant to the Agreement.

Over the past year, GMOB's relationships with the Parties to the Agreement as well as the public at large have continued to develop. GMOB is firmly established as an independent organization and its oversight, research, and public communications functions continue to evolve. In 2018, GMOB will seek out additional opportunities to collaborate with the Parties and the public to further progress on all fronts, particularly on the critical areas highlighted in this report.

As part of our oversight role, GMOB has provided, in this report, an evaluation of progress made in 2017 to meet the objectives of the Giant Mine Remediation Project. It includes observations, recommendations, and supporting rationale as to how and why the Project Team, as well as other Parties, groups, and agencies (including GMOB itself), can improve site remediation in an effective and expeditious manner, and secure benefits for local residents. The report also provides an update of our own progress on the development of a research program towards a permanent solution for the arsenic trioxide dust stored underground at the Giant Mine site.

Overall, GMOB considers the Giant Mine Remediation Project as both a remediation project and a development opportunity. Managing the environmental and human health risks posed by contamination is paramount. GMOB also believes this challenging Project can be completed in a holistic manner that takes full advantage of socio-economic opportunities including jobs, training, and capacity building. If done well, the remediation of Giant Mine will enable Indigenous communities and Northerners to gain skills and expertise through planning for and completing this world class remediation project. Effective remediation using an inclusive approach can contribute to reconciliation with local Indigenous people.

With this perspective in mind, GMOB's main concerns in the last year relate to the community's capacity and preparedness to meaningfully participate in all aspects of Project implementation. The negative effects of the Giant Mine, including the offsite contamination and impacts to community wellness, are once again highlighted in our report as issues from the past that continue to affect remediation progress in the present.

In closing, I would like to acknowledge the hard work and commitment of the GMOB directors and staff, the Project Team, and the Parties to the Agreement. We encourage members of the public to continue sharing their ideas and concerns about the Giant Mine Remediation Project with GMOB at public meetings, through our website, and by visiting our office.

Dr. Kathy Racher  
Chair, Giant Mine Oversight Board

## Introduction

The 2015 *Giant Mine Remediation Project Environmental Agreement* (Agreement) established the Giant Mine Oversight Board (GMOB). GMOB is an independent body under the direction of a six-member Board of Directors appointed individually by each of the Parties to the Agreement. The Parties include the: Government of Canada (Indigenous and Northern Affairs Canada - INAC), Government of the Northwest Territories (GNWT), Yellowknives Dene First Nation (YKDFN), North Slave Métis Alliance (NSMA), Alternatives North (AN), and City of Yellowknife. INAC and GNWT are co-proponents, working together as the Giant Mine Remediation Project Team (Project Team).

This is GMOB's second Annual Report. The first report, entitled Establishment Report: July 2015-December 2016, described the establishment of the Board and its office, and included discussion of the GMOB mandate, vision, and mission. These are summarized below.

### **GMOB'S MANDATE IS TO:**

- Monitor and report on the Giant Mine Remediation Project (the Project);
- Review, report, and/or make recommendations on Project Team programs, research, annual reports, etc.;
- Undertake communications activities with the public and signatories to the Agreement;
- Research and administer funding for designated research to find a permanent solution to the arsenic trioxide stored underground at the site; and
- Report through GMOB public meetings and reports, including GMOB Annual Reports.

### **GMOB'S VISION IS:**

that the remediation of the Giant Mine site, including the sub-surface, be carried out in a manner that is environmentally sound, socially responsible, and culturally appropriate.

### **GMOB'S MISSION IS TO:**

independently monitor, promote, advise, and broadly advocate for the responsible management of the remediation of the Giant Mine site, and manage a research program to seek a permanent solution to the arsenic trioxide stored underground at the mine.

A more detailed description of GMOB's vision, mission, and mandate as well as the Board's Operating Principles can be found at:

[www.gmob.ca/about/#mandate](http://www.gmob.ca/about/#mandate)

# What We Heard

GMOB heard a wide variety of issues and concerns during meetings with the Parties to the Agreement and the public in 2017. It's important to document and communicate these observations since they reflect public understanding and concerns about the remediation Project. Some of the issues raised are related to the Project, while others speak to broader community concerns. This summary is considered representative but not exhaustive.

## 1. Community and Socio-Economic Concerns

- Requests continue for a formal apology and compensation to YKDFN for the loss of traditional land uses resulting from the Giant Mine operation.
- The Yellowknife Historical Society asked that a distinct geological feature at the Giant Mine site be preserved for educational and research purposes.
- Some members of the public are not aware of any formal policy or procedures to ensure documented archaeological sites on the Giant Mine site will be protected.
- There is widespread concern about how local communities and stakeholders can access socio-economic benefits associated with the remediation activities.

## 2. Engagement and Consultation

- Some members of the public want to be more active partners in the Project and in GMOB initiatives. They want to more effectively ensure community values, expectations, and feedback are considered.
- GMOB was asked to include the Project Team and support staff in GMOB annual meetings so they can answer questions from the public.
- Some members of the public asked that GMOB and/or the Project Team hold an "Arsenic 101" course for the public.
- Parties to the Agreement said that their limited capacity is restricting their ability to meaningfully engage in the remediation planning processes.

## 3. Safety and Security

- Members of the public asked about the risks if the freeze technology fails, and about response plans in case of a catastrophic event or terrorist threat.
- The public asked about the quality of information concerning arsenic trioxide contamination in the region, and the need for warning signs

in contaminated areas for tour operators and individual tourists.

## 4. Environment

- Recent research and published studies indicated that there are arsenic "hotspots" in soil on Latham Island and Ndilo. People suggested a comprehensive soil-testing program for all of Yellowknife and that contaminated areas be cleaned up.
- Some residents expressed frustration that the remediation isn't advancing fast enough on the land and water that has been "poisoned" by historic contamination.
- People asked about the reliability of the underground arsenic chambers and the safe treatment of associated mine water.
- People asked whether the Giant lease boundaries and the project area could be extended to include the entire Baker Creek watershed.
- On numerous occasions, people said a formal traditional knowledge study of the Giant Mine site and area is needed with the results applied to the remediation program.

## 5. Health Issues

- The Yellowknife Health Effects Monitoring Program (YkHEMP) includes a random volunteer sampling of the people in Yellowknife, Ndilo, and Dettah. Some people told GMOB that separate research should target the health concerns and causes of death of people who worked directly with arsenic trioxide at the Giant and Con mines in Yellowknife.
- People are concerned about the contaminant levels in animals and vegetation and if it is safe to conduct traditional activities, such as trapping and food gathering, in the Project area.

## Observations and Recommendations

Operationally to date, the Giant Mine Remediation Project focused primarily on site maintenance and remediation planning. While the Project Team has undertaken on-site work it considered urgent, full remediation will not begin until the appropriate regulatory approvals are received from the Mackenzie Valley Land and Water Board (MVLWB). Since the completion of the environmental assessment in 2014, the Project Team has undertaken studies and developed plans needed to initiate the regulatory process. The Project Team recently announced it would submit the information required to start the MVLWB licensing process in early 2019.

GMOB's observations and recommendations are informed by its meetings and discussions with the Project Team and Parties to the Agreement, its review of materials provided by the Project Team, analysis of materials presented at committee and public meetings, and public concerns. GMOB provides observations and 12 recommendations under three broad themes in this report.

- Project Impacts on Community Opportunities and Wellness
- Project Management and Planning
- Environment and Health

### THEME 1

#### Project Impacts on Community Opportunities and Wellness

One of GMOB's biggest concerns is the slow progress of the Project Team and others to prepare local communities and businesses for the socio-economic benefits that will be increasingly available as the remediation Project proceeds. In its cover letter to the 2016-17 annual report of the Giant Mine Remediation Project, INAC stated: "We are committed to following the mandate given to us by the Government of Canada to use public investment to spur economic growth, job creation, and to improve economic opportunity for Northerners and Indigenous People".

It is not readily apparent that the Project Team has met that commitment. For example, the actual expenditures by the Project Team for 2016-17 totaled \$40,305,969 – a substantial public investment. However, the 2016-17 annual report noted that employees and contractors on the Project were only 23% Northern and 4% Indigenous, down from the previous year. If these employment

numbers are accurate and all-inclusive, GMOB finds this very disappointing and would have expected much greater involvement and benefits for northern and Indigenous communities.

GMOB seeks clarification on how the Project Team determined its socio-economic numbers. It also encourages clear accounting that allows better understanding and verification of this information. While the current level of northern and Indigenous involvement is inadequate, GMOB understands that the employment pattern will change once remediation activities ramp up. More can be done to involve communities and to achieve success on larger, holistic issues such as community wellbeing and reconciliation. To achieve these objectives will require a commitment at the senior levels of INAC and GNWT. Below, GMOB provides recommendations on different aspects of community opportunities and wellness related to the Project.



## Socio-Economic and Community Development Opportunities

### RECOMMENDATION 2017-1:

GMOB recommends the Project Team meet with federal, territorial, municipal, and Indigenous representatives (and others deemed appropriate) to develop a socio-economic strategy that identifies specific economic, social, and educational opportunities to be generated by the Giant Mine Remediation Project. Meetings should continue annually to implement and monitor progress, and to plan for each year. A formal process with multi-party involvement (e.g., through a steering committee) for the life of the project will give socio-economic considerations the attention they deserve.

The Giant Mine Project is both a remediation project and a development opportunity with major potential benefits from employment, business, and other economic activities for people of the region. However, to seize those benefits a fundamental shift is required, moving from a focus on periodic local employment toward a collaborative, long-term vision.

All levels of government should make local economic opportunities associated with the Giant Mine Remediation Project front and center, leading ultimately to a positive socio-economic impact. The Project will inject hundreds of millions of dollars into the local economy but based on the Project Team's last annual report, it appears that there has been relatively poor local uptake of available opportunities.

In its 2016 Establishment Report, GMOB recommended: "the Project Team apply a structured and deliberate framework...[to]... assist the Project Team to analyze and optimize local education, training, procurement, and jobs skills development opportunities" (*GMOB Recommendation #2016-11*). A socio-economic impact assessment framework would enable governments to identify issues and boost activities

that improve the long-term public health and outlook for community wellbeing into the next generation(s). GMOB has not yet seen such a framework applied by the Project Team.

GMOB understands that the Project Team is updating the 2016 Labour Resources Study Report but notes that this does not equate to a socio-economic plan for the Project. Further, while the Project Team has stated it intends to prepare a Socio-Economic Strategy, GMOB is concerned that limited progress has occurred on this critically important initiative. This concern is heightened by the fact that the active phase of remediation is scheduled to begin within a few years. In the opinion of GMOB, failure to address this gap on a priority basis will compromise the ability of the Project to achieve meaningful socio-economic opportunities. If they are aligned with the community vision, such opportunities could inject a spirit of reconciliation into the Project and correct some systemic social and economic disparities within the greater Yellowknife community.

## Capacity

### RECOMMENDATION 2017-2:

GMOB recommends that the Project Team meet with the Parties and GMOB, to assess capacity needs and the best use of resources to fully understand where there are gaps, and how they can be closed. This needs assessment should happen as soon as possible to allow the Parties to participate effectively in the upcoming water licensing process. Timely attention to capacity issues could facilitate both current socio-economic opportunities and those that will open up when the remediation gets underway.

The Parties face high demands. They must review the many documents distributed by the Project Team and attend regular meetings. Party representatives must also communicate updates to their constituencies, and compile and relay community feedback. They also assist the Project Team with its interactions with the community. The YKDFN, NSMA, Alternatives North, and the City of Yellowknife each have at least one person in their organization designated to fulfill these responsibilities. In some cases, this person has other duties unrelated to the Project. The Parties are concerned that they do not have adequate capacity to participate effectively in the technical and socio-economic aspects of the Project.

In its 2016 Establishment Report, GMOB noted these concerns (*GMOB Recommendation #2016-9*) and recommended steps to address the capacity needs. The Project Team responded with a list of ways it has tried to address capacity issues. For example, the Project Team funds an independent technical consultant to lead technical reviews of materials presented to the Giant Mine Working Group. This reviewer is a valued resource to the Parties and GMOB. However, this one person has limited time and scope of expertise, and is shared by the various Parties. GMOB continues to hear that Parties struggle to keep on top of all aspects of the Project. Improved collaboration among the Parties could help provide collective input into key Project document reviews and decisions.

## Communication and Engagement

### RECOMMENDATION 2017-3:

As in 2016, GMOB recommends that Project Team communication and engagement responsibilities be given equal importance as other parts of the Project and that they be resourced accordingly. Similarly, the Parties and GMOB should seek input from their constituencies on how to best represent constituent interests and expand awareness of the challenges and opportunities provided by the Project.

GMOB recommended in its Establishment Report (*GMOB Recommendation #2016-3*): *“communication and engagement be treated with an importance equal to other aspects of the Project and that they be resourced accordingly”*. The Project Team responded with a list of its many efforts and restated its commitment to strong communications with all stakeholders. GMOB acknowledges the Project Team’s willingness to respond to requests for information and meetings, and its sensitivity to capacity issues when scheduling those meetings. Some Parties noted that communications with the Project Team improved over the past year.

GMOB’s 2016 recommendation stands. The Project Team should devote more resources to communicate and engage the public at large. For example, the public has difficulty to get information, provide input, or ask about opportunities, except through quarterly newsletters and yearly public meetings. The Project Team is without an accessible “storefront” office and its website remains limited. The Agreement required a plain language summary of the Project Team’s annual report but this has not yet happened. GMOB continues to encourage the Project Team to use communication tools that engage the community in ways that are meaningful.

All Parties should seek input from their constituencies to ensure their interests are appropriately represented. Some of this is happening. For example, the YKDFN’s Giant Mine Advisory Committee effectively communicates Project-related issues within the community. The

YKDFN health liaison has proved to be an important position. GMOB continues to interact with the public through its storefront office and public meetings.

Until recently, the City of Yellowknife relied on the Project Team to keep City residents informed. It could be argued that the City of Yellowknife, however, is best placed to engage with city residents. It could provide information and facilitate feedback to better understand community priorities, concerns, and values about the Project. GMOB notes that the City is not playing that role through its website nor through public forums. This situation could reduce residents’ influence on remediation design and limit opportunities for local socio-economic benefits.

During GMOB’s most recent meetings with the Parties, the City announced it had identified a lead person to coordinate the different aspects of the City’s participation in the Project. This is promising, but GMOB is uncertain how the City plans to engage its residents. GMOB recognizes that the City, like the other Parties, struggles to find the capacity to devote to the Project.

GMOB encourages the City of Yellowknife to continue its efforts to find internal resources for the Giant Mine Remediation Project and to effectively engage Yellowknife residents on Project progress, obligations, and opportunities. The City and the Project Team should work together on public engagement.

## Public Concern and Legacy

### RECOMMENDATION 2017-4:

GMOB continues to recommend that the Federal Government formally respond to requests from Indigenous groups for an apology and compensation related to the historic operations at the Giant Mine.

Public concern about the legacy of Giant Mine remains a key issue. In its 2016 Establishment Report, GMOB recommended (GMOB Recommendation 2016-3): “the Federal Government formally respond to requests of Indigenous groups for an apology and compensation related to the historic operation at the Giant Mine.” That recommendation stands. In response, the Project Team said that an apology and negotiations about compensation are outside its mandate. However, the GMOB recommendation remains, directed to Government of Canada politicians and not to the Project Team.

Still, the Project Team does have a key role to play to support reconciliation efforts, as noted above. In 2017, YKDFN invited the Project Team and GMOB to attend a “healing the land” ceremony involving its leaders, Elders, and community members. These important community-driven events should be strongly supported.

In addition, in 2017, the NWT Legislative Assembly unanimously passed a motion calling on the Government of Canada to apologize to the YKDFN for harm caused by the Giant Mine operations. The Government of Canada has yet to formally respond to this motion.

## THEME 2

### Project Management and Planning

GMOB understands there are many aspects to a remediation project of this size. The Project work includes engineering and environmental studies and plans, stakeholder engagement, and making sure local people and businesses have socio-economic opportunities. A successful remediation program depends on the success of these inter-related parts of the Project.

GMOB’s mandate is to evaluate the effectiveness of the Giant Mine remediation. To do this GMOB must understand the remediation plan, its various parts, and schedules, and how these components fit together.

As GMOB observed in 2016, the lack of information provided by the Project Team limits this understanding. GMOB lacks information on the status of the varied components of the Project and how they might all eventually come together. The Project Team has yet to be clear about the critical path, or sequence and integration of tasks necessary to complete the Project, and about performance measures. GMOB also requires a clear and full understanding of the role of the Main Construction Manager (MCM).

## Critical Path, Integration, and Performance Measures

### RECOMMENDATION 2017-5:

GMOB recommends that the Project Team provide a five-year project plan and critical path to show how all Project elements are linked and integrated. The Project schedule should highlight major milestones, a budget, specific performance measures, and a flowchart showing the decision-making model for the Project. The Project Team's annual report should detail what was achieved compared to what was planned and budgeted for each year. The report should explain variations between goals and achievements.

Since its establishment, GMOB has asked the Project Team for a high-level Project plan that clearly lays out the multi-year timeline and critical path for all Project elements and major activities.

This information would help answer several questions. First, GMOB needs a detailed plan to assess whether the Project Team's commitment to begin remediation in 2020 is feasible. Second, since the Project is so complex, GMOB wants assurance that the final closure plan appropriately considers the results from all the studies conducted. These studies also need to be integrated into management and monitoring plans. For example, GMOB questions how the results of the recent Human Health Ecological Risk Assessment (HHERA) will be integrated into the final closure plan, as required by the environmental assessment.

In 2017, the Project Team distributed an engagement calendar with a one-year planning window. The usefulness of this calendar is limited since reviewers can't see how the Project Team will advance to remediation. Neither the brief annual work plans provided in an appendix to the Project Team's annual reports, nor the schedule of Project

components show how the many elements relate and will eventually come together.

Without an overall Project plan and until a defined water licence is in place, GMOB is unable to properly evaluate the critical path for the Project. Similarly, the absence of performance measures makes it difficult to assess if the Project Team is meeting its goals and targets, or where improvements should be made. This recommendation echoes the recommendations made last year, which have yet to be satisfactorily addressed. GMOB will follow up directly with the Project Team to expand on these recommendations.

## Main Construction Manager

### RECOMMENDATION 2017-6:

GMOB recommends that the co-proponents describe the responsibilities that the Main Construction Manager will inherit from the Project Team, and how this arrangement will affect relationships among the co-proponents, the Parties, GMOB, and the public.

In late 2017, the Project Team awarded a contract for a Main Construction Manager (MCM). This company will take over a substantial part of the management of the remediation Project. The Project team stated that the MCM would operate as an extension of the Project Team for planning, engagement, and operations. The Project Team reassured GMOB that the co-proponents would keep final authority over all parts of the Project.

GMOB hopes this change will enhance project management, since it addresses, in part, GMOB's 2016 recommendation regarding the Project's

delivery model (*GMOB Recommendation # 2016-10*) i.e., "that the Project Team carefully examine options other than the current government-driven and controlled approach to the Project". To understand this new Project management model, GMOB needs a comprehensive list of the MCM responsibilities, as well as how responsibilities will be transferred and delegated. This is especially relevant because of the role the MCM will play in the Giant Mine Working Group sessions, in community consultations, and with GMOB.

## Independent Peer Review Panel Advice

### RECOMMENDATION 2017-7:

GMOB recommends that the Independent Peer Review Panel (IPRP) respond to the Project Team's conclusion that the remediation and stabilization of arsenic dust is progressing at a rate appropriate for the associated risk.

The Project Team established an Independent Peer Review Panel (IPRP) of internationally recognized experts to advise on major technical decisions related to the Project. At GMOB's request, the Project Team provided technical IPRP documents prepared between January 2014 and March 2017. GMOB reviewed these, focusing on topics related to GMOB's oversight mandate. Several IPRP

recommendations emphasized that the remediation and stabilization of arsenic dust should happen "as expeditiously as possible". GMOB asked the Project Team to formally clarify its actions to address the IPRP's advice. The Project Team responded that it is conforming to those IPRP recommendations. GMOB would like confirmation that the IPRP agrees with the Project Team's statement.



## Remediation Studies and Plans

### RECOMMENDATION 2017-8:

GMOB recommends that the Project Team make it a priority to fulfill all requirements associated with Measures 5 and 6 in *MVEIRB's Report of Environmental Assessment*.

In 2017, the Project Team made progress on a number of important studies that will feed into the final closure plan. It released the final report of the Surface Design Engagement process, the draft HHERA report, and an analysis of options for potential Baker Creek diversions. The Project Team held a Contaminated Soils Workshop to evaluate remediation options for the different areas of contaminated soils on the site. It gave the Parties a preview of the draft Closure and Reclamation Plan, including a description of the closure objectives. The Project Team continues to make progress on several environmental assessment measures set out by the MVEIRB, especially those required to obtain the remediation water licence. GMOB acknowledges the work done by the Project Team and its subcontractors on these studies. Specific comments from GMOB on individual studies or plans are posted on the GMOB website.

There are, however, other measures which have not received enough attention. Notably, the Project Team has made little progress on the Quantitative Risk Assessment (*EA0809-001 Measure #5*). The MVEIRB report indicates this assessment is needed for regulatory approvals and it should be considered in the final remediation strategy. In addition, only small progress has been made on *EA0809-001 Measure #6*, which requires the Project Team to report on options for long-term funding of the Project (i.e., after remediation). GMOB and other Parties determined that the draft report on funding failed to meet the intent of Measure #6. GMOB encourages the Project Team to revisit this important issue. Significant progress on these and other measures are essential if the upcoming regulatory proceedings are to be efficient and effective.

## Regulatory Process

### RECOMMENDATION 2017-9:

GMOB recommends that the MVLWB review the current absence of a valid water licence at the Giant Mine site to determine if the Project Team should obtain a short-term, focused water licence as an interim measure, until a broader remediation water licence is issued.

The MVLWB must approve a Type A water licence and associated land use permits before full remediation can begin. The Project Team recently announced it would submit the information required to start the MVLWB licensing process in early 2019. The Project Team intends to begin engagement on the information package in May 2018 and has asked for feedback on the engagement process. GMOB looks forward to participating in these processes.

As voiced in 2016, GMOB recommends the Project Team obtain a water licence to regulate the discharge of treated mine water from the Giant Mine site during the current care and maintenance phase. During the environmental assessment phase, the Project Team indicated that urgent on-site remedial action was necessary to protect public health and safety. The Project Team argued that the emergency provisions of the *Mackenzie Valley Resource Management Act* applied, including the ability to temporarily operate without a water licence. The Project Team has continued to operate without a water licence since 2005, including discharging treated effluent, or wastewater, into Baker Creek each summer. Since any urgency has long since passed, routine multi-year discharge of treated wastewater into the environment without a water licence is inappropriate. No other operator in the NWT would be allowed to do this for more than a decade without a water licence.

The Project Team's response to GMOB Recommendation #2016-7C, in Appendix 2 of this report, states it did not require a water licence for its ongoing care and maintenance activities. It noted that its operations comply with the *Metal Mining Effluent Regulations (MMER)* and the *Fisheries Act (FA)*, and that it treats wastewater to the standards set out in the pre-2005 water licence. However, both the *MMER* and the *FA* are reactive and punitive in nature – operators can be charged if they exceed the specified limits or cause significant environmental harm – rather than proactive and permissive as is the case with a water licence. Finally, the issue is not so much about environmental harm per se, but rather the appropriateness of government agencies operating without a water licence under conditions that would normally require one.

In GMOB's opinion, a valid water licence should have been in place to regulate the ongoing effluent discharge from the Giant Mine site since 2005 and should be in place now and until the full remediation water licence is granted. GMOB sees a narrowly focused five-year water licence that addresses effluent discharge limits as appropriate in this circumstance.

GMOB's interprets the law differently from the Project Team. GMOB suggests that an independent authority such as the MVLWB, which has jurisdiction in this area, resolve the issue.



## THEME 3

### Environment and Health

#### Environmental Monitoring Studies

##### RECOMMENDATION 2017-10:

GMOB again recommends that the Project Team develop a fully-integrated Environmental Management System. Further, GMOB recommends that related program descriptions and their results be made easily accessible to the public.

The Project Team continues to conduct a broad range of environmental monitoring programs on and around the remediation site. The Project Team's annual report lists these programs and uses them to evaluate current environmental conditions and support remediation planning. GMOB routinely reviews the environmental reports distributed by the Project Team and provides comments or suggestions as appropriate. Overall, the quality of the reports is good.

One key ongoing environmental program monitors the dust caused by site activities. Dust is monitored at stations along the Project boundary and at nearby stations. The Air Quality Monitoring Program (AQMP) ensures that the dust management strategies used on the site are working as intended. It also allows local residents to check on the level of contaminants in the dust compared to environmental health standards. GMOB acknowledges the Project Team's efforts to make the results of the AQMP consistently accessible to the public via a dedicated website, and its willingness to investigate and discuss any irregular results with the Parties.

In 2016, GMOB recommended that the Project Team develop an integrated environmental monitoring plan and report any trends noted in water, soil, and wildlife monitoring results (*GMOB Recommendation #2016-7A*). The Project Team responded that this is being done and pointed to where the information could be found. However, in contrast to the AQMP, neither the program descriptions nor their results are easily accessible to the public. This issue was discussed at the last semi-annual meeting of GMOB and the Parties. GMOB expects progress will be made in the coming year.

During the upcoming water licensing process, GMOB will continue to advocate for the environmental programs necessary for the remediation and post-remediation phases of the Project. Once the licensing process is underway, environmental monitoring results will be publicly available on the MVLWB website.

## Human Health-related Studies

### RECOMMENDATION 2017-11:

GMOB recommends that the Project Team develop a communication and education strategy to improve the public understanding of arsenic risks. The strategy should aim to reduce the gap between scientists and the broader community in their perceptions of risk and safety.

Human Health and Environmental Risk Assessment (HHERA) and the Yellowknife Health Effects Monitoring Program (YkHEMP) are the main human health-related studies undertaken by the Project Team. The HHERA was a requirement of the environmental assessment, to be completed before water licensing. The draft report was released in October 2017, with public presentations to the YKDFN, NSMA, and Yellowknife communities. This study brought environmental quality data together with studies of human activities to aid in understanding the potential health risks from contaminants at the Giant Mine site in its pre-remediation state. The study also evaluates whether, and to what extent, the remediation project will change health risks.

The YkHEMP launched in 2017. Led by Dr. Laurie Chan from the University of Ottawa, the program will create a database of the arsenic and other metals, associated with the Giant Mine site, found in YKDFN and NSMA community members and in randomly selected Yellowknife residents.

In the past two years, the Project Team placed significant emphasis on these two studies to alleviate the health concerns of local residents. Community members wait with anticipation to see the study results. The HHERA and the YkHEMP studies each refer to expectations that the other study will fill in potential gaps about the health effects of arsenic. How these study results are interpreted and communicated to the public will be critical with respect to addressing stakeholder concerns and expectations. As reflected in our recommendation, there are real differences in the perceptions of safety between scientists and the public. Scientists view safety as a quantitative, numerical question – is exposure to arsenic below guidelines? Community

members see safety as a qualitative, holistic question – how does arsenic affect my health or my children's health and future wellbeing?

Each study aims to increase understanding about exposure to arsenic, from food, soil, and water by measuring arsenic levels in toenails and urine. These scientific results should inform people of the environmental health issues related to arsenic on the Giant Mine site and in the Yellowknife region. They should give people information on the exposures from various activities and how to minimize exposure. The more participation by local residents, the more valuable the study results and their usefulness for future arsenic exposure monitoring. Neither study will evaluate the overall health or wellbeing of an individual or community.

The public often raises concerns about the health effects from past exposures to arsenic. However, the scientific limitations of the HHERA and YkHEMP studies mean they are not able to address concerns of past exposure to arsenic trioxide, whether from working in the mines or from environmental exposure. Due to continued concern about past exposures, Dr. Chan committed to explore the feasibility of a retrospective study that might evaluate data from historical occupational or community sampling programs. However, such a study is outside the mandate of the Giant Mine Remediation Project.

GMOB believes that the best opportunities for the Project to improve public health and community wellbeing in the region lie in improving other determinants of health, such as education, skills upgrading, jobs, the economy, cultural and traditional practices, and reconciliation. (See the earlier section on Project Impacts on Community Opportunities and Wellness.)

## Offsite Legacy Contamination Issues

### RECOMMENDATION 2017-12:

As in 2016, GMOB again recommends that the federal, territorial, and municipal governments make it a priority to ensure off-site contamination issues are resolved to satisfy public health and environmental concerns.

In its 2016 Establishment Report, GMOB raised the issue of elevated concentrations of arsenic in soils, vegetation, and lakes outside the Giant Mine lease boundary (*GMOB Recommendation #2016-8*). The former Giant Mine lease defines the boundaries for the Project. The Project Team maintains it is not responsible for remediation beyond that area. However, the historic operations of Giant, Con, and Negus Mines resulted in air and water-borne arsenic contamination well beyond the mine leases. Although off-site contamination is not directly within GMOB's mandate, it can lead to on-site contamination, e.g., via Baker Creek watershed drainage into the mine site or through re-suspension of arsenic trioxide dust by off-site construction. Further, off-site contamination tends to dominate any public discussion of the Giant Mine Remediation Project. As a consequence, offsite issues must be resolved.

GMOB has seen some progress on its 2016 recommendation. The GNWT Departments of Health and Social Services and Environment and

Natural Resources advised the public of safe levels for drinking, fishing, and swimming in local lakes. A GNWT interdepartmental working group co-operated with the City of Yellowknife to put signs around affected water bodies to help people understand the risks. In addition, university-led research has continued to add to an off-site database during the past year.

These latter studies indicate that some soils and lakes surrounding Giant Mine have elevated, or even high, arsenic concentrations. However, the HHERA findings show low risks of exposure or accumulated contaminants for people engaging in recreational activities such as wading or swimming in local lakes, and eating fish from Yellowknife Bay and Back Bay.

"Hot spots" identified in and around Yellowknife, which includes high soil arsenic levels in Ndilo, are a source of continuing concern highlighted by the YKDFN. GMOB will continue to advocate for resolution of this issue.

## GMOB Research Program

GMOB's research program focuses on finding a permanent solution for the arsenic trioxide stored underground at the Giant Mine site. In November 2016, GMOB contracted Arcadis Canada Inc. to build on remediation option assessments prepared by INAC in 2001. The Arcadis update examined methods in place, or currently in development, for long-term management of arsenic trioxide. GMOB presented the report, *Giant Mine State of Knowledge Review: Arsenic Dust Management Strategies Report, August 2017*, at a public forum held on October 11, 2017 in Yellowknife. A "What We Heard" report summarizes the observations expressed during that public meeting.

In October 2017, GMOB hosted a Research Model Strategy Workshop, engaging GMOB board members and staff, the independent technical advisor to the Giant Mine Working Group, and nine research program experts from Canadian universities, research councils and professional

associations. The objective was to explore options for the design of the GMOB research program, considering both funding and administration, and to outline next steps. The workshop report entitled, *Designing an Active Research Program for Managing Arsenic Trioxide*, can be viewed at [www.gmob.ca](http://www.gmob.ca).

After the October workshop GMOB immediately began exploring research network opportunities. It also keeps the door open for independent proposals and links with international expertise. GMOB will continue to update and engage the public as the research program is developed.

In a related matter, the Project Team is finalizing protocols for obtaining arsenic trioxide samples from the site for research purposes. GMOB may refer researchers to the Project Team to obtain samples, since it will not keep or distribute samples itself.

# APPENDICES

## APPENDIX 1 Glossary

<b>Agreement</b>	Giant Mine Remediation Project Environmental Agreement	<b>NWT</b>	Northwest Territories
<b>Co-Proponents</b>	Federal Government, represented by Indigenous and Northern Affairs Canada (INAC), and the Government of the Northwest Territories (GNWT)	<b>Parties</b>	Yellowknives Dene First Nation, North Slave Métis Alliance, Alternatives North, City of Yellowknife, Government of the Northwest Territories, Indigenous and Northern Affairs Canada
<b>ETP</b>	Effluent Treatment Plant	<b>Project</b>	Giant Mine Remediation Project
<b>FCSAP</b>	Federal Contaminated Sites Action Plan	<b>Project Team</b>	Indigenous and Northern Affairs Canada, Government of the Northwest Territories, Public Works and Government Services Canada, and other federal government departments
<b>GMOB</b>	Giant Mine Oversight Board	<b>SDE</b>	Surface Design Engagement
<b>GNWT</b>	Government of the Northwest Territories	<b>SSP</b>	Site Stabilization Plan
<b>HHERA</b>	Human Health and Ecological Risk Assessment	<b>SSWQO</b>	Site Specific Water Quality Objectives
<b>INAC</b>	Indigenous and Northern Affairs Canada (Government of Canada)	<b>YKDFN</b>	Yellowknives Dene First Nation
<b>MVEIRB</b>	Mackenzie Valley Environmental Impact Review Board	<b>YkHEMP</b>	Yellowknife Health Effects Monitoring Program
<b>MVLWB</b>	Mackenzie Valley Land and Water Board		
<b>NSMA</b>	North Slave Métis Alliance		

## APPENDIX 2

### Table of GMOB Recommendations from 2015-2016 Establishment Report and Project Team Responses

<b>SUBJECT 2016-1: GIANT MINE PROJECT PLAN</b>	
<b>GMOB Recommendations</b>	GMOB recommends that a plain language work plan be developed that sets out the main activities planned for the next five years. The work plan should be presented in a plain language format, complete with budgets, timelines, and performance measures. The plain language multi-year work plan should be submitted to the GMOB and made widely available to the public. Consistent language and numbering should be used to link the work plan with the annual report.
<b>Giant Mine Remediation Project Team Response</b>	A plain language summary of the annual work plan is an important part of the Project team's presentation made at yearly public forums. It is also presented to key stakeholders in Yellowknife, Dettah, and Ndilo, and to Yellowknife City Council. We're committed to extracting the annual work plan details from this presentation and ensuring the information is published to the website in an accessible, easy-to-find format. The Project team will work to incorporate a five-year look ahead that includes relevant timelines and other details as part of our work plan summary we previously committed to append in future GMOB Annual reports.

<b>SUBJECT 2016-2: MEANS TO MEASURE PROGRESS/PERFORMANCE METRICS</b>	
<b>GMOB Recommendations</b>	The GMOB recommends that quantifiable performance measures and timelines be developed as soon as possible and reported in future Project annual reports.
<b>Giant Mine Remediation Project Team Response</b>	<p>As indicated during the review of the GMRP Annual Report to GMOB, the Project team is currently updating its performance targets to align with INAC's Departmental Performance Measurement framework. This will include specific quantitative performance targets in future plans and reports. We expect to have a draft to share with GMOB in the coming months and will welcome input before it is finalized. In addition, we will identify specific performance measures that are included as part of the Main Construction Manager contract and any sub contracts they procure.</p> <p>Due to the evolution of the Project over the past several years, most notably as a result of the Environmental Assessment, identifying a meaningful baseline can be difficult. The team continues to work to address this challenge. For example, the final scope of the project is currently being defined to comply with the Environmental Assessment measures and other constraints, which the project team feels will set a reasonable baseline against which the active remediation can be measured through to project completion. This will include using quantifiable performance metrics.</p> <p>It is important that care and maintenance activities are not confused with remediation activities; they serve two different purposes. Care and maintenance activities ensure the site remains in a stable condition until remediation can be completed.</p>



**SUBJECT 2016-3A: COMMUNICATIONS AND ENGAGEMENT**

<b>GMOB Recommendations</b>	The GMOB recommends that communication and engagement be treated with an importance equal to other aspects of the Project and that they be resourced accordingly. Specifically, the Project website must be updated and kept current; and the Project Team should establish an accessible office where the general public can obtain current information on remediation activities, progress, plans, and opportunities to become involved (e.g., jobs, contracts, consultations).
<b>Giant Mine Remediation Project Team Response</b>	<p>The Project team is extremely committed to communication and engagement with stakeholders and the public and considers this an important and valued part of the Giant Mine remediation process. Communication and engagement efforts are an integral part of our work plans and the ongoing management of the project, and we will strive to maximize opportunities for the public to obtain the most up to date information on the Project.</p> <p>The team includes a full-time Engagement Manager to ensure that engagement activities are incorporated into overall project planning, and to oversee the actual engagement events throughout the year. The input from the engagement activities is carefully considered by the team as it works to finalize the remediation plan and the development of the updated project description. We are also in the process of staffing a full-time position to support the Engagement Manager and be a liaison with our stakeholder communities.</p> <p>The team also includes dedicated Communications staff. Work on a major update of the project website is already underway. The update will bring the website in line with current Government of Canada guidelines and standards, and our hope is that the new format will make more frequent updates easier. We expect to launch the updated web site by early Fall. In the meantime, ongoing efforts to communicate with stakeholders and the public will continue.</p> <p>For example, this includes an electronic newsletter, which highlights ongoing and upcoming work on the site and published a minimum of bimonthly or more frequently to reflect activities on site. As well, this also includes monthly meetings with the Giant Mine Working Group, the Giant Mine Advisory Committee, and the recently-established Heath Effect Monitoring Program Advisory Committee.</p>

**SUBJECT 2016-3B: COMMUNICATIONS AND ENGAGEMENT**

<b>GMOB Recommendations</b>	The GMOB recommends that the Project Team improve efforts to determine what kinds of communication and engagement tools will be most successful when communicating with the public in all local communities.
<b>Giant Mine Remediation Project Team Response</b>	The Project team continually assesses new methods to reach the broadest possible audiences and is always open to suggestions on ways to improve our communications with the public and individual stakeholder groups.

**SUBJECT 2016-3C: COMMUNICATIONS AND ENGAGEMENT**

<b>GMOB Recommendations</b>	In the spirit of continued reconciliation, the GMOB recommends that the Federal Government formally respond to requests of Indigenous groups for an apology and compensation related to the historic operations at the Giant Mine.
<b>Giant Mine Remediation Project Team Response</b>	The issues arising from the legacy of the Giant Mine are complex. While the Project Team is focused on the remediation of the former mine site, and as formal responses on the issue of apology and compensation for Indigenous groups are outside the Project team's mandate, the team has conveyed this request within INAC's NWT regional office. Regional staff has, in turn, met with the Yellowknives Dene First Nation to hear concerns directly in order to develop a formal response.



**SUBJECT 2016-4: TRADITIONAL KNOWLEDGE AND COMMUNITY RELATIONS**

<b>GMOB Recommendations</b>	The GMOB recommends that the Project Team draw on best practices to develop a comprehensive traditional knowledge strategy. This should be done in close collaboration with the affected Indigenous peoples and include a timeline for immediate implementation.
<b>Giant Mine Remediation Project Team Response</b>	A stand-alone traditional knowledge strategy has not been developed by the Project Team; rather, the consideration of traditional knowledge has been integrated into project planning and activities through the consultation and engagement processes we undertake with First Nations and other Indigenous groups on various project work, as well as the overall remediation plan. For example, traditional knowledge was incorporated into the planning and scheduling of the work when the C-Shaft and A-Shaft headframes were deconstructed. The Project team will continue to incorporate traditional knowledge into our implementation strategy as part of the remediation plan currently under development.

**SUBJECT 2016-5A: CARE AND MAINTENANCE/ADVANCED REMEDIATION**

<b>GMOB Recommendations</b>	The GMOB recommends that the Project Team identify foreseeable additional advanced remedial work that may be reasonably required prior to full remediation. The team should provide appropriate justification for such work.
<b>Giant Mine Remediation Project Team Response</b>	<p>The Project team monitors the site continually and, based on evolving site conditions, will identify any work that is required to be completed in advance of full remediation. All foreseeable work is identified in the annual work plan and communicated to the public and stakeholders through the annual Public Forum, the electronic newsletter, and regular Working Group and other meetings.</p> <p>The need to carry out advanced remedial work will be evaluated based on the relative risk and considers the level of effort to proceed in advance of the overall remediation plan, while also taking into account the input from various technical experts, mine specialists, and stakeholders.</p>

**SUBJECT 2016-5B: CARE AND MAINTENANCE/ADVANCED REMEDIATION**

<b>GMOB Recommendations</b>	The GMOB recommends that the Project Team document and communicate trends in the risk profile of the site. The trends should clearly illustrate: a) any increasing risks caused by site deterioration (e.g., aging infrastructure); and, b) risk reductions achieved by advanced remedial works such as the SSP.
<b>Giant Mine Remediation Project Team Response</b>	The Project team will continue to monitor, document, and communicate trends in the risk profile, such as the relevant information provided in the 2015 -16 Annual Report of the Giant Mine Remediation Project (external link, English only) provided to the GMOB in October 2016.

**SUBJECT 2016-6: REMEDIATION PLANNING**

<b>GMOB Recommendations</b>	The GMOB recommends that the Project Team work with interested Parties to identify and mitigate potential delays to the remediation planning process. Opportunities to accelerate the planning process should be considered.
<b>Giant Mine Remediation Project Team Response</b>	The Project team will continue to work with stakeholders to identify ways to optimize and expedite the planning process.

**SUBJECT 2016-7A: ENVIRONMENTAL ISSUES**

<b>GMOB Recommendations</b>	Expedite the development of a fully integrated Environmental Management System.
<b>Giant Mine Remediation Project Team Response</b>	<p>The Giant Mine Project Team currently has an Environment Health and Safety and Community Management System in place for the project. It is an integrated system that includes aspects of both an Environmental Management System (ISO 14001) and Health and Safety (OHSAS 18001). The Project is currently updating the Management System to be compliant with the revised 2015 ISO 14001 Standard. The Project can commit to providing this to the Board once completed.</p> <p>In addition, the Project will be requiring the Main Construction Manager, who will oversee the overall implementation of the remediation, to have an Environmental Management System in place that will include the development of Environmental Protection Plans and programs. The Main Construction Manager is expected to be in place in late 2017.</p> <p>We welcome further discussion with the GMOB to address any other questions or concerns.</p>

## SUBJECT 2016-7B: ENVIRONMENTAL ISSUES

### GMOB Recommendations

Use and expand upon existing monitoring information to identify trends in environmental quality for soil, water and air. It is important that such trends be clearly documented prior to the initiation of full remediation. Also, see the GMOB's recommendation #6 on the Project Team's 2015- 16 Annual Report.

### Giant Mine Remediation Project Team Response

Based on lessons learned from year to year, monitoring programs evolve and adapt to ensure continual improvement in the data that is being gathered. This is used to better design the final remedial program and determine the health of the surrounding environment. This can make year-over-year trend analysis challenging, but the Project team continues to complete work in specific areas leading up to and throughout remediation to ensure planning takes into consideration any identified trends.

Some examples include:

- Trends in effluent and surface water quality stations in Baker Creek, Yellowknife Bay, Yellowknife River, and Horseshoe Island Bay were assessed as part of the Environmental Effects Monitoring (EEM) Program under the federal MMR. Specifically, the Phase 4 EEM Program Final Interpretative Report (Golder 2013a) and the Phase 5 EEM Program Investigation of Cause Study (in prep) include detailed trend analysis since mine closure in 2003.
- A comprehensive assessment of spatial trends in sediments as well as effects in biota was completed in 2011 in Baker Creek (Golder 2013b). A site-wide soils sampling program was completed in 2015 to establish the existing condition and spatial variation in concentrations of parameters of potential concern (Golder 2016a, b). This information is being used to inform the decisions associated with soil remediation. These data will also be used to assess the efficacy of remediation activities.
- Air quality is currently monitored regularly at the fence line of the property and at stations located in the community of Yellowknife. The purpose of these two monitoring programs is to determine if there are exceedances to threshold values, which would pose potential risk to human health and the environment. In addition, activity- specific air quality monitoring is also conducted, as required (e.g., roaster demolition). Should any exceedances be identified through any of these programs, there is follow up to determine the cause of the exceedance and implement any remedial measures. Real-time data and weekly reports are available on the NWT Air Quality Monitoring Network. More information on the monitoring programs is available on the Government of the Northwest Territories' Giant Mine Remediation Project webpage.

The Project team will continue to look at useful ways to identify and communicate trends in environmental quality for various media, including seeking input from regulatory authorities and stakeholders through the Working Group.

The project team is also exploring the Government of Canada's new Open Data initiative (<http://open.canada.ca/en/open-data>) to see how we can better communicate and share our data with the public.

A Status of the Environment Report will be submitted in 2022 (that is, seven years after the Effective Date, as stipulated in the Environmental Agreement). It is expected that trend analyses will be included, as appropriate.

**SUBJECT 2016-7C: ENVIRONMENTAL ISSUES**

<b>GMOB Recommendations</b>	Present the rationale for the ongoing practice of discharging effluent to Baker Creek without the required authorizations and describe what steps the Project Team is taking to become fully compliant with legislation.
<b>Giant Mine Remediation Project Team Response</b>	<p>As discussed in past meetings with GMOB, the Project is governed by <i>the Mackenzie Valley Resource Management Act (MVRMA)</i>. The Environmental Assessment Final Decision of August 2014 included 26 measures, several of which would need to be partially- or fully- addressed before the Project could advance its water licence application for the remediation. While the Project Team works toward addressing these measures, section 89 of the MVRMA allows the Minister to “take any reasonable measures to prevent, counteract, mitigate or remedy any adverse effect, in a federal area, on persons, property or the environment. . .if the federal Minister has reasonable grounds believe that [(b)(ii)] a danger to persons, property or the environment may result from past operation of the work or from its closing or abandonment.”</p> <p>Under section 89, the Project is able to release treated effluent to Baker Creek since this needs to be completed as an interim measure given there is no viable alternative discharge. INAC ensures that all effluent meets the parameters that had been established in the former mine’s water licence, prior to discharge. In addition, the Project complies with the Metal Mine Effluent Regulations (MMER) under the Fisheries Act, which directs the operators of metal mines to conduct Environmental Effects Monitoring (EEM) as a condition to deposit effluent. EEM has two main components: effluent and water quality monitoring, and biological monitoring.</p> <p>Regulatory authorities, including the Department of Fisheries and Oceans and the Territorial Land Use Inspector, monitor the activities on the site.</p>

**SUBJECT 2016-7D: ENVIRONMENTAL ISSUES**

<b>GMOB Recommendations</b>	The GMOB also recommends that INAC provide a plain language explanation of how they monitor and report on activities at the Giant Mine site in the absence of a full remediation water licence and land use permit.
<b>Giant Mine Remediation Project Team Response</b>	In addition to updates provided at the annual Public Forum and other stakeholder meetings, the Project Team reported on our monitoring activities for human health, air, water, soil, sediments, waste, and biodiversity in the 2015- 16 Annual Report of the Giant Mine Remediation Project [external link, English only] provided to the GMOB and available to the general public, in October 2016. We will continue this in future annual reporting. The Project team welcomes suggestions to improve how it communicates on the monitoring activities at the Giant Mine site.

**SUBJECT 2016-8: OFF-SITE CONTAMINATION**

<b>GMOB Recommendations</b>	The GMOB recommends that the federal, territorial, and municipal governments make it a priority to initiate a process to ensure off-site contamination is appropriately addressed to protect public health and the environment.
<b>Giant Mine Remediation Project Team Response</b>	<p>While clean-up efforts at Giant Mine contribute to the Government’s actions to protect the health and safety of NWT residents and the environment, legacy contaminations issues beyond Giant Mine boundaries fall outside the scope of the Project as defined by the Mackenzie Valley Environmental Impact Review Board’s Report of Environmental Assessment and Reasons for Decision [external link, English only].</p> <p>The Government of Canada is, however, aware of the issue. Officials from INAC are working with the Government of the Northwest Territories and other federal departments to explore appropriate ways the federal government could support the GNWT in managing arsenic contamination on territorial lands and in waters.</p>

**SUBJECT 2016-9: CAPACITY**

<b>GMOB Recommendations</b>	The GMOB recommends that steps be taken immediately to address capacity issues including meeting the current capacity needs and committing to providing intervenor funding during the regulatory review process.
<b>Giant Mine Remediation Project Team Response</b>	<p>The Project team recognizes that capacity is an issue across the Northwest Territories and takes a number of actions to help stakeholders participate meaningfully in the project. The Project team receives annual proposals from the Yellowknives Dene First Nation, North Slave Métis Alliance, and Alternatives North for technical and administrative resources to participate in all aspects of the Project.</p> <p>Historically, the project has fully funded all compliant requests. This includes providing funding for:</p> <ul style="list-style-type: none"><li>• a full-time Yellowknives Dene First Nations (YKDFN) staff member dedicated to the Project, including salary, rent and expenses;</li><li>• all YKDFN and North Slave Métis Alliance (NSMA) members to attend any and all community meetings; and,</li><li>• a technical advisor, who is available to all members of the Working Group, which includes YKDFN, NSMA and Alternatives North.</li></ul> <p>In addition, the Project has heard and addressed specific concerns from YKDFN regarding capacity through:</p> <ul style="list-style-type: none"><li>• improving scheduling of meetings and engagement sessions to accommodate work load of YKDFN staff,</li><li>• providing communication and design support for community notices,</li><li>• increasing timelines for reviewing technical documents, and</li><li>• developing the yearly engagement plan and calendar with YKDFN staff to ensure their capacity to participate meaningfully is maximized.</li></ul> <p>The Project will continue to work with the Yellowknives Dene First Nation and the North Slave Métis Alliance to be responsive to their capacity concerns, and welcomes suggestions on ways to continue to improve. With regard to intervenor funding, although there is no statutory requirement to fund public participation in regulatory proceedings, the Project will consider requests for intervenor funding from parties leading up to future Land Use Permit or Water Licence Proceedings. INAC will also provide notice to parties well in advance of submission of the water licence application to allow time for these discussions to take place.</p>

**SUBJECT 2016-10: DELIVERY MODEL**

<b>GMOB Recommendations</b>	The GMOB recommends that the Project Team carefully examine options other than the current government-driven and controlled approach to the Project to expedite the regulatory process and reduce costs. If a new model is impractical, then a very careful review of efficiencies should be undertaken with the results implemented quickly and effectively to reduce or eliminate further delays and unnecessary costs.
<b>Giant Mine Remediation Project Team Response</b>	<p>The Giant Mine site reverted to the Crown when the owner, Royal Oak Mines, went into receivership in 1999. In accordance with the <i>Department of Indian and Northern Affairs Act</i> and the terms of the Northwest Territories Lands and Resources Devolution Agreement, the Giant Mine site falls within shared Federal and Territorial jurisdiction, and is, therefore, subject to Government of Canada policies, procedures and practices with respect to project management.</p> <p>In compliance with applicable regulations and policies, and in keeping with project management best practices, the Project team will continue to seek efficiencies to eliminate further delays and unnecessary costs, and welcomes suggestions from the GMOB and others to continually improve delivery of the Giant Mine project at the best value possible.</p>

**SUBJECT 2016-11: ESTABLISHING THE SOCIO- ECONOMIC COSTS AND BENEFITS**

<p><b>GMOB Recommendations</b></p>	<p>The GMOB recommends that the Project Team apply a structured and deliberate framework, such as a Health Impact Assessment (HIA) or Social Economic Impact Assessment to evaluate the social, economic, and cultural aspects of the Project from a community health and well-being perspective. The framework should assist the Project Team to analyze and optimize local education, training, procurement, and jobs skills development opportunities. Further, this evaluation should aim to minimize negative effects while maximizing the positive effects of the Project; for example, the potential negative impacts of transient labour and major contractors on local housing, medical and social resources. (Examples of resources which could assist the Project Team include: The National Collaborating Centre for Healthy Public Policy, the Society of Practitioners of Health Impact Assessment, the Alaska HIA Program, and the International Association for Impact Assessment.</p>
<p><b>Giant Mine Remediation Project Team Response</b></p>	<p>In accordance with the Environmental Assessment, the Project is designing and implementing a long-term Health Effects Monitoring Program [external link, English only] to ensure the remediation activities do not have negative impacts on community health. Scoping of this program is currently underway, led by Dr. Laurie Chan from the university of Ottawa. This includes consultation with area First Nations, other Indigenous groups, and the community at large. This program will generate a baseline for community health prior to the start of the remediation work, and will continue throughout active remediation and for years after work at the site is complete.</p> <p>In addition, the Giant Mine Remediation Project’s socio-economic strategy is being developed in conjunction with the Government of the Northwest Territories and other agencies to ensure Northerners and Indigenous persons are positioned to benefit from employment opportunities that result from the remediation of the Giant Mine site.</p> <p>The strategy includes measures to reduce and limit barriers that might prevent Indigenous and Northern persons, including those living in the Monfwi Gogha Dè Nih t’è claim area, from successfully participating in employment opportunities that arise out of the Giant Mine site’s remediation.</p> <p>The socio-economic strategy also looks at ways to support and build capacity in the North, and includes working with INAC and the Government of the Northwest Territories, as well as other federal departments.</p> <p>For the Main Construction Manager contract in particular, the successful bidder will need to demonstrate they have an approach and process in place to maximize the use of Northern and Indigenous businesses, and to promote Northern and Indigenous employment. This includes the need for a dedicated Economic Development Officer as part of the contract, whose role will be to work with and engage the community members on employment and business opportunities.</p> <p>The Project has also worked to maximize Northern and Indigenous employment and business opportunities prior to tendering the Main Construction Manager contract. Between 2006 and 2016, we are pleased to report that 56% of workers on site were Northern employees, and 15% of workers on site were Indigenous employees.</p> <p>In addition, of approximately \$130 million in contracts that were awarded between 2006 and 2016, \$61 million in contracts were awarded to Yellowknives Dene First Nation-owned businesses, and \$3 million were awarded to Tlicho-owned businesses.</p> <p>The Project has plans this year to conduct a socio-economic session specifically for the Yellowknives Dene First Nation, as well as hold a capacity building workshop.</p>

**SUBJECT 2016-12: HEALTH AND COMMUNITY WELL-BEING**

<b>GMOB Recommendations</b>	The GMOB recommends that the Project Team actively embrace the principles of trust, transparency, and communication and engagement to communicate Project risk with respect to health and community well-being. The progress and outcomes of the HHERA and Health Effects Monitoring Program are essential elements of Project risk communication. Perceptions of risk, beyond quantitative science, must be addressed.
<b>Giant Mine Remediation Project Team Response</b>	<p>Every member of the Project Team is committed to an open, transparent, and respectful approach to communicating and engaging with stakeholders, First Nations and other Indigenous people, and the general public in a way that creates, maintains, and builds a mutual and lasting trust. Specifically, the Project acknowledges the importance of listening to and understanding community perceptions of risk, responding to concerns, and communicating the risks identified by the project team to stakeholders, and we will continue to do so through the risk assessments being conducted by the Project team.</p> <p>In addition, the project will be undertaking a Quantitative Risk Assessment as per Measure 5 of the Environmental Assessment in 2017. As part of this assessment, we will be seeking input from the public and encourage participation in a risk session where community concerns related to the risks on site will be taken into consideration.</p> <p>The Project will also work with stakeholders to ensure that their concerns and perspectives are key inputs into the Quantitative Risk Assessment.</p>



## APPENDIX 3

### GMOB Performance Measures Table

MANDATE REQUIREMENTS	TASK	WHAT WAS DONE	RATING
	Review and make recommendations to the Co-Proponents' Annual Report.	The 2016-2017 Co-proponents Annual Report was received by GMOB on October 30, 2017. The Report was reviewed and submitted to the Project Team, Parties and public on January 29, 2018.	Completed
	Review and make recommendations to the Co-Proponents' Status of the Environment Report.	The Status of the Environment not submitted by the Project Team for review.	Not Started
	Review and make recommendations to the 20-year Independent Project Review.	The 20-year Independent Project Review was not submitted by the Project Team.	Not Started
	Participate in and advise on the Co-Proponents' process to assess options for the management of Baker Creek.	GMOB participate in a Baker Creek engineering meeting, the Working Group Meetings and reviewed the Baker Creek Options Report from the Project Team.	In Progress
	Manage the Research program, toward a permanent solution for dealing with arsenic at the Giant Mine.	GMOB completed a <i>State of Knowledge Review: Arsenic Dust Management Strategies and the Plain Language Summary Report</i> on September 11, 2017. GMOB held a public presentation of the SOK on October 11, 2017. GMOB held a Research Program workshop October 19 – 20, 2017 in Ottawa that brought together participants from research institutions to help identify research program models for the development of the GMOB research program.	In Progress
	Promote public awareness of itself, the Environmental Agreement and its roles under this Agreement.	Continued maintenance of the GMOB storefront office, development and enhancement of public displays and web based public information tools, public information sessions including presentations to: GNWT/Wilfred Laurier University Science Committee; NWT and Nunavut Association of Professional Engineers and Geoscientists; Governor General of Canada Leadership Tour; and the Canadian Northern Economic Development Agency.	In Progress
	Establish a publicly accessible repository of records that it considers relevant to its responsibilities.	GMOB is engaged in an ongoing collection of records related to Giant Mine, the Giant Mine Remediation Project, Arsenic Trioxide and Arsenic Research. This information is available either through the website and the office.	In Progress
	Provide all of its reports and evaluations to the Co-Proponents and shall make them available to the public.	Distribution to all of the Parties is a priority. All reports, minutes and financials of GMOB are delivered to the Parties electronically and are made available to the public through the website or by requesting a printed copy.	Completed
	Issue an annual report each year and hold a public annual meeting each year for the first five years of its operations.	A GMOB annual report and GMOB AGM is planned for each year. GMOB released its 2015-2016 Establishment Report April 11, 2017. GMOB held its 2016-2017 AGM on November 17, 2017.	Completed



**COMMUNICATIONS  
MANAGEMENT**

<b>TASK</b>	<b>WHAT WAS DONE</b>	<b>RATING</b>
Provide opportunities and communications tools for Parties to the Agreement, the Project staff and the general public to collect information and comments by the Board and to increase the awareness of actions and positions taken by the Board.	GMOB is engaged in content communication with the Parties, Project staff and the public through daily business, public presentations and Working Group meetings. GMOB records formal evaluations of meetings and public presentations.	In Progress
Provide feedback to the Parties and the Project staff regarding Project activities.	GMOB administration keeps an ongoing list of issues of comments and concerns i and incorporates into the GMOB annual report.	In Progress

**RESEARCH  
PROGRAM**

<b>TASK</b>	<b>WHAT WAS DONE</b>	<b>RATING</b>
Manage the Research program, toward a permanent solution for dealing with arsenic at the Giant Mine.	GMOB completed a <i>State of Knowledge Review: Arsenic Dust Management Strategies and the Plain Language Summary Report (SOK)</i> on September 11, 2017. GMOB held a public presentation about the report on October 11, 2017. GMOB held a Research Program workshop October 19 – 20, 2017 in Ottawa that brought together participants from research institutions to help identify models for the GMOB research program.	In Progress

**FINANCIAL AND  
PHYSICAL RESOURCE  
MANAGEMENT**

<b>TASK</b>	<b>WHAT WAS DONE</b>	<b>RATING</b>
Provide the necessary financial records to the respective authorities in a timely fashion.	The completed GMOB audit is delivered annually to INAC and then presented at the GMOB AGM. The audit describes the GMOB financial position as of March 31, 2017, its operations and its cash flows for the fiscal year end, in accordance with Canadian accounting standards for non-profit organizations. The 2016-2017 GMOB Audit was delivered to INAC on (date) and signed off by INAC on (date). The 2016-2017 GMOB Audit was presented at the GMOB AGM on November 17, 2017.	Completed
Manage GMOB funds in a prudent and responsible manner so as to receive a positive review of the annual financial audit.	GMOB is funded by the federal government according to the terms set out in Article 11 of the Agreement. Crowe MacKay LLP prepared the 2016-2017 Audited Financial Statements, formally accepted at the GMOB Annual General Meeting on November 17, 2017. In its report, the Auditor stated, "In our opinion, the financial statements present fairly, in all material respects, the financial position of Giant Mine Oversight Body Society as at March 31, 2017, and the results of its operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations." View the audited financial statements at <a href="http://www.gmob.ca/reports/#reports">www.gmob.ca/reports/#reports</a> .	Completed
Manage GMOB physical resources in a prudent and responsible manner.	GMOB completed the 2017-2018 annual inventory of assets on December 11, 2017, according to GMOB policy.	Completed

**HUMAN RESOURCE  
MANAGEMENT**

<b>TASK</b>	<b>WHAT WAS DONE</b>	<b>RATING</b>
Maintain an appropriate level of staff to assist in GMOB activities.	In accordance with the GMOB Operational Policy, GMOB administration and board review staffing requirements on a quarterly basis.	In Progress
Maintain positive relations with GMOB employees.	In accordance with the GMOB Operational Policy, the Board monitors staff relations.	In Progress
Provide employees with an annual evaluation and performance feedback.	In accordance with the GMOB Operational Policy, the GMOB staff members receive annual evaluations and performance feedback.	Completed
Provide employees with training as required.	In accordance with the GMOB Operational Policy, staff training is identified and supported.	Completed



## Board of Directors



Dr. Kathleen Racher  
Chairperson  
Yellowknife, NT



Ginger Stones  
Director  
Ottawa, ON



David Livingstone  
Director  
Yellowknife, NT



Kenneth Hall  
Director  
Yellowknife, NT



Tony Brown  
Secretary-Treasurer  
Uxbridge, ON



Dr. Ken Froese  
Director  
Calgary, AB

## PAST DIRECTORS

Todd Slack  
Interim Chairperson  
Yellowknife, NT

Dr. Istvan Gabos  
Past - Vice Chair  
Edmonton AB

## CONTACT

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## Office Staff



Ben Nind  
Executive Director



Letitia Pokiak  
Office Administrator