NUNAVUT WATER BOARD HEARING

RE: DORIS NORTH PROJECT

HEARING HELD AT THE
KULLIK ILIHAKVIK ELEMENTARY SCHOOL
CAMBRIDGE BAY, NUNAVUT
AUGUST 13, 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 9:07 A.M.)
THE CHAIR: Good morning. My name is Thomas Kabloona, and I'm the Acting Chairman of the Nunavut Water Board. Before we begin with the hearing, let us begin with a prayer, and I would ask Guy Kakkiarniun to make the opening prayer.
(OPENING PRAYER)
THE CHAIR: The Nunavut Water Board is an institution of public gathering created under Article 13 of the Nunavut Land Claims Agreement and is responsible for the use, management, and regulation of fresh water in the Nunavut settlement areas.

On behalf of the Water Board, I welcome everyone to Cambridge Bay for the purpose of this hearing to review the application filed by Miramar Hope Bay Limited for a Type A water license in accordance with the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

And with me today are Members of the Board. On my far right is Guy Kakkiarniun from Kogali (phonetic) and George Porter from Gjoa Haven, and Geoffrey Kusugak from Rankin Inlet, and to my left, Rob Hanson, Iqaluit, and Lootie Toomasie from Taloyoak.

We also acknowledge Raymond Kayaksark is

present but is not participating in the hearing for the decision; he has declared conflict of interest, as he is Vice President of Kitikmeot Inuit Association, an intervener for this application.

Several Staff members and Nunavut Water Board consultants who have undertaken a technical review of Miramar's application are present, and I will highlight key individuals. Dionne Filiatrault, Acting Executive Director; David Hohnstein, Acting Director of Technical Services; and Phyllis Bealieau, Manager of Licensing; and Richard Dwyer, Licensing Administrative Trainee, Ben Kogvik, interpreter/translator; and several other support Staff. Bill Tilleman, legal counsel for the Nunavut Water Board, will be swearing in witnesses. In addition, we have several interpreters available for simultaneous translation, Joe Otokiak, Edna Elias, Mary Hunt, and Attima Hadlari, and Ben Kogvik.

In the past, parties in other proceedings have approached the media prior to the release of the Board's decision, suggesting comments about what the Board is going to do either procedurally or in terms of the final result.

Since the Board cannot comment on pending matters either by confirming or denying the

accuracy of other statements to the media, the Board would appreciate if all parties would refrain from any such comments that may imply a certain action or decision by the Board.

Board Members will not discuss the hearing or the matters before the Board with any of the parties or the media. If you have a question about the Board and its practices or procedures, please speak to the Acting Executive Director, and she will assist you.

I would like to advise the parties that the CBC has asked to plug into the taping system. If any party has any concerns with this request, I ask that they make such concerns known before we proceed.

If there are no concerns, I would like to move forward to a roll call. I will begin the roll call with Miramar, and then go to other intervening parties: INAC, DFO, Environment Canada, Kitikmeot Inuit Association, Nunavut Tunngavik Incorporated, and Government of Nunavut. If any other interveners would like to speak, please identify yourself.

It is our tradition to give respect to our Elders. At any time an Elder may speak to the application on file.

Before proceeding, I would like to request that all parties register with Phyllis and Richard at the side table.

The Board relies on the parties and the Applicant to ensure that all issues and options for resolutions are on the record and expects the parties and the Applicant to provide evidence accordingly. Failure to ask questions of the other parties leaves the Board in a position to accept the other parties' submissions.

To ensure an accurate record of the proceedings, we have with us a court stenographer, Karoline Schumann. To assist Karoline, I ask that all parties speak their name before speaking.

APPLICATION HISTORY:

I will now give a brief history of the application.

In 2002, an initial application was filed by Miramar Hope Bay Limited, which was immediately forwarded to the Nunavut Impact Review Board for environmental assessment in accordance with Article 12 of the Nunavut Land Claims Agreement.

The environmental assessment Part 5 review was completed in 2006, with a project certificate issued in September of last year.

The Nunavut Water Board provided Miramar with

guidelines in October 2006 in accordance with Section 48(3) of Act 13.8.1 of the Nunavut Land Claims Agreement to assist the Applicant in meeting the information requirements of the Board.

As a result, Miramar filed an application for a Type A water license in November. Following consultation and review by interested parties and direction by the Board, a revised water license application was submitted to the Water Board on May 4th of this year.

Following receipt of this document, the Nunavut Water Board provided notice to parties on May 9th. Additional information, including proposed modifications, was filed by Miramar on June 8th. Pursuant to Section 12.4.3 of the Land Claims Agreement, the Nunavut Water Board requested that the Nunavut Impact Review Board review the proposed modifications. The Nunavut Impact Review Board concluded that the proposed modifications did not require further screening.

A pre-hearing technical meeting was conducted in Cambridge Bay on June 11th and 12th. The pre-hearing decision was issued setting out the issue before the Board today. Written submissions for this hearing have been received from the Government of Nunavut, Department of Environment,

Department of Fisheries and Oceans, Environment Canada, Indian and Northern Affairs Canada, Kitikmeot Inuit Association, and Nunavut Tunngavik Incorporated.

Before we proceed, I would like to advise the parties that any decision of the Board requires that it be consistent with the project certificate issued by Nunavut Impact Review Board.

Miramar Hope Bay Limited has requested to make a brief presentation on the current status of the project. Mr. Connell, how long will you take?

MR. CONNELL: Do you want to swear us in at this point? I asked the question to Mr. Tilleman whether he would like to swear us in at this point or give the presentation.

MR. TILLEMAN: Thank you, Mr. Chair. I think that's a great idea, and maybe he could just introduce the team, and then when they're ready to give their evidence, I can just swear them all at once or affirm them, and then they're ready to give their presentations. That's fine by me.

PRESENTATION BY MHBL:

MR. CONNELL: Thank you very much, Mr. Chairman. My name is Larry Connell. I'm with Miramar Mining. I'm General Manager of Environment for Miramar Mining.

Mr. Chairman, Board Members, Staff, Elders, community members, representatives of the Kitikmeot Inuit Association, Nunavut Tunngavik Inc., Government of Nunavut, and the Departments of the Government of Canada, I can tell that you we're all very happy to be here today to present the Doris North Project to the Board. It has taken a great deal of effort by many people to get to this point. We would like to thank the Board, Board Staff, and all the interveners who worked very hard to review this project so that we could present the project to you today. The input and guidance from these parties has helped us prepare a water license application and all the supporting documents.

The Proponent of the project is Miramar Hope Bay Limited. In the application and its supporting documents, we have used the term "MHBL" to refer to Miramar Hope Bay Limited. In this presentation, you will see us introduce the word "MHBL" and "Miramar" to refer to Miramar Hope Bay Limited.

Miramar is a wholly owned subsidiary of Miramar Mining Corporation, which is a publicly traded company. When we refer to the parent corporation, we will use the full name, "Miramar Mining Corporation". When we refer to "the project", we mean the Doris North Project, as we described in

the revised water license support document.

We are very grateful to the Board for granting us this opportunity to present the project to you. And on that basis, I'm going to start into our presentation, and I'll start off with introductions, Bill, and then come back to the evidence.

The presentation that I'm going to give you this morning, the outline is here on the first and second slide. We'll give you a project overview. We'll go through our planned water use. We'll talk about the general conditions that apply in the water license. Then we'll move into description of waste disposal, specifically dealing with the disposal techniques for the mill tailings, for sewage generated by the project, for garbage generated by the project, and the other hazardous wastes that are generated.

We'll go on to talk about water management, and water management will specifically break down into two areas: The management of water for Tail Lake, and how we manage storm water at the site. We'll then go on to describe our environmental management system, how we're going to monitor the performance, the environmental performance of the project. We'll discuss the closure and reclamation planning,

and then move on to the financial security for that reclamation and liability.

Before I get into it, I'm going to introduce the Miramar team. We have with us, Mr. Jim Currie, Vice President of Operations. We have Terri Maloof, who is Manager of Permitting and Compliance; Alex Buchan, who is Manager of Community Relations; and Katheryn McIvor, who is our Tenure and Permitting Coordinator.

We also have a very dedicated team of expert consultants with us. We have Maritz Rykaart, who is an engineer with SRK Consulting, geotechnical engineer; Maritz is right here. We have John Chapman, who is also an engineer with SRK Consulting, and John is our principal specialist on water quality and the water modelling. We have Nathan Schmidt at the end of the table; Nathan is also an engineer with Golder Associates, and his primary area of expertise is hydrology. And last but not -- two last but not least, we've got Gary Ash, who is a fisheries biologist and a principal of Golder and has done the baseline environmental monitoring for us with his team and also is the primary group who have done the compensation for fisheries lost. Now last but not least, we have Diana Valiela, who is with Lawson Lundell, who is

acting as our counsel for the project.
So at that phase, I'm ready now to get into the project overview.
MR. TILLEMAN: Thank you, Mr. Chair. So I'll, in just a moment, go over and swear them in, and as I'm getting ready to do that, I'm wondering at the beginning of their presentation, if they could just indicate how long it would be roughly so the Board knows.
And also, sir, just in case anyone else in the audience had any questions or motions they wanted to bring up by way of procedure, now might be a good time to ask them before we start with the Proponent.
So through you if anyone else who is a party here has a question today about what we're doing or a procedure, maybe have them stand and ask that, and if there is none, then I can go straight over and swear them in and away they go.
THE CHAIR: Does the public have any questions?

ALEX BUCHAN, JIM CURRIE, TERRI MALOOF, LARRY CONNELL, MARITZ RYKAART, JOHN CHAPMAN, GARY ASH, NATHAN SCHMIDT, sworn:

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

Our presentation this morning will take roughly two to two-and-a-half hours. We'll try to put a break point in at one hour into the presentation, and we'll do that at the break hopefully between the water management piece.

With the Board's indulgence, I'm going to sit to give this presentation, and I'll do it from that point, if that's okay.

MR. HANSON: Just for the record, every time you speak and push on your mike, always say your name first for the record so we know who you are.

MR. CONNELL: Larry Connell, Mr. Chairman.

THE CHAIR: Before you proceed, do you wish to recess for 10 minutes, or what would you like to do?

MR. CONNELL: I take my leave from you on that. We're quite happy to take a short break now and then proceed.

THE CHAIR: Does 10 minutes sound good to you?

MR. CONNELL: Yes, sir.

(BRIEF ADJOURNMENT)

THE CHAIR: Shall we reconvene. You may proceed with your presentation.

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

I'm going to now proceed with an overview of the Doris North Project. Start off with a location map. A little difficult to see on that, but it's approximately 105 kilometres to the southwest of Cambridge Bay. It's 5 kilometres inland off of Coronation Gulf, Roberts Bay, and it's on the east side of Bathurst Inlet.

The next slide shows a little closer-in view. The Doris -- this is the Hope Bay Greenstone Belt. It's an 80-kilometre long mineralized belt. The Doris North Project is at the top, the north of it. This is the Jericho project right here, so it gives you some sense of where it is, and here's Kugluktuk here and Cambridge Bay here.

Just some quick points of the project. The project is located on Inuit-owned land. The minerals are owned by Nunavut Tunngavik Inc., and Doris North will be a small underground gold mine with an average mining rate of 720 tonnes per day of ore. It's expected to produce 311,000 ounces of gold from 460,000 tonnes of ore over a two-year mine life. It's going to be a short-term profitable project but located in an area with significant future potential for other growth and

other mineral deposits. So we anticipate that we will be back before you to seek further developments in this belt in the future.

The site footprint in the Doris North Project is approximately 54 hectares. The major components of the project is an underground mine accessed by a decline or a ramp from surface; a mill to process the ore; the mill will have a design throughput of 800 tonnes per day; a power house to house the diesel generators to generate the power that we need for the mill and the rest of the facilities; a maintenance shop with the warehousing; a camp to house and feed the workers; and a sewage treatment plant to deal with the sewage generated by our housing of people at camp.

There will be a fuel storage tank farm at the mill site within a secondary containment facility, a liner, that will have a capacity of 7-and-a-half million litres, and another fuel storage tank located at Roberts Bay within -- again, within a lined containment, and that will have a capacity of 5 million litres.

There will be a tailings containment area and the associated piping to take tailings to the tailings containment area and also to bring reclaimed water back, and we're using a small lake

called Tail Lake located about 5 kilometres from the mill.

We're going to have a landfill on site to deal with our garbage. The putrescible garbage of the -- the garbage we generate from the kitchen, that will be incinerated. This landfill is to deal with the nonhazardous garbage we generate from operations. We're also going to build within that -- that landfill will be within one of the -- will be located within one of the construction quarries, the quarries that we mine out to produce the rock for construction.

We will also construct in that quarry, a landfarm. This is a lined facility to allow us to deal with any petroleum-contaminated soils. While we don't expect to have spills, we know that it's best to be prudent to plan for them so that we can actually treat those soils if they occur.

There will also be an all-weather airstrip that will be constructed as a widened section of a road, the access road, and we'll have a winter airstrip located on Doris Lake.

There will be a rock-filled jetty in Roberts Bay in the marine environment to offload the barges as the supplies will come up from -- up the Mackenzie River around and into Coronation Gulf to

the site.

At the Roberts Bay, there's also a jetty near the -- sorry, there's also a lay-down area near the jetty to accommodate the storage of the containers and things that they offload the barge prior to them being hauled up to the mine site about 5 kilometres away.

The access road between Roberts Bay and the mill site is 4.8 kilometres long, and that will be an all-weather road, and there's also an all-weather road that goes between the mill and the Tail Lake, which is 5.8 kilometres long.

This is a map that shows those facilities. This is Roberts Bay out here. This is the jetty. This is the road that connects up to the mill site, so the mill site is in this location here. Tail Lake is out in this location here, and this is the access road out to Tail Lake.

This is a closer-in view of just the plant site. The camp is located here. Fuel -- the fuel storage tank farm is here. The mill and the crushing circuit are over here. This is the ore stockpile. The portal entry is over in this direction, and this here is a stockpile for temporary waste rock coming up from underground, where we place it with the intent that it go back

underground.

This is a view from Doris Lake looking to the north towards the Roberts Bay. This is the mesa, and the mill is going to be built on this outcrop of rock here, so this is the mill and camp area, this general location. The access into the mine, the decline starts in this rock face here and goes down this direction.

The ore body that we're going after is this set of lenses up here, inside the red circle. The system we're on actually continues out into the lake, but the Doris North Project is this here, these lenses here. And the point in showing you this is to make sure that you understand that the project is not located under the lake; it's actually in ground, and so it's within permafrost. This is that outcrop where the portal goes in, and that was the mesa, that green colour is the mesa.

How will the ore be mined? It's an underground mine, uses opening stoping and mechanized cut-and-fill methods. The access is by means of a ramp from surface. That ramp is going to be 4-metres high by 5-metres wide, 900-metres long, at a 10 percent downgrade. The lowest production level is 62-and-a-half metres below surface, so that's as far down as we're going. And the

ventilation for the mine is going to be through three vertical raises, three vertical holes that come to surface with a fan on top of them. And one of those will also provide a secondary route of exit for the miners in case of the -- any accident to the main ramp.

The cycle for mining is basically ore and waste rock are drilled off. The drill holes are loaded with explosives and then blasted. Loose rock is scaled, and then the rock bolts installed to secure the roof. The broken rock is then loaded onto underground haul trucks, and they all come -- the ore comes to surface for milling, and the waste rock either goes to other underground locations to be backfilled, is to be used as backfill to fill the holes, or comes to surface for temporary storage, pending return to where -- to go -- to be placed as backfill underground.

These are just some shots of general pictures of other underground mines just to give you a sense of what that is, so this is underground mining operations here of our other operations.

Next, I'm going to go through the ore processing. This is -- the mill is the building where we extract the gold from the ore. This is a very simplified flow sheet, but basically the ore

is brought into the crushing plant, it's crushed, and then brought into the grinding circuit. The grinding circuit grinds or breaks the ore down in a wet system to a very fine sand slurry. We do that through a tumbling mill.

The slurry then goes onto a gravity separation circuit where we remove those coarse particles of gold by centrifugal force. We recover about 40 percent of the gold in this circuit here. The slurry from the gravity circuit then goes on to flotation. In the flotation circuit, we treat the -- we recover the gold-bearing minerals and separate them away from the majority of the ore by flotation.

And I'll describe flotation a little further along, but this, in essence, what it does is it takes the remaining gold minerals and puts them into 10 percent of the total weight, and only that 10 percent of the total weight goes on for cyanide leaching. So if there's 720 tonnes coming in at the front end, only 72 tonnes goes on for cyanide leaching. The remainder goes out to tailings without ever being in contact with cyanide.

The flotation concentrate then goes on to leaching with a very dilute cyanide solution, and we recover the gold that's leached into solution.

We then take the remaining slurry from the leach circuit and go through a cyanide detoxification circuit, where we chemically destroy the cyanide and precipitate metals at the same time.

We're then going to filter that slurry with the solids going back underground as backfill, and the water phase going back to the front end of the leach circuit with a small bleed stream that comes off and is mixed with the flow tails and goes out to the tailings impoundment. These solids are potentially acid-generating, and so we're placing them underground where they can be encapsulated within the permafrost.

Just to go through the circuits, the ore is brought to surface by mine dump truck. It's placed into a stockpile at a crusher. Then it's picked up by front-end loader and fed into the crusher. Basically in the crushing plant, the large rock is just broken into small rock and then put into a stockpile to go into the mill. This is a down-view into a large gyratory crusher. This is the actual crushing bowl, and you see the ore sloping into the crusher.

In the ore processing circuit then, the ore is mixed with water, and it's milled to break into a sand-sized wet slurry. This is a grinding mill.

This is a large grinding mill, but it's a sample of what one would look like. The free gold, these particles of free gold are then recovered using the gravity circuit.

These are some pictures of a typical grinding circuit. This is a much larger mill than we would have. Doris North would be more in this size, but this is a cut-away view. Basically this is a rotating drum, a rotating drum with steel balls inside, and those steel balls break up the ore into a very fine sand.

This is the gravity circuit. A typical view of what a gravity circuit would look like. This is the centrifugal separator that skims the particles of free gold, because they're heavier, out to the outside wall. And then you can see here a table removing the free gold from that concentrate. About 40 percent of our gold will come out this method.

The remaining mineral then goes on to this flotation circuit, where I've said 90 percent of the weight is separated away and not -- and sent out to tailings. The remaining 10 percent goes on to processing.

The key point is after we leach, the cyanide slurry is destroyed. The cyanide that's in this

slurry is destroyed using a cyanide destruction circuit. In this case here, we'll be using sodium metabisulphate to oxidize the cyanide to break it down.

This is a typical view of a flotation circuit. This is a -- the flotation cells. Here's a cross-section view. An agitator, air, is put in the bottom, and you get these little air bubbles -- sorry, little air bubbles with the particles of mineral attached to them, and they then float up to the surface. So here's these bubbles with the mineral on it. We pull this material off, and that's the concentrate that then goes on for leaching.

This is the facilities that will be located in Roberts Bay. Here is the ocean. This is Roberts Bay itself. This is the shoreline, that line there. This is the jetty that will be built to receive the incoming barges. We need it deep enough, to get enough water to offload the barge.

This is a construction quarry, and we will build the fuel storage tank within the construction quarry once the quarry is all finished. And then we have a lay-down area where the material coming off the barges is stored, pending its being taken by truck up to the mill site so we can offload the

barges in a rapid pace and then move the material later.

This is a photograph of where Quarry Number 1 is going to be located. So we've actually started work on this. Quarry Number 1 has been opened up.

And here are some views, we did some pre-development work this year under agreement with the Kitikmeot Inuit Association to prepare ourselves for receipt of this year's construction materials. So this is the jetty that's been built to receive the barges coming this year.

This device that you see out here is a silt fence that was installed around the construction site to make sure that any of the mud we stir up during the construction is held within this device, and then it settles out within a few days. So it's just like an oil boom to some degree. It's a curtain that's in the water basically to let the solid settle out.

And this is the -- this is Quarry Number 1, and here's the lay-down area that's being developed. That black square you see is actually the geogrid material that goes under the rock fill as part of the foundation for the jetty. They pre-assembled it down here and then moved it out into the ocean.

This picture is to show you that the rock that

we're using to build the facilities is not coming from the mine. The rock that we're using to construct the roads and all the lay-down areas is coming from four quarry sources: Quarry Number 1 down here, Quarry 2 here, Quarry 3 is here at the tailings impoundment, and Quarry 4 is just the levelling of that mill outcrop. All of the waste rock coming from underground is being placed into a stockpile on surface and then returned back underground as backfill.

I'm now going to move on to our planned water use. The Doris North Project is projected to use the following volumes of water: We project 30,000 cubic metres a year for potable water, the drinking water. And process water we project to be at a maximum of 450,000 cubic metres per year.

We will and Miramar has a made the commitment in its application to maximize to the greatest extent we can, the greatest practical extent, the use of recycled water from our tailings containment area in the mill so that we will minimize where we can the use of fresh water.

From a -- potable water or treatment water, we're going to draw that from Doris Lake. We've estimated that at 30,000 cubic metres per year. We will only use what water we need for drinking. The

water will only be taken from the lake as it's required, so this is an upside estimate. We don't expect that we will reach that point, but we will practice conservation to keep it as low as possible.

And the water we do draw from Doris Lake will be measured through a meter, and we will monitor the quality of that wear, and it will be reported to the Water Board as part of what we anticipate to be the Surveillance Network Program reporting.

I should at this point explain SNP. I've used the acronym throughout the slides. "SNP" refers to a Surveillance Network Program, which is really the monitoring program that we envision will be part of the water license that dictates what we monitor, how often we monitor, and what parameters we measure, and how those are reported to the Board.

This slide here shows the location of the fresh water pumphouse. It's located on the north end of Doris Lake. It's a floating pumphouse, so it's about 4-by-6 metres, floating. It's anchored in place, and then there's a steel catwalk that takes it over to the shore. There is a floating dock here for receiving float planes, and this is the road that connects it up to shore.

The next view shows a cut-away view. So here

is the lake bottom, here's the water level, and here's the floating pumphouse. The pumps are set here. We have a screen around the pumps to protect anything being drawn into the pumps, to protect fish as well, and then a catwalk, a steel catwalk, that bridges to the shore. The closest to the bottom is about 2.7 metres. And this system has an air compressor on it that bubbles air around the pumphouse to keep the pumphouse from totally freezing in during the winter months. That's how we keep it floating during winter. This is not unique; this is a fairly standard technique.

The mill will also use water. We call that process water. And in the process water category, we've also included the water that's going to be used in the underground mine. Processed water will be a combination of water that's recycled from the tailings containment area with fresh make-up water taken from Doris Lake. We expect an average consumption of about 970 cubic metres per day, with a maximum of 1183.

The amount of water used underground is very minimal. This is a mine that's operated within the frozen ground, within permafrost, and so we will mix a brine solution or a salt water solution in the mill, send that underground, and that will be

recycled underground through sumps. So we will use a fair small amount of water actually to accomplish this, and because we're in frozen ground, we don't expect to receive any groundwater at all. The annual maximum consumption of process water is expected to be 450,000 cubic metres per year.

As we've stated earlier, we will -- we have committed to minimize our use of fresh water. What happens is basically the processed water comes back to the mill tank from the tailings impoundment, and we only make up the water required from Doris Lake as fresh water to make up that tank.

The reason we've asked for a larger amount of fresh water really comes to deal with our first year of operation. As we recycle water from Tail Lake in the first year, we will have a very small pond depth in Tail Lake because of the ice cap and the fact that we're placing tailings over top of it, and the lake really hasn't begun to rise yet. So we have some concerns in that first winter of operation that our use of fresh water will be greater than it will be in subsequent years. Once the level of the lake increases, we're fairly confident that our use of reclaimed water will grow, and so fresh water use at that point will go down and diminish.

We'll also practice recycle streams within the plant itself to, again, minimize our use of fresh water. And we have three internal recycle streams. We have a re-grind circuit thickener. That water is recycled to the front end. There is a thickener in the carbon and leach circuit, the cyanide leach circuit, that recycles water back to the front end. And the water that we remove from filtering the residue before we send it underground, that water is also recycled within the mill.

So just we will be recycling to the maximum extent the water that we can to minimize our use of fresh water. Any fresh water we use will be metered and reported to the Board as part of our SNP program, monitoring program.

I'm now going to move to some of the general conditions that we've asked for in our application to the Board. The first one is the term of the license. Miramar has asked for an eight-year license, and that is based upon getting us through the project, through the reclamation, so the next license for this project strictly deals with the environmental monitoring that will go on after the project's been reclaimed.

Year 1 of that eight-year term is actually the year of construction. Year 2 and 3 is the years of

operation. Year 4 and 5 then becomes the years we would actually physically remove the buildings, and then we will continue to actually manage Tail Lake until we can safely reduce Tail Lake, and that will be somewhere between four and seven years afterwards. So that eight-year license takes us -- if things are going very well, that will take us right through to final reclamation. If things don't go as we expected, we'll be back in front of the Board for renewal at that period in time.

Compensation, just to let the Board know that in 2006, Miramar signed an Inuit Impact Benefits Agreement with the Kitikmeot Inuit Association. And as part of that, there's also a Water Rights Compensation Agreement that's already been agreed to with the Kitikmeot Inuit Association.

Other compensation we've already entered into is fisheries compensation. The Fisheries Act requires that there be no net loss of fish habitat, and so consequently, we have been working with DFO to put in front of them an agreeable plan to compensate for the fish habitat that is affected by this project. There has been general agreement on the techniques to be used for that compensation, and the final designs are due to go -- are scheduled to go to DFO by September of this year.

Those compensation measures are listed here. Basically the primarily one is to increase fish accessibility into Roberts Lake. This is Little Roberts Lake down here. Roberts Lake is up top, and there's a boulder garden located in the stream. And basically what we're doing is this boulder garden becomes an impediment during low water to Arctic char being able to get up into the system. They get trapped in the boulders and actually can't get out. So our intent is to use hand techniques to excavate small pools to make a way for the char to get through this, to increase the ability for char to get up into the system to reproduce and come back out.

And then there's some additional items. There's some stream enhancement in Roberts outflow. Sorry, that slide, there's also the creation of rearing habitat in Doris Lake and some pool habitat in the tributary of Roberts Lake. There is also compensation for the small stream at the outflow of Tail Lake and for the -- compensation for the sea bottom covered by the jetty.

I'm now going to move into waste disposal. There are a number of types of waste that have to be managed at the Doris North Project. The primary one, the largest volume, is the mill tailings

slurry. The mill tailings are going to be sent to Tail Lake. They will be stored underwater within Tail Lake, and we'll describe that in substantive detail as we get further into the presentation.

There's also this solid residue that comes from the cyanide leach circuit. That will be filtered in the mill after we destroy the cyanide, and then that will be sent underground as a dry solid to be placed in the underground. By "dry solid", I mean it's got no free water; it's about 10 percent moisture.

There's also sewage to be treated. We will have a treatment plant on site to treat the sewage. The grey water or the treated water from that sewage treatment plant will go out to Tail Lake with the tailings. The solids, the sludge from the sewage treatment plant are going to be filtered, and then they'll be incinerated.

The garbage, as I said before, the kitchen waste will be incinerated. The nonhazardous other garbage will go to a landfill in Quarry 2, so there will be a landfill system built within Quarry 2.

We'll also generate some hazardous wastes, things like spent batteries, spent glycol, solvent. These will be shipped off site. They'll be basically put into shipping containers and then

stored, and they'll be put into containers, and then shipped south during the annual season to make sure that they go back to either a recycling facility or a licensed disposal facility, but they will not be left at site.

We also will potentially generate some contaminated soils from the spills, and these will be excavated. The soil will be excavated and taken to this landfarm facility where we will try and -- it will actually go through this soil landfarming technique to remove the oil contamination from the soils using a landfarming technique.

At this point in time, I'm going to turn the presentation over to Maritz Rykaart for a short period. He's going to take us through the method we use to manage the tailings and give you some details on the tailings impoundment dams.

MR. RYKAART: Maritz Rykaart. Thank you, Larry.

Mr. Chairman, Members of the Board, in the next few slides, I want to describe the tailings containment system, and specifically the function of the two tailings dams and how that all fits in and how that pertains to the water license application.

Before moving into the details of that, I just

want to advise you that two of the slides that you will be seeing will differ slightly from what you have in the handouts. The information is the same. We just decided to present it in a different fashion.

Mr. Chairman, what you see on the board in front of you is the two water bodies that pertains to the tailings containment system. The large water body, Doris Lake, is the water body adjacent to the mill site and the mine facility, which sits up in this area here.

Tail Lake is a small lake in an isolated catchment, which means that any water that flows into this catchment only flows into this lake and then out via this natural outflow stream into the tail -- northernmost end of Doris Lake. Then the water flows down Doris Creek towards Roberts Bay. This isolated catchment is about 450 hectares, and Tail Lake itself occupies roughly 80 hectares. This is the lake which will become the tailings containment facility for the Doris North Project.

I'm now going to step you through the stages of how this facility will be operated. Please note that I'm going to focus on the physical aspects of the tailings containment facility, and at a later time, Mr. John Chapman is going to talk about the

water aspects in greater detail.

The first thing that's going to happen, Mr. Chairman, is we are going to construct two dams to completely contain any water within the Tail Lake catchment facility. These dams, called the north dam and the south dam, will be water-retaining dams that will ensure that any water that enters the facility can only exit the facility through engineered and controlled systems implemented by the mine.

The second stage will be after the mine has been developed and the mill has been commissioned, a tailings pipeline will be placed long the road leading from the mill site all along the tailings facility. This tailings pipeline will be used to subaqueously discharge tailings into Tail Lake.

Mr. Chairman, what that means is that the tailings pipeline will be underwater and all tailings will be deposited underwater in the deep pockets of this lake. This means that at any time, you will not see tailings. Nowhere throughout the stage or the life of the mine will you ever see tailings at surface.

As tailings is deposited into Tail Lake during the open-water seasons, i.e., during the summer months, tailings water will be discharged via a

discharge pipeline into Doris Creek. This will be a way the water is released from this facility in an engineered and controlled fashion. The details of how that will be done will be discussed in a presentation a little later on this morning.

As tailings deposition progresses during the two years of operation, what is going to happen is the water level in Tail Lake is going to rise. That is why you see a larger area occupied by water in the slide. The objective of the water management strategy is to control the elevation of this water level. As this water level rises, new shoreline is exposed, and that is the shoreline erosion that you will hear about during this presentation and by various interveners. Managing the water level is managing the shoreline erosion potential around this facility.

After two years of mining operation, there will be no longer any tailings deposited into this facility. The mill will shut down. The pipeline will be decommissioned. While this tailings deposition has ceased, the water level may still be higher than the original lake level. Therefore, this water level will continue to be discharged in an engineered and controlled fashion through the discharge strategy that will be discussed in

greater detail later on.

Ultimately, after a number of years, the water level in this Tail Lake facility will return to its original level, i.e., that's the level that you see the lake at today. At this time, all this water will have been discharged via the discharge strategy in a discharge pipeline. At this time, you still will only see the lake water; you will not see any tailings. All tailings will still be under a cover of at least 4 metres of water.

The final stage in closing the tailings containment facility would be to breach the dam in an engineered fashion such that the natural outflow in Tail Lake can return. At this stage, the facility will operate as a natural outflow system, as it is today. The south dam will be left intact, not being breached, as it sits on the catchment divide and serves no purpose as a dam anymore and also is no impediment to any natural water flow as it is on the catchment divide.

So, Mr. Chairman, these two dams that I've just showed to you are the primary containment -- serves a primary containment purpose for the tailings containment facility. These two dams have, therefore, been engineered to a very high degree and a very high standard, considering the

environment that they're in.

In the next couple of slides, I would like to present to you some of the highlights of this dam to give you a clear understanding of how the system works. In the slides, I have highlighted a number of the main design components of importance.

Firstly, the dam itself, the primary water containment system of the dam, is based on the fact that this is a frozen core dam. Essentially what this means, in a nutshell, is that this dam is an extension of the permafrost environment, and this frozen wall will prevent any water in the dam from seeping or leaking out.

However, there are two secondary backup systems to ensure this dam continues to function for a long time. The first thing is there's a secondary liner built into the facility. This liner is a geosynthetic clay liner, and that will ensure that should, for any reason, the frozen core not function as designed, there is an alternative way to prevent water from seeping out of the facility.

The next system that's built into this dam is a series of thermosyphons. These thermosyphons assist to keep the dam foundation in as cold a state as practical in this environment. Although these thermosyphons are not needed to keep the dam

frozen, these thermosyphons will extend the life of the dam far beyond its life capacity.

It should be pointed out, Mr. Chairman, that this dam has been designed with the input of a number of experts in frozen core designs, as well as in the type of foundation condition that we have. We had leading experts assist SRK in the design of this dam. We've also had the benefit of having built a similar dam in the last year in a similar environment, and in that particular case, we had a peer review panel of six of Canada's leading dam design experts review all the work. And that knowledge has been transferred to this dam, therefore, there's a high degree of review and confidence in the design.

Notwithstanding all of this additional review, the dam has an extremely high level of contingency and conservatism built into it. It is built as a full water-retaining dam to the highest level and the higher conservatisms that is reasonable for this environment.

In addition, Mr. Chairman, it should be noted that this design will include a large amount of instrumentation that will continuously monitor and verify that the design assumptions are appropriate and that the dam will be performing according to

the design standards.

Finally, it should be noted that the design life of this dam is 25 years. Considering the life, the expected life of this dam for full operation, it is only between four and ten years, depending on the water management strategy. Therefore, there is ample design conservatism in the design life of the facility.

Now, Mr. Chairman, when we discuss these things, I often discuss stuff like that to my -- with my wife, and she tells me that nothing makes sense to her, and I should show her a number of pictures. So in the next few slides, I'm going to attempt to give you, in a nutshell, what the construction of this dam will look like.

The first part of construction is to excavate a key trench. What this key trench is is coming in and excavating a hole in the permafrost that will end up being the anchor block for this dam. This dam, because it's a frozen core dam, we need to make sure that we completely freeze in the dam structure with the foundation and building all the secondary containment systems into the environment as a one single unit. To do that, we dig a hole into the permafrost where we can anchor things in.

The next part of the dam is to build the actual

frozen core. What this is, this is the central part of the dam that will retain all the water in the facility. This frozen core will be constructed from a processed gravel, which has been produced from the quarried materials. This processed gravel will be put down in a highly engineered and highly controlled fashion, such that, once it's in place, it completely freezes and will stay frozen as a complete unit for the life of the structure.

During construction of this frozen core and key trench, the secondary containment facilities will be built into the core. This consists of a liner, which is built upstream, as well as a series of thermosyphons in the key trench that will ensure maximum cold temperatures that will keep this facility frozen throughout the life of this structure.

This frozen core cannot live on its own. It needs to be protected from the environment to keep it functioning. In order to do that, we need to put an outer protective shell on it. In order to adequately engineer the shell to ensure that it functions adequately under all conditions, we put what we call a transition zone of material around this outer core. This is a material that is larger particle size than the core itself. So this is

small gravel; this is a bigger material, about the size of a baseball and smaller. We ultimately cover this material with an outer shell, which is what we call run-off quarry material. That's the material as we drill and blast it out of the quarry. This outer shell protects the dam and the core from the thermal environment as well as from the other hydraulic forces that will play on the dam.

As a last note, Mr. Chairman, when this dam is in operation, what you'll see under the full supply condition, in other words, the maximum amount of water that will ever be in this dam, a water level up here which is below this core ensuring full containment. And what is important to note is that at any given time, there will be no tailings against this dam; there will be only water against this dam. The tailings will be in the deeper pools way back here in Tail Lake.

So, Mr. Chairman, to wrap this up, this is a plan layout of one of the dams, particularly this is the north dam. So if you look at it from the top, you'll see an outer shell. If you had X-ray vision, you would see the key trench and a series of thermosyphons in the dam, in the base of that dam, and what you see here is a spillway that will

allow engineered outflow from this dam to ensure that water never overtops this facility in an uncontrolled fashion.

To give you a better idea of what these things look like in practice, this is an excavated key trench. All the white you see here is just snow. These pipes, these straight lines you see are the thermosyphon pipes being laid. This is an example of a similar dam that has been constructed. This is the preparation that's done prior to building the core and filling up the key trench.

This is a view after that key trench has been filled in after the core has been partly constructed, and as you can see, these white sheets here is the liner being placed on the slope. This is the secondary containment facility that I talked about.

Ultimately, Mr. Chairman, this is what the facility will look like or very similar to that. You'll see a very wide crest with an outer shell of material. Underneath all of this, there's a series of pipes, and you'll see a series of thermosyphon radiators sticking up out of the ground keeping this quarry intact.

Mr. Chairman, in conclusion, this dam has been designed to a very high degree of conservatism with

a very large involvement from a number of experts. In addition, Miramar has appointed a construction team to construct this dam consisting of an experienced construction manager and an experienced contractor, who not only are experienced in construction in the north but also have constructed these dams in the past, and therefore, this is something they are familiar with and understand the intimacies of it. Thank you.

MR. CONNELL: Larry Connell. Thank you, Mr. Chairman. Thank you, Maritz. Mr. Chairman, this may be a good spot or an actual spot for a short break, if you'd like to do that.

THE CHAIR: Is 10 minutes good for you?

MR. CONNELL: Yes, sir.

(BRIEF ADJOURNMENT)

THE CHAIR: Before we reconvene, I have a couple of housekeeping items.

In my introduction this morning, I omitted to mention that we have a couple people from Bay Chimo. The other parties will be arriving today from other communities, weather-permitting, and I was reminded earlier that I omitted to complete my presentation this morning. I shall finish it before we proceed again.

The Board relies on the parties and the Applicant to ensure that all issues and options for resolutions are on the record and expects the parties and the Applicant to provide evidence accordingly. Failure to ask questions of the parties leaves the Board in a position to accept the other parties' submissions.

And we can proceed questioning of the Applicant by parties respecting the Applicant's presentation -- my apology, you can proceed with your presentation.

CONTINUED PRESENTATION BY MHBL:

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

Before I go back to waste management, my colleagues too have shown me that I need to clarify three things that I said this morning, just to make sure.

The first one is on Slide Number 33. It's just to define what I meant by potable water. I think I said drinking water when I said that. What we're specifically meaning by "potable water" is all of the water that's used for showering, for the kitchen, for bathrooms, and for drinking water, not just strictly drinking water. Potable water is that combination of all the water used -- to be

used outside of processing. So it includes showering, cooking, et cetera. So that was clarification point number 1.

Point number 2 was on Slide 47. I used the term "treated grey water". What we're specifically referring to is all of the water coming from the camp and from the sinks, drains, all of that combined water is collected, as well as the toilet water, and is combined as sewage. It goes to the sewage treatment plant, and it's that treated sewage water that then is discharged to Tail Lake with the tailings. So it's after it goes to the treated sewage -- sewage treatment plant, all of that water is then combined and sent to tailings. The sludge from the sewage treatment plant is what's incinerated.

And the third item that -- to try and make sure I got clarification on the record is I talked this morning about the fisheries compensation measures, and we are working with DFO on those compensation measures. However, we would like the Board to ensure that or to consider that these compensation measures that we're working with DFO will actually be part of this water license, and that once we have designs agreed to with DFO, we would submit those to the Board, and that those would become

authorized as part of this current water license.

So the details ultimately will be given to the Board after agreement has been finalized with the DFO and Miramar on those compensation items, just those fisheries compensation measures, such as that modification to the boulder garden within the outflow stream from Roberts Lake.

Mr. Chairman, that finishes those clarifications. I'm now going to go on to the water management component.

Sorry, before I proceed, does anybody have any questions on those clarifications that I just skimmed over?

Okay, moving on to water management. Water management at the Doris North Project will consist of two elements: One is the management of storm water and the snowmelt that runs off from the plant site, the landfarm, the landfill, and the water that's collected within our containment facilities at the fuel tank farms. And the other component of that management, water management, is the management of the water that's released from Tail Lake and how that's managed during the water seasons (sic). We're going to break them into those two categories.

I'm going to start with the storm water

management. So this storm water and snowmelt at the plant, it basically consists of taking the noncontact water, that's the water that hasn't touched any of our facilities, and diverting that away from the plant site through the use of berms. In other words, we take the clean water, the water that's never contacted our materials, our facilities, and direct it away from our plant site.

The runoff and snowmelt from the ore and waste rock stockpiles will be directed into a pollution control pond. This will be a lined pond, and the water collected there will be transferred to the tailings containment area. So, in essence, all the water coming into contact with ore and waste is transferred to tailings.

The remainder of the plant site, the water again is directed, but it's directed this time into a second pond called the sedimentation pond. We will monitor the water in that sedimentation pond, and if the water meets the standard for discharge, then it would be discharged onto the tundra. And we've proposed a standard for that checking of this water that we took from other mining sites across the north.

The water will be discharged in a controlled manner, so that we don't disrupt the tundra. In

other words, we'll spread it out over the tundra in our primary area. If the water doesn't meet that standard, it will be held and transferred to tailings.

This is a plan view of the plant site, and just basically going to show you that there's a series of diversion berms that direct the noncontact, clean water away from the plant site. And the ore and waste rock stockpiles, which are located in this area, any water draining from that area comes through and into this pollution control pond, and that goes to tailings.

The water from the remainder of the plant site is collected and comes into the sediment control pond, and we'll check the water quality here, and where it's good, if it meets the standards for discharge, that will then be discharged onto the tundra. If it doesn't meet the standard, it will be taken to tailings.

Similarly at the landfill and the fuel storage facilities, the primary focus is to divert those waters that don't come in contact with the facility away from it by using berms. Any water that does fall within the containment facility or within the landfill will be collected in the sump. From the landfill, we will monitor the quality of that

water, and if it meets the discharge standard, then that water will be discharged onto the tundra, and in our application, we proposed a standard for that water, that if the water doesn't meet the standard, then we would put it into a tank truck and take it to Tail Lake.

In the fuel storage containment sumps, these are the sumps that collect the water that falls within these liners, these containment liners, that water will be run through an oil/water separator unit that's specifically designed for that purpose. And then the water that comes out of that, the clean water that's gone through this filtering process, would then be discharged onto the tundra, and we will verify that that water is clean by sampling.

At this point, I'm going to turn the presentation over to John Chapman. John Chapman from SRK is going to walk us through the strategy that we will use to manage the annual release of water from Tail Lake during the summer seasons. John?

MR. CHAPMAN: Mr. Chairman, Members of the Board, Ladies and Gentlemen, in the following series of slides, I'd like to provide you with an overview of the water quality model that was

developed. I would like to then go through the discharge strategy that was developed, and then explain how the control system will work, will be implemented to control the discharge. I then explain how we simulated the control strategy to ensure that it will work. And then lastly, I want to provide an overview of how the model will be utilized during the operational phase of the mine.

Now, the primary purpose of the model was to determine what the changes in the water quality would be in Tail Lake over time during the operational period as well as after operations cease. The secondary purpose of the model was to also evaluate and develop the discharge strategy that would meet the requirements of the discharge system.

This slide shows all of the elements that were included in the development of the Tail Lake water balance. I'm not going to go through these elements; I'll explain it in a more simplified way in the next slide, but this slide just shows that all of the inputs and outputs for Tail Lake were accounted for.

Now, I'm afraid this slide isn't very legible, but what this shows is that it takes the sources, and these are accounted for in the previous slide,

that will contribute to the water quality in Tail Lake. For example, the mill site over here deals with the storm water management, which Mr. Connell discussed earlier. All the other components include the ore stockpile, the waste rock, the treated sewage, and the tailings that will come from the mill.

The Tail Lake water balance also includes the background inflow that will occur, and to this is added the source of the road and rock fill that will be used for construction and the potential for shoreline erosion, what solutes will be released from this shoreline erosion, the greater water and load balance. It also includes the Doris Lake system, which includes the road and construction fill that will be placed within its catchment and the background loadings that will enter the lake. It then looks at the mixing of the discharge from Tail Lake as it will be discharged to Doris Lake outflow and will mix at the waterfall. And then finally, it considers the flow confluence of Roberts Lake outflow in Little Roberts Lake.

This slide just shows the information that was used in the development of the source terms for each of the components that are included in the overall water and load balance. I won't go through

this in detail; it's all addressed in the reporting that has been done to date.

Now, this slide shows the steps that were taken in the use of the water quality model. First of all, we use it to assess the water quality in Tail Lake. We then looked at evaluating several discharge strategies and looked at the complexity of how they operate and how effective they would be, and then from that, we selected a preferred strategy, and based on that preferred strategy, we developed a control strategy to implement that strategy, so in the next few slides, I'm going to discuss the control strategy.

Two objectives were laid out for the control strategy: The first is to meet MMER criteria before any discharge would occur from Tail Lake; the second is to meet CCME guidelines in Doris Creek downstream of the waterfall after the discharge had mixed with the outflow from Doris Lake.

When we evaluated the impacts on Tail Lake, we saw that the rise of the water in Tail Lake will affect shoreline erosion. So to minimize the effects of shoreline erosion, a third objective was set forth, and that was to minimize the water level in Tail Lake.

Now, this slide is the same one that Mr. Rykaart had shown earlier, and I'll quickly run through it just to refresh your memory. The first step will be to construct the water-retaining structures, north dam and south dam, around Tail Lake. Tailings deposition will then commence, and that will lead to the implementation of the discharge strategy, and it is mainly this discharge strategy, the control of the water from Tail Lake over time, that I'm talking about here.

So just going through the rest of the slide, the water is expected to rise in Tail Lake. Once tailings deposition ceases and discharge continues, the water level will again decrease to the original elevation, and at that time, it will be possible to breach the north dam and allow the natural outflow of Tail Lake to be re-established.

This photo just shows the waterfall that's located downstream of Doris Lake. The discharge will occur somewhere behind where this person is standing and then downstream of this area here. After the discharge has fully mixed with the flow in Doris Lake outflow, it will be monitored on a regular basis.

Now, the key components of the control strategy is that the strategy allows for full containment of

any water that is released to Tail Lake. This will allow the development of alternate strategies or adaptive management plans in the event that there is any constraint on the release of water from Tail Lake.

Other components that are a part of the control strategy is the continuous flow monitoring in Doris Lake outflow and the use of a variable discharge pumping system to release water from Tail Lake.

As I mentioned before, the water quality in Doris Creek will be monitored downstream of the waterfall, and that monitoring program will be used to verify that the control strategy is operating as designed and to make any changes to the control strategy so that the objectives are met.

Now, there will be two phases in the discharge management of water from Tail Lake. The first phase will occur during the operational period and immediately after tailings deposition ceases, and entails the period from when the water elevation in Tail Lake will increase from its original elevation of 28.3 metres to the maximum elevation and then decreases again to the original elevation.

During that time period, as I've mentioned, the flow in Doris Creek will be monitored continuously. That's upstream of the discharge point. The water

quality will be monitored at Tail Lake intake, that's where the pipeline takes water from Tail Lake before it discharges to Doris Creek.

To determine the amount of water that may be released, what we term a maximum allowable discharge ratio will be calculated, and then that discharge ratio will be multiplied by the flow in Doris Creek to determine what the target discharge rate is. That target discharge rate would be further corrected by a factor of .8 so that the discharge is always well below the maximum allowable discharge rate. The discharge would then be regulated by a pumping and a computerized control system, and the water flows and quality would be monitored continuously.

On this page, it shows the calculations that would be undertaken to determine the allowable discharge volume ratio and also determining the target discharge rate. In the handout, there's an error in this calculation here. This right bracket is located in the wrong place. It's located over here, if you can just correct it in your handout. And as I mentioned before, the factor of .8 is applied to determine the target discharge rate to ensure that the release volume is always below the maximum allowable release volume.

This slide is as it is in your handout. There's a slight error in the -- or rather an omission. There's an arrow that should go from this location to this box here, and in the next slide, I will go through that again and just highlight it.

Now, what this slide does is it shows the process that will be followed to determine whether or not there will be discharge and how much discharge will occur at any one time. First, the water quality in Tail Lake will be measured, and then the question will be asked, Is the water quality -- does it meet the MMER criteria. If it does not meet the MMER criteria, there will be no discharge. If it does meet the MMER criteria, the next step is to measure the water quality in Doris Creek, and if the water quality in Doris Creek -- a check is then done to see if the water quality in Doris Creek meets the CCME criteria. If it does not for any particular parameter, then it will be checked against the water quality in Tail Lake.

For example, in the case of selenium, we know that the water quality is elevated in Doris Creek, the water quality is predicted to be low in Tail Lake, and that those conditions -- sorry, if the water quality in both Doris Creek and Tail Lake is

above CCME, there will be no discharge allowed. However, if the concentration in Tail Lake is below that in Doris Creek, such as I mentioned for selenium, then that parameter would be excluded because discharge of Tail Lake water in that case will not increase the concentration in Doris Creek. The balance of the parameters then would be used to determine what the allowable discharge volume is, and that will be calculated as I explained before.

The next step is then to select the lowest of the allowable discharge volume ratios, so that's done for every parameter that is being monitored. We select the lowest one of those, and that is carried forward to determine what the target discharge rate is.

The discharge rate is then calculated based on the actual flow in Doris Creek, and then there is another check performed before any discharge is allowed. To ensure that the amount of volume that is released to Doris Creek is not going to impact the flows significantly, the target discharge rate would be adjusted to 10 percent of the flow in Doris Creek if it is up above that amount.

And then the final check that is done before a release is allowed is to see if the water elevation in Tail Lake is at or above the original elevation.

If it is above the original elevation, then discharge will commence and will be controlled at the target discharge rate. If it's below the original elevation, there will be no discharge allowed.

Now, as we can see from this slide, there are a number of checks built into the decision matrix that will be followed to determine whether or not there will be discharge, and all of these checks will ensure that water will not be released unless we can meet the objectives of the control strategy.

Now, as I mentioned, there are two phases in the control strategy. The second phase will commence when the water elevation reaches the natural outflow -- natural elevation in Tail Lake.

During the operations, the water quality model will be used, as I will explain in later slides, to estimate when the natural outflow elevation will be reached. At that time, approximately a year from that time or before that time, an ecological risk assessment will be undertaken to determine whether or not it will be possible to breach the north dam at that time and then re-establish the natural outflow from Tail Lake. That condition is expected to arise about three to seven years after mining ceases. It's also important to note that

environmental effects monitoring will continue after the breaching occurs.

So what we've done up to now is to discuss the water quality model. We've looked at how the discharge strategy was developed and how it would be controlled, and the next step is actually to simulate the discharge strategy, so that's what I'm going to talk about next.

These results have been presented in the supplemental information package that was prepared subsequent to the technical hearing, so I'm just going to highlight some of the results from that. These results -- again, I apologize the quality of the slide, it's not very clear on this projection, but what it shows here is concentration of copper on the -- "Concentration" on the 'Y' axis and "Time" on the 'X' axis, and what I'd like you to concentrate on are the blue data over here. That represents the copper concentration over time.

Now, that is the predicted water quality in Tail Lake over time, and that quality will result in a discharge strategy that looks like this. Basically it indicates that in Year 1, a certain amount of water would be released. In Year 2, more water would be released. In Year 3, somewhat less water would be released, but by Year 4 or 5, the

long-term average is reached where the water that would be released is equal to the natural inflow to Tail Lake. This data set represents the base case assumptions.

In the next series of results, again the same thoughts are presented, but these conditions represent the low-flow conditions or conditions that are dryer than the base case. This means that there's less water that flows into Tail Lake, and there's less water that flows in Doris Creek. Under these conditions, the copper concentration again is predicted and then discharge volumes are estimated.

This plot shows that the amount of water that would be released is slightly less than in the previous slide, but as we will notice here, in Year 4, there's slightly more water released, but the conclusion is that irrespective, the same -- it's the same time period that is required to achieve the long-term average outflow condition, in other words, within -- this active control within four years, and then subsequent to the four years, the discharge is at the long-term average inflow to Tail Lake.

This set of slides represent variable rainfall conditions in Years 1, 2, and 3, and then reverting

to average conditions from Year 4 onwards. What it shows is that there's a slight change in the copper concentration in Tail Lake, but it also shows that there's a significant change in the discharge strategy.

Because of the drier conditions, a lot less water would be discharged in Year 1. Year 2 is a slightly wetter year, and a lot more water would be discharged. Year 3 is again a dry year, and we see that a lot less water would be discharged. And Year 4 more water would be discharged, and in year 5, basically the long-term average discharge rate would be very established.

What this shows is that the system is designed to adapt to the actual conditions that will prevail at the site. In other words, if there's higher rainfall than average, the system will discharge water accordingly. If there's less rain than average, the water discharge will be reduced accordingly.

So just to retrace, the model showed that it's possible to meet the CCME guidelines in Doris Creek. The model shows that the discharge strategy is very flexible and automatically adjusts to suit the site conditions. The time frame to reach the point where the water elevation in Tail Lake is

changed back to its original elevation is minimized, that is, minimizing the risk of shoreline erosion, and it uses conventional methods to discharge the water.

Now, I'm going to talk a little bit about how the water quality model would actually be used during operations. The model itself will not be used to determine or control the discharge volumes. The volume that will be discharged will be calculated independent of the model, and the steps that will be taken I've discussed in previous slides. The model will be used only to assess the potential implications for the future requirements for management. In other words, what the model will be used for is to project forward to assess if current changes in climatic conditions will implicate the term for which active management will be required.

Now, to use the model during the operational phase, the model will be revised to allow input of the actual monitoring data into the system, and then compare that to the base case calculations. So this slide just goes through the steps that will be undertaken. Again I apologize, the print is a bit small, but the slides in the handout, you can follow in that, and that should be clear.

On a monthly basis, the average monitoring results that will be obtained at the site will be input to the model. Now, those monthly averages will represent the prescription, the flows in Doris Creek, the discharge volumes from Tail Lake, the discharge -- I'm sorry, the discharge water quality, as well as the tailings lake water quality, and the decant body, so, in other words, the amount of water that is discharged from Tail Lake. That would be input into the revised water and load balance, and then various assessments would be undertaken.

The first step would be to compare the calculated water elevation in Tail Lake to that that's actually determined or measured in Tail Lake. If the comparison is not acceptable, in other words, if there's a significant difference between the calculated and the measured value, then the capacity curve, in other words, the volume rating, for Tail Lake will be recalibrated.

In the event that the difference is acceptable, the next step will be to compare the calculated water quality to the actual water quality in Tail Lake. Again, the question will be asked, Is the calculated value comparable to the actual water quality values? If it is not, then the next step

would be to identify the cause of the deviation; in other words, we would go back to the sources and see which source is most out of line and what is causing the deviation from the calculated value. In that case, that source term would be revised, and the model would be recalculated and the assessment would be repeated.

In the event that the water quality comparison is acceptable, then the model will be used to predict the discharge schedule into the future, and the assessment that will be done then is to compare the predicted discharge schedule to the base case schedule; in other words, will it take three years or five years to achieve the steady-state condition where Tail Lake elevation is lowered back to its original elevation.

If there is a significant impact on the discharge schedule, at that time, it will be possible to identify and implement adaptive management strategies to correct the situation. If the -- if there is no impact on the discharge schedule, then the process would be repeated for the following month. So basically that is how the water balance and water quality model will be used during operations.

Now, in that evaluation, there are various

criteria that need to be assessed to determine whether the differences are acceptable or not between the calculated and the predicted values. To assess whether or not the water elevation is -- the difference is significant or not, we will use a value of 0.1 metres.

With respect to the water quality, it's important to note that the water quality difference is a function of the actual conditions that will occur. Using the water quality model, we can show that for the low-flow conditions, a difference of 20 percent will increase the water management period by one year, and the critical number here is the one year that it pushes the water management strategy out by.

The 20 percent I might mention is the number that we had submitted in the supplemental information package as an example of what that difference might be, and it's based on this assumption, that it will affect the water management strategy by one year.

In the case of the base case assessment where we've got higher flow conditions, it's possible that a -- it's necessary for a 40 percent or more increase in the copper concentration before the water management strategy would be affected by one

year. So these are examples of how the level of significance would be determined for the water quality.

And I thank you for your time.

MR. CONNELL: Thank you, John. Mr. Chairman, it's Larry Connell again.

I'm going to continue on through the environmental management system.

Miramar has developed an integrated environmental heath and safety management plan. We use the acronym EHSMS to refer to that environmental heath and safety management plan. And that's designed to encompass all of our operational activities at the Doris North Project site.

The environmental management system basically breaks down as follows: We do the planning before we do anything. We then act; we go and do what we're going to do. Then we check to see what happened, what the consequences of what we did is. If we've done -- we then look at the consequences, adjust what has worked and what has not worked and act again, and then repeat that by checking again. So there's a continual improvement system, and that is intended to be used in each of our environmental management plans.

At Miramar, this system has been placed on an intranet so that the plans that make up our environmental management system are kept the current plan. You don't have to go find which version you're dealing with today. It's on the intranet. Each of our employees has access to that intranet site. So if they're looking for the emergency response plan, they know it's there on the intranet site, and they'll have the most current version, and it's easy for us to keep the more current version out there rather than have to do it through paper.

As part of that environmental management system, we have an environmental protection plan, and that protection plan encompasses 15 management plans, and these were all part of the submission that was given to the Water Board as part of our application, and as you can see, they cover things such as the emergency response, air quality, how we manage waste rock, how we are going to manage hazardous materials, how we manage explosives, and et cetera. I won't go through them all. It also includes a closure plan and a monitoring and follow-up plan.

Each of these plans are meant to be "living" documents. In other words, we will put them into

operation; they will be the tools used to train employees so the employees know what commitments they have to make and how they should make those. But things will change, things will change, we'll learn as we move forward. So those plans are intended to be updated on a regular basis, so that we're always learning from our experience and improving our management plan accordingly.

We also have a program to monitor how we're doing, how we're doing environmentally. And so as part of our presentation, we've actually completed a monitoring and follow-up plan. It includes monitoring of the following areas: We've got air quality; climate monitoring; noise; hydrology, how much water is flowing; the water quality, obviously water quality is a very large component of that monitoring plan; we've got geotechnical monitoring, how we're going to characterize waste rock that we use in construction and elsewhere; aquatic effects monitoring, how -- what is the consequences of our operation on aquatic affect downstream; fisheries monitoring, to see how well those compensation measures have taken place; vegetation and soil and wildlife monitoring.

Put together, these will create a management system specific to the Doris North Project. A

management system that's a pants-to-fit design. Miramar has proposed a surveillance network sampling program as part of our application that includes water quality monitoring locations, frequencies, and the parameters to be monitored.

All of these programs in design meet or exceed all the legislated requirements, and also they exceed and meet all of the NIRB project certificates that are in this file certificate for the Doris North Project.

As a company, Miramar fully supports the need for environmental monitoring and reporting to a level that ensures that the project is meeting all regulatory requirements and to ensure that impacts are as predicted during the environmental assessment. That is, we're confident that our monitoring can be used to verify that the mitigation measures that we have implemented as a company are working and to give us the time frame and the knowledge to trigger adaptive management where it's necessary. We are confident that the proposed monitoring programs we have put forward have been developed to address all of the risks associated with this project.

However, some of the interveners have recommended beyond what we have proposed. We would

ask the Board to consider what monitoring and reporting is required to meet the objectives that we stated earlier in the slide above and to hold the line on requiring the collection and reporting of additional data that may be nice to have but does not truly influence how the mine is regulated. We recognize that the Board can always add additional monitoring and reporting requirements to the water license Surveillance Network Program at any time in the future if conditions demonstrate that there's such a need.

I'm now going to move on to closure and reclamation planning. Mine closure and planning for reclamation at Doris North has been a critical part of our application. We have completed a closure reclamation plan as part of the submission, and that reclamation plan has now advanced well beyond the conceptual level, especially given the short term of the mine life.

In summary, this project can be reclaimed so that there is no requirement for perpetual care. Specifically what I mean is that there's no -- it will not be reclaimed in a fashion where there is long-term water treatment or management required. The tailing solids at the final end of closure will be under a permanent 4-metre water cover and won't

be exposed to surface. All of the cyanide leach residue solids will have been placed back into the underground mine and encapsulated within the permafrost in the sealed mine.

What happens at mine closure? First of all, all of the ore and waste rock stockpiles will be removed. All the ore will be milled, and the waste rock will go back underground. And then we will seal all access into the underground mine, and the mine will remain in a frozen condition. That's within the permafrost.

The mine site will then be -- the mill site then be cleaned out and the -- of all its contaminated materials, and once that cleaning is finished, the mill building will be dismantled.

All the chemicals, hydrocarbons, hazardous materials that are left at the time of closure will be packaged and removed from the site and taken back south and either recycled or appropriately disposed of.

All of the equipment and buildings no longer needed will be cleaned and dismantled. Buildings that we continue to use for the reclamation, they too will be dismantled once they're no longer required. The intent is at the end of the day, nothing is left on the project site. Equipment and

building material that has a salvage value will be removed from site by sea lift.

The inert material that has no salvage value will be buried in the landfill on site. So the demolition debris that is nonhazardous will be buried on site in the landfill within Quarry 2. And Tail Lake will be returned to its pre-development water level by breaching the north dam, as you've heard previously.

Specifically at Tail Lake, the annual water discharge that John described will continue once mining ceases in a managed fashion until it's shown that there will be no further impact on the downstream aquatic life from an irregular discharge. We expect that to be in three to seven years after mining ceases.

The water level at that point is expected to return to the pre-development level of 28.3 metres, which is actually expected within the third year, as you saw in John's presentation. At that point, the annual discharge will equal the natural runoff into the lake.

We'll still continue to manage the discharge, but the north dam could be breached at that point. However, one year before the water level reaches that 28.3 metre, which is the pre-development

level, as John said, we would do an ecological risk assessment to verify and determine when water quality is going to be suitable for release in a unregulated fashion to meet the guidelines of the standards that we put forward for this discharge strategy.

How long will reclamation take? The physical removal of buildings, equipment is expected to be done over two years, two summers following mine closure. So under a current schedule, that will be completed by the end of 2010. Reclamation of Tail Lake will continue, and it was expected at the worst to be seven years after the cessation of mining, so by the end of 1015 under our worst-case scenario. However, post-closure monitoring will continue until we can demonstrate that the site is sufficiently stable for a final departure. We expect that to be at a minimum of something in the order of ten years.

What's left after reclamation? The building pads and the roadways will still be left. We're not proposing to remove those, because to remove those, we would actually damage the underlying permafrost. We will, however, remove the rock drains, culverts, and bridges so that natural flow is re-established.

The landfill will be left on site. It will be within Quarry 2, and it will be covered with a cap of rock, and that rock will come from the quarry.

The rock quarries that we used for construction will obviously be left at site, although they will be stabilized, the walls in those will be stabilized.

The jetty will still be there, but it will be below water. We will remove the jetty that's above water, and so there will be a 1-meter cover over the remaining piece of the jetty. You won't see it, but it will still be there, the base.

The tailings containment area, it will remain as a flooded shallow lake with a breach through the north dam, but it will look very much similar to what it does in its current state.

And obviously the fisheries compensation structures that we've constructed on site would remain, and those would continue to operate after the mine closes.

These were just some artist's views to show what the site would look like after reclamation. So you see Tail Lake return to its current elevation, the north dam is -- sorry, the south dam remains, the north dam remains, but it's breached. You can still see the quarries. The mill and all

the buildings have been removed.

Similarly, this is looking from the north to the south, you can see the jetty is no longer visible, although the quarry is still there, and the roads are still visible. It will take a fair while for nature to overcome those roads, but if we remove them, we would actually do more damage to the tundra.

Now, I'm now going to move on to financial security, which is a key point for Miramar. It's very important that Miramar acknowledges that we are in a position where we have to bond for the liability that's left from this site, so that in the event that Miramar were not to be around to do its duty to reclaim the site, that there is funds to do that work.

So in calculating what that amount is or what estimate we should have for reclamation, we have done two forms, we've done it by two methods. We -- the Kitikmeot Inuit Association have a reclamation costing model, and we worked with the Kitikmeot Inuit Association to use their model to come up with one estimate, and that estimate was 11.7 million.

INAC also have a reclamation costing model called "RECLAIM" that's got a long experienced life

in the north, and we've used that model to come up with an estimate of reclamation, and we've come up with an estimate of 11.5 million.

Both of those estimates include a discount for future costs using a discount rate of 3 percent. What that means is that costs to be incurred after 2012, we have brought back those back to 2007 dollars by using a discount rate at 3 percent so that we're -- and we've done that with all these, that we're comparing apples and apples.

INAC have prepared, independently prepared, their own estimate of this cost, and the INAC estimate is 11.5 million when you use the discount rate. And INAC's reported their costs, both discounted and undiscounted, but I've just made the comparison between them so that you can see the apples-to-apples comparison.

The net outcome is that all parties seem to be in consensus that the cost of reclaiming this project is in the range of 11-and-a-half to $12 million. There seems to be consensus amongst all parties that that's where the appropriate number lies.

This is just a table showing the breakdown of our estimate using the RECLAIM model. I won't go through it in detail, but it just shows the

breakdown by area for you.

A key issue to Miramar is how security is obviously held, and there's a unique feature with this project in that it's on Inuit-owned land. This is private land. The Kitikmeot Inuit Association have indicated that they will ask Miramar for $11.7 million under the land lease as reclamation security to protect their interests because they will be issuing the commercial mining lease for this property, and they'll have a security request under that mining lease.

INAC have recommended that the total reclamation security should be 12.3 million, and of that, 6.1 million of this total is for water-related reclamation liability, and that should be held by INAC.

Just make the point that this 12.3 million is not based on any discount. It is the undiscounted amount, which is different from past practice that has been applied across the north in Nunavut, and by not discounting that future cost, it adds about 0.8 million to the estimate.

To date -- I'm now going to talk about this double-bonding issue, and I'm going to explain what I mean by that. To date, INAC and the Kitikmeot Inuit Association have been unable to reach some

agreement on how security could be held against reclamation on the Doris North Project or how it could be jointly administered by the two parties if we fail to meet our obligations.

Since we've got a condition where the Kitikmeot Inuit Association are asking for full security under their land lease and INAC is recommending to the Board that we should also post security to the Water Board of roughly $6 million for the -- sorry, of the water-related liability to the Water Board under INAC.

That means that, in total, the company is being asked to post total security bonds of $17.8 million against what everybody's already acknowledged to be a liability of 11-and-a-half to 12 million. So we're being asked to place into the bond or the combined bonds in excess about $6 million. That's a significant amount of money to us.

This $6 million in double bonding is a significant issue to Miramar, and it's also a significant issue to the mining industry. It has the potential to render large projects that are going to be developed in the future on Inuit-owned lands to become totally uneconomic, and I'll explain that a little bit further later on.

The reality is reclamation activities take

place in a holistic fashion. It's not very efficient to separate or try to separate the land- and water-related. These are interrelated items. When you go to do one piece of reclamation, you don't separate it by whether it's a land- or a water-related issue. You just reclaim to ensure that both are dealt with.

So trying to isolate that water-related reclamation from land-related reclamation, it ends up leading to a very inefficient reclamation that's got to cost more. Because you've got two parties doing two different things potentially doubles the project management costs, doubles administration, the mobilization costs. It's very inefficient.

On a large scale project, this could add tens of millions of dollars to a project cost, this double bonding, and could be enough to render a project uneconomic. So it disadvantages projects to be developed on Inuit-owned lands, and ultimately potentially penalizes Inuit beneficiaries from getting development on their land.

The double-bonding issue is also unfair to industry. We're being asked to put an excess into the bond because there can't be a form of cooperation between the two parties. We have been

asking INAC and the KIA to see if they couldn't find some method to resolve this for approximately two years now.

Here are some options: We've got a total of four options we've put on the table for how this issue could be revolved. In Option 1, INAC would hold the full reclamation security, and then INAC and the KIA would have an agreement between them that covers how they could jointly manage the reclamation activity if we don't live up to our obligations. That's a viable option.

Option 2, again, INAC would hold full security for the project, and in return, they would provide the Kitikmeot Inuit Association with an indemnity against any future claims or liability against the KIA from the activities or liability that the mining company's left behind on the Inuit-owned land. INAC and the KIA could then have an agreement on they would jointly manage the reclamation activity on this private land if the company were not there to live up to its obligation. Again, a viable option.

Option 3, again, INAC and KIA could each hold separate reclamation security, but in aggregate, that reclamation security would represent the total estimate rather than duplication of the estimates.

In other words, there would be no overlap or excessive bonds. In that case, KIA and INAC would have an agreement that sets out how they would jointly manage the reclamation of the project if we failed to live up to our obligation, and both parties would provide the other party with an indemnity against additional claims against each other resulting from our activities on the private land.

Option 4, INAC and the KIA would jointly hold the full reclamation security. INAC and KIA would have an agreement covering how they would jointly manage the reclamation activity and how they would spend that money accordingly.

There's actually precedent for this already. This is the way the Boston license is set up, where that security is jointly held, and there's agreement that the parties will jointly work to reclaim the site.

We're not taking a position on which option is best; we leave that to other parties to resolve.

This slide is intended to show how difficult it is in trying to divide land and water. As you know in the INAC submission, there's been an attempt -- there's been a division of those estimates, and the net is that INAC's estimate is roughly 50/50 split

between what's water-related and what's land-related. The bottom line is the total remains the same, the total estimate's the same.

We've gone away and done our -- taken our estimate and also divided it by our own estimate of what's water and land, and we've come up with a split that's closer to two-thirds being land and one-third being water. The reality is if we gave five professionals this job, you would probably get five different answers because you're -- it's a subjective thing to determine what's a water-related and what's a land-related issue.

And I'll just give you one example. Under the line "Chemicals and Soil Management", under INAC's estimate, they see that as a water issue, whereas we see that as a land-based issue. In other words, the removal of the chemicals that are left at the end of the day and the clean up of the soils, we see that as primarily a land issue, that if not done would become a water issue, where INAC's saying that it's only a water issue because it's a water liability. So consequently, it's very, very tough to separate this water and land liability.

In a nutshell, to summarize, we think it's unfair that Miramar be asked to double bond or to be asked to overbond for this project, and that

really what should happen is the parties need to hold security in a cooperative manner. And without this -- such cooperation and without setting such a precedent as this, it's going to be a significant disincentive in the future to large-scale investment on Inuit-owned land. It penalizes development on private land versus development on Government Crown land.

And that's the end of our submission, Mr. Chairman. Thank you very much for your time.

THE CHAIR: Thank you very much. I think we're pretty close to lunchtime, so we'll break for lunch, and be back here at 2. Is that acceptable? 1:30? The kitchen will be pretty busy. 2. Thank you.

(PROCEEDINGS ADJOURNED AT 11:50 A.M.)

(PROCEEDINGS RESUMED AT 2:00 P.M.)

THE CHAIR: Welcome back, everyone. Before we proceed, we have some housekeeping items to do, and I'll turn it over to legal counsel.

MR. TILLEMAN: Thank you, Mr. Chair. My name is Bill Tilleman.

What we'd like to do to keep the order of written presentations or visuals documented is propose that they be filed as exhibits, and so I propose, unless there's an objection, that the

application and all of that material not need to be marked. It's part of the record, and accordingly, it can be accessed by the Board or the public.

However, today, I propose three things do be marked. The first one then would be the presentation that is a hard copy that the parties received, and I suggest that be marked as number 1. Exhibit number 2, I propose that that be the electronic version that we saw up on the screen. It was a little bit different than that. And then I propose, Mr. Chair, as Exhibit Number 3 is there's a follow-up document, which is being distributed now to the audience. Miramar was kind enough to provide 50 copies of a document that is -- I'm trying to give it a good name -- maybe we'll just call it a follow-up to the technical meeting, dated August 11th, 2007, from Dr. Rykaart, and that would be number 3, and that's it. Unless there's objections, I propose they be marked accordingly. Thank you, sir.

EXHIBIT NO. 1:
HARD COPY OF MHBL DORIS NORTH PROJECT PRESENTATION TO NUNAVUT WATER BOARD, AUGUST 13, 2007.
EXHIBIT NO. 2:
ELECTRONIC COPY OF MHBL DORIS NORTH PROJECT

PRESENTATION TO NUNAVUT WATER BOARD, AUGUST 13, 2007.
EXHIBIT NO. 3:
SRK CONSULTING MEMO FROM DR. RYKAART, REGARDING DISCHARGE LOCATION AND WATER QUALITY AND MONITORING PLAN, DATED AUGUST 11, 2007.

ROLL CALL:

THE CHAIR: Thank you. And this morning I said I would do a roll call. I apologize for skipping ahead or sometimes I do get ahead of myself, so before we proceed on to the agenda items, I'd like to do a roll call.

KIA and NTI, INAC, Environment Canada, DFO, and GN, what I would like you to do is walk up to the microphone, introduce yourself and your group so the Applicant knows who's all involved in this public hearing. First in order is KIA/NTI.

MR. CLARK: Good afternoon, Mr. Chairperson. My name is Geoffrey Clark, and I am the Director of Lands, Environment, and Resources for the Kitikmeot Inuit Association. And with us here today is KIA's president, Mr. Donald Havioyak; our Senior Lands Officer, Stanley Anablak; our Environment Technician, Kevin Tweedle; our legal counsel, John Donihee; and as well, we

have a summer student with us, Angus Peterson.
MR. HAKONGAK: Good afternoon, Mr. Chair. George Hakongak, Senior Advisor, Environment, Water, and Marine Management with Department of Lands and Resources, NTI in Cambridge Bay.
MR. CLARK: And providing technical services to both KIA and NTI is Dr. Mike McGurk from Rescan Environmental Services, and he is here with us today as well. Thank you.
THE CHAIR: Thank you. Next is INAC.
MR. McLEAN: Yes, good afternoon, Mr. Chair and Board Members. My name is Carl McLean, Director of Operations with Indian and Northern Affairs Canada, Nunavut Regional Office. And we've brought a very experienced team with us to participate, and I'll ask them to stand up when I introduce their names.
We have Jim Rogers, Manager of Water Resources with INAC; David Abernethy, Water Resources Coordinator with INAC; we have Baba Pedersen, Resource Management Officer with INAC out of the Kugluktuk office; Maria O'Hearn, Manager of Communications with INAC; we have Ken Landa, Legal Advisor with Justice Canada, advisor to INAC; and our team of consultants and our experts. We have

Leslie Gomm with Gartner Lee Limited; Holger Hartmaier with BGC Engineering Incorporated; Lisa Barazzuol with MESH Environmental; Eugene Yaremko with Northwest Hydraulic Consultants; and John Brodie with Brodie Consulting Limited. Thank you.

THE CHAIR: Thank you. Environment Canada.

MS. WILSON: Good afternoon, Mr. Chairman and Members of the Board. My name is Anne Wilson. I'm a Water Pollution Specialist with Environment Canada in Yellowknife. Our team today consists of myself doing the water quality work; Savanna Levenson is the file lead for this presentation; Dave Fox is here as an Air Issue Specialist; and Glen Groskopf, who is the Mining Issue Specialist. Thank you.

THE CHAIR: Thank you. DFO.

MS. GORDANIER: Thank you, Mr. Chair, and good afternoon, Members of the Board. My name is Tania Gordanier. I'm with Fisheries and Oceans Canada with our Environmental Assessment and Major Projects Group based out of Ottawa. I have with me here today Amy Liu, who is a Senior Habitat Biologist based out of Iqaluit, and Mr. Paul Savoie, who is a Habitat Team Leader also based out of Iqaluit.

THE CHAIR: Thank you. GN.
MR. ATKINSON: Good afternoon, Mr. Chair, Members of the Board. My name is Mike Atkinson. I'm Manager of Environmental Assessment and Land Use for the Government of Nunavut-Department of Environment. Thank you.
THE CHAIR: Thank you. Anybody else? Are we ready to proceed with the agenda items? Number 9, questioning of the Applicant by parties respecting the Applicant's presentation. First will be KIA/NTI, I believe.
MR. CONNELL: Mr. Chairman, can I interrupt?
THE CHAIR: Go ahead.
MR. CONNELL: While we have finished our presentation, we do have a short number of slides to respond to some of the major issues on the interventions, and we would be willing to put those on the table now if that would be acceptable.
THE CHAIR: Go ahead.
MHBL RESPONSE TO MAJOR ISSUES ON INTERVENER SUBMISSIONS:
MR. CONNELL: Just got to get the slides loaded up to the screen, and I'll start from there. Thank you, Mr. Chairman. Larry Connell.
What we've done here is put together some

slides that really just address some of the critical items in the interventions that will be coming so that we could put this into the record before the Board for your deliberations. And some of these, I will go through them very quickly for brevity, I won't expand, and I'll go through others with more detail.

The first set of slides deal with the additional monitoring items that were requested by Indian and Northern Affairs Canada. And the very first column on this chart, and you'll see it's the same way I've set all these slides up, the first column contains items that were recommend by Indian and Northern Affairs that were previously committed to by Miramar either as part of our submission or through the technical hearings process. So I won't dwell with that column because there's already a consensus with the parties that those are acceptable.

The middle column are new recommendations that Indian and Northern Affairs have put before the Board where there is consensus that we can agree to those items being included within the water license. And then the third column is the one of key interest to us, are those where recommendations have been put forward that we do not accept, we do

not feel are appropriate, and I will dwell more on those as I move through them.

So the first item on this slide deals with tailings seepage monitoring, and we have previously agreed that tailings seepage monitoring should be incorporated into the license.

In this slide here, we're dealing with issues dealing with the water quality calibration monitoring. I won't dwell with the items that we've already previously committed to; you see those there. And we will get copies of this printed tonight. We've just completed it and will get it to everybody overnight.

The items in the center column, things to do with pan evaporation and the volume of the treated sewage, we agree that those are appropriate to be included in the license. However, in the far column, the right-hand side, the items that we find to be too hard or too great and cannot agree to are things such as measuring the ice thickness on Tail Lake on a weekly basis. We would suggest that this would be more appropriate if it was done, say, once a month during the winter months, that we believe that weekly going out to measure that ice thickness is too much.

The same with there was a recommendation that

we do a multi-depth water quality sampling on a regular basis distributed over the whole of Tail Lake. This water quality will be monitored by Miramar on a very frequent basis at the intake. We proposed that as part of our program, to monitor up to two heights at the intake on a regular basis. As part of the internal monitoring program, that's what will get done.

Water quality monitoring once per month in the open-water season in one other location other than the intake will be part of our internal program so that we can also check to make sure that the lake is not segregating, that there's not differences across the lake. We don't think that's appropriate to go into the license. That was part of our internal plan for internal monitoring.

The next one deals with geochemical monitoring. The geochemical monitoring of tailing solids, that was something we already put into our work plan. The geochemical monitoring of the leach residue placed underground on a monthly basis, the inspection of the freeze back of that leach residue placed underground, and the seepage water quality are things that we agree are appropriate. However, we would suggest, rather than it be monthly, that these should be something that are done biannually.

Geochemical processes in cold weather are very, very slow, and so this is just a confirmatory check to make sure that we aren't having something take place that is not expected, and we believe that doing this twice a year will be adequate to meet that need of protection.

There was, however, a request by -- in the Indian and Northern Affairs submission to do a series of monitoring within the cyanide destruct circuit. We think it would be much more appropriate than doing these internal monitoring checks within the plant. Those are something we will be doing with operators, but we think it's much more appropriate for the water license to deal strictly with the output of that circuit, and so we suggest that a monthly monitoring of just the barren bleed solution is what should appropriately be put in the license and not moving further back into the plant where the operators work. It's really the output, what's coming out of the plant, how good it's doing, and how that's going into Tail Lake that should be of critical importance in monitoring to ensure that the performance that is being committed to is being met.

The next one deals with the geochemical monitoring relating to waste rock. We had

previously committed to monitoring of the waste rock that's placed on surface and the tonnage placed and reporting that, and we agreed to segregation of waste rock from the -- of the -- waste rock that's nonmineralized from the waste rock that's mineralized. In other words, the nonmineralized rock is likely to be of no harm, whereas the mineralized rock is the one of major concern.

However, Indian and Northern Affairs have also asked that we monitor where the waste rock is placed back underground. We find that a very difficult thing to live with because we built into the plans that's gone through the NIRB process a certain size of stockpile. In order to do segregation, where we can segregate by lithology, we would have to create a number of piles that would then be picked up and placed underground, and that would be difficult for us to do. We would actually have to expand the facility and change the facility from the design in order to achieve this, and we also don't feel that this is going to add any additional protection overall.

The next two, the subsurface geotechnical monitoring during the dam construction, that was previously in our plan, so we agree with it. The

quarry rock monitoring, there was a follow-up ABA monitoring on the rock that's placed. In other words, we've already characterized the quarries before we started construction, but we made a commitment to also do periodic sampling of the rock that's placed out on the site, so that we confirm what the quarry is showing.

The difference or the addition to this is Indian and Northern Affairs asked that we do what's called a shake flask extraction test on 5 percent of the samples taken. That's to measure the potential for metal leaching. The test has its difficulties. It tends to overestimate, and it's not very -- it's not always perfect, but it does give you valuable data, so we've agreed that that should be something that could be added and we could agree to.

The geotechnical inspection, the inclusion of the Tail Lake shoreline in the annual geotechnical inspection, that was something that Miramar had previously agreed and had put into our own plan.

Seepage from the downstream, this is a repeat, it appears twice in the intervention, and so I won't go through it again. We've agreed that seepage should be monitored.

The annual geotechnical inspection should be

extended to all surface facilities, including instrumentation. That component was already in our monitoring plan. The new piece that Indian and Northern Affairs have suggested or recommended is the inclusion of checking the underground wall rock temperatures in the Doris Lake pillar, in other words, the piece of rock that's towards Doris Lake to ensure that there is no thawing taking place and to look at groundwater conditions in the annual inspection, and we believe that is appropriate and commit to doing that.

The Tail Lake discharge standards, Indian and Northern Affairs had asked us to include BOD and fecal coliform in the weekly parameters to -- on Tail Lake discharge. That comes from the fact that we are discharging the treated sewage together with the tailings. We don't have a problem with incorporating those, a periodic check. However, the difficulty of those two elements is that they require -- they cannot be preserved, and so in a remote location, getting those samples to the lab to meet the analytical requirements is a difficult thing. It requires that you coordinate the actual shipping of that sample. So what we're suggesting is that we do it once per month to confirm that there's not a problem and that the other three

weeks in that month we do not do BOD and fecal coliform. And that way, we do -- can check and make sure that these are a parameter problem, and at the same time, we're not making it impossible to get the samples to the lab in a timely fashion.

This one is a repeat. It does appear twice in the intervention, that is what we've already talked about, that we cannot effectively segregate the waste rock to go back underground into separate piles without changing the design of our waste rock stockpile, to create the area for it.

The inclusion of nitrates and nitrite from the camp/mill sedimentation pond is parameters to be checked. That is something we agreed to through the technical hearings.

The -- there was a request in the intervention or recommendation intervention that we include nitrate, nitrite, and ICP-MS metals to the parameters being monitored at the waste rock pollution control pond, and we can agree with that one. That one is acceptable to us.

The underground water quality, there was a recommendation that we should be monitoring. On a monthly basis, the underground mine water is pumped to surface and on to tailings impoundment, and we agree that that's something that makes appropriate

sense and should be incorporated.

We're also -- during the construction phase, we had proposed a series of monitoring, environmental monitoring, to ensure that we're protecting the environment during that phase, and one of them is to actually monitor the quality of water that drains away from these newly constructed roads and pads. And we have proposed a pH monitoring, and it was recommended that electrical conductivity would be an additional easy parameter that would add value to us. And we agreed that that would be an addition that would provide additional value, that we could agree with that one.

The next one is a repeat. It's being put there because it also appears in this section of the intervention, but I won't dwell on it. You've already heard me speak on that.

Again with waste rock monitoring, with respect to this quarry rock seep surveys, we had previously agreed that they would be done on ephemeral seep sediments. We wouldn't just go out and pick locations of tundra if there's no water or a sample there. We're going to -- in this case here, we're looking for where there's water and then monitoring that water, so we had agreed to that previously.

The new recommendation in the Indian and

Northern Affairs submission is that 20 percent of those samples, even whether they meet good quality water as measured by pH in the electrical conductivity should be set for -- sent out for secondary analysis. We had said that we would already send out those for secondary analysis where the pH in electrical conductivity indicated that there was some reason to believe there was a problem. And Indian and Northern Affairs has asked that we extend that to 20 percent, and we think that is a large number, that can be a very large number and a high-cost item to us, but we agree that it's worthwhile doing some, and we have suggested that 10 percent of the total samples taken would be more appropriate.

And it was also recommended that the survey be expanded to include the drainage coming out of these rock drains, so we agreed with that. That's an appropriate thing to incorporate in the monitoring.

The next item was on tailing solids monitoring, the monitoring or the measuring of the tonnes of combined tailings placed in Tail Lake was something that previously we had agreed to. The monthly monitoring for the elements shown there was something we had previously agreed to.

On tailings supernatant monitoring, the monitoring of the combined tailings supernatant water placed in Tail Lake, initially on a daily, reduced to weekly after three months. This is an item that we had previously included in our own plan, so it's agreeable with us.

The new recommendation from Indian and Northern Affairs is the inclusion of weak acid dissociable cyanide in total metals by ICP-MS into the list of parameters, and we agree that that's an appropriate addition. However, it also went on to request or recommend, the INAC recommendation was that we incorporate weekly and monthly monitoring of cyanate and thiocyanate. These are parameters that are not key to any of the monitoring or the management program. We suggest that they're of interest to know what they are on occasion, but that they should be checked on a regular basis, they are just an added cost that won't help us. So we're suggesting that these parameters be checked once per quarter.

Next, we're into cyanide leach residue monitoring. We had previously agreed that the tonnage of cyanide leach residue sent underground should be monitored and checked and reported on. The Indian and Northern Affairs submission and the

recommendation is that we also include WAD cyanide, weak acid dissociable cyanide, and total metals by ICP-MS into a list of parameters on that stream, and we agree with that, that that's an appropriate addition.

So as I said previously, there was also a recommendation that we incorporate weekly and monthly monitoring of cyanate and thiocyanate. We don't believe that those should be done on a weekly or monthly phase, that those are less critical parameters, and that they should just be checked on a periodic basis. We suggest once per quarter.

Also dealing with the cyanide leach residue monitoring, Indian and Northern Affairs made the recommendation that we should be monitoring the moisture content of the backfill going underground and also total and weak acid dissociable cyanide in the backfill placed underground. And we agree that those are acceptable additions of things that would improve the strength of the monitoring.

However, they also recommended that there be monthly monitoring for acid-based accounting of those samples and that we deal with total sulphate, total metals by ICP-MS, totally inorganic carbon, effective NP, including doing mineralogy on the cyanide leach residue solids placed underground.

On a monthly basis, that would be an extremely high cost item, and we really don't think that adds to the long-term performance because this material is to be frozen within the permafrost, and so we find that as unacceptable in addition to the SNP program.

There was also a request or a recommendation for a visual inspection of freeze back of the backfill in stopes and monitoring of seepage, if present, on a twice-per-year basis. Actually it was requested monthly in the INAC submission. We're suggesting that that is appropriate, but twice a year would be sufficient to determine whether there is a problem developing in these areas.

This material will be placed within the stopes, it will freeze, and the geochemical processes are slow to evolve, and so it will be pragmatic to go out and check that our predictions are there, are what is taking place, but we think that that -- if we do that on a twice-per-year basis, that will be adequate to demonstrate that we know what's taking place and then checked it and confirmed it.

And that the seepage be monitored for pH electrical conductivity, metals by ICP-MS, alkalinity, acidity, sulphate, total and WAD

cyanide, total ammonia, nitrate, and nitrite, and we can agree with those additions to the seepage program, just on a less frequent basis.

The submission from Indian and Northern Affairs also recommended that a humidity cell test be run on the cyanide leach residue, and that that test should continue throughout the active life of the mine or until the Water Board approves cessation of the test. We don't think that's necessary. We believe that that is not a -- should not be a requirement of the license.

I've already discussed the visual inspection, so I'll pass on that. This next one, cyanide destruction circuit monitoring, we've previously discussed this. It appears twice in the intervention, so I thought it clear in the appropriate phase, but I won't repeat it. We've already given you the logic behind that.

So I'll go on to Tail Lake monitoring. Indian and Northern have proposed or recommended that we do dissolved oxygen and redox monitoring in situ in Tail Lake. We agree that that should be done in Tail Lake. We can accept that, that that's going to provide some valued information, and we're recommending it should be done every two months at SNP point TL1. The change that you see, we

believe, is just an error in the INAC submission, that they intended to be Tail Lake.

The next two items, one deals with storm water discharge monitoring. The recommendation put forward by INAC was something we've already previously agreed to. Obviously that's a consensus there. The same with the discharge of where we're discharging onto the tundra, that they do daily, visual monitoring of the discharge points to make sure that erosion is not taking place, and that those points be armoured with rock to ensure that the surface isn't disturbed by the discharge. So those are previously agreed and are part of our monitoring plans.

The next two are similar. The Tail Lake shoreline erosion monitoring, this visual assessment of suspended sediment in the water was something we had previously come to agreement on and have incorporated that into our plan. The same with the shoreline erosion being included in the geotechnical inspection.

Under geotechnical monitoring, the monitoring of temperature and deformation measurements on the instrumentation installed in the north and south dams, as you've heard this morning from Mr. Rykaart, these were already part of our

proposal.

Under thermal monitoring, Indian and Northern Affairs proposed that we install some thermistors underground to monitor rock temperatures in the wall rock. We discussed this previously. It's just repeated in this section, and we agree that that is a pragmatic approach to make sure that we're seeing -- to make sure that the permafrost is staying within that rock. And the north and south dam seepage is something we've covered again; it just repeats itself in this section.

This next item deals with a condition that was recommended be put in the license in the case that we applied for the extension of the mine life beyond two years. It lists a series of things that we should be studying and monitoring and doing six months before we submit an application for any extension of the mine life. We feel that that really is irrelevant to this current license application and suggest that these are issues that really need to be addressed during the environmental assessment of any application for expansion. This information should be required as part of an EIS submitted under a NIRB review of such an application. We take note that these are critical pieces of information that would be needed

for the next phase, but we don't think they're appropriate for this water license.

I'm now going to leave the Indian and Northern Affairs submission and just have a couple of small items that are -- a short number of items that are contained within the intervention put in by the Kitikmeot Inuit Association.

The first item, the Kitikmeot Inuit Association in their submissions suggested that samples should be taken at more than one depth to ensure that results are not biased by stratification of the water column. We've previously discussed that under that INAC recommendation, that we feel that we are already, as part of our submission, measuring water quality at a series -- two points at the discharge point, and that's what's appropriate in the water license. We will be doing additional monitoring to ensure stratification outside of that, but we don't think that's appropriate at the monitoring point.

The second line item there is detailed monthly reporting during the first year of operation. Miramar believes that basically was a request for a stepped-up list of monthly monitoring during this first year of operation. We believe that this really is a duplication of effort. We understand

that the water license will contain an SNP program, that SNP program requires to submit a monthly monitoring report, and we believe that adding anything to that really becomes excessive, we're duplicating effort.

The Kitikmeot Inuit Association, in their submission, have also suggested that we do daily or twice daily measurements of water quality and flow during the freshet. Right now our proposed monitoring is monitoring every second day. This monitoring twice a day is quite a work load, quite a basis of a work load. The lake itself, because it's a lake, tends to attenuate out the concentrations. Thing don't change quickly in a lake, and so we believe that this is really going beyond what is going to provide any environmental -- or additional environmental protection to monitor twice a day versus the proposed monitoring rate. The water flow will be monitored on a continuous basis, as you heard this morning.

The Kitikmeot Inuit Association in their submission has asked that Miramar provide proof of a laboratory accreditation prior to discharge of water from Tail Lake into Doris Creek. There is a certificate condition that requires that we seek

accreditation of our onsite environmental laboratory, something we've agreed to.

However, we believe it's important to point out that in accrediting a laboratory, it is not something you go and apply for, obtain, and then go and do it. When you accredit a lab, what you're doing is basically seeking feedback that your lab is running and receiving appropriate numbers for each parameter. So what you do is you sign up to be accredited, and then you send out samples that you measure in your lab to be measured in other labs, and you do comparisons to make sure that your lab is accurate. And after you do this over a period of years and you do the documentation, you can then receive the accreditation for your lab.

So this is not something that can be done ahead of time. It actually has to be done by doing the actually running of the lab. And so while we're agreeing that we will seek accreditation and we'll go through the process, it's not something we can do prior to the start of operation. It has to be done during the operating part of the life of the mine.

We will, despite doing that part, we will have QC measures in place, including using external labs to do checks and for verification of our results.

Our compliance monitoring is going to be done by an external lab so that the numbers that the Board are seeing are going to come from an accredited lab, and they'll be compared back to what our lab is saying. And there will also be independent sampling and verification by the regulatory agencies.

The next issue, moving on from the KIA to Environment Canada, Environment Canada suggest in their intervention that targets below the CCME guidelines should be applied in this water license. We disagree with that statement or disagree with that recommendation. Miramar is proposing to comply with the CCME guidelines for protection of aquatic life.

And this next bullet is actually a quote right from the guidelines. I'll read it: (As Read)

> Canadian water quality guidelines are meant to protect all forms of aquatic life and all aspects of the aquatic life cycles, including the most sensitive life stage of the most sensitive species over the long term.

Those come right from the environmental guidelines, so environmental quality guidelines. So we believe that these guidelines are already protective of the

environment, that there's no need to go beyond them; this is how they were set. And so we're being asked again to set the goal post beyond what's necessary.

Also we point out that Miramar is not aware of any other water license that's been issued that has receiving water quality limits set at or below the CCME guidelines, so we're already proposing something that's a step forward.

Environment Canada suggested that for parameters which do not have CCME guidelines, such as chloride and total dissolved solids, that the targets within the water license should be set to maintain ambient conditions within two standard deviations from the current baseline values. We disagree with this. We believe that this is overregulatory, and it doesn't add protection.

The reason there are no guidelines for those two parameters in the CCME criteria is because those parameters are acknowledged to be not critical parameters of concern, and it only is by having excessive values of those that any environmental harm would occur. So that's acknowledged right in the CCME guidelines. So we believe that this too is trying to move the goal post beyond a reasonable spot.

And that ends my presentation, Mr. Chairman. Thank you very much for this opportunity.

THE CHAIR: Thank you.

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

And by way of keeping track of this and making sure all of the parties have this, we should propose that these be marked, and so we can mark the next one, which would be Exhibit Number 4 as the supplemental information responding to concerns of parties in electronic version, and then number 5 is coming, which would be the hard copy, correct?

MR. CONNELL: Correct.

MR. TILLEMAN: So, Mr. Chairman, we propose number 4 be the electronic version and number 5 be the hard copy version, and then they'd be marked accordingly.

Now, I would think the parties would want the hard copy as soon as possible so they could match up what was said and square up their response or clarify where they're going, so if the Staff can be any help to get the hard copies, if we could do that quickly for the benefit of the audience, and that's it for me, sir.

EXHIBIT NO. 4:

ELECTRONIC COPY OF MHBL'S SUPPLEMENTAL

INFORMATION IN RESPONSE TO INTERVENER SUBMISSIONS.
EXHIBIT NO. 5:
HARD COPY OF MHBL'S SUPPLEMENTAL INFORMATION IN RESPONSE TO INTERVENER SUBMISSIONS.

THE CHAIR: I think we can keep moving on. Agenda items: Questioning of the Applicant by parties respecting the Applicant's presentation.

MR. CLARK: My name is Geoff Clark, with the Kitikmeot Inuit Association.

We have a couple questions. The first question, I'd like to introduce John Donihee on behalf of KIA.

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

The material that was just presented, certainly fair enough for Miramar to respond to the recommendations made by the parties in their interventions, I'd simply like to point out that we'd like to wait and we need to get a hard copy of it and have a look at it before we're in a position to decide whether we need to respond.

We do have a few other questions I think that Mr. Clark will present to the Board. I'm not sure

procedurally how to handle it, except to say that once we've reviewed it, perhaps I'll speak with the Board counsel, and if there is a need for us to ask any questions about these new tables that have just been provided, I can work it out with your -- with Board counsel at that point, if that's acceptable.

MR. TILLEMAN: Thank you, Mr. Chair.

I think that is acceptable. And as he was talking, what seems the next step in this would actually be to take their chart that they presented and is marked now as 4 and 5 and actually add one more column, right? I mean, it would seem to be fair to me, Mr. Chair, that everyone has a chance to look at that and then respond. They may simply say if it was modified, we would agree, or they may say, We disagree. But I think the parties need a chance to look at the table, think about it, and then if we could -- if they agree to add one more column, and then the Board will know exactly what people think about those 15 or 20 slides.

So thinking it through, I think Mr. Donihee raises a reasonable request, and that is if you can give us a minute at a break, I can discuss with counsel and parties and the Proponent how best to help the Board understand what was just presented and to be fair to those parties that have to reply.

So in summary, I'm recommending to you that you let the parties wrap their mind around Mr. Donihee's request, but I'm satisfied we can come up with something that would benefit everybody and, at the same time, allow the questioning to carry on with the major presentation, which was proposed by Mr. Donihee.

THE CHAIR: We will recess for 15 minutes.

MR. TILLEMAN: It's Bill Tilleman, Mr. Chairman. You're the boss. I don't need that long, but if you do, then you're the boss, and we will do whatever you say.

THE CHAIR: 10.

MR. TILLEMAN: 10 it is, sir.

THE CHAIR: Thank you.

(BRIEF ADJOURNMENT)

THE CHAIR: Thank you all for coming back. Bill, were you able to come to a resolution on this?

MR. TILLEMAN: Yes, Mr. Chairman. It's Bill Tilleman, and thank you very much. I did have a chance to speak to the parties or some of them and their counsel, and I'm speaking closer to the mike because I know that it's hard to hear in this room, and so actually I'm doing this on purpose so

everyone, including me, will try to be better heard.

And so the resolution which I suggest, Mr. Chair, is that the parties do cross-examinations as they were prepared to do before this latest presentation by the proponent. So we go through all the cross-exams as normal, and then before the close of the evidence, likely tomorrow afternoon or whenever we reach that point, we will put back up a slide like the one that they put up, only we will have one more column, and that last column will simply be the final version of this slide from all parties. That is to say we may, by tomorrow night, have disagreement on some points, we may likely still not be in agreement on some points, there may be modifications. And once that slide goes up, Mr. Chair, then I recommend and we've agreed that all the parties will have an opportunity to ask questions on it, and then that will end the matter.

So, Mr. Chair, that is the agreed-upon resolution. If I've overstated that or if anyone disagrees, then I would ask them to come up and correct me. Failing that, I would just simply suggest we go to KIA's cross-examination as they planned it, thank you.

THE CHAIR: Thank you. Anybody else? Okay, if there isn't anyone else, shall we move on to the agenda item? Questioning by the -- questioning of the Applicant by parties KIA/NTI.

KIA QUESTIONS MHBL:

MR. CLARK: This is Geoff Clark. Thank you, Mr. Chairman.

KIA has one question, and it regards the water control strategy and the water management strategy, and in the presentation, information is presented showing how water management discharged from Tail Lake can be managed in the case of low precipitation years, and we're aware in the submission that there's also been modelling done in the case of high precipitation years which, in terms of diluting copper, should not be a problem because there will be more water in Tail Lake and more water in the Doris outflow.

But recently in Kugluktuk, I believe it was two or three weeks ago, we got 6 inches of rain in a 24-hour period, and the previous recorded record to that point in time was about 1-and-a-half inches in a 24-hour period, and we wanted to ask Miramar how such an event, if this occurred over the eight-year -- you know, one time in an eight-year period of operating the Tail Lake facility, how it

would affect the Tail Lake and, I guess, not as much the water management plan but the ability to hold water within Tail Lake.

MR. CONNELL: Thank you, Mr. Chairman. I'm going to ask Mr. Chapman to respond to that.

MR. CHAPMAN: Mr. Chairman, John Chapman.

The -- if I can just paraphrase the question. The question is that you want to understand how the inflow from a 6-inch storm would affect the water-holding capacity of the dam?

MR. CLARK: Mm-hmm.

MR. CHAPMAN: Okay, what will happen is that if you have a stormy event like that, the flow in Doris Creek will increase as a result. Because the system is a totally dynamic system, the flow in Doris Creek is monitored continuously, and the discharge rate is adjusted according to the flow rate that occurs in Doris Creek.

So when the Doris Creek flow increases, the discharge rate from Tail Lake will also increase correspondingly based on the pumping system, and so that you will draw down the water in a rate proportional to the effect of the storm.

So what will happen is that at the end of the storm, you will have some accumulation of water in

Tail Lake, but most of it will have been taken up by the increased discharge that will occur automatically. So there may be some short-term increases in the Tail Lake water level, but it will be taken care of by the increased discharge rate. That's the first point I would like to make.

The second point is that because you have a net increase in the water quality for that short duration, it will effect a dilution of copper in Tail Lake. That means the copper concentration will be less, and that, in time, means you will be able to discharge more rapidly in the subsequent period. So ultimately, it will catch up with itself, and you would end up on the same basic discharge schedule. So the bottom line is that it will not affect the holding capacity of Tail Lake in any way whatsoever.

Thank you, Mr. Chairman.

MR. CLARK: This is Geoff Clark.

Thank you, Mr. Chapman, for your answer to that. That clarifies the discharge strategy and how it would affect copper in the water.

And how would the infrastructure be affected? Would the actual dam itself -- would there be enough -- forgive me, I'm not an engineer, so I'm using terms that might not be appropriate, but is

there enough free-board in the Tail Lake dam to be able to manage such a rainfall event if it were to happen or to handle a rainfall event if it were to happen?

MR. CHAPMAN: John Chapman, Mr. Chairman.

I will defer that question to Maritz Rykaart, who is the design engineer.

MR. RYKAART: Maritz Rykaart.

The dam has been designed with a very large design capacity. We can handle zero release from this facility under normal conditions for a period of five years or more. A rainfall event, by example, the magnitude that you just mentioned for Kugluktuk, that would, in effect, if you did nothing else, if you retained all the water, that would be less than one year of additional rainfall that's been retained. So this five years will reduce to four years and a bit. The bottom line is it would not affect the capacity and not change the risk factor of the dam in any way whatsoever.

MR. CLARK: This is Geoff Clark.

Thanks a lot for your answer. We have one more question, Mr. Chairman.

MR. DONIHEE: John Donihee for KIA. I would like to ask one question in relation to the

double-bonding issue that you raised. It seems to me that what's different about the Doris Project is that it's on IOL, and that as a result of that, there's a suggestion that water -- only water-related security can be held by INAC under the water license.

And I'm just wondering in Miramar's experience, I mean as I look at the table up there, there's a lot of years of involvement with mining in Canada, and so I'm wondering if you have any information or any knowledge of the situations from other jurisdictions where mines are actually developed on private lands, and whether you could help us in any way by explaining how the issue of landowner's liability might be dealt with in those other jurisdictions so that we could give that some thought here in Nunavut.

MR. CONNELL: Thank you, Mr. Chair.

The one case, of course, that we all know about that we talked about earlier where we do have precedent for this is Boston, where there is a joint agreement, where the security is held jointly for the land and the water.

I don't have any experience base on mining both here in Canada or the U.S., where it's strictly private land. In Montana, I know of one situation,

very small case, but it was a very small incident where it was a private landowner on a small barite deposit. The State did hold the bond for that deposit, and basically the landowner just absented the situation in the State. We dealt with the State on the reclamation. So it's not a good case-in-point for comparison here.

I'm sorry, I can't really shed any analogies to you from elsewhere.

MR. DONIHEE: Thank you, Mr. Chairman. That's the only question that I had, and I believe that's all our questions.

THE CHAIR: Thank you. NTI?

MR. DONIHEE: Mr. Chairman, NTI has no questions.

THE CHAIR: Thank you. INAC?

INAC QUESTIONS MHBL:

MR. McLEAN: Thank you, Mr. Chair. It's Carl McLean with Indian and Northern Affairs Canada.

We have several questions, and I'm going to defer them to our experts to ask those questions.

First, we'll ask Lisa from MESH Environmental, she has a couple questions for Miramar.

MS. BARAZZUOL: Lisa Barazzuol.

In Miramar's presentation on Slide 21, there is

a flow sheet of the mill process and then subsequent slides that describe the different parts of the mill process. And on Slide 27, there's a description of the mill flotation, and then after the mill flotation, there's a cyanide leach residue process and also the cyanide destruction process. I'd like to ask Miramar to also present and describe those processes.

MR. CONNELL: Larry Connell.

Just to paraphrase the question, what's being asked is just to provide a little more understanding of the cyanide leach process and the cyanide detoxification process?

MS. BARAZZUOL: That's correct, so we have a full picture of the ore processing cycle.

Lisa Barazzuol.

MR. CONNELL: Thank you. Larry Connell. Thank you.

In cyanide leaching, the concentrate --

MR. HANSON: Excuse me, just for a second. Recognize your Chair before you speak. We want to know who you are. Say your name. Do not get in a conversation back and forth. That's why we have a Chair up here. Thank you.

MS. BARAZZUOL: Lisa Barazzuol. I apologize.

MR. CONNELL: Mr. Chairman, may I respond to that one?
THE CHAIR: Go ahead.
MR. CONNELL: The cyanide leach circuit basically consists of a -- where we take the flotation concentrate, we mix it with a solution of sodium cyanide, and the gold is leached from the solids into the solution. So we're moving the gold from the solid phase into the solution phase by extracting it from the solids.

The gold is then absorbed onto activated carbon. It's like a charcoal that's in an aquarium filter, and the gold is absorbed onto that surface, and then the carbon is removed using a screen. We remove the carbon that way. The carbon is then extracted. The carbon is then again leached in hot water or a solution of cyanide to extract the gold back out, and then it's actually plated onto wire wool using electrorimming cells. Like plating of a car bumper except we're doing it onto wire wool where we're using electrical energy to actually plate the gold from solution onto this wire wool from -- we strip back off the carbon. The carbon is then re-activated by a thermal process; it's heated back up, and it's recycled back into the process.

The slurry from that process, once it's been leached, then passes on to the cyanide destruct circuit. In the cyanide destruct circuit, we basically have a large agitator with a large input of compressed air, and we add a chemical called sodium metabisulphate. This sodium metabisulphate oxidizes the remaining cyanide. It actually converts it into a cyanate, so it destroys the cyanide, takes away its toxicity effects. And at the same time, it breaks down the weakly bound complexes of metals in cyanide so that those metals can be precipitated and removed from solution. The objective is to make sure that that stream is not leaving the plant in a highly toxic form; it's to destroy that residual cyanide that's left.

We then take that slurry after we've detoxified it or destroyed the cyanide, filter it. We'll thicken it first and then filter it, and the solutions from those will be recycled back to the front end of the leach circuit with a small bleed solution coming off of that, so that we release these metals that will build up, and that's combined with the float tails that go out to the tailings impoundment.

The solids that have come from the filter will be something in the order of 10 percent, so there's

no free water on them. There's no water that's -- it's essentially a dry cakey product. That is then trucked back into the underground mine and used to backfill the stopes. That's placed into backfill stopes where it will become frozen, so it's isolated from the environment at closure.

Thank you, Mr. Chairman. I think that answers the question that I was asked.

THE CHAIR: INAC?

MS. BARAZZUOL: Mr. Chair, Lisa Barazzuol. I have one more question.

Miramar has presented the monitoring plans that they had, including the waste rock -- sorry, management plan, including the waste rock management plan, and in Slide 47, they present the types of waste to be managed, and I would like to ask Miramar for clarification why the waste rock was omitted from this slide as a type of waste to be managed.

MR. CONNELL: Mr. Chairman, it's Larry Connell. Can I answer that question?

The types of -- I discussed waste rock, and it was an oversight on our part. I did discuss waste rock, and it should have got incorporated there as well, so I apologize for that. It should have been incorporated.

THE CHAIR: INAC?
MS. GOMM: Thank you, Mr. Chair. Leslie Gomm.

I have four questions for Miramar. The first one relates to site water management and management of storm water.

In Miramar's presentation, they highlight that water from the sediment control pond and the landfarm will be transferred to Tail Lake if it does not meet the discharge standards. Can Miramar clarify the intentions of the water from landfarm and fuel storage and handling areas should that water not meet the discharge standards?

THE CHAIR: Miramar?
MR. CONNELL: Mr. Chairman, I'll respond to that.

In the fuel containment facilities and the landfarm, we anticipate that that water, because it's in contact with the potential of oil, will have -- potentially have oil within it. So what we're using there is an oil/water separator unit. It's a packaged unit, purchased unit, that separates oil away from the water before discharging it. So we're not monitoring ahead of time there to determine whether it's contaminated, we're processing it through the oil/water separator

before it gets released. So our intent is that all the water that collects in the sumps within those facilities will be pumped through this oil/water separator unit before it's released.

THE CHAIR: INAC?

MS. GOMM: Mr. Chair, thank you. Leslie Gomm.

I'm just wondering if Miramar could clarify once that water has gone through that treatment system that -- and it is sampled, if it meets discharge standards, it will be applied to the tundra. If it does not, what will happen with that water?

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chairman.

If -- that's correct, if the water meets the standard we will be monitoring, it will be discharged onto the tundra. If it doesn't meet the standard, it will either be recycled back into it because there's something wrong with the oil/water separator.

Generally these things have a filter system in them, and that filter will bind, and if we're not -- that will have to then -- we'll recycle the water until we replace the filter. And that's the situation in case of those fuel facilities. So if

we're not getting good performance out of our monitoring system for those -- for that oil/water separator, the water will get put back in the system. The system gets shut down until we can make the separator back into its functioning purpose -- into its -- into how it's supposed to function, its functioning purpose.

THE CHAIR: INAC?

MS. GOMM: Okay, Mr. Chair, now on to my second question.

This deals with the operational use of the model and specifically Slide 79 of Miramar's presentation. In that slide, they basically present a decision tree of when the model will be recalibrated both with respect to water quantity or water level and water quality. Can Miramar provide more information on how they will determine if the comparison of calculated water quality with Tail Lake water quality is acceptable?

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

Can I ask that the question be restated, please?

MS. GOMM: Can Miramar provide more details on how it will be determined if the

comparison of calculated water quality in Tail Lake with actual water quality is deemed acceptable or not as shown in that flow chart?

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

In Slide 80, we present criteria that would be used to judge whether or not it is acceptable. The judgment, as shown in that slide, there are different criteria that would apply for different climatic conditions. If it's a very wet year, for example, then the difference can be significantly higher than if it's a dry year.

What we will do is we will judge, based on the climatic conditions, whether or not -- which category should be applied, and that would be the process. Ultimately, it would be what the impact is on the discharge schedule, whether or not it's significant, but that is the process that would be used.

MS. GOMM: Mr. Chair, Leslie Gomm.

So to clarify, the decision will really be based on flow conditions if it's an average year, dry year, wet year, and what the implications on those changes in water quality are on the timing of discharge, and specifically, I guess, is it deemed

critical if it's going to push the discharge period for one year longer? Is that kind of the criteria?

So you basically are -- you're going to go through your process, you're going to compare, and then you're going to see what that resulting concentration does to your timing of discharge, and if that timing of discharge results in an additional year, that will be deemed critical, and then you'll go back?

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

That is correct.

THE CHAIR: INAC?

MS. GOMM: Mr. Chair, Leslie Gomm again.

Again, referring to that same slide, Slide 79, you talk about if we -- it is deemed unacceptable, you're going to identify the causes and revise source terms and recalibrate the model. Can you give us a little bit more detail about what source terms you're referring to in the revision there?

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

If I can refer you to Slide Number 62, that

shows the source terms that are being considered in the water and load balance, and what we would do is we would go back to the monitoring data for each of those source terms and see which ones are causing the upset condition, and that is basically what would be considered when we look at the recalibration.

THE CHAIR: INAC?

MS. GOMM: Mr. Chair, Leslie Gomm.

Just to clarify, would some of those source terms also include re-evaluation of nutrient degradation rates based on actual site conditions?

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

If nutrients are shown to be a potential concern, and it cannot be tracked down to the source term, yes, then we would be looking at degradation rates and see how it affects. But I might add that in none of the modelling cases was the nutrient degradation shown as a problem.

THE CHAIR: INAC?

MS. GOMM: Thank you, Mr. Chair. Leslie Gomm.

Last question, again pertaining to the discharge operational use of the model, is it the

intention to do these monthly updates of the model or a recalibration throughout the year or only during the open-water season?

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

The intent is to do it through the year, but we have to recognize that in certain months when it's frozen, obviously there's no discharge occurring, so there would be limited implications with respect to looking at source terms, for example.

The other constraint obviously is that if you have ice conditions on Tail Lake that it will have, in part, certain changes in concentration beneath the ice that may not be of any significance until the ice melt occurs. So it has to be recognized that there are constraints certain times of the year, and that during those periods, it would not be necessarily required to recalibrate the model. It's only during the open-water period that we would actually consider recalibrating the model.

Thank you, Mr. Chairman.

THE CHAIR: INAC?

MR. ROGERS: Mr. Chair, Jim Rogers, Manager of Water Resources for INAC.

My question for the Proponents relate to Slides

55 to 57 on storm water management. I would also like to refer to the Kugluktuk storm. Will Miramar be considering this storm in future analysis of storm management and runoff off the mine site and do risk assessments? And if changes are required in the design for the future, will Miramar provide those changes to the Water Board? Thank you.

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chair, it's going to take me just a moment to do some consultation with my colleagues.

MR. RYKAART: Mr. Chairman, Maritz Rykaart.

Mr. Chairman, under normal mine management procedures, you would design your storm water management systems on your mine site for a particular design event selected by the mining company.

A typical design event is obviously based on risk, but a fairly common design event would be a 100-year, 24-hour storm event. This is the design criteria that MHBL has selected for their storm water systems. This design event is obviously significantly smaller than the Kugluktuk event that has been mentioned by Mr. Rogers in his question.

However, it should be noted that storm events

bigger than the particular operational design intent selected by the mining company can occur, but it is not normal practice for a company to design their operational systems for those events.

I do not know where the Kugluktuk storm event fits into the hydrology structure. I do not know if it's a 1-in-500-year event or if it's perhaps a PNF, but you wouldn't design your operational systems like that.

It is a risk-based system, and Miramar believes that their current system of the 100-year, 24-hour storm event, which is equivalent to 65 millimetres of rain over 24 hours is adequate, and therefore, do not intend to change that design criteria.

THE CHAIR: INAC?

MR. BRODIE: Mr. Chairman, my name is John Brodie.

I have one question for Miramar concerning the reclamation security matters. On their Slide Number 106, they present a division of land- and water-related security. In their estimate, they include a line item called "Post-closure Site Maintenance". Insofar as the majority of the post-closure work is directed at water management activities, it would be of interest to us if Miramar could explain why they have assigned all of

the liability in this category to land-related liability and none to water-related liability.

THE CHAIR: Miramar?

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

In our estimate, when we got to post-closure site maintenance, the actual post-closure water management strategy for Tail Lake is covered under tailings, and so it doesn't appear under post-closure site maintenance in our estimate.

This post-closure site maintenance was more directed at erosion protection and changes on the site in an annual basis moving forward, and so these were perceived by us to be more land-related than they were water-related. Our water component, as you're expecting on long-term water management, in a post-closure period is actually under the tailings area.

Yes, this is -- this just reiterates the fact that any two or four or five engineers who are doing this are going to come up with different answers, because subjectively we look at each component, we consider it differently, we make our best judgment, but we're going to get different answers with different people because it is subjective; we're surmising where we believe those

things are going to move in different ways.
Thank you, Mr. Chair.
THE CHAIR: INAC?
MR. BRODIE: John Brodie, Mr. Chairman.
That answer is satisfactory. Thank you.
THE CHAIR: Thank you. Go ahead.
MR. McLEAN: It's Carl McLean, INAC. I just have one more question.
It's a question on one of the pictures that Miramar is showing on Slide Number 30, and it's a picture of the jetty with the silt curtain around it, and I'm a curious guy, so I believe I know what that black shady area outside of the actual rock jetty is. Is that the geotextile liner that's floating to the surface?
THE CHAIR: Miramar?
MR. RYKAART: Mr. Chairman, Maritz Rykaart.
Mr. McLean, that is correct. That is the geogrid that forms the foundation. The geogrid floats on the water, so what you see there is the outer edge of the geogrid that is actually still floating. Because of the way it had to be placed, the low visibility in the water, the outer perimeter was much wider than needed, and that edge

that you around the jetty is the floating leading edge of the jetty.

THE CHAIR: INAC?

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

Just to follow up then, so in order to complete the construction, what happens to that floating geotextile grid?

THE CHAIR: Miramar?

MR. RYKAART: Mr. Chairman, Maritz Rykaart.

What happens is the limit of the geogrid beyond the toe of the jetty is measured, and an anchor system is tied to this portion. The rest of the excess material is cut off and removed, and the remainder that needs to be in place is permanently sunk to the bottom so that you see nothing at the surface; it all lies on the sediment, as it is supposed to.

THE CHAIR: INAC?

MR. McLEAN: Thank you, Mr. Chair. That's all our questions.

THE CHAIR: Thank you. Next, we have Environment Canada.

EC QUESTIONS MHBL:

MS. WILSON: Thank you, Mr. Chairman.

Anne Wilson speaking from Environment Canada. I just have a few questions for the Proponent.

Just to clarify my understanding of the water management strategy, I'd just like to confirm Miramar's proposal here. Are you proposing two sets of discharge criteria or one discharge criteria and one set of management objectives?

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

We're proposing one set of discharge criteria, which is the MMER criteria that would dictate whether or not we can release water, and then we propose a second set of criteria, which are the CCME guidelines, and that would be in the receiving water downstream of the waterfall.

THE CHAIR: Environment Canada?

MS. WILSON: Thank you, Anne Wilson.

So you would effectively be regulated on two sets of criteria, correct?

MR. CHAPMAN: John Chapman, Mr. Chairman.

Yes, that is correct.

MS. WILSON: Thank you. I would just like to add -- Mr. Chairman, Anne Wilson --

THE CHAIR: May I remind you to move

your microphone closer to you. There's lots of echo in this building and that background noise here, the translation equipment. Can you speak closer to the microphone, please? Thank you.

MS. WILSON: Anne Wilson, sorry about that. It sounds really loud from here.

I'm just going to mention that it was very helpful to have the table from Miramar earlier with some comments on our intervention aspects, and thinking about the idea of criteria versus management targets in Doris Creek, we do have several other licenses which utilize the CCME guidelines as either hard limits or environmental targets. The ones that might apply as precedents here would be Colomac mine has to meet CCME guidelines in the receiving environment, similar to this instance.

Some of the diamond mines in the NWT have license limits at end of pipe, which are at or lower than CCME. That would include Diavik, Snap Lake, and some of the Ekati. It's mostly zinc and arsenic and a couple of others, which I could look up if needed. So that was where I wanted to confirm my understanding was correct, that we would indeed be regulating in two points not just on the one with management targets for the other.

THE CHAIR: Miramar?
MR. CHAPMAN: Mr. Chairman, John Chapman.
I would like to just ask the question of the intervener, with the Colomac project, the license limit is actually set for discharge water quality from the specific tailings lake, and it does not specify in the water license that water quality objectives are -- CCME water quality objectives are not specified in the license. That is my understanding of their license. Can she please elaborate on that?
THE CHAIR: Environment Canada?
MS. WILSON: Thank you, Anne Wilson.
The outflow of one lake downstream from the tailings impoundment area there has limits on it that while they may not say meets CCME, the numbers match the CCME or ambient conditions on that, and I can look up that license afterwards and just note which is which, if you like.
THE CHAIR: Miramar?
MR. CHAPMAN: Mr. Chairman, that would be helpful. Thank you very much. This is John Chapman.
THE CHAIR: Environment Canada?
MS. WILSON: Anne Wilson.

I will undertake to do that and provide it to the Board and to the Proponent by tomorrow morning, if that's acceptable.

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chairman, can we ask Anne to repeat that question, please?

MS. WILSON: Mr. Chairman, it's Anne Wilson.

I can provide John with the specific parameters for the Colomac license, which are relevant here as being either ambient or CCME. I do have that information with me, just not in hand, but I can do that by tomorrow morning, if that's acceptable.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

Yeah, that would be very helpful. Thank you very much.

THE CHAIR: Environment Canada?

MS. WILSON: My next few questions deal with the monitoring -- oh, sorry, Anne Wilson again -- in the aquatic environment, and I'm thinking about the time lines here. More will be said about this in our intervention, but in brief, if it turns out that the mine construction proceeds as planned, discharge occurs in Year 1, which is June or July of 2009. Under the National

Environmental Effects Monitoring Program, there are very generous time lines for Proponents to submit first site characterization and study design, then -- and that would be within 12 months after the first tap is turned on, discharging effluent. Then the monitoring starts six months after that study design is put in, and we would not see an interpretive report until 30 months after the tap is turned on. So conceivably that could be as late as early in 2012.

I'm just wanting to ask Miramar if they will undertake to submit the study design and proceed as quickly as possible and in the process, as we've expressed concerns that the short mine life will mean we don't have information in hand in time to do anything with it.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. I'm going to ask Gary Ash from Golder to respond to that for us, please.

THE CHAIR: I believe we had a question from over here?

MR. TILLEMAN: Thank you, Mr. Chair. I guess it was just following up on what Environment Canada had offered, which was to provide examples of other water licenses that had used CCME criteria

in certain circumstances. That would be helpful to have hard copies, not only for the Proponent but also for the audience and for the Board. And that was the question -- or, sorry, that was my request, sir, from the Staff.

MS. WILSON: If I may, Mr. Chairman?

MS. VALIELA: If I may, Mr. --

THE CHAIR: Miramar?

MS. VALIELA: -- Chairman? I wonder whether we could request Ms. Wilson to also provide the ones from Diavik, which are at those levels.

THE CHAIR: Name? State your name, please.

MS. VALIELA: Very sorry. I'm Diana Valiela from Miramar.

THE CHAIR: Environment Canada?

MS. WILSON: Anne Wilson.

I can certainly do so. I will be able to provide that electrically tomorrow. If the Board can help us with printing that out, that would be wonderful.

THE CHAIR: Legal counsel?

MR. TILLEMAN: I'm sorry, yes, sir. I was now onto the second thought, which was that the time lines are really going to be helpful, and if I understood from Ms. Wilson, her question, it was

tell us how the time lines are going to work here when we have monitoring that will kick in at a time when we're into the phasing-down of the operational cycle. That's important to help the Board also, should it decide to write a license, write the proper license. So I don't have any requests, but I'm certainly interested in listening further, so I'm sorry, I didn't -- if I indicated I had anything else. Now I just want to listen.

THE CHAIR: Thank you. Miramar?

MR. CONNELL: Thank you, Mr. Chairman. Again, I'm going to ask Gary to comment on that, thanks.

MR. ASH: Thank you, Mr. Chair. It's Gary Ash with Golder Associates.

With regard to the timing of the EEM program, the first discharge would be in the summer of 2009. So once that discharge has been completed, that would give us information for site characterization, and I would think it would be reasonable to submit a first study design somewhere later in that year, which would be probably close to six months ahead of the one-year requirement, and that way could probably undertake the initial study program sampling during the second year, which would still have the discharge. So I think

that's a reasonable request so that the monitoring could take place during the period when there would be discharge.

THE CHAIR: Environment Canada?

MS. WILSON: Anne Wilson here. Thank you, Mr. Chair.

One of my concerns with the monitoring that is proposed, the national program does not include measures of productivity. We do expect to see changes downstream. By "productivity", I mean we would see more algae and maybe some more of the little animals that live in the water growing because of the nutrients from the mine.

I'm going to ask Miramar if they would do some measure of productivity and ask how they would assess those changes.

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chairman, I'm going to need a few minutes to caucus on that, just to discuss that for a moment. If we could discuss that, and we'll give a response.

THE CHAIR: Environment Canada? Miramar?

MR. ASH: Thank you, Mr. Chair. It's Gary Ash from Golder.

Yes, you're right. The EEM requirements does

not include a measure of productivity, and likely one of the measures that could easily be added would be looking at chlorophyll a in, say, Tail Lake and Doris Lake and downstream. That would provide a good estimate of increases in algal productivity within the system, and that's something that could -- that probably could be added to the environmental effects monitoring program that will be developed in consultation with Environment Canada and submitted for approval by Environment Canada prior to implementation.

THE CHAIR: Environment Canada?

MS. WILSON: Anne Wilson. Thank you, Mr. Chairman.

That would be acceptable. We -- chlorophyll a will give us a good idea, and further details could be worked out on that as far as timing.

My next question is still on the monitoring, and I'm wondering for the water quality, how changes will be assessed as far as is it a significant change or not. So has any thought been given to what statistical tests will be used to assess that?

THE CHAIR: Miramar? If it pleases Miramar, we will recess for 10 minutes?

MR. CONNELL: At your pleasure,

Mr. Chairman. We can respond now or wait until after a 10-minute break.

THE CHAIR: Respond now, and we'll take a break.

MR. CHAPMAN: Mr. Chairman, John Chapman.

We just need clarification whether or not EC is referring to the day-to-day management plan or whether they're referring to the long-term effects monitoring plan.

THE CHAIR: Environment Canada?

MS. WILSON: Anne Wilson.

I was referring to the environmental monitoring, not the day-to-day management.

THE CHAIR: Miramar?

MR. ASH: Thank you, Mr. Chairman. Gary Ash from Golder Associates.

The statistical analysis that would be done on data, both water quality and the biological information, will be collected through the environmental effects monitoring program would be outlined in the preliminary study design that would be submitted to Environment Canada. So at that time, we would outline how the data would be handled and the statistical analysis that would be done on the data.

THE CHAIR: Environment Canada?
MS. WILSON: Anne Wilson.
The frequency of monitoring in the receiving environment is going to be very delayed under the EEM program, so I'm just wondering if the proponent is willing to conduct ongoing monitoring prior on the same basis as the baseline work has been done so that changes within the downstream receiving environment can be assessed prior to the formal EEM process.
And just by way of background on that. Other mines in the NWT that I deal with have both an AEMP, or aquatic effects monitoring program, as well as the national environmental effects requirement placed on them. And the reason for that is so that more immediate, ongoing environmental decisions can be made as needed. Your SNP is very good and will give us information in the immediate discharge area, but we aren't going to necessarily see changes in Little Roberts Lake in time to know if management decisions need to be made.
So just to recap my question, is the company willing to do aquatic monitoring in advance of the EEM being approved?
THE CHAIR: We'll take a 10-minute

recess.
(BRIEF ADJOURNMENT)
THE CHAIR: Shall we reconvene, and thank you. Environment Canada?
MS. WILSON: Thank you, Mr. Chairman, Anne Wilson here with Environment Canada.
I think we're at the point of Miramar was thinking about my questions, last request, to do some aquatic effects monitoring earlier than would be required under the EEM.
THE CHAIR: Miramar?
MR. CONNELL: Thank you, Mr. Chairman. It's Larry Connell.
Sorry for the delay. We are just taking time to try and understand what that entailed. The reality is Miramar has continued to collect its baseline water quality sampling data through 2004, 2005, 2006, and 2007. So the program's been ongoing through those years now, and we can commit to continue collecting that downstream water quality data as we move into 2008, 2009, that we've built into the EEM. That's a reasonable request, and we will commit to that.
THE CHAIR: Environment Canada?
MS. WILSON: Anne Wilson. Thank you, Mr. Chairman.

That's very helpful, and I'm pleased to hear that the baseline data is ongoing even this year. That's useful for capturing the range in natural variability that -- I'm preempting my presentation and our intervention, but that's good.

One of the things that comes to mind is the timing of results under the EEM is not -- it's kind of an extended time frame, and it would be nice if there were some way for the license to be crafted so that the results could be available before the 30-month interpretive report so that regulators and the public could be aware of what's being monitored and what is being seen as it is collected.

Would it be reasonable to ask that results are provided to the Board on that basis, on an annual or even seasonal basis?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

The past practice that we've had is our annual aquatic effects monitoring programs, Golder's been doing them for us, and they generally report them on an annual basis and create an annual report for aquatic effects, which we then put into the public domain and have been to the public domain up to this point in time. We will continue to do that. You know, we don't want to hold those results back

either. They're of no value unless they're put out, and so we will commit to continue doing that.

I must admit that we're late this year. We haven't got last year's done. Sorry, that's the baseline water sampling results, not the aquatic effects. This is baseline, the annual baseline monitoring of results that we do put out an annual report right now and will continue on that basis.

THE CHAIR: Environment Canada?

MS. WILSON: Thank you. Anne Wilson here.

That winds up my questions, and I'll just turn things over to Dave Fox from Environment Canada.

MR. FOX: Dave Fox, Environment Canada.

Mr. Chair, the recommendations agreement table that Miramar showed earlier today did not discuss any of the waste disposal concerns raised by both Environment Canada and the Government of Nunavut. I'm curious if -- does Miramar agree with Environment Canada's recommendations 3.2.1, incineration of waste, and recommendation 3.2.2, open burning of contaminated wood waste? If Miramar disagrees with these recommendations, I'd like to understand why they do.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

We specifically didn't address them in our submission because they weren't water-related issues. These were air-quality-related issues. But we definitely can talk to them now if that's of importance, and we would like to do that.

With respect to the -- I'll start with the second one -- with respect to the burning of wood waste, we went back to our cyanide -- to the proposed cyanide supplier, and he has told us that this is an issue that they have heard before in other jurisdictions, not the burning so much but the long-term use of this wood offsite. And he assures us that all the sampling they have done, they have done sampling of this wood for cyanide residues, and they have great assurance that there is no transfer of any product into the wood, and so that does change to some degree. We don't have to burn them in that case if that's the case.

We were strictly holding that out because we were concerned about contaminated wood that escapes our property that we lose control over that could cause harm to somebody. That was our prime motivation behind that.

And let me look up your second one on the incineration. I've got to get the wording

precisely. Can you give me the number again, please?

MR. FOX: It was 3.2.1, incineration of waste.

MR. CONNELL: 3.2.1. Just one moment. Mr. Chairman?

THE CHAIR: Go ahead.

MR. CONNELL: Thank you, Mr. Chairman.

3.2.1 deals with the installation of an incinerator that complies with Nunavut EPA standards, Canada-wide standards for dioxins and furans, Canada-wide standards for mercury emissions.

In doing our engineering, we have noted that and it is our intent that the incinerator we're purchasing is set to meet those standards. We understand that that's the guidelines that's been established for Nunavut, and so our purchase of an incinerator has been done -- or is planned to be done with that in mind. That's the double-chamber, higher temperature incinerator unit.

THE CHAIR: Environment Canada?

MR. FOX: Mr. Chair, I thank the Proponent for the information on the cyanide-contaminated wood. That's good to understand that.

EC commends Miramar for committing to purchase appropriate equipment and the appropriate incineration technology, but within the recommendation 3.2.1, the main concern is regarding the incineration management plan and the development of that in consultation with Environment Canada.

I'll be talking more about this in our presentation, but I'm curious to see if Miramar would agree with developing that plan.

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chair, we are -- our probably only response to that would be that we don't fully understand what is in that plan. We went through the Environment Canada submission. It referred to a plan, but we've never seen a plan or an example of plans, and we don't know what's in it, but obviously if it's of benefit, we're intent on -- we would greatly like to get your assistance, and we'll see what's involved, but we don't have enough information at this point in time to understand what you mean by a management plan.

THE CHAIR: Environment Canada?

MR. FOX: Thank you, Mr. Chair. Dave Fox speaking.

Perhaps it's a better discussion after our

presentation, and things may become more clear. I thank Miramar for answering the questions.

Mr. Chair, Dave Fox speaking, Environment Canada. That concludes our questions.

THE CHAIR: Thank you. Next we have DFO.

DFO QUESTIONS MHBL:

MS. GORDANIER: Thank you, Mr. Chair. This is Tania Gordanier from Fisheries and Oceans Canada.

I just have a couple of quick questions for the Proponent, and more a matter of clarification than anything.

My first question relates to Slide Number 45 from the presentation, and on that slide, under the heading of "Tail Lake", there are four bullet points outlining compensation measures that will be undertaken to offset losses to fish habitat. DFO is only aware of three measures that are on that list: The first being increasing fish accessibility to Roberts Lake, the creation of a rearing habitat in Doris Lake, and the creation of pool habitat in the tributary of Roberts Lake.

Could the proponent just please clarify whether there are, in fact, additional compensation measures that are being proposed, or if there are

actually only the three that DFO is already aware of?

THE CHAIR: Miramar?

MR. ASH: Thank you, Mr. Chair. It's Gary Ash from Golder Associates.

In our original no-net-loss plan that we developed, we had a conceptual design for how we would do the enhancement in Roberts outflow, and at that time, it involved creating more of a pool-and-weir type fish passage facility, and in doing that, we felt that we would be enhancing the creek for rearing of juvenile fish by having larger areas of pool habitat for them.

With our revised design that we've developed this year as a result of doing less work in the stream, just removing strategic boulders to provide adequate fish passage, that's probably not as valid as it was during the original concept, so we'll take another look at that in our proposed no-net-loss plan that we're going to be submitting by September 15th, and we'll work that out with DFO.

THE CHAIR: DFO?

MS. GORDANIER: Thanks very much, I appreciate that clarification.

I just have one more question, and it relates

to Slide 95 from the presentation, and again this is just a point of clarification. I believe the last bullet says that fisheries compensation structures would be in Little Roberts outflow and Little Roberts Lake, and I believe that should have read the compensation structures would be in Roberts outflow and in a tributary to Roberts Lake. Can you please confirm if that understanding is correct?

THE CHAIR: Miramar?

MR. ASH: Thank you, Mr. Chairman. Gary Ash from Golder.

Yes, that is correct; that is a typo in the slide, and it should read fisheries compensation structures in Roberts outflow, a tributary to Roberts Lake, Roberts Bay, and in Doris Lake.

THE CHAIR: DFO?

MS. GORDANIER: Thank you, Mr. Chair. It's Tania Gordanier here, and that's all the questions from DFO at this time. Thank you.

THE CHAIR: Thank you. Next, we have GN.

GN-DOE QUESTIONS MHBL:

MR. ATKINSON: Thank you, Mr. Chair. I have -- oh, Mike Atkinson, Government of Nunavut.

I have just two questions. My first question

is a follow-up to Environment Canada. They raised the issue regarding incineration and management of waste streams, and the response -- I guess DOE also raise this as an issue in our intervention because we see it as managing a waste to avoid contamination of air, land, and water.

In Miramar's response to Environment Canada, they said they do not believe it's a water-related issue, and I just -- my question is is that -- is it Miramar's wish to have this not included as a condition within the license?

THE CHAIR: Miramar?

MR. CONNELL: I'm sorry, Mike, I don't understand the question. Mr. Chairman, could we ask for a clarification?

THE CHAIR: GN?

MR. ATKINSON: Yes, okay, I'll try and rephrase it.

So the issue of incineration in compliance with Canada-wide standards and requirement to submit an incineration management plan, I take it from your response to Environment Canada that you do not wish to see this included as a license condition; is that correct?

THE CHAIR: Miramar?

MR. CONNELL: We had not believed that

that waste, that the incineration management plan should be a water license issue. It doesn't mean that we are -- pleased to work with Environment Canada to create that, but we did not see that as a water license condition -- sorry, Larry Connell -- and so we hadn't addressed it as a water license issue.

THE CHAIR: I didn't get your name?

MR. CONNELL: Sorry, Mr. Chairman. Larry Connell.

THE CHAIR: Thank you. GN?

MR. ATKINSON: Mike Atkinson, Government of Nunavut.

I guess my response to that is I see it as analogous to a lot of the discussion that's gone on today regarding management of things like landfills or acid rock drainage; you're managing a waste stream for the purposes of avoiding contamination of a water cause. And so to conclude that, I guess, I would say it really depends on the comfort of the persons deciding the license and the Board in terms of jurisdiction.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

It's our understanding that these Canada-wide standards are a GN regulation, and consequently, we

would be required to comply with them, irrespective of what the water license required.

THE CHAIR: GN?

MR. ATKINSON: Mike Atkinson, Government of Nunavut. I have no further comments on the issue.

I do have a second question, and it relates to abandonment and restoration of the mine site. It's one of the stated objectives to return the site to -- suitable for wildlife, and although I don't propose to start raising a whole series of wildlife-related issues, I'm assuming in order to achieve the objective of wildlife habitat, you'll be looking at removing obstructions to migration and things such as re-vegetation of disturbed sites.

So my question is, having looked at, myself, a lot of the literature on re-vegetation, it's pretty sparse. Forgive the pun. So the first part of the question is do you propose to undertake any research yourselves looking at re-vegetation, and do you have any idea of how long re-vegetation of disturbed sites is going to take?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

This was actually a subject of some discussion

at our technical sessions. The first part is, yes, we would obviously remove obstacles that would get in the way of wildlife migration. We would not leave those behind at the site.

With respect to the re-vegetation, requirement for re-vegetation, in Nunavut there is a requirement that re-vegetation take place only with native species, species that come from the north. So that actually restricts what can be done.

At the technical sessions, there was dialogue between ourselves and the GN, and actually the GN indicated to us at that point in time that they would provide us with some informations as to what they know is going on, and so we're still looking for that. We're also going to be searching literature to see what's out there.

We will do what we can to reclaim and re-vegetate the site. We know from our discussions with the Kitikmeot Inuit Association that they too are keen to see the site re-vegetated as much as possible, but we -- we're very reluctant just to say, yes, it will be done, because it hasn't been done anywhere yet successfully. We will do our best efforts to re-vegetate where we can, given the constraints of what's happened in the north.

Being a short-term life, we only have a couple

of years to actually achieve it. We have already done some small scale research on to the re-vegetation efforts at our exploration site. We worked with the KIA to some degree on looking at re-seeding native plants on soils at the Windy camp, and we've had some success with that. We've collected seeds using school kids from Kugluktuk, and we've had some success in that regard.

We will continue those kinds of programs, but I don't want to leave anybody -- that we have some magic bullet that's going to change that. It's an industry problem in the north, and we will do our best to participate. Otherwise, I don't think re-vegetation is going to recover itself in a fast period of time. It's going to take decades, and we've said that all along in our water license application, in the closure and reclamation plan.

THE CHAIR: GN?

MR. ATKINSON: Mike Atkinson, Government of Nunavut. I'm happy with the response from Miramar. I have no further questions.

THE CHAIR: Thank you. Any questions from the Staff?

MR. TILLEMAN: It's Bill Tilleman, Mr. Chair. Thank you. The Staff may have a couple of questions, but it would be helpful if the staff

could take 5 minutes and just a very short recess.
    And maybe even before that, if there were any other members of the audience that hadn't had a chance to ask questions, perhaps you could ask them, and once the audience have their questions answered, then if you come back after a very short 5-minute break, then we would be ready to go.
THE CHAIR: Any questions from the public? We'll take a 5-minute break.
(BRIEF ADJOURNMENT)
THE CHAIR: Bill?
NWB STAFF QUESTION MHBL:
MR. TILLEMAN: Thank you, Mr. Chair. It's Bill Tilleman. So then the Staff have a couple of questions, and that's it. So Mr. Hohnstein will take the mike, if that's okay with you, sir.
MR. HOHNSTEIN: Thank you, Mr. Chair. Some probably just clarification -- or, sorry, David Hohnstein.
    Some clarification questions for Miramar. Going back to the project changes list that was submitted back at the pre-hearing technical meeting. Just a clarification as to when Miramar would be planning on constructing the fuel storage facilities, and I believe on Appendix D, E, it

mentioned April 2008, and just a confirmation as to whether or not that might still be a plan.

THE CHAIR: Miramar?

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

The steel for that tank is on one of the barges coming up this year. It will be constructed sometime in -- just after the winter of next year. The earth works or the containment area will get done during the late winter, and then the steel erection would take place early this spring so that the tank is fully in place for the 2008 sea lift.

MR. HOHNSTEIN: Thank you. David Hohnstein again.

Just a question on the construction of Doris Lake intake. We received some I think it was a preliminary sketch drawing of the plans for the intake, and just curious as to when we might receive final detailed design of that facility if it -- just as far as the timing, I guess.

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chairman, as you saw, the sketch of the pumphouse, SNC are working their way through detailed engineering on that right now, to take that design to a detailed design, and it's probably somewhere over the next eight weeks that

those detailed designs will be available.
THE CHAIR: Staff?
MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.
So they will be available prior to installation of the intake facility?
THE CHAIR: Miramar?
MR. CONNELL: Thank you, Mr. Chairman.
When you're -- just to make sure we're talking the same thing, we're talking about the floating pumphouse?
MR. HOHNSTEIN: (NONVERBAL RESPONSE)
MR. CONNELL: Yes, that will be available before it's installed.
THE CHAIR: Staff?
MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein.
Would Miramar provide an explanation as to why copper became a critical parameter again after the final run with the test results obtained from Cantest, and will the increase in copper concentration affect the discharge strategy?
THE CHAIR: Miramar?
MR. CHAPMAN: Mr. Chairman, John Chapman here.
I wonder if the question could please be

repeated; I didn't fully appreciate what was being asked.

THE CHAIR: Dave?

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

I believe it went back to the change from the previous method of cyanide destruction to the new method of cyanide destruction, and prior to that, I believe there was selenium that was a key element in the modelling, and it appears copper now is one of the significant factors.

THE CHAIR: Miramar?

MR. CHAPMAN: Mr. Chairman, John Chapman.

I believe that's a misunderstanding. Copper has always been the limiting factor. Selenium has never been considered a limiting factor in the discharge strategy.

MR. HOHNSTEIN: Thank you, Mr. Chair. Just a -- David Hohnstein.

Just a quick clarification on the change of the sewage treatment process, and now that the sewage sludge is being bagged and incinerated, how often do you foresee that process taking place, and has the incineration system that's been installed been considered for taking that into account?

THE CHAIR: Miramar?
MR. CONNELL: Thank you, Mr. Chair.
I don't have the specific information as to the frequency of that incineration. We can get that from SNC today. It is not very frequent. The process that we're processing is being used at the diamond operations, and that's where it's coming from. We're using the same equipment as they are.
But I can't specifically tell you whether that takes place once a month or once every week, but I can endeavour to get that information from our engineering people as to what they expect and get back to you.
This is a frequent occurrence. It's something in that kind of range. The filtering equipment is built right into the plant so that you filter and bag it, and then that is then taken over to the incinerator unit, and yes, our incinerator unit has had that capacity incorporated in its engineering.
THE CHAIR: Staff?
MR. HOHNSTEIN: Thank you, Mr. Chair. David Hohnstein again.
Just a further question on the sewage treatment process that's being planned. In one of the figures that was provided, there was a note, I believe it was Note A, that indicated there was an

emergency storage pond, or if there was an upset or problems, it would be -- the effluent would be diverted to an emergency storage pond. Is there any plans for such a pond?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

Those drawings were given to us by Sani-Drain, which is the supplier, and I didn't notice that note, but it's definitely not. It's an error. There is no storage pond planned here. Sewage will go into the holding tank and then into the sewage treatment plant. We have no plans and no -- that holding ponds will be constructed.

THE CHAIR: Staff?

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

Moving on to the list of commitments that was developed at the pre-hearing technical conference, there was a new drawing provided on the bridge over Doris Creek, I believe it was, with the pipelines included with it, and it was noticed on the drawings that the slopes underneath the bridge had changed from a 2-to-1 slope to a 1-to-1 on this new drawing, and we were wondering if there was any -- if you could provide clarification on that.

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chairman, we've got the drawing here. We're going to look at the original drawing. We've got SRK, who did the original design for that slope. They'll pull up the original drawing. The drawing that you had on the bridge was an SNC Lavalin drawing, and they're restricted to the bridge. So we'll just check to see whether they've arbitrarily changed that or whether -- what it said in our original drawing, and we'll get right back to you as soon as we can on that.

THE CHAIR: Staff?

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

In Miramar's submission, they indicated discharge criteria to be set for, I believe it was, the landfarm sump at 5 milligrams per litre, and we were just curious as to what -- the sewage, I guess, was set at a visible sheen, and the landfarm was set at 5 milligrams per litre. And we were just curious as to what concentration a visible sheen might be noticeable at, and whether or not the 5 milligrams per litre could be applied to both of them.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman.

What we did in coming up with that no visible sheen, we actually went back and took a look at what other water licenses across the north have been written and included in those parameters.

So in our submission, there is a table that actually lays out that study, how we -- the results we got from that investigation, and that's where we got the no visible sheen. I do not know what concentration a no visible sheen refers to. I don't know, but I would suspect that it's the 5 milligram per litre would work for both of them.

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

Just a couple more quick questions. In Environment Canada's written submission, they noted an omission of silver and thallium from the revised monitoring plan, and I guess I'm just looking for a comment as to why it wouldn't be included if it's a CCME parameter; and the second note on that was the Staff noted that the CCM nitrite should actually be .06 rather than the .02, based on the calculation, and it should also read "nitrite nitrogen". I think there was a footnote on there but...

THE CHAIR: Miramar?

MR. CONNELL: Can you give us clarification, Dave, on where you're reading from

so that we can go to that same spot and look at the table with you?

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

Sorry, I meant to have mentioned Table 5.2 and Table 6. -- Revised Monitoring Plan Table 5.2, Table 6.5 of the June supplementary.

THE CHAIR: Miramar? Please state your name.

MR. CONNELL: Larry Connell.

We're just looking at that table before we respond to make sure we're looking at the same thing.

MR. HOHNSTEIN: Mr. Chair, David Hohnstein.

I could go on to another additional question while they're looking up the information, if that's okay.

THE CHAIR: Is that okay with the Applicant?

MR. CONNELL: (NONVERBAL RESPONSE)

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

In Item 27, and I'm not sure where that came from, there's a reference to a shoreline adaptive management plan, and we were wondering if this is

intended as a stand-alone document or if it's embedded in another document.

THE CHAIR: Miramar?

MR. CONNELL: Mr. Chairman, that shoreline adaptive management plan actually shows up as an appendix in the tailings design report that's part of the water license application. It's not a stand-alone; it's attached as an appendix to that report.

THE CHAIR: Staff?

MR. HOHNSTEIN: Thank you, Mr. Chair.

One final question -- David Hohnstein -- there's mention of using riprap on the sewage treatment plant discharge, and I think this is during the construction phase, and it was asked whether or not the riprap provision would be provided at other locations of discharge through the tundra, and what provisions are taking place for prevention of erosion.

THE CHAIR: Miramar?

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

Yes, Miramar has committed that wherever we are going to be discharging from the tundra, so for example, at the landfill sump or at the sedimentation control pond, that those discharge

points would be onto an armoured rock base so that we didn't just wash or erode away the tundra and create a hole at that discharge point. And so each of those -- any point where we're discharging onto the tundra, we would provide a rock armoury to prevent that erosion from incurring.

THE CHAIR: Bill?

MR. TILLEMAN: Thank you, Mr. Chair. It was just in the interest of time and to be fair to the Applicant, they might need a few minutes to answer that one question on Table 5.1 or 5.2, so I just thought it might be a benefit to them, and to save you time, to let them look at that over the dinner hour and come back and answer that later. That way we can get to Board questions, so I'm just trying to be fair to the Proponent.

THE CHAIR: Miramar?

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

Mr. Rykaart has the -- can go back to the question on the bridge while we're looking through the tables, and I'll pass this on to Mr. Rykaart to answer that question.

MR. RYKAART: Mr. Chairman, Maritz Rykaart.

I'm answering the question with regards to the

bridge drawing that was in supporting document of supplemental information. The supplemental information does show a 1-to-1 side slip under the bridge. That is an error. If you refer to the original supporting document with all the engineering drawings, that is a 2-to-1 slope, and the 2-to-1 slope is based on the engineering design and the stability calculations.

THE CHAIR: Staff?

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

THE CHAIR: Thank you. I'd like to take this opportunity to welcome an Elder to this public hearing, Margaret Nakashook.

(APPLAUSE)

THE CHAIR: Board Member Hanson?

NWB QUESTION MHBL:

MR. HANSON: Robert Hanson. Just a question for Miramar, to clarify the location of the sewage discharge during construction and where the flow will go.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. During construction, the sewage treatment plant will discharge onto the tundra at a point a hundred or so metres on the north end of the plant site so

that the flow is upstream of the lake, and then it will work its way across the tundra, back onto the plant site, and well before Doris Lake, and we've committed to an SNP point within Doris Lake to make sure that none of that is contaminating Doris Lake.

THE CHAIR: Board Member Hanson?

MR. HANSON: Thank you. It's Robert Hanson.

Is there a contingency plan in case the slurry discharge does not meet discharge criteria during construction, operation, and/or closure especially during winter?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. The -- during the construction phase, if we were finding that our sewage treatment plant couldn't accommodate that or live up to that criteria, we would either have to suspend operations until we got the sewage treatment plant back into function.

Alternatively for a short duration, you could put it into a tank truck to take to Tail Lake, but that's not a viable option during construction because Tail Lake's not viable at that point.

So in this case here, if our sewage treatment plant was not functioning as designed, it would require us to suspend, bring in the appropriate

people to repair that plant before we could restart operations.

And during the operational phase, the same would apply except in this case, we're not discharging the water onto the tundra; we're now taking that treated water and actually putting it into Tail Lake, but we still would not want to continue running with a treatment plant that's not functioning.

THE CHAIR: Board member Hanson?

MR. HANSON: Robert Hanson. Probably a three-part question here. How will waste from Windy and Boston be brought to Doris landfill; will it be on the winter road or a winter road, and how many trips do you expect to make back and forth to have this done?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. With respect to garbage from Windy, once we're -- once Doris North is up and operational, it will have to be through a winter road because there will be no summer access between the two sites, and so that would only be during the winter.

The volumes of garbage that are generated at Windy would be stockpiled over the summer-months operation until the following winter and then

hauled on a campaign basis, so we'd be doing it on a short duration campaign, where you basically use the equipment that's supplying the exploration camp and back-haul that garbage back to -- as it's going past Roberts Bay to put it in, so it would be done over a period of one or two days.

THE CHAIR: Board Member Hanson?

MR. HANSON: Thank you. Robert Hanson.

Have all the SNP monitoring locations and coordinates been confirmed, and if not, when will they be?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. No, the coordinates have not been confirmed. We have committed or agreed with INAC in the submission that what really needs to take place before they're finalized with a GPS unit is that an INAC water resource inspector go out to a site and, together with Miramar personnel, they walk to those -- each of those location points, choose what's an appropriate, safe spot that can actually be monitored on a consistent basis.

They then set those SNP coordinates, which we then put a metal rod or something to indicate that that's the allocated spot, and that becomes the

SNP. What's now been chosen is just based upon our walking through those sites now, and we've selected those off maps, but the actual GPS coordinates have not been selected, and that will be done as soon as we could with INAC with respect to getting a water license inspector on site to do those with us.

THE CHAIR: Board Member Hanson?

MR. HANSON: Thank you. Robert Hanson.

How long will it take for the onsite lab to return samples results so that the discharge from the tailing pond can be adjusted in case there's a problem?

THE CHAIR: Miramar?

MR. CONNELL: The concept or the objective that this lab is designed for is to be able to return samples within the same day. So the same day we take the samples, we get the results back so that we can adjust our coordinates -- adjust our discharge targets accordingly, and so our concept is to turn-around in that same day.

THE CHAIR: Board Member Hanson?

MR. HANSON: A final comment, Mr. Chair -- question, I guess, of Miramar, and it's concerning the dams and what -- I have a very big question, and I guess I'm concerned if there's

any leakage, and how often do you expect to be checking for any leakage or seepage out of the dams? Is that ongoing, weekly, monthly, daily? Just a concern if something should happen and something should breach within the dam, especially onto the land. Thank you.

THE CHAIR: Miramar?

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

The visual inspections of those dams would be done on a daily basis by the site operational staff, and they would note -- and part of -- one of their checklist items would be to note if they see pools appearing. And then of course, the next phase is, if you see a pool appearing, is what is that water. Is that water just runoff water that comes from the upstream side, or is it something that's seeping through. Because you're right, once the seepage is starting to occur, it needs to be addressed as quickly as possible. So during the summer months obviously, that's going to be on a daily basis. Even during the winter months, we will still do a daily inspection, but obviously the parameters we note will drop back as a result of the fact that water's not moving.

MR. HANSON: Robert Hanson. I just

want to say thank you; I have no more questions.
THE CHAIR: Thank you. Any further questions from Board Members? If not --
MR. CONNELL: Mr. Chairman, could we go back and answer the question that was left hanging on the table from the Board's side?
THE CHAIR: Go ahead.
MR. CHAPMAN: John Chapman, Mr. Chairman.
I believe the question related to, first of all, the units of the nitrite nitrogen concentration. The numbers reported in Table 6.5 of the supplemental package is 0.6 milligrams per litre. That is correct as stated. It is nitrate nitrogen, and it's 0.6 milligrams per litre.
With respect to -- 0.06, yeah. With respect to thallium and zinc -- sorry, thallium and silver, they are both included in the table.
THE CHAIR: Staff?
MR. HOHNSTEIN: Thank you, Mr. Chair. That's all.
THE CHAIR: Bill?
MR. TILLEMAN: Mr. Chair, yes, sir, I just notice the time. It's Bill Tilleman, I notice the time, and it's into the time when the Lodge prepares dinner; they're probably waiting. You're

the boss, but you could go ahead with KIA right now, but to do that would likely push them a bit unfairly. And if their presentation is in the order of 30 minutes, which it likely is, it might be a good idea to just go to dinner and then let them do their presentation this evening.

I realize that it's scheduled for a community session at 7, to let the citizens say whatever they want, ask questions of the Applicant. If there's time left over after that, sir, then we could go to KIA and give them a little bit more time to present and not be rushed. The final call is up to you.

THE CHAIR: May I ask KIA how long their presentation will take?

MR. CLARK: This is Geoff Clark. We estimate, without any questions, that our presentation is -- we're doing it together with NTI, and it will be about 35 minutes in length without any questions.

THE CHAIR: Go ahead. Do you need to be sworn?

MR. TILLEMAN: No, I was going to say I need to eat, but I don't really -- no, sir, I don't have any other comments.

THE CHAIR: Go ahead with your presentation. Miramar?

MR. CONNELL: Just so that we don't upset Dave Hohnstein, we have a correction that we should give to him. We have looked at these tables, 5.2, and there was a re-submission of the monitoring table -- the monitoring report, the follow-up report, that came in sometime late July, and that table does -- is missing -- the two lines for silver and thallium are missing. There is no change to those numbers; they were just somehow got left off that table when it came in on the new plan. He's not wrong. He's -- we're not driving you crazy.

PRESENTATION BY KIA/NTI:

DONALD HAVIOYAK, GEOFFREY CLARK, GEORGE HAKONGAK, sworn:

MICHAEL McGURK, affirmed:

THE CHAIR: We have just received new information that the restaurant closes at 6 at the hotel. Would anybody have any objections to us reconvening at 6:30? We'll reconvene at 6:30.

(PROCEEDINGS ADJOURNED AT 5:19 P.M.)

(PROCEEDINGS RESUMED AT 6:34 P.M.)

THE CHAIR: Shall we reconvene. KIA?

MR. CLARK: Thank you, Mr. Chairman. My name is Geoff Clark. I'd just like to inform the Board that KIA and NTI are doing a joint

presentation, and so NTI will start with the presentation, and then we will move directly into the KIA presentation, and we will take questions after that. Thank you.

MR. HAKONGAK: Thank you, Mr. Chair, thank you, Geoff. Members of the Board, Miramar, Water Board staff, interveners, welcome.

Good evening, my name is George Hakongak. I'm the Senior Advisor, Environment, Water, and Marine Management for the Department of Lands and Resources of Nunavut Tunngavik Incorporated in Cambridge Bay.

To begin, NTI would like to thank the Nunavut Water Board for the opportunity to participate in the final hearing addressing the Miramar Hope Bay Limited water license application for the Doris North Gold Project and to allow the views of Nunavut Tunngavik to be presented.

NTI, along with the Kitikmeot Inuit Association, engaged Rescan Environmental to review the Miramar Hope Bay Limited water license application and guidelines as set out by the Nunavut Water Board.

The review carried out by Rescan Environmental is focussed on evaluating the information submitted by Miramar Hope Bay Limited to determine the

completeness and effectiveness of the proposed measures to ensure responsible environmental stewardship.

NTI recommends that the following issues be addressed through terms and conditions of a project certificate.

Critical issues. The issues and concerns identified by NTI review fall into the following categories: Those that need to be addressed prior to the acceptance of a water license application, namely, the terms of the water license and monitoring of the stations; NTI would like to see a five-year water license issued as stated in the Rescan report; those that need to be addressed and monitored during the duration of the mine life for effective environmental stewardship, namely, the monitoring of discharge water at first be shed from Tail Lake and hereafter. And "hereafter", I mean until they close.

Monitoring program. Issues identified in the category of monitoring cover broadly all stages of mine operation and mine life and include aspects of the ecosystem and socio-economic impacts of the project.

Additional requirements. The proponent in its final submission and supplementary documents has

requested from the various regulators clarification of the monitoring variables and directives required. NTI recommends that all the regulators involved in this project define their requirements for effective monitoring and that the NWB include these as part of the recommended terms and conditions for acceptance of the water license application.

In addition, the Proponent has committed to various undertakings with regard to project design, impacts monitoring, and mitigation issues raised previously by organizations and others. NTI would encourage the Proponent to demonstrate its good corporate citizenship and environmental stewardship by living up to these commitments.

In conclusion, in closing, NTI is in support of the proposed water license application. NTI is encouraged by the progress made in the development of application and requests that the Nunavut Water Board incorporate the NTI's issues as well as monitoring variables and directives defined by other regulators into the terms and conditions for acceptance of the application. In addition, NTI encourages the Proponent to operate and undertake its stewardship role within the letter and spirit of the NLCA.

Once again, thank you for providing NTI an opportunity to participate in the review of the Miramar Hope Bay Limited water license application. We look forward to hearing the Nunavut Water Board's decisions on this matter and proceeding.

Koana.

THE CHAIR: KIA?

MR. HAVIOYAK: Koana. Thank you, Mr. Chairman. Thank you for giving us an opportunity to be participants here. Briefly, first of all, I'd like to thank you all for coming to Kitikmeot here, to Cambridge Bay, to hear presentations and to hear from Miramar as to their proposed project and for them to be able to give us an insight into their project. We thank them.

I am a chairperson for Kitikmeot Inuit Association here in Kitikmeot. You will be aware our staff are also here and our consultants. The names being today with me are Geoff Clark, Lands Director, and also Stanley Anablak, Senior Lands Officer, and also Kevin, who is here new to Kitikmeot, working out of our Kugluktuk office, and here with me also is Mike McGurk -- I hope I said that right -- he's the one that advises us as to our endeavours as we move ahead. We also have here with us or legal counsel, John Donihee.

Because we are dealing with Miramar's water license and holding a hearing here in Cambridge Bay because they submitted their proposal to you and for them to be able to give us information, the people information, we at KIA were asked as to what our thoughts were in terms of the water license application.

I will inform you as to KIA's position and also KIA's activities as to what KIA thinks of Miramar's water license in terms of the Doris North Project. Later on, you'll hear from Mr. Clark on this issue as to how KIA feels of this proposal.

KIA is the Regional Inuit Association for the Kitikmeot region in Nunavut. We represent Inuit beneficiaries of the Nunavut Land Claims Agreement in the Kitikmeot region. The Doris North Gold Project is an important opportunity for the Kitikmeot region and for Nunavut. KIA has promoted appropriate mining development in the Kitikmeot region in the interest of all Inuit in Kitikmeot and Nunavut.

The KIA supports mining development that respects the environment because we have responsibilities to Kitikmeot Inuit to balance economic development, social development environmental protection, and to protect the land,

wildlife, and Inuit lifestyles.

As the Regional Inuit Association, we, the owners of the subsurface Inuit-owned land in the Kitikmeot region include parcel BB-60 where almost all of the project will be built, except for the jetty that is set into the ocean at Roberts Bay.

KIA is also the designated Inuit organization for purpose of Article 20 of the Nunavut Land Claims Agreement and is responsible for reclamation after development on Inuit-owned land.

KIA's involvement is subsurface land management. We issue licenses and lease for Inuit-owned land. We still need to complete the land lease with Miramar for Inuit-owned land parcel, BB-60. This will require more work before construction of the project can begin on Inuit-owned land. That lease, when complete, will address security requirements for the Inuit-owned land and eventually reclamation on the site.

On September 6th, 2006, Miramar and KIA signed an Inuit Impact and Benefit Agreement. This IIBA was reviewed and approved by the Minister of Indian and Northern Affairs Canada and is now in legal force. The IIBA addresses socio-economic impact of the Doris North Project and commits Miramar to action which will reduce those impacts and ensure

opportunities for Kitikmeot Inuit to benefit from this agreement.

KIA is responsible for the protection and management of water in, on, or flowing through Inuit-owned land under Article 20 of the Nunavut Land Claims Agreement. A Nunavut-wide water policy has been developed by NTI, KIA, and the other RIAs to address Article 20 rights and responsibilities and to manage water on Inuit-owned land.

Separate from the IIBA negotiation, KIA and Miramar addressed the impact of the project on Inuit water rights under the Article 20 of the Nunavut Land Claims Agreement and on the rights set out in the Nunavut Water Act resulting in a water compensation agreement between KIA and Miramar. KIA is satisfied that compensation concerns related to Inuit water rights has been resolved.

The development of the Doris North Project will directly affect the land and water on Inuit-owned land, Parcel BB-60. Water flow from the mine discharge point will flow into Tail Lake, Doris Creek, Little Roberts Lake, and then to Little Roberts Creek, and then onward to Roberts Bay. If the quality or quantity of water is affected beyond what is predicted in the environmental impact statement and water license application, then

additional water compensation will be paid to KIA.

The area of Hope Bay has traditionally been used by Inuit for hunting, fishing, camping and travelling, and the land is owned by Inuit. This explains why the terms of the water license issued by the Nunavut Water Board are of considerable importance to Inuit.

KIA has carefully reviewed the evidence submitted by Miramar and the other parties in this hearing. And in KIA's review of the Doris North water license application, KIA has relied on the expert advice of Rescan Environmental Services. Rescan worked closely with KIA to prepare recommendations contained in the submission and presentation. KIA has set out detailed position on the water license application in their written submissions.

Based on our review of the Doris North water license application, KIA recommends to the Nunavut Water Board that the duration of the water license be no longer than five years in length. This will allow for construction, operation, and initial closure activities to be complete before the water license is renewed for final closure operations.

In this presentation, KIA highlights issues related to terms of the water license, water

management, water monitoring, and aquatic effects monitoring, amongst others. The KIA also provides recommendation to address these and other issues.

The KIA also provides a reclamation security estimate for the part of the Doris North Project that is on Inuit-owned land. The KIA estimate is based on Inuit values, Inuit reclamation objectives, and Inuit consultation.

You've heard my presentation. Now we're open to questions, and my staff will be giving short presentations as to KIA's position as to the water license application before the Nunavut Water Board. Here's one of our staff members, Geoff Clark, to present the remaining points and recommendations regarding the water license.

MR. CLARK: Thank you, Mr. President. My name is Geoff Clark or Pialak in Inunniaqtun.

KIA's comments relate to the term of the water license, the water management plan, and monitoring. And specifically, to provide more detail on the KIA President's presentation, KIA recommends that the water license not exceed five years before it is renewed.

The company applied for an eight-year license, and KIA recommends a shorter term because this will provide the Board with an opportunity to review the

water quality monitoring data, and the overall success of the water and waste management plan at Doris North before Miramar enters the phase of post-closure monitoring.

During the license renewal process, Miramar will have to defend their history of environmental management and propose how they plan to successfully complete the post-closure phase based on the information they've generated over the five-year water license.

KIA believes that Miramar can achieve its water management plan for discharging from Tail Lake and meeting MMER regulations at the Tail Lake pumping station and CCME standards a hundred metres downstream of the discharge point in Doris Creek.

However, KIA does have concerns about the water management strategy, and these concerns are the success of real-time monitoring of the quality of water discharged from Tail Lake that will be required, the accuracy of the water quality model for Tail Lake that will not be confirmed until after the tailings facility is operational. There is potential for background water conditions to reach CCME standards, which would prevent discharge of water from Tail Lake. If the water volume in Tail Lake during winter is lower than expected,

this could delay opportunities to decant water from Tail Lake in the spring. Pumps and other equipment in Tail Lake will have to be managed so that tailings are not re-suspended in the water, and if the mine life is extended for whatever reason, the entire water management strategy would have to be re-evaluated.

Based on these concerns, KIA recommends that the Board define any potential exceedences of CCME guidelines, regardless of their magnitude or duration, as significant, and this would require a recalibration of the water quality model and a re-evaluation of Miramar's discharge strategy from Tail Lake.

The Board should not accept exceedences of CCME standards by 20 percent as a threshold to forcing them to standards by Miramar. In the case that CCME guidelines are exceeded, Miramar should provide example strategies for achieving CCME standards and their costs as part of an adaptive management plan.

The onsite laboratory to measure water quality in real-time will be critical to Miramar's discharge strategy. And in this point, Miramar has addressed this issue in their response to our submission, and KIA has looked at our submission

and realized that we had a communication -- or a miscommunication in our submission, and we support the original NIRB condition that within the water license -- or that the Board should require as a condition of the water license that Miramar provide proof of application for laboratory accreditation as required by NIRB prior to discharge of water from Tail Lake into Doris Creek. Originally in our submission, we said that it should provide proof of accreditation, but Miramar's correct, that's a long process, but they should provide proof of application for accreditation. And we'll provide those details in writing or whatever process the Board wants related to that table that was shown earlier.

The precision and accuracy of the water quality results measured at the onsite laboratory should be independently verified by a third-party laboratory as recommended by NIRB.

The water quality model for Tail Lake, which is the foundation of the discharge strategy, should be regularly updated during the operational lifetime of the mine using field data. Updated long-term model predictions and a comparison of predicted and observed water quality should be provided in annual monitoring reports.

Overall, it's clear that the key to effective protection of water at the site is ensuring that Miramar's discharge strategy actually works as planned, and this is something that has yet to be demonstrated. The Board should scrutinize the discharge operation through the requirement of frequent reporting, and Miramar should be required to immediately stop discharge should the discharge plan not go according to the original plan. In that case, the Board should require a satisfactory explanation for what caused the failure of the discharge plan for Miramar and a proposal for a method that will prevent failure in the future before allowing discharge to resume.

Miramar also proposes to discharge water from sedimentation ponds at the camp and mill pad onto the tundra. The Board should consider requiring Miramar to monitor the frequency, volume, and duration from the sedimentation ponds to the tundra to ensure that these discharges are infrequent and do not affect the ecosystem. If Miramar do not meet these criteria, then this water should be diverted to Tail Lake.

In terms of reporting, Miramar proposes that water quality results will be presented in an annual report, and KIA suggests that short monthly

reports be prepared during the first year of operations to provide confidence that the water management plan is being applied successfully.

And this is a point that Miramar brought up, that they felt that monthly reports were too numerous and onerous for the company. And KIA's real intent here is that definitely during the months of freshet, the two or three months when there's maximum water flow through the system during melt and runoff, that during these two or three months, these are the most critical times and important for the water quality model. And during this time of the year, there should at least be more frequent monitoring if the company feels that year-round monitoring is too difficult.

These reports should include all water quality data, flow measurements from Doris Creek, discharges from the tailings pond and the water levels, and all data used in calculating the discharge rate from Tail Lake should be provided. KIA also supports the use of comprehensive sample collection protocols and testing details that are recommended in the NIRB report.

Due to the short mine life, there are monitoring plans that may not make sense with regulatory requirements. For example, the MMER

requirements or regulations require reporting of aquatic effects in a time line which results in the report being submitted after the mine is in the closure phase.

Also if monitoring of slow-growing vegetation shows any significant uptake of metal during construction or operation, then KIA recommends that the Board require Miramar to sample the vegetation again within five years to determine if there are any long-term effects of the original sample.

With regards to reclamation and closure of the Doris North mine, as the KIA President said, this project will almost be in its entirety on Inuit-owned land, and KIA beneficiaries are the primary users of all the land around the Doris North Project site. Thus, KIA has a strong interest in ensuring that the entire site is reclaimed to Inuit standards and that KIA does not incur residual reclamation liability on Inuit-owned land as a result of the project.

The KIA has developed -- in response to this, the KIA has developed the capacity to independently analyze and assess reclamation security by developing its own proprietary method for assessing reclamation security. This model generates security estimates that are based on Inuit values

and specific reclamation objectives. KIA staff and board members with the help of computer modelling and mine reclamation experts developed this model.

The guiding principles of KIA's reclamation security model are to protect the environment, be sure that the site is safe for future use by people and animals, restore the site for future use by people and animals, and that there be no perpetual care.

KIA's process for estimating the security at the Doris North Project was to orient Miramar how to use the model, and then Miramar developed an estimate after consulting with KIA staff. KIA then used the estimate and the objectives for reclamation and consulted with Inuit from Bay Chimo, Bathurst Inlet, and Cambridge Bay, who were appointed to KIA's community beneficiary committee for this particular area of Kitikmeot. And the results of using KIA's reclamation model and process are included in Miramar's water license application.

Thus, KIA and Miramar have received feedback from Inuit on reclamation from those who have lived in the area of the proposed mine site. When consulting the community beneficiary committees, the KIA received guidance on several issues related

to closure of the project.

Some examples of the feedback received include that the jetty should be dismantled as it will not be required by Inuit after closure of the mine; that consultation with Inuit must be part of the reclamation plan and for post-closure monitoring and any subsequent closure planning; that after decontamination and prior to tear-down of any buildings, Miramar should offer the communities of Bathurst Inlet, Bay Chimo, and Cambridge Bay the first right of refusal on any infrastructure that is scheduled to be dismantled at closure; if the mine closes unexpectedly while the temporary waste rock pile remains on surface, the Inuit that we consulted said that the waste rock should be transferred to Tail Lake for subaqueous disposal. We also received feedback that no contaminated waste should be buried on Inuit-owned land, and nonhazardous waste must not be buried on Inuit-owned land unless KIA is compensated and the waste is disposed in a landfill designed and approved by an engineer.

In Miramar's water license application to the Board, using KIA's costing model for security, they estimated that the cost for reclamation will be about $11.7 million. This estimate already

includes feedback from Inuit on several of the items that I listed to you earlier.

There are some outstanding matters related to reclamation of the temporary waste rock piles and burial of waste on Inuit-owned land, but these can be worked out between KIA and the Proponent as part of the land use, and these items will not drastically change the security estimate.

An additional item that we will also discuss with the Proponent in this negotiation relates to an issue that came up at the technical meetings, which was the proper design and cover depth of the engineered landfill, but this can also easily be dealt with during the lease negotiations and won't cause a significant change to our reclamation estimate.

Thus, KIA accepts Miramar's security estimate of approximately $11.7 million for reclaiming the land and water on Inuit-owned land, subject to the changes that KIA will require on the land use. Because the jetty is not on Crown land, KIA will not be collecting security for this part of the mine.

And in Miramar's water license application, they also provide a reclamation estimate using the RECLAIM model, and it should be noted that in both

cases, the reclamation estimate came out to be similar using both the reclamation model that the Kitikmeot Inuit Association uses and INAC uses. And this should be a comfort to the Board that this amount of reclamation security for the project is adequate.

In regards to any proposed split of land-versus-water-related reclamation security on Inuit-owned land, which is private land, KIA's three goals for setting security occurred in three -- or there are three goals, and they are in order of priority.

And our first goal is to ensure that all project-generated liabilities are covered by security. After that, the second-most important priority is to ensure that all risks or liability for Inuit on Inuit-owned land are secured. And thirdly, the third priority, is that no double payments, which could act as a disincentive to mining, should be required.

And these three goals, ordered in that priority, make sense to KIA. Like INAC, KIA wants to make sure that all liability for reclamation is covered by security. Secondly, KIA wants to ensure that all risks on Inuit-owned land that could include land or water must be secured by KIA.

And the reason for this is that KIA is accepting this development on Inuit-owned land, and we're expecting to benefit from this project, and that's why we have given permission through the IIBA and so on to allow this project to proceed. And if KIA felt there was risk that this could all change and KIA could have a lot of financial liability three or four years down the road for a cleanup, that would totally change our perspective on whether or not this project should be allowed to proceed. So that's why KIA insists that all risks and liabilities on Inuit-owned land, regardless of whether they're land or water, are secured by KIA.

And in regards to the issue of double bonding, KIA and NTI's policy encourages mining on Inuit-owned land, but protecting Inuit interests are more important than avoiding double bonding.

KIA agrees with Miramar on the difficulties in splitting land and water security. It's very hard to make sense of where a split would be because it's -- land and water is all interrelated.

And KIA believes that the Nunavut Water Board has already interpreted this issue properly in 1998 when this issue of land-versus-water security-splitting was dealt with in front of the Nunavut Water Board regarding the Boston license

renewal, which is in the same area of -- or the same owners and in the same area of Nunavut.

For the Board's information, KIA has cooperated with INAC and the Proponent to seek a means in order to avoid double payments. We've talked with INAC for many years, since -- five or six years would be a rough estimate about this issue, but to date, we have been unsuccessful to come to a resolution.

KIA will remain open to searching for a solution with INAC and the Proponent on this topic, but it should be noted that we've already spent several years on this matter, and frankly, we expect that if there's to be any resolution, it will likely be an issue for industry, INAC, and possibly the Board to resolve because we've spent a lot of time trying to figure this out already and haven't come to any fruitful result yet.

So we believe that this issue will not go away without the Nunavut Water Board addressing this issue. We're hopeful that the Minister will consider alternate and innovative forms of security as per the INAC reclamation policy.

In conclusion, the KIA supports appropriate mining development in the Kitikmeot because it has important responsibilities to Kitikmeot Inuit to

balance economic development with social development, environment protection, and to protect the land, water, wildlife, and Inuit lifestyles.

And the KIA continues to support the development of Miramar's Doris North Gold Mine. Miramar and KIA have signed an IIBA related to this project, and this IIBA has already been reviewed and approved by the Minister of INAC and is now in legal force.

As part of or at the same time as the IIBA negotiation occurred, KIA and Miramar came to an agreement regarding Inuit water rights in Article 20, and there's now a compensation agreement between KIA and Miramar. KIA is satisfied that our compensation concerns have been addressed.

KIA is the landowner and is involved in surface land management, including licensing and leasing on Inuit-owned land. The Doris North Project is almost completely on Inuit-owned land, and an important item that remains outstanding is completion of the land lease that Miramar will require before it can start building its mine at Roberts Bay.

In this presentation, we identified issues and provided recommendations to the Board related to the duration of the water license, water

management, and monitoring, among others. We have provided a reclamation security estimate for the entire site of the Doris North Project based on a reclamation model, which is based on Inuit values, Inuit reclamation objectives, and Inuit consultation.

KIA's reclamation estimate for Inuit-owned land for the land and water is $11.7 million. This security is subject to minor adjustments and will have to be furnished as part of the land lease for Inuit-owned land, which is yet to be completed.

The KIA hopes that our input has been helpful to the Board, the public, and to the interveners, and this concludes our presentation, and our panel is available to answer any questions.

Thank you, Mr. Chairperson.

THE CHAIR: Thank you, KIA. We will recess for 5 minutes.

(BRIEF ADJOURNMENT)

COMMUNITY PRESENTATION BY MHBL:

THE CHAIR: Welcome back, everyone. First of all, I'd like to welcome the people from Bay Chimo, Bathurst Inlet, and Cambridge Bay, and if you would introduce yourselves, and then once they're done, the Applicants will introduce themselves, and the Board Members will also

introduce themselves as well.
MR. KANIAK: I'm Logan Kaniak from Bay Chimo.
MS. KANIAK: Mary Kaniak, Bay Chimo.
MS. KLENGENBERG: Emma Klengenberg from Bay Chimo.
MR. KLENGENBERG: I'm Clarence Klengenberg. Good to see you all.
MS. PANEGYUK: I am Ella Panegyuk from Bay Chimo.
MS. HANILIAK: Lucy Haniliak from Bathurst Inlet.
MR. HANILIAK: John Haniliak, Bathurst Inlet.
MS. HANILIAK: Nancy Haniliak from Bathurst and Bay Chimo area.
MS. KAKOLAK: Eileen Kakolak from Bay Chimo.
MR. PANEGYUK: George Panegyuk, Bay Chimo.
MR. CONNELL: Mr. Chairman, thank you. Thank you for coming. We welcome you here. Thank you for coming.
My name is Larry Connell. I'm General Manager of Environment with Miramar Mining, and I'll ask the people at this table to introduce themselves to

you. Can I start with Nathan at this end?
MR. SCHMIDT: Nathan Schmidt from Golder Associates.
MR. ASH: Gary Ash with Golder Associates.
MR. RYKAART: Maritz Rykaart with SRK Consulting.
MR. MALOOF: Terri Maloof, Miramar Mining Corporation.
MR. CHAPMAN: John Chapman, SRK Consulting.
MS. VALIELA: Diana Valiela, Lawson Lundell.
MS. McIVOR: Katheryn McIvor with Miramar.
MR. CURRIE: Jim Currie, Miramar Mining.
MR. BUCHAN: Alex Buchan with Miramar Mining.
THE CHAIR: Board Members?
MR. TOOMASIE: Lootie Toomasie, Taloyoak.
MR. HANSON: I'm Bob Hanson from Iqaluit.
THE CHAIR: Thomas Kabloona, I'm from Baker Lake.

MR. KUSUGAK: Geoff Kusugak, Rankin Inlet.
MR. PORTER: George Porter from Gjoa Haven.
MR. KAKKIARNIUN: Guy Kakkiarniun from Kogali (phonetic).
THE CHAIR: Now, we have another Board Member, also a Board Member, he could not make it due to the bad weather. And if you have any questions for the water license application, you can ask them any questions any time right now. I've changed the menu.

Perhaps the Applicant can give the presentation to the community members from Bathurst and Bay Chimo, and they, in turn, can ask questions maybe after you do your presentation.

MR. CONNELL: Thank you, Mr. Chairman. Yes, that would be fine. Again, thank you for coming and joining us.

I'm going to give you a fairly short presentation of what the Doris North Project is all about. I'm going to start off with giving you an overview of what the project is.

The project is located about 105 kilometres to the southwest of Cambridge Bay. It's located on the Hope Bay Greenstone Belt at the north end, just

off of -- about 5 kilometres inland from the coast. Here's Umingmaktok, here's the Jericho mine, just to put things in perspective.

The project is all on Inuit-owned land. The minerals are owned by Nunavut Tunngavik Inc., and the Doris North Project will be a small underground gold mine. It's expected to produce 311,000 ounces of gold from 460,000 tons of ore over a two-year mine life.

This is a short-term but very profitable project that's located in an area with significant potential for growth, and we anticipate that this will be the start of further development in this area.

The footprint for this project is approximately 54 hectares. This is a plan or a map view of the site. This is the ocean down here. This white here is the ocean, that's Roberts Bay. Here's the jetty, which is a rock-filled structure for receiving our supplies. There's a roadway that goes about 5 kilometres inland, and here's where the plant and the camp will be built. The underground mine is in this location here. It's under the ground. It will go in the hillside and then go under. The ore will come to surface, be milled. The waste from the milling will go to Tail

Lake and will be placed underwater in Tail Lake.

This is a view looking from Doris Lake looking to the north, looking out towards Roberts Bay. This is the Doris mesa. The mill and the camp will be built in this area here on that rock outcrop. The entrance into the underground mine will be in this hillside here and would be by a tunnel going into the ground, and the ore body is actually below the ground over here.

This is a map showing the facilities that are down on the ocean, so this is the shoreline, this is Roberts Bay, and this is the jetty where the barges will come in. We have a quarry to get some construction rock here. There will be a fuel tank here, and this is a big pad for the storage or for the placement of the supplies that come from the barges to the site so that they could be put on the ground here and then trucked up to the plant site.

We started development of this project this year so that we can receive the construction supplies this coming summer. This was done with the permission of the KIA.

So this is the jetty, this is the rock-filled jetty being constructed. You can see it's filled into the -- it's rock placed in the ocean. This black material is a plastic material that goes

underneath the fill in order to help protect the sediments at the bottom. This that you see around the edge is a curtain that was put there during construction so that the mud that we generated by building this was kept inside this curtain until it settled out and didn't pollute the water around it. This is the quarry where the fuel tank will be built, and this is the lay-down area being prepared for the arrival of this year's construction supplies.

How will the ore be mined? It will be an underground mine. It will use open stoping and mechanized fill methods. The access will be from surface using a ramp. That ramp will be built 4-metres high by 5-metres wide, about 900 metres long, and it will go into the ground at about a 10 percent grade.

The lowest level within the mine is 62-and-a-half metres below the surface. That's the lowest point that we're going down to. We will have three vertical holes that come from the surface back into the mine to provide fresh air for the people working there and also to provide a second route of exit if this hole were to be blocked for any reason.

The cycle for mining underground is that we,

first of all, drill off the ore and waste rock. We then load those holes with explosives and blast it. The blast rock after the blast is scaled, pulled off the roof, and then we put bolts into the roof to make sure that the roof is secure so that the roof does not fall back onto our heads as we work.

The broken rock is loaded into underground haul trucks and brought to surface. The ore is brought to surface and goes into the mill. The waste rock will go into other holes in the underground mine to be used to fill the holes, or what we can't do immediately will come to surface, be stored, and then go back underground.

This is -- the next thing I'm going to cover is the processing of the ore in the mill. The mill is the plant in which we extract the gold from the rock. We start off by bringing the ore that's come up from underground and putting it through the crusher, and the crusher breaks the larger rock into smaller pieces of rock, and then that rock is fed into the mill. So the first phase is to break the rock up in a crusher.

The second phase is to mix the crushed rock with water and mill it in machines like this, tumbling mills, that break the rock into a wet sand. We then recover the particles of free gold

using centrifugal force. We spin these particles at high speed. Gold is heavier, and so it's thrown out, and we recover about 40 percent of our gold through this gravity circuit.

After the gravity circuit, we then recover the rest of the gold-bearing minerals by floating them away. What we do is we treat the ore particles so that those that contain gold will float off to the surface. It allows us to take 90 percent of the weight and send it straight to tailings with no other treatment or no contact with other chemicals.

So if we're milling 720 tonnes per day, only 10 percent of that or 72 tonnes per day goes on to contact the -- to the leach circuit to be contacted with cyanide to extract the gold. The remaining material goes out to tailings.

In the leach circuit, we leach the gold from the rock in this concentrate using a dilute solution of cyanide. The cyanide puts the gold into water. We then recover the gold on carbon, and eventually pull the gold out in the form of a bar of gold.

The slurry after the cyanide leach circuit is sent on to a cyanide destruction circuit. We chemically destroy the remaining cyanide so that it's not released to the environment. We then

filter that slurry with a filter cake, a dry filter cake, going back into the underground mine as backfill into the holes we've created, and the solution being recycled in the mill with a small bleed solution going off and being mixed with this solution here, which goes out to tailings.

Next, I'll cover how much water we're going to use. The Doris North Project will use about 30,000 cubic metres of water for potable uses; that's the drinking water, shower water, et cetera, and about 450,000 cubic metres per year for the process.

We will try to recover as much of that water as recycled water from the tailings impoundment, so that we will try to recycle as much water as possible from our tailings impoundment to make sure that we minimize the amount of fresh water we use, but we will still have to use fresh water. We also have three internal recycle streams inside the mill where water is recycled so that we, again, minimize our use of fresh water.

The project is already -- Miramar, through this project, has already reached an agreement for an Inuit Impact Benefits Agreement with the KIA that was signed in 2006 and is now in force. We've also signed with KIA a water rights compensation agreement to compensate for Inuit water rights

under the Nunavut Land Claims Agreement.

In addition, we have been working with the Department of Fisheries and Oceans to compensate for the fish that will be lost by the construction of this project, the habitat for fish, because we're using this lake as a place to put our waste, so we're compensating by trying to create places where fish can better utilize their habitat and compensate for the loss of fish within Tail Lake.

Now, I'm going to go on to waste disposal. The types of waste to be managed at the Doris North Project, the largest one is the mill tailings slurry. And as I said, that's going to be sent to the Tail Lake and disposed underwater within the tailings containment area. I'm going to talk about that a little more in a few minutes.

The cyanide leach residues after it goes through the cyanide destruction circuit we're going to filter, and that's sent underground as backfill to fill the holes underground.

We also are going to have sewage that we create from the people that live on site. We will have the sewage treatment plant. We'll treat that water, and then that water will be sent to Tail Lake. The solids from the sewage will be filtered and incinerated; they'll be burned.

The nonhazardous solid waste, the garbage of -- two types of garbage, one is the kitchen garbage. The kitchen garbage will be incinerated. The material that's not kitchen garbage will be sent to a landfill. It will be on site, and we're building that landfill in one of the quarries that we use to build to get our construction rock.

We'll also generate other hazardous waste, things like batteries, solvents. Those will be packaged, held on site, and then shipped off site with the annual sea lift to be either recycled or to be disposed of in the south.

While we don't plan for spills, we know that we have the opportunity, there is going to be the chance that we're going to spill some oil onto ground, and so we're building within the landfill a lined facility where we can take these soils and treat them so that they can be returned to the land, so we can remove whatever contamination we have put into the soil using -- from petroleum products.

I'm going to now talk about the tailings containment system. The mine site is located on Doris Lake. It's at the north end. This is Tail Lake, and we're going to place the tailings below water in Tail Lake. So to do that, the first thing

we're going to do is build two dams, one at this end and one at this end, so that Tail Lake is isolated from the rest of its watershed. If we're going to put tailings in it, we're going to isolate it so we can manage and control what goes on within that lake during our time there. Then after the mill is started and things are running, we have tailings, it comes by pipeline, and it's deposited underwater in the lake. It goes into the deep holes under this lake.

Once we start discharging tailings into the lake, we'll start to have the water rise in the lake. So each summer season, we will discharge water from the lake through a controlled system, through a pipeline, and discharge to this -- into Doris Creek outflow, the little creek that flows from Doris Lake right at the top of the waterfall so that you get good mixing of our discharge water with the natural water coming out of Doris Lake.

So as the mine operates, the water level in this lake will rise because we're putting solids on the bottom of it. After the life of the mine, after two years, we will stop putting tailings in the lake, but we will continue to discharge water through this controlled system. So over time, we will lower Tail Lake back to its original water

level, but the solids will remain below the water, and that will take somewhere in the order of three to five years.

After the lake has returned to its natural level, we'll ensure that the water quality here is adequate for discharge now without using the managed pipe system, and when we determine that is the case, we will then breach this dam and allow the water to then flow in an unregulated fashion back to the way it was. At no time will tailings solids be visible. They will always be below water.

I'm going to now pass on to water management, how we manage water at the project. We have two types of water to manage. The first is the storm water, the rain water, and the snowmelt at the plant site, at this landfarm, and our landfill, and also within the containment liners of our fuel tanks. And the second water we have to manage is that water released from the tailings containment area from Tail Lake.

For the -- just going back. For the storm water what we do is basically through berms make sure that water that falls on the land is diverted away from our buildings and our structures so that we don't contaminate that water. Water that comes

into contact with the waste rock and the ore on surface will be collected in a pond and sent to Tail Lake so it doesn't escape into the environment. Water that collects within the fuel containment facilities will be pushed through -- will be pumped through the treatment system, an oil/water separator to remove any oil, and then it will be discharged onto the tundra.

Looking at Tail Lake, the management for the way we would release water from Tail Lake is set up to meet two criteria. The first criteria is the metal mine effluent regulations set under the Fisheries Act. If our water quality does not meet that criteria, we will not discharge. We will only discharge when it meets this criteria under the Fisheries Act, and that includes the requirement that the water be not toxic to fish.

But we're also committing that the water that we discharge into Doris Creek at a point below the waterfall, that this waterfall within Doris Creek will meet what's called the CCME guidelines. This is the Canadian Council of Ministers of the Environment. And these are guidelines that have been set right across Canada to ensure protection in the receiving environment of all aquatic life.

The other objective of our management strategy

is to keep the rise of water in Tail Lake to a minimum, because as the water rises, we increase the risk of shoreline erosion. So we want to keep that rise of water in Tail Lake to a minimum.

So you've seen this picture before, and I'll just quickly go through it again. The dams are now built. We now have the pipeline constructed, and the tailings have now been discharged into Tail Lake. In the first year, once the open-water season occurs, we will measure the flow of water down this creek. We will measure the water quality of the creek. We will measure our water quality here, and we will determine how much water we can safely discharge to meet those criteria I gave you in the last slide. We will then actively pump water in a managed and controlled fashion to meet those criteria. And that will go on each summer during the open-water season only. During the winters, there will be no discharge. The system will sit dormant. The tailings will collect until the following open-water season.

So as I said before that over time, the Tail Lake water level will rise, and after mine closes, the water level will -- we'll continue to discharge the same system to meet those same criteria, and the water level will, in time, drop. Once things

have returned to the same level and condition and we know that this water can be safely discharged, we will breach the dam and allow the system to go back to the way it is right now.

This is a picture of the waterfall that you saw on the last slide. Our discharge from Tail Lake will be discharged behind this person into this creek in a spot where there's bedrock so that we don't cause bank erosion. The water will then mix with the water coming out of Doris Lake, and we will monitor below this point to ensure that the water meets those CCME criteria.

So the two guidelines we're meeting is, one, our water has to meet the MMER guidelines set in the Fisheries Act, and downstream here, the monitoring will show that we meet the CCME guidelines to protect aquatic life. Both of those will be monitored and reported to the Water Board as part of our ongoing monitoring programs to ensure that we have successfully met the criteria to protect the environment.

Miramar has created an environmental management system for the project that's designed to help us train employees on how to meet the commitments and things that we have put forward as a company to meet these objectives.

An environmental management system is a systemized program that's based on the principle of before you do something, you plan it. You plan it out, and then you go and do it. But after you've done it, you then check to see what happened. If everything's okay, you act again. If it's not okay, you make a change before you act, and then you act and do it again, but you check again. And you continually do this on an environmental performance in a circle to make sure that we're continually improving our performance and that we're checking what is happening.

The environmental management system consists of a whole series of management plans that we've already written and have presented to the Water Board, and these are the guidance documents that employees will use to make sure that they operate the mine in accordance with these procedures so that we protect the environment. These plans will be updated on a regular basis so that the things we learn, the experience we gain is being built back into these plans so that the employees have the best information to keep the system working as it's designed.

We also, as part of that system, have a monitoring plan, and the monitoring plan includes

monitoring all of these areas. Obviously water quality is a critical one, but there's also a lot of other areas we're also doing monitoring on a regular basis, and that will be part of our water license monitoring and reporting of the water -- of these -- of the outcome of this monitoring to the Water Board to make sure that we are performing in accordance with the commitments we've made.

This program has been set so that we exceed all legislative requirements and so that we meet the project certificates that were set in the NIRB project certificate.

Now, I'm going to go into planning for reclamation, when we close the mine. What happens at mine closure? The first thing is all of the waste rock and ore that's left on surface will be removed. We'll mill the ore. The waste rock will go back underground to fill the holes, and then we will seal the underground mine.

This underground mine is in the permafrost. It's a frozen condition, so once we seal the mine up, it will remain in a frozen condition.

The mill building itself will be cleaned out to remove all the chemicals and all the slurry in it, and then we'll dismantle the building and remove it. All the chemicals, hydrocarbons, the fuels,

hazardous materials, they'll be removed from the site and taken back south for recycling or for alternate disposal.

Equipment and buildings that are no longer needed, they'll be cleaned up and then dismantled. The buildings that we need during this reclamation, they'll ultimately be removed as well. So the intent is that all structures and buildings that we put on the site will ultimately be removed.

The equipment and buildings that has no salvage -- or has salvage value, that will be shipped back south by sea lift. Material that has no salvage value that we take down from the demolition will be buried in a landfill, and that landfill will be located in one of the quarries.

As we said before, Tail Lake will be returned to its pre-development level. The tailings will be at the bottom of the lake where the lake will return to its current water level. You will not see the tailings on surface.

These are just two views on what the site would look like after closure. This shows Tail Lake back to its normal present level. The south dam will still be there, the road will still be there, and these quarries will still be here, but the mill site, all the buildings have been removed, the

bridge across the creek has been removed.

This is a similar view, now looking from Roberts Bay looking to the south. So here's Doris Lake. Here's Tail Lake. The jetty is gone. It's been removed down below water level. And the roads though, the trace of the roads still remains. We haven't picked the roads up because to actually dig these roads back up, to dig the rock back up, we'd actually disturb the surface of the ground, and so we've left the rock in place, and that will grow over with time.

That gives you a quick overview of the project, and we'd be very happy to answer questions, any questions you have on our application for a water license. Thank you very much.

Mr. Chairman?

THE CHAIR: Thank you. Any questions? If there's any questions and if you have any questions to Miramar, this is the time to ask them.

COMMUNITY COMMENTS AND QUESTIONS:

MS. HANILIAK: I'm Nancy Haniliak from Bathurst and Bay Chimo area. That Doris North, when is it going to be open? And if before it open, maybe you could let the Elders of Bathurst and Bay Chimo area go to that area, and maybe you

guys could show us whereabouts it's going to be.
THE CHAIR: Miramar?
MR. CONNELL: Thank you, Mr. Chairman. I'm going to let Alex Buchan answer that question. He's our community liaison person. I'm going to let him answer that question.
MR. BUCHAN: Thank you, Mr. Chairman. We have a regular schedule of visits, annual visits to site that we have in place, and last year, Elders from across the Kitikmeot were invited to attend and take a look at the campsite and take a look at the area where the mine is proposed to be built, and we plan on doing that again this year. In addition to that, bringing in KIA staff that talk to the Elders in their communities. So that is part of our plans.
Thank you, Mr. Chairman.
MS. HANILIAK: We're close to that area. We would like to see what part and what area it's going to be done and worked at. We would like to see where it is and where it will be done, so it would be really a pleasure for us Inuit from Bathurst and Bay Chimo area to see where it's going to be done.
THE CHAIR: Miramar?
MR. BUCHAN: Yes, thank you,

Mr. Chairman. We totally agree with that, and that work is being done in order to show the Inuit where we plan to do the development work, and I thank you for bringing that up. That is an important consideration. Thank you.

MR. CONNELL: Mr. Chairman, there was a first part of that question that we didn't answer, and I -- just give me a sec.

You asked us though when things would happen, when things would start. If we get a water license, and that's up to the Board, construction would actually start early next year in the winter, and operation of the mine would start underground late in 2008, next year, and the mill will start up actually late in 2008. The mining underground will start up earlier in the year. So we're looking at, if we get a water license, construction would start this coming winter, and the operation would start late next year.

MS. HANILIAK: Thank you, Mr. Chairman. Like when Miramar first opened Windy Lake and Boston, they kind of promised us everything, and we kind of never see everything yet, and we would like to see what's happening when this project is opening. And for our Elders, especially for our Elders, they would like -- they want to kind of

understand what's going on, and we'd like to see you people bring us up there and show us -- kind of show us where it's going to be really done.

THE CHAIR: Miramar?

MR. BUCHAN: Thank you, Mr. Chairman. We're working actively through the Kitikmeot Inuit Association community liaison officers in order to coordinate these trips, and once a date has been set, the communities and the Elders will be informed when those trips occur. Thank you.

THE CHAIR: Any more questions?

MS. HANILIAK: Thank you, Mr. Chairman. Ever since Miramar opened, we kind of like, I mean -- like they promised us everything, and we never see what they promised us, and we'd like to see what goes on this time.

THE CHAIR: Miramar?

MR. BUCHAN: Maybe just a point of clarification, what sort of promises are being mentioned, just for our information? I just wanted to know what sort of promises are involved. Thank you, Mr. Chairman.

MS. HANILIAK: Thank you, Mr. Chairman. Like they promised us they would like to -- they would come to our communities once in a while, like maybe once a month or twice a month, but we never,

ever did see that from Miramar. They don't ever come to Bathurst and Bay Chimo area. Sorry, Mr. Chairman. They kind of want to go to Bathurst and Bay Chimo for a meeting or, you know, come and talk to us and hire from our area, but they kind of -- I don't know, whatever, sorry.

THE CHAIR: Miramar?

MR. CURRIE: As the senior Miramar representative here, I can assure you that Alex Buchan here will come to visit you in Bathurst and Bay Chimo before October; would that be fair? Thank you, Mr. Chairman.

MS. HANILIAK: Like, I'm saying they always promise to come and visit us, but we don't ever see anybody come around to visit us from Miramar or wherever.

THE CHAIR: Miramar?

MR. CURRIE: If Mr. Buchan does not come to visit you, he will be in big trouble with me, so I promise you he will come.

MS. HANILIAK: My husband worked for Windy Lake for -- ever since it opened, and they promised to visit us, but they don't ever come and visit us to have meetings. They promised to come and have a meeting with us and everything, but they don't ever show.

THE CHAIR: Miramar?
MR. BUCHAN: Mr. Chairman, there's been a number of points of contact with the communities in the Kitikmeot with regards to our project. I guess a lot of these points of contact are in relation to the development of specific plans related to Doris North, and as far as I'm aware, in the case of the development of our plans, the community of Umingmaktok has been consulted with, so I don't know how to respond other than that.

I understand we've received input from community members. We've received input from the harvesters in that area. We've spoken to the people that have used that particular piece of area or land for harvesting purposes in the past, so I don't know how to respond other than that, Mr. Chairman.

THE CHAIR: Thank you. Any more questions?
MR. HANSON: Thank you, Mr. Chair. Nancy, I think the most important thing to know, from what I've just heard, is that this organization has offered to come and send somebody to your community, and you've stressed that point over and over again.

And I guess now it's something that they have said they were going to do, and maybe there's other people that said they were going to come and didn't come. They are. And I appreciate what they're saying is they talked to the people of the Kitikmeot area.

You're here, you want to be heard, and that's what you want. Make sure they understand that. We're listening to you. You tell us what the problem is, and we'll make sure hopefully it can get fixed, but we appreciate what you're telling us, thank you very much, but I do appreciate what Alex is saying and what the Vice President is saying, he will be there; if he doesn't, he will be in trouble, so I think he will be there for sure.

So what we want to do now is hear from all of you, and basically every one of you. If you want to talk to us, this is your opportunity to talk to us. You came by charter; please tell us what your concerns are.

Any other concerns on what's happening with the animals, with anything? I mean, we have to hear from you. That's why we're here, and our decision will be made once we hear all the evidence, not until. So you must tell us. Thank you.

THE CHAIR: Any more questions?

MS. KLENGENBERG: Can we have a few minutes? Hi, I'm Emma Klengenberg, daughter of Clarence. I'm just wondering if they can have at least 5 minutes to themselves to see if they come up with anything, any other problems, or something to do with wildlife.

THE CHAIR: We'll recess for 5 minutes.

(BRIEF ADJOURNMENT)

THE CHAIR: Shall we reconvene? Do we have any questions from the public to the Applicant?

MS. HANILIAK: Thank you, Mr. Chairman. We just had a short break. I will take Bathurst and Bay Chimo. We would like to keep our water clean, be careful with our fish or wherever you are blasting.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. We understand that, and our work plans that we have are intended to provide that. The blasting for the operational applies -- will all be underground. We won't be doing the blasting on surface. The blasting on the surface will just be during that construction phase, in this first part of the phase.

We actually did some blasting on site this spring, and we had a team of people on site who actually had devices on the site to monitor the vibration because we were close down to the Roberts Bay, and we wanted to measure that vibration to make sure that we didn't harm the fish, or if we were getting too much vibration, that we could reduce the size of blast or change our blast, so we have built that into our plan to make sure that when we blast, we're being as protective as we can of the resources.

And our work plans, as we presented to the Board, are intended to keep the water clean. That's our intent too. We understand that that's very important, and our system is intended to work to that aim, to keep the water as clean as we can, and to limit the amount of water that we actually use. Where possible, we'll try to recycle water from our Tail Lake rather than take new water.

MS. HANILIAK: Thank you, Mr. Chairman. The materials you use and whatever you guys using with -- are they harmless to our water?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. For the large part, a lot of the materials used are harmless, but we do have materials that are harmful

to water, and those are the materials that we have to manage in such a way that they are protected from the water, and that is why we have the -- in the milling process, where we use some harmful chemicals, that's why we have this cyanide destruction circuit, where we actually chemically treat that water so that we don't damage the water that we release to the environment.

And we spent this whole period of designing this strategy for how we manage the water in Tail Lake to be protective of the water downstream. Those criteria that I mentioned, the CCME guidance, those are numbers that are set not by us but set by the Government of Canada in consultation with all the provinces and the territories that are meant to ensure that if we meet those levels in water, that that will be protective of all aquatic life, and that's -- what we're asking the Board to set is what we must adhere to.

MS. HANILIAK: Thank you, Mr. Chairman. Do you guys blast underwater, or what kind of materials do you use to do your work in the water?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. We do not do any blasting; this project doesn't do any blasting underwater. We don't do any mining

under the water. The only construction work that's going on with the water was that jetty that you saw being built, and you saw what we did to it, put the curtain around to make sure that the mud that we stirred up was kept in place and didn't get a chance to go out beneath the water. That's the only activity we have that's actually in water.

The other use of water, of course, is our tailings. We're putting tailings in Tail Lake, and as you saw, we're building dams there to make sure that no water gets out of that Tail Lake until it's on a managed system, and that's what part of the application is with the water license. Thank you.

MS. HANILIAK: Thank you, Mr. Chairman.

THE CHAIR: Any further questions?

MS. KANIAK: Thank you, Mr. Chairman. I don't fully understand, but I have heard the water, it's hard to -- if water has fish, and I'm sure you know how to relocate fish by now. The work site, the project, perhaps maybe some -- I'm just commenting on some of the stuff that I heard, that some of the rocks may be dangerous or contaminated.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. The materials that we produce that could be harmful

to water are not stored where they can come in contact with fish or with water. The milled rock, the rock we mine goes into the mill. It's processed through the mill, and it's turned into a fine sand. That sand is our tailings; that's our waste product. That's placed underwater in Tail Lake, and Tail Lake is sealed off, so that during the life of the mine, Tail Lake is isolated from the downstream environment, and we only release that water when it meets the criteria that I had on the slide. And that's intended to make sure that the water that comes out of our system is protective and safe to fish. So we do have in place the plans to protect fish.

We also are required under the Fisheries Act to take the fish out of Tail Lake because Tail Lake is going to be used as a tailings impoundment, and we have to do measures in other waters to compensate for the loss of the fish in Tail Lake because that we'll be using for tailings. That's no longer viable for fish, and so we have to compensate elsewhere for that fish, and we've worked with the Department of Fisheries and Oceans to put on the table things that we will do in order to compensate for that fish. And it's not monetary compensation. What it is is to replace habitat or create

techniques for fish to pass through places they can't pass now so that there's not an overall loss of fish in the area.

THE CHAIR: Any more questions? If you don't have any more questions, thank you for coming here.

MS. HANILIAK: Thank you, Mr. Chairman. When are you guys planning to start this project on doing -- checking on water and stuff like that?

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chair. Some very good questions.

We have already started checking on water. We've been doing it in 2004, 2005, 2006. We're doing it again this year, and we will continue to do that through the construction phase, and we have a program of monitoring that will continue during the life of the mine and after the life of the mine, with the results from those all being given to the Water Board so that they too can confirm that the monitoring we're doing is truly protective of the water. So we've already started on monitoring water, and that will continue through construction, it will continue through the operations, and it will continue until we -- into closure, until we can demonstrate that we can now

leave the site, and the water quality won't -- is not harmed.

MS. HANILIAK: Do you have any Inuit working with you or just Kabloonas?

THE CHAIR: Miramar?

MR. BUCHAN: Thank you, Mr. Chairman. As mentioned previously in our presentations, we do have an Inuit Impact and Benefit Agreement that we have negotiated and successfully concluded with the Kitikmeot Inuit Association. Part of that agreement calls for Inuit employment, promotion of Inuit employment and promotion of contracting to Inuit business.

As part of our exploration program thus far, excluding activities related to Doris North, I believe that we have a fairly strong record in terms of using Inuit companies and employing Inuit.

As I understand right now, as of last year in our exploration program, we've approached around 30 percent Inuit employment in our exploration program with a lesser amount of Inuit content on the business side of things.

So to answer the question, there is Inuit involvement in our project, and we hope to see more Inuit involvement in the future. Thank you.

THE CHAIR: Thank you. Any more

questions?
MS. HANILIAK: Thank you, Mr. Chairman. It would be really nice if Bathurst and Bay Chimo could get -- if you guys could get somebody from Bay Chimo or Bathurst to join this project because it's so very close to Bathurst and Bay Chimo.
THE CHAIR: I need to remind that this is a water application, and as I indicated earlier, our mandate is water and water only, and it would be unfair for us or any Member to make any comments on this matter. Thank you. Thank you very much for coming.
We would like to reconvene with the interveners, KIA/NTI. Shall we proceed with the Applicant questioning to the interveners?
MHBL QUESTIONS KIA/NTI:
MR. CONNELL: Thank you, Mr. Chairman. We have four questions we wanted to ask the KIA. I'm going to ask the first two and then pass it to John.
The first one a question really that I think is hopefully to get to a point of misunderstanding between us, rather than a point of disagreement, and it's related to Slide 31, which was labelled "Reporting Requirements". In that slide, it was indicated the KIA suggests that short monthly

reports be prepared during the first year of operations to provide confidence that the water management plan is being applied successfully.

Miramar, in its submission, has always believed that under the water license, we would also be required to submit monthly reports as part of our surveillance network monitoring program. We would have to supply monthly reports and annual reports.

So my question basically is could, in KIA's view, these monthly reports that are required under the water license for the SNP program also satisfy the KIA's recommendation under their presentation for these monthly reports on how we're performing with the water management plan?

MR. McGURK: This is Michael McGurk.

The short answer is yes.

MR. CONNELL: Thank you. My next question is with regards to reclamation security.

THE CHAIR: Excuse me, I didn't get your name.

MR. CONNELL: Sorry, Mr. Chairman. The name is Larry Connell.

Second question is with respect to reclamation security. If INAC provided an indemnity to the KIA against the liability on the mine activity on Inuit-owned land, would the KIA then be satisfied

with INAC holding the full reclamation security?
THE CHAIR: Interveners?
MR. CLARK: This is Geoff Clark from KIA.
And our answer is yes.
THE CHAIR: Miramar?
MR. CONNELL: Thank you. John Chapman is going to ask just a couple of questions with respect to the water management system.
MR. CHAPMAN: Mr. Chairman, John Chapman.
In the written submission that was provided by the KIA, they state that the Board should not accept exceedences of CCME standards by 20 percent as a threshold for significance. Based on the MHBL presentation this morning, does the KIA agree that the level of significance applies to Tail Lake and not to Doris Creek?
THE CHAIR: Interveners?
MR. McGURK: Michael McGurk.
Can you elaborate, please, so that I understand the full context of your question?
THE CHAIR: Miramar?
MR. CHAPMAN: John Chapman, Mr. Chairman.
In the written submission, there was reference

to the standards -- exceedence of the CCME standards by 20 percent, and the reference is with regard to the water quality in Doris Creek, but in the Miramar presentation this morning, it was explained that that 20 percent applies to Tail Lake, not to Doris Creek, and the 20 percent significance would be used in the recalibration of the model. Does the KIA agree with that?

THE CHAIR: KIA?

MR. McGURK: Michael McGurk.

The key issue is ensuring that the water quality in Doris Creek does not exceed CCME guidelines. If that can accomplished, then the aquatic ecosystem can be protected. And if I misunderstood the application of the 20 percent significance, that was my fault.

THE CHAIR: Miramar?

MR. CHAPMAN: Thank you, Mr. Chairman. The second question --

THE CHAIR: I didn't get your name.

MR. CHAPMAN: Thank you, Mr. Chairman. This is John Chapman. I apologize.

In Slide 26 of the -- sorry, I'm referring to Slide 26 of the presentation and, again, also I'm referring to the written submission. In the written submission, there is talk of the -- there

should be no exceedence of CCME in Doris Creek, but in the presentation, in Slide 26, the KIA state that any potential exceedence of CCME should not be accepted in Doris Creek. Can the KIA please clarify what is meant by "potential"?

THE CHAIR: Interveners?

MR. McGURK: Yes, this is Michael McGurk.

And I think I was using "potential" promiscuously. What I meant was that for the purpose of writing the water license, it should be simply exceedence of a CCME guideline, but during your internal water quality management, should you see the potential for an exceedence through trend analysis, then we presume that you would use this as a means of preventing that trend from resulting in an exceedence of the guideline, but you could strike that "potential" for the purpose of water license preparation.

MR. CHAPMAN: Thank you, Mr. Chairman.

THE CHAIR: Miramar?

MR. CONNELL: Thank you, Mr. Chairman. It's Larry Connell. That is all of our questions. Thank you.

THE CHAIR: Interveners? Thank you. Next INAC.

INAC QUESTIONS KIA/NTI:
MR. McLEAN: Yes, Carl McLean with INAC.

Just have one question for KIA, if I could, Mr. Chair, and it's related to the reclamation and closure plan and the estimates for that reclamation.

In the KIA presentation, it says KIA accepts Miramar security estimate for reclaiming land and water on IOL, subject to some changes to be discussed.

Now, Miramar's estimate had a breakdown between land and water, and INAC is wondering if KIA can explain, maybe for ours and the Board's purposes, some of the criteria used to split that land and water in the model. That might be helpful.

THE CHAIR: KIA?

MR. CLARK: This is Geoff Clark from KIA.

In our exercise of developing an estimate for reclamation security for Inuit-owned land at the Doris North Project, we didn't explicitly try to set up our estimate so that we could -- it was just -- part of it was for water, and part of it was for land. We did the reclamation estimate in a holistic fashion that considered the land and the

water together.

That being said, there are specific activities that relate almost entirely to water, and there are activities that relate almost entirely to land. And, for example, all of the reclamation activities related to reclamation of the tailings impoundment, which would include removing the equipment within the tailings impoundment, breaching the dam, any water treatment, shoreline protection, tailings catch ponds would be considered water-related reclamation.

There is a Miramar plan and ecological risk assessment for water quality at closure, and considering it related to water quality, one could think of that as being a water-related reclamation. That wasn't in our mind when we were doing the estimate, but when you go through it afterwards and you look at it, you could assume that that would be water-related.

And in our estimate, there are -- if I were to go through it, I could give you other examples of items that are water-related. And when we looked at it, as I recall just a few days ago, just to look at it because I thought there might be a question, we thought it added up to about 3 or $4 million, in that ballpark.

THE CHAIR: INAC?
MR. McLEAN: Thank you, Mr. Chair. That was the only question we had.
THE CHAIR: Thank you. Next is Environment Canada.
MS. LEVENSON: Thank you, Mr. Chairman. Savanna Levenson on behalf of Environment Canada. We have no questions.
THE CHAIR: Thank you. DFO?
MS. GORDANIER: Thank you, Mr. Chairman. Tania Gordanier on behalf of Fisheries and Oceans Canada, and we have no questions at this time either.
THE CHAIR: Thank you. GN?
MR. ATKINSON: Thank you, Mr. Chair. Mike Atkinson, Government of Nunavut. I have no questions.
THE CHAIR: Thank you. Staff?
MR. TILLEMAN: While we're looking to see if we have any, I wonder if the audience has any, and if they -- subject to that, we don't have any questions.
THE CHAIR: Any questions from the public? Long day. Go ahead.
MR. TILLEMAN: Yes, sir, when you said long day, it suggested that we might be close to

ending that long day, and so I just wanted to make sure I had the opportunity to file some exhibits and hand something out that I promised to do. Is this an appropriate time to do that, sir?

THE CHAIR: Go ahead.

MR. TILLEMAN: Thank you very much. So what I would propose is that we would file and mark the following three exhibits: Number 5 would be the agreement that we made with parties today to put this supplemental information in a table form and give it to the parties. So we now would propose to have that marked, and could everyone come to Dionne at this table and pick up their copy?

You will note that there is one additional column in that, which is "Intervener Response", and we would like the parties to write that in, and if they have any questions, talk to the Applicant and try to resolve those issues on those seven pages if they can.

Number 6 then would be the hard copy presentation of the KIA that we just received and NTI, and number 7 would be the NTI/KIA presentation in electronic copy. So those are the three exhibits, sir, and we have the table, once again, for the parties before they go.

THE CHAIR: Bob?
MR. HANSON: Thank you, Mr. Chairman. Robert Hanson.
If I can, Bill, Exhibit Number 5 is a hard copy of the question from number 4 that you mentioned. That number 4 was the electronic copy of the questions and answers of the intervener by Miramar and a hard copy of them be made. So that would be part of your Item 5.
Item 6 would be the NTI electronic copy, Mr. Tilleman? I just made notes. Number 6 would be NTI electronic copy. Item 7 would be NTI's hard copy. Item 8 would be KIA's electronic copy. Item 9 would be KIA's hard copy. Does that meet with your approval?
THE CHAIR: Bill?
MR. TILLEMAN: Well, if it isn't, we'll make sure that it's straight tomorrow morning.
EXHIBIT NO. 6:
HARD COPY OF KIA/NTI INTERVENTION PRESENTATION.
EXHIBIT NO. 7:
ELECTRONIC COPY OF KIA/NTI INTERVENTION PRESENTATION.
THE CHAIR: Is it a long day yet?
MR. TILLEMAN: Yes, sir.

THE CHAIR: We shall adjourn until 9:00 tomorrow morning. Thank you all for coming. See you tomorrow morning at 9.

(WHICH WAS ALL THE EVIDENCE TAKEN AT 9:10 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

EXHIBITS

PAGE NUMBER: