Nunavut Water Board Hearing

Applicant: *Echo Bay Mines Ltd.*
Intervener: *Department of Indian Affairs and Northern Development*

Meeting held November 15th, 2001 in Kugluktuk, Nunavut

Kadluk: Sorry.

Testing 1 2 3, how's that? That was my fault. Nobody told me it should…

To conclude my opening remarks, I invite you to pick up some information about the Nunavut Water Board and this application in particular. And I ask anyone present to sign in with our licensing administrator Rita Becker. I will now give you some brief instructions on how to proceed with your presentations or submissions.

When you come up to make your presentation please state your name for the record. Spell it out if necessary. Anyone who will present evidence shall do so under oath or affirmation sworn before Mr. Bill Tilleman legal counsel for the Board. But this requirement does not apply to persons who simply want to ask questions. All questions shall be directed through the chairman who in turn will ask Echo Bay, interveners, or another person to answer it. Since we have simultaneous translation into English, Inuktitut, it is very important that only one person speaks at any given time. And please speak slowly and clearly. Mary Hunt and Ida Ayalik and Ben Kogvik will be our interpreters today. Their job is extremely difficult and stressful so it is very important that only one person speak at a time, in a clear and precise manner.

Thank you we will now proceed and follow the agenda as outlined in the order of events.

At this time I would like to introduce the Board members and staff. The Board is made up of eight members plus the chairman. Four members are nominated by NTI, two by the government of Nunavut and two by DIAND. As I already stated, my name is Thomas Kadluk, Chairman of the Water Board and I am from Baker Lake. Mr. Bob Hansen is the vice-chairman and he is from Iqaluit but unfortunately he is not here today. George Porter is a member from Gjoa Haven. Kakiarniut is a member from the community of Kuugaarjuk; Jackie Nakulaaq is a member since July 1999. He is original from Coral Harbour now residing in Rankin Inlet. Koonoo Tattuinee is a member from the community of Arviat. Thomas Qablunaaq is a member from Baker Lake. Lootie Toomasie is from Qikirtarjuaq. In fact he is the mayor of that community. Missing

today is Joe Ohokkanoak from Cambridge Bay who could not make it today due to other commitments and business.

The Water Board's head office is Gjoa Haven. Phillip de Pizzo is the Executive Director of the Board. Dionne Filiatrault is the technical advisor. Rita Becker is the licensing administrator and Ben Kogvik is the secretary to the Board. Also present is Dr. Bill Tilleman, legal counsel to the Board, and we also have Ramli Halim, technical assistant.

We will now take a 15-minute break and I ask all interveners who wish to make a presentation, submission or oral comments to register with the Nunavut Water Board staff and indicate whom you represent. We will now take a 15-minute recess.

Pardon. Okay. We'll take a 5-minute recess.

I would just like to remind everyone, don't do what I did. You have to turn the mike on. And shut it off when you're done. Apparently they're conserving batteries. It's a good thing I have a loud voice. Before we proceed, his worship Stanley Anablak, the mayor of Kugluktuk, would like to say a word or two. Mr. Mayor,

Thank you…

…Thank you Mr. Mayor [applause]

I will now do a role call to see who's going to intervene – and the name of their agent or counsel if they have one. So far we have one intervener, DIAND. Are there any interested parties who wish to make a verbal presentation? Did I forget any organization or any individual who has a written submission? Let's proceed.

Normally we start with the applicant but I see the interveners are up here already. I think it would be more appropriate if we start with the applicant. Several representatives of Echo Bay Mines are present today. I recognize Mr. Bill Danyluk. Did I pronounce it right? If I don't pronounce names right please forgive me. Hugh Ducasse and Jerry McCrank from Echo Bay Mines, could you please introduce yourselves and your colleagues? And please tell the Board and the audience who will make the presentation on behalf of the Echo Bay Mines.

Danyluk: Thank you Mr. Chairman, other members of the Board, Mr. Executive Director and other employees of the Board, representatives from the Lupin Mine and all interested parties. My name is Bill Danyluk. I am a professional engineer, and hold an advanced graduate diploma in

management. I have been General Manager of the Lupin operation for two years. I have been working for Echo Bay Mines at Lupin in various capacities since 1988 and have over 20 years of mine operations experience.

Mr. Chairman, I would like to introduce my colleagues, and other expert witnesses who will be speaking on our behalf today. In order of appearance, and if they would please acknowledge themselves by raising their arm.

Mr. Hugh Ducasse, certified mining safety professional, is manager of loss control and environmental affairs at Lupin and has held that position for 5 years. He has been an employee of Echo Bay since 1985 and has 26 years of experience in the mining industry.

Mr. David Hohnstein, certified engineering technologist, is environmental co-ordinator at Lupin and has held that position for four years. He has been an employee of Echo Bay Mines since 1984, holding various positions within our environmental department, including manager of environmental affairs. Mr. Hohnstein has in total almost 20 years experience in the environmental science field.

Mr. Courtland Smith, professional engineer, is Vice-President, Nuna Logistics Ltd. Mr. Smith has 15 years of engineering and managing experience in mining industry, including 10 years working for Echo Bay Mines with some of that time at the Lupin Operation. Representing Nuna, Mr. Smith has done various project work for Lupin including the preparation of this reclamation estimate.

Mr. John Zigarlick, chairman and chief executive officer, Nuna Logistics Ltd. Mr. Zigarlick has worked in the mining and mining construction industry since 1968. He is the founder of Nuna Logistics Ltd and past president and chief executive officer of Echo Bay Mines ltd. Mr. Zigarlick was instrumental in developing the Lupin Mine and putting it into production. In total he spent 21 years as an employee of Echo Bay Mines and is very familiar with the Lupin Operation.

Mr. Brent Murphy, Master of Science, professional geologist, is senior environmental geologist, EBA engineering Consultants Ltd. Mr. Murphy has 15 years experience working in directly related areas such as water quality management and evaluation, environmental impact assessments and mine reclamation and geo-physical assessments. EBA has also subcontracted out the geo-chemical assessment work to Robinson Geo-consultants Ltd., who are specialists in this field.

Mr. Jerry McCrank, professional engineer, is Vice-president Operations, Echo Bay Mines ltd. and has held that position for 4 years. Mr. McCrank has been an employee of Echo Bay Mines for 25 years in various capacities including General Manager of the Lupin Operation for many years.

Mr. Martin Ignasiak is our legal counsel and is associated with Fraser-Milner-Casgrain. Mr. Ignasiak will not be presenting any evidence today but he is present to handle any legal issues that may arise on our behalf.

Mr. Chairman, on behalf of Echo Bay Mines ltd. and the Lupin Operation, I would like to thank you and the Board for allowing this hearing today. I would also like to thank all in attendance for being present at today's hearing. I know many of you have travelled very far and have taken much time to prepare for and participate in this process. Echo Bay Mines acknowledges each of you as distinguished representatives of your respective organizations. We sincerely respect your right as well as your obligation to present any evidence or ask any questions of us as we proceed through this hearing process.

Echo Bay Mines ltd. operates the Lupin Gold Mine on the western shore of …. [inaudible] Lake in the Kittikmeot region of Nunavut. The mine has been operation in 1982 and has produced more than three million ounces of gold. The current life-of-mine plan forecasts production of approximately 160,000 ounces of gold per year to 2006, with declining production in 2007. Ongoing exploration programs are currently underway which could extend the life of the operation.

Echo Bay Mines obtained the first water license for the Lupin Mine from the Northwest Territories Water Board on June 1, 1981. The license was subsequently renewed in 1990 and again in 1995. In July 2000, Echo Bay Mines was granted another renewal of the Lupin water license by the Nunavut Water Board for a period of 8 years to June 30, 2008. Within Part B "General Conditions," article 2, the reclamation security amount was set at $29.2 million in the form and schedule as required by the minister of Indian and Northern Affairs Canada.

Echo Bay Mines has always contended that the ultimate reclamation amount is substantially less than the figure derived by the Nunavut Water Board. We believe the actually security amount should be set at $15.5 million or less. Today, we will present to the Board what we believe to be a legitimate and reasonable proposal for the schedule of payments, corresponding to the proposed security amount. In its decision the Nunavut Water Board gave notice that the reclamation security issue is to be reviewed annually with the possibility of adjusting the security amount as new evidence or circumstances arise. It is with this annual review

process in mind that we are requesting an amendment to the current total reclamation security amount. The following points summarize our rationale for recommending that the Nunavut Water Board grant our application to reduce the amount of reclamation security for the Lupin operation:

- Echo Bay Mines has an exemplary record of environmental stewardship at each of its North American operations including Lupin.
- Echo Bay Mines has completely reclaimed two mines in the Northwest Territories and 4 others in the United States.
- Progressive reclamation is practised at each of the current operations and completed in a timely basis.

Echo Bay Mines has proven by our actions that we will complete the reclamation of the Lupin Mine. The Lupin Operation has already spent over $5 million on progressive reclamation of the site and further work is planned during each year of operation. Hugh Ducasse and David Hohnstein will present in detail the reclamation work that has already been completed at Lupin and the work planned and budgeted for each year throughout the remaining mine life. You will be given a visual representation of how this plan will continue to reduce the reclamation liability of the operation, not add to it.

We intend to spend an additional $7.7 million on progressive reclamation activities over the remaining mine life. The salvage estimate for machinery, equipment and inventory at Lupin upon closure is considerable and Echo Bay Mines maintains this value should be taken into consideration when setting a schedule of payments for the reclamation security. Should the Bathurst Inlet road and port be constructed, valuable infrastructure at Lupin will be put to good use instead of being disassembled, reducing the reclamation requirement by as much as $1.6 million.

We have obtained an independent estimate by a consortium of reputable northern consulting and construction companies that supports our lower reclamation estimate. Court Smith and John Zigarlick are here today to present details and answer questions regarding their estimates to move esker material to be used as ultimate cover for the tailings containment area. Brent Murphy of EBA engineering will talk about the analysis his firm has completed on our reclamation plan. He will also talk about some research that is required by Echo Bay Mines to prove the viability of the options we are presenting. The basis of our feature research will be to show that an esker cover of 1 metre or less will adequately complete the tailings-related reclamation.

Echo Bay Mines maintains that the reclamation estimate completed by Brodie Consulting ltd – that which formed the basis of the security amount set by the Nunavut Water Board in 2000 – was hastily prepared and based on unreasonable assumptions. Much concern was raised by the BCL estimate comparing the cost for Echo Bay Mines to do the work compared to contractor rates. The reclamation estimate presented today is already based on contractor rates. If Echo Bay Mines determines that we can do the work better or at a lesser cost than our major surface contractor, we will consider it. However, the current situation is that Nuna performs all surface work related to the operation already and we expect this to continue in the future. We do not understand this fear that somehow the cost of the work will dramatically increase if contractors are required to do the work when our estimate is in fact based on this very principle. DIAND has contended that Brodie Consulting Ltd., the Nunavut Water Board and their own reclamation estimates were based using the Reclaim Modelling Program, which they claim is becoming the industry standard.

Echo Bay Mines would like some clarification from DIAND as to their rationale for making this statement because we are not aware of any company that relies on this program. We see the reclaim model only as a tool for roughly estimating reclamation costs in the absence of more tangible data. Reclaim is nothing more than a big spreadsheet. The model inherently produces estimates on the high side because those using it apply layer upon layer of contingencies to compensate for inadequate input data. It is Echo Bay Mine's position that BCL did not do adequate research in producing its estimate. BCL did not visit the mine site even once nor did BCL confer with any Echo Bay Mines personnel. Mr. Brodie admitted at the hearing for the license renewal that he wished he had more time to do an adequate job. We contend that since BCL lacked well-researched input data, he simply included multiple contingencies to derive his unreasonably high estimate.

Compensating inadequate research with fudge factors and masking the result with a fancy name like Reclaim does not constitute good science. The BCL estimate is inadequate by any reasonable standards and it should not be used as the basis of the required reclamation security of the Lupin Operation.

It is that simple. Echo Bay Mines is at a loss to understand why there is any continued support for the work and conclusions reached by BCL. In fact, let me quote for you from Mr. Brodie himself, from his "Reclaim Generic Guidelines" document:

"This model is not intended to replace reclamation planning or to be used to determine the activities required to reclaim a site or to dictate how much should be spent on reclamation. Estimates of reclamation costs

developed using this spreadsheet should be considered as engineering estimates. A contractor's estimate is likely to be more accurate as it will reflect current construction costs for the specific equipment to be used. DIAND, SRK and Brodie Consulting are not responsible for the completeness or accuracy of any reclamation estimate made using this model."

Mr. Chairman, DIAND and BCL are not prepared to take responsibility for the completeness or accuracy of their estimate using the Reclaim Model, yet it was from this estimate that our reclamation security amount was derived. Conversely, Echo Bay Mines and all of our contractors and consultants are unequivocally willing to take full responsibility for our estimate. DIAND also claims in their intervention that traditional tailings reclamation has generally involved recovering of tailings with a quantity of suitable granular material sufficient to ensure that permafrost will re-form in the tailings area and sufficient to ensure that the extent of reformation will be such that even at a time of maximum melt, the active layer will not extend downward into the tailings material. Once again, Echo Bay Mines must ask DIAND for the rationale for making such statement.

Echo Bay Mines contend that this statement is simply not based on actual practice, either in Nunavut, the Northwest Territories or anywhere else throughout the country. Echo Bay Mines proposes to incorporate freezing of the Lupin's tailings to limit oxidation potential because the climate of the region allows for it. Incorporating natural physical attributes into a design is simply good engineering practice. The natural cold climate at Lupin is a valuable addition to our reclamation toolbox and we will utilize it to our best advantage. However, it was never meant to imply that the one and only acceptable method to reclaim the tailings containment area was to totally encapsulate the tailings in permafrost. That we have proposed to incorporate frozen tailings at Lupin in our reclamation plan (and perhaps the K…. [inaudible] Lake property and one other had a similar line of thinking as the only other examples we know of) comes far short from what we would consider constitutes traditional tailings reclamation practice as DIAND would contend.

Our ultimate reclamation plan will ensure that any discharge from the tailings containment meets the discharge criteria specified within our water license. Throughout the history of the operation at Lupin, our discharge water always has met discharge requirements with very little treatment required. There is no good reason to believe that we will not be able to meet discharge requirements once operations are completed and no new tailings are being introduced into the system.

Another comment made by DIAND in their intervention statement is very disturbing to Echo Bay Mines. DIAND claims that Echo Bay has not established any definitive results as yet and that there has been no data generated, no data analysed and no demonstration that the option proposed is effective, feasible, suitable and reliable. Mr. Chairman, Echo Bay Mines has conducted extensive research for more than a decade on our tailings containment area and frozen core dam structures at great expense. We have collected much valuable data and Mr. Murphy will attest to this in his presentation later. We ourselves are experienced operating professionals and we support our work with many different consultants when required. May I repeat that throughout the history of the operation at Lupin, our discharge water has always met discharge requirements. While DIAND may not think so, Echo Bay Mines considers this to be effective, feasible, suitable and reliable performance. Again, there has not been a single good argument put forward illustrating that we will not be able to meet discharge requirements once final reclamation has been completed.

Mr. Chairman, the points I have just discussed represent the basis of our request for this hearing and outline the approach we will take to assure the Board that our request is well founded. Mr. Chairman, within their intervention statement, DIAND has submitted to the Board that they still do not recognize our water license since it lacks the minister's approval. Echo Bay Mines has no intention of entering any jurisdictional arguments regarding our license. Regardless, we need the water to run the operation and we consider our license issued July 1st 2000 and notarized by the Nunavut Water Board as giving us the right to do so. DIAND has also submitted arguments as to what Echo Bay Mines should and should not be able to present at this hearing. Once again Mr. Chairman, Echo Bay Mines also has no intention of clouding the very important and fundamental issue at hand here – the ultimate reclamation of the Lupin Mine – by entering into a procedural debate.

The majority of us are at this hearing today to talk about the technical issues regarding our reclamation plan, not to get sidetracked by matters of procedure. The majority of us want to discuss our reclamation plan on its technical merits, considering costs and ultimate impact on the environment. Everyone attending this hearing wants to be heard and we all have a right to be heard. Input from each person here today is valuable and should be taken into consideration. We are all professionals in our own right and there is much we can learn from one another.

Mr. Chairman, this hearing has severe consequences for Echo Bay Mines and the Lupin Operation. This hearing is not a game for us, nor should it be for anyone else. Mr. Chairman, I urge everyone here today to take this into consideration as we proceed through this hearing process. The

economic realities facing the gold mining industry provide sufficient motivation for both the Nunavut Water Board and DIAND to work with Echo Bay Mines to develop a reclamation security amount and subsequent schedule of payment that is both reasonable and affordable. Demanding or expecting money the company cannot possibly provide is not advancing anyone's interests.

Within their intervention statement, DIAND expresses concern that costs for mine site clean-up do not become the responsibility of the Crown and thus the tax-payer. Mr. Chairman, the Lupin Goldmine is about as far away from being a burden on the Canadian tax-payer as could be imagined. Over $8 million annually of direct tax revenues is generated for various levels of government from the Lupin Mine. These direct taxes I speak of include income tax, property tax, land leases, quarry permits, excise tax, workers' compensation Board contributions and royalties. For the remainder of our expected mine life, this will add up to over $50 million. For the 19 years prior to this, approximately $150 million in direct tax revenues were generated from the operation.

Mining is considered a primary industry that generates spin-off jobs in many sectors, primarily the manufacturing sector, but many others as well. Yes, even government jobs are created in support of the mining industry. The Lupin operation has provided jobs for thousands of different employees over almost a 20-year time period. We will continue to provide many more jobs for the duration of our mine life, many within the Kittikmeot Region where they are much needed. Throw in some non-direct taxes such as sales taxes, municipal taxes and the like and the total tax revenue is that much greater.

Mr. Chairman, taking all this into consideration, it is very hard for Echo Bay Mines, and the mining industry in general for that matter, to understand how any reasonable person can consider us a burden on the tax-payer. The simple fact of the matter is that the Lupin Operation has created tremendous wealth for this country and we will continue to do so unless we are faced with such an unrealistic reclamation security schedule that forces us out of operation. Such a scenario would turn the Lupin Operation from a $50 million asset for the government into a liability. Now that, Mr. Chairman, would indeed place an unnecessary burden on the tax-payer.

Thank you, Mr. Chairman, for the opportunity to present Echo Bay Mines' opening statement. I would especially like to thank the Hamlet of Kugluktuk for hosting this hearing. I would also like to acknowledge all Elders who are in attendance today. Your valuable input and advice is always required and listened to. Mr. Chairman, I would like to turn the

floor over now to Mr. Ducasse and Mr. Hohnstein, who will talk in more specific detail about our reclamation program at Lupin. Thank you.

Kadluk: Thank you. Mr. Lee Webber, you raised your hand there?

Webber: Yes, thank you Mr. Chairman. Lee Webber from the Department of Justice, assisting DIAND. I don't intend to embark at the moment on any response to Mr. Danyluk's opening remarks. He has a right to make his opening remarks. I've held my tongue on that same basis – these are styled as opening remarks and I figured he had a right to make them. What I'd like to put before the Board is in the nature of a preliminary point, a motion if you will. I think it's obvious from the material that has been filed in writing by Echo Bay before the proceedings and for that matter also from Mr. Danyluk's opening remarks, that a good deal of the material which Echo Bay wants to put before the Board today – wants the Board to consider – is either a response to arguments that were already entertained at the proceedings in March 2000, specifically a response to Mr. Brodie's submission. It's a rehashing of material or it's material such as the Nuna estimate, which could have been presented to the Board a year and a half ago in the March 2000 proceedings.

In the Board's decision of roughly a year and a half ago – this is page 31 of the copy that I've got. It's in the section of the Board's analysis dealing with security, under the heading "Periodic Review." There's the statement, for example: "If, on the annual anniversary date the license holder believes the security formally established should be reduced due to evidence not previously available, then the applicant should apply to have the amount and/or payments curtailed." That statement in the Board's Reasons for Decisions – I may have referred to it as the License a moment ago – is one of two starting points.

The other starting point is General Principles of the Common Law and I don't think there's any inconsistency between them. When the Board said that the security might be reviewable on the basis of evidence not previously available, I understand the Board to be including the principle of due diligence. In other words, the purpose of an annual review is not to rehash arguments that were previously made, nor is the purpose of an annual review to give Echo Bay an opportunity to bring forward material that it could have generated – could have brought forward – previously. The purpose of an annual review, as I see it, is to allow Echo Bay to bring forward truly new developments or material that could not reasonably have been generated by exercising due diligence on a previous occasion. A year and a half ago, going into the hearing, Echo Bay had Mr. Brodie's report. There was an extensive period of post-hearing submissions. Echo Bay did in fact make extensive comments on Mr. Brodie's report.

This is not the appropriate occasion for a rehashing of those comments, nor is it the appropriate occasion to bring forward a report which is new, in the sense that it didn't exist a year and a half ago but which could nevertheless have been readily generated a year and a half ago.

Now, we're all in a bit of an awkward situation here. DIAND doesn't want to interfere with Echo Bay's opportunity to present new evidence, to convey to the Board its concerns about the security deposit amount. But I would urge on the Board the idea that there has to be a limit, that this is not an occasion for, as I say, a rehashing of criticisms of the Brodie report, nor is it to be an opportunity to bring forward material such as we've got in the Nuna report – material which is really in essence just a rebuttal of Mr. Brodie's presentation, Mr. Brodie's report. If Echo Bay wanted to rebut Mr. Brodie's report, the time to do it was March of 2000, April of 2000. The opportunity to do it was amply presented to Echo Bay at that time. A hearing before the Nunavut Water Board should not operate as an inexpensive means of judicial review or appeal. So, I'm asking that the Board exclude some of the evidence that is being placed before it – that has been placed before it and is being placed before it – or at the very least, that the Board give it absolutely minimal weight.

I'd also like to raise one further point at this stage: the University of Alberta report which was submitted in written form to the Board and copied to interested parties. As I understand Echo Bay's position, the hypothesis...

TAPE 2 side A

Ignasiak: ... that's not relevant or that's already being considered. And I'm sure that'll be reflected in any final decision. But certainly given the efforts everyone's made to be here, I would like to be able to present the full application. Thank you.

Kadluk: Mr. Webber?

Webber: Lee Webber, just quickly Mr. Chairman. I agree with Mr. Ignasiak that the focus shouldn't be too narrow, my concern is to ensure that the focus isn't too broad. I think, I agree, we've all come a long way to have this hearing and it's reasonable for Echo Bay to have its say. I think, though, that there are limits to the amount of mileage one can get out of the argument that we've all come a long way. Yes, let's hear Echo Bay by all means but let's not have a rehashing – and some of the material we've got (*some* of the material we've got) is a rehashing – let's not have a rehashing of arguments that we've entertained, listened to and dealt with a year and a half ago. Thank you.

Kadluk: Thank you. Let's take a fifteen-minute recess.

... available. Accordingly the Board instructs Echo Bay to focus on new information that it received after last year's hearing, that it would not have anticipated at the time of the hearing or objected to after the hearing but before the final written submissions closed. We also agree that the University of Alberta report should not be a major focus because as Mr. Webber points out, the authors are not here to be cross-examined. We would like to proceed and allow the studies to be filed as exhibits but the oral presentations should definitely not rehash last year's hearing or information. For example, if you can tell the Board what Echo Bay has done last year in terms of progressive reclamation, please tell us now.

Tilleman: Before we went to break, Mr. Chairman, there were a couple of administrative things that needed to be done. One was we need to give advice as to what things should be filed as exhibits and then of course I need to affirm the panel so that we can get right into their presentation.

Regarding the exhibits, what I would propose is that any information that is in the record is already in the public registry and so the Board could refer to that. However, when the applicant or the intervener make references to documents including those written submissions, if you would please, through their council, tell us so we can mark them. For example, we didn't know – at least I didn't know – what Mr. Danyluk was reading from but apparently it's in a written format. So please, we'll just leave that in the hands of Mr. Ignasiak so he can tell us what should be marked. And also then Mr. Webber so he can tell us what should be marked, so we have a copy of that.

So, let me offer – before we begin – to swear or affirm to the two things. One, to mark as Exhibit 1 an annual report of Echo Bay Mines which is "Echo Bay Mines Ltd. Annual Report 2000." And, Exhibit 2 would be a quarterly report – dateline Edmonton, Nov. 1. And these will be on the table for intervener and of course for Echo Bay to look at. From what I can understand, they are public documents. And then, you will be seeing a PowerPoint presentation. I think Mr. Ignasiak has offered to reduce that to a CD-Rom that can be sent to the Board immediately at the end of the hearings, so if we want to mark that as Exhibit 3.

Ignasiak: I propose that the written statement that Mr. Danyluk read off the mark is Exhibit 3. And there are copies of that available at the back for anyone who would like to have a copy. I propose that there will be three PowerPoint presentations today over here. And what I propose is that at the conclusion of the hearing, once back in Edmonton, Echo Bay will burn all three of those presentations onto one CD-Rom and provide one of those to the Board. And so, it's at your discretion but I propose that we simply

mark the CD-Rom as one exhibit containing all three PowerPoint presentations.

Tilleman: So we agree, Mr. Chairman. So if I could just affirm all the witnesses that will give evidence here today. And, what I'll do is just go through the names and, in order to have you sworn, gentlemen, I would have had to steal a Bible this morning and I elected for reasons stated, frankly, in Exodus chapter 20, not to steal a Bible. And so, I left it where it was and so with the indulgence of the Board, and especially the witnesses, that means we'll have to affirm you today, if that's okay?

Kadluk: Mr. Webber.

Webber: Lee Webber, department of Justice for DIAND. Just on the question of the labelling of exhibits, I am a little bit fearful that this issue of which evidence is proper and which evidence is not may rear its head again and for that reason I'm wondering whether it might be better, rather than including all three presentations in one CD and labelling them all as one exhibit, deal with them separately just in case there is something in any one of the presentations which is found to be objectionable.

Ignasiak: Thank you Mr. Webber. So that means, then… so Exhibits 4, 5 and 6 will be three CD-Rom presentations that they will identify in their presentation, Mr. Chairman.

And so, if we could now then affirm the witnesses so you can begin. And let me see, is it correct that the people to present will be Mr. Ducasse, Mr. Hohnstein, Mr. Smith, Zagarlik, Murphy, and McCrank? And are those all of your witnesses? And Mr. Danyluk. Okay, let's go through them in a hurry. Mr. Danyluk, please spell your last name for the record.

Danyluk: D-a-n-y-l-u-k.

Tilleman: Do you affirm that the evidence you have given in any report or are about to give in these proceedings is the truth, the whole truth and nothing but the truth. Do you so affirm?

Danyluk: Yes, I do.

Tilleman: Mr. Ducasse please spell your name for the record.

Ducasse: D-u-c-a-s-s-e.

Tilleman: Do you affirm that the evidence you have given in any report or are about to give in these proceedings is the truth, the whole truth and nothing but the truth. Do you so affirm?

Ducasse: Yes, I do.

Tilleman: Mr. Hohnstein, please spell your name for the record.

Hohnstein: David Hohnstein. It's H-o-h-n-s-t-e-i-n.

Tilleman: Do you affirm that the evidence you have given in any report or are about to give in these proceedings is the truth, the whole truth and nothing but the truth. Do you so affirm?

Hohnstein: Yes, I do.

Tilleman: Mr. Smith, please state your last name for the record, even though it seems obvious.

Smith: S-m-i-t-h.

Tilleman: Do you affirm that the evidence you have given in any report or are about to give in these proceedings is the truth, the whole truth and nothing but the truth. Do you so affirm?

Smith: Yes, I do.

Tilleman: Mr. Zigarlick , please spell your surname for the record.

Zigarlick: Z-i-g-a-r-l-i-˚C-k.

Tilleman: Do you affirm that the evidence you have given in any report or are about to give in these proceedings is the truth, the whole truth and nothing but the truth. Do you so affirm?

Zigarlick: Yes, I do.

Tilleman: Mr. Murphy, please spell your name for the record.

Murphy: M-u-r-p-h-y.

Tilleman: Do you affirm that the evidence you have given in any report or are about to give in these proceedings is the truth, the whole truth and nothing but the truth. Do you so affirm?

Murphy: Yes, I do.

Tilleman: Mr. McCrank, please spell your name for the record.

McCrank: M-˚C-˚C-r-a-n-k.

Do you affirm that the evidence you have given in any report or are about to give in these proceedings is the truth, the whole truth and nothing but the truth. Do you so affirm?

McCrank: Yes.

Tilleman: Thank you sir. Thank you Mr. Chairman. We're now in the hands of the applicants.

Kadluk: Thank you gentlemen. I would like to remind you just for the record that any time you are wanting to speak, please state your name for the record because this hearing is being taped.

Mr. Danyluk, have you got any further comments to make, opening comments to make?

Danyluk: Yes, Mr. Chairman, just one comment. I would like to apologize for not following our agenda. I got mixed up a little bit there and I took the liberty to make my opening statement and now I see that we should have continued on with some introduction.

Kadluk: Thank you. At this point in time, I would like any elder if there is any to speak if they wish to speak. The Board considers traditional Inuit knowledge has an important role to play in the decision making process, along with the Western scientific knowledge.

There's none?

Okay, to carry on, to my knowledge, the only persons or agencies that have submitted formal presentation to the Board is DIAND. To DIAND legal counsel or representative, please introduce yourself and name the organization you represent. Mr. Webber?

Atwood: [Inuktitut greeting.] Mr. Chairman. My name is Will Atwood. I'm the Regional Director General for Indian and Northern Affairs Canada, regional office in Iqaluit, Nunavut. It's a pleasure to be here today in Kugluktuk – it's been, I believe, four years since I've been here last – it's always a nice community to come visit. We have with us today a number of representatives from our regional office. We're using this as an opportunity for our staff to get into the community, to get to meet some

people, to see and appreciate and understand the work of the Nunavut Water Board. So, it's an excellent education experience for them.

Just by way of brief, very brief, background, with the establishment of Nunavut on April 1, 1999, DIAND also took the occasion to establish a new regional office headquartered in Iqaluit, with offices in Rankin Inlet and Kugluktuk to administer the department's responsibilities with respect to resource management, but also with respect to the department's other business, which is Inuit programs and services. So it's certainly our pleasure to be able to bring that additional work for the department into Nunavut.

By way of introduction, our delegation consists of Stephen Traynor, who's the director of operations for the Nunavut Regional Office. Stephen's responsible for overseeing the lands, minerals, environment and waters divisions of our regional office.

Everyone seems to know Mr. Lee Webber, who's our legal counsel and always a pleasure to be with again, from the Department of Justice, but with DIAND on this file.

Paul Smith – Paul is our regional manager of water resources and will be giving a statement a little later on.

We also have with us in the audience, Jennifer Creebik, who is with our communications branch, who recently joined us. Jacquie Simms, who's from our Policy Branch from the regional office. It's maybe her first trip to Kugluktuk, I'm not sure. As well, we have Alex Bernard, who's an articling law student from the Department of Justice travelling with us as well. So with that, Mr. Chairman, I turn to you.

Kadluk: Thank you. As of now, no one else has expressed a desire to speak or present evidence on matters under consideration at this hearing. I invite anyone who would like to make a presentation to the Board to come forward and state their name and organization whom they represent. At this time, this invitation is for presentation and not for questions.

Are there any individuals or organizations who object to proceeding with this public hearing?

No individual or organization has stated a written objection to the holding of this hearing. At this time, I call any organization or individual who may object to the holding of this hearing to state their concerns and reasons for objection.

If no one has any objections, we shall proceed without further delay.

Mr. Danyluk, would you please proceed with your presentation as mentioned earlier. As mentioned earlier, because of technical and legal nature of the issues, please assure witnesses to be very clear and paced during your presentation. Thank you.

Danyluk: Mr. Chairman, unless everyone would like me to rehash my opening statement I will just turn the mike over to Hugh and David.

Ducasse: Mr. Chairman, my name is Hugh Ducasse, I'm the manager of loss control at the environmental cares at the Lupin Mine and I've been working for the Lupin Mine since 1985. I'd like to thank you and the members of the Board for this opportunity to present information regarding reclamation activities at Lupin.

I will discuss… we're just waiting for this to brighten up a little bit, Mr. Chairman. I will discuss some of the reclamation work that has been done to date in the industrial and residential facilities at the site.

…. At the tailings containment area and our conceptual plan for completing the reclamation of the tailings containment area. If at any time you find that the information I'm giving you is unclear or if you have any questions, please do not hesitate to let me know.

Over the years, Lupin has diligently practiced progressive reclamation of the site. At the end of the summer, we have spent a total of $5.6 million on reclamation work at the Lupin Site. And we are now at the point where there is very little that can be done in the industrial and residential areas of the site until after we have finished milling.

This aerial photograph was taken in August of this year, starting at the top of the photo, we removed the fuel transfer station and all the associated piping that was just west of the airstrip. Just east of the airstrip there are three roads. Several of these and several others that are not in this photo were removed from service by having the accesses removed and the surface of the road scarified to promote natural re-vegetation. In total, approximately 1,500 metres of roadway have been reclaimed in this matter. The original airstrip that serviced the Lupin site has also been reclaimed by removing the access and scarifying the surface.

In 1987, we had a leak in the tailings line just south of the sewage ponds. This area was reclaimed by stripping the tailings material and the surface soils and covering the area with esker. This work was completed in 1995 and since then natural re-vegetation has taken hold. Several storage buildings that were near the floatplane dock have also been removed.

This is another aerial view of the industrial and residential facilities. The two holes in the ground on the right of the photo are the centre zone and west zone crown pillars. This is where the air body has been mined right up to the surface.

The yellow arrow points to a location of what was a third hole, the east zone crown pillar. A considerable amount of scrap steel was dumped into this hole. It was then covered with approximately 25 metres of oversized waste rock and underground waste rock and finally the overburden that had been previously stockpiled from prior to crown pillar mining was pushed back over the site and regraded.

We have recently begun back-filling the centre zone crown pillar since mining is now complete in this area. When this has been filled, we will once again push the overburden over it and regrade the area. Once the west zone crown pillar is completely mined out it will be kept open until the final reclamation of the site begins. It will then be used for disposal of non-hazardous scrap material and, like the east zone and centre zone, will be capped with waste rock and overburden.

Just below the yellow arrow was the location of a large steel-clad building that was approximately 80 feet by 140 feet. This building was sold, dismantled and shipped to another mine site in the Northwest Territories.

The next four slides will show the reclamation work that was done this summer. The two orange buildings that you see in the foreground were the A and B annexes and were used for accommodations in the first few years of Lupin's operations. Since then, these buildings were no longer needed. They were removed from the area and the area was regraded.

This picture was taken during the dismantling of the red path annex. Once again these buildings were used for accommodations in the earlier days and were no longer needed.

This is the same area after the buildings were completely removed and the site regraded.

The original 6-inch diameter tailings line that ran from the mill to the tailings containment area was also removed this summer. This was approximately 6 kilometres of pipe.

That concludes the reclamation that we did this year. Mr. Chairman and members of the Board, I hope this brief presentation has given you some insight into some of reclamation that has taken place at Lupin to date. As I mentioned earlier, we have done just about everything we can do in terms of reclamation in the industrial and residential areas of the site at

this time. As other facilities become obsolete, they too will be reclaimed, and we do have plans for progressive reclamation of the tailings containment area, which Dave will present next.

As you know, Lupin is not the only mine that Echo Bay operates or has operated. Echo Bay has three other operating mines in the United States and at each of these properties, Echo Bay practices progressive reclamation. The quality of this progressive reclamation work is evidenced by the fact that the McCoy Mine has received the Nevada State Excellence in Mine Reclamation Award for waste-drop dumps and for wildlife habitat enhancement. The Round Mountain Mine has received the Nevada Department of Environmental Award for Excellence for the ongoing reclamation of the Manhattan site. And the Sunnyside Mine has received the Colorado State Reclamation Award.

In addition to the four operating mines, Echo Bay has fully reclaimed several others. In the Northwest Territories, Echo Bay reclaimed the Pine Point Mine and the Port Radium Mine. In the United States, we reclaimed the Alaska Juno Mine, which was recently given a complete release without prejudice by the state of Alaska. And we reclaimed the Borealis Mine, which received the Nevada State Excellence in Mine Reclamation Awards for both mine reclamation and overall mine reclamation.

Our history shows that Echo Bay has not only met our reclamation obligations but we have gone beyond the industry standard and have been officially recognized for our environmental commitment. There is no reason to believe that we will do otherwise at the Lupin site. This concludes my presentation. Mr. Chairman and members of the Board, thank you for listening. If you have any questions, I'll do my best to answer them. Otherwise, I'll hand it over to Mr. Hohnstein to talk about reclamation at the tailings containment area.

Kadluk: Mr. Webber?

Webber: I'm sorry, I'm just reading a note here. Mr. Ducasse, you mentioned some American mines that Echo Bay was involved with and cleaned up. At each of those mines, did you have to post any security?

Ducasse: Excuse me. Mr. Webber, I think Mr. McCrank has more knowledge of this and can answer the question.

McCrank: At the AJ Mine that we're talking about, no, the answer is no. At the Borealis that was mentioned the answer is no. At Round Mountain, what we had posted there is what we call a corporate guarantee, that's based on the viability of the company – of the American company. And, at the McCoy Mine, the same thing. We do have small amounts of bonds posted

at Round Mountain and McCoy but the majority of it is corporate guarantee.

Webber: What does a corporate guarantee consist of?

McCrank: Our name on a paper. We sign a document saying that we'll do the job.

Webber: And are there any financial conditions attached?

McCrank: Yes there is. I'm sorry. It's based on the economic viability of the company, based on your cash flow, your net debt, a convoluted number of calculations that an accountant can explain to you. But right now, we are viable for the corporate guarantees in the United States. We have approximately – for the mines that we have in the United States – our corporate guarantee amounts about $35 or $40 million I think it is, that meets that criteria.

That number that I'm quoting is a ballpark number. It's not exact. It's in that range.

Kadluk: Thank you Mr. McCrank. Any questions from the Water Board Resource staff? Dionne?

Filiatrault: Thank you Mr. Chairman, Dionne. Just referring right now to Exhibit 1 that we posted – it's the Echo Bay Mines Ltd Annual Report for 2000. And just for the information of DIAND and maybe a comment from Jerry McCrank, it states in one section that in early 2001 regulators in Nevada formally called upon two of the company's subsidiaries to provide other security to replace corporate guarantees that had been given in respect to Round Mountain and McCoy Cove operations. I'm not sure – maybe comment on that statement? It's on page 16, if you'd like.

McCrank: Can you repeat the question please?

Filiatrault: Thank you, it's not really a question. It's more just an opportunity to comment as follow-up to DIAND's question where you had stated that both – was it McCoy and Round Mountain – were both under corporate guarantee. I'm going to read a statement from you annual report that states, "Early in 2001, regulators in Nevada formally called upon two of the company's subsidiaries to provide other security to replace the corporate guarantees that had been given in respect to the Round Mountain and McCoy Cove operations." If you could just comment on that?

McCrank: The only comment I can make is that the Nevada Department of the Environment asked Echo Bay to post additional cash bonding. We

appealed that to the BLM. The BLM has not requested any more money right now. But that's still under negotiations with them.

Filiatrault: Did they give any reasons as to why they were requiring another form of security?

McCrank: The way they interpreted the accounting practices – they didn't like the numbers. It's as basic as that. Our numbers don't look good, if you're familiar with reading balance sheets and spreadsheets, our numbers are not that great. We do have a high debt load. That debt load has been corrected. If you've been reading the press releases that may be came from Franklin Nevada of ours, it still has to be approved by shareholders' agreement. But by early next year we hope to waive about $160 million U.S. off our balance sheets, so we are going to be looking quite good, once this deal closes. So, as far as financial look, on the sheets, we're going to look a lot better.

Well, that's why we don't look good. But no gold mining industry looks good right now, even Echo Bay.

Kadluk: Thank you. May I remind everyone of you to please state your name for the record as this public hearing is being taped. Thank you. Mr. Webber?

Webber: Could I just ask for clarification, Mr. McCrank, you used the initials BLM. What do those stand for?

McCrank: I'm sorry, say again.

Webber: I believe you used the initials BLM when you were talking about an appeal procedure in the states –

McCrank: The BLM, Mr. Chairman, is equivalent to what we have here in Canada, called DIAND. They look after all federal lands. It stands for Bureau of Land Management.

Kadluk: Thank you. Any further questions?

Ignasiak: It's not so much a question. Just so it's clear on the record, we've broken away from the traditional format of the presentation followed by cross-examination at the conclusion of them. But this was discussed earlier, off the record, and I just want to put on the record that Echo Bay Mines agrees that this is a better process to follow because I think it helps clarify things if, that, we take after every segment of the presentation by Echo Bay Mines, the opportunity to do what was just done. I think that'll make the process easier for everyone, and make everything clearer, as opposed to waiting until the end of the entire presentation to have questions posed.

So, Echo Bay Mines supports that, and I thought that should be on the record.

Kadluk: Thank you. Echo Bay Mines, did you have further comments to make. Mr. Hohnstein?

Hohnstein: Yes, Mr. Chairman –

Kadluk: Oh, just one moment, hm, Dionne?

Filiatrault: I wasn't aware that we were going to be asking questions, I was going to save all my questions to the end, but if that's the way that we want to proceed, at this point I do have a couple questions just based on what you had to say. You talked about some reclamation this year, in 2001, and some previous reclamation work that was done. Specifically with the work that was done as recently as this summer, do you have any figures or financial values as to what the cost that you've expended in the last year associated with the reclamation of annex A and B. I believe the other ones were the red buildings and that 6 kilometres of pipeline?

Ducasse: Yes, Mr. Chairman. There was some other work that Dave will refer to in his presentation, that was done at the tailings containment area. The total amount we spent on reclamation in 2001 was $194,000.

Kadluk: Thank you, would you please proceed.

Hohnstein: Thank you. Good morning Mr. Chairman, members of the Board, Water Board staff and ladies and gentlemen present today. I'm here today to present information on Lupin operations, specifically with regards to tailings management and the reclamation work that is to be carried out at the tailings containment area, or the TCA.

I would like to invite any questions during the presentation so that we may provide a response with the relevant materials in front of us, up on the screen.

To the benefit of those in attendance who are unfamiliar with the Lupin tailings area, I've included an aerial-view slide to illustrate the management of tailings and the concept behind the solids and water storage and the separation into the two main components of the TCA, the solids retention cells and the water-holding ponds.

Once the gold has been removed from the ore, the waste product (the tailings) is transferred to the TCA for long-term storage. Alternately, milled tailings are utilized in the backfield plant where the solids portion is

mixed with cement and transferred back underground to provide ground support for the mining process.

Placing the tailings solids reduces the impact on surface and allows the current tailings area to provide storage over a longer period of time. The milled tailings is currently placed in either cell 3 or cell 5, depending on the time of year and the length of time in use. Within these cells, the solids settle out and the water portion is collected. This water will remain in these cells until seasonal transfer of water from the TCA ponds has been completed. Generally, the water within the TCA is transferred in a batch process whereby one area is emptied prior to transfer of water from the preceding area. This starts seasonally in July, with the transfer of pond 2 contents via siphons to the environment. Once as much water as possible is transferred from pond 2, the transfer of water from pond 1 can take place. This again, is accomplished with the use of siphons. The water is then held until the next season for discharge to the environment.

There have been occasions in the past where the water quality of pond 1 has been exceptional and was transferred concurrent with the discharge of pond 2. Water held within cell 4 is then transferred to pond 1 and stored for approximately 1 year. During this time, natural treatment of the water takes place and an assessment of the water quality can be made prior to next season's transfer and treatment may be applied if necessary.

The water that is accumulated in cells 3 and 5 is then transferred to cell 4 for storage until the following year. Due to the distance between the cells, a pumping system is used to transfer the water from cell 5. Generally at this point, the TCA is now ready for a winter season of tailings placement with regards to storage.

At this point, I would like to switch focus from the general operations of the TCA to the issue which is the basis of the meeting today, reclamation. Reclamation of the Lupin site has been estimated in excess of $15 million upon closure of mining operations. This amount can be greatly reduced by carrying out progressive reclamation that is current with the operations up to the end of the forecasted mine life. At present, approximately one half of the closure costs are associated with the closure of the tailings containment area.

With a foreseeable end to the mining operations at Lupin, it is possible to forecast and plan ongoing reclamation at the TCA to substantially reduce the closure cost prior to actual cease of operations. Progressive reclamation planning is endorsed by management of Echo Bay Mines and its environmental policy, as well as forming a part of the water license issued by the Nunavut Water Board and the current draft Northwest Territories Mine Reclamation Policy put forward by the Department of

Indian Affairs and Northern Development. Within this portion of the presentation, I would like to illustrate for the Board and for those in attendance the forecasted progressive reclamation work that can be accomplished at Lupin with the next 5 years.

The Lupin operation was granted a water license from the Board effective July 1, 2000 through to June 30, 2008. During this license period, the mine and ore production is planned at approximately 4.3 million short tons. The TCA storage available as of 2000 is approximately 2.1 million cubic metres. This has been increased by approximately 600,000 cubic metres through the raising of an internal dyke referred to as M-dale [inaudible].

With mine closure in the foreseeable future, the focus of the tailings management is to maximize the available storage through the construction of smaller containment cells within cells 3 and 5. This will allow a staged filling of sections within the TCA and provide manageable areas for esker cover placement during the mine life.

Timing for the first covering component is to be scheduled in 2003 to correspond with mobilizing equipment to Lupin and having an area of suitable size available for cost-effective construction.

With the staged utilization of the TCA cells and the progressive reclamation schedule through to the end of mine life, the slide shown here illustrates the appearance of the TCA upon completion of activities. I would like now to take everyone through the conceptual progressive reclamation plan which corresponds with the mine's operating plan over the next 6 years. Within this operating plan, starting in 2003, there has been approximately $1 million per year budgeted for ongoing reclamation work.

This slide shows the current status of the Lupin TCA as of August 2001. Please note the location of cells 1 and 2, and the esker cover that is being placed on top of tailings. This work was carried out in 1995 once the cells were filled to capacity and no further tailings deposition would be possible. The upper corner of cell 2 remains to be covered and was used for some tailings deposition in 2000. The covered area makes up approximately 1/3 of the total cell area requiring covering at the Lupin TCA. Approximately 2/3 of the total area is forecasted to be covered between 2003 and 2008.

In 2001, cell 3A dyke was completed and the cell was used for tailings deposition throughout the summer, as is visible in the aerial photo. These many cells are sectioned up by a simple walk-out and end dump construction method utilizing waste rock or esker material. The cells then

provide an ideal settling environment for the tailings solids and allow the filtering of water to leave the area relatively flat for final covering.

In the next series of photos, the forecasted cell construction and use is illustrated by layering specific components upon the original photograph to explain the sequence of events on an annual basis and a conceptual final TCA closure.

In 2002, the second and third mini-cells are to be completed within cell 3. In fact, cell 3B was begun in 2001 and should be completed prior to yearend. As well, the divider dyke and sulphide will be raised to provide additional separation of water from the solid tailings and develop the first of 4 mini-cells. This dyke was also raised prior to the end of summer 2001.

In 2003, planned progressive reclamation work will begin with the final covering of a portion of cell 2 with approximately 1 meter of esker material. The newly constructed cells 3A and 3B will have been filled during the summer of 2002 and will be covered with 1 metre of esker.

Construction of divider dykes for cells 3C, 3D and 3F will take place, each one being built as the previous cell is being filled. During the colder months, the tailings deposition is rotated to minimize tailings depth and the retained water. The dam 6 divider dyke and sulphide will be brought up to its maximum elevation. Unfortunately the aerial photo used in this presentation does not include the extreme western portion of cell 3, for viewing of the two small cells 3B and 3F that are parallel with dam 6 and are not shown. A tailings drawing is available for later review.

In 2003, the first work on re-sloping of perimeter dams will take place. This work requires initial geo-technical evaluation to determine suitability of materials as well as the final slope that is required. Generally, a slope of 1 to 2 or 1 to 3 would be adequate for long-term stability and erosion protection. Two smaller dams, 1B and 1C, along dam 2, will be brought up, along with dam 2, to final recommended specifications. Covering of the mini-cells of cell 3 continues with cells 3C.

In 2004, the covering of mini-cells within cell 3 continues with cells 3C, 3D, 3E and 3F. Cell 3G and 3H divider dykes are to be constructed. These cells, along with cell 5A, will be filled with tailings during the year to their constructed elevations of 489 metres. Work will continue on the closure preparations on dam 1A and dam 4 to provide suitable slopes as recommended by geo-technical experts.

Covering of small cells continues in 2005 with cell 3G. Cell 3I and 5B divider dykes are to be built in cell 2005. These cells and cell 3H will be

filled with tailings to their final elevation of approximately 490 metres. Work will be completed on the closure preparations of dams with the addition of slope material for dam 5 and dam 6. These two dams are very small, less than 2 metres in height and are expected to have tailings solids against the upstream slope at closure.

Covering of cells 3H and 3I will take place in 2006, along with a partially covering of cell 5B. Cell 5B will only be partially covered due to funds available for reclamation on an annual basis. Tailings deposition in 2006 will take place into cells 3J… no input of tailings during the course of the previous year…

Tape 3 side A

…between 0.5 and 1.5 metres of actual underlying tailings. As well, this active zone is seasonally active, being active or unfrozen for approximately two to three months of the year.

In 2009, continued monitoring of the tailings ponds will take place to determine any water quality problems. Water will continue to accumulate within the facility from general precipitation and runoff. As water levels increase within the TCA, it will be necessary to construct an overflow channel, conceptually planned for a location north of dam 1A within the bedrock.

To provide a natural or gravity flow of water within the TCA, the J-dam will require opening or lowering of the crest to allow water to flow from pond 1 to pond 2. This slide shows the projected configuration of the TCA with respect to water flow and runoff from the covered cell areas for control and monitoring and release through the designed overflow to the environment. The divider dyke located at the southeast corner of cell 4 will also require removal or application of waste rock to stabilize it and allow flow of water overtop into pond 1.

That concludes the description of what reclamation work planned at Lupin with regard to the TCA during the license term. The following slides are slides that illustrate some re-vegetation that is taking place at Lupin. This slide shows some examples of the vegetation variety that has been occurring upon the areas that have been reclaimed in the recent past.

The first two photos show vegetation occurring on cell 1, which was covered with esker material 1995. Dwarf birch appears to invade rather well, as do a variety of grasses. The third photo shows willow growing on a reclaimed area associated with the tailings spill from 1987. This area was also reclaimed in 1995.

This slide shows numerous patches of grass beginning to establish on cell 1. This area was covered in 1995. When allowed to proceed naturally, it is evident that vegetation will natural establish on the reclaimed areas.

This slide shows the downstream slope of dam 1B and the vegetation that is established over the course of mine life. Some of these grasses and shrubs are very mature and thriving in the sheltered down slope of the dam.

This next slide shows an area of cell 1A where in 1995, during the covering process of cells 1 and 2, material from the Finger Lake esker, which is our borrow source for material, was removed and placed upon the esker cover of the cell. There was little re-growth from the soils the first couple of years but has established very well in recent years.

This slide again shows an area of cell 1A that received a portion of the overburden material stripped from Finger Lake esker in 1995. If future opportunities exist and more of this type of material becomes available through construction requirements, it may be beneficial to spread more widely these materials, giving more location for natural vegetation to re-establish on the esker-covered tailing cells.

These last few photos that I've shown with the re-vegetation, there was a date stamp on the photos. They were taken from this fall, 2001, I think they were taken end of August, beginning of September.

That concludes this portion of the Lupin presentation. I would like to thank Mr. Chairman, Board members and everyone in attendance for their time, and invite any further questions with regards to the information that we're presented. Thank you very much.

Kadluk: Thank you, Mr. Hohnstein. Any questions from the interveners? Mr. Webber.

Webber: Thank you, Mr. Chairman. Mr. Hohnstein, has Echo Bay submitted an interim A&R plan to the Board?

Hohnstein: Mr. Chairman. Yes, one was submitted, I believe it was submitted in April of this year.

Kadluk: Dionne?

Filiatrault: Thank you Mr. Chairman. I have in front of me the interim A&R plan that was submitted by Lupin Mine. It was received in our office on May 23. The cover letter is dated April 26, 2001. The document itself is dated April 28, 2001, and that document was distributed to the interveners.

Kadluk: Thank you Dionne. Any further questions? Mr. Webber?

Webber: I'm going to admit that I haven't read the interim A&R plan so I'm going to ask Mr. Hohnstein, the reclamation plan that you've just sketched out. Is it the plan that's also been sketched out in the A&R plan which has been submitted to the Board?

Hohnstein: I believe the schedule as such that was presented today wasn't included in the plan. The general concept of progressive reclamation of the TCA was. This was essentially developed along with the mine plan and some of the latest funding that we've put into our operating plan.

Kadluk: Thank you. Any further questions? Mr. Traynor.

Traynor: Yes, with regard to your pond 1 and pond 2, do you have any indication as to how deep the tallic [inaudible] may be in those ponds given that they've been open water for quite awhile? The reason that's important for the Board is just that when there's open water, it's a source of heat and it reduces the permafrost below it. So once you remove the water, you then have to re-freeze that ground to be able to become a permafrost. So therefore it can considered part of an active layer, but it's generally referred as a tallic. So do we know how much tallic or unfrozen layers there are below pond 1 and 2?

Hohnstein: I guess, just going back to the reclamation plan, just as a point of clarification. Ponds 1 and 2 will not be drained upon closure. The intent is to leave them containing water, and I guess to answer Mr. Traynor's question, no, we do not know the depth of any tallic if there is one that has developed underneath the tailings area.

Traynor: As an addition to that, do you then have any reasonable expectation that that potential tallic below, if there is one, below pond 1 and 2, would have any effect or impinge upon the rehabilitation activities of the surrounding cells?

Hohnstein: I don't have the information available to me, I'm not familiar with it, but I'd like to defer the question to Mr. Brent Murphy with EBA.

Kadluk: Thank you.

Ignasiak: Mr. Chairman, perhaps we could make a note of that question and it could be asked again during Mr. Murphy's presentation since he'll be going into more detail with respect to the tailing containment area. We suggest that, if it's agreeable DIAND.

Kadluk: Mr. Traynor.

Traynor: Given the information we've just heard with respect to – we have what was submitted end of April, May – an interim A&R plan – we've now heard a presentation that is not contained within that A&R plan. Do we have some sort of, can I ask the Board for clarification on what the expectation is with regard to approvals or non-approvals of the interim and whether those need to be done? And, how does this new information play on having the opportunity for all parties, speaking not only on behalf of myself, for Indian and Northern Affairs, but my colleagues within the federal family, whether it's DFO, Environment Canada and the opportunity they may have to comment or review on afore documentation of the proposed plan?

Kadluk: Dionne.

Filiatrault: I can clarify that for the Board, as I'm the one responsible for doing the technical reviews of the documents. Those documents were distributed along with the application and independently through the technical review process. They have not been approved at this point in time by the Board. It was my view that there would be supplemental information that would be presented at this hearing that could have potentially impacted those documents and they will be discussed separately, but following this hearing.

Kadluk: Mr. Traynor.

Traynor: Thank you very much, Dionne, for clarifying that. As I have not myself seen that document or, just today, seen today the proposed changes, given that the matter before us is security deposit and the importance to the Crown regarding liabilities, is there information vis à vis the new information provided today that basically tells us that given this program schedule of reclamation, how much each year the liability is reduced over the life year by year by the activities that are undertaken by your proposed tailings reclamation?

Kadluk: Mr. Danyluk.

Danyluk: Yes, to answer Mr. Traynor's question, the tailings containment area has had some progressive reclamation done, as you've seen on the slides, since 1995 and even earlier. What we endeavoured to do with this new schedule was to show on a year by year basis in more detail, as Dionne mentioned, that we have indicated that we will do progressive reclamation. Now this shows on a year by year basis, the exact work that's going to be done and yes, we have a document here that has the exact dollar value attributable to each year of operation and how the proposed security

amount will be reduced on a year by year basis. I will be discussing this in more detail once our representatives from Nuna and EBA have completed their presentations.

Kadluk: Thank you Mr. Danyluk. Mr. McCrank.

McCrank: I'm getting a little bit confused here about details and what we have submitted in changes. I do believe that, unless I'm wrong in this, we always intended to be covering the tailings pond. What we presented here today is just more detailed, narrowed down by what we're going to do today, tomorrow, the next day. But it was always being covered, so there are no changes. Am I wrong David?

[inaudible]

Traynor: Can we have that exchange please, on microphone?

McCrank: Yeah, I understand what you are saying. It was always planned to cover the tailings pond in blocks. That's been established that way since back in 1990 at least. What Dave showed today was block by block by block how we're doing it, to be able to demonstrate to the Board how much money Echo Bay will have available to spend year by year by year to get to that end point 2009, having it all done. But it all envisioned, this whole plan envisioned covering it by the life of the mine.

Kadluk: Mr. Traynor.

Traynor: Stephen Traynor, DIAND. Thank you very much Mr. McCrank and you are correct, it was always assumed that the tailings would be covered in a progressive manner. What the issue, which has not been decided to date, that you're looking for today, is the understanding that it would be covered progressively and that the amount of that cover would be in the 1.75 to 2 metre range. What you've stated here today is that you will progressively cover as you've suggested, and yes you've provided more detail as to how that will be, and that certainly goes a long way to understanding how that reduces the liability over the life. However, you have made the statements that you will only be putting 1 metre of fill and it is my understanding is that the task here today is to understanding what new information you're going to provide which would allow for a reduction in security. And, hopefully, you will be presenting that information, as opposed to just saying this is the progressive one we're proposing. So, we're not in dispute, but we are saying that we haven't seen the full picture, including the amount of material that you're now proposing, on the table.

Kadluk: Mr. McCrank

McCrank: He's right. Things are evolving. This is a presentation, some questions are being pre-empted, coming sooner than the presentation. Bill Danyluk, for example, is talking about how much money his mine will be spending per year. That question came up before he had a chance to comment. The question that Mr. Traynor is asking about, the 1 metre versus 1.75 metre, that is coming up too, so maybe some of the questions are better held back until our whole presentation is done. I do like the idea of answering the questions as they come up, but a lot of our answers are coming up as the presentation is coming out. That's why EBA is here, to tell what they feel that we should be doing. Bill Danyluk explained how much money we have available for the plan and put in our budget and our cash flow to be able to pay for it. At $2.75 gold, this is what we can do and it works out that way and it's planned that way. So I'm hoping that all these questions will come out and we'll answer them as they come up as well. Thank you Chairman.

Kadluk: Thank you Mr. McCrank. Mr. Tilleman.

Tilleman: Just following on that and then reminding us where we are and it's almost noon. I think actually, both the intervener and the applicant are right. The current license does require the presentation we had in May and also what we're learning today. I think Mr. Traynor's point, and it's a good one, is we're here today to learn how much, if any, should this be reduced from $29.2. So you need to tell us exactly why today, what have you done in the last year or so, that would suggest to this Board that you have now reclaimed to the extent that allows them to give you a credit. You mentioned $196,000 and that's the start. And so what else have you done in the past year and a half or so that would suggest the Board would reduce this right now. As opposed to saying, in 2003, 4, 5, 6, 7, 8, 9 this is what we are going to do, because at that time, annually, you have the right to come back, 'okay this is what we did, as we told you a couple of years ago, and this is what we've done this year, as we told you.'

And so, each year that goes by, you can come back and make that request because I assume that what you're not doing is making a global request for a reduction based on what your estimates will be performed from today.

Secondly, Mr. Traynor's point about the reduction in the amount – the fill amount – is an issue that relates to cost and also to the viability of that to protect the environment. And that's another issue that we need to address because I'm sure that's what the Board wants to know: what are we going to do right now? And based on what evidence?

Now, regarding the timing for the noon break, it doesn't matter to me, Mr. Chairman. Maybe if you ask the applicant and the intervener what they

thought, maybe we could break now or 12:30. Why don't you just ask the audience and then the Board can decide and you can do whatever you want to do?

Kadluk: It's now 12 noon, what are your suggestions here? Should we break for lunch now because the hotel is extremely strict on meal times? I would suggest very strongly right now that we come back and reconvene at 1:15 sharp. Ok? Mr. Traynor.

Traynor: One thing I'd ask is the arrangements that we had, since it is very busy, is that our lunch will not be prepared until 1 so if we could ask for a 1 to 1:30 and we can make sure that we're back here sharp and see what we can do to assist in that matter.

If we could break at 1:30, that would be even better for us. But I don't know what the arrangements are made for every other party here.

Kadluk: Applicant, what's your suggestion? Do you have a problem reconvening at 1:30?

Danyluk: I would urge that we do break now, just that our subsequent presentations will have more clarity if we do them back to back rather than perhaps do one now and then break, come back and do others. If we reconvene at 1:30 instead of 1:15, I don't see that as a problem.

Kadluk: Okay, we will break now and reconvene at 1:30. Thank you.

[break]

Let's proceed with the public hearing. Mr. Danyluk, if you could introduce your next speaker.

Ignasiak: Just as a preliminary matter, Echo Bay Mines is prepared to make the speaking notes referred to by Hugh Ducasse an exhibit and I would propose that that be marked as exhibit --

Kadluk: Okay. Pardon me. The interpretation system is not working. Just bear with us please.

[inaudible]

Ignasiak: My notes reveal that Exhibit 4 is the overhead presentation by both Hugh Ducasse and Dave Hohnstein and I propose that as Exhibit 5, we enter the speaking notes of Hugh Ducasse, which we undertake to provide electronically to the Board. And I propose that we enter as Exhibit 6 the speaking notes of David Hohnstein, which we undertake to provide to the Board electronically. If that's satisfactory to the Board?

Filiatrault: Just to clarify, we have the PowerPoint presentation from Hugh Ducasse and Dave Hohnstein, which we have as 4.

Ignasiak: Correct.

Filiatrault: PowerPoint presentation speaking notes from Hugh Ducasse?

Ignasiak: That's correct. His speaking notes as #5.

Filiatrault: Were they attached to the ones that you had given me for Dave Hohnstein?

Ignasiak: No they were not.

Filiatrault: So they actually haven't been submitted at this point.

Ignasiak: No, that's correct, and we undertake to provide those electronically.

Filiatrault: Okay

Ignasiak: And as 6, what we propose is providing to you electronically the speaking notes of David Hohnstein and I understand that you already have a written version but we would be prepared at the same time to provide you with an electronic version.

Filiatrault: Yes Mr. Chairman, we have those and the ones they are going to provide. I would still also suggest that we list as Exhibit 7 the CD-Rom that would include the electronic copies of the presentations.

Ignasiak: Yes, what I was about to do was propose that as Exhibit 7 we enter the overhead presentation that will be referred to by the next speaker, which will be Brent Murphy from EBA and I propose that we now file his overhead presentation electronically as Exhibit 7 and again we would provide with a CD-Rom containing that presentation.

Kadluk: Mr. Webber.

Webber: Mr. Ignasiak if I could just ask Mr. Ignasiak to clarify for me what will be on the CD-Rom?

Ignasiak: We leave this to the discretion of the Board. In our view the easiest would be to provide the Board with one CD-Rom containing all the Exhibits we intend on filing electronically. If the Board would like each exhibit on a separate CD-Rom, that's possible although that involves a lot more CD-Roms. So I would propose that we mark each as an exhibit individually

for use of reference but that practically it'll be one CD-Rom containing all those exhibits.

Up to this point, my understanding would be that the CD-Rom would contain the overheads used by Hugh Ducasse and Dave Hohnstein and that would be Exhibit 4. The CD-Rom would also contain Exhibit 5, the speaking notes of Hugh Ducasse; it would contain Exhibit 6, the speaking notes of David Hohnstein, and Exhibit 7, the overhead presentation used by Brent Murphy of EBA.

Webber: As long as we have an opportunity beforehand, which is to say, at the proceeding today, to have the Board okay the admission of each of the documents, I don't see the problem in having multiple documents on one CD-Rom.

Kadluk: Thank you. Shall we proceed?

Danyluk: Thank you Mr. Chairman. I'm sorry for the delay in getting back to you here. At this point I'd like to introduce Brent Murphy of EBA Engineering, who will have a presentation our behalf.

Murphy: Thank you Mr. Danyluk, Mr. Chairman, members of the Board, support members of the Water Board, members of DIAND and members of the public, thank you very much for this opportunity today to speak to you. As Mr. Danyluk has indicated, my name is Brent Murphy. I am a professional geologist registered both within the NWT and Nunavut. I have a B.Sc. – a Bachelor of Science – in Geology and I also have a Masters of Science in Geology concentrating on geo-chemistry. I have over 15 years of experience in applied environmental science including mine reclamation, environmental impact assessment, water quality assessment, project management.

I currently work for EBA Engineering as a senior environmental geologist project director / office manager located out of our Yellowknife office. EBA Engineering is a well-known Arctic geo-technical and environmental consulting firm, with a staff of over 325 people in Western and Northern Canada. Our Yellowknife office currently has 15 people, which have maintained an office in Yellowknife since 1987. Thank you.

EBA Engineering was retained by Echo Bay Mines to undertake a review of their [inaudible] abandonment and restoration plan as well as to initiate the process of determining the viability of alternate restoration / reclamation methods if it deemed it was appropriate. This was the start of an adaptive management process looking at the overall strengths and weaknesses of the [inaudible] restoration plan for the Lupin Mine.

The team members included both EBA engineering and also Robertson Geo-consultants based out of Vancouver. The selection of Robertson Geo-consultants was a very important one because both EBA Engineering and Echo Bay Mines recognize the importance of having experts in acid rock drainage, or ARD, which is one of the significant environmental concerns of the Echo Bay mine site.

During our review, which included visits to the mine site and extensive sleuthing through their file, we focused on both the geo-thermal / geo-technical and the geo-chemical databases. We thought those were the two main aspects which were of potential concern with regards as the mine goes toward closure.

The existing reclamation plan consists of, as Mr. Hohnstein and Mr. Ducasse have spoken about, consists of flooding ponds 1 and 2 and covering the existing tailings deposition cells of cells 1, 2, 3 and 5 with cover material. And that number, which I understand is a matter of record, is 1.75 metres currently in the cost estimate.

As you can see, here's a site map of the site and again, it's a rehash of what Mr. Hohnstein presented, but we're showing that these are the main areas that will be covered, 1, 2, 5 and 3 with cell 4 being flooded by pond 1 and pond 2.

And just from the show, in case some of you haven't been to the mine site, some of the existing viewpoints of ponds 1 and 2. Again these are predominantly photographs that were taken in August of this year looking towards the north – northeast – from the eastern shore of ponds 1 and 2. So, it's a series of photos showing the existing conditions of the pond.

What we found is that Echo Bay, as with a lot of mining companies, had a very extensive database. They had been very proactive in undertaking extensive studies. However, the studies have been – and these studies covered from both the environmental baseline studies that were conducted in the late 1970s all the way through up to this past summer – these studies covered all aspects of the mining operation and there was a very good database, as I've indicated, on the geo-thermal data.

Essentially, the geo-thermal data consists of monitoring the temperatures within the ground on both the containment dykes and within the reclaimed cells as well as their active cells. As we all know, the Lupin Mine is located in an area of extensive permafrost, so permafrost is obviously a potential ally, what we look at with regards for reclamation. And the mine site is in an area that contains permafrost. The mean annual ground temperatures range from –6˚C to –8˚C. Their active layer (when I'm talking about an active layer, this is the layer that thaws on an annual basis

with the onset of warmer temperature) ranges from 1-metre thickness in undisturbed terrain to over 4 metres in exposed bedrock. So therefore, these are areas that do not contain permafrost on a semi-annual basis.

Within the reclaimed tailing cells, the geo-thermal data which Echo Bay had in the database – and the cells we're talking about are cells 1 and 2 for the most part – the cells are predominantly frozen year-round except for seasonal thaw with the onset of the summer weather. No surprise there. The active layer thicknesses range from 1.5 metres to 2 metres and of course the thickness of the active layer is dependent on the amount of cover. Now, when I'm talking about the thickness of the active layer dependent on the amount of cover, I'm talking about the thickness of the active layer within the tailings, the potentially reactive material of concern.

What we have found, or what Echo Bay has determined over the past 10 years of their monitoring, is that this active layer, right now, currently, is approximately 1 metre thick within their reclaimed tailing cells, cells 1 and 2. Approximately. The temperatures within these inactive tailings deposition cells range between –3.5˚C and –7.5˚C. So they're a little bit warmer than the surrounding ground, if we had undisturbed ground where the temperature range was –6˚C to –8˚C.

And of course, in the active tailing cells, we would expect and we have noticed higher temperatures and there's very little permafrost near the surface but as you go deeper it's slowly starting to cool down.

With the geo-chemical database, referring to the chemical characteristics of the tailings material (the material that is deposited within the tailings containment area.) Again, Echo Bay has had extensive testing done, however it hasn't been all compiled into one coherent package and that's one thing we've been assisting them with. Through this compilation process, what we've determined is that of course the tailings are characterized by high sulphide content and low neutralization capacity and of course they exhibited the tendency to become acid generating. Now, acid, when I'm talking about acid, acid rock drainage, or ARD, is the result of the introduction of oxygen into the tailings material, which results in a process called oxidation of sulphide minerals and the subsequent neutralization of acid produced by buffering minerals (other minerals present in the tailings material or alkalinity in the pour water process.)

It's a process that is common to many mine sites which contain sulphide minerals. Now the sulphide minerals we're talking about at Lupin Mine consist of puretite, [inaudible] arseno-pyrite, iron (or iron pyrite), calco-pyrite. So there are numerous species present.

However, we did find that there were some important data limitations, especially within the geo-chemical database. We found that there was a lack of concrete geo-chemical data characterizing the pour water from the active layer. When I'm talking about the pour water within the active layer, I'm referring to the tailings; I'm talking about the water that's contained within the void spaces within the tailings material.

Now, this is a very important aspect. Because we did not have very recent or very good data from that, we are unsure of the potential impact which would result from the pour water migrating outward from this active layer or active zone over a period of time into the surrounding water. And that's the most important data gap that currently exists at this time.

So what I'm saying is that, at this point in time, we are unsure, even with the existing cover measures, of what is resulting, what is the pour water characteristics of that active layer within the tailings as you have surface water migrate down through it and flow out from it.

Now, the current reclamation option that Echo Bay has produced, which, as we've all discussed here this morning, entails covering the tailings cells with a cover material, i.e. an esker material, and flooding other areas of the tailings containment area to maintain long-term ponds. This method is consistent with industry-accepted standards through the mining industry throughout the nation and the world.

The important thing to note, also, is that the cover option will limit but not entirely prevent ingressive oxygen into the underlying tailings. Now, it's the presence of the oxygen which begins to kick-start your acid generation process. So, when we're putting covers on tailings, that's one of the things we're trying to do. We're also trying to contour it so we're minimizing surface water in-flow into the tailings material as well. Okay?

The proposed cover option as it is currently stated by Echo Bay Mines, the 1.75 metres, will not prevent thaw penetration into the tailings. It will not. And the cover thickness of 1.75 metres, as it is currently presented in the reclamation option will result with an active layer within the tailings ranging between 0.5 to 1.5 metres thick. So on an annual basis we can expect an active layer within the tailings that is unthawed 0.5 to 1.5 metres thick. Okay? That's as it is now.

As stated, the geo-chemical impacts (the impacts of this freeze-thaw cycle) on the tailings material are not well known. We do not have a lot of data. If we go for a thinner cover option, which is certainly a viable alternative, what that would result in would be a thicker active layer within the tailings. And if we go for 1 metre cover, we're probably estimating approximately a 2-metre active zone within the tailings. Okay?

And it is important to note that thinner cover options are a viable alternative and have been used elsewhere.

Now, Echo Bay mentioned this morning that it was never their intention to have total encapsulation of the tailings within the permafrost. That is possible, but there are technical difficulties that would probably prevent it from ever occurring. The first thing is, number 1, the impact of global warming. What we've determined also is that for the tailings at Lupin to become 99 per cent frozen, you would probably be looking at a cover option of 3 metres or greater, and that still needs to be determined.

This option, of total encapsulation of permafrost is only viable if all the remaining tailings are completely frozen and we know that the presence of solutes within the tailings solids (the fluids that used in the mill process), depress the freezing point of this. And there's also unfrozen – very potentially unfrozen layers – within the tailings at depth, which we certainly don't know about. So, what we're saying is that a permafrost encapsulation is a very viable alternative but total encapsulation is, I think, an unrealistic goal. Permafrost can be used as your ally.

So, based on our review, again, just to summarize some of the main points, Echo Bay Mines has completed, has maintained, has developed an excellent database, both from a geo-technical, geo-thermal, geo-chemical viewpoint. The reclaimed tailings are frozen the majority of the year, with the exception of a thin active layer in the summertime. An esker cover is a viable option in the sense that it will assist in limiting oxygen ingress into your tailings and assist with preventing the onset of acid generation. The cover option also assists in maintaining the tailings in a frozen condition. The current reclamation option, with the 1.75 metres, is insufficient to encapsulate the tailings totally within permafrost. Total encapsulation may not be technically feasible – it's possible, but it may take awhile. Covers of 1-metre thickness or less may be a viable reclamation option.

Now, the reason I'm saying this, I'd like to point out two I think very important examples and one, which is located in Nunavut here. That's the Rankin Inlet Mine, which was reclaimed in 1994 where they used a 1-metre cover of esker sand and used permafrost freeze-back as their preferred method of stabilizing the tailings to prevent acid generation. Now, they're saying that total encapsulation of tailings within permafrost, what they also have acknowledged is in fact that there will be pockets of brine material contained within that so-called frozen body and the fact that it never will freeze. Also, these tailings that were deposited were reclaimed in 1994 and they're estimating that it will take approximately 15 years for the tailings to freeze to its maximum extent.

The other option, or the other example I'd like to present as well to highlight the fact of thinner cover material, is the Discovery Mine Property located north of Yellowknife. That has, or did have, an acid generation problem, or acid rock drainage problem and that was reclaimed over the last two years using a cover thickness of 0.6 metres. Okay, so both of these options of thinner cover thicknesses have been deemed acceptable by the appropriate regulatory agencies. So, thinner cover options are viable. Okay?

However, there certainly are data gaps that need to be addressed before final reclamation…

TAPE 3, side B

…we share it with the members of the Board and members of DIAND, and it's an iterative process, and it does take time. Echo Bay does have an existing reclamation plan that can certainly be – there's room for improvement on that and we're moving forward to doing that.

One of the first things we need to address in the data gaps is the data gap that currently exists on the basis of the geo-chemical characterizations. We need to characterize what the geo-chemical characteristics of the tailings material currently contained within both the active and inactive cells. We need to concentrate on the active layer characterization within these tailing deposition cells. That's the layer that's unthawed on a seasonal basis.

We collect this data and we compare it to previously collected data, of which there is an extensive database, to determine whether or not the long term predictions that were presented in the late 80s and early 90s are still valid and to update the model. And we certainly need to recalculate the water balance of the tailings containment area to assist in mass balance equations, i.e. what is the long term impact of this pour water within an active layer as it flows into the water of ponds 1 and 2? And what are the ultimate discharge characteristics of the water as it flows from ponds 1 and 2 into the environment?

Now, it's important to note that these data gaps exist for both the one-metre cover option and the 1.75-metre cover option. These data gaps exist for both.

The analysis required: obviously we need core water chemistry, a time domain reflectology test, which is a determination of the amount of unfrozen water in your tailings. We need to do whole-rock chemistry on your tailings material. Acid-base accounting – we need to determine the acid generation potential of these tailings material, recent data. We need

to do leachability tests on the tailings material, we need to do water analysis of the water contained within the reclaimed ponds. We need to do water analysis of the ponds within 1 and 2, and we need to do some water analysis at the discharge point as it goes into the receiving environment, as well as water analysis of your receiving water environment.

We also need to do a geo-technical study. We need to tweak or improve the accuracy of the geo-thermal model, i.e. will the active layer thickness extending into the tailings with a 1-metre cover, will that be 2 metres, will it definitely be less? We need to tweak that. We need to determine the impact, the potential impact, of the heat transfer from the pond of water onto the frozen tailings, which will be naturally frozen anyways within the reclaimed cells.

Now, this addresses Mr. Traynor's previous question where he was concerned about the presence or absence of a tallic layer within the ponds 1 and 2. That tallic layer would have naturally been present anyways, because the waste material was deposited into an existing water body. We are concerned about the heat transfer, and that heat transfer will be built into the model. The tallic level or layer will in all likelihood continue to exist as long as there's pond water there.

And finally, as a brief summation, we're here to ensure the integrity of the natural environment after mine closure. I think that's ultimately all of our goal as we sit here and go through this public process. I thank you very much for your time, and I look forward to answering any of your questions. Thank you.

Kadluk: Thank you Mr. Murphy. Any questions? Mr. Webber.

Webber: Thank you. Lee Webber. Mr. Murphy do you have your written report in front of you?

Murphy: I do sir.

Webber: Okay, could I ask you to turn to page 5.

Murphy: Yes sir.

Webber: And I'm looking at section 4.0, a discussion of reclamation options. You with me?

Murphy: Yes I am sir.

Webber: Thank you. In the first paragraph, and I'm going to leave out some of the wording because I don't think it's relevant to the question:

"The current closure concepts are consistent with industry accepted practice to minimize the potential for acid generation of the tailings by limiting the availability of oxygen and the sulphide oxidation rate within sulphidic mine waste."

And then, 3 sources are sited for that statement. Do you still stand by the statement that that is industry-accepted practice?

Murphy: Yes.

Webber: Okay, thank you. Second question, is it fair to say the following: that you get less oxygen ingress and less acid generation with a cover of 2 metres or 1.75 metres than you do with a cover of 1 metre?

Murphy: It's fair to say that, yes.

Webber: Okay, so even though, as you point out, there are uncertainties, data gaps, with respect to a range of options, one thing we can be reasonably certain of is that with the thicker cover there is less oxygen ingress and less acid generation than with the thinner cover.

Murphy: The thicker cover will slow down the amount of time it takes for oxygen to get into your tailings, so ultimately, oxygen will still be introduced into your tailings material, but more likely at a later date. So what it's doing is slowing down the onset of the acid generation process.

Webber: With a thicker cover, there will be a thinner active layer in the tailings proper than there would be with the thinner cover. Is that correct?

Murphy: Yes, based on what we know to date that is a correct statement.

Webber: Thank you.

Danyluk: Excuse me, Mr. Chairman. If I may also add to our response, one of the questions we'd like to establish here is, one metre of cover will adequately do the job, 2 metres will certainly reduce the amount of oxidation, so would 7, so would 100. But I would, as an illustration, if we were put, Mr. Webber, under 1 metre of esker cover, I don't think it would matter to his oxidation rate whether he had 1 metre or 2. The bottom line is 1 metre – we are going to show – will adequately do the job. 2 will do better, so will 10, but the bottom line is 1 will do the job.

Webber: I'm not sure if I like the picture of myself being buried under esker cover, but we'll just leave that one. First of all, let's not take this thing to absurd extremes where none of us are pushing in that direction. Nobody's talking about 7 metres or 70 metres. We are only talking about a range of roughly between 2 metres and 1 metre. That is the only comment that I have on Mr. Danyluk's response.

Murphy: I certainly agree with Mr. Webber, but I'd like to also indicate the fact that there have been other examples where 1 metre or less cover has more than adequately done the job. And the prime example is the Rankin Inlet Mine, which is a very similar environment to the Lupin Mine.

Kadluk: Thank you. Mr. Traynor.

Traynor: There are certainly other situations, I guess one must also be cognizant of the time when that was done, and what the capacity of any regulators – what the process was at the time. Having said that, we can certainly say we are obviously very encouraged and it is evident that you have provided a lot of information. If there was some key activities of the ones you've outlined, what would they be? To clearly define what the difference would be between a 1 and 1.75? Would something like the pour water gap really provide greater certainty that what you're proposing as a 1 would be better or the same as the 1.75?

Murphy: Thank you Mr. Traynor. The most important data gap at this point, or I'll say there are two right now, it's the establishment of your pour water chemistry characteristics, along with the recalculation or revisitation of your water balance, using that to do your predictive mass balance equations into your ponds. So, in other words, what we're trying to do, is, if we know we have a 1-metre, or say a half-metre or 2-metre active layer thickness, what is the chemistry that's going to come from that? And ultimately, with the surface water inflow, what are the characteristics of the leachate that is generated by that as it goes into the pond? And what is the buffering or assimilative capacity of ponds 1 and 2 prior to discharge into the environment?

So, to sum up, the biggest data gap at this point in time is your pour water chemistry. You do your pour water chemistry, so you do your pour water chemistry then you have to revisit that with a recalculation of your water balance through the tailings containment area.

Traynor: Thank you very much for that. Do get a sense from the physical attributes of the cells that the pour water leachate would have different characteristic in terms of amount of movement between that active layer right at the margin, would it be greater or less given more cover or less cover? I mean, if you put a certain amount of material as your cover, would that

provide a better inhibitor to movement of leachate along that active layer boundary?

Murphy: At this point in time, I honestly cannot say. There will be leachate produced by your active layer no matter if you have 1 metre of cover or 2 metres of cover or 1.75 metres of cover. So, the presence of leachate within your active layer is a given, no matter your cover thickness.

Kadluk: Mr. Smith.

Smith: [inaudible] I'd like to ask Mr. Murphy how many field seasons he believes it will take to make this determination, between 1 metre and 1.75 metre.

Murphy: Thank you Mr. Smith. I'll be conservative here and say definitely within two field seasons.

Kadluk: Any further questions? Dionne?

Filiatrault: I guess at this point, if you look at the recommendations in the EBA report, there's the suggestion that the tailings cover of 1 metre thickness or less may be a viable reclamation option for Lupin Mine site. My question isn't directed at you, Brent, but more maybe at the mine. At this point in time, are you requesting an amendment, or suggesting an amendment, to your interim A&R plan that currently proposes 1.75 metres and are now suggesting that you want to modify that to 1 metre in the absence of the actual data that 1 is a concrete, viable option?

Danyluk: Mr. Chairman, if we could just take one moment to confer, please?

Kadluk: Five minutes?

Danyluk: No that's fine, Mr. Speaker. In answer to Dionne's question, we're asking for an amendment on the security amount. We are basing this on the fact that we think that 1 metre is sufficient to do the job. We are going to endeavour to illustrate and prove to the Board over the next 2 field seasons through our geo-chemical testing and water-based analysis that this in fact will be proven so. And our request is for an amendment to the security amount.

Filiatrault: Just one thing, Greg. You brought up in your report some references to the Rankin Inlet Mine and the reclamation that has been done there with the cover option that they have imposed. We actually have a report that was done on the Rankin Inlet Mine and we'd like to enter that in as Exhibit 8 and we'll get a copy and make it available to you so the Board

can make reference to this if they so wish. And we'll make copies available to the interveners.

Murphy: Could I ask, is that the report from the Canadian Geo-technical Journal?

Halim: Yes, this a report done just recently in the Canadian Geo-technical Journal by Mr. [inaudible], Jameson and Dyke. And I should probably ask a question. Basically, what I'd like to mention about this report is that the conclusion given in this report is basically 2 things. The first one, it says that you have to be able to have, to stop the oxidation in the top of the tailings, you have to maintain the temperature below –2˚C. It doesn't tell you anything about 1 metre cover is better than 2 metres in terms of being able to reduce the active layer of the tailings.

And the second one that's mentioned as a conclusion, it says that even that when you have a tailing thickness with temperature of –2˚C, you still have a potential oxidation that can happen in that zone. However, it's going to be smaller, and that's the whole point. You mentioned that in Rankin Inlet, that has probably the same kind of weather condition as down here, 1 metre would be adequate. However you never discussed anything about the type of cover, what exactly the gradation, the colour. The gradation of the cover materials and the colours also affect the degree of penetration of this permafrost. For example, if you have a rock or stone that is a black colour, it's going to absorb heat, so in the summertime it's actually going to bring the [inaudible] penetration. So the case is fairly unique from location to another location. You cannot just say that in Rankin it worked 1 metre, and here you're going to apply that. I think that's not what it says in this report.

Murphy: Thank you sir. However, I'd like to make reference to the fact that it said 1 metre cover from an esker, so I assumed that that was reasonably transportable material and was of a similar grain size to the existing material proposed for the Lupin Mine. If I erred in that, I apologize, but I think the [inaudible] Esker is predominantly sand- to gravel-sized. Am I not correct?

Halim: Yes the esker material they have all different kind of gradation. There is some esker that has a fairly broad base, or fairly uniformly graded or it can have a variegated one. The uniformly graded esker material, for example, can have a very high permeability and this is not a question that you actually brought up about the geo-chemistry. Because if you have material which is coarser in terms of gradation, what happens in the summertime when it's thawing, is there is going to be a movement of water above the tailing materials, can be transporting some of the chemical constituent from the tailings. This is something that has never been

discussed at all. And that is one of the things we are not very sure about, using the coarser material as tailings cover.

So, basically, the condition that is applicable for different areas, it depends uniquely on the type of materials and the weather itself, and you cannot just apply one from the other.

Webber: Mr. Murphy, could I ask you to have another look at your written report, page 6 at the top. I'm not quite sure if we've got the same pagination here. On my copy, page 6 begins with, in mid-sentence, "utilizing esker cover"?

Murphy: Yes, that is correct.

Webber: Ok, in that same paragraph, the last sentence of the paragraph:

"The current esker cover thickness of 1.75 metres, was an arbitrary number based on what as estimated in order to implement total permafrost encapsulation of the tailings materials."

Now, it seems to me that there's a bit of an internal inconsistency there, and I'll explain what I mean, but I'd like you to do what you can to enlighten me on this. In the first instance, you label it an arbitrary number but then you go on to say that it was based on what was estimated in order to implement total permafrost encapsulation of the tailings materials. Now, it seems to me that if it was based on such an estimate, while the figure of 1.75 metres may have been rough, it may have been low, the objective – I may even grant you for the sake of argument at least that the objective of total encapsulation may have been unattainable. But it strikes me that it's inconsistent to say on the one hand that the figure was based on what was estimated in order to implement total encapsulation and to say in the same breath that it was an arbitrary number.

Murphy: Thank you Mr. Webber, the number '2 metres' was an estimate from my understanding, and the 1.75, if I used poor English on that I apologize, but the 1.75 was used, my understanding, in the cost estimate. There has been no thermal modelling done on the 2-metre cover. I mean, when we started looking at that, and based on our initial review of the data, a 2-metre or a 1.75-metre cover will not encapsulate the tailings in permafrost.

Webber: If I understood you correctly, the estimate was actually 2 metres, and the 1.75 is something of a ratcheting down of that figure.

Danyluk: Which date, or when we estimated 1 metre or 1.75 metres or 2 metres – these are estimates. What we are endeavouring, and what we have repeatedly said at the risk of rehashing something, we are in an iterative

process where we are trying to establish the amount of cover which we can economically put on the tailings containment area which will adequately do the job of reclaiming those tailings. This was something that was changed subject to year upon year of data gathering.

We expect to be sitting here, as I will present in a proposal, on an annual basis, and we will talk with the Nunavut Water Board and any other interested party, about our data-gathering, about our information we have assembled, and we are going to continue and this figure might change six more times between now and our mine closure. We have to submit a final reclamation plan within three years of final closure. Up until that time, it's subject to change.

Webber: Just to come back to Mr. Murphy, sorry, I'm going to have to reiterate the question, because it was a question, Mr. Murphy. Just looking for explanation, clarification, confirmation of your own particular choice of words. I'm not trying to trip you up here, I'm just trying to make sure that I understood what you said. What I understood you to say was that the estimate of what was needed in order to implement total permafrost encapsulation was 2 metres and that 1.75 metres was actually something of a shaving down of the estimate. Is that correct?

Murphy: The 2 metres was the estimate, and the 1.75 metres was the number that was used in the cost estimate.

Kadluk: Any further questions?

Kadluk: Water Board resource people any further questions? Dionne?

Filiatrault: Mr. Chairman, can we just take a couple minutes. I want to clarify something and maybe there will be another question before…

[pause]

Kadluk: Are you ready to proceed? Okay. Let's proceed.

Filiatrault: Thank you Mr. Chairman. Actually, this is just a more informal question, more to EBA than to Echo Bay Mines. I have some information that EBA recently carried out some research on low permeability cover performances in the Yukon. Is that material related to tailings cover and were there any conclusions that were drawn in that study?

Murphy: Yes, that was in relation to tailings cover and I have not seen the report itself but I can certainly request that and forward that to you. I have not reviewed the results of the study that came from that.

Filiatrault: So, I mean, that report was mostly on low-permeability covers, is there any other information potentially that might be in that report on high-permeability cover material such as granular material? Because we'll hear later on that there's some discussion on the type of material that could potentially be used as a cover source.

Murphy: I honestly cannot say, Dionne, at this time. I'll certainly forward you a copy of the report when we get it from our Whitehorse office.

Kadluk: Any further questions for the applicant?

Ignasiak: Mr. Chairman, I just wanted to confirm for the record, because we moved on that Exhibit 8 will be entered as the article from the Canadian Geo-technical Journal entitled "Oxidation of Mine Tailings from Rankin Inlet Nunavut at Sub-Zero Temperatures." And that's Exhibit 8 and copies of that will be provided to the intervener and the application. Is that correct?

Filiatrault: Yes, Mr. Chairman, that's correct, that's been logged as Exhibit 8 and copies are being made.

Ignasiak: Thank you.

Danyluk: Perhaps, Mr. Chairman, if we could just break for a few minutes to switch our panel over.

Kadluk: Break for 5 minutes.

[pause]

Kadluk: I believe David [C… inaudible] for the Water Board has a question or comment to make.

Tilleman: It's just to clarify. At the beginning of the hearing, what I wanted to say but I didn't do it very clearly, was that the Public Registry is something that is also part of the record and the Board wanted to make it clear that everyone knew that the registry was part of the record and includes the documents, as I understand it, sir, back to the time of the 2000 application?

Filiatrault: No. The Public Registry is a list of all documentations, correspondence, technical reports, any documentation that's been submitted to the Board or the NWT Water Board from the time that Echo Bay received the water license.

Tilleman: I didn't understand the nature of the scope of the registry but it is a complete set of documents relative to Echo Bay.

Kadluk: Thank you, any further questions for the applicant? Danyluk.

Danyluk: Thank you Mr. Chairman. I'd now like to introduce Mr. John Zigarlick and Mr. Courtland Smith from Nuna Logistics Ltd.

Smith or Zigarlick: Mr. Chairman, Board Members, on behalf of Nunavut…

Kadluk: Mr. Webber?

Webber: I do feel that I have to reiterate this point that DIAND does have reservations about the whole of Nuna's contributions to this. Again, because of the view that this is essentially an attempt to rebut Brodie Consulting Ltd.'s report of last year and that the time for rebuttal of Mr. Brodie's submission was at last year's proceedings.

Ignasiak: Mr. Chairman, if I could speak to that point. If you refer to the report previously submitted to the Board by Nuna Logistics, you will see that Nuna Logistics first visited the Lupin Mine Site in September of 1999 to begin work on the report that's presently before you. That is before anyone at Echo Bay Mines had any knowledge of Mr. Brodie's report, which wasn't presented until March of 2000. They visited the site again on two subsequent occasions, in August of 2000 and September 2000, along with Clark Builders and EBA. They all visited with the intent of preparing a detailed analysis of what it would cost to reclaim the site.

So, during the course that they were preparing the report, the public notice for the hearing which occurred in March with respect to the Lupin license did not go out until December 17, 1999. Nuna was already doing the work required at that point time to prepare the report as we can see, they continued working on that report up until January, 2001. So that report was an ongoing piece of work which was not in any way near completion at the time of the first hearing and that is why it could not be presented at the first hearing. I think if you look at the report you will see that it contains a level of detail that is quite, in our view, exceptional, that it goes into the detail of labour costs, fuel costs, capital carrying costs. And a report like that, I think everyone will understand, takes quite some time to prepare. So Nuna was retained before the public notice for the last hearing was issued, and Nuna continued working and did not complete the report until long after the Lupin decision was issued. So to say that it is somehow prepared to rebut Mr. Brodie's report even though Nuna was retained before they knew of Mr. Brodie's report, I don't think that argument holds water.

Kadluk: Mr. Webber?

Webber: Thank you Mr. Chair. I come back to the concept of due diligence. I'm not abandoning the argument that this report is largely a response to what Mr. Brodie had to say. At the same time though, I would make a second argument, a second argument which I touched on earlier, which is, again, the concept of due diligence. The time for submission of this report was in March 2000. It could have been produced. For Echo Bay to say now that it essentially didn't manage to complete it in time for last year's proceedings, I don't think that's fair game. If they had an overall reclamation cost estimate which they wanted to prepare for the Board and they wanted the Board to consider in setting the total amount of security, the time for that was when the Board was considering the license renewal.

Kadluk: Thank you Mr. Webber.

Ignasiak: Mr. Chairman, I don't think the argument that Echo Bay Mines somehow wasn't acting reasonably in obtaining the report holds water either. This is a report that provides an estimate for a project that is estimated to cost over $20 million, the way it was written. That takes time. Certainly, Echo Bay Mines would not want to have received a rushed report for that important a decision. And second, I don't think that Nuna Logistics, and this can be confirmed with them when they give evidence, would be prepared to rush a report that ultimately they're going to have to live up to at the end of the day if retained. So, on that basis, to suggest that there wasn't due diligence practiced ignores the reality of a significant mining operation. And for instance, as we sit here today and discuss the issues we discuss, there continues to be work ongoing in respect to tailings management and everything else.

And so it's a process of adaptive management, of continuous research, of continuous study, and that's not just at the Lupin Mine, that's at many other mines, and that's just the nature of business and of large industrial projects such as this one. There's continuous improvement and continuous work being done, and on that basis I think if anything, it's good to see that a company like Echo Bay Mines, 8 to 9 years before they're expected to close a plant is already giving in-depth study and in-depth thought to how the site can properly reclaimed. So I don't think it can be argued that it's not reasonable for Echo Bay Mines to have obtained a report when it did and to allow the contractor sufficient time to do a proper job.

Kadluk: Thank you. Mr. Tilleman.

Tilleman: Yes thank you sir. I think we should just continue with the hearing and remind Echo Bay that the Board has made a ruling this morning and so, to the extent that you gentlemen can be prospective in your analysis and apply this to the future, not the past, you probably won't have the Board

interrupt. If you do apply it to the past, you're either going to have Mr. Webber make another rejection or the Board itself. So, let's mark it, I don't know if this has been marked or any of the other documents you need to present were marked, the Board will receive it for whatever weight it has. They are at the Registry, so to that extent they are marked. If you want to identify it specifically then do it, and get on with it, but I know, sir, that the Board is looking for statements reflecting the future and today's issue before them, which is, should it be reduced now, and if so what?

And, Mr. Webber's point is that at least you knew about it, in fact part of your submission is that it started a year before you knew by the time of the hearing in 2000 that there were studies ongoing and to that extent you should have notified the Board, 'Hang on just a minute, before you make this final assessment, this has happened.'

So, to my knowledge and recollection, that didn't happen. That's partly Mr. Webber's point. Here we are today, let's carry on but look forward or else you'll either have him object again or the Board itself, or I will.

Zigarlick: Just as a bit of a clarification, I've never seen the Brodie report nor am I interested in seeing the Brodie report, so I have no conflict about what's in that thing. This is a different type of business. The only thing I recall about the 1999 visit. We didn't actually go to visit the tailings pond, we went there to quote on building an internal dyke, which my colleague Court Smith will comment because we did build an internal dyke as a result of that first meeting.

On behalf of Nuna, I'll just go back over a little bit of my background. It's been associated with the construction and major earth moving projects in senior positions which began in the North in 1968. My secondary education is in business administration, and I'll be 65 in March so I guess in some places I might qualify as an elder. I was employed with Echo Bay Mines for 21 years, 16 years of those as President and CEO, during which time we constructed a number of mining complexes with a total value well in excess of $1 billion. Included in those developments was the design and construction of the Lupin Mine, which came into production only nine days after original plan start-up and within 15 per cent of the budget, on a totally airlifted project.

While we were constructing the Lupin Mine, I had occasion to head up the group that completed the reclamation of the Port Radium Silver Mine in Great Bear Lake, which was accepted by the Crown and the government of the Northwest Territories as satisfactorily reclaimed. This was done without a penny of bond coverage or a formalized, submitted reclamation plan. And, I might say, it was formally operated a property of the

Government of Canada by Eldorado Nuclear. This was followed by the demolition and the reclamation of the Pine Point Industrial Complex, a plant that was eight times the size of Lupin. This was done under an Echo Bay subsidiary called Zanford, and I think you'll agree that it was a satisfactory and well-accepted reclamation program.

During my tenure at Echo Bay, I had the transportation group report to me, which included several large aircraft. As pointed out earlier, the Lupin Mine was designed as a fly-in operation because attempts to build long winter roads in the barren lands had not been successful. We were fortunate enough to gather a number of experienced ice road builders, several who are now employed with Nuna Logistics. The Lupin ice road was first started in 1983, and last year handled 8,000 truckloads, making it one of the busiest ice roads in the world.

In 1993, I left Echo Bay, and I put together Nuna Logistics to provide construction and earth-moving service to the North and mining industry. The ownership of Nuna Logistics is 25 per cent KIA, 25 per cent Nunasi and 50 per cent with the management group and I hold the position of chairman and CEO. Depending on the season, Nuna employees number up to 400 to 425 in a particular season.

The company has had a rapid growth and currently does between $80 and $90 million worth of work in the North each year. Not only do we bring good construction method to the North, but engineering support. I believe now Nuna Logistics employs more engineers than the Lupin Mine does.

Nuna has been involved in all of the major Northern mining projects in the last 8 years. BHP Acadie – Nuna constructed a 7,000 ft strip, 200 ft wide, runway out of granite. It started in May and it had jets landing in October. The plant exploration for this mega-project was completed by Nuna, as was the construction of the roadways and several dams, notwithstanding the initial mining the panda pit.

We also constructed the largest frozen core dam erected in Canada under the direction of EBA engineering. The mining of the Acadie Mine Misery Pit, some 30 km from the main plant is totally done by Nuna Logistics, who own the camp, shops, crushing plants, equipment and onsite staff of about 150 people. It is sort of a comparison of the capabilities of Nuna, at the BHP site we move about 50,000 tons of rock a day, drill blast, build roads, waste dumps. In other words, if we had to move the same amount of rock that the Lupin Mine does in one year, it would take us about 10 days. So we run on big volume.

DIVEC - Nuna Logistics is a partner of Lack [inaudible] Construction who are doing all the civil work which will exceed about $400 million

work of work and includes a 4.5 km dyke and up to 100 feet of water plus roads, tailings ponds, runways, etc.

Prior to the start of this project, Nuna had nine engineers working at its Vancouver office for almost a year planning and constructing the cost of this project. As a matter of interest, Mr. Danyluk touched on reclamation work in 2003 – it coincided very much with discussions we've had, we have a bunch of surplus equipment coming off the DIVEC job during the winter of 2003. Nuna was the contractor that constructed the Wind Spirit air-strip, dams, roadways, campsite, etc.

Now, when we talk about the tailings ponds at Lupin. Covering the tailings ponds at Lupin is not new to Nuna. We covered two of those ponds that were outlined on the map in 1995 with 85-ton haul trucks. Therefore we're very familiar with the haul cycles, thaw cycles of the eskers for material, and associated costs. We have already completed approximately 35 per cent of the anticipated required coverage of the tailings for reclamation. So I don't know where you could ever find a better cost comparison than that…

TAPE 4 side A

…when you start going on tailings, because of softness. But the minimum we could is a metre. So that if the tailings pond portion were covered worked very well with 100-ton trucks and the PSI on our tires, even the bigger trucks, the 200-ton trucks, will do the same thing. So if somebody wants to go down to a lesser amount, it'll make it more difficult to cover. And as Court says, well maybe we should go to 7 metres because we charge on the unit base.

So I don't know where you could get a better knowledge of pre-costing a project because we've already done so much of it onsite, and besides that we presently do the surface work of the present clean-up that's going on there. I believe we do all the surface work, with the loaders, builders and so forth.

Nuna has completed hundreds of millions of dollars of construction, earth-moving projects in the North in the past eight years and done so making a profit. A big part of our business is providing cost estimates to a variety of projects, and I don't know of too many (in the North) diamond projects that haven't come to us through the engineering companies to get cost estimates.

And, I don't understand what a formula is to do a clean-up project. I just don't know how you possibly do it. Our estimates are done in detail on each segment because there is no one property the same. We take a

segment of work and we used our experience, the type of equipment we've got, the support costs, and we also do a double-checker on our cost estimates with internal groups. We're comfortable with the estimates we provide on any project as we are always prepared to accept a contracted fixed price on a time-and-materials basis. The Lupin project is no different, so in our case we've submitted a business proposal to carry out their reclamation program no different than the one we're submitted on Polar [inaudible].

This is our business. We think we're pretty good at it. We have about $50 million worth of equipment within 200 km of the Lupin Mine so we're not shy on any of the equipment. We have long-term contracts in place. As I pointed out, we have a bunch of surplus equipment coming in 2003. So with that, I will pass it on to Court Smith, who's our vice-president of engineering and has been involved with Nuna for several years.

Smith: Thank you, Mr. Chairman and the Board. Thank you for hearing from us, and the staff. And thank you DIAND for coming, and the people of Coppermine, the last time I was here I was 12 years old, so it was sort of nice to come back.

My name is Court Smith, I'm Vice-President of Nuna. I'm a professional engineer. I got my start at Lupin in 1982. It was about the beginning of when Lupin was starting up. I worked in a number of different departments – I worked in the mill, I worked in maintenance, I worked underground. I spent, on and off, eight years at Lupin, roughly. I went to different mining companies in different places around the world and came back to work for Nuna Logistics about five years ago. As John mentioned, our business is construction and contract mining, that type of work focused entirely in Nunavut and the Northwest Territories.

Nuna prepared a proposal and a cost estimate for Lupin Mine site reclamation in January of 2001. The proposal was a result of business development efforts in Nunavut and the Northwest Territories. In particular, we decided that it would be a wise to move to into trying to provide a total solution for mine site reclamation. And what we were trying to do is to put together a team that could do all of the elements that were needed and start before the mine closes down, start to provide help earlier on and get ourselves in front of the particular mining companies and say, 'This is how we can help going forward, and we'd like to do the work, and this is why we're here.'

So what we did is that we looked at Nuna's expertise and its expertise is more the earth works-type projects and we decided to bring in Clark Builders, who also have experience in the North in building construction, so they have iron workers and the people that can work with the steel, the

buildings and pipes and that sort of thing. And then we decided to bring in EBA Engineering as well, and our view there is that in order to be responsible in our reclamation efforts, we need to have a technical aspect to our work. And we don't want to just have a bunch of contractors tearing stuff down, we want to have people who know the impact is of doing everything we do on a daily basis in a reclamation program.

So, we currently do the contract of the surface support work at Lupin and we've recently completed some tailings earth works at Lupin and we did it under budget. Clark Builders has been involved in the original construction of the Lupin plant and the facilities there. And EBA is a recognized leader in northern engineering, and Nuna's worked with EBA and won awards while jointly completing earth works projects at the BHP Acadie site.

In the proposal that we developed – and I'd like to focus on this – ours was a proposal and a cost estimate. It wasn't a study. We're not in the business of studies. We're in the business of moving earth. So we do proposals – all we're trying to do is develop our business. Anyways, the way that we did it is that we developed our labour and equipment rates specific to our experience at Lupin and nearby projects. We visited the site with Clark Builders and EBA for the purpose of assessing the reclamation requirements. We determined the haulage profiles from our perspective, the productivities and quantities and the schedule, just like we would with any of our other projects in the North. We developed a detailed work plan and cost estimate and we're comfortable with those estimates and that work plan.

Because Lupin was constructed in the early 1980s, there are no side issues to deal with. We're not dealing with a property that has PCBs and asbestos and all of those sorts of things that were related to projects that were started in the 30s or whatever. So this is a straightforward reclamation project for us.

When Echo Bay asked Nuna to do this, they said, 'Take a look at the entire scope of the project, all of the buildings – take all of the buildings down, bring the entire site back to a normal, pre-development state.' So, for that, that was the entire scope, it included the buildings, it included covering the tailings, it included all of the roadways, the airstrips, putting gradual grades to everything. It included all of the utilities, taking everything out, burying it, covering it, responsibly reclaiming the site.

Our estimate to do all of this work was $24.5 million, and that was based on 1.75 metres of cover, as this discussion has been going on about. From Nuna's perspective whether it's 1.75 metres or whether it's 1 metre, it's a linear relationship when you deal with the cost. In other words if you take

the ratio of 1 metre to 1.75 metres, the cost of the tailings cover is proportional in that regard. So whatever the resulting discussion relates to, it's nice and easy to calculate how that relates, because from Nuna's perspective, what we would change is the duration of time that we would be doing the covering. So it's easy for somebody to take it and calculate as they so wish.

In closing, as I'd mentioned earlier, we recently completed a dam-raising project at Lupin. This project had the identical haulage profile. We were hauling from the same esker to roughly the same location, because it was at the tailings pond. We used the same estimating procedures that we used in every other project and on that project we came in under budget, so that gave us comfort that our numbers are appropriate for the work that we're doing. So, thank you very much.

Kadluk: Thank you. Mr. Danyluk does that conclude your presentation from Echo Bay?

Danyluk: No, Mr. Chairman, we have several closing remarks, and also I would like to take this opportunity, Mr. Chairman, on behalf of Echo Bay Mines to table this document which you have copies of. It's the form of a letter to Philippe De Pizzo, the Executive Director of the Nunavut Water Board, copied to yourself, Mr. Chairman, and it's titled "Reclamation Security and Payment Schedule Proposal." With respect to our amendment request to our current water license for the Lupin Operation and our subsequent hearing here today.

Ignasiak: Thank you Mr. Chairman –

Kadluk: Just a minute. Mr. Webber, did you have a comment to make?

Webber: Just a question or two of the witnesses from Nuna.

Ignasiak: Perhaps we'll now proceed with those questions to Nuna, and after that I would just like to formally mark the Nuna Report as well as the document Mr. Danyluk as exhibits. But perhaps first, Mr. Chairman, we'll continue with the Nuna witnesses.

Kadluk: Thank you.

Webber: Thank you. I wonder if somebody over at Echo Bay's table would have a copy of the May 25, 2001 letter from Mr. Danyluk to the Nunavut Water Board. That's the amendment application letter.

Webber: Thank you very much, if you could turn to page 5. I just want to – this is something of a matter of form – there are two tables set out on page 5 and

the indication is that Nuna is the source for the figures contained in each of those tables. Since this information, as far as I could see on my quick review of the Nuna proposal, since this information doesn't appear in Nuna's proposal, I wonder whether Nuna could confirm that Table 1 and Table 2 present Nuna's figures.

Smith: Is your question that I verify that I calculated these? I didn't calculate these. These, if I understand correctly, Mr. Danyluk did the calculation, which I don't actually have a problem with because I believe it's a linear calculation. I'd need a calculator to make sure the numbers are right. But the concept – I wouldn't have a problem of the concept of linearly reducing by quantity. The thickness is consistent over a common area, therefore if you don't change the area and you change the thickness, you linearly change the quantity. Therefore you can linearly reduce the dollars if you are also reducing linearly the total. So I don't have a problem with the calculation process, I assume that the calculation is done correctly.

Webber: Okay, thank you. One question – this is sort of an end-of-presentation question. There was no other convenient place in which to fit in this question. Mr. Danyluk, could you take a look at page 7 of that same letter? There are a couple of quotations there, the second one is from "Consultation Document on Mine Reclamation Policy for the Northwest Territories" and that's the document that DIAND itself sited from at the March 2000 hearing and then provided in the week, I think, following the March 2000 hearing. The one preceding that, "Toward Mine Site Reclamation Policy for the Northwest Territories," frankly I'm not familiar with that one, and just in the short time that I've had to discuss it with the folks from DIAND, they don't seem to be terribly familiar with it either. Do you have particulars, specifically date, author, especially the date on that other one, "Toward Mine Site Reclamation Policy"?

Danyluk: Mr. Chairman, I'm sure we've got a copy of it. We can endeavour to get a copy of DIAND's document for them.

Webber: I guess my hands are a little bit tied since we're not familiar with the document even though it would appear to be a DIAND document. I guess my first guess would be that it's a document which precedes the document sited later on the same page, and was therefore overtaken by that later document. I note that it's headed "Toward a Policy" which to me indicates that it was part of work-in-progress. I don't have the context into which to fit that particular paragraph.

Danyluk: Mr. Chairman if I could interject. Mr. Webber is speculating on the status of the document purported to be written by DIAND that he does not know the existence of. With all due respect, for him to now raise that, I find a little unfair since he's had the application which mentions that document

since May and at no time has he asked Echo Bay Mines or myself for any clarification to it, and now it becomes an issue. We've undertaken to provide a copy of that, but now he's going on to speculate about what that document pertains to be about and I think that under the circumstances that's a little unfair.

Traynor: Why don't we just resolve it by having the applicant send in your copy of that document. And I think Mr. Webber's point simply was that it was a precursor that is sited and also the one that the Water Board does have in its registry. But if you have it, do us a favour and send it in, and we'll then have it, for what it's worth.

Webber: I would also like the opportunity to comment in some way on the document. It hasn't previously been part of the public record in these proceedings. We weren't the ones that sited it.

Traynor: So, that being the case, before the proceeding ends we'll have to make a decision on whether or not that alone would hold the record to be open before it's closed. I don't know if the Board wants to hold its decision pending an undertaking of this kind. So my advice to you, sir, is not to make a ruling now, but before we close – but later on – that you decide this point. Let's move forward with the presentation is my advice, Mr. Chairman.

Kadluk: Mr. Webber.

Webber: I have no further questions for Echo Bay at this time, thank you.

Kadluk: Thank you.

Filiatrault: Thank you Mr. Chairman, I had some questions for the people from Nuna. Rather than just kind of making reference to specific areas in the document, there's a couple of areas that I would suggest that maybe haven't been included and if you maybe refer to your list of assumptions that you made, I would just like clarification as to why cost estimate is not provided in those areas. There's nothing listed under 17 as far as re-vegetation goes, for the site. I'd like some clarification as to whether or not any efforts or any costs are being associated with re-vegetation. And, why it wasn't included in the cost estimate?

Smith or **Zigarlick:** It wasn't included. We were of the opinion that natural re-vegetation was an appropriate course of action. That is, I suppose, that's a matter for people who know much more about that than I do. My understanding is that re-vegetation in the context of this cost estimate wouldn't amount to much, whether it was humanly done or whether it was natural.

Filiatrault: There are some other estimates, as far as dealing with hazardous material, removal and disposal on site?

Smith: Which item was that?

Filiatrault: It may not necessarily be in your list of assumptions, it may have been excluded from the list of assumptions, but it may have been excluded from the cost estimate itself and not necessarily clearly laid out in your assumptions that you intentionally excluded it.

Smith: In terms of our normal operations in what we do, we deal with hazardous waste on an on-going basis, and we've talked about things such as antifreeze, waste oil, that sort of thing. That's in our normal support services, so we would deal with that sort of thing. We are not aware of any hazardous materials on the site that are not within the range that normally deal with. As I mentioned before, we're not aware of any PCBs or asbestos or anything like that. There are things such as lab supplies and that sort of thing, and that's the sort of thing that goes out in special items, and those are included in the broad context of the estimate.

We have intentionally dealt with, and maybe we didn't make it clear here, but whenever you have something such as a fuel tank or that sort of thing, there's material to be dealt with in those regards and we have intentionally focused on those materials and we've included in this estimate the movement of contaminated soils, for instance, in the area of the fuel storage and the powerhouse, for example. That's in here, and that was a conscious thought process. Perhaps it wasn't written but it was included.

Filiatrault: So how would it have been included in the cost? I guess maybe if you could indicate in the report the number – where I would be looking in this report to identify areas where hazardous material would have been included, where – you just mentioned fuel tank farms, so your hydrocarbon contaminated materials.

Smith: We're handling the material, yes.

Filiatrault: So it's in the actual handling that you've increased your price per unit --

Smith: Yes--

Filiatrault: You're just including it in your labour costs, or are you including it in your actual quantity?

Smith: Okay, for every quantity of material that we view, we view it as having to be handled from one place to another place, and in the estimate spreadsheets, what we do is we assess – we do it, as you've seen on a

monthly basis – we take that we're going to be doing in that month and we figure out where it's going to be moved from and where it's going to be moved to. And then we cost out what it costs to pick that up and deal with it and move it and locate it to where it needs to be located to. So that's all part of the material balance, if you will, of the estimate. It's determining how much is going to be moved from where to where, and then different materials have different productivities associated with them.

In other words, if you're putting siding off of a building into the back of a truck, that truck is not going to carry anywhere near the amount of siding in the truck as it would if you were going to put rock in that truck, in terms of weight. So you factor in the productivity and you factor in the distance hauled and then you work out the cost from that basis. So we work out the haul cycles and we work out the haulage profiles and we go on like that. Does that answer your question?

Filiatrault: I guess just as another example, when you talk about reclamation of, say, the fuel tanks. Demolition and the actual cleaning of those tanks are incorporated just in the ground scheme of the reclamation of fuel tanks.

Smith: For example, with fuel tanks, there are a number of processes that go into it. You have to take whatever is left in the tank (it has to be removed), you have to clean the tank, then you have to take shears to the tank, then you have to load the material into the truck and you have to locate it where you're going to dispose of it, and then you have to place it there, and then you have to cover it. And so those things are covered in the estimate. The Clark Builders' estimate included everything up to and including shearing it and having it on the ground and the Nuna portion of the estimate included loading it onto the trucks and hauling it to where it ultimately is to be placed.

Filiatrault: What about fuel delivery to the site? Assuming that the fuel tank farms are bare, the fuel you would have to deliver to the site in order to carry out the operation, has that been taken into account in this estimate?

Smith: Yes, we've included the required fuel to operate the equipment and the facility while we're doing the reclamation of it. There are existing tanks there, and of course we would use those up to the point where those would be taken out. But we also have, as part of our fleet, and how we operate in the North, we have to take our fuel tanks wherever we go with us. We have to – in our other work, and this would be no different in the very end of this – at the very end of the Lupin reclamation, there isn't going to be a camp to stay in, and there isn't going to be any fuel tanks, there isn't going to be anything. It's going to be just like the day that they first started building it. So we would have to bring that stuff in, and that's part of our normal business. We bring our own temporary camps and they can be very

small camps, with only 10 or 20 people. Or they can be – we have portable camps that go to 140 people, and then we also have portable fuel tanks, double-lined tanks for instance, for doing the tail end of reclamation projects or the very beginning of a mine development project or a construction project.

Kadluk: Okay, may I remind you all, please state your name when answering questions, asking questions or making general comments as this public hearing is being taped for the purposes of transcripts. Thank you.

Halim: I'm just referring to schedule 16 on your fuel consumption for the cost estimate prepared by Nuna. There's a mention about the quantity of fuel as about 4.3 million litres for the whole reclamation work. Could you explain to me – I didn't see anything else other than the quantity of fuel and it was assumed that the price given is 55 cents per litre and that's including the delivery to the site—

Smith: Yes –

Halim: But it doesn't say in here.

Smith: Okay, I'm sorry. The 55 cents is assumed to be the landed price of fuel at the Lupin site, it's a pretty good number. It can vary from year to year depending on the base price of fuel but it would include the transport to site and it would include the road use fee for putting the trucks on the road to transport the trucks to the site, so it's an all-inclusive landed-site at Lupin.

Kadluk: Dionne, you had a comment or a question to make?

Filiatrault: Yes, Mr. Chairman. Thank you. The other issue is, and you touched on it just a second ago, is delivery cost and the use of the winter road. How does that play into the overall cost estimate that you put forth?

Smith: The winter road has operated since the beginning of Lupin; it has now more reason to operate than ever before. There are two diamond mines along the road, representing a couple of billion dollars worth of investment. They're there for 25 years. The road will be there. The price that the road operates at is fairly static, if you will, because it's so driven by the sheer volume of what has to go into the diamond mines. So whether there's a little more at Lupin or a little bit less won't impact the cost to Lupin at all. We used a number of 10 cents per ton-kilometre – that's a short ton kilometre – in our estimate. The number – that's, I believe, a conservative number compared to what has been experienced in the last couple of years.

Filiatrault: Could you maybe clarify in your report where it states you used that 10 cents? I just couldn't find any reference to it.

Smith: Yes, it's under [pause] "Basis of the Estimate," page 6 of 15, item 3. What that paragraph is in fact saying is that we've included these items. However, they may be supplied by ourselves, or if the owner chooses they may elect to provide them.

Filiatrault: Just a couple of other, I guess they're more specific areas that don't seem to be clearly laid out in here, and maybe I'll just list them off and you can address them one by one.

- Rip-wrap or fill for erosion resistance on the dams or the dykes.
- Tailings supernatent treatment.
- Cover fill for stopes and demolition of waste.
- Decontamination of the pipes and tanks in the mill.

Smith: Okay, can I – we'll start with – the rip-wrap is inherently covered in it, it's not specifically mentioned. It is a material no different, in our view, than any other material, we would just selectively take it and place it. The next item, you were talking about supernatent and treatment of water. We do not include anything regarding treatment of water in our estimate. And, I'm sorry, could you repeat the next items?

Filiatrault: [inaudible]

Smith: That's in the Clark estimate – it's included as part of the cleaning process. One of the first tasks in a reclamation project of the mill is a fairly substantial cleaning project. And that's just one of the first tasks and the reason you do it in the beginning is because you have at your disposal all of the pumps and pipes and everything to get it to the tailings pond.

Filiatrault: Thank you. Under the tailings costs and quantities in your spreadsheet, related to your cells and your dykes, there doesn't seem to be any costs associated with the cell dykes – schedule 7? And, Mr. Chairman, that sort of relates back to when I was talking about rip-wrap and stability of those dykes, nothing has been identified in this estimate.

Smith: Okay, what we're talking about is internal dykes and there's no need for any rip-wrap on internal dykes. In fact an internal dyke is no different from tailings cover. It's merely a plan of sequence of placing the tailings cover so that you can control where the tailings will end up. The whole concept of dividing these cells with divider dykes – the purpose of that is to advance the ability to cover tailings by making sure they're placed in an appropriate place in the first place.

Filiatrault: Thank you Mr. Chairman. That's my mistake. I just realized it was internal dykes, but where in the schedules do you deal with the exterior, dykes?

Smith: There's no reference within this document specifically to rip-wrap – it's a detail that's beyond the document. It's a quantity issue – rip-wrap is quite a small quantity and when we haul rip-wrap there's substantially no difference between hauling that and any other ton of earth work-type material.

Filiatrault: There's a lot – when you're talking about the reclamation of this site, you're talking about a significant amount of haulage and transportation of large quantities of materials from Finger Lake. Does the cost estimate include any reclamation that may then be required at Finger Lake?

Smith: As part of the process of obtaining the esker material, the way that it's obtained is that as fall occurs, you're in fact clearing off the esker in a planned manner and you are actually creating a smoother terrain than probably was there before. So, in the process of what we call farming this esker, it is leaving it – at any point while you're doing that – you're leaving it in a proper environmental state.

Filiatrault: Just to clarify another point. In cell 4, Dave Hohnstein was talking this morning that there's no material that's placed in cell 4. However, cell 4 is used as a holding area, and maybe this isn't directed at you but other people at Echo Bay, is it not conceivable that there are going to be some sediments that would then settle in the bottom of cell 4 that would then going to require some form of reclamation?

Ducasse: Dionne, anything that might be settled in the bottom of that is covered in water now, there's no oxygen delivered yet. But we don't foresee having to do anything with cell 4.

Filiatrault: Just to confirm that, what would be the depth of cell 4? And the material that would be in that, to ensure that there's no reaction taking place, we want to make sure that you have sufficient water covered to limit that.

Ducasse: Dave Hohnstein tells me it's 3 to 4 metres depth of water in cell 4.

Filiatrault: The next question is back to Nuna again. If, I'm assuming all the equipment you're proposing to use is all your own equipment that would be on site?

Smith: We have equipment on site right now and we would use that, plus we would augment it with other equipment for the specific tasks that would need to be done.

Filiatrault: Into your estimate, have you built in the contingency that would need to be considered for winter storage of that equipment?

Smith: The way that we have approached the estimate, is, because of the seasonal nature, the work – some of the work is a seasonal nature type of work – the way that we have approached the costing of it, which is what we do when we have other projects that are seasonal like that. We have a set charge for the piece of equipment for just being on site and not being used, and then we add an hourly charge for using the equipment so that way we cover our carrying costs for the equipment on a 12-month basis even though it's only used for 3 months. And we've included that in this estimate.

Filiatrault: Thank you, Mr. Chairman.

Kadluk: Thank you Dionne. Mr. Danyluk, do you have any further comments to make on your presentation?

Ignasiak: Perhaps I could first confirm there are no more questions for Nuna Logistics.

Traynor?: Mr. Chairman, just to give anyone a sense of the timing here, Mr. Danyluk has a presentation to give on a question that was raised earlier which concerned a proposed payment schedule and we're getting down to the dollars and cents now. And so, Mr. Danyluk will give a presentation on that subject, which I believe is in the neighbourhood of 20 minutes and Mr. McCrank will follow with comments that should take between 4 and 5 minutes and that would conclude Echo Bay Mines' presentation subject to the closing arguments of the appellant to made, I believe it's Agenda item 16, at the very end. So that would be after the intervener presents its evidence, if any. So that's just to provide the Board with a sense of the timing, and I thought that perhaps before Mr. Danyluk proceeds we could just revisit the issue of exhibits one more time.

I believe the idea was to mark the Nuna Logistics report as exhibit 9. I thought we could confirm that for the record. Is that correct.

Filiatrault: Yeah, we can do that, exhibit 9, Nuna's Report.

Ignasiak: And perhaps at this time we could mark the document Mr. Danyluk referred to as exhibit 10. That would be our proposal.

Webber: Mr. Ignasiak is referring to which document?

Ignasiak: It's a document by Mr. Danyluk on Echo Bay Mines letterhead dated November 15, 2001 addressed to the attention of Philippe De Pizzo regarding reclamation security and payment schedule proposal. And the document is 5 pages.

[pause]

Danyluk: I had started earlier referring to this document and it is in fact a letter to Philippe De Pizzo and copied to yourself Mr. Chairman. And, the first part, for brevity I will…

Tape 5 –side A

It is intended to be a reasonable basis on which to establish a funding mechanism for meeting reclamation needs. Echo Bay wants to make additional contributions to a fund over and above moneys already in deposit with the government of Canada. The annual review process as specified by the Board would be the mechanism by which both parties could review the security amount and revise the schedule of payment if necessary, relative to new developments. Such an annual review would serve as an excellent forum for Echo Bay Mines to update the Board on the year's reclamation activities, research progress, and to present any proposed changes to the plan. Echo Bay Mines recommends that such a review process take place at the Lupin Mine in the fall of each year starting in 2002. This will be the best time of the year for the Board to view firsthand the work that has been completed during each summer's reclamation season.

With this proposal, we can develop a true team approach between Echo Bay Mines, the Nunavut Water Board and other stakeholders to satisfy all concerns regarding the progress of the reclamation work. Reclamation work was completed at the site during 2000, during 2001, and more is scheduled to be completed in each and every year of the remaining mine life.

Upon the Board's setting of the security amount and subsequent payment schedule, Echo Bay Mines will continue to work with DIAND to determine the form in which the security will be transferred. Echo Bay Mines and DIAND have a meeting scheduled for December 15, 2001, to continue to discuss this issue. If the Board agrees with this proposal by Echo Bay Mines, we could possibly have a completed security plan in place by year-end. Since all parties have had ample time to contemplate this issue over the last year, we do not feel this is an unworkable timeframe. As to the amount and timing for security, Echo Bay Mines proposes the following, and believes it to be fair and reasonable.

If I could draw your attention to the screen behind me, [pause] Mr. Chairman, we have discussed the reasons for believing that 1 metre of cover will be sufficient to prevent or limit the oxidation of the containment area to an acceptable level. And Nuna concurs with the cost estimate for the 1 metre cover. So we start with a cost estimate of $18.8 million; we add $125,000 for post-closure monitoring, $370,000 for some post-closure engineering, for a total of $19.3 million, which is our total that Echo Bay submits as the amount to reclaim the Lupin Mine site.

If we apply the same discount rates as the Nunavut Water Board used in determining the original security amount (that was 10 per cent for our compliance record and a further 10 per cent to reflect that Lupin is an existing mine with almost 20 years of operation) the revised reclamation security amount would be $15.466 million.

That figure is reflected at the top of this table. We currently have $2 million on deposit with the Government of Canada. We propose to do progressive reclamation totalling $7.7 million during the years 2001-2008. This was the work that was visually illustrated during the presentation by Mr. Hohnstein and Mr. Ducasse. That would leave the balance remaining at closure of about $4.9 million.

We have a salvage value estimate done by Alan Laird, our director of plant and engineering for Echo Bay Mines, who has over 30 years of experience in doing this type of work. He has estimated our salvage value upon closure of our equipment and machinery at about $7.45 million.

Now, we know that there is some concern about using these types of figures at closure. We have taken this into account, and are only proposing to use 50 per cent of this number – 50 per cent conservative contingency, if you will, leaving $3.73 million.

We generally carry a warehouse inventory at the site of between $8 and $10 million. Once again, supplies, parts for equipment for example, to show some obsolescence with time. We would like to use a conservative amount for this obsolescence of 20 cents on the dollar and we would propose to use $1.6 million.

If you look at this table and you see the required trust fund at the end of mine life as completely covered. In fact there is a surplus of $457,000.

Now, the combination of the current down payment, the forecasted progressive reclamation and conservative salvage value are sufficient to cover the proposed reclamation security provision, even without a trust fund being established. However, Echo Bay Mines realizes that both the

Nunavut Water Board and DIAND want to see a reclamation trust fund built up as quickly as possible, relative to the company's ability to fund it.

Echo Bay Mines proposes to annually perform reclamation work and to contribute to the trust fund at a combined rate that closely approximates $7.50 per ounce of gold produced. Echo Bay Mines proposes to contribute $500,000 annually to the fund for the first 4 years and a reduced amount during year 5. After year 4 of the process, accruing interest will continue to add significantly to the trust such that the contributions continue to approximate about $500,000 annually.

If I could draw your attention to the first highlighted column, titled "Reclamation Security Balance." This is the balance on January 1 of each year. You'll see we start at 2001 with that figure of $15.466 million that I mentioned, and the reclamation security balance and hence the reclamation liability declines each and every year of the remaining mine life. Production is expected to be completed in 2007, the remaining security balance is paid off or accounted for in 2008.

The next column, titled "Forecasted Progressive Reclamation Work." The reclamation spending shown in the year 2008 of $1.8 million will totally complete the covering of the entire tailings containment area to a depth of 1 metre. Our estimate to cover the tailings containment - $7.6 million.

So you can see during each of those years of our mine life, if you can recall back to the visual representation we gave of the divider dykes and then subsequent filling on an annual basis, each year, the dollar value shown corresponds to the work that we have visually shown within that presentation.

The next column titled, "Echo Bay Mines' Payment to the Reclamation Trust Fund." July 1 is listed there as a recommended date. We start in year 2001 with the $2.92 million currently on deposit to the Government of Canada. You'll see, then the $500,000 added through each of 2002 through 2005. The number below with an asterisk is what would accrue on a straight line interest basis at the end of each year – at 4 per cent was the number we picked, an achievable, expected rate of return – so each of those annual contributions, together with the accrued interest will total, by the year 2009, $6.59 million.

The next two columns, "Revenue from Salvage of Warehouse Inventory" and "Revenue from Salvage of Machinery and Equipment" start to kick in in 2007, once mining has been completed, and again, these were the conservative, factored figures for these two categories.

So you can see that when combined with the conservative salvage estimate, there would be sufficient funds to complete the remainder of the site reclamation. If we consider the total reclamation estimate of $19.3 million, from that we reduce the amount by $7.7 million for progressive reclamation (that would be the work completed between 2001 and 2008), by the reclamation trust fund $6.59 million, our warehouse inventory of $1.6 million and our equipment and machinery salvage value $3.7 million, that in 2009, we would have the entire $19.3 million of reclamation requirement accounted for.

These are a lot of numbers to throw up all at one time. I'm sure there may be some questions and I would be more than happy to address them.

Kadluk: Are there any questions?

Ignasiak: Mr. Chairman, I take it there are no questions. If that's the case, perhaps we could mark as exhibit 11 the overheads referred to by Mr. Danyluk, which as the others, we will provide in electronic form.

Kadluk: Thank you. We'll take a 10-minute break. Thank you.

[pause]

Kadluk: Okay, let's reconvene. Any further comments there, Mr. Danyluk?

Danyluk: Yes, Mr. Chairman, thank you. Mr. Chairman, on behalf of Echo Bay Mines and the Lupin Operation, I would like to take this opportunity to summarize the various points that we have discussed throughout today's hearing.

In its decision regarding our water license, the Nunavut Water Board gave notice that the reclamation security issue was to be reviewed annually, with the possibility of adjusting the security amount as new evidence or circumstances arise. It's with this annual review process in mind that we have requested an amendment to the current security amount.

We have discussed the reclamation work that has already been completed at Lupin and the work plan for each year of the remaining mine life. The Board was given a visual representation of how this plan will continue to reduce the reclamation liability of the operation, especially within the tailings containment area.

Echo Bay Mines has obtained independent estimates by experienced northern construction companies that support our reclamation estimate. These estimates, prepared by Nuna Logistics and Clark Builders, are based

on the past experience of actually doing the job for which the estimate was prepared. An estimate can't possibly be more accurate than that.

EBA Engineering talked about their analysis, completed on our reclamation plan. The amount and quality of data collected at Lupin to date was summarized and categorized as comprehensive. Also discussed was our plan for collecting additional geo-chemical data. The basis of our future research will be to prove that an esker cover of 1.0 metres or less will adequately complete the tailings related reclamation.

Echo Bay Mines explained why we believe the BCL reclamation estimate is flawed and why it should not be used as the basis of the required reclamation security at the Lupin Operation. Echo Bay Mines contends that our reclamation estimate is accurate and should therefore be the one used to set the security amount.

Mr. Chairman, Echo Bay Mines believes that our overall reclamation plan for the Lupin Operation is technically sound. Echo Bay Mines fully intends to complete all the work required to reclaim the site. Much of this work will take place throughout the remainder of the expected mine life, as we have illustrated to you today. The balance of the work can only be started once mining is completed in 2007. Echo Bay Mines has proven our intention of reclaiming the site by the amount of work already completed at Lupin and by our reclamation performance at every mine the company has been involved with.

DIAND contends that it is the responsibility of the Board to set the security amount and subsequent schedule of payments, and Echo Bay Mines agrees with DIAND on this point. Echo Bay Mines believes that the proposal tabled today is both fair and reasonable.

The annual review process as specified by the Board would be a mechanism by which both parties would review the security amount and revise the schedule of payment if necessary. With this proposal, an annual review process recommended therein, we can develop a true team approach between Echo Bay Mines, the Nunavut Water Board, and other stakeholders, to satisfy all concerns regarding the progress of the reclamation work.

Mr. Chairman, if the Board agrees with this proposal, Echo Bay Mines will then continue to work with DIAND regarding the form of the security transfer. It is then entirely possible that a completed security plan for the Lupin Operation could be in place by year-end. This would be an important milestone for all three parties to achieve, allowing each of us to concentrate our efforts and resources on other matters.

Mr. Chairman, the current economic realities facing the mining industry compel both the Nunavut Water Board and DIAND to work with Echo Bay Mines to develop a reclamation security amount and subsequent schedule of payment that is both reasonable and affordable. By staying in operation we will continue to generate a substantial tax contribution to all levels of government. Lupin will provide many jobs during the duration of the mine life, many within the Kitikmeot Region. Also, our strategic location could greatly enhance further resource development in the Kitikmeot.

There is no doubt that mining will pay a major role in the future economic development of Nunavut. The announced closing of both the Nanisivik and Polaris Mines in 2002 will leave Lupin as the only operating mine in the entire territory. Echo Bay Mines believes it is important for the Board and for all levels of government to show their commitment to the mining industry in Nunavut by supporting the Lupin Operation with respect to our security proposal.

Echo Bay never has and is not now looking for any kind of financial assistance. All we ask is for reasonable security terms to allow us to remain in operation. Mr. Chairman, we have put forward a sound reclamation plan that will see much work performed on a progressive basis prior to closure. Also, our security proposal will provide sufficient funds to complete the balance of the post-closure reclamation. Echo Bay Mines believes that our reclamation plan adequately provides assurance to the Board, to DIAND and to other stakeholders that the site will be reclaimed to the satisfaction of all concerned.

On behalf of Echo Bay Mines Ltd. and the Lupin Operation, I would like to thank you and the Board for allowing this hearing today. We hope and anticipate that upon further review the security amount and payment schedule proposal that we have put forward will be acceptable to the Board. Echo Bay Mines will await the decision of the Board on these matters.

I'd like to turn over now to Mr. McCrank.

Kadluk: Dionne?

Filiatrault: I'm assuming that Mr. McCrank's are the closing remarks for the hearing?

McCrank: No.

Filiatrault: Or is it dealing with the financial status –

McCrank: I'm just going to basically… no, I'm not the closer. Martin will be the last one.

Filiatrault: Maybe I could, Mr. Chairman, I only have two final questions and I'll get those out of the way and then virtually I'll be done. One is that I would just like, maybe the people the from Echo Bay, to address, at the current security requirements that have been set by the Board, what financial implications does that have on Echo Bay Mines? What's the current financial health of Echo Bay Mines? And do we just look to your annual report to draw our own conclusions? Or maybe, if you could just comment on the financial health of Echo Bay Mines. And, what is your current credit rating?

McCrank: What was that last…?

Filiatrault: Credit rating.

McCrank: Basically, there's no credit rating for gold mining companies, including ours. We have a heavy debt load and we're working to try to get rid of that debt.

Filiatrault: And as far as the financial health of Echo Bay Mines, there's not really anything other than to say that you have a heavy debt that you're trying to clear? That's all you'd like to say at this point?

McCrank: I'd like to go through my talk and then I'll say something, if that's okay with the Board.

Kadluk: Okay.

McCrank: Thank you, Mr. Chairman. My name is Jerry McCrank. For the past 25 years, I have been an employee of Echo Bay Mines. For the last four, I have been Vice-President of Operations for the company. Echo Bay is a Canadian gold mining company established in 1964, our shares trade on the Toronto and American stock exchanges. We operate four mines, one in Washington State, two in Nevada and the Lupin Mine. We also hold a development property located in Timmins, Ontario, and an advanced exploration property located in West Africa. Both of these properties are waiting for a better gold price to move them further. This is on top of the Uluu [inaudible] property which we have located next door to Lupin. That one also is waiting for better gold price.

For the last 38 years, we have had continuous presence in the North. We are still one of the largest private employers of residents from the northern communities, and as a fellow said before, we have never had any serious violations or environmental problems over this time. We are not asking

for any handouts or subsidies, but we are asking for the Board to understand the difficult times the gold mining industry is facing. Echo Bay has always reclaimed areas where we have worked and we have every intention of doing the same thing here at Lupin. Asking us to place on deposit a total reclamation dollar amount that reflects the worst-case environmental scenario is unrealistic to us. This high upfront dollar deposit is not the best use of the money, nor do we have the financial capacity to do it, to fund it. The ability for Echo Bay to obtain a third party bond or letter of credit to back this liability does not exist in the current market. Bonding companies and banks are not willing to take on this type of risk when they see where the gold price has been over the past four years and the financial difficulties the low gold prices have put on virtually all but a few companies in this industry.

We are diligently working at trying to restructure the capital of this company. This is evidenced by the announcement September 5 of this year with Frank Nevada. This announced transaction will eliminate approximately $160 million worth of debt of the company and we hope this transaction – and it is also subject to shareholder approval for Echo Bay – will be approved early next year. And at that time, $160 million goes off the balance sheet.

We believe this is an important first step on the road to being debt free and will allow the company to have a viable future. It is very important to Echo Bay that the Board recognizes that Lupin is an existing mine in operation since 1982 and establish a reclamation dollar amount that is realistic and structure the terms to meet Echo Bay's ability to fund it.

It is also very important that the Board understands that Echo Bay cannot fund the amount being requested prior to this hearing, but we can perform reclamation on an ongoing basis as was explained to you as went through today. And we would like to build a fund that we believe will be required on closing. Each year that Lupin remains in operation, its environmental liability will decrease due to its ongoing reclamation program. The reclamation dollar amount on closure will be substantially less than what would face us if we shut down today and substantially less than the dollar number in front of you.

The Echo Bay proposal will allow us to meet our obligations of compliance without the Crown incurring any new unsecured environmental liability and without forcing us into financial insolvency. Our hope is that the Board will be willing to restructure a solution that is a win-win for everyone. The proposal we are putting forth makes sense to us over the long term and I do believe it would be in the best interest of all parties to look at it and consider it. Thank you Mr. Chairman.

Kadluk: Thank you Mr. McCrank. Any questions?

Danyluk: May we have just one moment please?

Kadluk: Yes.

[pause]

Danyluk: Thank you Mr. Chairman, that will be it for that answer.

Kadluk: Thank you, so you're done?

[inaudible]

Kadluk: Thank you, shall we move on?

As I stated earlier, DIAND has submitted a formal presentation and will present it verbally, therefore I would invite Mr. Webber, representing DIAND, to make their presentation.

Webber: Thank you Mr. Chairman. Paul Smith, Waters Manager for DIAND in Nunavut will be making the primary presentation and when he is finished, I will have a few comments to make on more legalistic matters.

Danyluk: Mr. McCrank, we apologize. There was a question posed to McCrank at the beginning of his presentation that after his presentation, I don't believe it was answered. That question was posed by Dionne. And I apologize to Mr. Webber, we overlooked that. Do you want to re-ask the question?

Filiatrault: My question was just relative to Echo Bay Mines' financial health and status given the current security requirements imposed by the Board as of last March's decision and hearing. And I believe that through the course of his presentation, he has addressed that.

Kadluk: Thank you. Okay, Mr. Smith, could you please proceed?

Tilleman: Sorry Mr. Chairman, please state your name and spell your last name for the record.

Smith: My name is Paul Smith, s-m-I-t-h.

Tilleman: Do you affirm that the evidence that you have given or will give in these proceedings is the truth, the whole truth and nothing but the truth, do you so affirm?

Smith: I so affirm.

Kadluk: Thank you.

Smith: Thank you Mr. Chairman, Board Members, all others present. We appreciate the opportunity to present our intervention to the Board here in Kugluktuk. The matter that brings us here today is one that we have to treat very seriously by our office, the minister and the Government of Canada, this issue being security bonding for mining operations.

As you and your staff are aware, the legal department is currently developing a Nunavut Mine Reclamation Policy and while it is still in its draft form, it has been widely distributed to industry, their associations, the institutions of public government and other organizations.

In the most basic rendering of this policy, the minister must avoid, where at all possible, accepting additional liabilities. This is accomplished by insuring that appropriate security is in place. This security can be required in a water license, a land lease, or both. This is not solely a DIAND policy, but in fact it is a directive to all ministers of the federal government given to them by the Prime Minister in the past year.

Now, the Mine Reclamation Policy applies to new mines and states that older operations like Lupin must be dealt with on a case-by-case basis. I would propose that this has been done. The Board has recognized that Echo Bay Mines has been a good corporate citizen and has a good environmental track record. As a result, the Board reduced the abandonment and reclamation security amount by some $10 million from the estimate produced for the Board by the consultant using the reclaim cost modelling program.

The Water Board's decision was that $29.2 million of security was required. This decision was based on a number of factors, including Lupin's interim A&R plan, which included as one option providing an adequate granular calc on top of the tailings to allow permafrost to establish itself and thereby eliminating the potential for acid rock drainage and metal leaching. Since the Board has made this decision, it is now Echo Bay Mines' responsibility to provide appropriate assurances to both the Nunavut Water Board and the minister that what is being proposed for abandonment and reclamation at Lupin, and particularly the manner in which the tailings containment area will be reclaimed, is sufficient to allow for a reduction in the amount of the security deposit.

As we have stated in our intervention, we do not believe that Echo Bay Mines has demonstrated that the proposal allows a reduction in security deposit at this time. It is the position of DIAND that while Echo Bay Mines has raised questions about the amount of cover material that would

be acceptable, they have not provided any other viable options or proven techniques that would be acceptable. They propose additional research that must be done in order to characterize a number of critical components in order to determine the suitability of cover material.

And since they can't provide this information and it has yet to be generated, there are no assurances to the Board or to the minister or to what the public demand in order to provide the rationale to change the Board's previous decision on security deposits.

So, where does this leave us? The Department recognizes the current economics of the metal mining industry, and this must be taken into account. Over the past several months, the Department has been in negotiations with Echo Bay Mines on the form of security. This effort is being managed by the regional offices with technical assistance from economic and financial advisors at our headquarter office. These discussions continue next month with another session in Edmonton.

However, our primary goal is always working towards reducing the liability to the minister and the Government of Canada. As such, we continue to urge and support the Board to maintain the amount of security currently required. Once again, thank you for the opportunity to present our comments today.

Kadluk: Thank you, Mr. Smith. Any questions from the applicant? Comments?

Danyluk: No, Mr. Chairman.

Kadluk: Any questions from the Water Board staff? Resource people?

[pause]

Filiatrault: What is the current form and schedule, if any, that has been discussed between Echo Bay and DIAND? What amount is in place right now, and how has that been forwarded to DIAND?

Webber: Steve Traynor will be answering this question for DIAND so could I ask Mr. Tilleman to swear him in?

Tilleman: Thank you Mr. Chairman, please state and spell your last name for the record.

Traynor: Stephen Traynor. T-r-a-y-n-o-r.

Tilleman: Do you affirm that the evidence that you have given or will be giving at this proceeding is the truth, the whole truth and nothing but the truth? Do you so affirm?

Traynor: I so affirm.

Tilleman: Thank you.

Traynor: If I understand the question correctly, you're asking the current amount of security and the form? The current amount of security is as indicated in Echo Bay's documents, it is $2.9 million. That is in the form of a letter of credit. Any remaining amount between that and the Water Board decision of $29 million is currently under negotiations with the Water Board. They have requested a reclamation trust fund. This is something that we've been working out with them, and it requires a little extra time, a little extra work, because it has both financial implications from a tax position that the Government of Canada has to look at as well, under the Canada Mining Regulations, there are provisions for credits towards your royalty payments, so it's a little bit more complex and that is what we are looking towards. And we have put some proposals on the table, I believe recently, and we're looking to discuss those at the December 15 meeting in Edmonton with regard to a reclamation trust fund proposal for them.

Webber: Excuse me, Dionne, could I just confer with Mr. Traynor for just a second please.

[pause]

Kadluk: Mr. McCrank?

McCrank: Stephen Traynor is partially right – he's right on the total amount of deposit we have – only a portion of that is in LC. The other portion is a cash deposit that we'd like to get back and start earning interest. As far as the proposals that are on the table, we cannot meet the proposals that DIAND is requesting of us. Putting $9 million a year for the next 3 years, or any combination of such is not possible. They're right, we are meeting on the 15th of December of this year in Edmonton. I don't know what we're going to say. We want to keep on doing concurrent reclamation. We feel that we can keep doing that, and as I said in our meeting, and on this paper I feel I have said it. And the other fellows have said it before. We cannot do both. We cannot put $9 million down a year. I know they'd like it. We'd all like it, but we can't do it. There's a million dollars in cash as well. It's just not all they'll see.

Kadluk: Thank you Mr. McCrank.

[pause]

Filiatrault: Mr. Chairman, thanks. I'm not sure how much this applies or not, but I'm going to ask it anyway, and we can go from there. Under the current decision that the Board issues, on page 22, the Board recommended that DIAND, Water Resources and Lands division harmonize the security to avoid duplication, and I'm probably paraphrasing a little bit. How much of the security is currently held under the land leases for DIAND Lands?

Traynor: Currently, under the land leases, there is no security. But there is no security because we have been in negotiation in that harmonization process, that's where they've asked for the reclamation trust fund. So we have not received any money as we wait for the resolution of the issue of the reclamation trust fund issue for them. And then they would be combined.

[pause]

Kadluk: Mr. Webber.

Webber: The comments that I was proposing to make as a tag-on to Mr. Smith's presentation had to do with form and schedule of security. I wonder if it might be convenient for the Board and all concerned if I make my comments and perhaps my comments will affect the questioning that Miss **Filiatrault** wants to engage in.

Webber: First of all, a little point of form. In DIAND's written intervention on page 3 in the first full paragraph, there's a reference to the department's draught Mine Reclamation Policy for Nunavut, initial draft September 27, 1999. Now, that document is not yet a part of the public record in the Echo Bay file. In March-April of 2000, what we filed was an earlier version of that same document which refers to the Northwest Territories rather than Nunavut. Mr. Smith also cited the Nunavut document in his oral presentation today. My understanding is that there is no substantial difference between the two but in any event, we would undertake to file the document referred to in DIAND's written and oral interventions with the Board.

Tilleman?: Why don't we deal with that, and also this other precursor if that's what it is, mentioned on the last page of Mr. Danyluk's submission. So why don't we mark as 12 the presentation that Mr. McCrank did, which hasn't been marked yet. And then 13 would be the one referenced, that Mr. Webber wanted to look at, which is the one called "Towards a Mine Reclamation Policy for the NWT." And that would be 13 and 14 would be the one that Webber just referred to which would the "Reclamation Policy" dated September 27, 1999.

Now, when you send in exhibit 13, which is this "Towards" document, do us all a favour and send it to Mr. Webber so they can examine it for whatever comments they wish to make on it. And if they have any comments, I think, Mr. Chairman, the Board can deal with them at that time.

Ignasiak: Just a point of clarification. That exhibit 13, is that understood to be the same document as referred to in both your submissions and by Mr. Danyluk in the application?

Webber: No, Mr. Danyluk's letter of May 25, refers to 2 documents; the one that we're missing, the "Towards" document, that's the first one mentioned in Mr. Danyluk's letter. Then Mr. Danyluk refers to a mine reclamation policy. The document that he's referring to there is the document that DIAND filed in March-April of 2000, then there's a third document, which is the one that's referred to in our current intervention, and that's a Nunavut-specific version of the second document.

Ignasiak: So our undertaking still stands, and that has not been pre-filed as of this point, is that correct? Or has it?

Danyluk?: The "Towards" document is not in the hands of the Board.

Ignasiak: Thank you.

Kadluk: Any further questions for the intervener? Mr. Webber.

Webber: I'm not going to let anyone get away with just one formal comment like that. I'd like to bend your ears a little bit longer if I may. What I wanted to talk about is two things, the form of security and the schedule for security. It's DIAND's position, supported by the Waters Act and the Waters Regulations, that form is a matter within the responsibility…

Tape 5 side B

… that's a question to be decided by the minister and his officials. The question of salvage value and inventory value has been raised by Echo Bay, these are two matters that came up at the preceding hearing as well and there was quite a bit of discussion about them at that time. I think at this stage, all that needs be said on the issue of salvage and the question of inventory is that those are possible forms of security. The value of those assets wouldn't go towards reducing the amount of security that is required by the Board in the first instance. If the minister saw fit, he might take, for example, the pledge of assets or a pledge of inventory or some sort of a lean on those assets, he might take such things as one form

of security, but it would be a question of form, and therefore it's a matter within the discretion of the minister.

Another matter that has been raised is the possibility of a reclamation trust fund. This again was something that was discussed in March and April of 2000. Again, it's my submission that reclamation trust fund is one possible form of security. I want to make it clear that DIAND is open to the possibility of having some, or possibly all of the security posted in the form of a reclamation trust fund. It may be that there are certain comments in the reasons for decision issued by the Board last year which frowned, or could be taken as frowning, on the possibility of a reclamation trust fund. DIAND views it as a matter within the discretion of the minister to say whether a reclamation trust fund is a form acceptable to him or not. DIAND would ask that the Board, in any decision that comes out of today's proceedings, DIAND would ask that the Board make a statement in that decision clarifying that the Board does see the reclamation trust fund as a possibility which the minister may, in his discretion, consider.

Now, in determining how much security to require, it seems that the DIAND and Echo Bay are pursuing somewhat different tacts. I just want to make that point to begin with, I'll come back to it in a second.

First of all, I want to talk about schedule. Both DIAND and Echo Bay are of the view that the schedule for security posting should be set by the Board. If I could summarize DIAND's view of the matter, it's this: the Board has to fix an amount of security that is to be posted. If the Board thinks that some amount of security is to be posted, the Board imposes a requirement to post that security amount. However, the Board is not requiring that a security amount be posted unless the Board also says that the security is to be posted by a particular date, by a particular time. The Board has the option of specifying several particular times, saying that the total amount of security shall be, say, $30 million, $5 million on this date, $5 million on another date and so on. But again, the dates have to be specified or the Board has only done half the job in requiring security to be posted.

Coming back to what I was saying about determining how much security to require. I had a chance to read quickly through Mr. Danyluk's November 15 letter, and of course I've listened to his presentation. I'm not quite sure if I'm misunderstanding or whether there is indeed a fundamental difference. I think that there is a fundamental difference.

DIAND's understanding of the way the security amount is to be set is that the Board asks on November 15, 'What is the reclamation work that remains to be done at the site?' Having identified what reclamation work

remains to be done, and of course there's an estimating process to be done there, the Board then comes up with an estimate of how much that work will cost and that, subject to certain adjustments, is to be security amount (the amount of security required under the license).

I say subject to certain amounts, this is set out in section 12 of the regulations. There are also statements in DIAND's draft Mine Reclamation Policy. I think this basic approach, though, is drawn from, is dictated by, that same section 12 of those regulations. The question is, 'What reclamation activity remains to be done between now and the ultimate abandonment of the site?' And what is the approximate cost of that reclamation? The question is not, what reclamation will remain to be done once active mining has ceased? In other words, one doesn't start with a dollar figure, one doesn't say, the amount of reclamation work remaining to be done is $30 million, then subtract from that $30 million the amount of progressive reclamation that will be done prior to the cessation of mining, say it's $20 million. One doesn't take the $30 million, subtract the $20 million and come up with the security requirement of $10 million.

Now, my reading of the November 15 letter from Mr. Danyluk is that's essentially what they're proposing. It is interesting, it is commendable that Echo Bay does engage in progressive reclamation and is proposing to continue progressive reclamation, and if they continue their progressive reclamation, and if that progressive reclamation lowers the cost of the remaining reclamation activity, then Echo Bay, at some future date, should get some crediting, some reduction, in the security requirement imposed upon them. But to begin with, that is to say, on November 15, 2001, the Board should ask itself, what is the amount of reclamation, both progressive reclamation and post-closure reclamation, or post-mining reclamation, what is the amount of reclamation that remains to be done? What are the activities, and what will be the costs of those activities? Subject to certain adjustments for a good track record, for example, that will be the amount of the security deposit requirement. That's not to deny that Echo Bay can come back in a year's time or at some other date and present the Board with evidence that will justify a reduction in the security requirement. But in the first instance, the security requirement should roughly equal the amount of the reclamation activity remaining as of this time. Those are my comments, Mr. Chairman.

Kadluk: Thank you Mr. Webber, any further questions?

Danyluk: Thank you Mr. Chairman, just in response to Mr. Webber's last submission. He was quoting a figure of $30 million, I'm assuming from $29.2 million, which was the original estimate, and this is, for us, one of the fundamental issues we are discussing today, that we contend that the

reclamation amount is $19.33 million not $29.2 million. Therefore, the proposal that we have put forward, which shows us doing reclamation work and contributing to the trust fund, will in fact account for that $19.3 million. So, I do not think that we have a fundamental on how we are going to account for the reclamation amount insofar as the provision for security. I think we have a fundamental difference in the actual number that we start the reclamation from, where we contend it's $19.3 and DIAND is urging you to stick with your original estimate of $29.2.

Kadluk: Thank you. Mr. Webber?

Webber: In response to Mr. Danyluk's observation, it is certainly the case that there is a difference between DIAND and Echo Bay on the issue of what the security requirement should be. I was using the figure of $30 million because it was a convenient round figure and also because it was a convenient round figure which happens to be close to 29.2 which is, in DIAND's view, the security amount that should be imposed, or should be retained, rather.

Yes, there's that difference in that starting point figure, but there also seems to be, whichever starting point one uses, whether its $29.2 million, or roughly $19 million or $16 million or some figure in between, or some higher figure, there also seems to be a difference in the approach that Echo Bay and DIAND take to the calculation of security quantum. In particular, there seems to be a difference in the way in which Echo Bay would factor in progressive reclamation and the way in which DIAND would suggest progressive reclamation should be factored in.

One other matter that I wanted to mention: the question of security schedule came up. A moment ago I said that both DIAND and Echo Bay are urging the Board to set a schedule for security postings. In, I believe it was December of last year, DIAND provided Echo Bay with a schedule for security postings for the Lupin Mine site. There've been ongoing discussions since then. There's also been some posting by Echo Bay. I think two factors, two additional factors, if I may, that argue in favour of the Board's setting some sort of a schedule, are these, and both of them would make Echo Bay's and DIAND's lives simpler.

There's been some disagreement between Echo Bay and DIAND, and I hope I'm representing Echo Bay's position correctly, they'll let me know if I'm not. There's been some disagreement between Echo Bay and DIAND as to whom the Board was giving the final say to. DIAND's understanding of the relevant license condition, combined with the reasons for decision, is that the Board wanted DIAND to engage in discussion with Echo Bay, but ultimately the Board was leaving it to DIAND to have the final say. That, yes, there should be a negotiation, but ultimately if

there was some disagreement, it was for DIAND to set the schedule. That, as I say, is our reading of the license condition. Echo Bay, on the other hand, as I understand their position, feels that consensus has to be reached.

And, it has been precious difficult to reach consensus, both on the interpretation of the relevant passages in the license and in the reasons, and on a schedule. That is the second point. The first one is the dispute between DIAND and Echo Bay on the interpretation of the license, the second was the more substantive difficulty in reaching agreement on a schedule. We have had difficulty on this score, and again, taking that combined with the fact that, in our view, it's within the Board's responsibilities to set the schedule, we would again urge the Board to do just that.

Kadluk: Any further comments? Mr. Danyluk.

Danyluk: Thank you Mr. Chairman, I think, between Echo Bay Mines and DIAND, we have come to some amount of consensus on a number of issues. We both want to ensure that the security amount is provided. What, I think, it comes down to, is the schedule of the payments and this is something that we have said, that by virtue of presenting this proposal, we have come up with a reasonable approach through doing the reclamation work, which is ultimately – and I think we all agree – is the most important, to get the work done, combined with the reclamation trust.

I think that DIAND has shown that they're quite rigid in their positions. They are asking to maintain this $29.2 million, they have asked as their proposal of a schedule of payment, that we come up with a 10 per cent down, which we have, and then $9 million this year, $9 million next year, and subsequent smaller payments of about $3 million for a few more years. And this is the issue at hand – we just simply cannot come up with this $9 million. We would urge that the Nunavut Water Board take a look at our proposal, which we feel is fair. And, if you also feel it's fair, we will be able to live with this proposal.

Kadluk: Thank you. Any further comments? If not, we will proceed. At this time, I invite the interveners who made a presentation to the Board to make their final closing remarks if they wish. Again, please restrict your intervention to matters under consideration.

Webber: Mr. Chairman, at least before it's time for DIAND's final summation, could I ask for a 10-minute break, please?

Kadluk: Thank you. Ten minutes.

[pause]

Kadluk: Closing remarks from the intervener.

Webber: Thank you Mr. Chairman. The Board is not starting from scratch in this proceeding. There's already a security requirement in place under Echo Bay's water license. It was justified in the first instance. The Board arrived at it after due consideration of all the evidence that was presented to it in the proceedings of March and April of 2000. The onus is on the party applying for an amendment, in this case Echo Bay, to convince the Board that it should move away from its previous appraisal of the situation.

Now, the end that the applicant Echo Bay wants to get to, the conclusion it wants the Board to arrive at, is that Echo Bay's evidence shows that a lesser amount of security should be required. The amount of security is to be based on the reclamation costs that are anticipated for the whole of the future, and because of that the applicant has to satisfy the Board through its evidence that the reclamation costs will be lower than what the Board figured they would be in the spring and summer of last year.

In other words, the evidence has to be such that it makes it reasonable to expect that the costs of adequate reclamation will be in the same ballpark as the estimate put forward by Echo Bay, as opposed to the estimate which the Board arrived at in its decision of last year.

Now, I'd like to take the Board to the May 25 application letter from Mr. Danyluk of Echo Bay, specifically to the Executive Summary at the beginning of that letter. Mr. Danyluk says – this is on the first page of the Executive Summary. "The following points summarize our rationale for recommending that the NWB grant our application to reduce the amount of reclamation security for the Lupin Operation." Now, I'm not going to read this out word for word, I'm going to provide you with my own capsule summaries of the points and the following comments on them.

First of all, Echo Bay mentions that it has an exemplary record of environmental stewardship in its North American operations. DIAND doesn't contest that but DIAND notes that that information was placed before the Board a year and a half ago and the Board has already taken it into account in setting the amount of the security, has already provided Echo Bay with a reduction on the amount of security on account of Echo Bay's exemplary record.

Second point that Echo Bay mentions in the Executive Summary is that it has already spent a considerable amount on progressive reclamation at Lupin. Again, DIAND applauds Echo Bay for this. DIAND certainly hopes and expects that Echo Bay will follow through on its plans to

continue with the progressive reclamation. But, two points, first of all, as I mentioned a couple of minutes ago, DIAND's approach to the way in which progressive reclamation should be taken into account vis a vis security appears to be radically different from the way in which Echo Bay would take it into account. Secondly, I come back to a point that was made at the last hearing with respect to Lupin, namely that nobody intends bad things to happen, nobody intends to have a catastrophe happen to them. People intend to do the right thing, but sometimes circumstances get the better of you. In the case of a mining company such as Echo Bay, there is an honest intention to conduct progressive reclamation, there is an honest intention to completely remediate the site before Echo Bay leaves. But circumstances may get the better of Echo Bay – financial circumstances, other circumstances, and Echo Bay may find that despite its good intentions, it can't follow through on them. And it is exactly because of that sort of possibility that we have provisions for the requiring of security deposits. It is exactly because of that possibility, it is to guard against that kind of possibility, that the water Boards in the North do require security deposits. I see that I've also covered the third point mentioned by Echo Bay, which is that it intends to perform all the work required to reclaim the site.

The next point is that the estimate which formed the basis of the security amount set by the Board in 2000 was based on unreasonable assumptions. I have to return to my point that this proceeding today is not intended to be a rehashing of what we went through a year and a half ago. Echo Bay made it abundantly clear that it disagreed with assumptions that were involved in Mr. Brodie's report. Echo Bay has made it abundantly clear since the Board's decision came down that it is unhappy with the security amount. But, while Echo Bay talks about the unreasonableness of the assumptions, and therefore implicitly the unreasonableness of the decision, Echo Bay didn't take any steps to challenge that decision. Echo Bay had its kick at the can a year and a half ago. Certainly, it's entitled to come forth with new evidence that could not reasonably be presented a year and a half ago. But it cannot simply make the arguments that were made a year and a half ago with the idea of making them a little bit better and little bit more convincingly.

The fifth point mentioned by Echo Bay is that it continues to conduct research with the help of technical experts. This is a point at which DIAND really wants to stop and congratulate Echo Bay. It does have to be acknowledged – Echo Bay deserves to have it acknowledged – that it is making good efforts, it is making great efforts, commendable efforts to come up with good methods of reclamation and to conduct the reclamation. But a research proposal, or the identification of data gaps, is not the same thing as information on which the Board can make a

decision. It's not the same thing as a convincing case. It's not the same thing as an adequate case.

By all means, Echo Bay should conduct its research, whether it's the research identified by EBA, or the research proposed by the University of Alberta. I should say, as an aside, that at this point it's really not clear to me to what extent the U of A proposal is a dead letter. And to what extent it's still a live proposition, but in any event, the purposes of today's hearing, it all comes down to the same thing. These are proposals, these are ideas, they're good ideas, they're worth investigating. Come back to the Board once they've been investigated, once you've got the results, once you've got the analysis, and once you've got the costing of these alternative reclamation ideas.

One comment further to the fact that these things are all in the conceptual stage, we've got hypotheses here, we've got good ideas. But the road to hell is paved with good intentions, and the North is littered with the remains of good ideas. One of the files that I've worked on is the Colomack [inaudible] file. And there was this grand plan for a zero-discharge tailings containment facility. I don't mean to suggest for an instant that what Echo Bay is proposing by way of tailings treatment tailings containment is something akin, something like the zero-discharge facility at Colomack. My point is simply this: it looked like a good idea at the time. But it was an idea that we're all living with in the Northwest Territories. It's an idea that we're paying for dearly. Let's see if the idea is borne out by the research before we sign onboard for it, before we endorse it.

Now, as EBA's written and oral presentations mentioned, there are uncertainties attaching to any of the proposed reclamation methods. There's a question of the degree of uncertainty, it's a question of choosing which is the better uncertainty to go with. It's a question of acting in a cautious manner. There may be data gaps, with respect to the idea of encapsulating the tailings, but we do know a few things for the time being. We know that 2 metres is the estimate that was historically arrived at by the industry for total encapsulation. We know that the method which we've been working with up to this point in the case of Lupin – and here I'm quoting from Mr. Murphy's document – "is the industry accepted practice." We know that thicker cover makes for a thinner active layer and we know that thicker cover at least impedes oxidation.

That's the main body of my comments. I do want to touch quickly on a few additional ideas, a few additional points. First of all, at one point in its evidence, Echo Bay points out that it had done progressive reclamation in the year 2001, I believe the figure that was quoted was $194,000. Possibly the amount of security required of Echo Bay should be reduced

by that amount. However, having said that, I'd throw in a couple of points on the other hand. First of all, it has not been demonstrated, even though there has been this $194,000 spent on reclamation, it has been demonstrated that there's been a reduction in the cost of the reclamation that remains the be done. And again, it is the cost of the reclamation that remains to be done which is the key. Secondly, some of the evidence presented on Echo Bay's behalf, for example the EBA presentation, casts doubt in a number of directions and I suppose it is possible that one of the conclusions that the Board could arrive at after today's proceeding is that the cover thickness on the tailings should in fact be increased and the security amount should be increased. I'm certainly not going to push that as a conclusion. DIAND has said in its intervention that the security should be maintained at $29.2 million, and DIAND stands by that position.

In the May 25 letter from Mr. Danyluk, page 6, there's a reference to a complete water cover option. However, there hasn't been any elaboration provided on that, and Echo Bay has said that it doesn't want to resort to that option, so I think that at this point, and at present purposes that option can be pretty much ruled out.

At one point, I think it's in Mr. Danyluk's letter of November 15, there's a reference to the idea of so much in the way of a contribution to the reclamation trust fund being contributed so much per ounce of gold produced. Now, again, DIAND would urge the Board to accept that the details of the form of security are for the minister to work out with Echo Bay. That having been said, I would like to note that I don't think that there should be a link between the total quantum of security required and future gold production. Because there's no logical link between future gold production and the current or future costs of reclamation.

In reading through the materials provided by Echo Bay, there seemed to be a bit of an idea at points, a suggestion at points, that somebody might require Echo Bay to pay the whole $29.2 million more or less immediately. I don't know whether I'm reading Echo Bay correctly on that score, but I certainly would like to point that insofar as there is a concern of that sort, it's a misplaced concern. Nobody, not the Board, not DIAND, is proposing to have Echo Bay anything like the whole $29.2 million right now or at any point in the very near future. There have been discussions between DIAND and Echo Bay since the Board's decision of last year and DIAND has indicated to Echo Bay that it, DIAND is willing to consider making accommodations with respect to form, accommodations which would make it substantially less onerous to Echo Bay to post the amount of security required. Bear in mind, please, that a security requirement of any particular amount, whether it's $29.2 million,

$1 million or $100,000, isn't the same thing as a requirement that DIAND actually post that much in cash or cash equivalent.

On the theme of the burden, or the impact, on Echo Bay, further to my comment about form, I want to underline that a reduction in the amount of security, in the total amount of security required, is not the only way of lessening or containing the burden on Echo Bay. The burden can be lessened via a choice of form of security, it can also be reduced by the choice of the schedule to the posting of security.

Echo Bay has mentioned the fact that it is an established mine and it has cited DIAND documents which indicate that for established mines there should be a case-by-case consideration of the mine circumstances. DIAND has no desire at all to back away from that position, but again, DIAND would remind the Board that this is a factor that the Board has already considered. The Board has already given Echo Bay a break because of its status as an established mine, an older mine, and because of its good record.

DIAND reiterates that in any estimating of reclamation costs for purposes of calculation of security requirement, the assumption has to be made that the reclamation will have to be done by a third party. DIAND also would remind the Board of the need to include a contingency in any security calculation, and I think that one of the reasons for sticking with the figure of $29.2 million is the fact that, again, given any additional questions that might have been raised by Echo Bay about the precise modes of reclamation, it may indeed be appropriate to have a contingency larger than the one that was proposed by Mr. Brodie last year. But again, I reiterate that DIAND sticks by the figure of 29.2 million. DIAND does not advocate any increasing of that amount by the Board.

Last two points are the points that I raised during DIAND's presentation. First of all, schedule, again, we would ask that the Board set it. Secondly, on the issue of form, we regard this as a matter within the responsibility of the minister. The minister is open to the idea of working some sort of a reclamation trust fund arrangement with Echo Bay. That is, the minister is open to consideration of the idea. We regard reclamation trust fund as one of the forms which the minister can regard as acceptable if he so chooses under section 17 of the Waters Act. And DIAND would appreciate it if the Board would make some sort of statement clarifying that it does not see a problem with the minister's opting for a reclamation trust fund if the minister sees fit.

I realize that I've talked for some time and it's been a long day. I thank you for your patience and I thank you for listening to me. Those are my submissions, thank you.

Kadluk: Thank you Mr. Webber. Mr. Danyluk, or someone from Echo Bay, do you wish to make a closing statement or a reply?

Ignasiak: Yes, Mr. Chairman, I expect my comments to be in the neighbourhood of 5 minutes. Mr. Chairman, I'd like to start be referring to section 12 of the Northwest Territories Waters Act – in this case we should probably refer to it as the Nunavut's Waters Act. Section 12 is also quoted by DIAND in its submission. Section 12 states that "the objects of this Board are to provide for the conservation, developments and utilizations of waters in a manner that would provide the optimum benefit there from for all Canadians and for residents of [and it should read Nunavut] in particular."

Now, I think that the Board can appreciate that conservation, development and utilization are not always one and the same and sometimes they conflict with each other. So really, what that clause says is that this Board is to oversee the use of the waters in the public interest. The public interest includes, of course, the environment and the protection of it, and it also includes the economic well-being of the people of Nunavut and their opportunities to earn a living.

It's on that background that we ask you make your decision as to what the security amount ought to be and as to the schedule that ought to apply… considering all those factors…

End of tape 5