

GIANT MINE OVERSIGHT BOARD PUBLIC MEETING TRANSCRIPT

May 30, 2024 at 7:00 p.m.

**K'àlemi Dene School
Ndilo, NT**

Giant Mine Oversight Board Members In Attendance

David Livingstone - GMOB Chair

Graeme Clinton - Director

Ken Froese - GMOB Director

Ken Hall - GMOB Director

Marc Lange - GMOB Director (Zoom)

Mark Palmer - GMOB Director

Ben Nind - GMOB Executive Director

Paul Green - Contractor

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David: Alright, folks, we are going to get started. I have been told that I have to sit close to the mic so people can hear me, and I have to sit up straight so people can see me. I think what we will do is introduce the Board members. They will introduce themselves, and then we will get into presentation. I think I would welcome questions at any point during the presentation. I don't think we have to wait. If there are questions, just ask them, and we will deal with it.

We have an interpreter here, so I have to remind myself and others to speak slowly and clearly. We will start with Ken.

Ken H: Welcome, everyone. It is nice to see you out. My name is Ken Hall. I was born in Yellowknife and grew up just on the other side of the bay out at Giant. I am glad to be here. Thank you.

Mark P: Hello, everyone. I am Mark Palmer, one of the directors.

Ken F: Hi, I am Ken Froese, one of the directors here from Red Deer, Alberta.

Graeme: Hey, everybody. It's Graeme Clinton. I am an economist here in Yellowknife and a director for the Board.

David: Marc Lange could not make it, but he is on the call so I will ask him to introduce himself.

Marc L: Hi, folks. Marc Lange here, director for Giant Mine Oversight Board. Apologies that I could not be there in person today. Some family matters are keeping me away from town right now.

David: I'm David Livingstone, and I am currently the Chair of the Board. Why don't we get into the presentation? As I said, people can ask questions whenever they like. I think most people here are familiar with the makeup of the Board and all that, but I will just quickly summarize again.

Six parties appoint Board members. Once they are appointed, they are independent of the Parties: Federal Government, CIRNAC, Yellowknives Dene First Nation, City of Yellowknife, Alternatives North, North Slave Métis Alliance, and the GNWT.

With respect to expertise, we have various specialists on the Board. We also have Paul Green hiding at the back. He is our engineering and technical expert, water resources expert. We have economics expertise, as Graeme has mentioned already. With regard to regulatory and remediation, Paul Green and Marc Lange are largely the leads on that. Contracting and procurement is Mark Palmer. For health and risk assessment, we have Ken Froese. On land, water, and fisheries matters, it is Marc Lange primarily. For contaminants research, generally Marc Lange is the research lead; Ken Hall is our community relations and mine operations lead.

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As I said, once the Board members are appointed by the Parties, they are independent. The Board itself is independent, at arm's length. That does not mean that we are without accountability, obviously, but independence from the Parties is an important feature.

The vision that the Board developed is that the remediation of the Giant Mine site, including the subsurface, will be carried out in a manner that is environmentally sound, socially responsible, and culturally appropriate. We have five or more key mandates: monitor and report on the Project; make recommendations; and hold public meetings and produce reports including the Annual Report. A copy of the 2023 Annual Report is on the table outside. Also, part of the key mandates are research and communication with the public parties and interested individuals.

We make recommendations annually, and sometimes during the year. The Annual Report captures the main recommendations. This time around, we had one regarding economics, one with regard to communication and engagement- reconciliation, four with respect to project management and planning, and three with respect to long-term planning.

Can everybody read the slides, okay? Okay, then I do not have to read them. The economics recommendation: Essentially, we are struggling a little bit with helping the Project achieve the goals that it set, particularly in terms of resident and Indigenous labour. We had a fair bit of discussion about that today. We are going to try to be clearer about our concerns working with the Project Team, recognizing that the Project Team is only one of the parties involved in trying to make this project as good as it can be for the economy and individuals in the North.

The boat launch is an ongoing concern for GMOB and those of the public who are aware of the plans for the boat launch. We have been encouraging the Project Team to host a public meeting, or a series of public meetings, to make folks aware of what is being planned, seek their input on those plans, and adapt accordingly.

Project management and planning: The major concern driving this recommendation was the fire season last year, and the concern the Board has about the way that the site was handled during the evacuation. It is our feeling that more work needs to be done to prepare for similar emergencies in the future. The Project has lots of contingency plans for situations of various kinds, but a forest fire and a community-wide evacuation was not foreseen.

Arsenic release because of forest fires is a concern as well. There is not any indication that there was significant arsenic release from the last forest fire season, but the fires were a fair distance away from Yellowknife. The closer to Yellowknife, the more arsenic there is in the environment. We recommend that more research be done in this area to prepare. There are several other parties who have raised the concern as well. Some research is being done, but clearly more needs to be done.

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Land use planning is another longstanding concern of the Board. Thus far, the City and the GNWT have not progressed far on land use planning. We think time is a' wasting frankly. The longer we wait for land use planning, the more opportunities that will potentially be lost. Some advanced planning is certainly overdue.

The Perpetual Care Plan is long overdue as well. It will be probably another year or two before we see an actual draft plan or otherwise. It has been several years overdue already. There are some concerns that we have, but we will get to that in a little more detail when we talk about the research projects.

The solution to the arsenic trioxide dust is not 100 years off. I will say that with some confidence. I do not know how many years it is, but I think that we are a lot further along than we would have thought 10 years ago, certainly 10 years ago and even 5 years ago. We need to start planning for the eventuality of having a treatment plant onsite. We don't want to lose the opportunity to place that treatment plant in the right place because we have not done the planning with that feature in mind.

We also need to figure out where we are going to store the process material. It could be stored on the surface. It could be stored in the pits. It could be stored underground. We are not there yet, but we need to start thinking about that and avoid losing opportunities or avoid foreclosing opportunities.

This is perhaps a little dated now, but the evaluation process for the Perpetual Care Plan, I believe, is complete. Our recommendation that a representative of the Giant Mine Working Group be involved is redundant, but the last part of this recommendation that should be involved in the review of draft documents as the contract proceeds, is still valid. Again, this is maybe on the wish list. I don't know how practical the implementation of this recommendation will be, but the main point is that the Perpetual Care Plan is long overdue, and we need to see an end to that process, the sooner the better. If this lights a fire under the Parties to get the work done, then great.

For the research program, Marc Lange will lead the discussion on this component.

Marc: Did you want me to adlib, go off the slides here, or a combo of both?

David: Both.

Marc: Okay. Again, I apologize that I can't be there in person. I can't see the faces around the room and how many people are hearing this presentation for the first time versus repeat offenders that are coming back to hear what we do every year.

David: Nobody is falling asleep just yet, Marc.

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Marc: Okay, well I might do just a quick introduction of the past as we get into the research going forward. For those who are not familiar, the Project had a thorough environmental assessment, and the option to deal with the arsenic below ground was to freeze it in place, so we did not have to put workers to dig out the old arsenic and bring it up top to treat it. That solution is the best for now. Certainly, it was the best evaluated 10 years ago. That is what is going on onsite.

Part of our mandate during the review, the mandate of the GMOB, was to come up with an alternative, a permanent solution. We have a little budget to stimulate research to deal with that underground arsenic. We ended up partnering with folks that you see on the slide now. A group of Canadian universities banded together and formed the network called TERRE-NET. In that way, we turned to a lot of those researchers for help answering our big questions. All these researchers working together were also able to leverage every dollar GMOB brought to the table. They doubled and tripled it by going for funding with other funding agencies, so we were able to achieve a whole lot more together.

What does the next slide have to offer us? This slide shows the areas of research that we have ended up working on in the last couple of years. Before I say a little bit more, to deal with the arsenic in a permanent way, there are a few components. One that I will talk about is transforming the arsenic below ground: transforming it, encapsulating it, or stabilizing it. That is one of the containers dealing with that molecule. I will describe the other containers that are just as important too that we have not done so much work on.

Starting with the transformation, or making that molecule safe, we have invested in about six different project areas. The first one was really to look at the dust itself: how it varied from one chamber to another, at different depths, what it consisted of. It is not actually pure arsenic at all. It is a mine byproduct. It has a fair bit of arsenic, but it has iron in there, antimony, sands, and all sorts of other components in it. In that sense, it does not behave like pure laboratory grade arsenic. It was important to fund that part to study what this stuff consists of and how it varies, and therefore what kind of treatment we might want to apply to it based on that variation.

Another area of research was making glass with it. You can see the bottom right. It is called vitrification. You mix about 10% of that arsenic dust with 90% of other things like sand and other materials. You heat it up, electrocute it, and it turns into glass. It does not transform the arsenic molecule, but it encapsulates it. It protects it from leaching out into the environment, either as dust or if it comes in contact with water. Even if you run water over it, it keeps the arsenic inside the glass. That is one area that we have invested in.

Another one that does not transform the molecule is mixing about 10% to 15% of the arsenic dust into a cement mixture and then using that cement mixture as a construction material, for example. Also, that idea would be to encapsulate and prevent

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the arsenic from leaching out into the water or the environment. That project has advanced as far as testing dozens and dozens, even 100 permutations of recipes, or how to get the best mixture that would make a solid cement with arsenic in it. Believe me, it has not been simple. Adding arsenic to the cement kind of ruins the cement, so it has been an exercise in finding the right recipe so that it stays consistent and prevents the arsenic from leaching. That is the cement project that we have invested in.

Another aspect is to chemically transform the arsenic. One is called sulfidation. You take arsenic and mix it in water, believe it or not. You dilute it and then you react it with a very strong acid, sulfuric acid. That process and mixture essentially reverses the arsenic creation process that happened in the first place when you mined the rock. When you mined the rock, it broke apart the sulfides and released pure arsenic. This is reversing that process.

What is attractive about this one is reversing the process makes it very, very, very, very stable. That arsenic was in those rocks that they mined for millions of years without leaching into the water, so reversing the process is exciting. The update or the furthest that we have been on that project is again a bit of a recipe game, so planning the right temperature and the right concentration of sulfuric acid that would quickly and the most cheaply cause the arsenic and the sulfide to come back together. It is still at a recipe stage, if you will.

Then the other projects we have been funding are somewhat related to that. I mentioned that for sulfidation we must bring sulfuric acid in, and you must bring a lot of it. You must be trucking it here from the south. One other project is looking at the local bacteria here. Some of the bacteria will digest the arsenic dust...

David: Marc, can you slow down a little bit? Sorry.

Marc L: Oh sorry. Translation, right?

David: Yep, thanks.

Marc L: Thanks for the reminder. Another project has been using bacterially created sulfur to be the source of sulfur that could be used for sulfidation. That is another project that we funded. That is kind of the summary of all the projects that we have funded. The only other one, yeah, you can see we funded some other ancillary projects.

I mentioned earlier that we studied the arsenic dust quite a bit. One of the discoveries was that this other element called antimony tends to be attached to the arsenic in the sediment. Scientists are looking at using antimony as an indicator of how arsenic might be moving through the site using a test. I won't go into the details of the test, but it is basically a fingerprinting technique that they are trying to develop. By looking at antimony fingerprinting, you can guess how arsenic might be moving across the site and where that arsenic came from. That is a research area that would be helpful. Should

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we implement a permanent solution, then you can use this antimony marker to track if it is moving in the site or if the arsenic we see at site has to do with legacy arsenic, for example.

Where are we going with this slide here, research program report? Is there something after this?

David: I don't know if there is something after this, but I think the purpose of the slide was just to remind people that there is this report out there from that workshop last year.

Marc L: Okay, thank you for that reminder. I think what I have described is a bit of a summary of exactly what was in that recent November program report. Should I say a few words about what may be coming up?

David: Sure.

Marc L: Of all the projects that we have been funding towards a permanent solution, glass is certainly yielding some very good results. The tests that the scientists did on the glass by exposing it to water and to mimic how much arsenic might come off the glass, have shown that very little arsenic comes out. The water that flows over the glass, if you repeat it over and repeatedly to simulate years of exposure, the water that comes off of the glass or touches the glass shows that it meets current arsenic levels in drinking water. It is very low. It is so much better than arsenic as a dust by many, many orders of magnitude.

In other words, this is looking like a really good solution at this stage. It is starting to get the Board thinking that we should look at investing in some other areas. I mentioned the main area that we have been focusing on has been about stabilizing the arsenic below ground, but a good permanent solution has other components. The big one is removal. We cannot at this point envision where we would go below ground and make glass. Instead, the arsenic would have to come from below ground safely and be fed into the glass making plant. So, removal is another area of research we are considering working on - identifying the best technologies at this point and how we might be able to test them.

The other area that is important for a permanent solution would be storing it. Let's assume that we can remove it safely. We stabilize it by making glass. Where do we store this glass and under what conditions to keep it safe? That is another area that the Board is considering doing some research. Then there is the residual as well. Is there anything left after you remove, stabilize, and store it? That is another area, but it is a little further out.

At this point, I think the new information is that we are considering investing in new research areas, like removal for example, while continuing to invest in some of this

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promising research for stabilization. I think that is all I will say right now unless I am missing something.

David: I think you are good. It is time for questions, observations, or concerns.

Ben: That was called the Copper's Corporation, which was out of Pennsylvania at the time. It was used for wood preservative. Of course, the EPA got to a point that when it recognized that arsenic trioxide was being used as a wood preservative or the building of structures in playgrounds, it suddenly became a great, great public concern. As a result, it was withdrawn. The supply of arsenic trioxide for that stopped. That is where it ended historically.

Voice *(Off mic. Audible words were as follows)*: glass, if it is vitrified, does it change it all or is it at a basis where it is ___ with glass?

Voice *(Inaudible - off mic)*

David: What was the question again? I had the answer ready.

Voice *(Off mic. Audible words were as follows)*: Glass...could you use it for another purpose. Does it reduce what is required for vitrification? Does that mean it is the arsenic trioxide is unavailable ___?

David: The question is, if you crush the vitrified arsenic trioxide, does that change its character? Does it make it more available to the environment? The answer is yes. There is a little more surface area, so there is potential for more arsenic entering the environment. The researchers have looked into that, and it is not significant. It is still near or at drinking water standards.

The Board had a meeting this afternoon, and we talked about this a little bit. The bigger the block, the less release there will be. So, it is probably to our advantage not to crush it. That is an area that we can look into further and will. At this stage of the game, as Marc said, vitrification looks like the most promising of the options.

We are not necessarily going to put all our resources into vitrification, but we are going to do a little more work in the immediate future within the next year or two to determine whether we can be confident in that process. We have talked about visiting sites where vitrification is being used. It is a proven technology. The site here is a little different, but not that much different. Then we will look at methods of getting that arsenic to the surface, into a plant, and figuring out what we do with the product at the end of that. There is a lot of work to do yet to prove this out, but it is looking promising for sure.

? *(Inaudible. Off mic)*

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David: Yeah, and that is again, one of the challenges. What are the energy requirements to vitrify arsenic trioxide? The answer is probably lots, but we don't know at this stage.

? *(Inaudible. Off mic)*

David: The question is, how effective is the freezing program in isolating the arsenic dust? I guess I'll turn to Natalie to maybe answer that. At this point, the full implementation of the freeze program has not started. It has been tested and looks good, but there is a lot of work to do to install the thermosiphons and so on.

Currently, the mine water is being pumped to surface and treated before it is being discharged, so there is arsenic getting into the system now. The theory is that when it is all frozen, there will be much, much less entering the environment. We will still pump and treat, but there should be less volume that needs to be treated. Natalie?

Natalie: Once all the chambers are frozen, the theory is that they will be frozen, and there will be no water leaking out of them. That is still a few years away. Since I have the microphone, can I ask a question now to Marc? It is something I have been thinking of since we had the research meeting back in December. Marc's comments spurred me to think about it when he talked about the leachate coming off the vitrified glass being very good quality.

I think I am not understanding it correctly. The way I understood it is the leachate is meeting our current discharge criteria at Giant, which is not very good at all. That is why we are building a new water treatment plant and doing all of our remediation work, because we have a lot of new runoff criteria. So, I am just wondering if I am misunderstanding or if the leachate off the vitrification will meet the new water license and all our runoff criteria. That is something the Project is very interested in hearing about. Thank you.

David: Marc, do you want to take that question?

Marc L: Yeah, sure. Thanks for that clarification. It is the latter. The experiments on the glass were interesting in the sense that first of all, they crushed the glass to mimic getting dumped from a height below ground. They found that even crushing it produced very good water quality. Then we exposed it to all sorts of impossible conditions, like high, high, high acid conditions that do not happen in the environment and low, low basic conditions that also do not happen in the environment. They then spent a whole lot more time on simulated water, simulated underground Giant Mine water, simulated Great Slave Lake water, and simulated acid rainwater.

In all those cases, the water that was simulated to run over these pebbles of glass came roughly to meet the latest water license drinking water standards. Basically, you would not really need to treat it. Now, this is not mimicking 25 years of storage but for the last

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5 or 6 years of exposure treatment, the water coming off of it looks like it would meet the water license standards.

David: Another element of that is that again, it is hypothetical. We are not anywhere near it yet, but if we stored the arsenic blocks on surface or in the pits, the water would be captured and treated. It does not have to be 100% secure. A little bit of leachate can be captured and treated. I think we don't need to be perfect in terms of the arsenic vitrification process, or at least the product, but we do have several questions remaining that we need to look into.

Marc L: There are some questions online as well. Make sure you have a peek at those.

Voice: I have a concern as well. I am a YKDFN member. About the blasting around Giant Mine, it creates fractures. It is going to create leakage. Those new fractures, what are you guys going to do about those? Are you going to be pumping grout into them? Are you going to be sealing them off? This is a concern to me, the leaking out from the ground and getting into the water system. I eat fish. I eat the berries. I harvest food. What is the chance of that affecting me, my children, and my grandchildren? I need answers, because you guys are going to be gone, and we are still going to be here. We have been here for thousands of years. I'm still going to be here. I will be buried here.

David: Natalie, do you want to address the question about potential fractures?

Natalie: I assume you are talking about the current blasting that we are doing for the remediation project. For the rest of you, there is some blasting happening to build the outfall pipe for the water treatment plant currently. There will be more to come as we do the remediation onsite.

We do have monitors set up onsite, as well as around town to make sure we do not exceed certain limits set by our monitoring and plans. So, we keep the blasts small, so we don't create fractures. That is our first plan. We do micro-blasts. We don't do the big blasts like they used to do in their mining. We have very small blast limits. Secondly, we are still capturing, pumping, and treating all the water, so all of the water at Giant is being captured and treated. Thank you.

David: Thanks. There are a couple of more questions.

Voice: I just have one more question. As me being a YKDFN member, I think that our community should have our own health and safety committee with the Giant Mine so we can do our own inspections. We can see physically for ourselves what you guys are doing. You say this. You say that, but I don't see anything. I can't go over there and look. If we had our own health and safety committee, we could rectify. We can work together. That is what I think is a good idea for us YKDFN members. Thank you.

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- Natalie: I am very happy to report that we have a Community Benefits Agreement with the Yellowknives Dene First Nation, which includes funding for exactly what you are referring to. We have called it community-based monitoring, but it is so you can check up and do whatever health and safety or monitoring you want. I strongly encourage you to talk to your Chief and Councils or your Councilors. Thank you.
- Kevin: I just wanted to go back to the issue of water quality standards and what the vitrification leaching results have been. If you guys can give us some numbers, I would find that helpful. What is the water license arsenic limit? What is the drinking water quality standard, and what are the results from the vitrification? Hopefully, the vitrification results are lower than the first two that I mentioned. If there are some numbers, it would just create a little more confidence for me. Thank you.
- David: Marc, I don't know if you have those numbers offhand, but I suspect not. We can provide them to you, Kevin. Certainly, the researchers have those numbers.
- Kevin: Has anyone given any thought to what 237,000 tons of arsenic trioxide vitrified into glass looks like?
- David: Right now, and as Marc referred to, the best mix seems to be 10% arsenic dust mixed with 90% other things. It is a lot of glass in the end, 10% of which would be arsenic dust. Yeah, if the arsenic dust occupies a cubic city block equivalent, then it will be 90 times that when it comes to the vitrified product. It is going to take up a lot of space wherever we put it if we go there.
- Kevin: Thanks.
- Voice: So, the vitrification process requires a lot of sand or product that is pure silica, and you are mixing it with the arsenic trioxide power. From what you are saying, these are laboratory tests that are being done on a small scale, so these are not pilot tests. These are bench tests, so you must go to pilot test. Then you must go to commercialization, so you are more than a decade away, I'm sure, going from laboratory bench to commercialization and application here, I would think.
- David: It is going to take some time for sure, but bear in mind that vitrification is a proven process. It is used elsewhere in the States for nuclear waste. It is used in Africa to deal with arsenic trioxide mining byproducts. I think there is a plant being built in Quebec.
- Voice: So, it works elsewhere?
- David: Yes.
- Voice: You are just using some of the product from the mine to do the tests at the bench level?

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- David: Yes, exactly. The vitrification process is a fairly robust one. This is an area that we are looking into further. The arsenic dust, as Marc mentioned, varies in character, but the vitrification process may be robust enough that those variations in arsenic dust character will not matter. What we are trying to figure out is how much more do we need to know before we really pursue this option? Do we need to know more about the variations in arsenic dust? If the process is robust, then maybe not. Maybe we don't need to research that as...
- Voice: Move to your pilot plan then.
- David: Yes.
- Voice: This is going to be very expensive. A lot of sand is going to be dug up to do it. Likely that is where the silica is coming from.
- David: Yes, but we were also brainstorming this afternoon, and the tailings is potentially a source of silica. There are literally many, many tons of glass already at the dump just being stored. We are not necessarily fixed to using fresh silica sand. There may be other ways to make this work.
- Voice: Okay. I have one question about the Perpetual Care Plan. The RFP was issued in late January by the federal government with bids in at the end of February. Has the company been selected to develop the Perpetual Care Plan?
- David: Natalie, over to you.
- Natalie: We are in the very final stages. We thought we would be able to announce it today. That is how close we are. The final paperwork did not get signed, but it should be early next week.
- Ben: The first question [online] is, will there be research into what type of sand is needed for the vitrification process and the potential locations to supply the appropriate sand?
- David: The short answer is yes. It is not just sand, as I just mentioned. There may be other possibilities that would solve several problems.
- Ben: Okay. That is the only question online.
- David: Personally, it sounds so attractive to be able to use the tailings to mix with the arsenic dust to turn it into glass and fill the pits with glass. If the vitrification process works, if it is practical and effective, then I think we can all breathe a bit of a sigh of relief, but there is a lot of work to be done yet. There is a faint light at the end of the tunnel, but we need to get an actual project that we can put through the regulatory process and the environmental assessment process no doubt. Have we tested the tailings to see what is in it? GMOB has not, but Natalie?

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Yeah, we have not looked at it as the mix for the arsenic trioxide in the vitrification process. It may not be a practical solution, but it might be.

Voice: *(First portion off mic, inaudible)*. Both the arsenic and the tailings are stuff that did not get processed by the roaster, so it is in stable form. There is some arsenic trioxide in the tailings, but I just forget what the numbers are. It was a surprise to me how low it was compared to the total arsenic in the tailings, much of which is pretty stable in its original form, because the milling process was not 100% effective.

David: Can I ask that somebody ask a question of Graeme on the economics? Graeme will not be around tomorrow for the rest of our series of meetings, so here is the opportunity.

Bob Stevens: I have a question about the economics, Graeme. In the socioeconomic snapshot that GMRP produced at their Annual Meeting, it stated that with Indigenous opportunities, consideration of bonuses and deductions favour deductions rather than bonuses. I think 53% of the companies failed to meet their IOC commitments, and 47% actually were successful. Is GMOB concerned about that? Should GMOB ask GMRP to identify the contractors that are failing and succeeding?

Graeme: It is an interesting question, but it is only partially an economics one. If I get this wrong, Mark Palmer is going to help me out, because it is a rules and regulations issue where a contractor will in its bidding process, tell the Project its expectations. As a part of their bid, they will tell the Project what they expect to achieve in terms of their local hiring content. Based on that percentage, they are awarded a certain number of points in terms of their local content. If they win the contract and they fail to meet the target that they set for their particular contract, then a penalty is incurred. If they exceed it, then a bonus is paid.

To me, that is the policy side of how the Project is trying to attempt to ensure a certain procurement outcome. The employment question is a far larger one, and it gets into how we link procurement to the employment outcomes that we want. It is not clear to GMOB that procurement is necessarily the solution to employment. If you want to raise employment on a macro level, where do your employees come from? They come from your labour supply. If you look at the labour supply within the Northwest Territories, how does it grow? How does it improve? How does the quantity and quality of labour supply increase?

If you look at it at that level, okay, we are talking about the education system and what type of graduates we are producing so that our training programs can be successful in taking a graduate and turning him into a potential valued employee by the Project. If that is not working or is only working to a certain extent, we still have a gap. Then we have to import labour. It would be preferable if that imported labour relocated to the Northwest Territories rather than just being what I call a job tourist.

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If we truly want to affect local resident participation in Giant Mine as well as in everything else that is going on in the Territory, it is not just a question of changing procurement rules. It is about changing how we address labour supply and the quality of labour supply. GMOB is increasingly focused on that aspect of it. How do we actually affect local employments levels at the Project? We are not convinced that procurement is going to do it for us.

Andrei: Hi. This is Andrei Torianski from the Project Team. The snapshot document that was being referenced earlier, I just wanted to make a clarification that it is not that 53% of contractors failed their IOCs and 47%. It is actually \$53 thousand dollars that were issued in penalties in the last fiscal year, and \$46.5 thousand were issued as bonuses. That could be essentially a handful of contractors who paid \$10 thousand each of a penalty, or a single contractor that paid a \$50 thousand dollar penalty. It all depends on the value of the contract, and the penalty is up to 5% of the total value of the contract.

Bob Stevens: Thanks for that. Is there any value in naming the contractors so that we do not get into a situation of contractors failing year-in, year-out to achieve their goals?

Graeme: So, the GMOB receives the employment record from the Project with a certain amount of data confidentiality, so data is suppressed in terms of releasing information on specific firms. That would be something that the Project would know, but GMOB does not know if it is Contractor X or Y or Z that is overperforming or underperforming. The question, should we publish a list of the companies that are overperforming or underperforming? There are probably some legal issues around that, but I am not sure. It does not feel like an economics question to me to be honest, but maybe somebody else has an opinion on it.

? *(Question off mic)*

Graeme: Yeah, I think...When I first saw the numbers, because I have done a lot of procurement with the government, we had penalties and bonuses. When you are talking about a project of this size and how much there is, those numbers are quite small when you think about it. You've got 5% of the penalty of the contract out of the \$100 million dollars spent or whatever, a lot of money. It is small, and I think that is worthwhile looking at. The numbers, I think we get in more trouble, I think the federal government would get in more trouble than it's worth. Off the top of my head, the better idea would be to go to the companies maybe and say, "What are your issues? Why couldn't you meet it? How can we help produce more labour and go to the people who really know?" They get it pretty close. They are not out to lose money. I have never seen anybody go down that route before to talk to the companies and say, "You're the experts. You know the market probably better than anybody. How can we help you get the numbers higher and help the Yellowknife area profit more?"

David: Alright, are there any more questions?

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Kevin: I am sorry. I have a couple of operational questions. Since you guys have the venue, I am going to ask. I have driven down the Ingraham Trail a couple of times in the last few days. There is some kind of drilling and construction taking place next to the northwestern tailings pond, kind of near the Vee Lake Road. What is going on there? Thank you, and then I have one more.

David: Natalie?

Natalie: Sure. Thanks, Kevin. I don't know exactly where you are pointing to, if it is right at the intersection. We are continuing with the paste, the underground backfill. There is some work going on there. Also with the Vee Lake Road, I do not think it is drilling. We are working on some vegetation test spots off to the left. When you go up Vee Lake a little bit, there is a turnoff. We are doing our vegetation test plots there. It is probably the underground backfill that you are seeing, and it is the final year, so we will be done soon.

Kevin: Thanks for that, yeah. It kind of looked like paste backfilling, but I was not sure. The arsenic waste from the deconstruction of the roasting building on the site has been sitting in those sea cans now for four years, maybe five years, maybe even longer. You guys can tell me how many years it has been, but I just think about the conditions inside those sea cans.

They are just sitting there in the open. They are experiencing temperatures between maybe -40 or -45 to probably 40 to 50 degrees, maybe even higher in the summer. Some of that stuff was put in plastic totes in there. I would really like to know the condition of the stuff that is in there and whether there is any evidence of stuff coming out of those sea cans.

Look, I understand it is on a pad. If there is anything coming out, it goes into the ground, and then it goes into the groundwater. You pump and treat that, but having that stuff sitting there, there was a tradeoff made about storing the stuff there and leaving it in situ with the building the way it was. I am not sure if we are past that tradeoff point now of having that stuff sitting on the surface for 5 or 7 years and whether there is stuff leaching out of those sea cans, 365 sea cans or something on the surface in the blazing sun in the summer and then cold winter. What kind of monitoring is done with those sea cans, and is there any evidence of stuff coming out of them after the number of years that they have been sitting there? Thank you.

Natalie: They have been sitting there approximately 10 years. It was 2014, I believe that we finished the roaster deconstruction. We do regular inspections on the area, and we have seen no areas of leakage or any changes. I am just looking to see when the last time we actually did an opening and a closing of the doors. We do not do that on a routine basis, because they are really hard to open, and they are stacked as well, but we do visual inspections regularly. There has been nothing noted.

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Ethan: Hi. My name is Ethan. I am a student at the University of Waterloo. I am here for the summer working at a co-op, and I had no idea that Giant Mine existed here before I came. Ever since I have come, I have heard lots about it, and we are looking for a consulting engineering company doing some work there. My degree is in environmental engineering, and I have an interest in remediation. That is a bit about me.

I was wondering. I am not sure about GMOB's position on this, but now that solutions are being suggested for the cleanup, is there another committee that is formed to make the final decision? I was just wondering what the criteria is and the decision process where someone actually says, "Okay, this is what we are going to do. This is passed." What is the process that goes into okaying that? Thanks.

David: Yes. Good question. GMOB's responsibility is to look for solutions. We do not have the budget to do much more than what we have done, and we have a shorter list of what we have planned to do. We will take it as far as we can. Then it is likely going to be a case where somebody else is going to have to step in and carry the ball once we have a potentially workable solution.

No matter who the proponent is at that point – it could be Canada; it could be the GNWT; it could be the co-proponents – it will go through a public consultation process to determine whether it is something that the public is supportive of. It probably will go through an environmental assessment process and then through the regulatory process. As people mentioned, it will take some time.

GMOB's role is to really determine whether a particular process has the potential to go further. That is basically what we are involved in right now. Are there any other questions? Can I solicit a question about...oh, okay. In the meantime, I am sure Ken Froese would love to answer a question about health and safety. If anybody has any concerns about arsenic exposure, then Ken's your guy.

Ben: There was a question online.

Natalie: This is not my question, but it is a good one. Off-gassing of arsine gas was an issue with the vitrification process and residuals when the Project looked at it years ago. Did the researchers look into the aspects of their analysis to date? Thank you.

David: We have not directly, but as I said, there are operating vitrification plants on two continents at least. I would expect that challenge has been looked into and addressed. These plants are operating. They are regulated, and they seem to be working effectively.

Well, as last year, there is a hockey game tonight. I am not sure....

(conversation off mic)

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Are there any other questions or issues that people would like to address?

Bob Stevens: In terms of land use planning, it mentions in your Annual Report that the City should take the lead. Has that been put to the taxpayers of Yellowknife that they are going to take the lead? Do we have the capacity in the City to undertake the lead in land use planning for that site?

David: The City has the mandate. That is clear. The City has thus far not exercised its mandate. We are not even to the stage of what process the City would follow. The GNWT and the City have had several discussions. The outcome of those discussions is that it is the City's lead, and the GNWT will support. The City thus far has not taken up that challenge. Hence, this is about the fifth time that we have made that recommendation.

Voice: To my knowledge, there has never been a Perpetual Care Plan designed for mining Canada. I am wondering what you are expecting in this document and what the roadmap will look like moving forward.

David: You are right. As far as I am aware, there has not been a Perpetual Care Plan developed, but long-term plans for sure, care and maintenance, care and monitoring plans. The U.S. with its Superfund Program and super sites in dealing with contaminants, has probably looked into that. I will turn it over to Natalie and Geneva for a more comprehensive answer.

Natalie: Sure. Thank you. The Environmental Agreement has a pretty good layout of what is expected in the Perpetual Care Plan, so we started with that as our guide. When we started working on it, we struck a taskforce called the Perpetual Taskforce, and many people in this room were on it. We took that guide from the Environmental Agreement and workshopped it into what a framework would look like. So, we do have that document, and there are a number of chapters. We have supplied that with our request for proposal for the proponent to use that as a starting gate. There are a number of chapters. I do not have them handy here, but it is in the Environmental Agreement: records management, long-term funding. For instance, there is a climate change operations manual, or operations requirements, that sort of thing. If you want to touch base with me after, I can send something to you if you like. Thank you.

Voice: I have one last question from me. It is sort of a personal one. With low water this year and potentially next year, I know there is work at the Giant dock. There was talk about actually closing that wharf off and the dock itself and having everybody go somewhere else. It seems to be open, and now it is really shallow where there is work happening there. Are they dredging it at the same time to make it deeper, to make it more useful for the City of Yellowknife?

David: Natalie? And then I will ask Ken Hall to weigh in on that.

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Natalie: The work we are doing on the Remediation Project is what I can speak to. Like I said, we are building our water treatment plant, and we are building the outfall pipe, so that is the work we are working on in that area. It is just beyond the public dock right now. There will be work continuing all summer and into next year as well on that outfall pipe. We are not doing any work on the public docks at all. Work in that area for remediation will not start until 2028 at the earliest. It will be 2028 at the Great Slave Sailing Club, so that will be where you will start to see some changes, but at the public dock, it will be 2030. We are not doing any dredging right now.

Geneva: We are doing a boater-focused meeting on June 11th from 7:00 to 9:00 at the museum near Giant Mine. We will talk more about that and show some of the designs that we are working on and talk more about the outfall work that we are doing in that area that summer as well.

Ken H: I am glad to hear that there is dedicated meeting for the boating public, because there is no advocacy group for most boaters in Yellowknife. There is a Sailing Club and a Yacht Club, and that is a fraction of the number of boaters in this city who have no voice. I encourage anybody who has a boat or an interest in boating to first of all, go to the meeting to see what is coming down the road so it is no surprise when it happens, and to become even a single voice.

I sort point my finger a little bit at the City because they had the wherewithal to do the improvements at the boat launch that are there right now, redoing the wharf and redoing the ramps and the parking lot a little bit. I personally would like to see them do more for this season. If nothing else, can somebody take a couple of more concrete ramps and put them at the end of the ramps so they can get into the water a little bit deeper? As soon as you drop your trailer tires off the ramp into the mud, you have trouble. You are probably going to pull the axle off your trailer trying to get it out of there.

I don't know how to get the message out to the boating public other than to say if you are a boater, take heed. Go to the meeting. Get vocal. Ask the City questions and pass it on to your fellow boaters. If there is one thing that is going to have the single biggest impact on the public in Yellowknife in the next 10 years, it is going to be the boat launch at Giant. So, get active and get talking to your friends. Get your voice heard.

Natalie: I do not think the City will be at the meeting on June 11th. It is the Remediation Project one, so we will be talking about what we plan to do for remediation, not the current situation with the water.

Ken H: Right, but maybe the public can ask their friends and neighbors who are at the City to come to the meeting and get involved, because things are going to change. It is going to be a little bit of a mess for a while. People need to voice their concerns. Even for this year, if anybody knows anyone at the City who has concrete ramps in their backyard

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that they can add onto that, even to get us through this season, then that would be great. My boat still has its winter cover on, and I'm not sure I will be taking it off this year.

Erika: Can I answer a question?

Ben: Yes, Erika.

Erika: Thank you. Sorry, I could not find my hands-up. Erika Nyssonen. I am the Senior Advisor with GNWT on the Project. I just want to clarify for the room's sake, the boat launch and the townsite area, including the marina, the public parking lot, the boat ramp, the dock infrastructure there, is the responsibility of the GNWT now.

When the Project began remediation, the City had their lease suspended, which allowed us to work with Canada. GNWT is the landowner. Through an axis agreement that we have between the three governments, this creates a mechanism and a process for Canada to do work in that area with other leaseholders. GNWT is responsible for the maintenance of the dock.

We have just installed a number of signs. Jeff, my colleague, is in the room. He has been project managing that. We have also done repairs on the dock. We are aware of the low waters this year, and I have had conversations with the commodore at the Yacht Club to ask about some potential solutions in the interim before the Giant Mine Project Team goes in to fully remediate that area. It is an interim mitigation measure that we are looking at.

To your point, Ken, I know that there is a concrete block that is sort of flipped up. Then after that, there is a drop off, so we are looking at how we can expediate any regulatory processes and permits and things like that. I am in the process of exploring what can be done to do that, and also to look at the dock and make some potential cladding or something to protect, because the water is so low there. Maybe we lower the tires. So, we are looking at how to deal with the low water this year. Also, we have signs up to say GNWT is managing this area, and people can contact us at this number. We have made some adjustments in the parking lot to create some more space for trailer parking.

We are responsible, Ken, so you are talking to the right people. It is us. The City is out of the loop. I am happy to hear from other folks. Jeff is there. People can talk to him. Then like you said, there is the boating meeting. Thanks for the time. I just wanted to provide that clarity.

David: Just to be clear, Ken Hall has no strong feelings about this.

Erika: I am a happy boater as well, so I know how important that is. I am on the case.

Ken H: Thank you, Erika.

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David: Alright, I think we have probably exhausted the questions but undoubtedly not the concerns. We will work on that. Thank you all for coming out tonight. If there are any questions that you would rather do quietly with the folks here, then by all means, we will hang around for a bit. Thanks.

Bob Stevens: I have one final comment. I am very appreciative of the work that GMOB has been doing over the last number of years. It certainly has taken a load off me in trying to understand how this Project is working. I attended the annual meetings of both organizations, and it is very helpful, so thanks. I appreciate it.

David: Thank you very much. We are adjourned.

Meeting Adjourned