NUNAVUT WATER BOARD HEARING

RE: DORIS NORTH PROJECT

HEARING HELD AT THE
KULLIK ILIHAKVIK ELEMENTARY SCHOOL
CAMBRIDGE BAY, NUNAVUT
AUGUST 14, 2007

APPEARANCES:

NUNAVUT WATER BOARD:

Mr. T. Kabloona	Acting Chairman
Mr. G. Kusugak	Vice Chairman
Mr. L. Toomasie	Member
Mr. R. Hanson	Member
Mr. G. Porter	Member
Mr. G. Kakkiarniun	Member

NUNAVUT WATER BOARD (NWB) STAFF:

Mr. W. A. Tilleman, Q.C. and Ms. C. Emrick	Legal Counsel
Ms. D. Filiatrault	Acting Executive Director
Mr. D. Hohnstein	Acting Director Technical Services
Mr. B. Kogvik	Secretary/Interpreter/ Translator
Ms. P. Bealieau	Manager Licensing
Mr. D. Carr	Licensing Administrator
Mr. R. Dwyer	Licensing Administrative Trainee

NUNAVUT WATER BOARD CONSULTANTS:

Mr. S. Lines and Ms. K. Tunaley	Tunaley Lines & Associates
Mr. R. Halim,	Hatch Ltd.
Mr. L. Wan	Consultant to Director Technical Services

APPLICANT:

MIRAMAR HOPE BAY LTD. (MHBL)

-Mr. J. Currie	Vice President of Operations
-Mr. L. Connell	General Manager, Environment
-Ms. T. Maloof	Manager of Permitting & Compliance
-Mr. A. Buchan	Manager of Community Relations
-Ms. K. McIvor	Tenure & Permitting Coordinator

MIRAMAR HOPE BAY LTD. CONSULTANTS

-Mr. M. Rykaart	SRK Consulting Ltd.
-Mr. J. Chapman	SRK Consulting Ltd.
-Mr. N. Schmidt	Golder Associates
-Mr. G. Ash	Golder Associates
-Ms. D. Valiela	Lawson Lundell LLP

INTERVENERS:

KITIKMEOT INUIT ASSOCIATION (KIA)

-Mr. D. Havioyak	President
-Mr. G. Clark	Director of Lands, Environment and Resources
-Mr. S. Anablak	Senior Lands Officer
-Mr. K. Tweedle	Environmental Technician
-Mr. J. Donihee	Legal Counsel
-Mr. A. Peterson	Summer Student

NUNAVUT TUNNGAVIK INCORPORATED (NTI)

-Mr. G. Hakongak	Senior Advisor of Environment, Water, and Marine Management, Department Lands and Resources

KIA/NTI CONSULTANT

-Dr. M. McGurk	Rescan Environmental Services

INDIAN AND NORTHERN AFFAIRS CANADA (INAC)

-Mr. C. McLean	Director of Operations, Nunavut
-Mr. J. Rogers	Manager of Water Resources
-Mr. D. Abernethy	Water Resources Coordinator
-Mr. B. Pedersen	Resource Management Officer
-Ms. M. O'Hearn	Manager of Communications

INAC CONSULTANTS

-Mr. K. Landa	Legal Advisor
-Ms. L. Gomm	Gartner Lee Limited
-Mr. H. Hartmaier	BGC Engineering Inc.
-Ms. L. Barazzuol	MESH Environmental
-Mr. E. Yaremko	Northwest Hydraulic Consultants
-Mr. J. Brodie	Brodie Consulting Limited

ENVIRONMENT CANADA (EC)

-Mr. G. Groskopf	Mining Issue Specialist
-Ms. S. Levenson	File Lead for Presentation
-Ms. A. Wilson	Water Pollution Specialist
-Mr. D. Fox	Air Issue Specialist

DEPARTMENT OF FISHERIES AND OCEANS CANADA (DFO)

-Ms. T. Gordanier	Environmental Assessment and Major Projects
-Ms. A. Liu	Senior Habitat Biologist
-Mr. P. Savoie	Habitat Team Leader

GOVERNMENT OF NUNAVUT-DEPARTMENT OF ENVIRONMENT (GN-DOE)

-Mr. M. Atkinson	Manager of Environmental Assessment and Land Use

INTERPRETERS/TRANSLATORS:

Mary Hunt Attima Hadlari	Inuktitut Language
Edna Elias Joe Otokiak	Inunniaqtun Language
Ken Balsillie	Sound Technician
Karoline Schumann, CSR(A)	Court Reporter

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(PROCEEDINGS COMMENCED AT 9:09 A.M.)
THE CHAIR: Good morning, everyone.
MR. TILLEMAN: Good morning, Mr. Chairman. Bill Tilleman. By way of follow-up to yesterday, I can report that the exhibits are -- the numbers were marked correctly, and we're fine in that regard.

Also yesterday afternoon, there was discussion regarding Table 6.5 and 5.2, and the Proponent has some better information in those two areas, and so I would suggest, Mr. Chair, that if you turn the time over to Miramar, they can make those quick clarifications, and then away we go for the rest of the day. Thank you.

THE CHAIR: Miramar?
MR. CHAPMAN: Good morning, Mr. Chairman, John Chapman.

Mr. Hohnstein yesterday asked the question why two corrections were left out of the Table 6.5 in the line text of the submission and 5.2 in the monitoring plan. When I responded to that question, I was actually looking at the April version of the submission. In that submission, the tables were correct. In the later submission, dated June 2007, there was omission of those two parameters, that's incorrect, and the details as

stated in the April version are the correct versions. I just want to clarify that, thank you.

THE CHAIR: Bill?

MR. TILLEMAN: Thank you, Mr. Chair. Nothing further from the Staff, thank you.

THE CHAIR: Thank you. I believe the next presenter intervener is INAC.

MR. McLEAN: Good morning.

PRESENTATION BY INAC:

DAVID ABERNETHY, JAMES ROGERS, BABA PEDERSEN, CARL McLEAN, JOHN BRODIE, HOLGER HARTMAIER, LESLIE GOMM, EUGENE YAREMKO, LISA BARAZZUOL, sworn:

THE CHAIR: Thank you. INAC?

MR. McLEAN: Thank you, Mr. Chair, Board Members, the public, and everybody else. Udlakut. My name is Carl McLean, Director of Operations with Indian and Northern Affairs in the Nunavut regional office. I want to thank the Water Board for the opportunity to speak to you and to the community members here today.

With me today, we have several staff from the Nunavut regional office along with a team of consultants. To my far left here is David Abernethy, Water Resources Coordinator; and your left is Baba Pedersen, Resource Management Officer

from our Kugluktuk office; and near me in the back here, we have Maria O'Hearn, Manager of Communications; Jim Rogers, Manager of Water Resources; we have Ken Landa from Justice Canada, who is serving as our legal advisor; as well, a team of consultants who have assisted us in preparing our comments for your consideration. We have Leslie Gomm, Gartner Lee Limited; Holger Hartmaier with BGC Engineering Incorporated; Lisa Barazzuol, MESH Environmental Incorporated; Eugene Yaremko Northwest Hydraulic Consultants; and John Brodie from Brodie Consulting Limited.

Indian and Northern Affairs Canada is pleased to intervene at this Nunavut Water Board public hearing of Miramar Hope Bay Limited's Doris North Project.

The proposed gold mine is an important milestone for Nunavut because it will become the territory second in line. The Doris North Project will positively impact the residents of Nunavut and Canada as a whole through the development of socio-economic opportunities and promoting the north's mining industry.

INAC derives its regulatory mandate, responsibilities, and obligations from several pieces of legislation. These include the

Department of Indian and Northern Development Act, the DIAND Act; the Nunavut Land Claims Agreement Act; the Territorial Lands Act and Regulations; the Nunavut Waters and Nunavut Surface Rights Tribunal Act; and the Canadian Environmental Assessment Act. INAC also implements the Nunavut Mine Site Reclamation Policy.

The Doris North Project lies almost entirely on Inuit-owned land administered by the Kitikmeot Inuit Association with a marine jetty lying on Crown land administered by Indian and Northern Affairs Canada. INAC has negotiated the issuance of a land lease for the marine jetty and will enforce the instruments of land tenure for this project component.

Under the Nunavut Water and Nunavut Surface Rights Tribunal Act, INAC will also be responsible for inspecting and monitoring compliance of the water license issued by the Board. Inspectors designated by the Minister under Section 85(1) of the Act will enforce the license, terms, and conditions.

Because of INAC's broad mandate, our review team is comprised of individuals with expertise in scientific and technical training. The Nunavut regional office staff members who have accompanied

me today will monitor and enforce the terms and the conditions of the water license and the Crown land lease. We take this responsibility seriously and are ready to demonstrate our ability to manage mining projects in accordance with our Department's mandate.

INAC's review of the submitted water license application has considered the environmental assessment review previously conducted by the Nunavut Impact Review Board. The water license application and supporting information that was submitted and information provided by Miramar at the recent pre-hearing technical meeting was also an important part of our review and consideration.

INAC's review focused on those issues within its mandate, particularly water quality and quantity, surface and permafrost disturbance, waste management, and abandonment and reclamation planning. INAC did not review any third-party compensation agreements such as the Inuit Impact and Benefits Agreement and Fisheries no-net-loss plan because these are not captured by our mandate.

Further, INAC did not review those physical structures that are planned within fresh waters as part of the Fisheries Compensation Agreement but suggest that the water license include a provision

for the final plans for these structures, accompanied by the Fisheries and Oceans Canada authorization and be provided to the Nunavut Water Board before construction. The Nunavut Water Board should also request that Fisheries and Oceans Canada confirm with the Board that these structures were built to specification.

Concerns identified by INAC during the Nunavut Impact Review Board's clarified review and initial steps in the regulatory phase have been addressed to a great extent by information and commitments provided by Miramar Hope Bay Limited. The written INAC intervention highlights those issues that continue to be a concern for the department by providing rationale and context for the issues and recommended water license terms and conditions.

Time does not permit us to go through the entire intervention at this hearing, therefore, we will only touch on key issues that relate to water resources, land monitoring, and abandonment and reclamation. INAC encourages interested parties to read our written intervention if they require further details.

Several issues related to water quality and quantity have been raised by INAC through the water licensing process. We believe that Miramar Hope

Bay Limited has made a very good effort to address many aspects of our concerns. Certain details require further clarification in the short and long term to satisfy our concerns related to water quality and quantity.

Water quality: The primary objective of Miramar Hope Bay Limited's Tail Lake water management strategy is to meet the Canadian Council of Ministers of the Environment Canadian water quality guidelines for the protection of aquatic life in freshwater environments. By meeting these guidelines in the receiving environment, Miramar hopes the project will not cause any adverse effects on the aquatic life downstream. Miramar Hope Bay Limited has also stated that the concentrations of deleterious substances in the release from Tail Lake effluent will not exceed the authorized limits set out in Schedule 4 of the metal mining effluent regulations under the Fisheries Act.

Miramar has developed a water balance/water quality model to assist in the management of effluent discharge procedures. The model estimates that prior to release, water quality within Tail Lake will meet metal mining effluent regulation parameters listed concentrations. The model also

predicts that, through mixing with the Doris Creek flow, concentrations will meet the CCME guidelines at a point approximately 50 metres downstream of the Doris Creek waterfall.

As previously stated, Miramar has developed a water balance/water quality model to manage the discharge from the Doris North Project tailings containment area. Indian and Northern Affairs Canada understands that Miramar will collect climate and hydrological data through it's ongoing program. Miramar should notify the Board of its intentions for incorporating collected data into its water balance/water quality model.

Within it's June 2007 information supplement, Miramar indicated that model recalibration would only be required if the model significantly underestimates solvent concentrations in Tail Lake and is shown to potentially have significant impact on the water management strategy.

Miramar has provided that the model be re-run when any of the critical or significant parameters deviate more than 20 percent above the predicted concentrations. Indian and Northern Affairs Canada feels that this is insufficient, given that Miramar's ability to release depends highly on actual conditions. Indian and Northern Affairs

Canada would like to have greater confidence that the predicted water quality results are reflective of the actual conditions in Tail Lake.

For this reason, INAC recommends that Miramar be required to recalibrate the model every three months during operations using all available water quality, hydrology, and climate data. The results of this recalibration should then be used to evaluate the ongoing Tail Lake water management strategy and discharge schedule.

The results of this recalibration and evaluation should also be submitted in a water balance and water quality report every three months. This report should also include all calculations used to determine the allowable discharge rate. Following operations, yearly water balance and quality -- water balance and quality modelling should be reported in the annual report to the Board.

Land surface and permafrost stability: Indian and Northern Affairs Canada offers advice concerning the geotechnical and permafrost stability of physical structures associated with the proposed Doris North Project. Miramar Hope Bay Limited has addressed many of INAC's concerns related to surface and permafrost disturbance in

its water license application and through supplementary information provided at the pre-hearing technical meeting.

Indian and Northern Affairs recommends that the Board consider the following recommendations which pertain to surface permafrost disturbance when writing a water license for the Doris North Project: Number 1, assess the stability and efficiency of the north and south dams in Tail Lake.

We believe that the dams, especially the north dam, is unique, as its foundation will be marine clays left from glaciation. INAC also understands that a limited geotechnical investigation was carried out at the proposed locations for the Tail Lake north and south dams in 2006. Miramar has submitted final design plans for those dams and has agreed to conduct additional geotechnical investigations throughout their construction.

Undisturbed soil samples from the dam foundations should be subjected to laboratory testing to determine site-specific deformation parameters which could be used to confirm the design assumptions of each dam and improve future monitoring of dam stability.

Indian and Northern Affairs Canada recommends

that the license include the following conditions for Miramar to fulfill those which relate to the stability of the Tail Lake north and south dams: Undisturbed samples from the dam foundation should be obtained during construction, tested, and the information provided to the Board and interveners. Miramar should indicate to the Board if the review of the results confirm design assumptions or if modifications will be required. Modifications to the dam design should be made under the supervision of a geotechnical engineer and provided to the Nunavut Water Board and provide details of the plan and geotechnical instrumentation to monitor the performance of the dams.

Water retention will be critical to dam stability and the treatment of water quality within the tailings containment area. For this reason, Miramar must monitor for seepage at the downstream toes of the north and south dams. If seepage occurs, a geotechnical engineer should determine whether it is caused by runoff, seasonal thaw, or seepage through the dam.

Should seepage occur through the dams, mitigation manners must be implemented in a timely manner to prevent thermal erosion of the frozen cores or foundations. Therefore, INAC recommends

that Miramar design a protocol for monitoring and assessing seepage along the downstream toes of the north and south dams to identify any seepage that is originating from Tail Lake.

This information should be communicated to a geotechnical engineer, who will implement appropriate mitigation and monitoring measures. The seepage monitoring and management protocol should be incorporated into the project's monitoring and follow-up plan.

Number 2, Tail Lake shoreline protection measures: Indian and Northern Affairs Canada recommends that the Tail Lake shoreline be evaluated on a regular basis through an annual geotechnical inspection for the long-term stability of the shoreline and constructed mitigation works.

Number 3, management of demolition landfill: Materials disposed of in the project's demolition landfill should be placed in a manner which minimizes cover deformation and potential frost heaving of buried materials. INAC recommends that Miramar provide the Board with a protocol for the placement of material in the demolition landfill to minimize settlement, voids, and frost heaving of buried materials and an inventory of volumes of materials placed into the demolition landfill with

photo documentation. A schematic diagram of the proposed locations of various materials should be included within the project's abandonment and reclamation plan.

Number 4, stability of underground mine opening upon mine closure: Underground rock and permafrost temperatures will be a consideration at closure. Also some of the underground openings may not be completely backfilled at completion of mining. Therefore, INAC recommends that the mine closure and reclamation plan should include protocols for data collection to be used in the assessment of the stability of the underground and mine openings. Data should include the type and location of backfill, rock mechanics, rock and permafrost temperatures, and hydrogeologic conditions.

Miramar Hope Bay Limited has proposed the use of a landfarm facility to remediate fuel-contaminated soils. INAC supports this idea. However, the landfarm facility should be maintained and monitored to ensure that it is performing as intended. A person with experience in bioremediation should manage the facility. For instance, the addition of nutrients must be carefully managed. Overdosage or a low moisture content with an otherwise optimal dosage will

inhibit microbioactivity, and as a result, the landfarm's effectiveness in treating contaminated soils may be reduced.

Waste rock management: As proposed, Miramar Hope Bay Limited does not plan to use underground waste rock for the construction of project infrastructure, for example, for roads, building pads, lay-down areas, and dams. To ensure that only nonacid-generating rock is used, all waste rock will be brought to surface, delivered to a berm, temporary waste rock pile pad, and returned underground as space becomes available.

Indian and Northern Affairs Canada recommends that Miramar Hope Bay Limited identify all waste rock by general lithology in underground location relative to its placement in the temporary waste rock pile pad. The location of waste rock should then be tracked as it is placed back underground. This will allow for Miramar and the Nunavut Water Board to understand the type of backfill waste rock and provide a basis for investigating the cause of underground acid rock drainage should this occur.

Furthermore, all waste rock should be placed in underground and not be used for construction or left on surface either subaerially or subaqueously at closure. Any waste rock remaining on surface

after the two years of operation should be characterized for acid rock drainage and metal leaching to assess outstanding risks.

Monitoring: Miramar has agreed to provide physical descriptions of the current and future monitoring sites. INAC believes that these physical descriptions will assist in the review of the data and identification of the sites by the inspectors. The monitoring data will also be necessary to confirm impact predictions. Miramar Hope Bay Limited should continue to operate the two climate stations near Doris North to enable a better correlation between the site and Environment Canada data.

INAC feels that the data collection program could be re-evaluated after two years. However, within the water license, INAC recommends frequent monitoring of Tail Lake, including level and quality. The quality of Tail Lake should be monitored near the point of discharge, quality and quantity of effluent immediately below the point of discharge to the environment from Tail Lake, Doris Lake including level, quality, and quantity of inflow and outflow, and quantity and quality of water in Doris Creek within 50 metres below the waterfall. This data should be provided to the

Nunavut Water Board in an extractable electronic form.

In their annual report, INAC recommends that Miramar Hope Bay Limited be required to report on the changing capacity of Tail Lake, a summary of seepage monitoring below the dams, geotechnical instrumentation data to assess the performance of the dams including temperatures, geochemical monitoring including tailings, solids, tailings liquid, cyanide destruction circuit data and cyanide leach residue, waste rock storage volumes, underground and backfill temperatures, and monitoring of backfill temperature.

Miramar in their presentation has indicated that the Nunavut Water Board can consider further monitoring. However, with the two-year mine life, it would be prudent to adopt INAC's recommendation of including additional monitoring from the outset.

Abandonment and reclamation: The mine site reclamation policy for Nunavut outlines INAC's policy for the protection of the environment and the disposition of viability related to mine closures in Nunavut. Additional copies of this policy are available for distribution to the Water Board as part of our intervention.

In general, the policy is based on returning

sites to viable and, where practical, self-sustaining ecosystems. To ensure that this objective is met, reclamation cost estimates are prepared to determine security requirements. These estimates are based on the assumption that the operator has defaulted and that the site requires reclamation by a third party and assumes that land- and water-related liabilities are addressed by one mobilized contractor.

As previously stated, the Nunavut Water Board's jurisdiction is over water-related security, and the Nunavut Waters and Surface Rights Tribunal Act permits the Nunavut Water Board to require the applicant to furnish this security to the Minister of INAC.

The Kitikmeot Inuit Association has indicated that they will ask Miramar to post security over water-related issues to be held by the KIA. This would be in addition to any security requirements the Nunavut Water Board decides to place on the water license.

INAC agrees that Kitikmeot Inuit Association's request would place Miramar in the position of being overbonded on the project. However, INAC believes that in light of the statutory framework within which the Board and the Minister operate,

this is not an issue that either the Board or the Department can resolve. It is fundamentally an issue between KIA and Miramar.

That being said, it is INAC's policy and in Section 4 of our mine site reclamation policy, it's our policy that the total financial security for final reclamation required at any time during the life of the mine should be equal to the total outstanding reclamation liability for land- and water-related calculated at the beginning of the work year to be sufficient to cover the highest liability over that time period.

The mine closure and reclamation plan submitted with the revised support document is not at a level of detail that INAC considers meeting the standards for final closure. At this stage of mine development, this is to be expected. The plan is sufficiently developed for initial licensing by the Water Board.

Since Miramar Hope Bay plans to operate the Doris North mine for only two years, the interim abandonment and reclamation plan should be updated and submitted to the Nunavut Water Board for approval after six months of operation. A final abandonment and reclamation plan should be submitted to the Nunavut Water Board for approval

after 18 months of operation.

Both the interim and final plan should incorporate revisions which reflect the current status of mine development. The interim and final plan should also include more detail in several areas as identified in Section 2.14.1 of our intervention.

INAC estimates that the water-related reclamation costs for the Doris North Gold Mine, including a provision for post-closure monitoring, will be 6.12 million. This amount assumes that there is no time value discounting of the reclamation activities in the period of two to nine years after the end of mining operations.

Details on the discounting estimate are provided in the written intervention. However, due to the short mine life, the security estimates should be revised six months and then again 18 months after the start of mining operations. Furthermore, the water license should include provision for annual adjustments to the reclamation security at the Nunavut Water Board's request.

Segregation of land and water security: The Nunavut Water Board has jurisdiction over water-related security. INAC recommends that the Nunavut Water Board include the water-related

security liabilities only when determining reclamation security to be held under the water license. Based on INAC's calculations, the water-related liability will amount to 6.12 million.

The water license should include a requirement for revised estimates to be provided six months and 18 months after the start of mining operations. Furthermore, the water license should include a provision for annual adjustments for the reclamation security, including any additional security that may be required.

Any revisions to the abandonment and reclamation plan may trigger a security review under the water license. The terms and conditions in the license should reflect this. It is our view that this is required by the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

INAC recognized the difficulty in isolating land versus water liabilities. We trust that the details in our written intervention and the information I will ask John Brodie to present shortly will be helpful to the Board.

So I'll now ask John Brodie to come up just to explain to the Board and to the persons present briefly how he's calculated that.

MR. BRODIE: Mr. Chairman, my name is John Brodie. I'm going to provide a further description of the land and water segregation in support of INAC's recommendation for water-related security.

Although the segregation is somewhat subjective, it is based on a significant element of logic. In the context of this hearing, the term "waters" means inland waters, whether in a liquid or solid state, on or below the surface of the land. This definition is as per the Nunavut Water and Nunavut Surface Rights Tribunal Act. This definition forms the basis for the term "water-related security". Water related security should include those reclamation activities or portions of activities which are necessary for the protection of or restoration of waters.

By exclusion, land-related security should include the balance of the reclamation activities which are necessary to leave the site in the condition as required by the applicable regulations and as set out in the reclamation plan.

This rationale has been applied over the past several years to a number of northern mining projects totalling about $185 million of total reclamation liability. The rationale has been

applied consistently over these projects and to the INAC estimate for Doris North. Furthermore, this has been done in a transparent manner, such that all parties can see how the allocation is calculated. Specifically, in the case of the INAC estimate for Doris North, the allocation for every reclamation activity can be found in Appendix A of INAC's intervention.

In order to provide an example of the rationale for the land and water segregation and some insight into the details of INAC's recommendation for water-related security, I will describe a few of the reclamation activities for Doris North.

First one, underground mine; this will include the closing of the portal and capping of ventilation raises. These activities have no water-related aspect; therefore, these activities are deemed to be 100 percent land-related. Number 2, Tail Lake shoreline stabilization; this activity is for the protection of the land from sumping and erosion and also for the protection of the water from high sediment load; therefore, this activity is deemed to be 50 percent land and 50 percent water.

Number 3, post-closure water management; by its nature, this is primarily a water-focussed

activity, but it includes the breaching of the dam which is partially a land-related activity; therefore, this activity is deemed to be 25 percent land- and 75 percent water-related.

Finally, the estimate includes an allowance for the removal of potentially acid-generating rock. The key issue here is the protection of water from the potential effects of acid rock drainage; therefore, this activity is deemed to be 100 percent water-related.

And that includes the examples of how the land/water segregation has been prepared. Thank you.

MR. McLEAN: Thank you, John. It's Carl McLean with INAC.

Moving on to the conclusions. Overall, INAC is pleased with Miramar Hope Bay Limited's application. INAC commends Miramar Hope Bay Limited for their cooperation, professionalism, and integrity during the course of the water licensing process.

INAC is confident that Miramar Hope Bay Limited will be able to operate this gold mine in a fashion that will ensure the protection of freshwater resources and, at the same time, provide meaningful and rewarding socio-economic opportunities for

Nunavumut.

INAC looks forward to a continued and productive working relationship with Miramar Hope Bay Limited, the Nunavut Water Board, and other relevant stakeholders.

And I want to thank the Board for giving us the opportunity for making this presentation today. Koana. Thank you very much.

THE CHAIR: Thank you. We now open the questioning to INAC from Miramar.

MR. CONNELL: Mr. Chairman, before we start our questions, could we take a short 5-minute break?

THE CHAIR: Can you take 10?

MR. CONNELL: Yes, sir.

(BRIEF ADJOURNMENT)

THE CHAIR: Shall we reconvene? Questioning to INAC from Miramar.

MHBL QUESTIONS INAC:

MS. MALOOF: Thank you, Mr. Chairman. Terri Maloof.

Miramar has proposed in our water license application the criteria for the receiving environment below the waterfall in Doris Creek be based on meeting CCME guidelines for the protection of aquatic life. Does INAC agree that CCME

guidelines will be protective of aquatic life downstream of the site?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC, Mr. Chair.

Through the environmental assessment process, INAC agreed that CCME guidelines downstream were acceptable. Those guidelines are designed to be protective, but more stringent values may be required in specific circumstances, depending on the actual situation, but we, through the environmental assessment and the review, we've agreed with those guidelines.

THE CHAIR: Miramar?

MS. MALOOF: Mr. Chairman, thank you. Terri Maloof.

And we have a few other questions, and John Chapman is going to ask some questions on water quality monitoring.

THE CHAIR: Go ahead.

MR. CHAPMAN: John Chapman. Thank you, Mr. Chairman.

I have two questions. The first question I'd like to ask is in the presentation by Miramar Hope Bay Limited yesterday, a strategy was proposed for running the water and load balance on a monthly

basis and to recalibrate the model based on certain criteria. Does INAC agree with this approach?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC.

I'll ask our experts in this field, Eugene Yaremko and Leslie, to answer that question.

MS. GOMM: Leslie Gomm, Mr. Chair.

INAC feels that, in addition to the proposed strategy that you put forward, that they would like to see more frequent calibration based on a time-based period rather than just the triggers to provide a level of confidence that the model does and can accurately predict what is happening in the lake since the model is being used as a forecasting tool.

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

If I can just expand on that. Would INAC agree that, if there is no significant difference between the actual and predicted values, that there is no need to recalibrate the model?

THE CHAIR: INAC?

MS. GOMM: Leslie Gomm, Mr. Chair.

That is true, but it depends on the definition

of significant, and that varies depending on low flow. So in one of your scenarios, a 40 percent difference is deemed acceptable, and with a model that is 40 percent off what reality is, can -- we need to be -- INAC feels it would like to have more information to have a confidence that a model that could potentially be off by 40 percent can still accurately be used to -- for future forecasting.

THE CHAIR: Miramar?

MR. CHAPMAN: John Chapman, Mr. Chairman.

That actually leads into my next question, and that relates to the criteria that were proposed yesterday, which included an elevation difference of .1 metre as proposed by INAC for the change in the water elevation, and then the water quality at a minimum of 20 percent for low flow conditions based on the controlling parameter, which in most cases is copper, and that the trigger value may be higher for high-flow conditions. If the minimum is set at 20 percent, would that be agreeable to INAC?

THE CHAIR: INAC?

MS. GOMM: I think in addition to setting the 20 percent, I think INAC would -- as a minimum, would like to see recalibration of the model at the end of each discharge period. In

summary, we would like to see quarterly reporting of the status of the results of the model compared to the actual field data in March, June, September, and December. In June, prior to any discharge, in addition to this report comparing the results, we'd also like to see a discussion and a proposed discharge strategy for that discharge season. And then a September report in addition to the comparison and discussion of discrepancies, we would like to see a recalibration based on that entire -- on that season's discharge period.

It is during the open-water season where you are discharging and you have a lot more activity going on that there could be significant variations, and that would allow for, you know, at least a guaranteed annual recalibration of the model based on real site conditions after the period of discharge.

THE CHAIR: Miramar?

MR. CHAPMAN: John Chapman. Thank you, Mr. Chairman.

I will now hand it over to Mr. Connell to ask the remaining questions.

MR. CONNELL: Thank you, Mr. Chairman.

I have a series of questions dealing with the recommendations with regard to placing waste rock

underground.

The first question, in the presentation, INAC made the recommendation that underground waste rock placed on the temporary stockpile should be tracked by lithology as it's placed underground as backfill. Can you describe how INAC would see this being implemented?

THE CHAIR: INAC?

MR. McLEAN: Carl McLean with INAC.

I'll ask Lisa from MESH Environmental to answer that question.

MS. BARAZZUOL: Thank you, Mr. Chair. Lisa Barazzuol. Larry, can you please, or Mr. Chair, can the question please be repeated?

THE CHAIR: Go ahead.

MR. CONNELL: Thank you, Mr. Chairman. Larry Connell.

The question was in your presentation, INAC made the recommendation that underground waste rock placed on the temporary stockpile should be tracked by lithology as it is placed underground as backfill. Can you describe how INAC would see this being implemented?

THE CHAIR: INAC?

MS. BARAZZUOL: Thank you, Mr. Chair. Lisa Barazzuol.

There would -- as the -- it's mining, there should be a control over general lithology and location of the rock, and then this would be placed on the pad accordingly, such that characterization could be conducted if necessary.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Larry Connell.

In that case, does INAC see that the waste rock moving to surface would have to be segregated into different piles by the rock type, and if so, how many piles do you envision?

THE CHAIR: INAC?

MS. BARAZZUOL: Thank you, Mr. Chair. Lisa Barazzuol.

I don't have a particular number of envisioned piles. That would be according to the geology of the underground.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. It's Larry Connell.

The current stockpile area was not designed for multiple piles. It doesn't have the capacity space for a lot of piles. We would be able to accommodate segregation, say the ramp development rock, from the mineralized material without having

to increase the footprint of this stockpile area, but if we try to segregate it into a series of multiple piles, we're going to need to increase the stockpile area from that currently that was covered or proposed in the environmental assessment and water licensing process. Would segregation of the mineralized waste rock that comes from areas immediately adjacent to the ore body from the nonmineralized ramp development rock, i.e., creating two piles, satisfy INAC's recommendation?

THE CHAIR: INAC?

MS. BARAZZUOL: Thank you, Mr. Chair. Lisa Barazzuol.

Yes, you presented that yesterday in the table, and it would be acceptable to separate nonmineralized from mineralized, but in addition to that, you had proposed that portal rock, which is defined as unmineralized in your -- in the table yesterday, could then also be segregated according to lithology and location; is that correct?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Larry Connell.

Yes, what we meant by the portal rock I'm referring to is unmineralized rocks. I'm putting it into that category. So basically two

categories: The rock that's coming from close to the ore zone, so mineralized, and that that's away from the ore zone that's outside mineralized rock. So it is two.

THE CHAIR: INAC?

MS. BARAZZUOL: But in addition to the segregation between the mineralized and unmineralized, there was a proposal here to -- for the portal rock, sort that by lithology.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Larry Connell.

No, I think there's some misunderstanding there. The segregation we're talking about is to segregate that portal rock as part of this nonmineralized rock, that's the development rock going into the ramp being separated away from the mineralized rock as we get close to the ore body, so just two categories of segregation.

THE CHAIR: INAC?

MS. BARAZZUOL: Thank you, Mr. Chair. Lisa Barazzuol.

I'm just going to, if I can, refer to the table that was printed and provided last night so that I can verify what I thought was correct.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.
I'll just wait for her to get an opportunity to look it up.
MS. BARAZZUOL: Mr. Chair, Lisa Barazzuol.
INAC would find it acceptable to separate the mineralized and unmineralized rock, unmineralized being the portal rock, into two separate piles.
THE CHAIR: Miramar?
MR. CONNELL: Thank you, Mr. Chairman. Thank you.
Just a last point on that, we're going to be placing all of this waste rock back into the underground mine, and if we were to monitor it by lithology, we would actually then be doing seepage monitoring to ensure that we note any bad quality seepage that would come from it.
If we were to, in a larger scale, try to document where it's going by lithology, how would the Water Board use that information to regulate the license?
THE CHAIR: INAC?
MS. BARAZZUOL: Mr. Chair, Lisa Barazzuol.
If ARD were to arise in the underground, this information would aid us in understanding that acid

rock drainage if it was placed by lithology.
THE CHAIR: Miramar?
MR. CONNELL: Thank you, Mr. Chairman.
I'm going to pass on the line of questioning to Terri Maloof. We're going to move on to reclamation, security, and bonding issues.
THE CHAIR: Go ahead.
MS. MALOOF: Mr. Chairman, thank you. Terri Maloof.
I just have two questions. Miramar feels that the separation of land and water reclamation liability is problematic. For example, in the INAC presentation, Mr. Brodie provided an example with respect to pad rock left on surface. And he indicated that drainage from the pad rock would affect water, and that this should be considered water-only reclamation related liability.
Does INAC not agree that bad drainage from such pad rock would also have a negative effect on land and, thus, should not be -- should not part of this liability be assigned to land?
THE CHAIR: INAC?
MR. BRODIE: Mr. Chairman, John Brodie.
In the description that I provided to you a short while ago, a point that I perhaps overlooked

was that the segregation that has been done has been in increments of 25 percent; in other words, activities are assigned a hundred percent land, 75 percent land, 50 percent land, 25 percent land, or zero percent land, and then the offset being to water.

There has not been an attempt in INAC's efforts to date to be more refined than this. And in the context of the question, one could see that there are other elements or say smaller fractions that might be land- or water-related.

For example, an area that is to be re-vegetated, in the work by INAC, this has typically been assigned a hundred percent land-related activity, although one could certainly argue that re-vegetation would have an element of erosion control, which would be of benefit to waters. So the point here is that this is -- there is a small benefit, perhaps, to water, but that activity is normally assigned a hundred percent land.

In contrast to that, the management of chemicals and hazardous materials at closure is typically assigned as a hundred percent water-related, although if these materials or reclamation activities were not addressed and there

was a spill, one could argue that some of that consequence would arise to the land as opposed to the waters that would be affected.

And the thinking has been that the greater potential environmental impact in the case of chemicals would in most cases accrue to the waters where the chemicals would drain to; therefore, the activity has been assigned 100 percent of water.

So the point here is that there's not been an attempt to be more refined than those increments on this kind of thinking. I hope that answers the question, provides some background to the rationale or approach that's been taken.

THE CHAIR: Miramar?

MS. MALOOF: Thank you, Mr. Chairman. Terri Maloof.

I have one further question. In today's presentation, INAC had indicated that the issue of overbonding is an issue between KIA and Miramar. We disagree with this, and we feel that INAC could be providing a leadership role in view of reclamation policy and how security could be jointly held and administered on Inuit-owned lands.

So my question is if the KIA were to agree that INAC can hold the full reclamation security for the project, would INAC be willing to provide KIA with

indemnity against liability resulting from Miramar's activity on Inuit-owned lands?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean, INAC.

For these proceedings, our mandate is the Nunavut Waters and Surface Rights Tribunal Act. That Act does not allow the Minister to hold land-related security. The Act states that the Nunavut Water Board will set the water-related security, and that security will be held in a form acceptable to the Minister, and so that's the legislation we're dealing with. The legislation does not allow the Minister to hold land-related security, and that's the reality we're dealing with.

THE CHAIR: Miramar?

MS. MALOOF: Thank you. Could we just have one moment for us to caucus. Terri Maloof. Thank you, Mr. Chairman. Terri Maloof. I just have one further question.

Could it not be that INAC could take a leadership role in this situation with respect to overbonding and, like to the Boston security precedent, hold security for both land and water jointly with KIA?

THE CHAIR: INAC?

MR. McLEAN: INAC's mine site reclamation policy, and I'm not sure that in our presentation -- or in our presentation today states that we try to cooperate with all the regulators and -- that are involved in liability and financial security, holding financial security, to avoid the double bonding.

However, we're restricted by what the legislation says. The legislation says that for water-related security, it must be payable to the Receiver General. In the Boston situation, that is a concern for us, and we'll continue discussions with the Board on that file. That security is not being held right now by the Receiver General. It's paid jointly, and it's being held actually by a third party.

With the Nunavut Waters Act and our policy, water-related security is required to be held by the Minister and be in the name of the Receiver General. So that's the restrictions we're working under.

MS. MALOOF: Thank you.

THE CHAIR: Any more questions?

MS. MALOOF: Mr. Chairman, no more questions.

THE CHAIR: Next we have KIA

questions to INAC.
KIA QUESTIONS INAC:
MR. DONIHEE: Thank you, Mr. Chairman. My name is John Donihee. I'm counsel for the Kitikmeot Inuit Association. I have some questions for INAC.
THE CHAIR: Go ahead.
MR. DONIHEE: Thank you, sir. John Donihee.
My first question -- the questions relate to this issue of security and double bonding. The first question relates to the risk that KIA may bear in -- if this mine is approved and it goes forward into construction and operation on Inuit-owned lands.
So the question really is does INAC agree that, under the terms of the legislation, that if the security provided by the company were inadequate, that the Government, the Crown, could come back and ask KIA or Inuit, because NTI is a landowner as well, to top up if there were a shortfall in the funds required to clean up the site after the development?
THE CHAIR: INAC?
MR. McLEAN: It's Carl McLean, INAC.
Can I just ask for a little more context? Is

your question in the context of default by the company and them having to use the security to go back and clean up the land?

THE CHAIR: KIA?

MR. DONIHEE: John Donihee. Thank you, sir.

Yes, that's correct. You've -- I think your numbers, round numbers, indicate about $12 million in overall liability, and you're suggesting that the Board should take approximately $6 million for water-related security only. So what I'm suggesting is that would leave KIA, if there were no double bonding, with the other 6 million for land.

And what I want you to focus on is the water part and assume that if KIA used up its 6 million for the land-related concerns and the 6 million taken for water-related concerns were not adequate, then I suggest to you that the Government of Canada could come back to the Inuit landowners and require them to pay for the difference between the 6 million water-related that was taken and the actual cost of the cleanup if it were more. Do you agree with that?

THE CHAIR: INAC?

MR. McLEAN: Carl McLean with INAC.

You know, the calculation of reclamation security is ahead of the reclamation and closure, and it's a moving target. Like it depends on the site-specific situation at the time.

KIA has used their best guess at what that number is. We've used our best guess. The good thing about it, I think, is that our total number for land and water is pretty close.

And, you know, in the case of default by the company and the jurisdictions have to go in and reclaim using security, at the time, we would certainly hope to be able to cooperate with the KIA and if there's other jurisdictions involved to conduct the reclamation project as one project using the same contractor because our estimate is based on one mobilization and reclaiming as one project. Like right now this is our best guess on what that number is.

As a landowner, there is some responsibility, and as a regulator, there is some responsibility that goes with that, I would think. And, you know, I wouldn't rule out us having to come back to the KIA. In the end, it's probably an option that the Minister would have, but whether it would happen or not, I don't want to speculate.

I would hope that the KIA agrees that, you

know, the most effective way to reclaim a project like Doris North that has multi-jurisdictions is to do it cooperatively and try to find a way to manage it as one project together, and that would be my recommendation to do if -- hopefully it doesn't come to that, but if it does come to that, that's what we'd do.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman.

Mr. McLean, if I can summarize your answer, it's yes?

THE CHAIR: INAC?

MR. McLEAN: I'd like everybody to consider my answer was related to the context I gave.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

I don't want to take too long with this, Mr. McLean, but it seems and KIA, of course, agrees entirely with your suggestion that the, you know, the abandonment and reclamation of the project should be handled as one activity in a collaborative way, of course. KIA would want to ensure the best possible cleanup of any Inuit lands affected by development, and so, you know, I'm not

quibbling with that part of your answer. In fact, you know, I agree. For what it's worth, I agree with it.

But I do want to have you help the Board to understand, you know, your Department is responsible for the administration of the Nunavut Waters and Nunavut Surface Rights Tribunal Act, and it's important for the Board to be able to understand that at the end of the day, if the security that is held by Her Majesty the Queen through your Minister is not -- for water-related matters is not sufficient to cover all the costs, that there is some risk that KIA or NTI, as the collective landowners could be required to pay the difference. Now, is that a fair way to express it, sir?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC.

I think it's fair to say that there's risk on both sides. We're taking some risk in case there's not enough land-related security held, and vice versa, KIA is taking that same sort of risk if there's not enough water-related.

I think the risk goes both ways, but you know, we're comfortable in saying that we'll do our best

to ensure that overall there's a hundred percent security held by the jurisdictions to the best estimate that we have to date.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

I'm going to leave that point there. I want then to ask Mr. McLean a little bit about the issue of land and water splits.

And Miramar's presentation to the Board yesterday, and I'm looking at Slide 103, they say that reclamation activities can't be separated between land and water because they're interrelated and that, you know, there could be inefficiencies resulting from trying to make that split. So that's -- that's the theme that I want to explore with you.

And if you have their PowerPoint presentation booklet, you might have a look at page 53 where there is Slide Number 106 that I want to ask you a question or two about.

And I understand that that slide is a division of land- and water-related security where Miramar took -- they laid out the INAC estimates, which you developed or your consultants developed based on your RECLAIM model, and then in the right hand of

the table, they set out their estimates based on their experts' and consultants' application of the RECLAIM model. So what we have here is a table, which shows two different results from the application of the same model, and I wonder if you could explain or give us your suggestions as to why these numbers in these comparisons are so different.

THE CHAIR: INAC?

MR. BRODIE: Mr. Chairman, John Brodie.

There's two parts to our response on this. The first is that other than the table that we have here in Miramar's presentation, we have no background or detail as to how they have determined their allocation of land- and water-related liability.

The second point is that when we look at the two estimates, we see that there are some significant differences in terms of where in the estimate various costs have been applied. For example, in the INAC estimate, we note that the tailings estimated liability is about $1.2 million, and in the Miramar estimate for tailings, it's about 2.5 million. So it would be very difficult, without going through the two estimates on a very

rigorous line-by-line basis, to determine where these differences arise from.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

Thank you, Mr. Brodie. I actually am not wanting to lead you into a debate about any individual number.

Let me put it to you this way: It seems to me that using the same model, qualified professional engineers looking at this project and asking the question of, you know, how to segregate land and water liability can come up to very different answers. And I suggest to you that if -- that Section 106 -- pardon me, Slide 106 in that presentation from Miramar is proof of that fact. Is that fair, that, you know, there's a degree of subjectivity involved in the application of these principles in separating land and water liability?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC.

In our intervention and our presentation, our intervention includes the calculations that Mr. Brodie used to come up with the security amount. As he indicated, we have not seen the

detail that Miramar Hope Bay used for the numbers they've shown, and without seeing that detail, it's difficult to answer your question.

I can say that, and we mentioned it in our presentation, that the methodology used in our calculation is the same methodology used in many projects across the north using RECLAIM model that's been accepted for those projects, so we didn't use any different methodology in this case than we have in the past.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

Well, Mr. McLean, at least I hope you'll agree with me that the analysis done by INAC and Miramar came out to very different numbers for the land/water split; would you agree with that?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC.

Yes.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, sir. John Donihee.

I do want to explore this idea about other projects. I think Mr. Brodie quoted a number of

around $185 million worth of security for other projects where the RECLAIM model has been applied, and he didn't actually mention the names of any of these projects. Can you tell us what -- and actually the only ones I'm really interested in are mines, so which mines are included in that $185 million?

THE CHAIR: INAC?

MR. BRODIE: Mr. Chairman, John Brodie.

The other projects that form that approximate 185 million, which was the total of land- and water-related liabilities, include the Snap Lake Diamond Mine Project, the Tahera Diamond Mine Project, and the Diavik Diamond Mine Project.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

Snap Lake and Diavik, of course, are in the Northwest Territories, and they're not on aboriginal land. And in the Tahera case, the land-related and water-related securities were split; is that correct?

THE CHAIR: INAC?

MR. BRODIE: John Brodie, Mr. Chairman.

That is correct; however, in the course of preparing estimates on the Diavik and Snap Lake Projects, INAC required a segregation of the liability into land- and water-related estimates.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

That's correct, Mr. Brodie, but in both of those cases, my understanding is that DIAND is the landowner and that there's a Crown surface lease as well as a water license; there's no aboriginal land involved, and it's really just a matter in those cases of deciding which DIAND pocket the money is going to go into; isn't that correct?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC.

In those instances, if there's Crown land involved, INAC would collect security for the land-related liability under their land lease. For water-related security liabilities, the Water Board would set the amount, and INAC would hold that security under the water license. I would think, I'm not too familiar with those securities in detail, but I would think that they would be both in the name of the Receiver General.

THE CHAIR: KIA?
MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

Mr. McLean, my point is really just that the $185 million that you've referred to doesn't really include, with the exception of Tahera, doesn't include situations where any of the Water Boards have had to deal with a private Aboriginal landowner and where the issue of double bonding, which has arisen here, has been a problem in the hearing; isn't that correct?

THE CHAIR: INAC?
MR. McLEAN: It's Carl McLean with INAC.

I'm not familiar with the proceedings that happened for those two mines in the Northwest Territories. Because John worked on those projects also, he was able to come up with the numbers that he did and the explanation, but what actually was discussed in the proceeding I'm not familiar with that, so I can't answer that question.

THE CHAIR: KIA?
MR. DONIHEE: Thank you, Mr. Chairman. Thanks, Mr. McLean, I'll leave that point there.

In Mr. Brodie's presentation earlier, he made -- he provided several examples to the Board,

and I tried to write them down as we went, but one of them dealt with shoreline protection, which he said was deemed to be 50 percent water and 50 percent land. The last one dealt with the potential for, I think, acid rock drainage, producing rock, which he deemed to be a hundred percent water. There was a third one that was 75 percent/25 percent split. I confess that I didn't catch what that one was about, but that's really not what I'm after here. I guess my question is who does this deeming? You know, what do you mean when you say it's deemed to be 50 percent water and 50 percent land? How do you do that deeming?

THE CHAIR: INAC?

MR. BRODIE: Mr. Chairman, John Brodie.

In the allocation, the, quote, deeming was done by myself, and the purpose was for answering the question of total land- and water-related liability, and that's really provided to aid INAC and the Board in making their decisions as to what the allocation should be.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chair. John Donihee.

Let me suggest then that -- I just want to

confirm then that the nature of the exercise that you undertook was to do an analysis of the cost of the abandonment and reclamation for this project and specifically then to segregate those costs into land- and water-related liability; is that correct?

THE CHAIR: INAC?

MR. BRODIE: John Brodie.

That's correct, the task was to, first, determine the total reclamation liability for the site, and then as a second step was to provide an opinion as to what the allocation of that might be into land- and water-related elements.

THE CHAIR: KIA?

MR. DONIHEE: Mr. Brodie, could you tell us whether -- you're very familiar, of course, you do this work for DIAND all the time, and you know that in this instance, the project is on IOL, and so I want to and I think I have to ask you whether the fact that you knew that DIAND would hold the water-related security had any effect on the way that you did your deeming.

THE CHAIR: INAC?

MR. BRODIE: John Brodie, Mr. Chairman.

I believe that if I was working on behalf of the KIA and was asked to do the same exercise that

I would have come to the same relative allocation.
THE CHAIR: KIA?
MR. DONIHEE: Thank you, Mr. Chairman.
I have a couple of questions that relate to the DIAND policy. This is -- what I'm referring to is the mine reclamation policy for Nunavut, which was published in 2002, I believe.
The issue that arises here and in this hearing, of course, is overbonding problem or potential overbonding problem because of the existence of liability for the Inuit on their IOL.
And I want to ask whether the DIAND -- when the DIAND policy was developed, whether there was specific consideration given to working out the issues that might arise in cases like this where you have a mine being developed on IOL. So was that something that was, you know, explicitly considered by the Department when this policy was developed?
THE CHAIR: INAC? If you feel you need more time to answer a question, don't hesitate to ask for a recess.
MR. McLEAN: It's Carl McLean with INAC.
Specifically I don't know a hundred percent for sure whether specifically IOL was, but I can't

imagine that it wasn't because the land claim would have been negotiated, and it was part of the record by then, so I would -- you know, my best answer is that because the land claim was there at the time of the development of the policy, then yes, it was considered.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

The policy calls for total liability for a mining project to be covered or secured -- covered by security, by financial security, and you know, your approach to -- your Department's approach, and Mr. Brodie indicated this is your approach, in applying RECLAIM in this case is to consider one single mobilization to the site to clear it all up -- clean it all up, sorry, and as well, you've indicated that you'd want to do it collaboratively, and of course, KIA would agree with that, but the problem I have, Mr. McLean, is that the way that the Department is interpreting the Board's jurisdiction seems to be inconsistent with the policy, because what you're saying to the Board is, you can only deal with the water-related part of this, and that's obviously, depending on whose split we take, half or less than half of the total

liability. And so you seem to be -- the approach you're taking here seems to be inconsistent with the policy that talks about looking at the whole project. Is that fair?

THE CHAIR: INAC?

MR. McLEAN: Can you ask your question again, please?

THE CHAIR: KIA?

MR. DONIHEE: Sorry, Mr. Chairman. John Donihee. I'm not sure I can do that again.

It seems that the policy calls for an approach to a mining development -- clean up of a mining development project in its entirety, holistic, I guess, if you like that kind of language. You know, you look at the whole thing; you mobilize to the site once; you collaborate to take care of it.

And I guess what I'm saying is that in taking a narrow view of the role that the Board can play in all of this, that it seems that you're being inconsistent with the policy. The Board's role, of course, is to assess security, and you're telling the Board they can only assess security for water.

Why would you have a policy that talks about dealing with a whole project and then turn around and tell the only regulatory agency, you know, with responsibility for this that they can only look at

part of it?
THE CHAIR: INAC?
MR. McLEAN: Thank you, Mr. Chair. Carl McLean with INAC.

I don't think what we're saying in our intervention and what we said today is in contravention with the policy. Our policy is to ensure that all the jurisdictions hold 100 percent reclamation security at any time during the life of the mine. That's to protect all the jurisdictions in the event of default.

So I think what we're recommending to the Board is that under the water license that they recommend the water-related security be, in our case, we're recommending 6.12 million. And the legislation we're working under says that that security would be held by the Crown.

If we did have a land lease, which we do in this case, for the jetty, we're collecting the security related to that jetty under that land lease. And to be consistent with our policy, I would hope that the KIA would collect the remaining amount of that 100 percent to ensure that the project is secured at 100 percent at any time during the life of the mine.

And we're suggesting that that reclamation plan

and closure plan be reviewed, first of all, in six months for several purposes. One is related to security and one is related to make sure that the plan is accurate, and again in 18 months for those two same reasons. So I don't believe what we're suggesting is inconsistent with our policy.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

Mr. McLean, you're, on top of being a chief spokesperson for your Department today, you're the Director of Operations for INAC in the Nunavut region. I understand that inspection and enforcement staff, you know, that that's part of your responsibility in the Department, that those folks report up the line to you; is that correct?

THE CHAIR: INAC?

MR. McLEAN: They're not direct reports to me, but they report up the line to a manager, who is my direct report, yes.

THE CHAIR: KIA?

MR. DONIHEE: And, Mr. McLean, do you hold or have you ever held an appointment as an inspector under the waters legislation?

THE CHAIR: INAC?

MR. McLEAN: No. It's Carl McLean.

THE CHAIR: KIA?
MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.
Are you generally familiar with the Nunavut Waters Act, Mr. McLean?
THE CHAIR: INAC?
MR. McLEAN: It's Carl McLean, INAC.
Yes, generally I am, yes.
THE CHAIR: KIA?
MR. DONIHEE: Thank you, sir. John Donihee.
Mr. McLean, Section 4 of the Nunavut Waters Act defines something called the appurtenant undertaking. I'm going to read that definition to you. You can check it with your counsel later, but I'm pretty sure I wrote it down exactly as it is in the Act. It says: (As Read)

> An appurtenant undertaking is an undertaking in relation to which a use of waters or a deposit of waste is permitted by a license.

And so, sir, I'm not asking you for a legal opinion, just your understanding as Director of Operations, isn't the appurtenant undertaking in this case the Doris North Mine?
THE CHAIR: INAC?

MR. McLEAN: Yes, that's the application we're dealing with, yes.
THE CHAIR: KIA?
MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.
Mr. McLean, my reading of the Act says that the Board has the authority to take security in relation to the appurtenant undertaking. Wouldn't that mean the mine?
THE CHAIR: INAC?
MR. LANDA: Mr. Chair, respectfully to Mr. Donihee, I don't think it's appropriate to cross-examine a witness on the law, and we're getting quite close to that. There may be a better way of getting at these issues, perhaps through written submissions at some point to the Board.
THE CHAIR: KIA?
MR. DONIHEE: Thank you, Mr. Chairman. It's John Donihee. We'll certainly get to it in argument before the end of the day, so I'll leave it at that for the moment.
Last question, I think, Mr. McLean, Miramar asked you whether INAC wouldn't take a leadership role in trying to do something about this double-bonding problem that's arisen here, and they asked you specifically about whether or not INAC

would accept an indemnity, and your answer seemed to be that the -- well, you didn't really -- I don't think -- I didn't hear you answer the question about the indemnity very clearly, but the substance of your answer seemed to be that the Act didn't allow the Board to take land-related security.

And so I guess I'll simply leave it with you, sir, that if the Act allows the Board to take security in relation to the appurtenant undertaking, you know, would you have any cause to reconsider your answer in light of our exploration, I guess, of that definition?

THE CHAIR: INAC?

MR. McLEAN: It's our opinion that the security provisions in the Act, you know, stand alone on what that can apply to, so I think it's pretty clear in both the Act and the regulation.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee.

Mr. McLean, Miramar says that INAC, your Department, and KIA should work out this security problem and that they shouldn't be stuck with it and have to pay more than is fair, more than is required. INAC has said in its presentation that

the problem is for KIA and Miramar to work out. And KIA in its presentation said that they had tried to work with INAC and the company, but that in light of their responsibilities to Inuit beneficiaries of the land claim, you know, they had to take the position that they have.

You know, left this way, it seems that the mess ends up in the Board's lap, and that's an unfortunate situation indeed. I'm wondering whether INAC can offer anything beyond what you already have as a means to try to resolve this problem and to assist the Board. Do you have any other ideas about how we might approach this in order to resolve the problem and to further assist the Board?

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC.

You know, as we stated in our intervention and presentation, legislation gives the Board jurisdiction over water-related liabilities and to set that security amount.

Our policy, the Nunavut Mine Site Reclamation Policy, you know, suggests that where at all possible, the issue of double bonding be avoided. You know, that's to be fair to the -- to, in this

case, Miramar.

INAC has come forward with a water-related amount. We don't have any say in how much the KIA asks for under their land lease, and by all indications, it appears that the amount that KIA is saying they would need to secure under the land lease includes the whole amount, both water and land. So like we don't really have any control over what the -- whether the KIA will ask for water-related security in addition to the land-related security. That's the choice KIA has made.

I will put forward that I recognize that we did have several discussions with the KIA on this project on how we might be able to work together to avoid the double-bonding issue. We haven't been successful to date. For Jericho, we were successful, and so I'm not sure why it's been different in this case.

You know, our policy says that, to be fair to the Proponent, we should work towards avoiding double bonding, and that's what we've done. We're recommending a water-related amount. We've come up with an estimate that's very close to what the KIA and Miramar has come up with for the total amount. There is differences in the split, but you know, to

the best of our opinion, the number we've come forward for water-related is the amount we're suggesting under the water license. It's the Board's decision in the end to set the water-related amount under the water leases.

Like we've provided as much evidence as we have to back up our intervention and the numbers we're coming up with. You know, that's the best we can do in this hearing procession.

THE CHAIR: KIA?

MR. DONIHEE: Thank you, Mr. Chairman. Those are my questions.

MR. McLEAN: I have to take a washroom break, so if we can just maybe have 5 minutes?

THE CHAIR: You have a choice between 5 and 10.

MR. McLEAN: That's your choice, Mr. Chair.

THE CHAIR: You have the benefit.

(BRIEF ADJOURNMENT)

THE CHAIR: Shall we reconvene. Next we have Environment Canada.

MS. LEVENSON: Thank you, Mr. Chair. On behalf of Environment Canada, Savanna Levenson. We have no questions. Thank you.

THE CHAIR: Thank you. DFO?

MS. GORDANIER: Thank you, Mr. Chairman. Tania Gordanier with Fisheries and Oceans Canada. We have no questions for INAC at this time. Thank you.

THE CHAIR: Thank you. GN?

MR. ATKINSON: Thank you, Mr. Chair. Mike Atkinson, Government of Nunavut. We have no questions.

THE CHAIR: Thank you. Staff?

NWB STAFF QUESTION INAC:

MR. TILLEMAN: Thank you, Mr. Chair. It's Bill Tilleman.

And I guess we do have a question or two, and the first one would be that on this issue of security. We've heard about the Board's previous decision in Boston and also about the Board's previous decision in Tahera. We've also heard about previous Land and Water Board decisions in Snap Lake and Diavik.

And so on that point, I would want to ask any of the parties if they would object then if the Board refers to those previous -- it's own previous decisions or, in fact, to portions of the water licenses in other jurisdictions dealing with the amount of security.

Now, we can either file those as exhibits, some

we have, like the Board's own license and reasons, and they're a matter of the public record, in any event, or you, whenever we find them, and if the Board, in its deliberations and reasons, wishes to refer to them, just refers to those licenses on this point.

So I'm asking the parties if there is any objection to that and for any comments on that, and that's the first question that I would have.

So, Mr. Chair, then, I would suggest if you just ask the Applicant and everybody else if they would object to that.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Larry Connell.

No, Miramar would have no objections to that.

THE CHAIR: Thank you. Any others? INAC?

MR. McLEAN: It's Carl McLean with INAC.

You know, it's certainly the Board's prerogative on what information they want to use in assisting them in making a decision on this project.

We would like to stress that it's important to recognize the different jurisdictions, different

legislation that the different jurisdictions use, and the time period that those decisions were made. So that's all we'd like to say on that.

THE CHAIR: INAC?

MR. McLEAN: And I was just reminded that my memory is short and that I was also going to say that the Board should also focus on the evidence that was presented at this hearing.

THE CHAIR: Thank you. KIA?

MR. DONIHEE: Mr. Chairman, John Donihee on behalf of KIA.

We have no objection at all, and it's our view that the Board can have recourse to any information that's found on the Water Register. So in my view, you know, that includes not just the reasons that the water licenses themselves and the reasons for decision in those cases but the evidence that was filed in those proceedings as well. So all of that's on the public record, and all of that ought to be available to the Board to assist it in making a decision.

THE CHAIR: Thank you. Any others? Staff?

MR. TILLEMAN: So thank you, Mr. Chair, so since no one else stood up and have objected, I'm assuming that everyone agrees that the Board

can use or rely on those decisions. And I would also like to stress and thank Mr. Donihee for elaborating on the record that does include evidence as well.

So that being the case then, unless anyone objects to that, the Board may look back and reflect on this issue in other licenses and proceedings before it or other licenses in other jurisdictions, for what that may be worth. I think it should be clear and obvious that the Board would rely primarily on the evidence in this proceeding.

Mr. Chair, on the matter of filing, I would suggest if we can find the mine reclamation policy of 2002 that we file and mark it. I realize it's in the public domain, but it's a matter that's simple to do and easy to do. And Dionne can, if she doesn't mind, help me with the numbers, not only for that but INAC's evidence, and we'll file it and mark it.

My mind though is carried to the importance of the exchanges that we just heard between KIA and INAC primarily, and I do strongly suggest in closings that the Board is briefed on this, and perhaps, if that's not enough time, that the Board may need the benefit of a written brief on the issues that have just been addressed.

As Mr. McLean's lawyer suggested, he not give legal opinions, and that was correct advice. It's nevertheless important for the definitions in the Act, as Mr. Donihee pointed out, also the regulations and any precedent that are on point, including the Board's own previous decisions, be elaborated on in closing. So I would encourage all of those parties to give the Board a strong closing on that point, and if necessary, it's up to the Board to seek additional submissions on those points.

Because if the position of the applicant and KIA is correct, then the reasons of the Board on those same points in previous decisions where the Board used the holistic approach resulting in a global amount and rejecting the admittedly difficult land/water split would on principle be reversed.

The Board's not bound by its decisions probably in a way that a court is bound by higher courts, and you need to call it the way you see it, but to be honest and candid, the Board has addressed those matters and written on them previously.

The Board has also addressed the matter of double-dipping previously, and my recollection is the Board has never been in favour of that.

Ultimately, Mr. Chairman and Members, it's your call. I just would like to ensure that these issues are thoroughly canvassed before the Board, and then the Board can decide what to do about it.

Not to put INAC on the spot, but if they feel so strongly about their position at the end of the day, that they, if the Board followed its previous precedents, that they would intend to advise the Minister to reject the license or take the matter to court. If they have those reflections, that might be nice to have on the record as well, for what that might be worth. And those are my thoughts.

I don't think the Staff have any other comments. I was wrong; just a couple of questions.

THE CHAIR: Go ahead.

MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.

Just a couple technical questions with respect to some of the items that were brought up by INAC. With respect to the cost closure estimate that was provided, the estimate that was provided by Mr. Brodie for INAC utilized a -- with respect to the long-term, post-closure costs, Miramar had utilized a $26,000 per year for 200 years. It has now been changed to 5,000 per year in INAC's

reclamation cost, and we were just looking for the reason for this reduction from the Miramar estimate.

THE CHAIR: INAC?

MR. BRODIE: Mr. Chairman, John Brodie.

This was an item that stemmed, in part, from the approach I took in developing the estimate on behalf of INAC.

Very briefly, I reviewed the Miramar estimate, and where I found the quantities of work, the reclamation activities, or the unit costs to be appropriate, I incorporated those into the estimate that I prepared.

Where I had concerns about either the scope of work, the quantities, or the unit costs, I prepared my own estimates or my own figures for those, and this is one of those items.

And in Miramar's estimate, they had considered the possibility of some long term, in other words, activities beyond the end of the extended water treatment period, reclamation activities for a period extending up to, I believe, it was 200 years.

And in reviewing the closure plan and the anticipated configuration of the mine site at the

end of mining, I had difficulty seeing that there would be such a requirement for that, so I substantially reduced that amount, leaving a much smaller amount in recognition that Miramar had raised the issue. In other words, I didn't opt to discount it to zero.

It is a subjective provision. I believe it's indicated the same way as a provision or an allowance for unspecified activities. But in my review, I thought that was a greater provision than was appropriate.

And in that regard, as I'm sure the Board is aware, I've been preparing these types of estimates on behalf of INAC for a number of projects, and I feel that it's very important to be consistent from one project to the next. And so leaving this type of large, unspecified provision I thought was inappropriate and inconsistent with what had been done on other projects, and that was the reason for making that change.

THE CHAIR: David?

MR. HOHNSTEIN: Thank you, Mr. Chair.

Second question for INAC. Just with regards to all-weather road construction and the access roads, there was a recommendation in INAC's presentation or submission that the -- that they provide

construction drawings of the proposed all-weather access roads showing the thickness of various materials and used at the coarse rock drains. They recommended details should be also provided for management of surface water adjacent to the access roads, including any contingency plans.

And I guess Staff's question would be what is the intent of this recommendation and justification, and can the construction drawings be provided just prior to construction?

THE CHAIR: INAC?

MR. HARTMAIER: Mr. Chairman, Holger Hartmaier for INAC.

That recommendation was a result of the recent submission of the drawings that showed, I believe, a 1-metre thickness of road bed in the vicinity of the drains that were going to be used to allow surface water to flow underneath the roads instead of constructing culverts.

That detail Miramar had obtained from SNC Lavalin as a detail that was used on the GNWT road, and the original detail was for 1.2 metres of cover. So there's a discrepancy between what Miramar was saying was the thickness that they were going to use for the road versus what the detail showed, so we just wanted to get them to verify

what the thickness was, and that the other provision was that Miramar had already committed to use -- reverting back to culverts, if there was a problem with the seepage through those rock drains. So it was more of a recommendation just to provide a final detail for those drawings.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.

In INAC's submission, Issue 2.9.2, there's a reference to quarry rock seepage management, and the water license should include a provision that if quarry rock seepage is determined unacceptable, as determined by but not exclusively the quarry rock seepage monitoring program, the seepage shall be transferred to Tail Lake.

I guess just looking for clarification on that as to whether or not it was referring to seepage within the quarry or if it was seepage from the quarry rock used in construction all long the all-weather road and storage pads and everything else that is being used.

THE CHAIR: INAC?

MS. BARAZZUOL: Mr. Chair, Lisa Barazzuol.

That was in relation to the seepage monitoring

plan that was proposed by Miramar.
THE CHAIR: Staff?
MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.
Again, just in reference to the all-weather road, the staff was curious, I guess, as to the recommendations that are being proposed for monitoring, and I guess with relations to other applications that have been before the Board that INAC has not made these recommendations in previous applications for other roads that have been developed. Some examples we've had are the recent Baffinland application and Meadowbank road applications.
THE CHAIR: INAC?
MR. McLEAN: It's Carl McLean with INAC.
If you can just restate the question, I just want to make sure I'm understanding the question, if you could. Thanks.
THE CHAIR: Staff?
MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.
I guess just as a clarification, we do understand that there is a seepage monitoring plan proposed; however, there's been added

recommendations as far as analysis and monitoring, and the Water Board has not received any recommendations of these kind from INAC for other proposed road systems in Nunavut, and whether or not, you know, we should be considering those previous licenses, I guess, as precedent for the monitoring program for this application.

THE CHAIR: INAC?

MR. McLEAN: It's Carl McLean with INAC.

You know, without going back and looking at our recommendations there, I don't want to speak without knowing all the facts. I don't want to speak too much to it, but I can say for this project we see this as a recommendation that's important. I'll certainly go back and see, find out the reasons why it may not have been important on those other applications and look at the review and see that, but I don't have that detail or that information right now.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.

Just one last question, within INAC's submission, there was numerous references to monitoring requirements and the analysis that would

be required, and there was varied references to ICP scans, metal scans that would be -- that are being requested. Some of the references made comment to dozens of ICP metals or reference to just a standard ICP scan.

It's the Staff's understanding that, depending on the lab that is being used, this could vary anywhere from 12 elements to 24 to 32, and we're just looking for some clarification as to which -- or how extensive a scan might be required.

THE CHAIR: INAC?

MS. BARAZZUOL: Thank you, Mr. Chair. Lisa Barazzuol.

That's right, different labs provide different analytical packages, and it was left just generally as dozens, but typically in geochemistry, in the studies, it would be -- I don't have a number off the top of my head, but in the 20s to 30s, 20 to 30 elements.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.

The Staff has no more questions.

THE CHAIR: Thank you. Are there questions from the public to INAC? Are there questions to INAC from the Board Members?

That being the case, we will break for lunch and be back here at 1:30.

(PROCEEDINGS ADJOURNED AT 12:00 P.M.)

(PROCEEDINGS RESUMED AT 1:33 P.M.)

THE CHAIR: Welcome back, everyone. Bill Tilleman, I believe we have housekeeping items.

MR. TILLEMAN: Yes, Mr. Chair, it's Bill. Thank you very much, and I would suggest that we follow up and mark, following the INAC presentation, that we mark as Exhibit Number 8 a hard copy of INAC's presentation received today; Number 9 would be the electronic copy, and then Number 10 would be the reclamation policy of Indian and Northern Affairs, and unless there are objections, I suggest they be marked accordingly. Thank you, that's it.

THE CHAIR: Any objections?

EXHIBIT NO. 8:
HARD COPY OF INAC INTERVENTION PRESENTATION.

EXHIBIT NO. 9:
ELECTRONIC COPY OF INAC INTERVENTION PRESENTATION.

EXHIBIT NO. 10:
2002 INAC MINE SITE RECLAMATION POLICY FOR

NUNAVUT.

THE CHAIR: Okay, we have Environment Canada to do the presentation.

PRESENTATION BY EC:

GLEN GROSKOPF, SAVANNA LEVENSON, ANNE WILSON, DAVE FOX, sworn:

MR. TILLEMAN: Thank you. Mr. Chairman, they're sworn.

THE CHAIR: Environment Canada, you may proceed with your presentation.

MS. LEVENSON: Thank you, and good afternoon, Mr. Chairman and Members of the Board.

I would like to start by introducing Environment Canada's team. I'm Savanna Levenson, Environmental Specialist. To my right is Anne Wilson, EC's Water Pollution Specialist, and next to Anne is Dave Fox, EC's Air Pollution Management Analyst, and to my left is Glen Groskopf, EC's Mining Project Officer.

I'm going to start with a brief overview of our presentation that will be followed by Anne Wilson, who will address water quality, and then Dave Fox, who will address waste management and incineration issues.

Environment Canada's presentation will cover the following areas: The mandate of Environment

Canada, comments and recommendations regarding discharge criteria, aquatic effects monitoring program, known as the AEMP, monitoring of seepage, and waste management and incineration issues. For a complete listing of all issues and recommendations, please consult EC's written intervention.

The mandate of Environment Canada includes EC's -- I'm sorry, EC's responsibilities for environmental protection are mandated by the Department of Environment Act and include a broad responsibility to provide advice. EC shares the administration of the Fisheries Act with the Department of Fisheries and Oceans, and we are responsible for parts of the Act dealing with prevention and control of pollutants affecting fish. The main pollution prevention section is 36(3), which prohibits the deposit of deleterious substances into waters frequented by fish.

The Canadian Environmental Protection Act, otherwise known as CEPA, is another act respecting pollution prevention and includes a number of regulations, guidelines, and codes of practice to that end, including designating substances as toxic. Mercury, dioxins, and furans have all been designated as CEPA toxic, and the Canada-wide

standards have been developed by CCME to limit emissions of these.

I'll now pass over the presentation to Anne Wilson, who will present our water quality issues. Thank you.

MS. WILSON: Thank you. It's Anne Wilson with Environment Canada. I wonder if we could have maybe the middle or back lights on just to read my notes here as I go along. Thank you.

I'd like to start with some of our points on the discharge criteria for Tail Lake and Doris Creek. Miramar Hope Bay Limited predicts that by managing effluent discharge volumes with flows in Doris Creek, water quality below the waterfall can be maintained at or below the Canadian Council of Ministers for the Environment, CCME, guidelines for the protection of freshwater aquatic life.

The proponent has done a credible job of modelling tailings water quality and proposes an innovative approach to regulating mine discharge while achieving environmental protection.

Two compliance points are proposed: MMER limits will be met at the end of pipe for Tail Lake, and MMER stands for metal mining effluent regulations, and CCME guidelines will be met at the waterfall in Doris Creek. EC notes that use of a

receiving environment compliance point is fairly unique. It's only been used at the Colomac mine, and in that case, the limits are higher than CCME, except for one parameter. And I was mistaken in that yesterday, the intent for that file had been to have CCME in the receiving environment, and it's not.

I had given yesterday a comparison of limits to the Board, just so that's on -- I guess that will be an exhibit -- showing where in various files CCME limits have been used and giving the Colomac limits as an example. Although the main use of that example is as a precedent for regulation in the receiving environment. In short, Environment Canada does support the dual compliance point approach, and we will go ahead to note a few points which require further consideration.

Miramar has proposed to meet criteria for the parameters shown in Table 5.2 of the revised monitoring and follow-up plan and to monitor supporting variables shown in Table 3.10 of the revised water license application support document. We do support the approach of using the CCME numbers as regulated or hard limits, as I call them.

There are a number of major ion parameters of

potential concern though, which do not have CCME guidelines values yet. The main one is chloride. This is an issue that's come up in the case of other mines being evaluated, and although the proponent had said yesterday that parameters without guidelines are not parameters of concern, I do have to differ for chloride. Road salts were declared a CEPA toxic in the 2001 report, the assessment. B.C. has a guideline for chloride of 150 milligrams per litre. The U.S. CEPA similarly has a guideline; that one is 230 milligrams per litre. Two other licences currently regulate -- or, sorry, one license currently regulates chloride specifically, that's Tahera, at 500 milligrams per litre, and Ekati has been tasked by the Board with developing its own chloride criteria and has come up with 313, although they are not yet formally regulated to that.

The CCME has quite a number of publications out, and we had a quote from one of them yesterday from the Proponent. In our intervention, we actually quote from another part of the CCME literature in which they state very clearly that impairment of waters up to guideline values is not advocated. And if I can just read you this from our intervention: (As Read)

> Where a higher level of protection is warranted due to the pristine nature of the aquatic system, then objectives may be set using the nondegradation approach.

That came from the 2003 CCME document, "Guidance on the Site-specific Application of Water Quality Guidelines in Canada".

In their preambles in 1987 and 1999 guidelines, they state: (As Read)

> Environmental quality guidelines should not be regarded as blanket values for national environmental quality. Variations in environmental conditions across Canada will affect environmental quality in different ways. Therefore, the users of effluent quality guidelines may need to consider local conditions and other supporting information such as site-specific background concentrations of naturally occurring substances during the implementation of effluent quality guidelines. Science-based, site-specific criteria guidelines, objectives, or standards may, therefore, differ from the Canadian EQGs recommended in this document. [And here's the nub of it] For ecosystems

of superior quality, impairment to guideline concentrations is not advocated. So I belabour that point a little bit here but...

To go forward to our recommendations, we do support the use of CCME values as regulated criteria in Doris Creek. We would also like to see a few more parameters included, and I can understand, after clarification asked for by Bill this morning, that silver and thallium are going to be added, but I'd also like to see oil and grease added as a regulated parameter there. And conversely, if natural levels are at or above CCME levels, such as for selenium, it's reasonable that discharge concentrations should maintain background or ambient conditions.

In the case of parameters, which have baseline concentrations which are substantially below CCME guideline values -- and my slide lists about 12 of them there -- management objectives should be to maintain these parameters at the closest possible concentrations in the receiving environment. Environment Canada supports the use of an 80 percent threshold for parameters which occur within an order of magnitude of the CCME values. We do suggest though targeting a lower threshold for action for the listed parameters which occur in low

levels.

Miramar has a really unique situation here; they have a good capacity in Tail Lake, and they are able to have a lot of flexibility in how they manage their flows. So without trying to limit what can be done based on the single limiting parameter, because I do appreciate that it only takes one parameter to shut down or to alter the management of the flow, we strongly encourage them to use the flexibility afforded by Tail Lake capacity to manage to the highest standards. So do the best you can as your management objectives, although you, you know -- and we're not saying regulate to the lower levels.

We noted that the SNP in Table 5.1 of the revised monitoring and follow-up plan should have the other parameters added to it, silver and thallium and also the sewage parameters which come up next.

Now, just to talk about parameters for which there are no CCME guidelines such as chloride and TDS, we --

THE CHAIR: The interpreters can't keep up with you.

MS. WILSON: Sorry -- Anne Wilson here -- my "Speak Slowly" sign had fallen over. I

apologize to the interpreters.

For parameters which don't have CCME guidelines such as chloride and TDS, we're looking for Miramar to commit to setting management targets which will maintain ambient conditions within a reasonable range to ensure that concentrations in the downstream aquatic environment remain protective of aquatic life.

And just to give examples of management objectives -- or rather, approaches, they could watch for a certain amount of change from baseline concentrations, and that could be two times and then -- or using perhaps the B.C. guidelines of 150 milligrams per litre as a threshold, that would then have them look at their management and see if anything could be done to change those concentrations, such as altering the flow and releases.

And this slide is different than our printed intervention. One of the real benefits of these meetings is that you get to talk to everyone, and you learn things that you didn't find out in the dozens of documents that we reviewed. So the idea of setting a TSS limit in the receiving environment has been reconsidered, based on information that there may be high-wind events up stream; there may

be wider natural fluctuations than I had envisioned, and the bottom line for us is that the end-of-pipe limit is considered as protective. I don't know of any licenses that have much more stringent than the 15 milligrams per litre at end of pipe.

Those are the Doris Creek recommendations. I've got two recommendations for Tail Lake discharge.

EC recommends that a limit be set for ammonia, and that is total ammonia as nitrogen of 6 milligrams per litre as the maximum average concentration. This value should be consistent with effluent concentrations which will not result in bioassay failure.

And Environment Canada also supports the monthly testing for biological oxygen demand and fecal coliforms, which was committed to by the proponent yesterday. We would suggest limits be set at Tail Lake outfall of 15 milligrams per litre for BOD and a hundred colony-forming units per decalitre for fecal coliforms.

And just a note on the bioassays to explain, that is a test of the effects of effluent on rainbow trout or little water fleas that gives us an idea of the toxicity of the effluent, and that's

an acute test, which means it's how many actually die from it. So if I use terms which aren't clear, hopefully Savanna will remind me to explain them.

Now, we'll move on to the aquatic effects monitoring. The AEMP has been designed to comply with the metal mine effluent -- effluent -- I'm sorry, environmental effects monitoring requirements or EEM requirements. We feel a more comprehensive program is needed to provide enough information to allow adaptive management to be used.

The time scale outlined in the EEM program and proposed for this project is not suitable for a short two-year mine life. We anticipate the first discharge may be in June or July of 2009. The MMERs come into effect once the proponent starts discharging 50 cubic metres per day of effluent. That starts the clock going on all the various studies that are required under the regulations.

So there's a broad set of steps that are gone through. Study design has to be submitted. Then monitoring starts six months after the study design, and that would conceivably happen in 2010. Then an interpretive report with the results is due 30 months after the MMER supply, and that would take us to 2012. Miramar has committed to as early

as possible study design submission and reporting of annual monitoring results in their annual report.

We note that the 2003 monitoring plan which was submitted is a little bit outdated, so we're recommending submission of an updated AEMP be required as a license conditions. I'd like to just give you a little bit of detail on what we have in mind here.

We recommend that the Proponent design an AEMP which monitors water quality, sediments, benthic invertebrates -- the little guys that live in the mud on the bottom -- and fish on an appropriate frequency with annual reporting of results. We want the program to be designed to capture the full extent of seasonal and spatial variability in the aquatic ecosystems so that we can tell if what we're seeing is a real effect, if changes are noted. The study design should include appropriate reference sites, lakes that aren't impacted by the mine. In addition to the objectives that were outlined in the monitoring and follow-up plan, we want to be sure the AEMP will detect effects which may not have been predicted.

Environment Canada believes the Proponent has collected a reasonable set of baseline data. We

would like to see the baseline date compiles and provided to the regulators and whoever's interested for review along with the AEMP design update.

The following slide provides a suggested framework for aquatic monitoring. And this is a new slide after yesterday's discussions, so I apologize that it isn't in the printouts we had left in the back of the room there.

Just to go through it briefly, there are five main locations that we would want to have monitored in the receiving environment. The immediate exposure lake is Little Roberts Lake. That's downstream from Doris Creek, feeds into it. We also -- and then Little Roberts Stream goes into Roberts Bay. There's two reference lakes. They're upstream of Roberts Lake, and there is Reference Stream A, again Roberts Bay.

We're suggesting that the front end of the monitoring be done as an AEMP, and then it can transition in the EEM in 2010. We would like to see starting next year, water quality monitoring be done -- and I've got a list of the variables that should be looked at there -- three times per open-water season.

We're suggesting that sediment quality be looked at every three years, and that would just be

in the depositional areas, that would be Little Roberts Lake, the reference lakes, and Roberts Bay. That would not be necessary to start until the MMER EEM kicks in, and we'd like to see benthic invertebrates surveyed. If they start in 2008, that would be a current baseline year, because, of course, there would be construction going on but no discharge yet. Then exposure surveys would be done starting in 2010 under the EEM.

Fish should also be looked at, and again every three years, and the fish would fall under the EEM for timing. So really it's mainly the water and one benthic survey that we're looking for in the years before 2010.

So I'm going to leave aquatic effects monitoring and just turn to the seepage aspects here. Annual freshet surveys are proposed along areas where blast rock's been used. And the idea is to take field measurements, and if there's any hits, take samples for lab measurements as appropriate. We support this tiered approach to monitoring. However, we feel that there should be a regular subset of field measurements backing up -- sorry, a regular lab measurement of the field measurements to back those up, especially for the parameters of concern: Ammonia, sulphate, iron,

and aluminum. And I believe the commitment was made yesterday to do 20 percent. We were thinking 10 percent would be fine, plus doing any hits as a follow-up. In addition, there should be some reference sites monitored on the tundra, given the natural variability in tundra pH values.

Just to summarize that recommendation, the annual seepage surveys should include periodic analysis of a limited subset of seepage samples and routine field monitoring of several reference points which are not subject to mine influences.

I just have a couple of miscellaneous points to wind up my part of the presentation. I noted that under the SNP, Surveillance Network Program, there appears to be duplication between two sites for samples taken at the reclaim pump and at the receiving environment in Doris Creek. I shouldn't have put end of pipe there; that's wrong, sorry. It was TL1 and TL4 are duplicated, so effectively what's going in one end of the pipe is being measured and the same coming out of the other end of the pipe, so that seems to be redundant and should be looked at and perhaps eliminated. That was requiring both toxicity and water quality testing.

The other aspect which has been covered by

Proponent's commitments here is erosion prevention. We want to ensure that discharge is to suitable substrates and ponding must be prevented as that can lead to thermal erosion. We've heard commitments for regular inspections on that and using suitable discharge structures.

So with that, I will turn things over to Dave Fox.

MR. FOX: Dave Fox, Environment Canada. Incineration is a waste disposal option that's used quite often at remote sites. Incineration is used to reduce the volume of waste through combustion or burning, plus it's a way of disposing of potential animal attractants, such as food.

However, incineration can produce emissions and may toxic contaminants, including dioxins and furans. If incineration is managed properly, emissions of these contaminants will be minimized, and therefore, the risk of these adverse impacts from these contaminants will also be minimized. However, if incineration is managed poorly, the environmental risk can increase substantially.

This presentation will focus on two main points. First, the incineration conditions should be included in the water license, and secondly, how

environmental risks from incineration can be minimized.

Although the release of contaminants begin as air emissions, incineration is not an air quality issue. The dominant exposure pathways for incineration contaminants are through sediments, water column, vegetation, and soil.

Dioxins and furans are the main toxics of concern from incineration. Dioxins and furans are formed as a byproduct of the incineration of the burning of waste. The largest source of dioxins and furans is from incineration of municipal solid wastes such as incineration of -- used at Doris North to dispose of camp waste. These contaminants are persistent in the environment, therefore, can accumulate over the lifetime of the mine. The mine contaminants bioaccumulate through the food chain, and they're toxic to fish, wildlife, and to humans.

In the next slides, I will discuss the environmental fate or the exposure pathways of incineration contaminants to wildlife. As I mentioned earlier, incineration contaminants are released to air. However, air is simply a pathway to other media. From the air, the contaminants deposit out onto vegetation, and then terrestrial animals that eat the vegetation then uptake the

contaminants that way. So this is the main exposure pathway for terrestrial animals, from air to vegetation and then to the animals.

For aquatic animals, again the toxins start as air emissions, but they're deposited to soil and then are introduced to water bodies through runoff or erosion, and then make their way to the sediments in the bottom of water bodies. There, the benthics, or as Anne described as little critters living in the mud at the bottom of lakes, can be exposed to it through ingestion of the contaminated particles or sediments, and then the fish that eat the contaminated benthics uptake it to the next level in the food chain.

This picture summarizes the exposure pathways from incineration contaminants through the food chain. So in each case, we start in the air, so that from the air, the contaminants are deposited. For the terrestrial food chain, as I say, it's deposited through vegetation; then herbivores eat it; they become contaminated; and then predators or scavengers will eat the contaminated herbivores, and that's how it works through the terrestrial food chain.

For the aquatics, the contaminations end up from the air to the sediments. The small little

critters in the mud, the benthics, uptake it through the sediments, and then they're eaten by fish, which are then eaten by larger predators, and again, it can make its way up through the food chain.

Sorry, maybe just to go back there. Look, my point in going through all of this is although it starts in the air, in the air, it's not a big deal, it's when it hits the grounds that it becomes an issue. So it's not an air issue; it's more of a water and soil issue.

Now, to address incineration emissions, the Canadian Council for the Ministers of Environment, the CCME, developed Canada-wide standards for dioxins and furans and Canadian-wide standards for mercury emissions. The Government of Canada and the Government of Nunavut are signatories to these standards.

I have focussed on the dioxins and furans because mercury emissions are easier to control. If you don't put any mercury into the incinerators, you're not going to get any mercury emissions coming from it. Whereas the dioxins and furans are a byproduct, they're formed in the process of burning of the waste.

These standards are only enforceable if they're

adopted by regulatory boards and included as conditions in operating permits and licenses, such as the water license here. The Canada-wide standards focus on emission limits from incinerators and demonstration of achieving those limits through determined efforts and through stack testing.

Determined efforts are best-management practices for incineration. It's like a three-legged stool. You have a leg for waste management, the technology that's used to burn the waste, and the operation of the incinerator. If any of these three legs are missing or not implemented appropriately, the stool will fall over, and there could be an excess of emissions of contaminants from the incineration process.

Just to go through a little bit of detail in each one of those legs, for waste segregation, the goal is to reduce the amount of waste to be incinerated, that way you reduce the amount of emissions. Only food and food contaminant wastes should be incinerated. Other waste should be diverted to more appropriate disposal options.

Incineration equipment's very important. There's a rule-of-thumb for incinerators, that they must achieve the three Ts, as they're known. First

is temperature. To fully combust or to break down these toxins and contaminants, you need temperatures of over a thousand degrees Celsius. You also need a time residency at that temperature to ensure complete combustion as well as thorough mixing or turbulence.

The best available technology for a development like this, I would suggest, is a dual chamber, controlled-air incinerator with control technologies like a wet scrubber. This type of technology is being used at other mines in the north in NWT.

Now, you can have the best technology in the world, but if it's not operating properly, you're still going to get problems, so incineration operation is a crucial part.

Operator training is crucial. If the operator doesn't know what they're doing, these are pretty sophisticated pieces of equipment, they need to know how to operate an incinerator properly, like the different temperatures or the types and the amount of waste that should be going into that.

Incinerators need to be properly maintained. If they're not, again problems can happen, and you won't get optimum combustion.

And recordkeeping is very important of

operations and maintenance, just to review how the determined efforts and best-management practices are going.

To ensure that determined efforts or best-management practices are being followed, the incineration emissions are minimized. We recommend that an incineration management plan is developed. This plan would include details on recycling and waste segregation, the selection of incineration technology, a waste audit, the types and the amount of waste that's being incinerated, operational maintenance records, operator training, details of that, list of staff who are trained, emissions measurements, and incinerator ash disposal. I'll speak a little bit more of that later. And all of these details should be reported annually.

Miramar has made commitments on incineration. Miramar has committed to comply with the Canadian-wide standards and to conduct annual stack testing. As well, they've committed to waste segregation programs and operator training. EC supports these commitments and commends Miramar for making them. However, to assist Miramar in achieving those and ensuring that these commitments are realized, we recommend that Miramar develop an incineration management plan in consultation with

the EC.

There have been concerns expressed that incineration should not be included in the water license. I contend that contaminants from incineration can impact water quality, sediments, and aquatic life. The link between incinerator contaminants and water issues has been investigated by the Canadian Environmental Modelling Centre. Details of this study are contained within our submissions as well as references.

To summarize our conclusions, they found that poor incineration management would adversely impact air, soil, water quality, sediments, aquatic, and terrestrial life. They also found that good incineration management will greatly reduce the risk of these adverse impacts. Our recommendation will ensure that good incineration management is employed and that these risks are reduced.

Just to touch on some of the other recommendations, incineration ash can be contaminated, and so it should be tested to determine the most appropriate disposal option. Miramar in its land field management plan has proposed to test incinerator ash for heavy metals; we'd recommend that Miramar also test the ash for dioxins and furans.

Another issue is the incineration of waste oil and waste fuels. We recommend that the waste oil or fuels should be tested for contaminants and only burn it in an approved oil fuel burner.

On open burning, we agree with the policy on open burning that was included in one of the appendices on the Miramar submission, that only paper products and untreated wood are suitable for open burning, and that cyanide-contaminated wood should not be burned in an open pit. We're not convinced that the cyanide would be destroyed during the burning process in an open pit and fear that it could be just a dispersion mechanism, where it increases the area that the cyanide might cover.

Yesterday, Miramar brought up that the wooden crates probably will not be contaminated with cyanide. It might be -- it would be helpful if Miramar could actually provide some written information about the contamination or lack of contamination of the containers.

And that's it for our presentation. Our panel would like to thank the Board for the opportunity to present our submission and be happy to take any questions. Thank you.

THE CHAIR: Thank you, Environment Canada. Miramar, questions?

MR. CONNELL: Mr. Chairman, can we have 10 minutes to prepare our questions, to get ourselves together.

(BRIEF ADJOURNMENT)

THE CHAIR: Shall we continue? Miramar to Environment Canada.

MHBL QUESTIONS EC PANEL:

MR. CONNELL: Thank you, Mr. Chairman. We have three questions, the first one is going to be from Terri Maloof.

THE CHAIR: Go ahead.

MS. MALOOF: Thanks, Mr. Chairman, Terri Maloof.

Yesterday during questioning, Miramar committed to continue the environmental quality baseline monitoring in the receiving environment in 2008 and 2009 and to initiate the first EEM monitoring study design in 2009. And my question is that in lieu of having the EEM requirements written into the water license SNP program, would you accept it if we put on the record a letter confirming those commitments until the EEM study design is complete?

THE CHAIR: Environment Canada?

MS. WILSON: Thank you, Mr. Chairman. It's Anne Wilson with Environment Canada.

That would be an unconventional approach to

getting the AEMP data. For our purposes, which is to be aware of what's happening in the downstream environment and changes associated with the mining operations, it doesn't really matter where the data are collected.

Are you contemplating putting this in your annual report as a means of getting it on the public record?

THE CHAIR: Miramar?

MS. MALOOF: Thanks, Mr. Chairman. Terri Maloof.

Yes, we would report it annually. This is merely intended though as a stop-gap measure until the MMER kicks in.

THE CHAIR: Environment Canada?

MS. WILSON: Anne Wilson here.

In most other licenses, and I can cite the Tahera clause, this is covered as a license condition. The Tahera license states that the licensee shall within two months of the effective date of this license submit to the Board for approval an aquatic effects monitoring plan, and there is some guidance given to developing that.

What I had in mind with the little framework that was put forward was a way to achieve consistent monitoring without duplicating any of

the SNP stations, just looking at the receiving environment, with stations that would then be also reported under the EEM program to avoid any duplication there. So I don't know if it should matter to the proponent if it's a licensed condition versus an undertaking.

THE CHAIR: Miramar?

MS. MALOOF: Thank you, Mr. Chair. Terri Maloof.

The key thing for us is that we were asking that it not be part of the SNP program, and it's not part of the SNP at Tahera. And as one point of clarification, Tahera is a diamond mine and not subject to MMER.

THE CHAIR: Environment Canada?

MS. WILSON: Anne Wilson.

That is correct.

THE CHAIR: Miramar?

MS. MALOOF: We have one further question from Gary Ash.

MR. ASH: Thank you, Mr. Chairman. It's Gary Ash.

Could you clarify in the table that you showed as part of the presentation, you had a column listing the frequency of samples and then an initial sample in 2008 and then 2010, which would

correspond to the EEM program requirements under the Fisheries Act. The frequency for aquatic invertebrates you had up there as a two-year frequency. Was your intention that there would be one in 2008, and then a frequency of two to get you to 2010, and then after that, it would be on a three-year frequency, which corresponds to the cycle for the EEM, because otherwise, it would be out of sync with that frequency?

THE CHAIR: Mr. Ash, if you could hold that thought; I was just informed by a Board Member that the Assistant Deputy Commissioner for Nunavut has just walked in. We'd like to acknowledge her presence.

MR. HANSON: Mr. Chairman, if I may, Helen Maksagak is the Deputy Commissioner who works for the Commissioner of Nunavut. Hello, Helen.

(APPLAUSE)

THE CHAIR: Environment Canada?

MS. WILSON: Thank you. Anne Wilson here.

I'm going to give you a qualified answer to that, Gary. If there are changes seen in the 2010 survey, then we wouldn't want to wait three years. If there are no significant differences seen, then syncing it with the EEM at that point would be

reasonable.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. I have a couple of questions with respect to the incineration part of the presentation.

In the presentation that we've just seen on incineration, you focussed on the burning of municipal waste, and I understand that that -- that portion of it. Are you aware that the proposed practice at the Doris North Project is to limit what is actually burned in the incinerator to just the kitchen waste, the food stuff waste, and the sewage sludge?

We are not planning to incinerate all the camp garbage and other garbage generated, the nonfood garbages. So our system will be quite different on a scale than a municipal incinerator down south, and our primary focus on doing this is solely to protect wildlife by reducing that potential for contact.

THE CHAIR: Environment Canada?

MR. FOX: Thank you, Mr. Chair.

Yes, we are aware of the commitments that Miramar has made on waste segregation and waste management, and we commend them for that.

The reference to the municipal incineration is

a little bit misleading just that municipal solid waste is just a term used with incineration. It means food waste and camp waste from the mines -- sorry, Dave Fox, Environment Canada -- the recommendations that we've put forward here are similar to what we've been putting forward to other mines.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman, Larry Connell again.

The next question is a point of clarification that goes back to the technical sessions that we had in mid-June. At that time, we discussed the disposal of the incinerator ash, and one of the amendments or changes that was made as a result of that was to no longer commit to put that ash in the landfill. Miramar at that point in time said that we would take that ash and transfer it over to the back flue going underground so that that was encapsulated to prevent any potential metals and the other toxins from actually getting into the landfill. So that was a commitment that we made at that time. On that basis, would it be agreeable that we wouldn't have to do as much characterization as what you're suggesting on the ash?

THE CHAIR: Environment Canada?
MR. FOX: Thank you, Mr. Chair. Dave Fox, Environment Canada.
Unfortunately I wasn't here for that pre-meeting hearing, and I wasn't aware of that, but if it is underground and well-encapsulated, that does provide some level of comfort. It still would be of interest to see, if the commitments to do the testing for the metals is still on the table, to throw in some dioxins and furan testing as well.
THE CHAIR: Miramar?
MR. CONNELL: Thank you, Mr. Chair.
Yes, we would -- we could periodically, just to make sure that we knew what that material is, but what I'm trying to do is reduce down that from being a regular routine sampling because it's a fairly high cost for doing furans and dioxins in ash. It can be well plus $1,000 a sample in that case, so we're trying to reduce that cost, but we still sense that it's worthwhile doing on a periodic basis.
THE CHAIR: Environment Canada?
MR. FOX: Dave Fox, Environment Canada.
I would agree with that. I wasn't thinking

regular sampling, just annual at most or even less frequent.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Larry Connell.

Just one more point, yesterday when we were discussing the burning of the cyanide boxes, we had gone back -- just to clarify what I had said, we had gone back to the -- our supplier, the potential supplier of these boxes, and he had told us that this issue has been brought up elsewhere in the world, and that the testing they had done had indicated that these boxes don't contain any cyanide, and so the recommendation to us is there's no need to burn them. And so our proposal or our change is that, on that basis, we don't need to burn these boxes, so it would no longer be a requirement to burn them, and that we could do -- that the -- demonstrate the testing ourselves rather than relying on other parties, just to see what's in that wood, and on that basis, deal with the wood issue. Would that be acceptable?

THE CHAIR: Environment Canada?

MR. FOX: Dave Fox.

That would be acceptable.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Larry Connell.

That's all of our questions.

THE CHAIR: Thank you. Next we have KIA.

MR. DONIHEE: Thank you, Mr. Chairman. John Donihee, counsel for KIA. We have no questions for this intervener.

THE CHAIR: Thank you. INAC?

MR. McLEAN: Thank you, Mr. Chair. It's Carl McLean, INAC. INAC has no questions for Environment Canada.

THE CHAIR: Thank you. DFO?

MS. GORDANIER: Thank you, Mr. Chairman. It's Tania Gordanier with Fisheries and Oceans Canada, and we have no questions for Environment Canada at this time. Thank you.

THE CHAIR: Thank you. GN?

MR. ATKINSON: Thank you, Mr. Chair, Mike Atkinson, Government of Nunavut, Department of Environment. I have no questions. Thank you.

THE CHAIR: Thank you. NTI?

MR. HAKONGAK: Thank you, Mr. Chairman. No questions from NTI.

THE CHAIR: Thank you. Staff? Does Staff need time?

NWB STAFF QUESTION EC PANEL:
MR. TILLEMAN: No, sir. It's Bill Tilleman, and I guess one thing I'd like to do is mark some exhibits.

The Staff have a couple of questions, and one issue that came up at the pre-hearing was the issue of the MMER. We've read a little bit about it in the submissions that were filed for this proceeding, and I guess if Environment Canada could in some, at least bigger picture, explain the regulatory ladder that's next, which would be the MMER, and even in terms of is it imminent that we will likely see an approval of that, the short-term being maybe in a few months, long-term over a year, or something like that, if they can give us some indication, understanding that it's ultimately a decision of Governor and Council. So that would be my only question, if they have the ability to give us that information, and then I'd like to mark some exhibits.

THE CHAIR: Environment Canada?

MS. LEVENSON: Thank you, Mr. Chairman, Savanna Levenson.

I'd like to refer that to our Mining Project Officer, Glen Groskopf.

MR. GROSKOPF: Thank you. I guess to

answer your question directly, scheduling of a lake for use as a tailings impoundment area requires amendment to the metal mine effluent regulations of the Fisheries Act. There already has been a draft amendment written, I understand, and it is expected to go for Gazette 1 in September or October, and consequently, it goes out for public review of 60 days, and which after that, the comments are compiled and considered, and then it would go on to Governor and Council for consideration.

If -- we've had a previous, if you want, round in which we've added a lake for a tailings impoundment area, and that took, from Gazette 1 to Gazette 2, a period of about six months. We would hope it will be a little shorter time frame this time, but there are a lot of variables we have no control over, including holidays, because you may note that Christmas kind of falls in there. It is our expectation though that if it's successful, it would go to Gazette 2 early in 2008.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.

Just a couple quick questions. One is related to the CCME parameters that are not currently on CCME as having CCME guidelines such as chlorine and

TDS. It was recommended that Miramar Hope Bay set management targets which will maintain ambient conditions and to ensure concentrations in the downstream aquatic environment which will be protective of aquatic life.

I guess just a confirmation as to whether or not Environment Canada was wanting regulated -- those parameters regulated downstream at the levels below -- or I guess first off, if Environment Canada was looking at having those parameters regulated; and secondly, if the suggestion of two standard deviations above background is recommended, is there enough data to provide a statistical number for regulation?

THE CHAIR: Environment Canada?

MS. WILSON: Thank you. It's Anne Wilson.

For the first part of your question, we're seeking not to have that regulated as limits but to have that as a management target to try and achieve protective concentrations within a range of ambient conditions.

I think the use of two standard deviations would be too restrictive and difficult to calculate, so we're suggesting the use of the B.C. guideline of 150 milligrams per litre.

For this site, background levels are in the range of 50 to 70. I think the risk assessment had 65 milligrams per litre, so it is naturally elevated above what we might see with CCME guidelines if they are put into place during the life of the mine, so I would not use those, not presupposing them but I think that we can use the B.C. guideline.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.

The second question was just as a clarification to a question proposed to Miramar yesterday regarding the incineration of sewage and what EC's position was on that, and if they're recommending not incinerating sewage, what the proposal might be to do with that sewage -- or the sewage sludge.

THE CHAIR: Environment Canada?

MR. FOX: Dave Fox, Environment Canada.

The sewage sludge, we're not supporters of incineration of material like that. The material needs specialized technology to burn it. A regular incinerator is not appropriate for material like that. If there's other disposal options, I'm not an expert in that, but perhaps tailings ponds are

other more appropriate -- or underground would be a more appropriate storage -- or disposal mechanism or option.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chair. I think we're finished with questions.

THE CHAIR: Thank you. Are there any questions from the public? I see one back there.

PUBLIC QUESTIONS EC PANEL:

MS. TOOLOOGANAK: I'm really sorry. My name Namhaliq (phonetic). I'm usually known as Helen Toolooganak. I'm from Cambridge Bay, born and raised here.

I'm very happy that the hearings are going on. Years ago when our communities first started being built in the '50s, late '40s, I guess, U.S. Air Force in the DEW Line started building, and when they shut down years -- a few years ago, they left a lot of garbage, and it's in the waters. There's contamination and PCBs, and there's so much in the waters right now out here in the bay. I don't know where else they may be laying across the north.

I'm -- I don't think there's not much being cleaned up right now, but when the mining companies come and do their hearings and the Water Board, it's good for the people, especially us

beneficiaries, to understand what they're trying to do and to let the people be involved, especially us beneficiaries and owners of this land. You're going to be mining on our lands.

I've sat here for the past day-and-a-half -- for the past day, listening, and I don't really understand about mining and all this technical stuff and all you people that are working for the different companies and businesses. I see very few Inuit except our Board Members. There's not even a woman on the Nunavut Water Board, so hopefully some day, we'll have women on that Board, but my point is you have to have the people involved, the owners of this land, and that the people need to understand what your work is all about. It's not only Miramar, it's not only Water Board, it's the Planning Commission. Environment Canada, I was really happy to watch their presentation and some of the recommendations.

We as Inuit, we grew up on the land, and we live on the land, and we survive with some of the food from the land, and we still do, and I don't know about the incinerator business and all that, but I want to learn more so I can maybe communicate with my Elders and the people that -- our future youth, our future leaders, like my kids and

grandkids, my neighbours.

We want to understand what's going on, and sitting here and you guys doing all your presentations, I don't really understand, and I want to understand, and I think each of you agencies and companies and boards should have local community meetings and workshops and also get more communication going with the local people, especially with the Doris Mine Project coming up. It will be nice for the people from Bay Chimo and Bathurst to have a really good consultation and awareness meeting with Miramar and whoever.

I don't know about this cyanide business though, and I want to understand it better. Can it leak into the land and into the water? And if it does, we the people from here, we go hunting and fishing, and we eat that fish, and we eat the Tuktu, and I'm wondering if -- how is that monitored like from any contaminants from whatever kind of business is going on out on our land, is there stuff leaking?

And if there is, sometimes like the U.S. Air Force, they hid a lot of -- they had a lot of hidden secrets and they never told the people. Us -- my dad worked on the DEW Line for years, and so many of our other people from the communities,

all they did was, you know, got to learn English, learn how to do mechanics, stuff like that. They were introduced to the southern life, the southern habits, southern food, they even brought alcohol, and now we got mining going on.

The U.S. Air Force never had hearings like this, and they left a lot of garbage, and I don't want the mining companies to leave that on our land like they did. Continue to do your work and be honest with the people and work with the people and make sure they understand, and I want to know more about the cyanide stuff.

THE CHAIR: Thank you.

MS. FILIATRAULT: Thank you, Mr. Chairman. Dionne Filiatrault.

I think Helen is looking for clarification on the cyanide process and understanding of the impacts to water and what's being done to mitigate any of that, and that could be Environment Canada may have some information on that, or I suggest possibly Miramar may be willing to provide a response.

THE CHAIR: Perhaps Miramar.

RESPONSE TO PUBLIC QUESTION BY MHBL:

MR. CONNELL: Thank you, Mr. Chair.

Yes, I can try and attempt a response. I never

operated the DEW Line, but I suspect they never had to apply for a water license either.

The cyanide we're going to use at the site will come in, and it's strictly within the mill, so it's only used inside the mill building. And it's used to extract the gold from the flotation concentrate, so it's a very small proportion of the total material that's treated, and so it's used inside the plant.

After we've extracted the gold, we take that solution, it's a liquid slurry that we have put the cyanide in, and we run it through a cyanide destruction circuit, where we actually destroy the cyanide chemically so that it is no longer a toxic material. And we do that before we even send it out to the tailings impoundment so that we're basically making sure that we're taking care of that toxic before it leaves the plant.

Having said that, there is on top of this whole system an extensive monitoring program, and that's what the Board will write into what we -- we keep using the acronym here you've heard today SNP. What it means is a Surveillance Network Program. It's again an acronym, but what it actually is is a list that goes in the back of the water license of all of the things we have to monitor, how often we

have to monitor them, and what things we have to go and measure. And it's required that when we do all of that, that we have to report back to the Water Board on a monthly and annual basis so that people can see that.

And on top of that, because that's taking our word for it, Indian and Northern Affairs has the responsibility to oversee to make sure that that work is being done appropriately, and so the Indian and Northern Affairs has a water license inspector, who will come to the site, do inspections, check on the -- that we're doing the job in appropriate -- with the water license, and they will also take at that time their own samples and take those to their lab and arrange to have check assays done that way.

So there's like a two-tier protective structure. The majority of the monitoring lies with Miramar. We're responsible to monitor and report to the Water Board on the monitoring we've done to protect the environment, and then Indian and Northern Affairs is there as a second level regulator to make sure that we're doing what we said we're doing and that they're reporting accurate results.

I'll end there and just see if that answers your question.

MS. TOOLOOGANAK: Thank you. I also wanted to ask if there's anyone here from Health Canada or if there's medical professionals, because I -- for myself, my people, I hear all the time, Is the food contaminated? Is the fish we're eating contaminated? Is it safe? We don't know. Is it causing cancer? We have so many questions, and yet, you know, there's no resources here.

We have Environment Canada here. I don't think they have an office in Kitikmeot. It'll be nice to have an office for Environment Canada in our region or even in Cambridge Bay.

And Miramar, I understand, has an office here now, which is good, and the Water Board has an office in Gjoa Haven, the Planning Commission. There's all kinds of offices, but I think Environment Canada needs to have more presence in the area, in -- especially when there's so much mining going on.

And I want to know the fish, is it safe to eat, and the water that our people haul when they're out on the outpost camps, is that safe to drink? Like, I want to know if we're going to get sick from it, or if my grandkids will get sick from it in the long -- in the long future -- in the future ahead of us.

We've got to really watch these things because so many of our ex-DEW Line employees I notice have got cancer. Maybe it's from PCBs or working on the DEW Line, and if you're working in the mines, is that safe too?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

I can't speak to all of Helen's questions because you're asking about current conditions, and I'm not -- enough knowledge to talk about whether things are safe right now. I can't speak to that, I would have to let others speak to that.

What I can say is that as part of the Nunavut Impact Review Board, the questions came up and were discussed there and through all the sessions on whether the activities that are going on in the Doris North Project whether they will cause harm to the fish and the wildlife and the water and result in the kinds of things you're talking about.

And the net outcome of that was the Nunavut Impact Review Board felt that this project, with the design and the mitigation measures that were going to be put into place, could be built and operated and closed down without causing any harm or additional harm to the water, to the land, or to the animals and to the fish. But I can't speak to

what has gone on in the past. I would leave that to others.

Mr. Chairman?

THE CHAIR: I think that we're getting sidetracked here. I think the questions were directed to Environment Canada, from the public to Environment Canada.

RESPONSE TO PUBLIC QUESTION BY EC:

MS. LEVENSON: Thank you, Mr. Chair. Savanna Levenson. I just wanted to respond to the last comment regarding Environment Canada offices.

We do have an office in Iqaluit, and most of us are out of the office in Yellowknife.

And as far as all of the mining reviews, Environment Canada does participate fully in all of the reviews going on in the north. Thank you.

THE CHAIR: Thank you.

MS. TOOLOOGANAK: Koana. Enjoy the rest of your stay here, everyone. I hope you had a good visit to Cambridge Bay and keep warm because it's pretty windy and wet out there.

THE CHAIR: Thank you. Questions from the Board Members to Environment Canada? Thank you very much, Environment Canada. Sorry, I apologize. Bill Tilleman?

MR. TILLEMAN: Thank you, Mr. Chair, so

for exhibits, I just propose that we mark as Number 11 their hard copy of their presentation today. Number 12 would be the electronic copy of their presentation today. Number 13, that would be a memo, dated August 13th of '07, on CCME guidelines, that would be marked as Number 13, and we have copies here if people need them. And Number 14 would be an exhibit that is the Colomac water license, yes. So the Colomac license would be Exhibit number 14, and that's the end of my business.

EXHIBIT NO. 11:
HARD COPY OF EC INTERVENTION PRESENTATION.
EXHIBIT NO. 12:
ELECTRONIC COPY OF EC INTERVENTION PRESENTATION.
EXHIBIT NO. 13:
EC MEMO ON CCME GUIDELINES REGARDING EFFLUENT QUALITY CRITERIA, DATED AUGUST 13, 2007.
EXHIBIT NO. 14:
COLOMAC MINE, NWT, WATER LICENSE SENT MAY 20, 2005, TO D. LIVINGSTONE OF INAC FROM MACKENZIE VALLEY LAND AND WATER BOARD.

THE CHAIR: Thank you. I didn't mean to put you on hold. Thank you for your

presentation.

If DFO is ready to give their presentations.

MS. GORDANIER: Thank you, Mr. Chair, we have a couple of changes to our presentation, so we need to load it to the computer. Would we be able to ask for 5 minutes to get set up, please?

THE COURT: Does 10 minutes sound good to you?

MS. GORDANIER: That sounds even better. Thanks very much.

(BRIEF ADJOURNMENT)

THE CHAIR: Welcome back, everyone. DFO?

PRESENTATION BY DFO:

AMY LIU, TANIA GORDANIER, PAUL SAVOIE, sworn:

THE CHAIR: DFO, you may proceed.

MS. GORDANIER: Thank you, Mr. Chairman. My name is Tania Gordanier. I'm with Fisheries and Oceans Canada. I have with me here today, to my left, Amy Liu, who is a Senior Habitat Biologist in Iqaluit. And to my right, Paul Savoie, who is a Habitat Team Leader, also based out of Iqaluit, Nunavut.

We're very pleased to be here today to present to you our intervention to the Board on the Doris

North Gold Project.

For the information of the Board and other parties here today, we have changed a couple of our slides in the presentation that was previously presented at the back. I will try to point out those changes as I come to them in the presentation, and I apologize if there's a few things that don't appear in the copy you have before you.

DFO's presentation today will cover our mandate, relevant legislation and policies, and then go through a number of the items that the Water Board listed in their pre-hearing decision, including financial securities, construction, water use, the tailings impoundment area, monitoring, closure and reclamation, and then we will end with a concluding statement. Other areas that were listed in the pre-hearing decision or categories to be discussed we haven't raised in our intervention, since we didn't have any advice or input to provide to the Board related to these matters under our mandate under the Fisheries Act.

The Fisheries Act is a federal legislation dating back to the time of Federation. It was established to manage and protect Canada's fisheries resources. The Fisheries Act applies to

all fishing zones, territorial seas, and inland waters of Canada, such as inland lakes, rivers, and streams as well as oceans. It is binding on all levels of government as well as on private citizens.

There are two sections of the Fisheries Act that are of primary relevance to this particular project. The first is Section 35, which prohibits the harmful alteration, disruption, or destruction, we also call that a HADD by the way, of fish habitat without authorization from the Minister of Fisheries and Oceans or by regulation under the Fisheries Act.

The second provision of the Act is Section 36, which prohibits the deposit of deleterious substance into fish-frequented waters unless it's authorized by a regulation made under the Fisheries Act.

A deleterious substance under this Act could consist of a chemical spill or a chemical of any type, and the metal mining effluent regulations is an example of the regulation that would authorize a discharge. This section of the Act as well as the metal mining effluent regulations are administered on our behalf by Environment Canada.

I'm going to provide a bit more detail on the

metal mining effluent regulations. As I mentioned previously, they are a regulation made under the Fisheries Act. They apply to metal mining operations, and they allow for the deposit of a deleterious substance into a fish-frequented water and specify monitoring requirements at the end of pipe or at the discharge point.

In the regulation, a tailings impoundment area is defined as one of two things: The first is a confined disposal area that is not a natural water body frequented by fish, or secondly, a water or place set out in Schedule 2 of the MMER. So therefore, if you intend to use a fish-frequented water body as a tailings impoundment area, it must be set out on Schedule 2 of the regulation.

The regulation requires that a no-net-loss plan, sometimes called a compensation plan, that is acceptable to DFO be implemented to offset losses to fish habitat associated with the use of a tailings impoundment area. And the regulation is required to be amended, so it's an actual regulatory amendment, to list any fish-bearing lake to be used as a TIA on Schedule 2. The amendments to the regulation must be approved by the Governor and Council of Canada.

In making our decisions in the administration

of the habitat protection provisions of the Fisheries Act, we use the policy for the management of fish habitat. It has an overall objective for a net gain in fish habitat productive capacity. On a project-specific basis review, we use a guiding principle of no net loss of productive capacity. So what this means is that if a company is proposing to do a work that could impact on fish habitat, we expect for them to do other works to enhance or restore habitats to offset those losses, and this is what we mean by a no-net-loss plan or a compensation plan.

Moving on to the topic of financial securities. DFO obtains financial securities in the form of irrevocable letters of credit. So far for this project, we have obtained securities for the jetty construction at just a little over $67,000. We are also anticipating requirements for performance bonds to ensure that fish habitat compensation works are constructed and functioning as intended, and under the MMER, we have a legal requirement to obtain financial securities for works associated with the tailings impoundment area.

So on the topic of financial securities, DFO requests that Miramar provide an estimate relating to the financial securities for the construction

and monitoring of the rearing habitats that are proposed in Doris Lake -- and I will discuss these in a bit more detail later -- the boulder removal in Roberts Lake outflow and pool creation in Tributary E09 in Roberts Lake. In addition, DFO is requesting that Miramar provide an estimate relating to the breaching of the north tailings dam, since it is relevant to the closure of the tailings impoundment area and the re-establishment of habitat downstream.

We do recognize that during the environmental assessment, Miramar provided an estimate of security required for the items listed in the first bullet, and we just would request that they update those based on detailed engineering that has been done during the water licensing phase and provided in their next submission of the no-net-loss plan.

Under the topic of construction, we have three items to discuss. The first being the jetty and rock spurs in Roberts Bay; second being the float plane and boat dock on Doris Lake; and lastly the Doris Creek bridge and approaches, and those last two are going to be very quick.

So for the jetty and rock spurs in Roberts Bay, and this is just for the information of the Board because we recognize that this is largely built,

but the construction of the jetty was proposed to involve a footprint of about 103-metres long by 6-metres wide on the bed of Roberts Bay, and this required the Fisheries Act authorization, since it was going to result in the destruction of fish habitat.

The compensation that the proponent proposed involved creating rearing and foraging habitat for fish through the creation of what we call rock spurs off the jetty and in the near-shore area west of the jetty, and these rock spurs are basically little underwater rock piles that create nice spaces for fish to congregate around.

The jetty at closure is intended to be recreated to below the high-water mark, which will re-establish fish access to the area. We understand from the discussions with the proponent during the course of the last couple of days that the modifications to the design of the jetty have occurred during construction. We understand that these are fairly minor in nature, but the proponent has agreed to provide DFO with details of the jetty as it's been constructed, and DFO will assess whether there's a need for us to amend the authorization accordingly.

Further on the jetty and rock spurs in Roberts

Bay, we are recommending that Miramar re-submit the no-net-loss plan, including the monitoring plan that should be implemented now that the jetty is constructed, and an updated Table 18, which was provided during the application of the water license, and we would request that this be provided on or before September 15th of this year. I also would anticipate that the as-constructed information might be provided at this time as well.

On the topics of the float plane and boat dock on Doris Lake and the Doris Creek bridge and approaches, DFO has no additional recommendations to make on these matters, since DFO is of the opinion that Miramar has proposed sufficient measures and design techniques to avoid and mitigate adverse impacts to fish and fish habitat for these project components. So basically DFO is completely satisfied with what the proponent is proposing and provided it's constructed as planned.

In the topic of water use, the floating water intake structure in Doris Lake, the water withdrawal rates and quantities are not expected to adversely affect fish and fish habitat in Doris Lake. DFO has no additional recommendations to make on these matters, since DFO is of the opinion that Miramar has proposed sufficient -- or, sorry,

that was one of our changes, my apologies. DFO does recommend that Miramar submit detailed plans on the water intake screen design as part of the no-net-loss plan. So although the proponent has indicated they will follow our guidelines, we are requesting that they just provide the detailed plans that indicate this.

On the topic of the tailings impoundment area, construction of the north dam will result in a destruction of fish habitat or, at the very least, a disruption of fish habitat directly from its footprint, and the subsequent dewatering of tail outflow will disrupt the fish habitat for ninespine stickleback.

DFO will need to issue an authorization for this, and I should clarify that we will issue two authorizations relative to the tailings impoundment area: The first being the need to issue an authorization for the harmful alteration, disruption, or destruction of fish habitat associated with the dam; and the second, it's not really DFO approval per se, but it is relative to the regulation made under the Fisheries Act is that Tail Lake will need to be added to Schedule 2 of the MMER. This is a decision of Governor and Council, as we've heard, but DFO will need to

ensure that the no-net-loss plan be approved prior to the deposit of deleterious substances.

So going on then to my point about the requirements to authorize the dam itself, the north dam. In this case, the proponent has proposed to provide compensation, which involves creation of rearing habitat in Doris Lake. DFO has recommended that substantially the no-net-loss plan is complete with respect to this component, with the exception of details on the dam breaching. We know that the dam will be breached, but we're hopeful that Miramar could provide us with a bit more detail on how this breach will be accomplished to ensure that it would be protective of the aquatic environment downstream.

It should also be noted and for the information of the Board that DFO will not be able to issue a Fisheries Act authorization for the north dam until such a time that Cabinet makes a determination to accept the addition of Tail Lake to Schedule 2 of the metal mining effluent regulations. And this is because we do not want to be in a position of approving the construction of a facility before Cabinet has made a decision that the facility will be able to be used, and this is of primary importance to DFO, since our Minister is

responsible, not only for the authorization under the Fisheries Act but also for the -- under the metal mining effluent regulations.

Keeping going on the tailings impoundment area, so for the actual deposit of tailings into Tail Lake and its use as a tailings impoundment area, the following fish habitat compensation features are proposed: The creation of four rearing habitat features in Doris Lake, the removal of a boulder garden in Roberts outflow to improve migration of Arctic Char into Roberts Lake, and the creation of two pools in Tributary E09 of Roberts Lake. And again, while conceptual plans have been submitted which are acceptable to DFO, we are still awaiting final detailed engineering drawings for several aspects of the no-net-loss plan, most notably the engineered drawings associated with the boulder removal that will facilitate fish passage into Roberts Lake.

Just for the -- this doesn't show all that well, but for the information of the Board, this is Doris Lake here, and the red dots that you can see around the lake represent the six rearing habitats that will be created in that lake. Four of them are proposed to offset the losses from the actual deposit of a deleterious substance into Tail Lake,

and the other two are intended to offset the losses associated with the construction of the dam and the dewatering of tail outflow. Again, these are small reef-like structures that would create some structure in the water for small fish to use.

The locations of the stream enhancement features in Roberts Lake, up at the top here is this Tributary E09 that we mentioned. That tributary will be enhanced to allow for greater access by juvenile fish. And down here at the bottom is where the boulder garden is located, that would be some of the boulders would be removed to allow for greater fish access by Arctic char.

On the Roberts Lake outflow fish passage, DFO recommends that Miramar submit the detailed construction plan for this enhancement or barrier removal on or before September 15th, 2007. Similarly, we are requesting that Miramar provide information on the site reconnaissance that we understand has actually occurred and include that information in the no-net-loss plan submitted by September 15th, 2007.

One of the other requirements of Fisheries and Oceans related to the tailings impoundment area is a fish salvage program, which the proponent has agreed to. We do have a draft protocol that DFO

uses for salvage of fish from lakes that are proposed to be used for mining operations.

This salvage program as a protocol was actually developed in the Northwest Territories to be used for the diamond mines, so there are some things in the protocol that may need to be modified to make them applicable to this scenario at Doris North.

So we are requesting that Miramar re-work the draft protocol to make it fit in the context of Doris North, and that when they are doing that, we recommend that they take community interests into consideration in the development and implementation of the fish salvage program and in the use of the fish that will be salvaged.

We also recommend that discussions with Miramar, the HTOs, and the Nunavut Wildlife Management Board, and perhaps any other relevant party be held to finalize the details of the fish-out protocol, and we also, as with our other recommendations, we do recommend that we have the details of this submitted on or before September 15th, 2007.

And it should be noted that when it is submitted, because it will be a variation of our standard protocol, we will be sending it for our science folks in Winnipeg to look at, just to make

sure that it's equivalent, at least, to the existing protocol.

The topic of monitoring programs, and we've heard a little bit about this already today, there is an environmental effects monitoring program required under the metal mining effluent regulations, and again, this is largely administered by Environment Canada.

DFO also requires as a condition of authorization monitoring of fish habitat enhancements proposed in the no-net-loss plan, and a monitoring program is proposed to ensure that fish habitat compensation features are functioning as intended, so we have received a lot of this information to date.

As a summary of what we have received, and this is a new slide or a changed slide from the initial handout, there's four main components to the monitoring program at Roberts Lake. The first is monitoring of downstream migration of Arctic char smolts, which are the juvenile char, for a ten-year period to determine whether the barrier removal has actually resulted in increased numbers of char being produced. A second component is monitoring of the upstream movement of the adult char just after the barrier removal to ensure that the

removal was successful in allowing more fish to pass through.

Additionally, the proponent has noted during the environmental assessment phase and during regulatory that the monitoring of rearing habitats in Doris Lake and the tributary of Roberts Lake, they will undertake this annually during operations and in Year 1 and 5 after decommissioning.

And finally, there would be monitoring of Arctic char catch-per-unit efforts, on how long it takes you to catch a fish using a certain gear type, along the shoreline of Roberts Lake and selected tributaries of it. We're requesting and making a recommendation that Miramar provide a monitoring schedule for all these components, so it's clear in what year which activities are happening when and that this would be submitted with the no-net-loss plan on or before September 15th, 2007.

Continuing with the monitoring program, DFO has also requested that Miramar undertake a monitoring program where Tail Lake is dewatered where it meets Doris Lake, since it is a wet area and there was some concern that this vegetation and its contribution to fish habitat would be lost when the tributary was dewatered.

And Miramar has kindly agreed to undertake this monitoring once prior to construction, once during operations, and once after closure. DFO does, however, recommend that the monitoring schedule be extended a little bit into the closure phase, a little further into the closure phase, to make sure that the riparian vegetation is being maintained, and this is simply because the dam will be there for nine years anyway, so we'd like to make sure that at Year 9, we still have some vegetation at the shoreline.

On the topics of closure and reclamation at the north tailings dam, flow is proposed to be returned to the Tail Lake outflow upon decommissioning of the Doris North mine and once water quality in Tail Lake meets CCME guidelines. The north tailings dam is proposed to be breached through the construction of a slot 20 metres wide with a 4-to-1 slope on both sides. As I had mentioned previously, we are interested in seeing the details of how this breach would happen and in ensuring there are adequate securities to ensure that this can be done, if there's unforeseeable issues. At closure and reclamation again, DFO recommends that Miramar provide the detailed plans regarding the breaching of the Tail Lake north dam with the no-net-loss

plan on or before September 15th, 2007.

So as a summary of our recommendations, we are hoping that financial security -- and this should probably read a financial security quotation, rather than the actual financial securities, although we can discuss that further -- but the financial security quotation be provided on September 15th, 2007, and this should be a fairly comprehensive assessment of what would be required to do fish habit compensation as well as the dam breaching.

We would request that a comprehensive no-net-loss plan in final form on or before September 15th that includes all the details of monitoring and detailed engineering, that it be provided by that date.

We also request that the fish-out protocol that would be discussed with Miramar, the HTOs, the Nunavut Wildlife Management Board, and any other relevant party be submitted again by September 15th, and as I mentioned, the details regarding the construction methods and breaching of the north dam be required.

In conclusion, it's anticipated that mitigation measures and recommendations that we've presented here will adequately address the concerns we've

identified and the impacts to fish and fish habitat. DFO expects that the final no-net-loss plan will adequately address residual impacts to fish and fish habitat if it contains the information and measures that we've identified during our presentation and intervention.

DFO's comments and recommendations are based on our areas of expertise and jurisdiction, and we trust that they are helpful to the Board as they consider the project before them.

Thank you. We're available for any questions or comments.

THE CHAIR: Thank you. Miramar?

MHBL QUESTIONS DFO PANEL:

MR. CONNELL: Mr. Chairman, it's Larry Connell.

Thank you, Mr. Chairman. We have one question. I'll ask Terri Maloof to ask it.

THE CHAIR: Go ahead.

MS. MALOOF: Mr. Chairman, it's Terri Maloof. I have one question -- well, actually I have two questions related to reclamation security.

In DFO's presentation, you state that you will require an estimate of security for the breaching of the north tailings dam. Miramar has provided an estimate of reclamation security for the breaching

of the north tailings dam within the mine closure and reclamation plan submitted as part of our water license application.

So is DFO aware that Miramar will be required to provide security for the breaching of the north dam as part of the bond to be held by INAC and, as we have heard at these hearings, may also be required to provide security for the breach of the north dam to KIA?

THE CHAIR: DFO?

MS. GORDANIER: Thank you, Mr. Chair. Tania Gordanier at DFO.

Yes, DFO is aware that there have been quotes required, and my apologies if that wasn't clear. We were hoping for our own estimate, but we are aware that there have been quotes provided and that there will be securities required by INAC and KIA.

That being said, there is a requirement, it's a legal requirement under the metal mining effluent regulations, for DFO to have securities relating to the tailings impoundment area, and therefore, we wanted to include that in our intervention.

It is not DFO's intention that our request for these financial securities would in any way increase the global amount of securities that would be required by the company. We would anticipate

that there would be a mechanism where we could work together with INAC to ensure that there was no duplication of those financial securities.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Can I just add one question?

Just a point of clarification more than anything else. Could I ask DFO if they could confirm that they already have issued a letter early this year that asks Environment Canada to proceed with the listing of the Tail Lake on this MMER Schedule 2?

THE CHAIR: DFO?

MS. GORDANIER: Thank you, Mr. Chair. It's Tania Gordanier.

Yes, I can confirm that DFO did send a letter to Environment Canada on December 20th, 2006, requesting that they initiate the scheduling process under the MMER, and we do have a copy of that letter here that could be provided if it's of relevance to the Board.

THE CHAIR: Miramar?

MS. MALOOF: Thank you, Mr. Chair. I'm Terri Maloof. I have one last question.

Have DFO and Indian and Northern Affairs come to any agreement as to cooperation over the double

bonding or the bonding issue?
THE CHAIR: DFO?
MS. GORDANIER: Thank you, Mr. Chair. Tania Gordanier.
INAC and ourselves have had a number of discussions on this issue. Unfortunately bonding isn't my area of expertise, and so it may require some follow-up discussions, but I know, based on what I heard this afternoon or earlier this morning, rather, that INAC has considerable expertise, I think, on this matter, and perhaps they could shed some light on some of the items or the ideas that we had discussed, if that would please the Board.
THE CHAIR: Miramar?
MR. CONNELL: Sorry, Mr. Chairman. Thank you very much. That answers our question, and we have no other questions for DFO. Thank you very much.
THE CHAIR: Thank you. Next we have KIA.
MR. CLARK: This is Geoff Clark from KIA. We have no questions for DFO, Mr. Chairman.
THE CHAIR: Thank you. NTI?
MR. HAKONGAK: Thank you, Mr. Chair. Nunavut Tunngavik Inc. has no questions.

THE CHAIR: Thank you. INAC?
MR. McLEAN: Thank you, Mr. Chair. It's Carl McLean with INAC. We don't have any questions, but if I may, I'd like to just confirm and follow up on the comments that were just made with regards to the discussions between DFO and INAC, if I could.
THE CHAIR: Go ahead.
FOLLOW-UP COMMENTS BY INAC:
MR. McLEAN: Given what Tania Gordanier said about the requirement that a letter of credit accompany the MMER application, that's the mining metal effluent regulation application, there may or may not be a short-term overbonding situation if the water license security is already in place. So we're cognizant of that issue, and we respect that the company has that concern.

INAC's mine site reclamation policy for Nunavut commits the Department to working with other regulators, including, of course, DFO to coordinate security and to avoid overbonding.

So assuming that the security imposed by the Nunavut Water Board covers all the water-related reclamation activities, including the water-related components regarding the breaching of the north dam, then INAC would support the downward

adjustment of the INAC-held security amount to ensure that there's no double-dipping on the Crown's part.

The security held by DFO should not increase the global amount of water-related reclamation security held by the Government of Canada. So we just wanted to confirm that we have had those discussions, and we would certainly recommend back to the Board if the water security licenses -- the water license security is issued prior to the MMER to reduce the water license security that -- on that amount. Hopefully that clarifies.

THE CHAIR: Thank you. GN?

MR. ATKINSON: Thank you, Mr. Chair. Mike Atkinson, Department of Environment, Government of Nunavut. I have no questions for DFO, thank you.

THE CHAIR: Thank you. Environment Canada?

MS. LEVENSON: Thank you, Mr. Chairman. Savanna Levenson, Environment Canada. We have no questions.

THE CHAIR: Thank you. Staff?

NWB STAFF QUESTION DFO PANEL:

MS. FILIATRAULT: Thank you, Mr. Chairman, Dionne Filiatrault. I have a question for DFO.

The security that you are required to hold under the metal mining effluent regulations for the north dam, is that for the immediate construction of that facility as a tailings facility, and is that security held until such time as that facility is taken out of service into closure, or is it only for the immediate construction of that facility?

THE CHAIR: DFO?

MS. GORDANIER: Thank you, Mr. Chair. Tania Gordanier.

In our written intervention, I think we had described the security required in relation to the construction, and that maybe wasn't -- we didn't describe that well. What we do need is securities relating to the actual breaching of the dam, so it's just for the component.

If, for example, the company were to abandon the site, then we would be able to go in and breach that dam and return natural flows to the water bodies, of course, subject to the water quality being sufficient. So it's not for the construction of the dam; it's for the breaching.

THE CHAIR: Staff?

MS. FILIATRAULT: Thank you, Mr. Chairman. Dionne Filiatrault. Just one follow-up to that.

So you would, in fact, hold the security until

such time as that facility is breached?
MS. GORDANIER: That's my understanding, yes.
THE CHAIR: Any further questions from Staff?
MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.
The staff is just looking for a little, maybe a commentary, from DFO. We neglected to address Environment Canada with the issue, and would look for commentary from DFO on the discharge parameters that are being proposed for being regulated under the water license, if one is presented, and whether or not DFO is comfortable with those parameters as they've been proposed as they reflect or are taken into account by the Fisheries Act.
THE CHAIR: DFO?
MS. GORDANIER: Thank you, Mr. Chair. Tania Gordanier.
As we -- I'm afraid I can't provide much of a commentary, but what I can say is that through a memorandum of understanding, our Section 36, and the expertise pertaining to deleterious substances and water quality is handled by Environment Canada on our behalf, and so I would respectively defer to Environment Canada's opinions and -- on those

matters, and since they are the ones with the expertise.

THE CHAIR: Staff?

MR. HOHNSTEIN: That's all. Thank you, Mr. Chair.

THE CHAIR: Thank you. Are there any questions from the public to DFO? Are there any questions from Board Members to DFO? Staff?

MR. TILLEMAN: Just to keep the house in order by way of filing, Mr. Chairman, a couple of exhibits would be in order. One, I propose as number 15 would be the written -- the hard copy of the presentation that we received today from Fisheries and Oceans. Number 16 would be the electronic copy of their presentation that we received today, and I propose, just to make sure I don't forget, that we would mark as Number 17, the letter of December 20th of '06. That would be a letter from Fisheries to Environment Canada regarding the Schedule 2 listing. So if they can provide that, we can get it marked and have it available for everyone.

And if you could just make sure DFO has -- if I've captured the essence of that document correctly, so maybe just let them confirm that, subject to that confirmation, I suggest we mark it

as Number 17.
THE CHAIR: DFO?
MS. GORDANIER: Thank you, Mr. Chair. I think that was accurate, Bill. And in addition, we have also brought a copy of our draft fish-out protocol, which is -- it's not really a public document, but we have referred to it in our presentation, so if the Board would like that for their consideration, we have a copy of that as well.
THE CHAIR: Staff?
MR. TILLEMAN: Well, then if it's not going to be embarrassing to Fisheries if you refer to it, then we should mark it. So let's propose the fish-out protocol of Fisheries and Oceans Canada be marked as Exhibit Number 18. And those are my comments. Thank you.

EXHIBIT NO. 15:
HARD COPY OF DFO INTERVENTION PRESENTATION.
EXHIBIT NO. 16:
ELECTRONIC COPY OF DFO INTERVENTION PRESENTATION.
EXHIBIT NO. 17:
LETTER FROM DFO TO EC REGARDING THE SCHEDULE 2 LISTING, DATED DECEMBER 20, 2006.

EXHIBIT NO. 18:
DFO DRAFT FISH-OUT PROTOCOL.

THE CHAIR: Thank you very much for your presentation, DFO.

MS. GORDANIER: Thank you.

THE CHAIR: Next we have GN. Are you ready to give your presentation, or do you need time to set up?

MR. ATKINSON: Thank you, Mr. Chair. As soon as the presentation is on the screen, I'm ready to go.

THE CHAIR: Bill?

MR. TILLEMAN: Thank you, Mr. Chair. So while I'm getting ready to swear in the team of GN, I'm reminded that yesterday an issue came up regarding the table that was marked as Exhibit Number 5, and that was the Applicant's response to various matters that were raised.

So we sent that home last night with all of the parties, and we've received at least one comment sheet back. What we had promised is that we're going to give everyone a chance to comment on that one way or another, and so I'm just bringing that through you, sir, to everyone's attention, that we still have that as a thing that we need to do before we close, either before or after dinner

depending on how long GN takes. I just wanted to keep that in everyone's mind that that's one extra piece of the hearing, and that's all.

THE CHAIR: Thank you.

PRESENTATION BY GN:

MIKE ATKINSON, sworn:

THE CHAIR: You may proceed.

MR. ATKINSON: Thank you, Mr. Chair. My name is Mike Atkinson. I work for the Government of Nunavut, Department of Environment, as Manager of Land Use and Environmental Assessment.

This is my presentation to the Doris North Water License Application Public Hearing.

So in reviewing this application, the GN derives its legislative role from the Environment Protection Act. The Environment Protection Act states that: (As Read)

> No person shall discharge or permit the discharge of a contaminant into the environment.

And within the Act, the meaning of "contaminant" means: (As Read)

> Any noise, heat, vibration, or substance that the Minister may prescribe.

Under the Environment Protection Act are a number of regulations. These include the spill

planning and reporting regulations -- sorry, a number of regulations and guidelines. The only regulation being the spill planning and reporting regulation guidelines for dust suppression, general management of hazardous waste, sulphur dioxide and suspended particles, guideline for site remediation, and guidelines for disposal of waste antifreeze, batteries, paints and so on.

In addition, the GN is also signatory to the accord on environmental harmonization and the Canada-wide standard subagreement, to provide for the continual development and improvement and attainment of priority Canada-wide environmental standards.

Under those standards and the ones of relevance to this project include the Canada-wide standards for dioxins and furans, the Canada-wide standards for mercury emissions, the Canada-wide standards for particulate matter in ozone, and the Canada-wide standards for petroleum and hydrocarbon.

In addition, the GN also has a mandate for wildlife management under the Wildlife Act and are aware that there are aspects which touched upon wildlife management issues. I do not propose to get into these issues in this forum because we are

currently working with the Nunavut Impact Review Board and the proponent and their consultants to address those issues in another forum.

So DOE is presenting issues on the following topics: Term of license, construction, water use, water quality and management, waste management, geochemistry, contingencies, monitoring, closure and reclamation.

I would add that our comments here are provided at the conclusion of a long-term involvement in this project, dating back to 2003, through the Nunavut Impact Review Board review of the project, and culminating in June 2007 technical meetings for the water license, and now these hearings.

So in relation to term of license, Miramar has requested an eight-year term for the water license. The proposed project schedule outlined in the application includes the following phases and periods based on the commencement date of August 2007. The proposed construction 14 months, operation 24 months, closure 24 months, and then post-disclosure monitoring until remedial objectives are confirmed.

Under the proposed schedule, construction, operation, and closure would occur over slightly more than a ten-year period. An eight-year license

term would cover -- an eight-year license term would cover construction, operation, intensive closure, and approximately three years of active closure phases.

DOE supports Miramar's request for an eight-year license as this would provide the Applicant with certainty that project could be constructed, operated, and largely closed within a single license period. It would also provide stakeholders with an opportunity to review closure and reclamation performance prior to issuance of a second license to cover ongoing closure and/or post-closure care and maintenance.

In relation to construction, DOE is satisfied that Miramar has made a sincere commitment to environmental protection through the establishment of environmental management plans and contractual specifications. The Department of Environment acknowledges the improvements made to the plans as a result of interventions at the June 2007 technical meetings and also notes Miramar's commitment to revise and update all environmental management plans on a regular basis as part of its adaptive management and continual improvement approach.

Recognizing the volume of environmental

management plans and regulator requirements established for the project, the DOE recommends that site orientation for all construction personnel and contractors include orientation on environmental protection requirements of all project authorizations, procedures in environmental plans, and methods for reporting and communication.

Additionally, Item 35 of the construction -- Item 35, construction monitoring be included in the technical information meeting supplement provided subsequent to the June 2007 technical meetings refers to a construction monitor, who will undertake a variety of environmental monitoring activities during construction. For clarity, the Department of Environment recommends that Miramar update the engineering specification titled "Environment Protection" to reflect the position of construction monitor and the proposed monitoring activities.

Briefly on the issue of water use, fresh water for the project during construction and operation will be drawn from Doris Lake. Miramar estimates that approximately 30,000 cubic metres of this water will be used as potable supply for the mine.

DOE would like to reiterate on behalf of colleagues from our Department of Health and Social

Services, who couldn't be present here today, that the water used for human consumption meets guidelines for Canadian drinking water quality.

On the issues of water management and water quality, discharges to the aquatic environment for the project will include treated effluent from the tailing containment facility, treated effluent from sewage treatment plant, discharges from the sedimentation pond, pollution control pond, landfill, and the landfarm sumps.

Additionally, storm water will come into contact with disturbed areas on the project site, including the quarries, roadways, and other structures. The Department of Environment recognizes that other interveners have the mandate to address water quality in greater detail and, therefore, has conducted only an overview assessment of these issues.

Miramar proposes that discharges from Tail Lake tailings containment area will meet MMER discharge criteria and will be mixed with outflow of Doris Lake to meet CCME water quality guidelines downstream of the water flow in Doris Creek.

Discharge from Tail Lake is expected to commence during the open-water period of the first year of operations if water quality in Tail Lake

meets MMER discharge criteria. Active discharge would continue during subsequent annual open-water periods until water quality in Tail Lake meets CCME water quality guidelines. At which point, the lake would return to the natural pre-disturbance and unregulated discharge regime.

While some level of uncertainty remains in the water quality resulting in Tail Lake, Miramar has proposed an adaptive discharge management strategy, which includes regular sampling analysis of Tail Lake water quality to determine acceptability for discharge, a variable discharge rate to balance the solute loading of Tail Lake discharge with natural flows in Doris Creek to meet CCME downstream of the waterfall, and the ability to operate Tail Lake as a zero discharge facility for a minimum of five years to allow water quality to improve.

While Miramar anticipate discharge from Tail Lake will meet MMER discharge criteria and that CCME will be met in Doris Creek downstream of the waterfall, it has also committed to active water treatment in Tail Lake should it be required to meet the standards.

The Department of Environment recommends that compliance with CCME water quality guidelines for the protection of aquatic life at the SNP point

downstream of the mixing zone be retained as the objective of the discharges in Tail Lake, and furthermore, we recommend that Miramar be required to report annually on the quantity, quality, and frequency of the discharge from the tailing containment area.

Miramar has substituted the membrane bioreactor sewage plant for the original rotary biological contactor type system. And as they outlined in their proposals that the bioreactor system is currently used in several remote mine sites in the Northwest Territories.

Treated effluent is proposed to be discharged over the tundra during construction and into the tailings containment area during operation. They suggest that overland discharge during construction would be directed away from Doris Lake and flow over the tundra before entering any water body.

Miramar suggests or state that effluent from the plant will meet discharge criteria consistent with those other mine sites and have proposed certain discharge standards. These standards, the discharge away from any water bodies, the treatment potential of the tundra, and the monitoring proposed by Miramar should ensure protection of the environment from this project component. DOE

recommends the proposed discharge standards with the compliant point at the treatment plant itself for the term of the license.

Runoff from waste rock storage areas will be collected in a pollution control pond, while sumps will be installed in the fuel transfer facility, tank farm, landfarm, and landfill to collect runoff in these facilities. Water in each of these basins will be sampled and analyzed before discharged. Water from the pollution control pond is proposed to be discharged to the tailings containment area, whereas water from other facilities will be discharged over the tundra only if in compliance with effluent quality criteria.

The DOE, the Department of Environment appreciates Miramar's commitment to include additional parameters of interest for analysis of waters prior to discharge in order to better manage potential environmental effects. Additionally, the DOE recommends that Miramar be required to report on the quantity, quality, and location of these tundra discharges on an annual basis to allow for evaluation on potential environmental effects of this practice.

Following initial characterization work, Miramar concludes that quarry rock to be used for

construction is nonacid-generating. Monitoring of potential acid generation and metal leaching is proposed to be undertaken by collecting samples of quarry rock in place and water samples from seep downgradient from the place of the quarry rock.

Further, doing laboratory analysis is proposed to identify potential effects. The DOE recommends that monitoring program also includes quarry size, especially if these are to be a source of potentially acid-generated rock storage -- location of acid-generating rock storage.

On the issue of waste management, the Department of Environment has reviewed the Proponent's proposed waste plans and is generally satisfied that waste will be managed in an environmentally responsible manner. We appreciate that Miramar has addressed comments on waste management procedures submitted earlier and committed to undertake annual updates on all of its waste management plans.

Miramar has also updated its conceptual closure plan to confirm that the operational phase nonhazardous waste landfill will also be used to dispose of nonhazardous demolition waste during closure. The DOE supports the consolidation of wastes in a central location, rather than

establishment of additional land fills, which would require reclamation and monitoring. And as such, DOE recommends, pending landowner acceptance and sufficient capacity, that Miramar's request to utilize Doris North landfill to accept nonhazardous demolition waste from Boston and Windy camps be accepted.

Miramar plans to remove sewage sludge from its effluent prior to discharge. The sewage sludge will be bagged and incinerated. Consistent with the intervention provided by Environment Canada, the DOE recommends that the incinerator used to incinerate wastes and, in this case, sewage sludge be suitable for purpose.

As previously outlined, the Government of Nunavut is a signatory to the Canada-wide standards for dioxins and furans and also Canada-wide standards for mercury and is required to implement these according to jurisdiction. Installation of an incineration device capable of meeting the emission limits established under these standards is required. Compliance with the standards must be demonstrated through stack testing upon commission of the incinerator at the site. During the course of operations, the Proponent shall also make determined efforts to achieve compliance of the

Canada-wide standards for dioxins and furans and the Canada-wide standards for mercury.

Through previous testing and analysis, the Applicant has concluded that waste rock and quarry rock is not acid-generating or subject to metal leaching. Visual monitoring of quarry rock supplemented by analysis of samples of placed quarry rock for acid generation and metal leaching potential is proposed. Quarry rock, which is confirmed to be a source of acid rock drainage and metal leaching, will be removed and placed -- either placed underground or contained in a quarry. Waste rock from underground is proposed to be returned underground for permanent disposal where it will be isolated from conditions conducive to acid rock drainage and metal leaching.

Tailings from the mill are also proposed to be deposited under a permanent water cover in the tailings containment area. And all of these actions are intended to mitigate potential acid rock drainage and metal leaching from the project. And while the Applicant is confident that the risks of acid rock drainage and metal leaching are limited, the Department of Environment recommends that the Applicant be required to undertake monitoring and analysis of potential for acid rock

drainage and metal leaching of tailings discharge from the mill, waste rock, and quarry rock to confirm predictions.

Additionally, we request that monitoring of waste rock placed underground should be undertaken to confirm freezing is occurring as predicted. Information from this monitoring will assist in verifying predictions and confirming reclamation and post-closure monitoring actions. This information will also provide data for the assessment of reclamation.

On the issue of contingency planning, the Department of Environment has reviewed emergency response and contingency plan and subsequent amendments submitted by Miramar and is satisfied with the plan. Supplemental information provided by Miramar on June the 8th indicates that total onsite fuel storage will be increased from 7-and-a-half million to 12 million litres to assess increased demand reality from increased electrical generation capacity and to provide a 14-month rather than a 12-month supply to accommodate contingencies.

While the increased amount of fuel presents a potential for more fuel spills, the Department believes that the addition of fuel storage tanks at

the Roberts Bay site is an important preventive measure that will alleviate pressure and the inherent risks associated with the originally proposed short fuel transfer period. The addition of a fuel storage tank at Roberts Bay facility should also allow barges to be offloaded in a relatively short period avoiding the possibility of potential overwinter storage of fuel barges and/or the transfer of fuel from barges to shore without the presence of lead spill responders from the barge operators.

With regard to monitoring, the Department has reviewed the applicant's monitoring and follow-up plan and the amendment submitted in June 2007. Follow-up monitoring is important to assess the compliance with regulated requirements and assess the accuracy of predictions. The latter is especially important to build a knowledge base for the assessment of future projects.

Having reviewed these monitoring plans, the DOE also recommend that Miramar ensure that construction monitoring outlined in Section 35 of the technical meeting information supplement is fully incorporated into follow-up and monitoring plans. We also recommend that Miramar report on the quantity, quality, and location of all tundra

discharges on an annual basis to allow for evaluation of potential effects, and again another reiteration, that quarry sites -- that Miramar include quarry sites in its acid rock drainage and metal leaching monitoring programs.

With regard to reclamation and closure, everybody will be relieved to hear that the GN does not require a security bond. It is common practice that the final closure and reclamation plan is submitted for approval at least 24 months prior to a planned termination of operations. The mine closure and reclamation plan submitted with the application is conceptual in nature and lacks the detail required in a final plan.

As the Applicant expects only a 14-month construction period followed by a 24-month operational phase, there is limited time available for the development, review, and approval of a detailed closure and reclamation plan before the closure phase begins. It is, therefore, recommended that Miramar be required to submit a detailed closure and reclamation plan for review prior to commencement of the project operations phase.

Acknowledging that Miramar has identified that the site will be reclaimed to provide for wildlife

habitat after closure, the DOE also recommends that Miramar be directed to pursue reclamation and re-vegetation research in advance of submission of a detailed closure and reclamation plan.

Under a separate cover, DOE is also aware that as a result of the technical meetings that we would provide information on source and potential vegetation species that could be used for such vegetation trials.

Just in summary, the Department of Environment of the Government of Nunavut feels that the application, the supporting design and management plans, and the additional information filed by Miramar describe the measures to mitigate and manage potential impacts resulting from the project. The application generally provides satisfactory mitigation and management procedures for all waste streams and hazardous materials.

And that, Mr. Chair, concludes our presentation. Koana, thank you.

THE CHAIR: Thank you. We'll recess for 5 minutes and come back.

(BRIEF ADJOURNMENT)

THE CHAIR: Welcome back, everyone. Bill, do you have any housekeeping items?

MR. TILLEMAN: Yes, Mr. Chair, I just

propose to mark the GN presentation. Exhibit 19 would be the hard copy, Exhibit 20 would be the electronic copy. And I'll have a couple more later, but that was it for now. Thank you.

EXHIBIT NO. 19:
HARD COPY OF GN-DOE INTERVENTION PRESENTATION.
EXHIBIT NO. 20:
ELECTRONIC COPY OF GN-DOE INTERVENTION PRESENTATION.

THE CHAIR: Thank you. Questions from Miramar to GN?

MR. CONNELL: Thank you, Mr. Chairman. It's Larry Connell.

We thank the GN for their presentations; we have no questions for GN.

THE CHAIR: Thank you. INAC?

MR. McLEAN: Thank you, Mr. Chair. It's Carl McLean with INAC.

We just have two questions, if we may, for the GN.

THE CHAIR: Go ahead.

INAC QUESTIONS GN-DOE PANEL:

MR. McLEAN: The first question is related to the slide related to water use, and it says: (As Read)

The Department of Environment recommends that potable water be treated to comply with Canadian Drinking Water Quality Guidelines.

And I just want to clarify and I wonder if you can confirm, Mike, that that's a recommendation rather than you're requesting it as a term and condition of the license.

THE CHAIR: GN?

MR. ATKINSON: Thank you, Mr. Chair. Mike Atkinson, Department of Environment.

Yeah, that is a recommendation to Miramar as opposed to a term of the license. I recognize that. As a term of the license, it would cause some difficulty for INAC in terms of enforcement so -- and the GN under the Public Health Act may have more appropriate enforcement mechanisms, so yeah, it is more of a recommendation.

THE CHAIR: INAC?

MR. McLEAN: Thank you, Mr. Chair. I'm going to turn the mike over to John Brodie, who has just one question on reclamation and closure.

MR. BRODIE: It's John Brodie.

The question concerns the timing of the submission of the detailed closure plan. INAC recommended that a detailed closure plan be

submitted six months after the start of operations. And the reason for this was two-fold: First, Miramar has already submitted a fairly detailed closure plan, and secondly, a plan submitted six months after the start of operations would allow verification of the actual site conditions and initial observation of the geochemistry and water management issues on the project.

And so the question is would the DOE support INAC's recommendation on the detailed submission at six months after the start of operations?

THE CHAIR: GN?

MR. ATKINSON: Mike Atkinson, Department of Environment.

I have no problem accepting what INAC are recommending.

THE CHAIR: INAC?

MR. McLEAN: Thank you, Mr. Chair. We have no further questions. It's Carl McLean, INAC.

THE CHAIR: Thank you. I must apologize to KIA for jumping ahead. KIA?

MR. DONIHEE: Mr. Chairman, John Donihee for KIA. We have no questions for the Government of Nunavut.

THE CHAIR: Thank you. NTI?

MR. HAKONGAK: Thank you, Mr. Chairman.

George Hakongak, NTI. We don't have any questions for GN.
THE CHAIR: Thank you. DFO?
MS. GORDANIER: Thank you, Mr. Chair. Tania Gordanier with Fisheries and Oceans Canada, and we have no questions for the GN Department of Environment at this time. Thank you.
THE CHAIR: Thank you. Environment Canada?
MS. LEVENSON: Thank you, Mr. Chair. Savanna Levenson on behalf of Environment Canada. We have no questions, thank you.
THE CHAIR: Thank you. Staff?
MR. TILLEMAN: Thank you, Mr. Chair. I think there's just one question, and that will be it for us.
NWB STAFF QUESTION GN-DOE PANEL:
MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.
Just a quick question for GN regarding the proposal for sewage discharge during construction, and one of the items that the Staff had noted was that the effluent was going to be discharged uphill and allowed to flow through the tundra and eventually would -- we had it confirmed that it would be flowing back through the construction

site, and we were just wondering if GN had any concerns with respect to environmental protection and public health as to this proposal, keeping in mind that a good portion of construction is going to be during the winter time when this treatment plant is operating.

THE CHAIR: GN?

MR. ATKINSON: Mike Atkinson, Department of Environment.

I would just like to clarify the issue. Your issue is a public health issue?

MR. HOHNSTEIN: (NONVERBAL RESPONSE)

MR. ATKINSON: I have to say I would be reluctant to speak on that issue, and I really don't have any expertise when it comes to issues of public health.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chairman. That's all.

THE CHAIR: Thank you. Any questions from the public to GN? Any questions to GN from Board Members?

Thank you GN for your presentation. And what we will do now is break for supper. I must apologize for putting you on hold.

On our agenda is presentation by other persons,

associations, agencies, et cetera, who have advised the chairperson that they wish to speak or make a presentation to the Board. On that note, we will break for supper and be back here at 6:30.

MR. TILLEMAN: Thank you, Mr. Chair, as we're breaking, one thing that might help the Staff is that what happens when we get back at 6:30 is that there will be a reply by the Applicant and then we go into closings. And we'll do closings, and the Applicant has suggested, and the Board can agree or not, but that they have a last say in closings.

And the Staff would only request that if you could come back and give Dionne your electronic version of your summary, she can print it off before we start at 6:30, so if anyone needs anything done on the computer or printer, show up just 10 minutes early.

And finally, we can go over that table that we talked about, which was Exhibit 5, when we come back, and that's it.

THE CHAIR: Thank you.

(PROCEEDINGS ADJOURNED AT 5:06 P.M.)

(PROCEEDINGS RESUMED AT 6:30 P.M.)

THE CHAIR: Welcome back, everyone. Looks like we're running on time here. Bill?

MR. TILLEMAN: Thank you, Mr. Chairman, and so coming to the end of the hearing, as according to my notes, what we have left to do first would be to file some exhibits, and I'll get to that in just a moment.

After that, Dionne will put up Exhibit 5, that table up on the screen, and then if any parties would like to make comments on that, it will be up on the screen, and they can ask questions of the Applicant, make their comments to the Board, or alternatively, some parties have handed in written comments on that table, which I would like to mark as a package.

And then once we're done with the discussion on Exhibit 5, we would move to the reply by the Applicant to the evidence. Mr. Connell can take that and do what he does. When they're done with the reply, Mr. Chair, then it would be, according to the agenda, time to go to closings by the parties; that's a summary of whatever they would like to tell the Board it should do. The Applicant has requested to go last in that summary. Then, sir, of course, following that, it would be your opportunity for any closing remarks to close the hearing.

So back to the filing of exhibits then, in the

submission of Environment Canada, there were documents referred to which we've received, and propose that they be marked. They're at our table. Exhibit 21 would be a report of "Modelling the Environmental Fate of Dioxins and Furans", CEMC report. Number 22 would be a "Screening Level Risk Assessment Model for Chemical Fate and Effects in the Environment". Number 23 would be the "Screening Level" -- they might have tried to trick me, but I'm not going for it yet. Number 23 would be the "Screening Level Risk Assessment Model for Chemical Fate and Effects in the Environment", and since I can't compare them to find out if they're identical, I'll leave it marked as a separate exhibit. And then Number 24 would be the package of any replies in writing to Exhibit Number 5. That'll be a package because I know more than one party has simply written in their comments.

And that, Mr. Chair, as far as I know, takes care of the marking of the exhibits, and if I've missed any, would any of the parties please stand up now and let me know, otherwise, we're caught up.

EXHIBIT NO. 21:
CEMC REPORT NO. 200701, ENTITLED "MODELLING THE ENVIRONMENTAL FATE OF DIOXINS AND FURANS RELEASED TO THE ATMOSPHERE DURING

INCINERATION".
EXHIBIT NO. 22:
41-PAGE REPORT ENTITLED "SCREENING LEVEL RISK ASSESSMENT MODEL FOR CHEMICAL FATE AND EFFECTS IN THE ENVIRONMENT - SUPPORTING INFORMATION".
EXHIBIT NO. 23:
4-PAGE REPORT ENTITLED "SCREENING LEVEL RISK ASSESSMENT MODEL FOR CHEMICAL FATE AND EFFECTS IN THE ENVIRONMENT".
EXHIBIT NO. 24:
PACKAGE OF WRITTEN REPLIES TO EXHIBIT NUMBER 5.

MR. CURRIE: Mr. Chair, Jim Currie, Miramar.

I think it would be useful just to go through the list of exhibits from 1 until the end one last time if we could.

THE CHAIR: Bill?

MR. TILLEMAN: We'll be happy to do so, Mr. Chair. It's Bill Tilleman. And Dionne then will read them out right now.

MS. FILIATRAULT: Thank you, Mr. Chairman. Dionne Filiatrault.

Exhibit Number 1 is the Doris North Project presentation to the Water Board in hard copy, filed

by Miramar Hope Bay Limited. Number 2 is the Doris North Project presentation filed to the Water Board in electronic copy by Miramar Hope Bay. Number 3 is SRK Consulting Engineers and Scientists memo, subject: Discharge location and water quality monitoring plan, in hard copy submitted by SRK to Larry Connell. Number 4 is supplemental information and response to intervener submissions, electronic copy filed by Miramar Hope Bay. Number 5 is the supplemental information and response to intervener submissions in hard copy. Number 6 is NTI/KIA presentation in hard copy. Number 7 is NTI/KIA's presentation in electronic copy. Number 8 is INAC's presentation in hard copy. Number 9 is INAC's presentation in electronic copy. 10 is INAC's mine site reclamation policy for Nunavut 2002 in hard copy. 11 is Environment Canada's intervention presentation in hard copy. 12 is the Environment Canada's intervention presentation in electronic form. 13 is the memo from Environment Canada, subject dated August 13th, 2007, regarding CCME guidelines reference effluent quality criteria in hard copy. 14 is the water licenses -- the water license sent to David Livingstone, INAC, on May 20th, 2005, by the Mackenzie Valley Land and Water Board for the Colomac Mine in hard copy. 15

is the Fisheries and Oceans fish habitat management program intervention presentation in hard copy. 16 is the DFO presentation in electronic form. 17 is the letter of December 20th from G. Flood to Shauna Sigurdson, regarding designation of Tail Lake as a tailings impoundment area under the MMER with attachment e-mail dated August 10th, 2007. Exhibit 18 is the draft general fish-out protocol for lakes to be lost due to mine developments by DFO; it's in hard copy. 19 is the Department of Environment Government of Nunavut presentation in hard copy. 20 is the Department of Environment presentation in electronic copy. 21 is the modelling of the environmental fate of dioxins and furans released to the atmosphere during incineration. It's a CEMC report in hard copy. 22 is the Screening Level Risk Assessment Model for Chemical Fate and Effects in the Environment - Supporting Information document in hard copy. 23 is a Screening Level Risk Assessment Model for Chemical Fate and Effects in the Environment in hard copy. And 24 is the package responses from the parties regarding Exhibit 5.

EXHIBIT 5 RESPONSES AND DISCUSSIONS:

MR. TILLEMAN: Okay, thank you, Mr. Chair. Bill Tilleman.

So that then leads us to, seeing no objections from the parties or that we've missed anything, that then puts us to the point where we go back to Exhibit 5, and I'd suggest quickly you go to the Applicant and see if they have anything to say about it, and if not, then you just go down the list and see if any parties want to comment on it.

Now, we do note that the Staff has received comments from KIA and NTI in writing and also Environment Canada is just coming in. So I mean, if they want to file in writing, that's fine too. If they want to ask questions, they can feel free to ask questions at this point. That's it from us.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. We have not seen any of those tables at this point in time, so we have no opportunity to comment on them or say anything. We've only seen the original table which we created.

THE CHAIR: Bill?

MR. TILLEMAN: Thank you, Mr. Chair.

And so we have one filed with us, which is KIA and NTI, their brief comments. I suggest you go and ask the audience if they have any questions that they want to ask about this, in any event. They can come to the mike and make whatever

comments they make. If all they say is we have written comments, then let's get those in right now and perhaps take a very brief break to give everyone a chance to look at them.

THE CHAIR: Any questions from the interveners? INAC?

MR. McLEAN: Mr. Chair, it's Carl McLean with INAC.

I just want to inform the Board that INAC has had a detailed discussion with Miramar on the table, and we've responded in writing, and we have a table completed, and we just have one hard copy right now, but I believe David is giving it to the Board there electronically, and we can certainly give it to Miramar electronically, if that would be helpful or get another copy printed for you.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

I just concur with what Mr. McLean said that during the breaks between our sessions, our people have been talking with the INAC people about the items on that table, and we've worked to try and reach a consensus on those items, and we believe that that's what you will see within the INAC submission. We haven't had -- looked through it yet.

THE CHAIR: Thank you. Any items? Any other parties that wish to make a statement on this? Environment Canada? DFO?

MS. GORDANIER: Thank you, Mr. Chairman. It's Tania Gordanier.

We don't have anything to add to the table from a DFO perspective. Thank you.

THE CHAIR: Thank you. Environment Canada?

MS. LEVENSON: Thank you, Mr. Chairman. Savanna Levenson, Environment Canada.

We have no further comments at this time.

THE CHAIR: Thank you. KIA?

MR. DONIHEE: Mr. Chairman, John Donihee, counsel for KIA.

We have submitted whatever response we had in writing, and from our perspective, we're quite content to, if all that's compiled, if Miramar wants to reserve a right to reply even in writing at a later date, that would be fine with us. I don't see any reason to push Miramar to reply to something that they may not yet have seen, but from a KIA perspective, you have our thoughts, and we have nothing further to add. Thank you, sir.

THE CHAIR: Thank you. GN?

MR. ATKINSON: Mike Atkinson, Department

of Environment, Government of Nunavut.
I don't believe anything in the table relates to issues that we raised, so therefore, we do not have any comments.
THE CHAIR: Thank you. NTI?
MR. HAKONGAK: Thank you, Mr. Chair. George Hakongak, NTI.
We have nothing to add to this table at this time.
THE CHAIR: Thank you. Any other interested parties? Bill?
MR. TILLEMAN: Thank you, Mr. Chair.
And so we have, as INAC suggested, they have worked with the company, and they have a response that Dionne is putting up on the screen that will be part of Exhibit 24, and a very brief written response by Environment Canada, as I had suggested, just a couple of paragraphs.
I've already given the NTI/KIA submission to the company, and I'm going to, when I'm done here, just walk over Environment Canada's and give it to them, and if they would like to reserve the right to reply to that and take the time to do it, then that's certainly their request, and they're entitled to do that.
So as we're putting the INAC comments up on the

screen, Dionne can scroll through them as fast as the company wants her to do it and then make whatever final comments they have on those, and that would be my suggestion, sir.

So if we can -- I can't see behind myself, but if she puts up the comments, then we should just scroll through them, and the company can respond however they wish.

THE CHAIR: Are we ready to proceed?

MR. CONNELL: Thank you, Mr. Chairman. This is Larry Connell with Miramar.

I would concur with what Mr. Tilleman suggested and also with Mr. Donihee's request, that the way that we would like to have the opportunity to proceed would be to digest these tables and responses and respond in a written format to the Board within, say, a week, something like that, rather than try to do this off-the-cuff and not have an appropriate time to put this together, if that would be agreeable to the Board.

THE CHAIR: In light of what's happened just now, we will now proceed to Miramar's reply.

MR. CONNELL: Thank you, Mr. Chairman.

THE CHAIR: I will give you a week.

MR. CONNELL: Sorry, I didn't

understand you.
THE CHAIR: Perhaps, Bill...
MR. TILLEMAN: Thank you, Mr. Chair. It's Bill Tilleman.
And to follow up on the concern was that, with the company just receiving these comments now, that it would be fair to give them some time to look at them and review them and reply.
And so as the Board had suggested earlier in the hearing, on the issue of the security, that it would be likely that that might be held open for one week from Friday. So if, in fact, that's your direction in the closing, then you can also tag along the opportunity, in addition to the security comments, to let the Applicant respond to those comments. That could all be done at the same time.
Therefore, as you suggested, Mr. Chairman, then we could go right into the company's reply at this point in time. If anyone objects to that procedure, then maybe they could come up to the mike. Failing which, I think we should just go right into the reply, but it's your call, sir.
MR. HANSON: Thank you, Mr. Chair. So just for the record, the Board did confer that we will give you a week for the reply to come back to this Board. You asked that question?

MR. CONNELL: (NONVERBAL RESPONSE)
MR. HANSON: We conferred; we agree. So what we're asking for now is please proceed with your comment.
MR. CONNELL: Thank you.
THE CHAIR: Proceed.
MHBL REPLY TO INTERVENER EVIDENCE:
MR. CONNELL: Thank you, Mr. Chairman. This is Larry Connell with Miramar.

I'm going to give a short summary. Hopefully I can keep it short.

I'd like to start off by thanking the Board for their patience during this hearing. I'd also like to thank the Board Staff for all their hard work in making this hearing a reality. We'd also like to thank each of the intervening parties for the work they have put into this project, not just this week but over the past several years. We acknowledge that, collectively, their input has helped us put before you a better project.

In summary, Miramar is requesting that the Board issue a Type A water license for the Doris North Project with a license term of eight years. We have heard that from start to end -- you have heard, sorry, that from start to end of decommissioning the Doris North projects extends

over approximately ten years, thus, an eight-year license provides us certainty against the construction, operation, and closure plans that are before you but still provides all interested parties with an opportunity to review our performance prior to the issuance of a second license for the final closure and post-closure monitoring.

Under water management strategy and the CCME criteria, in comparing the interveners' presentations against the written interventions, there appears to be recognition and agreement from the interveners that the discharge strategy proposed by Miramar is both reasonable and environmentally protective.

Miramar has worked diligently to develop and put in front of you as part of its application what we believe is a very effective water management strategy to control the release of water from the tailings containment system. This includes a comprehensive model to simulate the proposed strategy.

Under our strategy, we are committed to meet two criteria: One, the metal mine effluent regulation discharge standards, including the required toxicity standard at the discharge point

from Tail Lake; and second, meeting the Canadian Council of Ministers of the Environment, the CCME, water quality guidelines for the protection of freshwater aquatic life in the receiving environment specifically below the waterfall within Doris Creek.

We believe that this strategy is unique, precedent-setting, and provides a high level of protection for water quality and all aquatic life downstream of the Doris North Project.

By and large, throughout this hearing process, you have heard other parties agree that the strategy as presented will provide a high level of protection to water quality in the receiving environment. However, in the Environment Canada's submission, the Board has been asked to consider applying standards that are even more stringent than the CCME guidelines.

Miramar is very concerned that the conditions contained within the water license require Miramar to use levels more stringent than the CCME guidelines in managing its water release, that this limit the effective operation of our water discharge strategy as proposed. We are concerned that such a water license condition could subject us to unnecessary shutdowns and jeopardize the

viability of our project.

You have heard from other parties that the CCME guidelines were established on the basis of ensuring full protection of aquatic life in the receiving environment. Consequently, it is our opinion that setting lower standards would not add further protection to the environment but could jeopardize our ability to manage the water level in Tail Lake. Excessive water level change in Tail Lake could lead to increased shore erosion and extend the overall management period at closure.

The next issue I'm going to talk to is the degree of environmental monitoring. In its application, Miramar has proposed an environmental management and monitoring program that is very extensive. It meets all of the legislative requirements and complies with the requirements contained in the NIRB project certificate.

Miramar strongly believes in responsible environmental stewardship and is, thus, committed to an extensive program of environmental monitoring. You have even seen during this hearing process our willingness to reach a compromise on requested additional monitoring items where these are reasonable and where they provide useful information. However, Miramar is concerned with

the extensive list of additional monitoring that has been recommended to you from the various interventions. Miramar would ask the Board to look at these requests and ask what is reasonable and truly necessary.

The last issue I'd like to talk to is reclamation security requirements. During this hearing, you've heard a lot of exchange about how reclamation security should be posted for this project. In its application, Miramar presented the Board with a full mine closure reclamation plan that included an estimate of reclamation cost that utilizes both the INAC reclaim model and the KIA proprietary reclamation costing model. Miramar worked with the KIA to ensure that their standards of reclamation were recognized and included.

You have heard that there is general consensus that the overall reclamation and liability for the project is in the order of $12 million. You have also heard a lot about how the security requirement could be split between water- and land-related activity. It is Miramar's belief that trying to split water from land liability is very difficult because land and water are interrelated. Miramar has acknowledged that it is our responsibility to post security against the full reclamation and

liability for this project.

However, you have also heard that there is no agreement on how the landowner and the Federal Government could jointly administer such security. And consequently, Miramar is being asked to post security bonds that, in aggregate, exceed the acknowledged liability by about $6 million. Miramar believes that this is extremely unfair and would hope that the landowner and the Federal Government could reach some accommodation to breach this impasse.

I'd like to thank the Board for the opportunity you've given us this week, and that closes my remarks.

THE CHAIR: Thank you. Miramar.

MR. CONNELL: Mr. Chairman, could I ask that a copy of this be entered as an exhibit so that you have the written copy?

THE CHAIR: Bill?

MR. TILLEMAN: I see no reason why not, if there is no objection from a party, and I see no one raising their hand. I propose that those comments be given to the Board and marked as Exhibit Number 25. Thank you.

EXHIBIT NO. 25:

4-PAGE WRITTEN REPLY TO INTERVENER EVIDENCE

BY MHBL.

THE CHAIR: The next item we have on the agenda is closing remarks. However, we will recess for 15 minutes. And then after we get back, all parties will have a chance to give their closing statements.

(BRIEF ADJOURNMENT)

THE CHAIR: Welcome back. Welcome back, everyone.

I now would like to call on KIA to make their closing remarks.

KIA CLOSING STATEMENT:

MR. HAVIOYAK: Thank you. I feel really small because I'm all alone up here. Thank you all. Thank you to everyone for being well-informed regarding the project, first of all. I am Donald Havioyak, President of KIA. KIA thanks for coming to the region to inform us and Miramar on Miramar's application for water license.

I'd like you to be informed and advised that the water license be granted because KIA is in support of a granting of a water license.

I will start by saying KIA support the issuance of a water license for the Doris North mine. Miramar Hope Bay Limited has presented a thorough application, comprehensive supporting materials,

which have been reviewed by the regulators, NTI, and KIA. No party in these proceedings has indicated that there are any major problems with this application. Those concerns have been identified and are all within the scope of the Board's authority and can be addressed during the drafting of a water license.

KIA wants to express its appreciation to all reviewers and participants in this hearing. The Doris North Project promises to deliver important benefits to Kitikmeot Inuit. Moving the project one step closer to reality through issuance of a water license is an important step forward for the Kitikmeot region and Nunavut.

Miramar has signed an IIBA and a water compensation agreement with KIA. Its application under the Nunavut Land Claims Agreement has been met, and there is no impediment under any land claims that might prevent the Board from issuing a water license.

Miramar has also satisfied the requirements in the Nunavut Water Act to address water compensation before the license can be issued. Miramar and KIA has completed quite a bit of work already on a surface lease, but as we indicated in our presentation, a lease is not yet complete.

This is not unusual. The KIA Tahera lease for the Jericho project was not signed until four months after the issuance of the Jericho water license. Once a water license is available for the Doris North Project, KIA will be able to complete the lease. It is our intention to do this in the near future.

From the KIA perspective, the only difficult issue left for the Board to decide relates to security for abandonment and reclamation of the mine. We have a number of comments to make to the Board on that issue.

First, however, it's important to know that there is no real issue about the total amount of security that is required for the Doris North Project. KIA, Miramar, and INAC all agree that it should be in the range of $12 million. Where there is disagreement, however, it is in addressing the question of how that security should be held and by whom it should be held.

All parties agreed that double bonding should be avoided. The added cost is a disincentive for Miramar and for the mining industry. KIA would like to find a way to eliminate this disincentive. KIA must, however, protect the interests of Nunavut Land Claims Agreement beneficiaries in this region.

We must also protect Inuit-owned lands, which are one of the important legacies we hold for our children and grandchildren. KIA is caught between its desire to encourage environmentally responsible mining development on Inuit-owned land and its responsibility to Inuit.

In these circumstances, we have no choice but to insist on full security for the project from Miramar. We have worked with the company and with INAC. We do not yet have a solution to offer to the Board. More work is needed, and it is very disappointing that INAC has taken a narrow legasistic (phonetic) view of the Board jurisdiction in relations to this issue. The mine site reclamation policy calls for alternate or innovative forms of security. KIA fails to see any evidence of innovation or even flexibility on behalf of INAC in addressing security issues for Doris North.

The problem can hardly have been a surprise for the Department, and this isn't the only time the Board has had to address it. This issue will come up again in the future, since other mines that need the water license are being developed on Inuit-owned land.

INAC's answer to the joint security ordered by

the Board under the Boston license seems to have been to develop an internal policy that prevents the Board to take -- from taking an innovative approach like this in the future. KIA suggests INAC -- suggests that INAC is ignoring the clear language of the Act and regulations which allow the Board to take security for the appurtenant undertaking the whole project, not just the water-related aspects of the project. We suggest that this includes more than just water-related security.

Whatever decision the Board makes, KIA strongly urge you to communicate the double-bonding problem that arises when mining takes place in Inuit-owned land directly to the Minister. If leadership is required from INAC, we suggest that the Board start at the top. If INAC mine site reclamation or other policies prevent flexibility and innovation and results in the impediment to economic development in Nunavut, they should be changed.

So where does all this leave the Board? If the Board chooses to accept INAC's interpretation of your authority, you will be restricted to water-related security only and will have to decide how much water-related security to take. The duplication that Miramar complains of, it's really

all found in the water-related security.

The evidence in this hearing indicates that there can be different results from qualified engineers applying the same security model to this project. INAC suggests that the water-related security should be about $6 million, but using the same model, Miramar has suggested the water security amount should be 3.8 million. If the Board chooses Miramar's analysis, the double-bonding problem is reduced by one-third, 33 percent. In fact, the less water-related security taken by the Board, the less double-bonding problem we have.

So one way to minimize but not to eliminate the problem facing Miramar is to take the minimum reasonable amount of water-related security. Looking at this issue more comprehensively, Miramar suggested four options to solve this problem. Any of the options, option 2, option 3, or option 4 would be acceptable to KIA. They all eliminate the double-bonding issue.

When asked about giving KIA an indemnity, which is a sort of guarantee that Crown would not come after KIA for security if the Minister took too little, and that didn't really explain why the indemnity was a problem. In the approach to

solving the double-bonding problem that protects KIA from liability would be acceptable to KIA.

We are willing to continue to work with the Board, INAC, and Miramar to find an answer. We are prepared to start work immediately. In the absence of a solution, however, I am bound as the President of KIA to protect Nunavut Land Claims Agreement, beneficiaries' interests, and Inuit-owned land. KIA will take security required to achieve this goal.

Thank you very much for listening, and that concludes our comments.

In case I do not see some of you before you depart, I wish you all a safe journey home on your flights. Thank you for paying attention.

THE CHAIR: Thank you. Koana. Next we have NTI.

NTI CLOSING STATEMENT:

MR. HAKONGAK: Thank you, Mr. Chair. George Hakongak with Nunavut Tunngavik Incorporated.

Nunavut Tunngavik Incorporated would like to thank the Nunavut Water Board for allowing our concerns to be heard at this final public hearing on Miramar Hope Bay Limited's water license application for the Doris North Gold Project.

Over the last two days, we have heard the proponent's application and the regulators' and interveners' submissions regarding their concerns and recommendations. It is with these recommendations suggested by the parties involved that the NTI hopes that the NWB will make an appropriate decision in a timely manner.

As we are aware, the Doris North Gold Project will become Nunavut's second operating mine, and the benefits to Nunavut Inuit and namely the people of the Kitikmeot region will be a welcome addition in helping the economy and well-being of Kitikmeot residents.

NTI would like to thank the Nunavut Water Board for bringing in the residents of Umingmaktok and Kingaog so that they may have a chance to have their concerns heard, as this project is in close proximity to their communities.

NTI would also like to thank the following people: Interpreters for their tireless work, the sound man for providing the necessary equipment in helping this hearing run efficiently, a court reporter for keeping a record of this public hearing, and to the staff of Kullik Ilihakvik for allowing the hearing to be held here in this fine facility.

It was a pleasure to see everyone again, and I wish you all a safe journey home. Koana.

THE CHAIR: Thank you. Next we have INAC.

INAC CLOSING STATEMENT:

MR. McLEAN: Thank you, Mr. Chair. It's Carl McLean with INAC, Indian and Northern Affairs Canada.

Indian and Northern Affairs Canada would like to thank the Nunavut Water Board for giving us this opportunity to comment on Miramar's application for a water license.

In our written intervention and verbal presentation, INAC has provided evidence to the Nunavut Water Board to assist in the licensing decision. In addition, throughout the week's discussions during the proceedings with other parties present, we have clarified and advanced many of the issues identified by INAC.

With regards to specific issues, we would like to inform the Board of the results of discussions INAC has had with Miramar on some of them. After discussions with Miramar regarding recalibration of the model, we have come to an agreement on the criteria for recalibration, which we feel will provide an appropriate level of assessment on the

effectiveness of the model.

Specifically, the level of significance for water elevation is 0.1 metres; the level of significance for water quality if a 20 percent deviation above predicted concentrations in Tail Lake. As part of the monthly SNP reports, Miramar will include a summary of the monthly operational assessment of the model proposed in Slide 79 of Miramar's presentation.

In addition, Miramar has committed to submitting an annual report 90 days after the end of the calendar year, March 31st, that will summarize the results of the monthly model assessments and any recalibrations that have been carried out. Also included in this report would be the relevant supporting data, SNP and internal modelling results, and discharge volume calculations. This would apply during both operation and closure periods.

INAC is pleased to have reached an apparent consensus with Miramar on the issue of geochemical monitoring. This requires confirmation by Miramar in their reply to our written comments on Exhibit 5.

With respect to waste rock management on surface, INAC also recognizes that the separation

of waste rock into two piles, that being mineralized and unmineralized portal rock, is operationally necessary.

On reclamation and closure, INAC has estimated the water-related reclamation liability to be $6.2 million. We note that there is a general agreement on the total reclamation liability. However, there is a range of opinion on the segregation of this between land- and water-related components. In this regard, INAC has provided details of the segregation in its verbal intervention and the rationale and examples of the segregation in our verbal presentation.

INAC advises the Board that this methodology is consistent with that used by INAC for other northern mining projects. Separating land- and water-related reclamation issues is difficult, but in INAC's view, that is the responsibility placed on the board by the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

The issue of overbonding is due to KIA's decision to request water security independent of the Nunavut Water Board process and in addition to the water-related security that may be imposed by the Board. It has been suggested that INAC take a leadership role in resolving this problem. INAC

contends that it has already done this. Despite INAC's policy for holding security equal to 100 percent of the water-related liability, INAC recognizes that segregation and separate holding of security exposes INAC to a potential shortfall of security funds.

The need for separating land-related security from water-related security arises because the law establishes a regime for the management of waters that is separate and distinct from the regime for the management of lands. This flows from the Nunavut Land Claim Agreement.

As such, the party with the legislative mandate to set security levels with respect to water license-related activities is the Nunavut Water Board. INAC respectively submits that the Board's jurisdiction is limited to setting a dollar value for the government-held water-related security. A desire by any landowner, whether a DIO or otherwise, to take security over lands or to hold water security in addition to the security held by the Minister is not a matter the Board can resolve, nor should it affect the Board's consideration of the evidence put before it.

In this application, INAC respectfully suggests that its experts have put forward the most detailed

and most transparent evidence on the issue of establishing the cost estimate for water-related abandonment and reclamation activities.

INAC is prepared to carry on discussions with the KIA and Miramar in respect of managing a reclamation project as a single endeavour using all security representing 100 percent of the costs in a way which avoids or minimizes overbonding.

As a final housekeeping note, the Board should request Miramar, when it files data or reports, to also provide all the data in extractable, electronic form.

INAC would like to thank again the Nunavut Water Board for giving us the opportunity to comment. Thank you to Miramar, the other interveners and stakeholders for their corporation.

I'd like to send a special thanks to the interpreters for their patience and hard work in interpreting our materials and to the Community for their hospitality.

Finally, thank you to the members from the outlying communities for taking the time to participate. Koana.

THE CHAIR: Thank you. We have Environment Canada.

EC CLOSING STATEMENT:

MS. LEVENSON: Thank you, Mr. Chair. Savanna Levenson on behalf of Environment Canada.

Environment Canada thanks the Nunavut Water Board for the opportunity to present our intervention. I would like to summarize our main recommendations to the Board in our closing comments and hope these are helpful to the Board in drafting a water license.

EC supports the use of two compliance points, meaning the MMER at end of pipe and CCME values below the waterfall in Doris Creek. Management objectives should seek to maintain the lowest levels of all parameters in the downstream receiving environments.

Ammonia limits should be set at end of pipe of 6 milligrams per litre maximum average concentration.

BOD 5 and fecal coliforms should be regulated on a monthly basis at end of pipe and limits of 15 milligrams per litre and 100 CFU per decalitre respectively.

An aquatic effects monitoring program should be implemented, which can inform management and the EEM without duplicating sampling requirements.

The annual seepage surveys should include periodic analysis of a limited subset of seepage

samples and routine field monitoring of several reference points which are not subject to mine influences.

With respect to incineration issues, we would like to stress to the Board that our concern lies with preventing contaminant discharge to water bodies and that we seek inclusion of best incineration practices in the waste management plans, just as similar plans cover hazardous waste management plans.

We are asking the Board to ensure that the release of contaminants from incineration is minimized through the application of determined efforts. By incorporating best practices into an incineration plan, i.e., using determined efforts as described today, we expect that the Canada-wide standards would be met and the aquatic environment would be protected.

Environment Canada is willing to provide ongoing support to the Board in the form of expert advice on areas such as water quality, aquatic effects monitoring, contingency planning, and the review of waste management and other plans.

Environment Canada would like to thank the Board on a constructive and well-run hearing. Thank you.

THE CHAIR: Thank you. We now have DFO.

DFO CLOSING STATEMENT:

MS. LIU: Thank you, Mr. Chair. Amy Liu from Fisheries and Oceans Canada.

Fisheries and Oceans Canada would like to thank the Board for the opportunity to come to Cambridge Bay to discuss our review of the Doris North Project. We would also like to thank Miramar Hope Bay Limited for working collaboratively with DFO to substantially address our issues prior to the hearing.

DFO has carefully considered all the information that Miramar Hope Bay Limited has presented in their submission to the Water Board as well as all the information presented by Miramar, the public, and other interveners during the course of the hearing in the past couple of days.

In our intervention, DFO has made a number of recommendations to the Board. In summary, these recommendations include: That Miramar provide a comprehensive no-net-loss plan in the final form on or before September 15, 2007, which includes detailed engineering on all components of the project related to the habitat compensation and monitoring as well as the design of the water

intake screen; that the fish-out protocol for Tail Lake be finalized after discussions with the local Hunters and Trappers Organizations, the Nunavut Wildlife Management Board, and other interested parties; that details regarding the construction methods for breaching of the north tailings dam be provided; and that a confirmation of financial security amounts required for the breaching of the north tailings dam and the habitat compensation features that are based on detailed engineering be provided by Miramar Hope Bay Limited.

While these items are still outstanding, Miramar has committed to providing them in a timely manner, and it is anticipated that with the inclusion of this information, the no-net-loss plan will adequately address potential harmful effects to fish and fish habitat. We trust that our comments and recommendations will be helpful to the Board in their deliberations.

In closing, DFO would like to thank the participants from the Kitikmeot communities for offering their knowledge about and views on this project.

And finally, DFO would also like to give special mention to the Community of Cambridge Bay for their hospitality and support during these

proceedings. Thank you.

THE CHAIR: Thank you. GN?

GN-DOE CLOSING STATEMENT:

MR. ATKINSON: Thank you, Mr. Chair. Mike Atkinson, Government of Nunavut-Department of Environment.

Government of Nunavut-Department of Environment concluding remarks to the hearings of the Doris North water license application. The Government of Nunavut-Department of Environment welcomes the opportunity to provide the Nunavut Water Board with its concluding remarks regarding Miramar Hope Bay Limited's Doris North Project application for a Type A water license.

Miramar proposes to construct, operate, and decommission and reclaim the Doris North project, a 720-tonne per day gold mine, approximately 125 kilometres south of Cambridge Bay. The mine is expected to operate for a two-year period beginning in 2008 followed by closure and a reclamation period.

The Nunavut Impact Review Board conducted an environmental review of the project proposal between 2002 and 2006, issuing a project certificate to Miramar in September 2006. The Department of Environment to the Government of

Nunavut intervened in the environmental review conducted by NIRB.

In April 2007, Miramar filed an application for water use and waste disposal with the Water Board. The Department of Environment has reviewed the water application. The review focussed on those aspects of the application that fall within the Department's mandate, i.e., the Environmental Protection Act, associated regulations and guidelines, and the Canada-wide standards. The Department provided its original comments on the application to the Nunavut Water Board in June 2007 as part of the technical meetings and was pleased that Miramar addressed most of our comments and recommendations.

During these hearings, the Department of Environment has provided additional comment and recommendation on outstanding issues of concern. Based on the dialogue of these hearings and recommendations provided by interveners and the Proponent's willingness to address concerns, DOE is happy that the project can be constructed, operated, and decommissioned in a manner that will protect Nunavut's aquatic environment from contaminants as required by the GN's legislation.

Finally, the Department of Environment would

again like to thank the Nunavut Water Board for providing us with the opportunity to intervene in this application. DOE would like to acknowledge the efforts and professionalism shown by Miramar and by interveners providing informative and engaging presentations.

We'd also like to thank again the Community of Cambridge Bay and the outlying communities for their participation, and that concludes our final comments. Koana.

THE CHAIR: Thank you. I would like to ask Miramar if they would like to make their closing statements now or after a 10-minute recess to prepare their closing statements.

MR. CURRIE: Mr. Chairman, Jim Currie, Miramar.

I think I can get this over quickly enough that we don't need to take a 10-minute break.

THE CHAIR: Go ahead.

MHBL CLOSING STATEMENT:

MR. CURRIE: Thank you. Mr. Chairman, again Jim Currie.

On behalf of Miramar Hope Bay Limited, I would like to thank the Nunavut Water Board for the opportunity to present our water license application in this the public hearing.

The president of Miramar, Mr. Tony Walsh, sends his regards, but regretfully he was unable to attend the hearings due to personal commitments elsewhere.

We appreciate the efforts of all involved and thank the various interveners for their thoughtful and detailed submissions. Thank you also to the people of the communities for your comments and questions.

Mr. Chairman, I'd like to extend a special thank you to the Board Staff for ensuring that our application was dealt with in a professional and timely manner. Thank you.

I'd also like to take this opportunity to personally commend the efforts of the Miramar team, which has worked tirelessly over the past year to prepare and defend our submission. Their dedication and professionalism has been shown in the quality of our application, the various management plans that have been proposed, and the way that they have responded to all issues raised in the technical meetings and in this hearing.

Mr. Chairman, at Miramar, as Mr. Connell noted earlier, we fully subscribe to the principle of responsible environmental stewardship in developing our mining operations in Nunavut. We hope that

Doris North will be the first in a number of gold operations in the Hope Bay belt to be constructed and operated by Miramar. We intend to develop and operate Doris North and all future operations in a way that will minimize environmental disturbance.

As has been shown over the past two days and throughout the entire process, Miramar has developed water management and monitoring programs that we believe will ensure environmental protection at Doris North and in the surrounding area. We believe that for the most part, we are in accordance with the recommendations of the various interveners.

However, I must state for the record that there are three issues that could jeopardize this project from our perspective because of their economic implications: The first, obviously, is double bonding; second, the insistence by certain interveners that Miramar be held to a higher standard than other operating mines in the north; and finally, timely issuance of the water license to Tail Lake being listed on Schedule 2 of MMER.

As has been noted a number of times in our presentations, double bonding is a major issue for us. We're prepared to post a bond that covers the total estimated cost of reclamation; however, we

are not prepared to double bond. It is an onerous requirement of this small project and would be a dangerous precedent for our future developments in the belt and, in fact, for all mining projects in the north on Inuit-owned lands.

To rebut the comments of our friends at INAC and KIA, the holding and distribution of bonds is not our responsibility.

It is interesting to note Mr. McLean's comments earlier today about there being risk on both INAC's and KIA's sides related to land and water reclamation. What has perhaps been forgotten in these proceedings is the fact that Miramar and companies like Miramar take the biggest risk of all in developing mines in the first place, particularly in the north.

Before we sell 1 ounce of gold from Doris North, we will have spent in excess of $200 million in the Hope Bay gold belt on exploration and development.

Risks to the environment will be covered by the enforcement of the conditions of the water license and our project certificate where we could be ordered to rectify, mitigate, compensate or, in fact, be shut down for various infractions should they occur.

Reclamation risk will be covered by a bond estimated to be in the order of 11.5 to $12 million. However, it should be remembered that this money will only be used if we fail to reclaim the mine to an agreed-upon standard. Yet, Miramar faces the risk that gold prices could plummet or costs could increase, and we may never recoup our investment. That, Mr. Chairman, is risk.

Mr. Chairman I have been instructed by the Miramar Board of Directors to state for the record that if the issue of double bonding is not resolved, it could lead to serious delays and possibly a halt to the project.

As was noted earlier, Environment Canada has alluded that discharges to the receiving environment be less than CCME guidelines. Should this requirement be included in the water license, this could also cause us to question whether we should proceed with this project, as this could seriously affect our water management strategy. All of the other interveners have stated that CCME guidelines are protective of aquatic species, and as such, these are the limits that we should have to adhere to at the monitoring point in question.

Finally, we were advised earlier today that the listing of Tail Lake on Schedule 2 of MMER may be

delayed slightly beyond the previously anticipated October date. Given DFO's advice to proceed with listing Tail Lake on Schedule 2, we are confident that this will still happen in time to meet our construction schedule.

In the meantime, there are still many things that have to be done prior to starting work on the tailings facility early next year. A delay in receiving the water license because of the MMER delay could set the construction schedule back by a year and could, in fact, jeopardize the project if gold prices were to fall precipitously in the interim.

In closing, Mr. Chairman, we respectfully ask the Water Board to approve our application in a timely fashion and write a Class A water license for Doris North that ensures protection of the environment and is consistent with other water licenses issued in the north.

We ask that the Doris North Project not be subject to conditions that are precedent-setting, overly onerous, or unfair.

Again, Mr. Chairman, our thanks to the Water Board, the Water Board staff, and all of the other interveners for their time and efforts. Koana, thank you.

THE CHAIR: Thank you. Are we there yet?

Thank you. The Board would like to thank the parties including especially the Applicant, the Staff, interpreters, court reporter, and the Hamlet of Cambridge Bay for all of its hospitality. We are at the close of the hearing, and I would like to make some comments to let parties know what happens next.

First, I now close the hearing record in these proceedings except on the following points: First, the Applicant can reply to any comments found in Exhibit 24, which is the table referred to earlier. Second, all parties are asked if they wish to file supplemental arguments on the water license security in its form, nature, and any conditions on security. Legal arguments would be appreciated, especially by INAC, KIA, and Miramar. The strict guideline deadline for these final submissions is Friday, August 24, at 4 p.m. mountain time. With the exception of these two points, this record is closed.

On timing, the Board intends to make its decision on issuing its license by 30 days, which is on or about September 17, 2007.

Good night, thanks again, this hearing is

adjourned according to these instructions.

I would now like to ask our Board Member, Guy Kakkiarniun, to say the closing prayer.

(CLOSING PRAYER)

(WHICH WAS ALL THE EVIDENCE TAKEN AT 8:07 P.M.)

I, Karoline Schumann, Court Reporter, hereby certify that I attended the above Hearing and took faithful and accurate shorthand notes, and the foregoing is a true and accurate transcript of my shorthand notes to the best of my skill and ability.

Dated at the City of Calgary, Province of Alberta, this 19th day of August, 2007.

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Karoline Schumann, CSR(A)
Official Court Reporter

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