



MACKENZIE VALLEY ENVIRONMENTAL

IMPACT AND REVIEW BOARD

GIANT MINE REMEDIATION PROJECT

ENVIRONMENTAL ASSESSMENT HEARING

EA 0809-001

Mackenzie Valley Review Board:

Richard Edjericon	Chairperson
Danny Bayha	Member
John Curran	Member
Richard Mercredi	Member
James Wah-shee	Member
Percy Hardisty	Member
Rachel Crapeau	Member

HELD AT:

Tree of Peace

Yellowknife, NT

September 10, 2012

Day 1 of 5

1 APPEARANCES

2	Chuck Hubert	) MVEIRB Staff
3	Paul Mercredi)
4	Simon Toogood)
5	Shannon Hayden)
6	Vern Christensen)
7	Alan Ehrlich)
8	Stacy Menzies)
9	Cailin Makin)
10	John Donihee	)Board counsel
11	Katherine Enns	)Technical Advisor
12	Lukas Arenson	)Technical Advisor
13	Franco Oboni	)Technical Advisor
14	Dave Tyson	)Technical Advisor
15		
16	Joanna Ankersmit	)AANDC
17	Michael Nahir)
18	Adrian Paradis)
19	Katherine Silcock)
20	Yose Cormier)
21	Ray Case	)GNWT
22		
23	John Hull	)Golder
24	Greg Newman)
25	Darren Kennard)

1	APPEARANCES (Con't)	
2	Mark Palmer	) PWGSC
3	Henry Westermann)
4	Lisa Dyer)
5		
6	Daryl Hockley	) SRK
7	Rudy Schmidtke	) AECOM
8		
9	Tony Brown	) SENES
10	Bruce Halbert)
11		
12	Ricki Hurst	) DPRA Canada
13		
14	Bill Enge	) North Slave Metis
15	Susan Enge	) Alliance
16	Eric Binion)
17	Ed Jones)
18		
19	Kevin O'Reilly	) Alternatives
20	Joan Kuyek	) North
21		
22	Jeff Humble	) City of
23	Gordon Van Tighem	) Yellowknife
24		
25		

1 APPEARANCES (Con't)

2 Edward Sangris) YKDFN

3 Todd Slack)

4 Alfred Baillangeon)

5

6 Randy Freeman)

7 Jonas Sangris)

8

9 Amy Sparks) Environment

10 Lisa Lowman) Canada

11 Margaret Fairburn (phonetic))

12

13 Sarah Olivier) DFO

14 Rick Walbourne)

15 Bev Ross)

16 Morag McPherson)

17

18

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1 --- Upon commencing at 9:11 a.m.

2

3 THE CHAIRPERSON: Good morning. Good
4 morning, ladies and gentlemen. I'd like everybody to
5 take their seats. Before I go and start, I just want
6 to welcome everybody to the Giant Mine Remediation
7 Project environmental assessment hearing, EA0809-001.

8 Before we do anything, it's always
9 customary that we -- we do the meeting with opening
10 prayer, so I'm going to ask the Elder from Dettah,
11 Dettah elder Alfred Baillargeon, to come up and do the
12 opening prayer.

13

14 (OPENING PRAYER)

15

16 THE CHAIRPERSON: Mahsi, Alfred
17 Baillargeon, for doing the opening prayer. Before I go
18 to my -- my comments, I'm just going to do some welcome
19 remarks. I would like to ask Chief Eddie Sangris, from
20 Dettah, to come up and do the opening remarks.

21

22 (INTERPRETED FROM TLICHO INTO ENGLISH)

23

24 OPENING REMARKS BY CHIEF EDWARD SANGRIS:

25 CHIEF EDWARD SANGRIS: This week we are

1 going to be in a meeting. And I really appreciate it,
2 that you guys are having a meeting in our community.
3 And as human beings, this is how our parents had taught
4 us.

5

6 (INTERPRETATION CONCLUDED)

7

8 CHIEF EDWARD SANGRIS: ...any
9 indication how this remediation is going to go on.
10 Yeah, I'd like to welcome you to our traditional
11 territory which we call Chief Drygeese Territories.
12 It's within the Akaitcho region.

13 You know, as -- as Dene we have a
14 protocol of sharing and cooperation since time
15 immemorial. And long before anything was established
16 in the territories our ancestors have always say we
17 share what we've got with each other.

18 And following that protocol we welcome
19 our visitors into our traditional territory. In
20 essence, I'd like to welcome each and every one (1) of
21 you today following my ancestors protocol to our
22 traditional land.

23 Anywhere you go in the territories you
24 always see that. Every First Nations welcomes every --
25 everybody into their traditional territory. And I'd

1 like to emphasize that as we share in cooperation with
2 our visitors, sometimes we may not say it, but we
3 expect the same in return.

4 Now what we have here is -- is -- is not
5 what we have expected, to be left behind. And, you
6 know, as people that have been most affected in the
7 area we have to say something. And you will hear it in
8 my presentation, but I would like to welcome each and
9 every one (1) of you, you know, for the whole week,
10 especially into my community.

11 I believe it's modesty, you know, why we
12 are adamantly are trying to protect the very things
13 that we sustain ourself on to carry on our -- our
14 culture and our tradition. And it's important that,
15 you know, we all have respect for each other.

16 You know, sometimes I always think in
17 the back of my mind that if I say this will it hurt
18 anybody, but sometimes we have to be heard. And, you
19 know, hopefully we can have a really good week. And I
20 hope you, each and every one (1) of you, enjoy your
21 stay in our community centre, and that we wish each and
22 every one (1) of you the best while you stay here.
23 Mahsi cho.

24 THE CHAIRPERSON: Thank you -- thank
25 you, Chief Sangris. I'm going to go to the Mayor from

1 Yellowknife, Your Worship Gordon.

2

3 OPENING REMARKS BY THE MAYOR OF YELLOWKNIFE:

4 MR. GORDON VAN TIGHEM: Thank you,
5 Rick, and good morning everyone. Welcome to
6 Yellowknife. As the chief mentioned, this is the
7 traditional region territory of the Weledeh people,
8 Chief Drygeese territory.

9 Outside today, if you were to go out and
10 walk around, you'd meet somewhere between twenty (20)
11 to twenty-one thousand (21,000) people, depending on
12 what hearings are in town. These people today come
13 from a hundred and fifteen (115) different -- over a
14 hundred and fifteen (115) different ethnic and world-
15 wide origins. Twenty-four (24) percent of us were here
16 before most of them came. And we'd like to still be
17 here tomorrow and next year, and our children's years,
18 and our grandchildren's years. So we look forward to
19 your success.

20 Our -- as a built community, we started
21 back in the mid-1800s. People came through here
22 looking for things that would be useful for their
23 industry and perhaps provide them with sustenance. In
24 the 1930s, some of them specifically came back to this
25 region and we became a city that was where the gold was

1 paved with streets (sic). And times were good.

2 The early settlers, when they came, or
3 the early prospectors and traders, when they came, the
4 only community that existed was a fishing village, now
5 Dettah. That's where they did their trading. Now
6 we've got a bigger centre. Gold went away, diamonds,
7 transportation, and we keep finding other reasons to be
8 here and we hope to stay here for quite a period of
9 time.

10 In finding the gold, some people weren't
11 quite as careful as others and that's why you're here.
12 A lot of study has gone in, many, many years of -- of
13 hearings, discussion, science, peer review, community
14 information. And it comes down to this. So we're very
15 appreciative that you are having these considerations
16 in our community.

17 Please enjoy it while you're here. And
18 be thoughtful. Think to the future and we look forward
19 to your considerations and your recommendations, and a
20 happy and healthy future for our community. So,
21 welcome and thank you.

22 THE CHAIRPERSON: Thank you, Mayor
23 Gordon Van Tighem. Mahsi. Now we'll go into the
24 Chair's opening comments now. And then I'll go -- go
25 to the agenda.

1 OPENING REMARKS BY THE CHAIRPERSON:

2 THE CHAIRPERSON: Good morning.

3 Welcome to the public hearing. My name is Richard
4 Edjericon. I'm the Chair of the Mackenzie Valley
5 Environment Impact Review Board. We are here to listen
6 to what you have to say about the proposed Giant Mine
7 remediation project.

8 This federal development has jointly
9 proposed by the federal and territorial government,
10 with Aboriginal Affairs and Northern Development Canada
11 as the lead department. The propose -- the proposal,
12 including the freezing of two hundred and thirty-seven
13 thousand (237,000) tonnes of arsenic trioxide dust in -
14 - in underground chambers, surface management of
15 several million tonnes of tailings, water management
16 and -- and release of treated effluent. It is also
17 included that the act of management of the feasibi --
18 facilities necessary for these actions are forever.

19 We have reached one (1) of the final
20 stages of this environmental assessment, which is the
21 public hearing. Over the course of the week, we ask
22 that you do your best to help the Review Board to
23 understand your views about the proposed development
24 and potential environmental, social -- socio-economic
25 and cultural impacts, and your views of the potential

1 significance of this impacts.

2 The Review Board will fully consider
3 these views while it -- and it -- it's in deliberations
4 of its decision in the environmental assessment. Once
5 that decision is made, the Board will prepare a report
6 of -- a report of environmental assessment, and send it
7 to the Minister of the Aboriginal Affairs and Northern
8 Development for his consideration, and that of the
9 government, sorry -- and that of other responsible
10 Ministers, including the territorial government.

11 Before we go any further, I would like
12 to introduce our Board members, then introduce staff
13 and counsel. I would like to introduce our Board
14 member Richard Mercredi from Fort Smith to my right.
15 Rachel Crapeau from Dettah. Danny Bayha from Deline.
16 To my left is James Wah-shee from Behchoko. Percy
17 Hardisty from Fort Simpson. Then John Curran from
18 Yellowknife.

19 I would also like to acknowledge our
20 newest Board member in the back there, Sunny Munroe.
21 Sunny was appointed to the Review Board on Friday. She
22 will not be participating in this -- this environment
23 assessment.

24 We are joined by expert technical
25 advisors. In the back we have -- are Dr. Lukas

1 Arenson, advisor on mine engineering. And Dr. Franco
2 Oboni, advisor on risk assessment. Ms. Katherine Ens,
3 advisor on eco technolo -- toxicology, and we also have
4 Mr. Dave Tyson, advisor on fish and -- and aquatics.

5 Our legal counsel is Mr. John Donihee.
6 And I would also like to introduce our staff. Our
7 community liaison is Stacey Menzies. I believe she's
8 probably here somewhere in the back waiting. And we
9 also have our summer student, Cailin Maki. She's at
10 the front door.

11 Environmental assessment officer for
12 this file is Shannon Hayden in the back. And Paul
13 Mercredi, Simon Toogood, and Carol Luttmer. Senior
14 environment assessment officers are Chuck Hubert,
15 manager of environment assessment and lead for this EA
16 is Alan Ehrlich, and executive director Vern
17 Christensen.

18 The Review Board is a co-management body
19 established by the Mackenzie Valley Resource Management
20 Act. Each Board member brings their knowledge,
21 experience, and values to the Board decision-making
22 process. Our members are northerners nominated by
23 First Nation aboriginal governments, and territorial
24 and federal governments.

25 Our goal is to make decisions that will

1 benefit the north for all residents, and for future
2 generations. I have some additional comments on
3 today's proceedings that I hope will help make our --
4 make sure everything goes smoothly.

5 We have limited time, and the Review
6 Board wants to hear what everybody has to say. Please
7 note that there is an agenda for the hearing which is
8 available at the door. In the prepare -- in the
9 prehearing conference, parties described their time
10 requirements. The staff had made every effort to meet
11 those -- those requests.

12 I ask that everyone respect the time
13 allotted for their presentation and questions, and use
14 their time effectively. To make sure this happens,
15 presenters will be timed, so Alan has a little light
16 here, and just so that we're -- we're on track. And --
17 and please understand that if I interrupt you that, you
18 know, we must continue to meet the agenda we have in
19 front of us, so we'll move forward.

20 I -- I have asked my staff to give a
21 five (5) minute warning. Be advised that when your
22 time is up, again you will be interrupted. In the
23 prehearing conference, all parties have committed to
24 keeping their presentation on time. Keeping to your
25 allotted time is important to make sure that everyone

1 gets their fair chance to be heard.

2 The Board is com -- committed to
3 fairness. The Review Board will be producing an
4 official transcript of this hearing. This trans --
5 transcript will be available through our website in the
6 public registry for this environmental assessment. It
7 will be -- it will be searchable if you were to go on
8 the website.

9 This session is being webcast live. We
10 have told parties that they may have remote
11 participants listening to this session. If remote --
12 if a remote participant wishes to ask a question, they
13 have to send their question by email or text to a
14 representative of their party -- party that is present
15 in the room that's here today.

16 We are doing this to be exclusive --
17 inclusive and efficient. However we ran into technical
18 problems with the webcast. We will continue the
19 hearing, nonetheless. Parties will be invited to ask
20 questions in turn after each presentation. For
21 fairness, at the request of the parties, we will
22 alternate forward and backwards through the list of
23 parties.

24 After questioning -- after party
25 questioning, I will invite questions of the technical

1 advisor, Board staff, counsel, and Board members.

2 Please address all questions to the Chair. The
3 Developer will give a presentation first. After it has
4 given the presentation, we'll have a scheduled time
5 allotted for parties to ask questions.

6 The order of questioning often after
7 each presentation will alternate forward and backward
8 through the following parties. First we have the
9 development -- the Developer, AANDC, and GNWT, the City
10 of Yellowknife, the Yellowknives Dene First Nation,
11 Alternatives North, North Slave Metis Alliance,
12 Environment Canada, Department of Fisheries and Oceans
13 Can -- and Oceans.

14 Following this will be questions from
15 the Board technical advisors, Board staff, Board
16 counsel, and Review Board members. Questions may be
17 asked with a microphone so that everyone can hear and
18 the transcribers can properly record it.

19 We have simultaneous translation through
20 Tlicho. On your headset you can hear English on
21 channel 1, translation on channel 2. And I'll ask that
22 you speak slowly and clearly for the interpreters.

23 Please take a moment right now to turn
24 off all ringers on your cell phones so that we hear --
25 we don't get interrupted, so if you can do that.

1 The project that the Review Board has
2 assessed in the past have been remediation project. To
3 avoid confusion, I will take a moment to remind parties
4 about the focus of the assessment we are conducting
5 here today. All of us here today know about the deeply
6 regression that the con -- contamination of the land
7 and water that continued for the many years when the
8 Giant Mine was running.

9 The Yellowknives have powerfully
10 expressed the effects this has had on their traditional
11 lands on their -- and on them as people. Everyone in
12 the room is sorry this happened and wishes it was
13 otherwise.

14 The continued -- the contaminated legacy
15 of the Giant Mine happened before the land claim
16 created the Mackenzie Valley Resource Management Act.
17 The Act gives us a system that is better than what we
18 had before. It better shares decision-making with --
19 with Aboriginal people. It involves the public more
20 often and more directly.

21 I would like to think and hope that
22 widespread contamination like that will not happen
23 under this system of envi -- sorry, system of
24 environmental management we have here today.

25 One (1) of the reasons we conduct an

1 environment assessment like this one (1) is to make
2 careful decisions we have on those who follow us will
3 not have to be sorry for the future. I -- that said, I
4 would want to remind you about the scope of the
5 project. We are not assessment the impacts of the
6 Giant Mine. We are assessing the impacts of the
7 proposed remediation project.

8 This is what this Board must decide on.
9 If you are going to present materials about the impacts
10 of the Giant Mine, you must make it very clear how it
11 relates to the remediation project we are looking at.

12 In 2008, the Review Board made other
13 decisions about the scope of this project and
14 assessment. I will con -- I will outline some of this
15 now. The relocation of the Ingraham Trail is not
16 within the scope of this project.

17 The freeze optimize study --
18 optimization study is not part of the scope of this
19 assessment but does inform the assessment by refining
20 the design of the proposed project. Whether the decide
21 (sic) is remediate to an industrial or residential
22 standard, it is not part of the scope of this
23 assessment, but end -- end land use of the site is
24 within the scope.

25 Any activities conducted as an emergency

1 measure under the Section 119 of the Mackenzie Valley
2 Resource Management Act are not part of the scope of
3 this project.

4 With respect to alternatives to the
5 frozen block method that has been proposed, in 2002 the
6 Developer struck an independent peer review panel with
7 a wide range of technical expertise. The panel
8 examined fifty-six (56) alternatives and identified the
9 top three (3).

10 After public sessions, INAC selected the
11 current method. In 2008 the Review Board accepted that
12 the Developer has done a thorough job of looking at
13 alternatives and that the current environmental
14 assessment will focus on the propose pro -- project
15 freezing the underground arsenic in place.

16 The Developer has -- has made it clear
17 on the public record that doing this would not prevent
18 changing to a different method if a better technology
19 emerges in the future; but that is the current plan
20 remain, keeping it frozen forever.

21 For this reason debates about specific
22 alternatives to the proposed frozen block method is
23 outside the scope of the current environmental
24 assessment. The Board also made the -- the temporal
25 scope of the Developer clear. We understand that from

1 the evidence on the public registry that contaminant
2 levels on the site may take much more longer than
3 twenty-five (25) years to stabilize, as we stated in
4 the terms of reference. The Developer activities are
5 those occurring within twenty-five (25) years and
6 extending to any further time required to subsidize the
7 site.

8 MR. RICHARD MERCREDI: Stabilize.

9 THE CHAIRPERSON: Sorry?

10 MR. RICHARD MERCREDI: Stabilize.

11 THE CHAIRPERSON: Oh, stabilize the
12 site, sorry. This is the boundary we have set for the
13 development activities. We'll consider any relevant
14 impacts arising from this -- from those activities
15 regardless of when those impacts occur.

16 What I have just said does not mean that
17 activities which take place outside the scope of the
18 environmental assessment will not be subject to Part 5
19 of the Mackenzie Valley Resource Management Act, but it
20 does mean that we are ten -- were not being considered
21 in this hearing.

22 So those are my comments as the Chair.
23 And before presentation, I would just like to ask that
24 if you were to come to the mic, again, state your name,
25 who you represent, and -- so that it's all logged and -

1 - and transcribed.

2 And also we've just got to make sure
3 that we don't speak too fast for our translators in the
4 back. And just again, housekeeping items, as you can
5 see we've got two (2) emergency exits, one (1) here and
6 the front door we came in, washrooms in the back.

7 And also, you know, when -- when we
8 speak we also want to make sure that we're -- we're
9 very respectful of each another and -- and we do that
10 and -- that's what I'm asking that we do.

11 So with that I'm going to move on now.
12 I'm going to go into the presentation by the Developer,
13 water treatment and management. And then after that,
14 we'll take a health break. Again, it'll be timed.

15

16 PRESENTATION BY DEVELOPER - WATER TREATMENT AND
17 MANAGEMENT:

18 MS. JOANNA ANKERSMIT: Thank you, Mr.
19 Chair, and thank you for the warm welcome from Chief
20 Sangris and -- and the Mayor. My name is Joanna
21 Ankersmit, and I'm the Program Director with Aboriginal
22 Affairs and Northern Development Canada with
23 responsibility for managing the Giant Mine Project.

24 I lead the Government of Canada's multi-
25 disciplinary team that is comprised of staff from

1 Yellowknife, Ottawa, and Edmonton, and I've worked for
2 this project -- on this project since joining the
3 department in 1999.

4 These hearings mark an important
5 milestone in our efforts to implement a comprehensive
6 remediation plan that is robust, safe, and will endure
7 well into the future. In fact, the Giant Mine
8 Remediation Plan is designed to improve the environment
9 immediately and minimize risks over the long-term.

10 As you are aware, the federal government
11 became responsible for this site in 1999. To ensure
12 the remediation plan is one (1) that is effective and
13 designed for the long-term, the project team has worked
14 with domestic and international experts while engaging
15 directly with public and interested stakeholders.

16 The project has been subjected to
17 significant scrutiny and challenged both before the
18 environmental assessment process, as you mentioned, by
19 the independent peer review panel of experts in the
20 fields of mine closure, and during this EA process, by
21 Review Board staff and experts, as well as the
22 stakeholders and parties to the EA. The project team
23 has appreciated the advice and input that has been
24 provided along the way, and we will continue to welcome
25 input to the project in the months and years to come.

1 Since the DAR was submitted, work has
2 concentrated on engaging the parties through the
3 environmental assessment process and has included
4 responding to hundreds of Information Requests,
5 participating in technical sessions, as well as various
6 engagement activities, including regular meetings of
7 the community alliance and monthly meetings with our
8 colleagues at the City of Yellowknife.

9 In addition, the Giant Mine remediation
10 team has progressed on design, the development of an
11 environmental management system, and taken actions
12 necessary to deal with the ongoing deterioration of the
13 site.

14 The aging infrastructure and associated
15 risks mean while the governments have been developing
16 and seeking regulatory approval of the remediation
17 plan, site issues of high risk to human health and the
18 environment have had to be addressed. Managing the
19 site issue by issue is not preferable and is certainly
20 not sustainable. Rather, we are committed to moving to
21 full remediation to ensure long-term solutions are in
22 place that benefit the environment and the people who
23 live here.

24 Currently, the Giant Mine poses risk to
25 humans and the environment. By comparison, the

1 remediation plan poses no significant environmental
2 impacts. By improving the entire site, in terms of the
3 environment and human health and safety, it is clear
4 this remediation plan offers significant positive
5 results.

6 The federal government has made the
7 remediation of the Giant Mine site a federal
8 contaminated sites management priority. Nearly \$160
9 million has already been invested to develop this
10 remediation plan, to engage with parties, and to
11 implement the risk mitigations me -- necessary to
12 protect human health and safety.

13 The project continues to command the
14 attention from highest levels of government, and
15 remains a federal priority for action by the federal
16 contaminated sites action plan. Over the past two (2)
17 years, three (3) federal ministers, including the
18 Minister of Aboriginal Affairs and Northern
19 Development, as well as the Commissioner of the
20 Environment and Sustainable Development, have all come
21 to tour the mine site to gain a better understanding of
22 the current risks as well as the proposed remediation
23 plan. They have a keen interest in the project, as the
24 protection of human health and safety and the
25 environment has been, and always will be, a federal

1 government imperative.

2 The project is subject to a high level
3 of scrutiny from various levels within government, such
4 as the Treasury -- Federal Treasury Board, the Office
5 of the Auditor General, and the Commissioner of
6 Environment and Sustainable Development. It is also
7 subject to the scrutiny of regulatory bodies that
8 ensure compliance with applicable legislation and
9 regulation in the territory.

10 Despite these existing oversight and
11 compliance bodies, we are committed to providing the
12 community a mechanism that ensures local concerns and
13 interests are brought to bear on the project, that
14 reporting is readily accessible and transparent, and
15 that public confidence is maintained.

16 During the course of the week, our
17 intention is to share the knowledge that underpins our
18 assessment that the Giant Mine remediation project will
19 have positive impacts on the environment and the
20 residents of Yellowknife, N'Dilo, and Dettah.

21 Addressing risks from the site will not
22 -- will provide not only long-term environmental
23 stability and safety for the local people, but the
24 ongoing significant investment of resources will have
25 positive economic benefits to the communities of the

1 area for many years to come.

2 Let's not forget, the Giant Mine site is
3 currently being monitored and safely managed. But as
4 the site continues to deteriorate, we know without a
5 doubt the approach is not sustainable. What is needed
6 now is a plan that makes immediate improvements to the
7 environment, improves safety for the residents and on-
8 site workers. That plan, the Giant Mine remediation
9 plan, we look forward to implementing in order to
10 finally provide the residents with a better, safer
11 environment in which to live and enjoy for many years
12 to come.

13 As you know, we're co-proponents on the
14 -- this project with the Government of the Northwest
15 Territories. I'd like to ask my colleague, Dr. Ray
16 Case, Assistant Deputy Minister with the GNWT, to share
17 a few opening remarks. Thank you, Mr. Chair and
18 members of the Board.

19 THE CHAIRPERSON: Thank you. Before we
20 go there, can -- can I ask that maybe you could come up
21 to the podium and do your presentation there? Thank
22 you.

23 DR. RAY CASE: Thank you, Mr. Chair.
24 My name's Ray Case. I'm the Assistant Deputy Minister
25 of Corporate and Strategic Planning for the Department

1 of Environment and Natural Resources. Department of
2 Environment and Natural Resources is the project lead
3 on behalf of the Government of Northwest Territories.

4 The role of the GNWT as a co-proponent
5 on the project was established through the cooperation
6 agreement respecting the Giant Mine Remediation Project
7 signed by the government of Canada and the Government
8 of Northwest Territories in 2005.

9 This agreement recognized the
10 remediation site was a priority for both governments
11 and the public, and the governments needed to work
12 together to ensure that the site is managed to protect
13 human health, safety, and the environment, and also
14 that governments would need to cooperate and coordinate
15 actions to achieve effective and timely remediation of
16 the site.

17 While the GNWT's current and anticipated
18 financial contribution to the remediation of the site
19 is relatively minor to that of the Government of
20 Canada, the role of the Government of Northwest
21 Territories as co-proponent has been significant. The
22 GNWT has been a full and active participant in the
23 development of the remediation plan that was set --
24 submitted to the Mackenzie Valley Land and Water Board,
25 and to the Developer's assessment report submitted to

1 the Mackenzie Valley Environmental Review Board.

2 We have also been an active participant
3 in these environmental assessment proceedings and the
4 related work with the parties to explore resolution of
5 issues and concern. The Government of Northwest
6 Territories is confident that the proposed project will
7 address risk to human health, public safety, and the
8 environment that are opposed by the mine site -- that
9 are posed by the mine site.

10 The process of -- in the process of
11 addressing these risks, we will address health and
12 safety and environmental risks, and the -- the process
13 to do this will not result in any significant adverse
14 impacts. The project will also maximize Northern
15 economic development opportunities.

16 We do recognize that given the history
17 of the site, the level -- and the level of risk posed
18 by the range of the contaminants on site, and the
19 proximity of the site to Yellowknife, Dettah, N'dilo,
20 and concerns about water supply for residents, it will
21 be important that we find ways now and in the future to
22 ensure that the public can also share our confidence.

23 Over the coming days, the project team
24 will illustrate how the project will address the risks
25 at the site and mitigate any potential adverse

1 impacts from remediation activities. We will
2 illustrate how Aboriginal governments, organizations,
3 the City of Yellowknife, non-profit organizations, and
4 the public will continue to be involved in the
5 environmental management and monitoring of the site.

6 We will also illustrate how the project,
7 the City, the Yellowknife Dene, interested parties, can
8 work together to endi -- identify opportunities the
9 project will create for future land use where none
10 currently exist.

11 We look forward to the opportunity to
12 address any questions or concerns that the Board, the
13 parties, and the public may have with respect to the
14 planned remediation activities and to the eventual
15 remediation of this environmental legacy.

16 Mr. Chair, we'll also -- I'll now to
17 turn Mr. Mike Nahir and Mr. Adrian Paradis to provide
18 an overview of the remediation project.

19

20 (BRIEF PAUSE)

21

22 THE CHAIRPERSON: Yeah, please proceed.

23 MR. MICHAEL NAHIR: Thank you, Mr.

24 Chair. My name is Mike Nahir. I'm the senior project
25 manager and chief engineer for Aboriginal Affairs and

1 Northern Development Canada. I have eighteen (18)
2 years experience as a project engineer and project
3 manager on the remediation of abandoned mines,
4 specifically in Northern Canada.

5 To my right is Adrian Paradis. And he's
6 the project manager here in Yellowknife. He has over
7 ten (10) years experience working on regulatory matters
8 in the Northwest Territories. He'll be talking right
9 after me on the management and oversight.

10 A project of this complexity and size
11 requires a national effort, drawing upon staff and
12 experts in Yellowknife, Edmonton, Vancouver, Toronto
13 and Ottawa. We draw upon the international experts for
14 technical advisor team, the engineering design team,
15 and the independent peer review panel.

16 We are here to discuss the environmental
17 assessment of the project, which is the remediation of
18 Giant Mine. It is an abandoned mine and a contaminated
19 site which the governments are committed to ensuring
20 the protection of human health in the environment. We
21 look forward to discussing the project this week and
22 are certainly anxious to begin the hard work of
23 remediating the site.

24 Slide 2. The Giant Mine remediation
25 project team is committed to remediating the Giant Mine

1 site. The team has carried out many investigations and
2 assessments over the last twelve (12) years. And now
3 we are confident that we have the right plan to protect
4 human health and public safety in the long-term.

5 There are certainly many more design
6 decisions that need to be made. And through the EMS
7 process we will be involving interested parties. So
8 this project is about making a significant improvement
9 to the environment.

10 Slide 3. The co-proponents are both the
11 Governments of Canada and Governments of Northwest
12 Territories. Aboriginal Affairs is the overall project
13 manager. And we'll be assisted by Public Works that
14 will be looking after contracting the project design
15 and construction services we require.

16 We've put together a team, including
17 some of the world's foremost experts on mine site
18 remediation. And they are present here at the
19 hearings. SRK and SENES are the technical advisors for
20 the project team. And since 2000, they've provided
21 technical support for the closure options in the
22 remediation plan. They are both internationally
23 recognized expert firms in mine site remediation and
24 risk assessment.

25 AECOM and Golder are providing the

1 engineering. They're a large international firm well
2 recognized and highly qualified to provide engineering
3 services in mine site remediation. Det'on Cho Nuna is
4 doing an excellent job of providing care and
5 maintenance services, ensuring public safety and
6 environmental protection.

7 Slide 4. As many of you know, the
8 operations of Giant Mine started in 1948 and went on
9 for approximately fifty (50) years when Royal Oak went
10 into receivership in 1999 and, ultimately, bankruptcy
11 in the year 2005.

12 The site is in a very deteriorated
13 state, and so there are many human health and
14 environmental concerns that need to be managed in order
15 to protect people and the environment. The Governments
16 of Canada and Northwest Territories are responsible for
17 the current site management, for doing the remediation
18 work, and for providing long-term care.

19 Slide 5. A developer's assessment
20 report was prepared by the governments to evaluate the
21 potential negative effects of the remediation project.
22 The DAR contains the main report and fifty-three (53)
23 supporting documents which describe the existing
24 conditions, the remediation plan, and the assessment of
25 short and long-term conditions. The plan calls for

1 fifteen (15) years of active remediation and ten (10)
2 years of stabilization which will then merge in to the
3 long-term management.

4 Slide 6. This is a picture that shows
5 some of the main components of the site that we'll be
6 discussing this week. The mine is located within the
7 city of Yellowknife and covers an approx -- an area of
8 approximately 850 hectares.

9 There are many buildings that are
10 hazardous. The largest concern is the roaster because
11 it is heavily contaminated with ar -- arsenic and
12 asbestos. The site treats somewhere between 500 and
13 700,000 cubic metres of contaminated mine water
14 annually.

15 There are four (4) tailings ponds with
16 60 million tonnes of tailings, the rate pits with
17 thirty-five (35) openings to the underground. Baker
18 Creek, which runs through the site, contains arsenic-
19 contaminated sediments.

20 Lastly and most importantly are the
21 fourteen (14) chambers and stopes containing 237,000
22 tonnes of arsenic trioxide dust, mostly contained in
23 the yellow-hatched area. This is a ways from the
24 processing of ore that was mined and is 60 percent pure
25 arsenic. So the project being assessed is the

1 execution of the remediation plan to deal with these
2 issues and hazards.

3 Slide 7. The overall goal of the
4 remediation project is to protect human health, public
5 safety, and the environment. As we've stated in the
6 DAR, the specific objectives of the remediation plan
7 are to first prevent in the long-term the release of
8 arsenic in the underground dust to the environment.

9 Second, clean up the surface of the site
10 so it is available for other uses. Decisions on how to
11 use -- on how to use the available areas will be made
12 together with stakeholders.

13 Slide 8. The third objective is to
14 reduce the risk by removing buildings, closing mine
15 openings, and getting rid of other hazards at the site.
16 Fourth is to minimize the release of arsenic from the
17 surrounding site, and the fifth is to rehabilitate and
18 restore Baker Creek to a more natural condition.

19 Slide 9. Most of the mine site has
20 typical mine site remediation issues, but what I want
21 to describe is the key concern at the site, which is
22 the arsenic trioxide dust stored in fourteen (14)
23 underground chambers and stopes.

24 The rock that was mined at Giant Mine
25 includes high levels of naturally occurring arsenic.

1 The roasting of ore produced the arsenic trioxide dust
2 waste. Arsenic can be dangerous to both people and the
3 environment if too much of it gets into the water, onto
4 the land, or in the air. The main concern with the
5 arsenic tridox -- trioxide dust at Giant Mine is that
6 the arsenic can dissolve in groundwater and flow into
7 Great Slave Lake if not controlled.

8 In the interim this issue is being
9 managed by keeping the water level in the mine below
10 the dust, and collecting and treating groundwater. We
11 also ex -- inspect accessible bulkheads to keep the
12 dust in the chambers.

13 There are a number of bulkheads that are
14 inaccessible and that is a concern. The remediation
15 plan calls for long-term stabilization containment of
16 the arsenic-contaminated dust by securing and
17 stabilizing the underground workings and then freezing
18 all the dust from chambers.

19 This will be described in greater detail
20 by Daryl Hockley, our technical advisor. Slide 10. I
21 want to also briefly describe some of the other main
22 concerns which will be covered in more detail by the
23 experts in the coming days.

24 Baker Creek does not meet the standard
25 for closure. The water and sediment in Baker Creek

1 contain high concentrations of arsenic. There's a
2 concern with the stability of the creek and the flow
3 capacity doesn't meet the high-flow requirements.

4 The design calls for re -- restoring
5 habitat in the creek by re-routing, re-building a few
6 sections of the creek which will also improve its
7 ability to pass large volumes of water.

8 We are awaiting the results of the
9 sediment study and work -- working with Department of
10 Fisheries and Oceans to determine whether contaminated
11 sediment should be removed from other sections.

12 Slide 11. There are eight (8) small and
13 medium-size mined-out pits, as well as thirty-five (35)
14 openings to the underground that are safety hazards.
15 The plan calls for backfilling a few of the pits and
16 surrounding the others with berms or fences to prevent
17 access. All mine openings will be sealed.

18 Slide 12. Over the many years of
19 operation quite a bit of soil got contaminated with
20 arsenic and spilled fuels. There were some tailings
21 scattered throughout the site outside the tailings
22 ponds. These soils and tailings will be excavated and
23 treated and contained appropriately.

24 Slide 13. There are far -- four (4)
25 large tailings areas located on surface covering a

1 large area of 95 hectares. These tailings fortunately
2 are not acid-generating, but do contain some low-
3 solubility arsenic in the water within the tailings.
4 As part of ongoing site management, any water that is
5 collected in the mine is treated to protect the
6 environment.

7 The remediation plan calls for the
8 tailings to be covered with two (2) layers then graded
9 for ditches and spillways. The tailing covers will be
10 re-vegetated and then available for other uses.

11 Slide 14. There are over one hundred
12 (100) buildings and associated infrastructure, a few of
13 which are contaminated with arsenic and asbestos. The
14 roaster is a heavily contaminated building which our
15 engineers have advised poses an unacceptable risk of
16 failure and needs to be properly demolished as soon as
17 possible.

18 The remediation plan calls for proper
19 demolition and a disposal in a landfill as well as a
20 frozen underground. Slide 15. The current water
21 treatment plant does an adequate job of meeting the
22 current standard. However, it is not efficient and we
23 want to meet a higher standard that is safe for
24 community uses and is protective of the environment.

25 A new water treatment plant will be

1 constructed to collect and treat contaminated surface
2 and mine water. The discharge will be to the north
3 Yellowknife Bay through a diffuser and mixing zone.
4 This is instead of discharging to Baker Creek, as is
5 done today, to allow it to repair as best as possible.

6 The monitoring of the safety of the ice
7 will be coordinated with the city fire department.
8 This criteria will be established consistent with city
9 standards to be protective of safety for winter
10 recreation. We have an extensive monitoring program
11 for water and it will be expanded to include all
12 activities such as ice thickness, air, and fish.

13 These tables summarize the main site
14 concerns. Slide -- slide 16. These tables summarize
15 the main site concerns and outlines the remediation
16 plan. The last column shows you what our assessment
17 has concluded are the outcomes. You will note that the
18 outcomes are positive, which is expected due to the
19 fact that this is a remediation project.

20 So for the arsenic trioxide dust in the
21 chambers, the plan is to stabilize the workings and
22 construct the frozen block. The benefit is that it
23 prevents release of arsenic into the groundwater. For
24 other parts of the underground mine, the plan is to
25 clean up and remove waste for -- and close mine

1 openings. The benefit is that it safeguards against
2 safety risk to wildlife and the public.

3 For open pits, the plan is to backfill
4 B1 and Brock pit, and to use signs, fences, or berms to
5 stop access to the remaining pits. The benefit here is
6 improved public safety by stopping access to the pits.

7 For the tailings areas, the plan is to
8 cover them with rock and soil and then revegetate. The
9 benefit is that there will be no direct contact between
10 tailings and people or animals. It improves the long-
11 term air quality and then provides for more options for
12 future land uses.

13 Slide 17. For tailings on the shore of
14 Great Slave Lake, the plan is extended to exist --
15 existing tailings cover. Sorry, is -- the plan is to
16 extend the existing tailings cover. The benefit is
17 that this limits erosion and the potential for arsenic
18 to get into the water.

19 For site water management, the plan is
20 to build a new water treatment plant and treat all
21 contaminated water and then release treated water to
22 Great Slave Lake instead of Baker Creek. The benefit
23 is that there will be much less arsenic in the Baker
24 Creek and significantly less arsenic in Yellowknife
25 Bay.

1 For Baker Creek, the plan is to move
2 portions of the creek and to reduce the risk of mine
3 flooding and to manage the contaminated sediments,
4 which create suitable habitat for fish/animals in the
5 creek. This reduces the risk of flooding, improves aqu
6 -- aquatic habitat in Baker Creek, and improves the
7 aesthetic value of the creek.

8 For contaminated soils, the plan is to
9 excavate all contaminated soils up to 2-metre depth and
10 cover anything that's deeper. This improves the
11 quality of habitat on site and reduces the risk to
12 public and animals. This provides more options for
13 future land uses.

14 For the buildings and infrastructure,
15 the plan is to remove all unsafe materials and tear
16 down buildings. The benefit is that that'll improve
17 how the site looks, and it reduces safety risks to
18 public and the wildlife.

19 This is a picture of what we expect the
20 -- the site to look after remediation. Once the main
21 remediation activities are ov -- over -- excuse me --
22 most of the site will be available for other uses.
23 This will be -- there will be areas where -- around the
24 tailings ponds available for recreation and residential
25 uses, depending on communica -- on community interest

1 and input.

2 A small area near the middle of the mine
3 will require long-term management. The activities in
4 this area will include running the ground-freezing
5 system and treatment of contaminated water. There will
6 be extensive monitoring of these activities to make
7 sure they are working and to ensure the land and water
8 are safe.

9 So to summarize what I've been saying,
10 the Government of Canada and GNWT are confident that
11 the Giant Mine Remediation Project will result in many
12 positive effects by improving and protecting the
13 environment. This is not an assessment of a new
14 development, but rather is the repair of an old
15 contaminated one (1). The project improves the
16 environment immediately. The project minimizes risk
17 and needs -- and the needs for site management in the
18 long term.

19 There may be some temporary negative
20 effects during the site remediation activities;
21 however, these will affect only small areas and will be
22 short lived and can be managed. So we conclude that
23 there will be no significant environmental impact due
24 to this project and, in fact, there will be a very
25 significant improvement to the environment.

1 Thank you, Mr. Chair. And I would now
2 like to turn this over to Adrian Paradis, who will
3 provide an introduction on the management and oversight
4 program.

5

6 (BRIEF PAUSE)

7

8 MR. ADRIAN PARADIS: Thank you, Mr.
9 Chair. I'll be brief for -- for time. My colleague
10 has covered the physical works in our proposed project.
11 I'm going to provide also a quick update on management
12 and oversight, perpetual care, adaptive management,
13 environmental management systems, as well as public
14 engagement and oversight. These topics will be
15 discussed throughout the week, with particular focus on
16 Thursday and Friday.

17 Sorry, slide 22, please. Perpetual
18 care. Perpetual care consists of two (2) components:
19 the physical systems, which Mr. Nahir has spoken to, as
20 well as the management and long -- the long-term
21 management and oversight of these systems.

22 The phys -- physical systems, including
23 the frozen block, have been designed for the long term.
24 The frozen block was designed to be robust over the
25 long term with -- and easy to monitor. With

1 constructive inputs from the parties through the Review
2 Board, through the environ -- environmental assessment,
3 we have altered our thoughts or improved our planning
4 on perpetual care and the commit -- and we -- made a
5 commitment to develop a perpetual care management plan.

6 Slide 23, please. We've been working
7 with the parties on the development of an environmental
8 management system for the project. The EMS is a key to
9 effective environmental management. It provides a
10 soundboard for making good decisions. It is easy --
11 easily auditable, and it allows for stakeholder input
12 into the elements of these man -- monitoring plans, as
13 well as the responses.

14 Slide 25 -- 24, I apologize. I slipped
15 a little bit ahead there. Since 1999 there has been a
16 significant amount of public engagement. There has
17 been particular high points throughout these --
18 throughout these years, with particular focus in 2001
19 to 2003, with the sol -- selection of the arsenic
20 trioxide management plan, the frozen block, as well as
21 since 2009 with the submis -- submission of the
22 Developer's assessment report, and through the
23 conclusion of the environmental assessment.

24 This is not to say that this is the only
25 time that we'll be talking to the public. It is

1 expected to increase again throughout the upcoming
2 detailed design phases, and will continue into the long
3 term while we are on site managing it, which is
4 forever.

5 Slide 25, oversight. The Giant Mine
6 project team believe the existing oversight mechanisms
7 are -- are effective and robust. However, through the
8 environmental assessment process and throughout our
9 public engagement, we have heard and learned concerns
10 from the parties that our existing such -- existing
11 oversight mechanisms can be improved upon.

12 By working with the parties, we've
13 reviewed the options for additional oversight, and we
14 are committed to establishing a community-based
15 oversight for this project. With that, Mr. Chair, I
16 thank you for your time, and this concludes our
17 presentation.

18

19 QUESTION PERIOD:

20 THE CHAIRPERSON: That's great. Thank
21 you. Saved by the bell. Thank you. I'm going to --
22 for your presentation. And the process that we have
23 here now is that we -- we give the opportunity to the
24 parties to ask questions. And the -- just keep in mind
25 that we are still limited, in terms of time, according

1 to the agenda.

2 So I'm going to go through a list of
3 parties, and then if we can limit our questions, and --
4 and so that way we can just maintain the schedule that
5 we have. But I'm going to go to the first one (1) on
6 the list here. I'm going to go to the City of
7 Yellowknife. Is there any questions for the Developer,
8 Aboriginal Affairs Northern Development Canada, on
9 their presentation?

10 Also as you come up, you could maybe do
11 a quick introduction of your team. And that goes to --
12 goes to all developer -- parties as they come up.
13 Thank you.

14

15 (BRIEF PAUSE)

16

17 THE CHAIRPERSON: Okay, I don't see
18 anybody here from GNWT. I want to go to the City of
19 Yellowknife. Again, maybe an introduction, if you're
20 here.

21

22 (BRIEF PAUSE)

23

24 THE CHAIRPERSON: Okay, moving on.
25 Yellowknives Dene First Nation, introduction of your

1 team. Go -- go and just introduce yourself for the
2 record and then your team.

3 CHIEF EDWARD SANGRIS: Thank you, Mr. -
4 - thank you, Mr. Chair. On my -- on the Yellowknife
5 Dene environmental and lands department is Todd Slack,
6 and Terry Bucks (phonetic) and Randy Freeman. And I
7 think in -- in my presentation we will discuss all the
8 -- the answers that we need to ask of the -- the
9 Proponent will be in my presentation. Mahsi.

10

11 (BRIEF PAUSE)

12

13 THE CHAIRPERSON: Thank you, Chief
14 Sangris. I'm going to go onto Alternatives North. If
15 you could do also an introduction of your team.

16 MR. KEVIN O'REILLY: Thank you, Mr.
17 Chair. My name is Kevin O'Reilly, and I'm here
18 representing Alternatives North today. We want to
19 thank you for the opportunity to participate in the
20 hearing, and we recognize that we're in Chief Drygeese
21 territory, and thank the Chief and -- and the Mayor for
22 the welcoming words this morning.

23 I have another person with Alternatives
24 North here me -- here with me this morning. Her name
25 is Franz Benoit, and she's not here right now but she

1 will be joining us later. We have arranged for some
2 independent experts to participate in the hearing as
3 follows: Dr. Joan Kuyek of Ottawa, who's seated next to
4 me. She will present on perpetual care case studies
5 and lessons learned later today.

6 On Thursday we have Karen LeGresley
7 Hamre, with Avens Associates, and she will be
8 presenting on site designation options as part of the
9 perpetual care planning. On Friday we have Dr. Natasha
10 Affolder, with the University of British Columbia, and
11 she'll be presenting on independent oversight. And
12 this was a study that she had done at the request of
13 the Yellowknives Dene First Nation, the City of
14 Yellowknife, and myself.

15 Also on Friday we have Duncan Kenyon,
16 with Pembina Institute, who will be here to present on
17 long-term funding options for perpetual care at Giant
18 Mine. And that -- his presentation is based on a study
19 that was done for the Yellowknives Dene First Nation
20 and Alternatives North.

21 And also you do have curriculum vitae or
22 resumes for all of our experts and myself that -- and
23 these were filed with the Review Board on August the
24 22nd, and of course we'd be happy to answer any
25 questions about our experience or background if you

1 would like to pursue that.

2 I also want to acknowledge the
3 assistance that we had from EBA Engineering: Ed Hove
4 (phonetic), Bill Horne, and Dawn Hailey (phonetic).
5 They helped review some of the documents related to the
6 frozen block aspects of the project.

7 We don't have them here today or
8 tomorrow for a couple of reasons. We don't have the
9 funding available to have them participate fully in --
10 in this process, but I think they're also happy with
11 the work that's been done to date, and I can speak to
12 that probably this afternoon.

13 I do have some questions for the
14 Developer, if I may proceed, and I want to let you know
15 for sure that we're focussing our questions on the new
16 materials that have been filed with the Review Board
17 since our technical report was submitted to you back in
18 July. And our -- our presentation was filed on August
19 the 22nd, so we tried to focus our questions on the new
20 material that's been filed. And we're also trying to
21 focus our questions on the remaining unresolved issues
22 and the most significant matters. We're not going to
23 nitpick away. We think it's important to try to focus
24 on the most important things.

25 We have a number of questions related to

1 the budget, management for the remediation project,
2 perpetual care, oversight, and some technical matters,
3 and these will be raised during the appropriate
4 sessions as we proceed through the week. But we do have
5 four (4) lines of questioning that we would like to
6 pursue on the -- the overview presentation that we saw
7 this morning.

8 And with your permission, I'd like to
9 proceed.

10 THE CHAIRPERSON: Yes, please proceed.

11 MR. KEVIN O'REILLY: Thank you. On
12 slides 20 and 26 of the Developer's presentation, if we
13 might be able to turn to those, this is where the
14 Developer draws a couple of very important conclusions.
15 At the bottom of slide 20, yes, you'll see there in the
16 bold, that's the one (1), we conclude -- 20, please, is
17 the first slide. You'll see at the bottom of this
18 slide a very important conclusion that we want to draw
19 to your atte -- attention.

20 The Developer's concluded that the
21 project will cause no significant adverse impacts. And
22 on the bottom of slide 26 we conclude that the project
23 is not likely to be a cause for significant public
24 concern.

25 We actually disagree with these two (2)

1 conclusions. And we provide a lot more rationale in
2 our technical report. But what I'd like to ask the
3 Developer at this point is, with these sorts of
4 conclusions, this would not give the Review Board any
5 basis for making recommend -- or recommending binding
6 measures for this development.

7 And is it the -- the position of the
8 Developer that there is no need for binding measures
9 for this particular development?

10

11 (BRIEF PAUSE)

12

13 MS. JOANNA ANKERSMIT: Joanna
14 Ankersmit. Mr. Chair, we stand by these statements.
15 And we believe that the information that we will
16 present to the Board this week will provide substance.
17 It's -- this is simply an overview presentation. And
18 throughout the week we will have the opportunity, I
19 believe, to provide substantive information to the
20 Board in order to be able to deal with this question,
21 Mr. Chair.

22 THE CHAIRPERSON: Thank you. Can you
23 just state your name again for the record.

24 MS. JOANNA ANKERSMIT: Joanna
25 Ankersmit.

1 THE CHAIRPERSON: Thank you. I'll go
2 to Kevin O'Reilly.

3 MR. KEVIN O'REILLY: Thank you, Mr.
4 Chair. I just want to be really clear on this. Kevin
5 O'Reilly here. Because if you actually draw these two
6 (2) conclusions regarding this particular development,
7 that would not give the Review Board any basis to make
8 any binding measures related to this project.

9 And the importance of binding measures
10 are -- and -- and you folks know your mandate very
11 well, is that if binding measures are accepted by
12 responsible ministers, they then have to be
13 incorporated into licences and permits and so on that
14 would be necessary to carry out the -- the development
15 to provide the sort of guidance and lessons learned
16 from this four (4) year environmental assessment for
17 how this project should be carried out.

18 And the importance of binding measures,
19 of course, is that they're trackable. There's a way to
20 enforce them and so on. So is the Developer actually
21 saying that there is no basis then for any binding
22 measures for this development? Thank you.

23 THE CHAIRPERSON: Thank you. Thank
24 you, Mr. O'Reilly. I guess I just wanted to point out
25 that -- to the presentations and -- that is done here

1 today, that I guess when there's questions asked, you
2 know, I'd like to ask the Developer if they could
3 answer those questions and -- so that, you know, again,
4 we have it on record. And I just want to make sure
5 that everybody has an opportunity to ask questions.
6 This is the time we do it.

7 So if I could, I'm going to come back to
8 the Developer. If maybe, Mr. O'Reilly, can you just
9 read out your first question again so that -- and I'll
10 ask the Developer. I mean, you say that you stick to
11 your -- your presentation and your present -- and your
12 position. But I still think that there -- you need to
13 answer that question, so I want to come back to that.
14 I'll go back to Kevin O'Reilly.

15 MR. KEVIN O'REILLY: Thank you, Mr.
16 Chair. Kevin O'Reilly here. Is it the Developer's
17 position that there is no need for any measures from
18 the Review Board to properly guide and manage the
19 project into the regulatory phase and afterwards?
20 Thank you.

21 THE CHAIRPERSON: Thank you. I want to
22 go back to the Developer. State your name again.

23 MS. JOANNA ANKERSMIT: Thank you, Mr.
24 Chair. Joanna Ankersmit. These are the results of our
25 analysis and, of course, binding measures are at the

1 discretion of the Board. We have full respect for this
2 process and the outcomes of it and we will respect the
3 outcomes as suggested at the discretion of the Board.

4 THE CHAIRPERSON: Okay. We'll continue
5 on. And -- and I'm also going to continue to ask that
6 if there's questions by all parties, you know, we like
7 to ask that everybody respect that and answer those
8 questions. Thank you. We'll continue on, Mr.
9 O'Reilly.

10

11 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
12 I'm not sure I actually got an answer to the question,
13 but I guess what it looks like is that the -- and I --
14 I don't want to put words in the mouth of the -- the
15 Developer here, but it looks like, the Review Board and
16 others, that we should rely on the commitments that
17 have been made during this environmental assessment by
18 the Developer.

19 And I'm just wondering how these
20 commitments can be tracked, reported, and how the
21 public can have confidence that these commitments will
22 actually be followed if there are no binding measures.

23 So it's really about follow-up to
24 commitments, and how we can track those and have
25 confidence that they are going to be carried out if

1 they're not -- if you -- if there's not the ability to
2 make binding measures around those. Thank you.

3 THE CHAIRPERSON: Thank you. I want to
4 go to the Developer and I'd like to hear some good
5 answers.

6 MS. JOANNA ANKERSMIT: Thank you, Mr.
7 Chair. The commitments that we -- that we make in this
8 project, for one (1), are taken very seriously and --
9 and are done very thoughtfully. We will be putting in
10 an environmental management system, that work has
11 begun. It's been wor -- we've been working with the
12 parties to develop that.

13 That's a systematic approach to managing
14 the project that will ensure that there's transparency.
15 It -- it will include audit and it will include regular
16 reporting that will be made available to the public, so
17 that progress against our objectives will be clearly
18 stated. And progress that the questioner, Mr. O'Reilly
19 is asking, that system itself will provide a level of
20 transparency through its reporting mechanism.

21 THE CHAIRPERSON: Thank you. Mr.
22 O'Reilly...?

23 MR. KEVIN O'REILLY: Thank you, Mr.
24 Chair. I think I'm going to move on from this
25 particular line of questioning into a -- a second one

1 (1), if I may. Slide 18 of the presentation, if we
2 might be able to put that up. Thank you. It's the --
3 the bottom part, here. The Developer says that:

4 "The remediation project will create
5 jobs for aboriginal people and other
6 northerners, will help local
7 businesses through spending on goods
8 and services."

9 And I think we also heard the Developer
10 say that \$160 million has been spent to date. And I
11 know that the federal and territorial governments,
12 they've set targets for the diamond mines and other
13 sorts of projects, and sometimes even through legally-
14 binding agreements for northern spending, expenditures,
15 targets for northern employment and so on.

16 And I'm just wondering, does the
17 Developer actually track aboriginal and northern
18 benefits in terms of purchasing, spending, jobs and
19 other kinds of indicators?

20 THE CHAIRPERSON: Thank you for your
21 questions. And I'm going to go to the Developer, to
22 the question.

23 MS. JOANNA ANKERSMIT: Thank you, Mr.
24 Chair. Joanna Ankersmit. Yeah, the contaminated sites
25 program that's run by the -- through the Department of

1 Aboriginal Affairs and Northern Development, as you
2 know, the program deals with contaminated sites in --
3 across the north in all three (3) territories.
4 Annually, the program produces, in a report that's
5 publicly available and on our website, that does track
6 Northern employment, Aboriginal employment, how we're
7 doing against our targets in those areas, the
8 percentage of -- of money spent to northern companies.

9 So that -- that -- those indicators are
10 available, and it's a publicly available report through
11 the contaminated sites program of Aboriginal Affairs
12 and Northern Development.

13 THE CHAIRPERSON: Thank you. Continue
14 on.

15 MR. KEVIN O'REILLY: Thank you, Mr.
16 Chair. I did actually look at the AANDC website within
17 the last few weeks and I think the most recent report I
18 could find about Giant was about four (4) or five (5)
19 years old.

20 And I'm just wondering is -- is there a
21 way in which the developer can provide information,
22 because they've made these commitments, on what the
23 track record has been on spending the \$160 million to
24 date on -- and what portion of that's been spent on
25 Northern contracting, employment, and so on.

1 Can they provide that to the Review
2 Board so that we can see what that track record looks
3 like, because I'd -- it's not on the public record so
4 far and the most recent stuff I could see on the -- on
5 the website was from several years ago.

6 So could they commit to provide that --
7 the track record for the past, and also the definitions
8 that they use for northern and Aboriginal employment
9 and contracting and so on. Thank you.

10 THE CHAIRPERSON: Yeah, thank you, Mr.
11 O'Reilly. I just have a question for you is that you
12 were saying that this information is a few years -- you
13 -- five (5) years or three (3) years, or...?

14 MR. KEVIN O'REILLY: Thank you, Mr.
15 Chair. I'm -- I'm desperately trying to get onto their
16 website, but I did look at this a couple of years ago -
17 - or sorry, a couple of weeks ago. And the -- the most
18 recent I could find was not within the last three (3)
19 or four (4) years anyways.

20 I can't remember the exact figure, but
21 I'm wondering if they could put that together, not for
22 the entire contaminated sites program, but just for the
23 Giant Mine so we understand what the track record to
24 date has been. Because I think that would be helpful
25 to know where we might be going. Thanks.

1 THE CHAIRPERSON: Thank you. I'm
2 going to go to the developer. I guess you heard the
3 question. The question I want to ask as well is that
4 is this information available, readily -- readily
5 available so that we could present it as -- so that --
6 that answers his question. I'll go to the developer.

7 MS. JOANNA ANKERSMIT: Thank you, Mr.
8 Chair. Joanna Ankersmit. That annual report is
9 available. If it's -- my apologies if it is not
10 available currently on the Aboriginal Affairs website.
11 It is available and -- and we can provide it.

12 THE CHAIRPERSON: The other question I
13 have for you then, how current is your website if -- if
14 the information is not on there? It should be on the
15 website, but I'm just saying that is it kept current as
16 well so that it's -- it's there?

17 MS. JOANNA ANKERSMIT: Thank you, Mr.
18 Chair. We do produce the report annually and provide
19 it to be posted on the Internet. If for some reason it
20 isn't available on the internet it is available through
21 the Aboriginal Affairs and Northern Development
22 Canada's office, either here in Yellowknife or simply
23 through an email.

24 THE CHAIRPERSON: Okay. Then we'll
25 take that as an undertaking number 1 and I'd like you

1 to get that information to us so that we have it. And
2 if that information -- Mr. Donihee...?

3 MR. JOHN DONIHEE: Thank you, Mr.
4 Chairman. It's John Donihee. Could I just be -- just
5 to be clear, is the report you're talking about
6 specific to Giant. And I suppose, secondly, you know,
7 do you have the last couple of years. I think Mr.
8 O'Reilly was asking about several years.

9 So if you have them annually, can you
10 provide the last two (2) or three (3) years' worth of
11 reports, and just let us know whether they're going to
12 be aggregated or whether it's going to be specific to
13 Giant.

14 THE CHAIRPERSON: Thank you, Mr.
15 Donihee. We'll go to the Developer.

16 MS. JOANNA ANKERSMIT: Thank you, Mr.
17 Chair. Immediately available, most definitely, are the
18 annual reports dating back several years, that they can
19 all be provided. I would need a bit of time to check
20 the level of aggregate. That is an aggregate report
21 with the entire contaminated sites program.

22 Giant Mine is included in the NWT
23 statistics. That said, I need a bit of time to look
24 and see what we have specifically available for Giant.
25 The information can be generated.

1 THE CHAIRPERSON: Mr. Donihee...?

2 MR. JOHN DONIHEE: Thank you, Mr.

3 Chairman. John Donihee. I wonder if you could let us

4 know, say, after lunch whether in fact the Giant

5 information is identified in that report in a way that

6 would enable it to be filed immediately and to satisfy

7 Mr. O'Reilly's request. And if not, then give us some

8 indication of how long it would take to break out the -

9 - the Giant numbers.

10 THE CHAIRPERSON: Okay, I'll go to the

11 Developer.

12 MS. JOANNA ANKERSMIT: Yes, I'd be

13 happy to get back to you by lunch -- after lunch.

14 THE CHAIRPERSON: Mr. Donihee...?

15 MR. JOHN DONIHEE: Thank you, Mr.

16 Chairman. I -- I think if, with your indulgence, sir,

17 we can just wait for that answer. And then we can

18 specifically identify the substance of the undertaking

19 once we hear back from the Developer.

20 THE CHAIRPERSON: Agreed. Okay, well,

21 we'll wait until after lunch with that. We'll continue

22 on, Mr. O'Reilly.

23 MR. KEVIN O'REILLY: Thanks, Mr. Chair.

24 And I did manage to find the -- the website here.

25 There are performance reports for the Contaminated

1 Sites Program. The most recent one posted here is
2 dated 2006/2007. So I'm hoping that they can provide a
3 breakdown of the -- the ni -- the figures for Giant
4 maybe from 1999 to, you know, when they -- they took
5 over the site to present just so we have some
6 understanding of how they're -- they're doing with
7 Northern benefits with this project.

8 But I'd like to turn -- focus the
9 questioning a little bit now, if I may. Well, it would
10 be interesting to see how they've managed this in the
11 past. I looked at the procurement strategy that the
12 Developer filed on August the 10th, and it's document
13 518. We don't have to have it up on the screen.

14 But when I looked through the
15 procurement strategy, I couldn't find any specific
16 targets for Northern spending or jobs and no real
17 commitment to actually track that. So has the
18 Developer actually set any targets for Northern
19 spending, contracting, Northern employment, and
20 Aboriginal employment and -- and contracting and so on
21 for this particular project into the future?

22 So are there any specific targets that
23 they've identified? Thank you.

24 THE CHAIRPERSON: Thank you. I'm going
25 to go to the Developer to the question.

1 MS. JOANNA ANKERSMIT: Thank you, Mr.
2 Chair. Joanna Ankersmit. Specific targets. We've
3 been meeting with the economic development arms of
4 YKDFN, with Tlicho. We -- Public Works recently held
5 an industry day in -- in Yellowknife. We're working
6 towards establishing realistic targets. And we're
7 working towards ensuring that the -- the remediation
8 plan progresses in a way that maximizes the benefits to
9 Aboriginal and Northerners.

10 Specific targets currently for the
11 implementation have not been set, and those are -- are
12 being done in consultation to ensure that the capacity
13 is -- is understood and that the project proceeds in a
14 way that ensures that we do maximize those benefits.

15 THE CHAIRPERSON: Mr. O'Reilly...?

16 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
17 Can the Developer tell us then when they might have
18 these targets available? Is it -- or, you know, just
19 when they're going to be available and how they are
20 going to track and report on them? Thanks.

21 THE CHAIRPERSON: Okay, thank you. I'm
22 going to go to the Developer.

23 MS. JOANNA ANKERSMIT: Thank you, Mr.
24 Chair. If I could just have a minute to caucus with a
25 colleague.

1 (BRIEF PAUSE)

2

3 THE CHAIRPERSON: Maybe -- Mr.
4 O'Reilly, how many more questions do you have? Because
5 I got a couple more -- I've got some people that have
6 yet to speak.

7 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
8 I am -- I think this -- that's the end of the line of
9 questioning. I just have a couple more shorter lines
10 of questioning, I hope; probably another five (5)
11 minutes, at most.

12 THE CHAIRPERSON: Very good. We'll
13 continue on.

14 MR. KEVIN O'REILLY: Thanks.

15

16 (BRIEF PAUSE)

17

18 THE CHAIRPERSON: Yes, please -- please
19 proceed.

20 MS. JOANNA ANKERSMIT: Thank you, Mr.
21 Chair. Joanna Ankersmit. There's -- there's currently
22 a target within the Northern Contaminated Sites Project
23 -- Program, sorry. And -- and that -- that's in this
24 report that we -- we'll be able to provide, or the
25 several reports that we will be providing.

1 Those targets will be clearly laid out
2 in that, and I'd like to be able to come back to that
3 after -- in the afternoon, after I've had a chance to -
4 - to review that, to ensure that I don't provide you
5 with information that's not current.

6 THE CHAIRPERSON: So we're going to
7 have a commitment to have that information to us after
8 lunch today, right?

9 MS. JOANNA ANKERSMIT: Yeah. I'd like
10 to be able to provide some information on what the
11 targets have been for the program. For instance, 60
12 percent is a target that we've used for Aboriginal and
13 Northern benefits. I need to -- to just go back and
14 look at that. And when we look -- look at the report,
15 everyone will have the benefit of that information.

16

17 --- COMMITMENT NO. 1: AANDC to provide some
18 information on what the
19 targets have been for the
20 Northern Contaminated Sites
21 Program

22

23 THE CHAIRPERSON: Okay. We'll go back
24 to Alternatives North.

25 MR. KEVIN O'REILLY: Thank you, Mr.

1 Chair. That's helpful. I just want to go to slides 7
2 and 8 of the presentation, and this is where the
3 Developer lays out the objectives of the remediation
4 plan.

5 And if you look at those five (5)
6 numbered points, they're largely -- I think it reflects
7 the kind of thinking that the Developer has had in --
8 in mind in putting together the remediation plan and
9 what it's designed to do and so on. But there's
10 actually nothing in those objectives that relate to
11 meaningful involvement of the community, and the design
12 and implementation of the project, or working together,
13 and so on.

14 And I'm just wondering why that sort of
15 focus is not part of the objectives that the Developer
16 has laid out for the remediation plan. Thank you.

17 THE CHAIRPERSON: Thank you. To the --
18 to the Developer, to the question.

19 MS. JOANNA ANKERSMIT: Joanna
20 Ankersmit. Thank you, Mr. Chair. The objectives are
21 focussed on the protection of human health and safety,
22 and the environment. That is first and foremost a
23 priority of the Government of Canada and the Government
24 of Northwest Territories in this project. And those
25 objectives are reflected within the Developer's

1 assessment report.

2 How we achieve these objectives is what
3 we have been working on with the parties and will
4 continue to engage with the parties on. Our efforts
5 are to have -- or, our intentions are to have a
6 collaborative approach. We've been working with the
7 parties on environmental -- in the environmental
8 management system.

9 And that is -- is inclusive and been
10 bringing together very good ideas that will inform the
11 project, in terms of how it proceeds and how we can
12 implement this project in a way that is inclusive. And
13 I think that we all share these objectives for the
14 Giant Mine Remediation Plan.

15 THE CHAIRPERSON: Alternatives
16 North...?

17 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
18 Kevin O'Reilly here. I just -- I guess I'll reiterate.
19 That's interesting that working together and meaningful
20 community involvement is not an objective in itself.
21 But I want to move onto the last line of questioning,
22 if I -- if I may, for the Developer on this overview
23 presentation.

24 And on slide 7, which is already up
25 there, the very last sentence there on the slide talks

1 about decisions on how to use the land will be made
2 together with stakeholders.

3 And so we've been involved in -- a
4 number of us have been involved in putting together the
5 -- the remediation plan for about six (6) to eight (8)
6 years. We've had four (4) years of this environmental
7 assessment. And it's curious that we're only now
8 talking about how to look at end use or land use for
9 this site, after like twelve (12) years of talking
10 about this. It just seems a bit backwards that -- I'm
11 wondering why we're not -- the end use for the land
12 wasn't considered early on in developing the
13 remediation plan.

14 So -- and I -- so can the Developer
15 explain why the end use for the plan, we're only
16 starting to talk about that now at the end of the
17 process, rather than at the beginning when we were
18 trying to work our way through the remediation plan?
19 Thank you.

20 THE CHAIRPERSON: Thank you. That's a
21 good question. We'll go back to the Developer.

22 DR. RAY CASE: Thank you, Mr. Chair.
23 Ray Case. The opportunity to make land around the
24 Giant Mine site available to -- for other uses has
25 always been a consideration in the development of the

1 remediation project. There are clearly, however,
2 limits on some areas of the site that will influence
3 future land use.

4 So the discussion around future land use
5 is to develop a plan within and respecting those
6 limitations, preventing disturbance to the remediation
7 project, reestablishing threats to public health and
8 safety, and that's where we need to -- to go working
9 forward on deciding how the land is used in the -- in
10 the future.

11 THE CHAIRPERSON: I'm trying to look
12 for -- thank you, Ray -- to answer that question. Why
13 wasn't it done twelve (12) years ago compared -- why
14 are we doing it now?

15 DR. RAY CASE: Mr. Chair. Ray Case.
16 As indicated, future land use and the -- the ability to
17 make it available for future land use -- for future use
18 has always been a consideration. The -- some land use
19 -- future land uses were, and still are, not an
20 opportunity, not an option. And those were identified
21 early on. We can work with future land uses and the
22 opportunities that remain.

23 THE CHAIRPERSON: Okay, I'll -- I'm
24 going to go to Alternatives North.

25 MR. KEVIN O'REILLY: Thanks, Mr. Chair.

1 I just, maybe one (1) quick point here. In April of
2 2008, I filed with the Review Board a plan that the
3 city had developed for the Giant Mine site that was
4 dated June of 2006. So, you know, the city was
5 thinking about future land use back in 2006, before the
6 Developer's assessment report had been prepared. And
7 here we are two (2) years later after the DAR, and
8 we're still talking about future land use.

9 So, anyways, I would like to thank the
10 Board for your patience in allowing me to ask questions
11 on behalf of Alternatives North, and -- and we
12 appreciate the answers that the Developer has provided.
13 Thanks.

14 THE CHAIRPERSON: Thank you, Mr.
15 O'Reilly. I think what we're going to do is -- I just
16 want to make a quick comment, I guess. You know, it's
17 -- you know, years ago we used to be in the position,
18 negotiations and so on. And -- and, you know, when I
19 sit here today, it's the same thing. You know, I feel
20 like, you know, we're negotiating at the table here.

21 And, you know, we're here for a reason:
22 to really listen to what people have to say. And I'm
23 going to ask the Developer to really think about, you
24 know, answering these questions. And, to me, what I'm
25 hearing from the table over here is we -- we're in

1 negotiations. And we're very careful as to how words
2 are being used. And I'm just saying that, you know,
3 sometimes the question is put out there. It needs to
4 be answered so that we give confidence to the public on
5 exactly what's happening with Giant Mine.

6 So anyways, I want you guys to think
7 about that. And we're going to take a ten (10) minute
8 break, and then I'm going to continue on. Thank you.

9

10 --- Upon recessing at 10:48 a.m.

11 --- Upon resuming at 11:05 a.m.

12

13 THE CHAIRPERSON: If I could get
14 everybody back to their seats, we could continue on.
15 There's questioning to the Developers. Before I kind
16 of want to just quickly recognize a couple former
17 leaders in here as well.

18 In the back we have the former Chief for
19 Dettah, Isadore Tsetta. I believe he's there in the
20 back somewhere. And then we also have former Chief
21 Fred Sangris and former Chief Jonas Sangris.

22 We also have Willard Hagen, I believe
23 he's the chairman for the Mackenzie Valley Land and
24 Water Board, in the back as well. And the former MLA
25 Sandy Lee is here as well. I'm going to go to now...

1 Anyway, I'm going to go to North Slave
2 Metis Alliance. I believe you have three (3) questions
3 to the Developer. So I'm going to go to North Slave
4 Metis and then you could also do your introduction.

5 MR. BILL ENGE: Thank you, Mr.
6 Chairman. My name is Bill Enge and I'm the President
7 of the North Slave Metis Alliance. I have with me as
8 part of my team today Elder Ed Jones, who's also a
9 director of the North Slave Metis Alliance, to my
10 right.

11 I have to my sister -- to my left, my
12 sister, Susan Enge, who is assisting us today with this
13 project; and Eric Binion, who is also our regulatory
14 analyst in the environment division.

15 Mr. Chairman, the question I have for
16 the Developer today, I'd like to start out asking a
17 simple question. And that is: I just want to clarify
18 that I understood what the Developer said this morning,
19 and that is that the Developer plans to retain
20 responsibility for the arsenic trioxide that is -- that
21 they wish to keep frozen in the underground vaults of
22 Giant Mine.

23 So that's the question I would like the
24 Developer to affirm or clarify. Thank you.

25 THE CHAIRPERSON: Thank you. I'm

1 going to go to the Developer.

2 MS. JOANNA ANKERSMIT: Thank you. Yes,
3 the governments are prepared to accept responsibility
4 for the long-term management of the arsenic trioxide.

5 THE CHAIRPERSON: Thank you. North
6 Slave Metis...?

7 MR. BILL ENGE: Thank you, Mr.
8 Chairman. Mr. Chairman, I think you know and everyone
9 in this room knows that the Government of the Northwest
10 Territories and the Government of Canada -- i.e., the
11 Department of Aboriginal Affairs and Northern
12 Development Canada -- are actively negotiating a
13 devolution agreement at this time, that one (1) of the
14 responsibilities that the Government of Canada wishes
15 to transfer into the hands of the Government of the
16 Northwest Territories is jurisdiction over lands and
17 resources.

18 And I'd like clarification here as to
19 who is going to take the lead role and responsibility
20 of the Giant Mine, should the devolution agreement be
21 concluded. Thank you.

22 THE CHAIRPERSON: Thank you. I'm
23 going to go to the -- the Developer.

24 MS. JOANNA ANKERSMIT: Thank you, Mr.
25 Chair. The Giant Mine is not part of the devolution

1 agreement. And the federal government will, and the
2 Government of the Northwest Territories, will continue
3 to maintain responsibilities as they are today going
4 into the future.

5 THE CHAIRPERSON: Okay. Thank you.
6 I'm going to go to the North Slave Metis.

7 MR. BILL ENGE: Yes, thank you, Mr.
8 Chairman. I'm having difficulty also with the
9 presentation to understand what is the differential
10 roles between the Government of Canada and the
11 Government of the Northwest Territories with regard to
12 this remediation plan. Thank you.

13 THE CHAIRPERSON: I'm going to go to
14 the Developer. But before I go to the Developer I
15 think again I just wanted to remind the parties that
16 the questioning should be relevant to the presentation.
17 So I ask, Mr. Enge, that's -- your question is in
18 relation to the presentation, correct?

19 MR. BILL ENGE: Mr. Chairman, it's my
20 view that if you look up there on the slide you will
21 see that the symbols of the Government of Canada and
22 Northwest Territories are combined. So I think it's a
23 legitimate question since they're doing a joint
24 presentation with regard to this presentation. Thank
25 you.

1 THE CHAIRPERSON: Thank you. I'm going
2 to go to the Developer.

3 DR. RAY CASE: Thank you, Mr. Chair.
4 Ray Case. In 2005, the Government of Canada and the
5 Government of Northwest Territories signed a
6 cooperation agreement with respect to the remediation
7 of the mine site.

8 That cooperation agreement identified
9 that the Government of the Northwest Territories had a
10 limited liability for -- for the -- the site and
11 established a limit on that liability to \$23 million.
12 It also, however, recognized that the Government of the
13 Northwest Territories needed to have a role and input
14 into the remediation of the site and established a
15 process by which we could participate in the
16 development of the remediation plan and the remediation
17 of the site.

18 THE CHAIRPERSON: Thank you. I'm going
19 to go to the North Slave Metis.

20 MR. BILL ENGE: Thank you, Mr.
21 Chairman. Could the Government of the Northwest
22 Territories describe for us what exactly their
23 participation is in this mine site? Thank you.

24 THE CHAIRPERSON: Thank you. I'm going
25 to go to the Developer.

1 DR. RAY CASE: Thank you, Mr. Chair.

2 Ray Case. The Government of the Northwest Territories
3 participates in the development of the overall approach
4 as part of the remediation team. The actual
5 contribution of resources is to take place at the
6 remediation phase.

7 THE CHAIRPERSON: North Slave Metis...?

8 MR. BILL ENGE: Yes, thank you, Mr.
9 Chairman. I'd like the Developer to describe for --
10 for us exactly how much funding are they planning to
11 put into the remediation when they become full
12 partners, I would think. Thank you.

13 THE CHAIRPERSON: Thank you. To the
14 Developer.

15 DR. RAY CASE: Thank you, Mr. Chair.
16 Ray Case. If I could get clarification on the -- the
17 question about full partners?

18 THE CHAIRPERSON: Thank you. Mr. Enge,
19 North Slave Metis.

20 MR. BILL ENGE: Thank you, Mr.
21 Chairman. Bill Enge here. Yes, the question is: What
22 percentage of the funding to undertake the remediation
23 of Giant Mine does the GNWT plan to put into this
24 project? Thank you.

25 THE CHAIRPERSON: Thank you. The

1 Developer -- to the Developer.

2 DR. RAY CASE: Thank you, Mr. Chair.

3 Ray Case. The government of the Northwest Territories'
4 total liability over the entire length of this project
5 was set out in the cooperation agreement and limited to
6 \$23 million. I can't give a percentage because the
7 total cost of the project has not finally been
8 determined. However, additional information on cost
9 will be provided later in these sessions.

10 THE CHAIRPERSON: Thank you. Mr.
11 Enge...?

12 MR. BILL ENGE: Yes, thank you, Mr.
13 Chairman. Bill Enge here. Okay, so the -- the cost of
14 this cleanup is in the hundreds of millions of dollars
15 from what I understand. This is what the Developer put
16 forward to us this morning, \$23 million is a pretty
17 small number in comparison to the cost of this cleanup
18 project.

19 In any case, that being said I just want
20 to finalize my -- to clarify my question to the
21 Developer. And that is, the cost of maint -- of
22 keeping the mine under -- the arsenic frozen in
23 perpetuity I understand is going to be borne by the
24 Department of Aboriginal Affairs Northern Development
25 Canada, is that correct? Something like \$1.24 million

1 a year in perpetuity, is that correct?

2 THE CHAIRPERSON: Thank you. I'll go
3 to the Developer.

4 MS. JOANNA ANKERSMIT: The long-term
5 cost associated with the mine will be borne by the
6 federal government, that is correct.

7 THE CHAIRPERSON: Okay, thank you.
8 Just another quick question to the North Slave Metis.
9 I was -- I was -- in terms of questioning, how many
10 questions do you have on your list? I was told that
11 you had three (3).

12 MR. BILL ENGE: Thank you, Mr.
13 Chairman. I only gave an approximation. I didn't give
14 a definitive number. That being said, that -- that
15 question I just put to the Developer I'm finished with.
16 I'd like to move on.

17 And the second -- second question I have
18 for the Developer is: Is the Developer aware that the
19 North Slave Metis Alliance are Section 35 aboriginal
20 rights holders? Thank you.

21 THE CHAIRPERSON: Okay, thank you.
22 Before I go to the Developer, I guess the -- we --
23 we're -- again, I want to emphasize that we're here to
24 -- to hear the presentation by the Developer on -- on
25 this proposed remediation project, and the -- the

1 question that you're asking are -- are Section 35
2 rights, that -- that really should -- should be -- the
3 questions that you should be putting forward should be
4 to the presentation. And I want to just remind you of
5 that.

6 So I'm going to ask you that we continue
7 on with your questioning, Mr. Enge.

8 MR. BILL ENGE: Thank you, Mr.
9 Chairman. I -- if I understand correctly, you're --
10 you're -- the ruling from the Chair is that that's an
11 inappropriate question, is that correct?

12

13 (BRIEF PAUSE)

14

15 THE CHAIRPERSON: Thank you. Again,
16 I'm going to come back -- the -- the questions that --
17 that -- the process that we have again is in accordance
18 to the Mackenzie Valley Resource Management Act, and
19 the process that we have set up. And the process that
20 we have here today is to deal with the Giant Mine
21 Remediation Project, so the question that you have is
22 not related to the presentation up there that we have
23 that's made by Giant Mine.

24 So I -- I would like to continue on with
25 the question that you have, Mr. Enge. Thank you.

1 MR. BILL ENGE: Thank you, Mr.
2 Chairman. I guess your answer to my question is that
3 you're ruling that that was an inappropriate question.
4 But I -- but this does have relevance, Mr. Chairman, to
5 the presentation because the question that I have is
6 the Developer has stated that it has seen fit to hold
7 meetings with the Yellowknives Dene First Nations and
8 the Tlicho Government in regard to the socio-economic
9 opportunities that they state will be afforded in terms
10 of the care and maintenance of the -- of the mine after
11 -- or should it be closed the way in which they wish to
12 see it closed.

13 And I just am wondering why it is that
14 the Developer didn't see fit to come and talk to the
15 North Slave Metis Alliance the same way it did with the
16 two (2) First Nations organizations, considering that
17 the Giant Mine area and the North Slave region is part
18 of the traditional territory of the North Slave Metis
19 people. Thank you.

20 THE CHAIRPERSON: Okay, thank you.
21 Before, I was going to just point out that, again,
22 we're -- we're doing questions for -- the -- the
23 Developer made a presentation. We have an opportunity
24 to question the Developer on -- on their presentation
25 and we're going through the list in order.

1 However, there is a -- a part on the
2 agenda here that talks about parties and positions and
3 summaries. And this is where everybody has an
4 opportunity to -- to put their position forward. And I
5 believe the North Slave Metis Alliance has ten (10)
6 minutes in there, as well. So that's where we're going
7 to, probably -- you know, you're going to have to take
8 a -- deal with your questions there.

9 My question to Mr. Enge is that the --
10 the presentation that was here -- again the questioning
11 line has to be made to the Developer on the
12 presentation at hand. So is there another question,
13 Mr. Enge?

14 MR. BILL ENGE: Thank you, Mr.
15 Chairman. I'm -- I'm unclear as to the ruling by the
16 Chair. I am asking a question in regard to the
17 presentation that was made. Part of the presentation
18 was under the heading of socioeconomic on the -- on the
19 slide. And the Developer has stated, in their
20 presentation, that they have met with the Yellowknives
21 Dene First Nations and the Tlicho Government in regard
22 to the stated socioeconomic opportunities.

23 The question I have is: Why didn't the
24 Developer come to the North Slave Metis Alliance and do
25 the same presentation in regard to the socioeconomic

1 opportunities that they stated will become available in
2 the care and maintenance aspect of the mine? Thank
3 you.

4 THE CHAIRPERSON: Okay, thank you.
5 That's a question to the Developer based on the
6 presentation at hand.

7 MR. ADRIAN PARADIS: The federal
8 government -- the Giant Mine project team. Hello, Mr.
9 Chair, apologize. Adrian Paradis on behalf of
10 Aboriginal Affairs and Northern Development Canada.
11 The project team can sit down and speak to all parties
12 about aspects of the project, including socioeconomic
13 benefits if that is requested.

14 THE CHAIRPERSON: Okay, thank you. So
15 I'll go back to the North Slave Metis Alliance. The
16 response to your question. Was there another question?

17 MR. BILL ENGE: Yes, thank you, Mr.
18 Chairman. Yeah, I just want to clarify here the Deve -
19 - what the Developer is saying. When he -- when the
20 Developer claims that the Department of Aboriginal
21 Affairs and Northern Development Canada is prepared to
22 meet with parties in regard to the employment and
23 business opportunities, you know, I would like a
24 definition of what he means by "parties." Because the
25 North Slave Metis Alliance is not just a rod and reel

1 club around here.

2 The North Slave Metis Alliance
3 represents Aboriginal people with Section 35 Aboriginal
4 rights. And it was pointed out that the Developer saw
5 fit to meet with the Yellowknives and the Tlicho
6 peoples, and not so for the Metis. And I'm wondering
7 where, in their view, the North Slave Metis Alliance is
8 categorized? Thank you.

9 THE CHAIRPERSON: Okay, I'm going to
10 stop it there for a second. I'm going to have a quick
11 caucus with my Board members and our legal counsel.
12 And then I'll come back to the question.

13

14 (BRIEF PAUSE)

15

16 THE CHAIRPERSON: Thank you. I'm going
17 to -- I'm just going to go to my legal counsel, just a
18 quick comment. But before I do that, again, I just
19 want to remind everyone that this project here is --
20 it's a remediation project that's been ongoing for some
21 time.

22 Again, we're here to listen to the views
23 of the public and everybody else that -- and parties
24 that had -- the Developer gave a presentation this
25 morning. And everybody has an opportunity to raise

1 their issues and concerns about the presentation.

2 And at this time, the Board doesn't want
3 to get into any issues in terms of jurisdiction in
4 terms of Section 35 rights. We're here to deal with
5 the Diamond Mine remediation project at hand.

6 So I just want to continue on with the
7 line of questioning. The questioning in terms of
8 Section 35, this is not the forum for us to deal with
9 that. And we're going to continue on with the
10 questioning, and move on. But before I do that I'm
11 going to ask Mr. Donihee to add to that.

12 MR. JOHN DONIHEE: Thank you, Mr.
13 Chairman. John Donihee, Board counsel. The Board
14 understands that there are differences between the NSMA
15 and -- and the crown, Government of Canada, with
16 respect to the nature and -- representative nature of
17 the NSMA, and that -- that those differences re --
18 relate as well to some of the issues being raised about
19 Section 35 of the Constitution Act.

20 Un -- unfortunately, you know, this
21 isn't the forum, as -- as the Chair has indicated,
22 where, you know, that kind of a difference can be
23 explored. The Board has no jurisdiction, you know, to
24 deal with the question of whether or not one (1) of the
25 parties in this proceeding may or may not appropriately

1 represent Section 35 rights holders.

2 And, as a result, the Board's really
3 unable to offer any -- any kind of remedy or -- or even
4 the capacity to explore this issue in this -- in this
5 proceeding. And -- and I think that's the legal basis
6 for the -- the Chairman's ruling. Thank you, sir.

7 THE CHAIRPERSON: Thank you. So again,
8 I'm just going to remind everybody else that parties,
9 again, have a position -- summaries coming up here
10 right after this, so that's an opportunity for parties
11 to -- to come forward and state what their position is
12 going to be in regards to this Giant Mine remediation
13 project cleanup.

14 And so -- and we ask that -- again, on
15 the agenda everybody was allotted time to do this, so
16 we're going to continue on with the agenda. So I'm
17 going to go to Mark -- You got any further questions,
18 Mr. Enge?

19 MR. BILL ENGE: Yes. Thank you, Mr.
20 Chairman. With respect, Mr. Chairman, I disagree with
21 your legal counsel's views that this Board doesn't have
22 a mandate or any kind of jurisdiction regarding the
23 Section 35 Aboriginal rights of the Aboriginal people
24 that are here.

25 This is a federally mandated Board with

1 a quasi-judicial mandate. And it -- this Board, in --
2 in our view, has to take into account who the
3 aboriginal groups are with Section 35 rights, and it
4 has to give that weight to that issue.

5 But having said that, I'll move on with
6 -- in regard to the employment and business opportunity
7 aspects of this -- of this mine. The Developer has
8 stated that employment and business opportunities have
9 been afforded the aboriginal groups in this area over
10 the past number of years. And sti -- and there are
11 statistics available on its website in regard to this
12 matter. And I'd like to know if they took into account
13 any business and employment opportunities afforded to
14 the Metis people of the North Slave area. Thank you.

15 THE CHAIRPERSON: I'm going to go to
16 the Developer.

17

18 (BRIEF PAUSE)

19

20 MS. JOANNA ANKERSMIT: Joanna
21 Ankersmit. The statistics that we have compiled and we
22 will be providing -- consider Aboriginal and Northern
23 employment as an aggregate. And it is not broken out by
24 specific -- specific group.

25 THE CHAIRPERSON: Okay. Thank you.

1 Mr. Enge...?

2 MR. BILL ENGE: Thank you, Mr.
3 Chairman. The employment and business statistics that
4 the Developer is providing, I suggest, should be broken
5 out into a difference between the aboriginal peoples
6 and the northern businesses.

7 And I'd like the Developer to undertake
8 to -- to do that so that we can get a clear picture of
9 exactly what kind of business and employment
10 opportunities are being afforded the Aboriginal people
11 whose traditional lands the mine is on. Thank you.

12 THE CHAIRPERSON: Okay. Thank you,
13 Mr. Enge. I guess the Developer has already made a
14 commitment to get that information to us this
15 afternoon. And once we get that information then
16 hopefully it may be addressed in terms of the monies
17 that they're spending in -- in the Giant Mine
18 remediation project.

19 So is there any further questions that
20 you have, because there are other people that we have
21 on the list that want to go too. Thank you.

22 MR. BILL ENGE: Thank you, Mr.
23 Chairman. The final question I have in regard to the
24 Developer's presentation is in regard to the -- the
25 contaminants, namely arsenic that has been -- or is

1 going to be managed on the surface at the mine site. I
2 -- I understand that the Developer plans to place a
3 gravel covering over the surface where they have found
4 arsenic to be from the surface to 2 metres below the
5 surface.

6 And in that regard I'd like to know have
7 they found -- why -- why is it that the Proponent
8 believes that a covering over arsenic that is found to
9 just be 2 metres below the surface is sufficient when
10 there may be more arsenic in other soils on the
11 grounds. Thank you.

12 THE CHAIRPERSON: Thank you, Mr. Enge,
13 for your final question. I'm going to go to the
14 Developer.

15 MR. MICHAEL NAHIR: Thank you, Mr.
16 Chair, it's Mike Nahir. I'll just preface my -- my
17 comment by saying the detail on the answer of your
18 question will be discussed on Wednesday when we discuss
19 surface remediation. But just in summary, we -- we've
20 done human health and ecological risk assessments to
21 determine our standards, and to look at how best to
22 remediate the site. And so that -- that is the
23 approach that -- that we've taken.

24 But, as I said, more detail will be
25 covered on Wednesday. Thanks. Thank you.

1 THE CHAIRPERSON: Okay. So you're
2 going to be doing your presentation on Wednesday on
3 that issue -- on that question. Okay. I'm going to go
4 to Environment Canada. Is there any questions for the
5 Developer on their presentation?

6

7 (BRIEF PAUSE)

8

9 MS. AMY SPARKS: Thank you, Mr. Chair.
10 My name is Amy Sparks and I'm here on behalf of
11 Environment Canada. We don't have any questions on
12 behalf of that presentation but I would like to
13 introduce Margaret Fairburn (phonetic) and Lisa Lowman
14 that are also here on behalf of Environment Canada
15 today.

16 THE CHAIRPERSON: Thank you. I'm
17 going to go to Department of Fisheries and Oceans.
18 Questions for the Developer, and maybe you could also
19 do your introduction as well. Thank you.

20

21 (BRIEF PAUSE)

22

23 MS. BEV ROSS: Good morning, Mr. Chair,
24 and Board members. My name is Bev Ross, I'm with the
25 Department of Fisheries and Oceans.

1 We have no questions for the Developer
2 at this time on their overview presentation, but I will
3 take the opportunity to introduce our team at this
4 hearing, as well. We have with us two (2) habitat
5 biologists, Rick Walbourne and Morag McPherson. And
6 Sarah Olivier is our environmental assessment analyst,
7 and she'll be joining us later today. Thank you.

8 THE CHAIRPERSON: Okay, thank you. I'm
9 going to go to the Board's technical advisors. Any
10 questions for the Developer on their presentation?

11 MR. JOHN DONIHEE: Mr. Chairman, it's
12 John Donihee. The advisors and counsel have no -- no
13 questions in relation to this -- this overview
14 presentation.

15 THE CHAIRPERSON: Okay, thank you. I'm
16 going to go to my far right, Mr. Danny Bayha. Any
17 questions to the Developer on the presentation? Board
18 member...?

19 MR. DANNY BAYHA: Thank you, Mr. Chair.
20 I don't have any questions on this presentation. Thank
21 you.

22 THE CHAIRPERSON: Thank you. Rachel
23 Crapeau, Board member...?

24 MS. RACHEL CRAPEAU: No questions at
25 the moment, Mr. Chair.

1 THE CHAIRPERSON: Thank you. Richard
2 Mercredi, Board member...?

3 MR. RICHARD MERCREDI: Thank you, Mr.
4 Chair. No questions at this time.

5 THE CHAIRPERSON: Thank you. James
6 Wah-shee, Board member...?

7 MR. JAMES WAH-SHEE: Thank you, Mr.
8 Chair. I have no questions. Thank you.

9 THE CHAIRPERSON: Thank you. Mr. Percy
10 Hardisty, Board member...?

11 MR. PERCY HARDISTY: Mahsi, Mr. Chair.
12 I don't have any at the moment. Mahsi.

13 THE CHAIRPERSON: Thank you. John
14 Curran, Board member...?

15 MR. JOHN CURRAN: Thank you, Mr. Chair.
16 No questions at this time. Thanks.

17 THE CHAIRPERSON: Okay. Thank you. I
18 want to thank the Developer for doing your
19 presentation. And I believe there's some commitments
20 made to get information to us after lunch, so we look
21 forward to that information that we can circulate and
22 distribute it around.

23 Next on the agenda I have is parties'
24 position summaries. So I'm going to go to YKDFN and --
25 oh, hang on, I believe -- maybe what I'll do is I'll go

1 to the City of Yellowknife, and then YKDFN. I think
2 the mayor has to leave right away, so I'll go to Mayor
3 Gordon van Tighem, if he's here.

4

5 (BRIEF PAUSE)

6

7 THE CHAIRPERSON: Okay, thank you.

8 We'll come back to them after lunch. I'm going to go
9 to YKDFN, according to the list. The minutes here, we
10 have thirty (30) minutes for YKDFN, Alternatives North
11 is ten (10) minutes, North Slave Metis ten (10)
12 minutes, Environment Canada five (5), DFO five (5), and
13 City of Yellowknife five (5).

14 So I'm going to go over to YKDFN.

15

16 (INTERPRETED FROM TLICHO INTO ENGLISH)

17

18 POSITION PRESENTATION BY YKDFN:

19 CHIEF EDWARD SANGRIS: Mahsi. My name
20 is Chief Edward Sangris. I'm a Yellowknife Dene First
21 Nation member and I'm a Chief of Yellowknife Dene First
22 Nation.

23

24 (INTERPRETATION CONCLUDED)

25

1 CHIEF EDWARD SANGRIS: I appear today
2 representing the people of my First Nations who do not
3 agree with the plans to remediate Giant Mine. We do
4 not agree. And we do not want arsenic to remain in the
5 ground, but we're here today because we refuse to be
6 left out of this decision-making yet again that we have
7 experienced in the past.

8 My message to the government this
9 morning, to the remediators, and to Board members, is a
10 simple one: listen to the people and what they want.
11 How they envision the future. Listen to the people who
12 were born here, who have lived here, and who use the
13 land traditionally as part of their history and their
14 culture.

15 Listen to the people who will die here,
16 and be buried here. And whose future generation will
17 remain on the land forever.

18 So what's the protocol among our people?
19 Long before anything was established in Yellowknife
20 Bay, our people had a protocol that anything on the
21 west side of Yellowknife Bay is to be left for our
22 wildlife that they depend on. And we have kept that
23 protocol to this day. We have established our villages
24 on the east side of the bay.

25 The Yellowknife Dene, the Weledeh people

1 have been most affected by the Giant Mine and the giant
2 mess that it has left behind. Before Giant, Con, or
3 Negus, and before there was a city of Yellowknife, the
4 land and the water was clean and productive. It used
5 to provide us with everything we needed, from fish,
6 caribou, moose, berries, and medicine.

7 But in the summer of 1934, our lives and
8 our tradition changed forever. Proctors -- prospectors
9 came to the Yellowknife, to the Weledeh territory
10 looking for gold. They were led to their treasures by
11 a Weledeh woman, Liza Crooked Hand (phonetic). And
12 soon our land was taken over by miners, geologists,
13 businesses, and the government.

14 Our people have never been formally
15 recognized for our role in the gold boom of
16 Yellowknife, or for the permanent loss of our land.
17 But when I say this morning my open remarks, welcome
18 remarks, I thought about how I hope that each word --
19 each -- some of my words have no hard feelings. But
20 the only thanks we ever got, or ever received, have
21 been pollution, disruption, and invasion of our
22 territory.

23 Now compensation have never been talked
24 about. In keeping with the other industry, how they
25 make their agreements, we're missing out on \$75 million

1 in compensation for the amount of years that Giant has
2 been in operation.

3 When Giant began producing gold in the
4 late '40s, it started releasing arsenic into the air
5 and into the water. In 1951, Dene children died and
6 other Dene started getting sick. But the government
7 let Giant Mine continue to pollute the air, the land,
8 and the water. There has never been the official
9 inquiry into the causes of those death. Our people,
10 whose children's mothers have never been given answers
11 for the loss that was suffered.

12 Now back then, government knew what was
13 happening because of the arsenic. And yet they allowed
14 our lakes and our creeks to be contaminated. Why was
15 that? When they knew people, animals, and plants were
16 being harmed, why did they let it continue?

17 Today, we still -- we still suffer from
18 the legacy of Giant Mine. We can't drink water from
19 the Yellowknife Bay, and we don't know if berries or
20 plants in the area are safe to eat. There's a layer of
21 arsenic on the bottom of the Yellowknife Bay. So on a
22 hot summer day we can't even let our children swim in
23 the water. And we'll -- never been compensated for the
24 wrongs to our land, to our people, and our way of life.

25 Ten (10) years ago, government assumed

1 responsibility for the mess they have neglected --
2 neglected for all these years. Finally, we thought the
3 arsenic would be removed and the land returned to the
4 way it was before.

5 Mining is an ancient industry, but
6 remediation is a relative new method. Some options are
7 not the right options or the only option. But now we
8 know that the government's re -- remediation plan, the
9 arsenic was stored -- will be stored underground. That
10 is a da -- danger that shall be there frozen
11 underground.

12 We now know that arsenic tailings will
13 be -- simply be covered up and that the water pumped
14 from the mine into Yellowknife Bay will still contain
15 some arsenic. The Yellowknife Dene do not review this
16 plan as remediation. The problem is not being removed.
17 That is a long-term management plan for the danger that
18 will remain forever.

19 The history of Giant Mine has shown us
20 that bad management, neglect, exploitation of the lands
21 and people are a reality. After all of that, do we
22 still trust the government to take care of our land?

23 I'm here today to remind the Proponents
24 that two (2) wrongs don't make a right. First, making
25 a mess, and then not cleaning it up is not a solution.

1 We do not agree with the frozen block method. As
2 traditional land owners, we want to protect our future
3 generation from the legacy of Giant Mine.

4 We want the arsenic removed and treated
5 or hauled away. We want the water in our lakes and our
6 streams to be clean enough to drink and the land to be
7 returned to how it was once.

8 We will never stop wanting and working
9 to achieve -- towards achieving this vision as for the
10 future. But we realize the reality of our times.
11 We understand technologies do not exist or not cost-
12 effective enough to achieve our goals.

13 We understand that stabilizing the
14 arsenic chambers by freezing them is maybe the best
15 solution for today. We understand that tapping the
16 tailings is perhaps the best solution for today. And
17 we understand that using today's technology, it is
18 impossible to stop Giant Mine from continuing to
19 release arsenic into the environment.

20 So our -- our understanding leaves us to
21 accept new goals, goals that are geared towards short-
22 term solution to cleaning up Giant Mine. The
23 Yellowknife Dene will remain partners to this process
24 so that we have input into how new technologies can be
25 applied to one day eliminate this hazard from our land.

1 We will remain influential players in
2 this remediation to ensure the government lives up to
3 its obligation of looking for new technologies and
4 getting rid of arsenic once and for all.

5 It is our view that accountability is
6 essential in this environmental assessment. The
7 government says that we have sufficient distance
8 between our respective divisions, that they are able to
9 both be proponent and regulators. Already there are
10 cases in this EA from the public registry that indicate
11 this is not possible.

12 At the site with the current emergency
13 work being done, it is difficult to tell who is in
14 charge, who is kawoo (phonetic), the boss. The
15 Yellowknife Dene do not believe that Ottawa should be
16 making decisions for this project. Those decision need
17 to be made here, by the people living in the dark
18 shadows of the mine and who are most impacted by its
19 history and its future.

20 Keep the -- keeping the decision-making
21 power in the hands of the Northerners is the only way
22 our First Nations will have a say in what happens next
23 at Giant Mine.

24 In addition to keeping decision-making
25 power in the North, there must be a mechanism in place

1 to ensure accountability by the Proponent. Independent
2 oversight must be implemented, and the Yellowknife Dene
3 must be included.

4 Beginning in 2009, the Proponent gave
5 indi -- indication that they were willing and open to
6 explore oversight options. Since that time, our staff
7 has worked with other interested parties in Yellowknife
8 to develop an oversight agreement. Now there's only
9 two (2) agreement so far, is between the two (2)
10 governments.

11 Since that time -- but just before this
12 hearing, the Proponent unilaterally rejected the work
13 that was being done, providing there's no desire to
14 enter into a binding agreement with the Yellowknife
15 Dene or to establish a meaningful arm's-length
16 oversight regime.

17 They believe because they are the
18 government, they are inherent -- inherently good and
19 working for all of us. Now, to me that is feeding
20 false information to make something appear real.

21 Well, as a Dene, I can tell you that
22 government are rarely looking out for us. Yellowknife
23 Dene involvement is essential since the beginning of
24 this remediation project. Our people have been poorly
25 informed. The government report for this site focussed

1 on surface, when they should be reporting on what's
2 really going on beneath us. That way the public can
3 understand how they will be affected in the future and
4 how it has affected our way of life and infringement of
5 our treaty rights. We must have a say in what
6 information is communicated to our people.

7 And the only way that we can ensure that
8 the government will keep the promises they have made
9 for us to the Board is to assign a clear measure
10 requiring the establishment of the oversight entity.
11 The Yellowknife Dene want to see this es -- established
12 within one (1) year of the report on environmental
13 assessments being completed.

14 The Yellowknife Dene First Nations has
15 the desire and the capacity to be part of that
16 oversight process. And through our Giant Mine advisory
17 committee, we will do what we can to make this -- to
18 make sure that this environmental disaster is made safe
19 for the future generations. We will ensure that when
20 technology becomes available, it will once again be
21 made clean and safe.

22 Now what I want to say, I have some ten
23 (10) minutes left, so I'd like to -- for my Elders to
24 speak on the subject for ten (10) minutes. And mahsi
25 cho. That was the presentation of the Yellowknife Dene

1 First Nations. I have ten (10) minutes left, I
2 believe, so I'll get my Elder to speak for ten (10)
3 minutes if the Board -- if the Chair approves.

4 THE CHAIRPERSON: Please proceed.

5

6 (BRIEF PAUSE)

7

8 (INTERPRETED FROM TLICHO INTO ENGLISH)

9

10 ELDER ALFRED BAILLARGEON: I am Alfred
11 Baillargeon -- Elder Alfred Baillargeon from Dettah.
12 We see all the information in front of us about the --
13 the Giant Mine. We is a Dene -- Dene First Nation
14 here. Our hearts cried, saddened, as none Aboriginal
15 people, they don't care about the land, but the money.

16 This is our land; we were born and
17 raised here. We never did got compensation, no benefit
18 what happened. To really -- to think about it, it
19 saddened us. Our ancestor, grandparent, all the
20 Drygeese -- Elder Chief Drygeese and Crapeau, that was
21 their land. That had a big impact on the community
22 today of the Yellowknife Dene First Nation. And I had
23 concern about this for a long time.

24 In 1935, I was born and they found that
25 -- the gold. And back then why no Aboriginal people,

1 government are not respecting our First Nation. And
2 here they say they're going to have a cleanup of Giant
3 Mine. How many years, and a hundred and sixty (160)
4 million is spent till today. And this -- there is some
5 of the things being put down, the old buildings. And
6 that -- to -- to really to look at it when you're up in
7 the air, it looks really -- it's not too good to look
8 at. And all the tailing and all the open pit is all
9 arsenic -- is all covered with arsenic, the whole area.
10 And the chamber that's underground, they said it's
11 going to be underground for the next hundred (100)
12 years.

13 What the -- what's going to happen of
14 the younger generation? Sometime -- sometime there's
15 an air -- the air and it gets over here and -- then
16 everything will go into the Great Slave Lake, and it
17 will go down the -- the river.

18 Those are the kinds of things that we
19 have to look for the long-term, not only short-term,
20 but we have to look ahead what's -- into the future.
21 And we has a few Elders here, Isadore and Michele
22 Paper, that at one (1) time those Elders that had work
23 at Giant Mine, those are the kind of people we need to
24 hear and standing up there and talking.

25 And we're -- this is our land so we have

1 to have our input, and you have to have respect for
2 people that -- and -- and hear people that they were
3 never raised and born here, they're the people that
4 talking.

5 Our land has been really polluted and
6 contaminated by water. We're not going to get nothi --
7 we're not going to accomplish anything by speaking ten
8 (10) minutes. We love our land. This is our land. We
9 see the other mine in our area is going to be the same
10 thing. It's going to be -- all the animals are going
11 to get killed. I know it's a very big impact when
12 there's a mine comes up. I'm seventy-seven (77), and
13 today we don't have anything in the -- in the
14 community.

15 We'll -- maybe we'll put forward
16 proposal for government to give us money. But how our
17 grandkids are going to be in the future? Once we pass
18 on the future on the kids, how are they going to
19 survive in -- in the future.

20 And we're not allowed to touch our water
21 in Back -- Back Bay. We can't make fire around that
22 shore and cook out and get fish or jump in the water.
23 Those are things that we can't do.

24 Some of the people that know the history
25 when the mine began, a lot of things is concern us.

1 And I don't feel it's right that they damage a big
2 portion of land. And the government, we need some kind
3 of compensation, and that's what I feel strongly about.
4 And they can't just not do nothing.

5 And we need to have some kind of
6 agreement in place for employment for our First Nation.
7 Maybe that's a goal -- that's a goal that we'll form,
8 that maybe the money would have come to us, but we
9 never got nothing out of that.

10 We kind of know what's happening. Ever
11 since the White people come into this area and they
12 ruin a lot of land, not only here, but other part of
13 the country, and they spoil everything for the people.
14 And that's not right. And Weledah and Dettah were all
15 relative and unique to hear people -- Elders all...

16 And maybe I will say some more things
17 later during the week, and I want to say a lot of
18 things. But we're going by time so maybe we -- maybe
19 we'll get paid for lunch. You guys will pay us. We
20 really have to put our concern forward. And we'll just
21 have little snacks here. We don't live on snacks, us.
22 Thank you, my relative.

23

24 (INTERPRETATION CONCLUDED)

25

1 THE CHAIRPERSON: Thank you, Chief
2 Edward Sangi -- Sangris and Alfred Baillargeon for your
3 comments. Mahsi. What I'll do is we're going to stop
4 there. And we're going to take a one (1) hour break.
5 So we'll come back at about 1:15.

6 And I just want to follow up one (1)
7 question before to the Chief. And then I'll go on to
8 Alternatives North, North Slave Metis, Environment
9 Canada, DFO, and the City of Yellowknife.

10

11 --- Upon recessing at 12:05 p.m.

12 --- Upon resuming at 1:22 p.m.

13

14 THE CHAIRPERSON: Okay. We're ready to
15 start. This morning the parties had position
16 summaries, so we've listened to YKDFN. They had thirty
17 (30) minutes. Next is the Alternatives North for ten
18 (10) minutes, and then we're going to go to City of
19 Yellowknife for five (5) minutes, and then North Slave
20 Metis for ten (10) minutes, and Environment Canada five
21 (5), and DFO for five (5).

22 So we're going to go now to Alternatives
23 North for their party's position summaries. Mr.
24 O'Reilly...?

25

1 POSITION PRESENTATION BY ALTERNATIVES NORTH:

2 MR. KEVIN O'REILLY: Hello. Sorry.

3 Okay. Sorry, now I'm awake. My name is Kevin

4 O'Reilly. Thank you for the chance to present our
5 opening remarks -- or, summary position here today.

6 Try to get -- oops, sorry. This is an
7 outline of what I'd like to try to cover today. We
8 have a little bit of background about Alternatives
9 North, the general subjects that we've reviewed as part
10 of the environmental assessment.

11 I want to talk a little bit about the
12 unusual aspects of this environmental assessment, what
13 we consider to be the unresolved issues, a summary at
14 the end, some conclusions and next steps. I'm going to
15 skip through these two (2) slides in the interest of
16 time, but if you have any questions about Alternatives
17 North, and who we are and what we do, we'd be happy to
18 try to answer those for you.

19 So this was our main focus in being
20 involved in the environmental assessment, two (2)
21 topics: independent oversight and perpetual care. And
22 I guess it's our view that government has too many
23 roles and responsibilities on this particular project,
24 and it's also our position that there's been no
25 meaningful public involvement in the project to date.

1 And that's why we think there's a need for independent
2 oversight.

3 Perpetual care, that really relates to -
4 - the alternative that the Developer has proposed is
5 frozen blocks, and that will require monitoring and
6 maintenance forever.

7 We do have concerns about some other
8 issues that we will talk about in the coming days:
9 impacts on ice in Back Bay, impacts on water quality in
10 Back and Yellowknife Bays, impact on air quality, risk
11 assessment and management, and some other issues that
12 were identified in our technical report.

13 So I want to talk a little bit about the
14 unusual aspects of this environmental assessment. Most
15 of the EAs that the Review Board deals with are private
16 sector developments. Most of them are also dealing
17 with new development at a site rather than trying to
18 clean up something.

19 So this EA is very different. It's
20 dealing with a development after the fact and the
21 remediation to try to reduce or eliminate risks and
22 impacts. We're also dealing with a development that
23 requires human intervention forever, and many aspects
24 of this project are still conceptual in nature.

25 We believe there still is significant

1 public concern with this project, and that's why we're
2 here today in fact, that this project was referred for
3 an environmental assessment because of public concern
4 and a lack of trust. And unfortunately, after four (4)
5 years I -- I have to report that we think there's been
6 little progress made on this issue of trust.

7 And I give a few examples here: the
8 Developer has delayed this environmental assessment
9 numerous times during the -- the process. We had a
10 site stabilization plan that was developed and approved
11 in secret, and it was really designed to avoid the
12 environmental assessment and split the project. And
13 there's no consent or support for this project from the
14 Yellowknives Dene First Nation or the City of
15 Yellowknife. We -- we don't think there's actually a
16 social licence to carry it out.

17 We do support the call for an apology
18 and compensation that have been made by the
19 Yellowknives Dene First Nation Elders to help begin to
20 build trust. And this was documented in a workshop
21 that we did with the Yellowknives in September of last
22 year. And that report is on the public registry.

23 We also think that we need to learn from
24 the Giant Mine to make sure that we don't make the same
25 sort of mistakes again, by having other perpetual care

1 sites. And so it's our position that there is still
2 significant public concern with the project.

3 I want to talk a little bit now about
4 some of the unresolved issues, in our view. We raised
5 the issue of thinning of the ice on Back Bay over two
6 (2) years ago. And we don't believe the Developer has
7 done the modelling or field work to address this issue.
8 So we wonder whether Back Bay is going to be safe. We
9 think this is a source of significant public concern.

10 On water quality, this issue has been
11 raised over the last couple of years as well. And we
12 don't believe the Developer has done the work to
13 demonstrate what the water quality will be in
14 Yellowknife and Back Bays. The Developer has also not
15 committed to cover any incremental costs for the city
16 in the case of an accident or malfunction, should
17 additional water treatment be necessary. And so we
18 think that there's potential for significant adverse
19 environmental impacts from this project on water
20 quality.

21 Tailings cover and performance. We
22 don't really understand what the purpose of the
23 tailings cover is. Is it just -- just to try to
24 prevent dust? Is it to shed water, retain water? If
25 we revegetate it, how deep will the roots go? Will

1 they get into the tailings and so on? We don't know
2 that.

3 In fact, two (2) of the four (4) test
4 pads are -- are under water some of the -- the year, so
5 they're not really of much value. And once again, we
6 think there's potential for significant adverse
7 environmental impacts.

8 Environmental management plans. It's
9 taken a long time to get AANDC to recognize that it has
10 a -- a set of guidelines on this issue and actually
11 follow its own guidelines. And the importance of
12 environmental management plans are they will set out
13 for the different parts of the mine what the purpose of
14 the closure is; how we can measure it; how we will
15 monitor it; how we can make sure if something is going
16 wrong, at what point do we know something is going
17 wrong. And what are we going to do about it? And
18 where there's uncertainty, we also need to have
19 research and design work to address those gaps.

20 There is a working group that's been
21 established. There's some limited progress there, but
22 it's a good step. Once again though, we think there's
23 potential for significant adverse environmental
24 impacts, because the management plans are nowhere near
25 ready.

1 On the issue of independent oversight,
2 even the Developer acknowledges that they have
3 conflicting roles as Developer, inspector, enforcer,
4 duty to the Aboriginal peoples. They've also admitted
5 they have no written guidance for their employees to
6 try to avoid conflicts. And we've also seen over the
7 last few months a dramatic shift in project management
8 away from Yellowknife to Edmonton and Ottawa.

9 It's interesting that the AANDC has
10 supported and signed agreements for oversight for the
11 Northern diamond mines, but they're not prepared to do
12 it for this project. We've had a -- an oversight
13 working group that's met for the last six (6) months.
14 We've had thirteen (13) meetings, six (6) drafts of a
15 discussion paper, eight (8) drafts of an environmental
16 agreement, and all that the Department will commit to
17 at this point is further discussions. We think this
18 is, again, a source of significant public concern.

19 Ongoing research and development. AANDC
20 has really approached this frozen block as the full and
21 final solution, which just shifts the onus for this to
22 future generations to deal with. And they will not
23 commit to pay for proactive research and development
24 for a better solution. They've only committed to a ten
25 (10) year review, where we sit back and wait.

1 We think that research and development
2 is an -- is an investment and can reduce perpetual care
3 costs, and that the frozen block is really unacceptable
4 without a proactive research and development program.
5 Once again, a source of significant public concern.

6 So perpetual care. We recognize that
7 it's going to be a requirement no matter what we do
8 with the site. We don't think the -- the Developer has
9 minimized perpetual care requirements. We also
10 recognize that there's a lack of federal policy in this
11 area to provide some guidance. And we think that you
12 can make a suggestion to help improve that.

13 The -- you'll see from our presentation
14 later this week, we don't think that they've adopted
15 best practices or learned from other perpetual care
16 sites. There's no firm commitment to carry --
17 undertake a perpetual care plan, only a commitment to
18 discuss it further. We think, again, this is a source
19 of significant public concern.

20 We would like to see a legally binding
21 environmental agreement to help build better
22 relationships, look at independent oversight, ensure
23 ongoing research and development, spell out
24 environmental management monitoring and perpetual care
25 requirements.

1 We -- the working group has made some
2 significant progress, but we think that we need to
3 think about an agreement as a social contract, just
4 like the contracts that they are going to issue for the
5 physical work side of the project.

6 So in summary, there are still many
7 technical issues unresolved. We think there's been
8 little progress on a social licence or social contract
9 for this project. Sorry. The governments have only
10 accepted one (1) of our eleven (11) recommended
11 measures. We think that there's still significant
12 public concern potential for significant adverse
13 environmental impacts from the project.

14 This, I think, slide sort of summarizes
15 our views on it. On the one (1) side you have the
16 engineering/physical work side of the project. We
17 think they've done most of that reasonably well.
18 There's still some concerns.

19 But on the human and social side,
20 apology and compensation, we don't have that. Local
21 political support for the project, not there. Ongoing
22 research and development, not there. Independent
23 oversight, not there. Long-term funding arrangements
24 not in place. Full disclosure of information and
25 records, not there. No thoughts about site

1 designation, land use controls. No comprehensive
2 perpetual care plan. No environmental agreement. And,
3 finally, no social licence or contract for this project
4 to proceed.

5 We would like to work together on this.
6 We think that there are ways to do that, some of the
7 ideas that we've proposed. But we think that this
8 project should only proceed if you accept the
9 recommendations that we've offered. And we'd like to
10 see them accepted as a complete package.

11 We still believe that even though the
12 Developers made commitments, that we need to have
13 binding measures to ensure that those are enforceable
14 and actually carried out. Personnel priorities change.
15 Commitments can change. Thanks.

16 My last slide. We are concerned about
17 what some of the next steps may bring with this
18 project. We're concerned that the government may make
19 further unilateral exemptions of the project while this
20 process is going on. And we don't think that's a good
21 thing.

22 We're also concerned about what may
23 happen with your recommendations or measures that you
24 may make, that the government will only accept the
25 intent rather than either accept, reject, or consult to

1 modify. We're also worried about what may happen with
2 the -- the consult to modify process.

3 We know that you have some guidance in
4 this area. And we hope that you will follow that and -
5 - and stand strong when the pressure comes, as it
6 inevitably will. Thank you very much.

7 THE CHAIRPERSON: Thank you. Yeah.
8 Thank you. The next presenter we have is the City of
9 Yellowknife if they're here.

10

11 (BRIEF PAUSE)

12

13 THE CHAIRPERSON: Okay. Then that's
14 fine. We're going to go to -- next is the North Slave
15 Metis Alliance. They got ten (10) minutes.

16

17 POSITION PRESENTATION BY NORTH SLAVE METIS ALLIANCE:

18 MR. BILL ENGE: Thank you, Mr.
19 Chairman. Bill Enge, President of North Slave Metis
20 Alliance. We thank the Mackenzie Valley Review Board
21 for this opportunity to make opening remarks. I am the
22 -- my name is Bill Enge, and I am the President of
23 North Slave Metis Alliance.

24 We are always ready and willing to
25 consult and discuss projects such as the Giant Mine

1 remediation project. The North Slave Metis Alliance
2 represents the Aboriginal rights-bearing Metis of the
3 Great Slave Lake area who use and exercise their
4 Aboriginal rights primarily in the area north and east
5 of Great Slave Lake, Northwest Territories.

6 With that in mind, our members have a
7 vested interest in protecting our traditional lands
8 with the view to continuing to exercise our Metis
9 Aboriginal rights in this area for generations to come.

10 Our Metis Aboriginal rights are
11 constitutionally recognized and affirmed in accordance
12 with two (2) landmark Supreme Court of Canada cases:
13 Powley and Cunningham.

14 Giant Mine is literally and figuratively
15 in the backyard of a majority of the North Slave Metis
16 people, as the majority of the North Slave Metis people
17 reside in Yellowknife. This mine has impacted the
18 North Slave Metis people for three (3) generations now
19 and may continue to do so indefinitely if we allow the
20 237,000 tonnes of arsenic trioxide now stored in
21 underground vaults at Giant Mine to remain there
22 indefinitely.

23 It goes without saying that the
24 recommendations by this Board as to what to do about
25 the arsenic trioxide problem at Giant Mine may be the

1 most important ones it has ever made, considering the
2 arsenic trioxide stored underground at Giant Mine
3 amounts to nothing less than the biggest dirty bomb in
4 the history of the Northwest Territories or, arguably,
5 that of Canada.

6 With that in mind, what is the Crown
7 proposing to do about the arsenic trioxide problem? I
8 understand the Crown proposes to entomb the arsenic
9 trioxide in a block of ice forever. Is this good
10 public policy? Is this good government? Is this the
11 only solution? Has the Crown exhausted all other
12 possibilities to rid ourselves of this monster? Or are
13 there other solutions, just too expensive?

14 If the answer to these questions is the
15 latter, I wonder what the Ottawa bureaucrats and
16 politicians who are supporting this would -- this
17 proposal would do if it was in their backyard. Or
18 would they find the money and the sci -- and the
19 science to permanently resolve a problem as dangerous
20 as this one is?

21 With these questions in mind, the North
22 Slave Metis people are asked to consider, in good
23 conscience, whether to support the Crown's application
24 to leave the cleaning up of the biggest dirty bomb in
25 the history of the Northwest Territories to future

1 generations of Aboriginal and non-Aboriginal
2 Northerners.

3 The North Slave Metis people are
4 incredulous about this proposition. The Aboriginal
5 rights-entitled bearing peoples of this area --
6 particularly the Yellowknife, the North Slave Metis,
7 and the Tlicho people -- are not responsible for this
8 mess.

9 Our peoples received little, if any,
10 benefit from this mine, but yet we're stuck with its
11 cesspool legacy. In that respect, we were not
12 consulted when this mine was built. And there are not,
13 to my knowledge, any compensation made -- compensation
14 negotiations going on between the Crown and the
15 affected First Nations whose non-renewable resources
16 were extracted and traditional lands damaged by this
17 mine.

18 Is it any wonder, with a legacy like
19 this mine has left behind in concert with the Crown,
20 that we would want the Crown to do the right thing and
21 properly clean this mine up? In other words, why would
22 we want to risk spoiling our traditional lands any
23 further with a contaminant as dangerous as arsenic
24 trioxide is?

25 What we want to see is the Crown to go

1 back to the drawing board and find a permanent right
2 and proper solution to cleaning up the arsenic
3 trioxide. Why would we want the Crown to do a
4 permanent right and proper cleaning up of the arsenic
5 trioxide? I'll tell you why: because the very survival
6 of the North Slave Metis people is at stake.

7 The course of action that the -- that
8 this Board recommends to the Minister of AANDC to take
9 will be permanent and have enormous ramifications not
10 only for our members' Aboriginal rights of survival,
11 but for everyone in this region and territory.

12 It's not an exaggeration to say that
13 should the arsenic trioxide leak into the Great Slave
14 Lake water system, every living thing in Yellowknife,
15 N'Dilo, and Dettah will be at risk, including and
16 especially human life.

17 Since before the beginning of the fur
18 trade, members of our ethnic community have relied on
19 the land and on hunting and trapping to survive. As
20 early as the 1800s, our forefathers and sisters
21 supplied the fur trade industry and the forts with meat
22 and other products.

23 When the fur trade industry shifted, so
24 did our ancestors, relying more and more heavily on the
25 land to keep our people alive. Today our members still

1 hunt and trap and exercise their Metis rights all over
2 their traditional territory north of Great Slave Lake,
3 including here in Yellowknife. I shudder to think what
4 could happen to all of us, should the arsenic trioxide
5 get into our air and water.

6 Our members have concerns that their
7 Aboriginal rights are being treated differently than
8 those of other Aboriginal groups, and we are dismayed.
9 Our Aboriginal-rights bearing members must be dealt
10 with on par with other Aboriginal groups, such as the
11 Yellowknives and Tlicho. But that is not happening.

12 What is happening is the NSMA is not
13 being properly consulted and accommodated by the Crown.
14 Notwithstanding the inadequate consultation by the
15 Crown, we do our best to place our views and concerns
16 on the public record.

17 With respect to the Giant Mine
18 Remediation Project, the NSMA, after careful
19 consideration, cannot support the Crown's proposal for
20 the following reasons: 1) there is no independent
21 oversight of the Crown's work; 2) there must be a
22 commitment by the Crown to research a permanent
23 solution; 3) there is no consideration of compensation
24 to First Nations for the damage done to their
25 traditional lands; 4) the NSMA needs to be better

1 consulted. North Slave Metis traditional know --
2 knowledge was never considered by the Crown in this
3 respect, and it needs to be accommodated for the damage
4 done to their traditional lands.

5 For these reasons, the NSMA is forced to
6 say that we recommend that this project go to another
7 level of in -- of review, an environmental impact
8 review, so that our rights-bearing members will have
9 the information they need to form an informed opinion
10 on the mine and how to manage the adverse impacts on
11 their Aboriginal rights.

12 Now with that, I'd like to have -- my
13 Elder would like to say a few words on behalf of the
14 NSMA. Thank you.

15 ELDER ED JONES: Good afternoon. My
16 name is Ed Jones. I'm an Elder with NSMA. I've lived
17 in Yellowknife a long time, long before Giant came into
18 production. And before the mine, the waters in the
19 Yellowknife Bay was clean, fresh, and fit to drink.

20 Now what I want to point out is in 1949,
21 I noticed tailings flowing into the Yellowknife Bay at
22 Giant. And it went -- went on for about ten (10)
23 years. When I came back to visit in '59, '57/'59,
24 there were signs posted along the shores of Latham
25 Island (phonetic) that no swimming or water drinking

1 allowed. It was unfit for human consumption. And I'm
2 wondering at this point why Yellowknife Bay is not part
3 of the remediation plan.

4 The -- the effects of that mine has gone
5 far beyond the immediate area of the mine. I remember
6 back in 1948, C. C. (phonetic) Bevan, of Peace River,
7 brought in milking cows and set up a -- a dairy. But
8 it was soon shut down, as the government found out that
9 the milk was tainted with arsenic. I may have further
10 comments later on, and for this I thank you.

11

12 (BRIEF PAUSE)

13

14 THE CHAIRPERSON: Okay. Thank you, Mr.
15 Enge and Mr. Jones. Thank you for your presentation.
16 Next on the list I have is Environment Canada. And
17 you've got five (5) minutes.

18

19 (BRIEF PAUSE)

20

21 THE CHAIRPERSON: When -- when you
22 start if you could just introduce yourself.

23

24 POSITION PRESENTATION BY ENVIRONMENT CANADA:

25 MS. AMY SPARKS: Thank you to the Chair

1 -- to the Board. I had a presentation, but it's not
2 here, so I'll just talk. So my name is Amy Sparks, and
3 I'm here to present on behalf of Environment Canada our
4 recommendations for the Giant Mine Remediation Project.

5 I'm a contaminated sites officer here in
6 Yellowknife, and I've been involved in the project for
7 a number of years on different aspects. Environment
8 Canada would like to thank the Board for the
9 opportunity to comment on the Giant Mine Remediation
10 Project, and we hope that our technical comments and
11 recommendations are useful to the Board in their
12 decision-making process.

13 So I very quickly just want to discuss
14 Environment Canada's mandate so everyone understands
15 where we're coming from, and then I'll summarize our
16 concerns and introduce the team that presented them.

17 So Environment Canada is participating
18 in this review in order to provide specialist
19 expertise, information, and knowledge to the Board.
20 Environment Canada will not be issuing permits or
21 authorizations for the proposed project, but we have
22 regulatory duties and responsibilities under our
23 legislation. This includes the Department of the
24 Environment Act, the Canadian Environmental Protection
25 Act, the Fisheries Act, the Migratory Birds Convention

1 Act, and the Species at Risk Act.

2 There are various regulations, policies,
3 and guidelines that stem from these legislations, and
4 Environment Canada's recommendations focus on these
5 issues. They fall within our mandated
6 responsibilities: aquatic quality and water management,
7 contaminants management, air quality, migratory birds,
8 and species at risk.

9 So the first legislation that I want to
10 discuss quickly is the Fisheries Act. Environment
11 Canada, on behalf of the Minister of DFO, administers
12 section 36 of the Fisheries Act.

13 Subsection 36(3) prohibits the deposit
14 of deleterious substance into fish bearing waters
15 unless authorized by a regulation under the Act or by
16 another law or Parliament. This is important because
17 the Fisheries Act regulations also include the metal
18 mining effluent regulations, or MMERs. And these
19 regulations require the mine to undergo an EEM, an
20 Environmental Effects Monitoring Program, that
21 evaluates the effects of mine effluent on the aquatic
22 environment.

23 The Migratory Birds Convention Act is
24 also an important piece of legislation that relates to
25 our submission. And this ensures the conservation of

1 migratory birds and establishes specific prohibitions
2 and defines activities which may be permitted and the
3 circumstances under which these activities may take
4 place.

5 A number of Environment Canada staff
6 reviewed the Giant Mine Remediation Project, and they
7 all contributed to the technical submission and
8 provided our recommendations that we have put forth to
9 the Board.

10 Myself and Lisa Lowman, who is with us
11 today, provided EA coordination for the review. Anne
12 Wilson, who many people know here today, was our water
13 and effluent lead. And Environment Canada has
14 recommended that additional sampling and monitoring for
15 the discharge location and the effluent diffuser be
16 undertaken.

17 Dave Fox was our lead on air quality.
18 Unfortunately he -- he will not be with us today, but
19 he has made the recommendations that additional air
20 quality monitoring to what was originally proposed is
21 undertaken.

22 James Hodson was our migratory birds and
23 species at risk lead, and he has recommended specific
24 mitigation measures that take place during demolition
25 and remediation to ensure the protection of migratory

1 birds.

2 I was the lead on the tailings covers
3 and the Baker Creek sediment remediation aspects. And
4 we have recommended that the tailings cover be
5 redesigned and that the Proponent works together with
6 us and other interested parties to develop remedial
7 options for Baker Creek.

8 I will pro -- be providing further
9 details on Environment Canada's recommendations on
10 these topics through my presentations over the next few
11 days. Thank you.

12 THE CHAIRPERSON: Okay. Thank you.
13 If we could, I guess -- what we don't have is a copy of
14 your presentation. And also we'd probably like to get
15 a copy from the North Slave Metis presentation as well,
16 a copy of their text so that we have it as well.

17 Moving on, I have DFO, and they can come
18 up and set up.

19

20 (BRIEF PAUSE)

21

22 POSITION PRESENTATION BY DFO:

23 MS. BEV ROSS: Good afternoon, Mr.
24 Chair and Board members and members of the public.
25 Thank you for hosting this public hearing and providing

1 us with an opportunity to present our recommendations.

2 My name is Bev Ross. I'm with the
3 Department of Fisheries and Oceans -- and the
4 opportunity to prevent -- present a summary of our
5 technical submission, which was submitted to the Board
6 on July 11th, 2012.

7 DFO's review of the Giant Mine
8 Remediation Project is based on our departmental
9 mandate and responsibilities under the Fisheries Act,
10 specifically those sections that apply to fish passage,
11 flows, killing of fish by means other than fishing, and
12 those related to the harmful alteration, disruption,
13 and destruction of fish habitat.

14 I'll note here, and -- and I noted that
15 Environment Canada iterated this as well, that
16 Environment Canada administers Section 36 of the
17 Fisheries Act that applies to deleterious substances
18 and the application of the metal mining effluent
19 regulations.

20 DFO is also a science-based expert
21 support department within the Federal contaminated
22 Sites Action Plan Program.

23 DFO's technical review for the
24 environmental assessment of the project proposal is
25 divided into four (4) main categories: the remediation

1 of Baker Creek, the outfall and diffuser, historical
2 foreshore tailings, and monitoring.

3 DFO anticipates a requirement for a
4 Fisheries Act authorization under Section 35 related to
5 the proposed remediation of Baker Creek and will
6 require a plan for the offset of losses to fish
7 habitat.

8 I'll here outline DFO's conclusions and
9 recommendations. The following is a summary of DFO's
10 conclusions for the Giant Mine Remediation Project in
11 four (4) areas. The first area of recommendations
12 relate to the proposed Baker Creek remediation.

13 The proposed rerouting of portions of
14 Baker Creek and potential removal of covering of
15 sediments will disrupt current functioning of fish
16 habitat and will require a Fisheries Act authorization.

17 Baker Creek must be stabilized both
18 physically and chemically in order to meet the stated
19 objectives of the remediation plan. Provided that a
20 fisheries habitat compensation plan is developed for
21 the restoration of Baker Creek, overall, the
22 remediation project is expected by DFO to result in an
23 improvement in the long-term health of Baker Creek
24 aquatic system.

25 Our secondary recommendations relate to

1 the outfall and diffuser. Additional details on the
2 proposed outfall and diffuser need to be provided in
3 order for DFO to make a determination pursuant to the
4 Fisheries Act related to the extent of the physical
5 disturbances in these areas.

6 Thirdly, DFO has made recommendations
7 regarding the historic foreshore tailings. The
8 proposed remediation for this area involves a cap to
9 cover the foreshore tailings in Yellowknife Bay to
10 provide erosion, exposure, and migration of the
11 tailings -- to prevent erosion, exposure, and migration
12 of the tailings.

13 DFO recommends that additional details
14 on the final cover design, footprint, and construction
15 details be provided in order to conduct a site-specific
16 review re -- related potential physical -- related to
17 potential physical disturbances to the area.

18 Finally, DFO will discuss monitoring. A
19 fish habitat monitoring plan for the restoration effort
20 on Baker Creek will be a requirement for a Fisheries
21 Act authorization. Monitoring associated with the
22 Baker Creek remediation and restoration will provide
23 information on the recovery of fish habitat in the
24 creek and will evaluate the success of the stated
25 remediation goals and objectives for the Ba -- for

1 Baker Creek, which have been stated as:

2 "To restore Baker Creek to a
3 condition that is as productive as
4 possible, given the constraints of
5 hydrology and climate, and to
6 physically stabilize the creek and
7 improve both the quantity and quality
8 of habitat."

9 DFO looks forward to providing our more
10 detailed presentations over the next few days and will
11 be happy to answer any questions the Board and other
12 parties or the public may have regarding our technical
13 submission. Thank you.

14 THE CHAIRPERSON: Thank you. I'm going
15 to ask the City of Yellowknife to come up now. And you
16 can state your name for the record.

17

18 POSITION PRESENTATION BY THE CITY OF YELLOWKNIFE:

19 MS. KERRY PENNEY: Hi. My name is
20 Kerry Penney, and I'm here to present a summary of the
21 position of the City of Yellowknife. And we did have a
22 brief presentation. It's only a few slides. And I do
23 have a copy of it here that I can submit after.

24 It's the City's position that the
25 Developer's remediation plan is fundally --

1 fundamentally incomplete in that it hasn't fully
2 considered the future land use and legacy of the site,
3 nor what was early defined as some of the essential
4 community interests.

5 As the Giant Mine land encompasses
6 approximately 8.3 percent of the City of Yellowknife's
7 total developable municipal land area, which is about
8 10,297 hectares, this presents an enormous challenge if
9 it isn't dealt with responsibly.

10 The City really has three (3) prime
11 areas of concern, which we'll address in the upcoming
12 days. One (1) is surface remediation, with respect to
13 issues pertaining to land use planning; the second is
14 water treatment and management; and the third would be
15 payment in lieu of taxes.

16 With respect to the land use planning,
17 the City submits that the Developer has failed to
18 address what was earlier defined as essential community
19 interests, such as land use, visual and cultural
20 settings, socioeconomic conditions, transportation, and
21 local resources.

22 For example, the City completed much
23 research in the past couple of years with respect to
24 smart growth and residential and mixed use lands close
25 to waterside amenities are limited in Yellowknife. And

1 the Giant Mine town site and adjacent shoreline present
2 an opportunity to improve quality of life for
3 residents.

4 The City has reiterated time and again
5 through the consultation process that remediation to a
6 residential standard is essential in creating a
7 balanced future development to the site. The town site
8 has been historic -- used historically for this
9 purpose, and there's significant cultural and heritage
10 value in maintaining this land use.

11 And, again, while the Developer has
12 deemed the Yellowknife Harbour -- excuse me, the Giant
13 Mine Harbour to be out of scope, the City submits that
14 the bay area continues to be impacted with remediation
15 plan components, including things such as the diffuser.

16 With respect to water treatment and
17 management, the City's position is that Yellowknife Bay
18 is used throughout the summer and winter, and proper
19 measures need to be in place to ensure the safety of
20 residents in that region.

21 During the technical sessions, the City
22 raised concerns with regard to the proposed diffuser
23 being placed in Yellowknife Bay, as impacts on ice melt
24 from the diffuser are not clear and could present
25 safety risks to snowmobilers, skiers, and pedestrians.

1 And it's not clear what, if any, protective measures
2 have been put into place.

3 The third issue, payment in lieu of
4 taxes. It's the City's position that the Developer
5 should be making payment in lieu of taxes to the City.
6 Due to the huge portion of land that this occupies
7 within the City, it's a portion that will never be
8 recoverable for the City for commercial or residential
9 use, and therefore the City will not be able to collect
10 taxes, and that the City's position is that it should
11 not be disadvantaged financially due to this lack of
12 potential use.

13 And those summarize the positions of the
14 City of Yellowknife. And they'll be dealt with more
15 detail over the upcoming days. Thank you.

16 THE CHAIRPERSON: Okay, thank you. I
17 wonder if we could also get a copy of your
18 presentation. I think that -- I don't think we have a
19 copy of that, so maybe you can make that available to
20 us. Thank you.

21

22 (BRIEF PAUSE)

23

24 THE CHAIRPERSON: Okay, the next part
25 of the agenda we have now is -- is the Developer's

1 presentation on the freeze and underground. And if
2 they can get it set up.

3

4 (BRIEF PAUSE)

5

6 THE CHAIRPERSON: If we could ask the
7 presenters to come up to the podium as well.

8

9

10 (BRIEF PAUSE)

11

12 PRESENTATION BY DEVELOPER - FREEZE AND UNDERGROUND:

13 MR. MIKE NAHIR: Okay. All right,
14 thanks. Okay, thank you, Mr. Chair. My name is Mike
15 Nahir. I've introduced myself previously. I want to
16 introduce the technical team that will be presenting
17 the discussion today on freeze and underground.

18 Second from my right, Daryl Hockley.
19 He's a civil engineer with twenty-five (25) years of
20 professional experience. Much of that experience has
21 been related to mine closure. He has completed closure
22 projects at over fifty (50) mines on five (5)
23 continents. Daryl has been one of the senior technical
24 advisors on the Giant Mine remediation project since
25 2000.

1 I'd also like to introduce Greg Newman,
2 to the right of Daryl Hockley. Greg has a master's in
3 geotechnical engineering. He's been active in ground
4 freezing since 1995 starting with Cameco's MacArthur
5 River Project. He's a princal -- principle engineer
6 with Newmans Geotechnique Inc. and -- a special
7 consulting company that focussed on ground freezing.
8 he has consulted on fifty (50) or more freezing
9 projects, mostly mining related, and several in the
10 Northwest Territories. He's been invited -- involved
11 in Giant Mine since the original 2000 freeze studies,
12 and continues with design and analysis oversight.

13 And lastly, I'd like to introduce Darren
14 Kennard sitting furthest to the right. Darren has a
15 master's degree of geo -- geological engineering, over
16 seventeen (17) years of experience in rock mechanics.
17 He's been involved with the assessment of open pit and
18 underground and bulkhead stability at Giant Mine since
19 2008.

20 And I'll ask Daryl Hockley to come and
21 give a presentation. Thank you, Mr. Chair.

22

23 (BRIEF PAUSE)

24

25 MR. DARYL HOCKLEY: Thank you. Good

1 afternoon, Mr. Chairman and members of the Board. My
2 name is Daryl Hockley. I'm a technical advisor to the
3 Giant Mine project team.

4 Slide number 2, please. Over the last
5 ten (10) years, hundreds of pages have been written
6 about arsenic dust, ground freezing, and underground
7 stability. My job in these next thirty-five (35)
8 minutes is to highlight some key points that we think
9 will help your assessment.

10 The first two (2) parts of our
11 presentation will review background, and the plan that
12 was presented in the Developer's assessment report.
13 The next two (2) parts will bring you up to date on --
14 on ways that our thinking has changed since the
15 Developer's assessment report.

16 Part 3 will cover major points of
17 discussions with the parties, and part 4 will present
18 findings from the freeze optimization study. And
19 finally, I'll have a short summary. Next slide,
20 please.

21 First some background on the arsenic
22 trioxide dust. Slide number 4, please. The arsenic
23 that is stored at Giant Mine comes from the rock at
24 Giant Mine. It was originally part of the rock, just
25 like the gold. To release the gold from the rock it

1 was cooked at a high temperature in a roaster, but that
2 high temperature also converted the arsenic into a gas.
3 In the first few years of mining in the late 1940s, as
4 Chief Sangris mentioned this morning, that arsenic went
5 directly into the air.

6 Slide 5, please. But by the early 1950s
7 people realized that was a bad idea, and they installed
8 systems to stop arsenic release into the air. This
9 picture shows an example of a -- of a modern
10 electrostatic precipitator. The first ones that were
11 built in the 1950s weren't as efficient as the later
12 ones.

13 But the fact is, for fifty (50) years
14 the electrostatic precipitators did prevent most of the
15 arsenic from going up into the air, and in the process
16 of doing that, they created the arsenic trioxide dust.

17 Slide 6, please. Arsenic trioxide dust
18 is a very fine powder. It's -- it's hard to -- it's
19 hard to get a good picture, but this is arsenic
20 trioxide dust actually in one (1) of the chambers. It
21 looks a lot like white flour that -- that we have in
22 our kitchens, except that it's 60 percent arsenic. and
23 when you mix it with water, a lot of that arsenic
24 dissolves and creates a water that's very heavily
25 contaminated.

1 And that's the basic problem that we're
2 trying to solve with this part of the project. We're
3 proposing to freeze the rock around the arsenic
4 trioxide so it cannot get into the groundwater and so
5 it cannot make its way into Baker Creek or Yellowknife
6 Bay.

7 Slide 7, please. The next several
8 slides are about where the arsenic trioxide dust is
9 stored. This first one is just an overview of the
10 entire Giant Mine site. And you can see the Ingraham
11 Trail running through this site from left to right in
12 this photo.

13 Slide 8, please. Now we're zooming into
14 the middle part of the mine site. And again, here's
15 the Ingraham Trail.

16 Slide 9, please. These red shapes show
17 the locations of the chambers and stopes where the
18 arsenic trioxide dust is stored. Of course, they're
19 all underground somewhere between about 30 metres and
20 100 metres below the ground surface.

21 Slide 10, please. This arrow shows
22 where we're going to be looking next. I'm going to
23 show you a view that imagines we could go under the
24 ground and look sideways at some of the chambers.

25 Slide 11, please. So what we see here

1 is three (3) -- three (3) chambers full of dust.
2 They're coloured pink here: Chamber 11, Chamber 12, and
3 Chamber 14. Chamber 15 was constructed but no dust was
4 ever put in it, so it's empty. These chambers were
5 made especially for storing the arsenic trioxide dust,
6 so they have nice rectangular shapes and fairly smooth
7 walls.

8 The next slide, please, slide 12. So
9 now the arrow is pointing up to something called Stope
10 B208. As you'll see, it's quite different from those
11 nice chambers.

12 Slide 13, please. This is again looking
13 -- looking through the ground as if the rock is removed
14 and we could see the Stope B208, which is also full of
15 arsenic trioxide dust. It has a very irregular shape
16 because a stope is -- is the hole that's left behind
17 when the miners take out the gold ore. The miners
18 follow the gold in whatever direction they need to and
19 create very irregular shapes. The -- this stope also
20 has a lot of tunnels around it. The tunnels were
21 needed to get into and out of the -- the gold ore.

22 Stopes like this are one of the main
23 reasons why we can't take the dust out of the ground.
24 It would be very difficult to get the dust out of all
25 these corners and tunnels. We would have to send

1 people in there to mine out a to -- to mine toxic dust
2 out of a fifty (50) year-old excavation, and that would
3 be extremely dangerous.

4 The next slide, 14. Click that one (1)
5 more time, please. This just shows you some
6 dimensions. And there was an error here. This -- this
7 off on the side here should be 58 metres. But the next
8 slide in fact shows us a little better, so.

9 Oh, this is slide 15. And these are
10 models. The models are available in the back of the
11 room here. But these models are all the same scale.
12 So you can see B208, as we saw on the slide before.
13 And you can see Chamber 12 here. That's one (1) of the
14 chambers that -- that we also saw. And this is the --
15 the Precambrian Building. The Precambrian Building is
16 just up the street. It's the one with the theatre
17 beside it -- inside it, I guess.

18 So you can see that still B208 is quite
19 a bit larger than the Precambrian Building and -- and
20 that -- that the chambers typically are a bit smaller
21 than the Precambrian Building, but -- but roughly that
22 scale. These -- these are not small -- small areas at
23 all.

24 The next slide, please, slide 16. This
25 slide -- the -- the model also has some of the lower

1 tunnels that come out of Stope B208. These needed to
2 be sealed so the arsenic dust couldn't get out. And
3 they were sealed with bulkheads. And you can see two
4 (2) of the -- the Stope B208 bulkheads behind these
5 circles. These little red things here are the
6 bulkheads.

7 Now, there are twenty-six (26) lower
8 bulkheads like this holding back arsenic dust. And we
9 worry about them failing and releasing the dust into
10 the -- into the rest of the mine.

11 You can also see this part of the model
12 here. That represents the ground surface. And you can
13 see it's not very far from the arsenic dust. In fact,
14 we -- we think this crown pillar -- that's the
15 technical term for the rock between the -- the stope
16 and the surface. This crown pillar is only about 10
17 metres thick. And its -- its stability is also very
18 questionable.

19 Slide 17, please. This slide shows one
20 of our other concerns with the current situation. Here
21 you see Stope B208 again and, below it, two (2) other
22 stopes on -- on the next level.

23 The rock between them is called a sill
24 pillar. And you can see it's also quite thin in
25 places. And -- and we -- we worry about its stability.

1 We worry that it could also fail and release arsenic
2 dust into the rest of the mine.

3 Slide 18, please. So this just
4 summarizes some of the -- the numbers and -- and the
5 terms: 237,000 tonnes of arsenic trioxide dust stored
6 in nine (9) chambers and five (5) stopes; twenty-six
7 (26) lower bulkheads holding them back. We're
8 concerned about many of those. For some of the stopes,
9 crown pillars are -- are unstable and are -- we
10 consider them to be a -- a risk. And for others, sill
11 pillars are unstable.

12 Slide 19, please. Fortunately at the
13 moment, as you heard earlier today, the -- the water is
14 being held at quite a low level in the mine. So this
15 is a view looking through at the whole mine now. This
16 is the ground surface. These brownie colours are the
17 arsenic trioxide and chambers and stopes. You can see
18 they are mostly in the first and second level of the
19 mine, so near the surface.

20 The mine itself continues quite a bit
21 lower. Currently the water is held -- a couple of
22 hundred metres down. So any water that gets into the
23 arsenic dust at this time trickles down into this pool
24 and eventually comes -- gets pumped out of the mine and
25 gets treated.

1 Slide 20, please. The concern is really
2 for the long term. If nothing is done, the -- the
3 groundwater would fill the mine, and then thousands of
4 kilograms of arsenic dust would be released into the
5 water every year. Even sooner in the future, if
6 nothing is done, one of the bulkheads or crown pillars
7 or sill pillars that I mentioned could collapse and
8 release arsenic into the mine.

9 And the other thing that worries us
10 today is Baker Creek. If it floods out of its channel
11 and comes into the mine in its current condition,
12 arsenic could also be released. Our project didn't
13 create any of these risks. Our project is trying to
14 fix them.

15 Slide 21, please. That brings me to the
16 frozen block method. I'll briefly show you how the
17 frozen block works and then summarize how it was
18 chosen.

19 Slide 22, please. Now this slide is
20 animated, so there will be several steps before it
21 looks like the printed version. The -- the first thing
22 that we would do with the -- with the chambers and
23 stope -- this is intended to be a -- a stope, and this
24 is intended to be a cartoon of a chamber. The first
25 thing we would do is stabilize any bulkheads. So we

1 would add new bulkheads or make them wider, or whatever
2 was needed to -- to stabilize them, and -- and also the
3 -- the sill pillars.

4 Next, we would drill under the chambers
5 and stopes and install freeze pipes. Next, we would
6 drill from surface and install freeze pipes in -- in --
7 vertical freeze pipes. Next, we would connect all the
8 freeze pipes to a freezing plant and allow it to cool
9 the rock around and below the dust. Next, we would add
10 water into the chambers or stope. Then we would
11 continue to operate the freeze plant until all the
12 water freezes. And lastly, we would remove the freeze
13 plants and convert the freeze pipes to thermosyphons
14 that would keep the ground frozen over the very long
15 term.

16 So those are the frozen block steps that
17 were presented in the Developer's assessment report.
18 Later in the presentation, I'll -- I'll show you some
19 additional thinking on some of those steps.

20 Slide 23, please. The DAR terms of
21 reference had a number of questions about the long
22 term. I mentioned that thermosiphons would be used to
23 keep the frozen blocks cooled over the long term.
24 Thermosyphons are a proven technology. This picture
25 shows some of the one hundred and twenty thousand

1 (120,000) thermosyphons that are used to preserve
2 permafrost in Alaska.

3 In essence, what they do is, they take
4 cold from the winter air and transfer it into the
5 ground. The neat thing about them is they are
6 completely passive. You -- you don't need any energy
7 or operator to make them work. That makes them very
8 robust over the long term.

9 Slide 24, please. But our project is
10 not just about thermosyphons. It includes plans for
11 long-term monitoring of the frozen ground and
12 maintenance, repair, or even replacement of pipes, if
13 needed. That's -- that's why we are confident the
14 frozen blocks can be kept frozen for as long as they
15 are needed.

16 Slide 25, please. The frozen block
17 method was selected by a process that took over three
18 (3) years. It involved many of Canada's leading
19 technical experts, over forty (40) public consultation
20 sessions, including three (3) multi-day public
21 workshops. And every step was reviewed by a completely
22 separate group of experts known as the independent peer
23 review panel.

24 Slide 26. This is a summary of the
25 selection process. You -- you don't have to read the

1 whole slide. The point of it is that there were three
2 (3) complete rounds, that we started with -- with all
3 possible methods, and went through three (3) complete
4 rounds of analysis, each one (1) of them including
5 feedback from -- from the community.

6 And that feedback was taken very
7 seriously. It led us to drop some options, and modify
8 others, and even add some new ones. And as I
9 mentioned, at the end of all of all of this, an
10 independent peer review panel looked at the work and
11 agreed with the recommendation to go ahead with the
12 frozen block method.

13 Slide 27. To summarize why the frozen
14 block method was selected in all those processes, the -
15 - the three (3) principle reason -- the principle
16 reasons are that it will mitigate the current risks
17 without creating any new risks to workers or to the
18 environment, and it will keep the dust safely contained
19 over the very long term.

20 Slide 28, please. Up to this point,
21 most of what I've said is a review of material in the
22 DAR, and you probably have heard the most important
23 points now. The arsenic trioxide dust is a real risk,
24 and we are proposing to reduce that risk by a method
25 that is the best choice available to us today.

1 But the DAR was completed more than
2 three (3) years ago, so from here on I will talk about
3 some additional work over the last three (3) years.
4 The -- the first -- first -- next slide, please. The
5 first group of things I'm going to talk about are
6 really the result of constructive feedback from the --
7 from the Board, and the Board staff, and the Board
8 experts, and the parties.

9 These five (5) topics were the subject
10 of Information Requests and discussions at technical
11 sessions. I'll go through each -- I'll go through them
12 one (1) at a time.

13 Slide 30, please. There were a number
14 of questions from the Board and parties about what was
15 meant by "long term". The project team has always
16 thought about long term. One of the main reasons the
17 frozen block option was chosen is that it is very safe
18 over the long term.

19 Individual parts like freeze pipes might
20 need to be replaced, but the system as a whole includes
21 monitoring, maintenance, and replacement. So the
22 system as a whole, the frozen blocks, will stay frozen
23 as long as we need them to be.

24 Slide 31, please. Our assessment
25 leading to the frozen block was very thorough, and it

1 covered all of the methods that are available now or in
2 the near future. But we do agree with the parties that
3 new options could arise in the future, and they should
4 be periodically evaluated. That -- that said, we don't
5 know if there will ever be anything better, so we think
6 the current assessment should treat the frozen blocks
7 as if -- as if they are here to stay.

8 Slide 32, please. My next point is
9 about the step where water is added to the dust. The
10 DAR mentioned that several methods of adding water were
11 under consideration, and the parties had a number of
12 questions about that.

13 We clarified that we do not need to
14 completely saturate the dust. In fact, it's the frozen
15 block around the dust that provides the real barrier.
16 We also came to understand the parties' concerns about
17 the water addition. In brief, they were saying that we
18 -- we have tried to keep the dust dry for all these
19 years and -- and they're not sure why we would -- why
20 we should want to wet it now.

21 Slide 33, please. Together with the
22 parties, we discussed a series of wetting studies that
23 are now in progress. Those studies continue to show
24 that we can wet the dust, but some re -- recent results
25 from the freeze optimization study show that the frozen

1 blocks work equally well even without the added water.
2 So we may not need to do the step that the parties are
3 concerned about. I'll come back to this point one (1)
4 more time in a -- in a few slides.

5 Slide 34, please. There were a number
6 of questions about climate warming over the long term.
7 We have always considered climate warming in our
8 analysis, but the questions from the Board and parties
9 helped us to agree on a worst-case scenario that --
10 that we can use for future -- future assessments.

11 Slide 35, please. This slide has the
12 wrong title. It should be titled, "Reversibility".
13 "Reversibility" means that -- means could we thaw the
14 frozen blocks if we ever wanted to in the future? That
15 wasn't something we considered in our earlier work, but
16 the Information Requests led us to look at -- at the
17 options.

18 We understand now that the Board and the
19 parties are seeing it as something that might be needed
20 if a better technology is developed sometime in the --
21 in the far future.

22 Slide 36, please. Success criteria.
23 The DAR presented some numbers that we would use to
24 determine when the initial freezing is complete. Here
25 they are again. We needed to explain them, but I -- I

1 think the parties were satisfied with those
2 explanations.

3 Slide 37. What's -- what's still
4 lacking is a set of success criteria for the long-term
5 freezing. We would like to be able to provide the
6 Board with a simple set of criteria like the ones you
7 saw in the previous slide. But we think that a much
8 more complicated set of success criteria will be
9 needed. This is an example of the sort of complexity
10 we think might need to be in those success criteria.
11 And we -- we believe there may need to be thirty (30)
12 or forty (40) criteria like this.

13 We think that criteria of that
14 complexity can only be developed together with a more
15 detailed freezing system design. And later this week,
16 others will talk about the proposed environmental
17 management system, which will include mechanisms for
18 people to work together to develop those criteria.

19 Slide 38, please. The freeze
20 optimization study has been another source of new
21 information since the DAR.

22 Slide 39, please. We mentioned in the
23 scoping hearing that the freezing optimization study
24 would be ongoing during the EA and that it would do,
25 broadly speaking, two (2) things. It would support the

1 next steps in the engineering design, and it would
2 provide input into this assessment and -- and future
3 assessments.

4 Slide 40, please. This slide just shows
5 the location of Chamber 10, where the freeze
6 optimization study is -- is taking place. You --
7 you've probably -- oops, you've probably seen it many
8 times, because it's right -- right next to the -- right
9 next to the -- to the highway here.

10 Slide 42, please. These next few slides
11 just show some -- show some steps in the construction of
12 the FOS. The first step was to prepare the ground
13 surface.

14 Slide 42. Then holes were drilled to --
15 to put the freeze pipes in, the vertical freeze pipes.

16 Slide 43. Here people are installing
17 the freeze pipes. These two (2) steps went on for many
18 weeks.

19 Slide 44, please. These are our
20 thermosyphons being installed. We're testing several
21 kinds of ground freezing systems here, some with active
22 freezing pipes, some with thermosyphons, and -- and
23 others that are a combination called hybrids.

24 Slide 45. This shows the -- the freeze
25 plant itself. The -- the freeze plant was put together

1 in Calgary and then shipped to site in a container. If
2 you look inside the container, it looks a lot like what
3 you might see in -- in a hockey rink.

4 Slide 46, please. This is just some of
5 the piping that connects the freeze plant to the
6 freezing pipes.

7 I showed you these photos only to give
8 you an idea of how many details need to be worked out
9 when one of these systems is designed and built. There
10 were hundreds of decisions to be made just for this
11 test, and there will be many more decisions required
12 for the full-scale system. But we believe we have more
13 than enough results now to assess whether the full-
14 scale frozen blocks will have beneficial or adverse
15 effects.

16 Slide 47, please. Some of the key
17 results to date are that the ground is cooling faster
18 than our earlier estimates, and that -- that's a good
19 thing. Both the active and the hybrid freezing systems
20 are working well, and that's also good. And we think
21 we have a strong basis for further engineering
22 decisions.

23 Slide 48. These are -- are pictures
24 where you can actually see ground freezing. It's rare
25 that you can actually see ground freezing, but if --

1 there are -- there is a tunnel under the -- under
2 Chamber 10, and you can go into that tunnel. And you
3 can -- you can see that there was ice forming on the
4 wall and -- in March, 2011, a month or so after we
5 turned on the system. And six (6) months later, there
6 was even more ice. And you can go down there today and
7 -- and still see that ice, very visible evidence that
8 the system is working there.

9 The next -- next slide shows a more
10 scientific presentation of the -- of the results. This
11 is a -- a view looking down on Chamber 10. I'll use
12 this view for the next few slides. So Chamber 10 is in
13 the middle here. The small black dots are freeze
14 pipes, vertical freeze pipes.

15 And the ovals just represent different
16 groups. So some of them are active freeze pipes, some
17 of them are hybrid freeze pipes, et cetera. We're
18 testing all these different types of freeze pipes. The
19 big blue circles, they show where we measure
20 temperature in the rock.

21 Next slide, please. Now the blue zones
22 here show how much the ground is cooling. This is in
23 April of 2011, three (3) months after the -- the system
24 was turned on. The right side of the system was turned
25 on first, and you can see the temperature is starting

1 to drop here. There's a scale on every one of these
2 charts, but generally speaking, the more blue something
3 is, the colder it is.

4 The -- the next slide shows that by --
5 slide 51 now -- by December of 2011, both sides were
6 getting quite cold. The middle blue here, this -- this
7 blue -- steady there -- that blue is somewhere between
8 minus ten (10) and minus fifteen (15).

9 And the next slide, 52. This shows data
10 from June of this year. Again, the left side, we keep
11 turning it off and on because we're doing different
12 tests over here, but you can see the progress of
13 freezing in -- in all directions really around the
14 chamber. So -- so, as I mentioned, all of the systems
15 are working well, and the ground is cooling faster than
16 our earlier estimates.

17 Slide 53, please. Our engineers spent a
18 lot of time looking at the freeze optimization study
19 and -- and using the results to estimate things they
20 need for design. They've also taken these results and
21 re -- reassessed long-term performance. And we've
22 looked at a couple of design improvements.

23 Oh, I'm just going to spend a few
24 minutes to -- to show you some of those results as
25 well. These were presented in a report that was filed

1 right at the end of August, I think, so may not have
2 had a chance to look at that. August 31st, yeah.

3 Slide 55 -- 54, okay. Right, I
4 mentioned earlier that we worked with the parties to
5 agree on some worst-case climate warming scenarios and
6 -- and that one of those scenarios is that the
7 temperature would increase by 1.6 degrees Centigrade
8 over one hundred (100) years.

9 So we used the -- the model -- used the
10 models and the FOS results to -- to see what would
11 happen if -- if we had thermosyphons only trying to
12 keep the ground cool and -- and we had climate warming
13 of 6.1 degrees.

14 The next slide, please. So the diagram
15 here shows Chambers 10 and C212 and what would happen
16 to their frozen blocks in worst-case climate warming.
17 Even after one hundred years (100) years of warming,
18 the thermosyphons around these two (2) chambers keep
19 the ground quite frozen, and all of the dust is below
20 minus 5 degrees Centigrade. We have other results like
21 this, and they confirm that the thermosyphons can keep
22 the blocks frozen even with thi -- this extreme climate
23 warming.

24 Slide 56, please. But how fast would
25 the blocks thaw if the thermosyphons stopped working?

1 Well, one (1) of the information responses showed that
2 the blocks would stay frozen even if only about half of
3 the thermosyphons kept working.

4 Now, we know from decades of experience
5 in Alaska that thermosyphons require very little
6 maintenance. And we know our plan includes monitoring,
7 maintenance, and replacement of thermosyphons. So we
8 have to imagine a very extreme case where all of the
9 thermosyphons somehow stop working and nobody notices.
10 We used the -- the FOS results to model that case.

11 Slide 57, please. This is a similar
12 kind of diagram to what you saw before. Here's the
13 ground surface. And this is Chamber -- Chamber 12
14 here. What you can see is ca -- because the
15 thermosyphons aren't working, this red -- red band,
16 that's -- that's heat from the ground surface that's
17 making its way into the ground.

18 And there's no thermosyphons to take
19 that heat out, so it is making its way down towards the
20 chamber. And this line here shows the zero degrees
21 Centigrade. Everything on this side is -- is colder.
22 Everything on that side is warmer, so everything on
23 that side is thawing.

24 And you can see that after twenty (20)
25 years, the zero degrees Centigrade is just touching the

1 upper corners of the arsenic trioxide dust. So we can
2 show you that even in this extreme case, it still takes
3 twenty (20) years that -- twenty (20) years of nobody
4 noticing, nobo -- nobody fixing it before the dust even
5 starts to thaw.

6 Of course, there are many ways to fix
7 the problem. We -- we could just repair the
8 thermosyphons. There are also many other mitigation
9 and adaptation measures possible with systems like
10 this. And results like these are why we continue to
11 say that the frozen blocks will be very safe over the -
12 - over the long term.

13 Slide 58, please. Results from the
14 freeze optimization study are also leading to possible
15 improvements in the frozen block design. Design
16 improvement are a normal part of engineering process in
17 all large projects. We want to mention some of the
18 types of things we're thinking about now so nobody is
19 surprised by them at a later date.

20 Fifty-nine, please, slide 59. Here's
21 the same sort of diagram. This one shows cooling of
22 the rock during the initial freezing. What you can see
23 is that the rock below the chamber -- pardon me. It
24 shows a case where we use only vertical therm -- only
25 vertical thermosyphons to cool the ground.

1 We have no horizontal -- no underground
2 freezing system or horizontal freezing system at all
3 here. But you can see that even with just these
4 vertical types, you get very effective cooling below
5 the bottom of the -- of the chamber.

6 So results like this are leading us to
7 ask whether we really need those horizontal pipes,
8 freeze pipes, below the chambers.

9 Slide 60, please. This slide shows two
10 (2) frozen blocks. One (1) is a -- a wet frozen block,
11 meaning that we add added water to the -- to the
12 chamber. And one (1) is a dry frozen block without any
13 water added. It shows them both twenty (20) years
14 after all the thermosyphons somehow stop working, so
15 it's that worst-case assumption that we -- that I
16 talked about a few minutes ago.

17 It -- it really is imp -- it's --
18 there's not an error, these are not the same chart,
19 they really are two (2) separate drawings. But it is -
20 - it is almost impossible to tell the difference. The
21 dry block is -- is performing exactly the same in the
22 long term as -- as the wet block. But results like
23 this are leading us to ask whether we really need to
24 add water at all.

25 Slide 61, please. Here's a very long

1 list of other things that -- that could be redesigned
2 on the basis of results from the freeze optimization
3 study. But once again, there are hundreds of decisions
4 in all these projects and -- and many, many left to be
5 made on this one.

6 Slide 62, please. But we -- we want to
7 emphasize that we are only considering design
8 improvements, and that means changes that will only
9 increase the beneficial effects or further reduce the
10 risk of adverse effects that have been considered in
11 this EA.

12 Next slide, please, slide 63. As I said
13 at the start of the presentation, hundreds of pages
14 have been written about this afternoon's topic, and
15 even this quick review has probably been a bit long for
16 some of you. So I'll end with three (3) points that we
17 would like you to -- to keep in mind.

18 First, the arsenic trioxide dust has
19 been a source of concern for many years. We understand
20 that concern and we agree with it. In its current
21 state, the arsenic trioxide dust represents a real
22 risk.

23 Second, our project will mitigate that
24 risk. It will make things a lot better using a method
25 that was selected through a long and careful process.

1 And the frozen block method continues to be the best
2 option available to us today.

3 Third, while many details are still
4 being discussed, everything we have learned so far
5 confirms that the frozen block method will mitigate the
6 existing risks without creating adverse effects on the
7 environment or people, and it will be monitorable,
8 adaptable, and safe over the very long term.

9 Thank you, Mr. Chairman and members of
10 the Board. That concludes my presentation.

11

12 QUESTION PERIOD:

13 THE CHAIRPERSON: Thank you. Thank
14 you for your presentation. Now what we'll do is we'll
15 go back to the parties and ask questions to you on your
16 presentation. And this time what I'll do is I'll start
17 from the bottom of the list now.

18 I'll go to Department of Fisheries and
19 Oceans Canada. Is there any questions to the Developer
20 on their presentation?

21 MS. BEV ROSS: Bev Ross, Fisheries and
22 Oceans Canada. No questions, Mr. Chair.

23 THE CHAIRPERSON: Thank you. I'm
24 going to go to Environment Canada.

25 MS. AMY SPARKS: Amy Sparks,

1 Environment Canada. There are no questions at this
2 time. Thank you.

3 THE CHAIRPERSON: Thank you. I'm
4 going to go to the North Slave Metis Alliance.

5 MS. SUSAN ENGE: Susan Enge, North
6 Slave Metis Alliance. Thank you very much for that
7 brief explanation. I believe this was the first
8 opportunity we've had to talk directly to the
9 Developer. So than you for that presentation.

10 What I heard this morning was
11 Yellowknife Dene First Nation as well as the North
12 Slave Metis Alliance stating that we prefer a removal
13 of the arsenic trioxide dust. And by that, a removal
14 of the dust that's currently in those chambers. And
15 I'm sure that was one option that you looked at. And
16 from what I've read, it was not an economically
17 feasible option for removing that -- those
18 contaminants.

19 So my question is: Why is that not an
20 economically feasible method that you chose to utilize?
21 Is the cost of using that approach, does that outweigh
22 human health?

23 THE CHAIRPERSON: Thank you for your
24 question. I'm going to go to the Developer.

25 MR. DARYL HOCKLEY: Daryl Hockley

1 speaking. It -- it had -- had very little to do with
2 economic feasibility. When we started the arsenic
3 trioxides alternatives assessment process, lots of
4 people wanted the arsenic dust taken out of the ground
5 and taken somewhere else.

6 We -- we went through a number of steps,
7 and we absolutely did look at that option. We looked
8 at taking it out and taking it somewhere else. We
9 looked at taking it out and reprocessing it. We looked
10 at taking it out, reprocessing it by several different
11 means, in fact.

12 As the conversation went on, people's
13 opinions changed. When we -- when we showed people
14 that taking it somewhere else meant there would be a
15 hundred trucks a month of toxic dust going down the
16 highway to -- to Alberta, which is the only place that
17 would take it, a lot of them thought that wasn't a very
18 good idea.

19 When we -- when we started explaining to
20 people that the dust, in fact, originated here, it
21 comes from the rock here, many people said that it was
22 more appropriate for the community to deal with the
23 problem here, not -- not try to send it somewhere else.
24 And this -- this conversation went on for a very long
25 time -- months and years -- before people came around

1 to these things. And you -- you saw the number of
2 iterations that were -- that were there.

3 I think at -- at the end of the day, the
4 -- the technical reasons why the taking it out options
5 scored lower than the -- than to deal with it in the
6 ground were primarily related to human health risks --
7 risks to the workers that would have to be involved in
8 taking it out of the ground -- and secondarily, to
9 environmental risks.

10 If you take it out of the ground to
11 reprocess it, that means you have pipes or trucks or
12 something running all over the surface. So now -- and
13 it's -- it's about -- there's -- there's no quick way
14 to process that material. It's fifteen (15) years of
15 reprocessing. So that's fifteen (15) years of -- of
16 pure -- highly -- highly pure arsenic running in pipes
17 all over the ground surface. We thought the risk of
18 spills from those was actually far greater than -- than
19 the environmental risk associated with leaving it where
20 it is.

21 So -- so it's -- in fact, we did not
22 choose to leave it in the ground because it was
23 cheaper. It -- it is not the least expensive option,
24 by any means. We did look at methods to take it out of
25 the ground and we concluded, largely on the basis of

1 human and environmental risk, that leaving it in the
2 ground is the best thing to do, the best currently
3 available method.

4 THE CHAIRPERSON: Thank you. I'm going
5 to go to North Slave Metis.

6 MS. SUSAN ENGE: Thank you, Mr. Chair.
7 I think this option and the discussion that you've had
8 with your experts does require further discussion with
9 Northerners and with Aboriginals and, in particular,
10 the Metis in this region, primarily because we are
11 rights hold -- bearing people here and we have a right
12 to discuss this issue. It -- it directly impacts us.

13 I have a question, then, regarding this,
14 because I know this discussion originated thirty (30)
15 years ago by a trucking company here in Yellowknife.
16 And it was suggested at that time that the arsenic dust
17 be transported via vehicle. And I'm sure there are
18 technical options out there to accommodate that. So we
19 look forward to that discussion.

20 My next question surrounds the worst-
21 case scenario. You mentioned that if everything fails,
22 it would take twenty (20) years for the ice block to
23 melt which would, in essence, dissolve all of the dust.
24 And whether that's three hundred (300) years from now
25 or thirty (30) years from now, nobody really knows.

1 And you cannot predict the future.

2 So my question is: If the worst case
3 scenario happens and that ice block melts, how long
4 will it take to contaminate the Great Slave Lake, and
5 how much further will it contaminate downstream?

6 THE CHAIRPERSON: Thank you for your
7 question. I'm going to go to the Developer.

8 MR. DARYL HOCKLEY: Daryl Hockley
9 again. I did -- I did mention that there were -- was
10 extensive public consultation on that public engagement
11 on the -- on the project. There were over forty (40) -
12 - forty (40) sessions in the period 2001 to 2003,
13 including three (3) major public workshops. I was
14 present personally at all of those workshops and
15 probably a dozen or so of the other local public
16 consultation. I -- I distinctly remember the -- the
17 North Slave Metis being present at some of those --
18 being represented at some of those discussions.

19 The -- as to the question about the
20 worst-case scenario, I think it's important to -- to
21 always keep the worst-case scenario in -- in
22 perspective. I -- I -- we wanted to show that even in
23 this almost crazy worst case, where all of the
24 thermosyphons quit working and nobody noticed it for
25 twenty (20) years, that even in that -- even in that

1 worst case it would still take twenty (20) years before
2 the dust be -- begins to thaw, begins to thaw.

3 And I agree with the -- the question
4 that nobody can predict the future and that we should
5 still be worried about something that would take twenty
6 (20) years to thaw. But you have to balance that
7 against any other thing we could do with that dust.

8 Well, think of all the other things we
9 could do with that dust. How many of them would be
10 robust to that kind of scenario? Let's say we took it
11 out of the ground, reprocessed it, and put it somewhere
12 else. Well, you can't reprocess a hundred percent it;
13 it's -- it's physically impossible. So even that
14 reprocessed material would still be toxic. Somebody
15 would still have to look after it. And how it would be
16 in a big landfill sitting on the surface instead of 100
17 metres underground.

18 If we had a similar scenario of global
19 warming and somebody going and deliberately shooting
20 holes in the -- in the landfill, instead of the
21 thermosyphons, that stuff would leak out in days or
22 weeks or months.

23 What we're trying to show with this
24 scenario is that -- that this is a -- this is a system
25 that's extraordinarily robust to even the craziest

1 scenarios. That -- that, we think, is what makes it
2 the best thing for the long term, just because nobody
3 can guarantee the future. Nobody can guarantee someone
4 will be there every day.

5 Now we know someone could actually be
6 totally absent for twenty (20) years and this thing
7 still wouldn't fail. That, to us, is what makes it a
8 good option for the long term, the best currently
9 available option for the long term.

10 THE CHAIRPERSON: Thank you. I'm going
11 to go back to North Slave Metis.

12 MS. SUSAN ENGE: I have one (1) last
13 question, Mr. Chair. And then my Elder has a
14 comment/question. I believe I just heard this morning,
15 I can't remember who I was talking to now, but we live
16 in an earthquake zone. I've never experienced an
17 earthquake up here, but that is a possibility.

18 What impact, and was that considered
19 under your risk assessment program?

20 THE CHAIRPERSON: Thank you. I'm going
21 to go back to the Developer to the question.

22

23 (BRIEF PAUSE)

24

25 MR. MICHAEL NAHIR: Thank you, Mr.

1 Chair. Mike Nahir. I'm wondering if I could seek a
2 clarification on the question. Are you referring to
3 the freezing part of this or other surface components?
4 Can you please clarify that?

5 THE CHAIRPERSON: Thank you. I'll go
6 back to the North Slave Metis.

7 MS. SUSAN ENGE: Sorry. Susan Enge,
8 Metis Alliance. If there is an earthquake, what impact
9 will that have on the ice block below?

10 THE CHAIRPERSON: Okay, I'll go back to
11 the Developer to the question.

12 MR. DARYL HOCKLEY: So we -- we have
13 looked at that. The -- the -- we think the --
14 generally speaking, things underground are the least of
15 your worries in an earthquake. What -- what you worry
16 about in an earthquake is things on the surface,
17 because the -- the ground shakes like this, and that
18 causes the soil above it to shake like this. If you
19 got a big tower on top of it, it shakes like that.

20 So, generally, the further you are in
21 the ground the -- the more stabile you are in an
22 earthquake. I'm just going to -- I'm just looking to
23 my right here because there's an engineer and a rock
24 mechanics guy who can correct me if I've got that
25 wrong, but . . .

1 Darren is our rep. Can you help us?

2 MR. DARREN KENNARD: And our worry in -
3 - in an underground scenario -- sorry, Darren Kennard.
4 Our worry underground would be areas that are water
5 saturated. The rock itself is quite stable during an
6 earthquake. Saturate -- anything saturated with water,
7 like sand or potentially some dust and -- during an
8 earthquake could potentially liquify and go places you
9 don't want it.

10 We worry about the -- the existing
11 bulkheads during an earthquake. Once everything's
12 frozen, and -- and we do plan to reinforce the
13 bulkheads -- we see the risk dropping significantly due
14 to an earthquake. Thanks, Chair -- Mr. Chair.

15 THE CHAIRPERSON: Thank you. Do you
16 have another question, or we'll put the Elder in.
17 Okay. Introduce your name.

18 ELDER ED JONES: Ed Jones. I want to
19 make a suggestion. To further seal these chambers,
20 couldn't we drill holes around the chambers and grout
21 them? That is, injecting material into the holes to
22 fill all the cracks and holes?

23 I want to suggest using bentonite. It's
24 a clay material that, when mixed with water, it
25 expands. And it -- you wouldn't have to freeze this

1 material. It would give the vaults and the
2 thermosyphons a double seal. Thank you.

3 THE CHAIRPERSON: Thank you, Mr. Jones,
4 for your question. I'm going to go to the Developer.

5 MR. DARYL HOCKLEY: Grouting is one of
6 the methods that -- that we did look at. It -- it does
7 work well in some circumstances. There's a -- one of
8 the problems with grouting is it -- it works well if
9 you have highly permeable rock. So if you have rock
10 that has a lot of fractures in it, you can grout them.
11 But it -- it works less and less well as the rock gets
12 better and better.

13 We have, at Giant Mine, pretty good
14 rock, so grouting would be -- it would be very hard to
15 get a grouting program that you could be completely
16 assured of at -- at Giant. That -- that's my
17 recollection.

18 I -- I do know that we did look at it,
19 and there might be more details in our -- in our files
20 on that, but that's my recollection of -- of why we --
21 we thought that grouting would never be quite
22 sufficient. We agree it could be done during the
23 freezing. So -- so as we drill holes, there's nothing
24 stopping us from grouting them if we see large
25 fractures down there. But we don't think that would be

1 sufficient over the long term for -- for all purposes.

2 We think fre -- freezing will be much more secure.

3 THE CHAIRPERSON: Okay. Thank you.

4 Any further question, North Slave Metis Alliance?

5

6 (BRIEF PAUSE)

7

8 THE CHAIRPERSON: Okay, none. I'm

9 going to go to Alternatives North.

10 MR. KEVIN O'REILLY: Thanks, Mr. Chair.

11 Kevin O'Reilly here for Alternatives North. I'm hoping

12 we could turn to slide 30 in the presentation.

13

14 (BRIEF PAUSE)

15 MR. KEVIN O'REILLY: That's the right

16 one, thank you. The second -- or, the last bullet on

17 this slide talks about assessment of long-term

18 performance included extreme future scenarios.

19 So I'm hoping that they can tell us a

20 little bit about what those extreme scenarios were that

21 were assessed.

22 THE CHAIRPERSON: Thank you. I'll go

23 to the Developer.

24 MR. DARYL HOCKLEY: Sure. The -- we --

25 we looked at a series, and I believe this was filed --

1 it was initially filed with -- with the arsenic
2 trioxide management alternatives report. And I -- I
3 believe we -- it was an appendix to an appendix sort of
4 thing. And I believe we took that appendix out and
5 then -- and then refiled it with -- with your Board in
6 June or July, I'm -- I'm not sure. So it should be
7 there.

8 But what it -- what it says in -- in
9 effect is, it -- it looks at how robust all of the
10 different alternatives -- I think there were eight (8)
11 alternatives at that time. It looked at how robust
12 each of them was to different periods of -- of total
13 neglect, basically.

14 And the thinking was that some of the
15 methods we talked about, like perpetually treating
16 water, they could fail in six (6) months. So something
17 goes wrong with the -- the federal budget and there's
18 no money for six (6) months, some of the methods could
19 fail in six (6) months.

20 Others of them might fail in two (2)
21 years. So let's say there was a -- something --
22 something going on with the government and -- and there
23 was nothing -- nothing, no maintenance for two (2)
24 years for some reason. Some of the other methods we
25 looked at would fail at that time.

1 To get the frozen blocks to thaw, you
2 need twenty (20) year periods, as -- as we showed. I'm
3 not sure what the number was at that time, it might
4 have been ten (10) years; but it was a long time
5 anyhow. And to get that period of neglect, you'd have
6 to imagine something like a -- a war or a global
7 catastrophe of some form.

8 So it was -- it was kind of a back
9 analysis. It was -- wasn't actually saying, Let's
10 analyze a war. It was saying, How long does it take to
11 cause a problem, and then let's try to imagine all of
12 the things that could possibly give us twenty (20)
13 years of total neglect.

14 THE CHAIRPERSON: Okay. I'll go back
15 to Alternatives North.

16 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
17 Kevin O'Reilly here. I think Mr. Hockley might be
18 referring then to -- and I'm not going to get the name
19 of this right, but I think it was in response to a
20 Round 2 Review Board Information Request. And it was a
21 -- a risk assessment document. And I can't remember
22 the -- I'm not a risk assessment guy.

23 But can the Developer confirm whether
24 there was any public involvement in the selection of
25 the scenarios that were evaluated, or was there any

1 public involvement in the evaluation of the risks and
2 looking at acceptability?

3 So basically, any -- any public
4 involvement in that risk assessment? Thanks.

5 THE CHAIRPERSON: Okay, thank you. I'm
6 going to go to the Developer to the question.

7 MR. DARYL HOCKLEY: Daryl Hockley
8 again. I -- I think -- I -- I don't think that's the
9 document I was referring to. It's a -- it's another
10 one that would have been filed in -- in July. But in -
11 - in direct answer to -- to the question, no, that was
12 a -- a group of engineers working in -- trying to
13 determine -- determine the appropriate scenarios.

14 And we -- I think we have recognized
15 that the better practice nowadays is to involve a
16 larger group in defining those scenarios. That's --
17 that's something we did not do ten (10) years ago, when
18 that work was being done. Again, I think our
19 methodology, working backwards -- working backwards
20 does -- is -- is fairly flexible that way, at least.

21 As I said, we weren't trying to imagine
22 a war or a -- a nuclear meltdown or something specific.
23 We -- we were -- we were just imagining time periods.
24 So we -- I think we could integrate that type of
25 reasoning with a public process, where people -- people

1 are free to -- to suggest what might cause those sorts
2 of durations of -- of neglect.

3 THE CHAIRPERSON: Thank you.
4 Alternatives North?

5 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
6 I guess I'm even more curious now about what -- where
7 this document is located. And I think it might have
8 been filed on August the 10th. So maybe I can have an
9 offline discussion with them and find out where it is.

10 But I just -- I guess the -- there's
11 this issue of how the -- the public is involved in
12 assessment of risk. And -- and I don't think that's
13 really happened very well to date, and the -- the
14 Developer has now admitted that as well.

15 So when -- when is the public going to
16 start to be involved in the assessment of risk,
17 particularly around the frozen blocks?

18 THE CHAIRPERSON: Okay, thank you. I
19 want to go to the Developer to the question.

20 MR. ADRIAN PARADIS: Thank you, Mr.
21 Chair. Adrian Paradis on behalf of the project team.
22 Assessment of risk has been an ongoing proj -- ongoing
23 on the project since the -- the government took over
24 the site in 1999. Elements of risk were included in
25 the review during the 2000s, during the development of

1 the arsenic trioxide management plan. There have been
2 ongoing works -- work since it happened.

3 The involvement of the public through
4 the failure modes analysis through your Board, through
5 the first round of Information Requests, has been pu --
6 has been done. That was submitted. And then there was
7 que -- been questions and answers going through the
8 technical re -- workshops in October, as well as
9 additional input through the second round of IRs; also
10 through the October workshop in -- on the technical
11 workshop on -- held on behalf of the Impact Review
12 Board.

13 We have made a commitment to try and
14 host a workshop on risk with the parties and the
15 public. Our engagement efforts though through the last
16 couple months have been -- or the last year have been
17 focussed primarily on the environmental management
18 system, as well as oversight and other -- other things.

19 It's a large group, but there's also a
20 group on the other side who have a competing interest
21 and competing priorities, and trying to focus our
22 attention on what is the priority of the day has been
23 our intention.

24 Ongoing engagement on risk is one of the
25 -- one of our priorities; not only on risk but just

1 engagement period, and bringing those concerns to bear
2 on how we develop the project.

3 The work through the environmental
4 management system of -- of -- that we're developing,
5 and the parties are part of that, will help inform a
6 lot of the discussions that are happening right now on
7 how the monitoring will occur. Thank you.

8 THE CHAIRPERSON: Thank you. I'll go
9 back to Alternatives North.

10 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
11 I think I've found the document that they're referring
12 to. It's document number 503 on the public registry,
13 for the record.

14 And just a brief statement to say it's
15 not very good that here we are at the end of the
16 process, and the public still hasn't been involved in
17 the assessment of risk. But I do want to move onto
18 slides 37 and 58, if I may.

19

20 (BRIEF PAUSE)

21

22 MR. KEVIN O'REILLY: Thirty-seven (37),
23 the -- the last point there, and I believe Mr. Paradis
24 mentioned this as well, that the environmental
25 management system process is supposed to allow

1 stakeholder input in to designing the criteria so that
2 we can know whether the fre -- frozen block stuff is
3 actually working.

4 If we go over to slide 58, there's a
5 stakeholder input sort of right in the middle of that
6 slide. It's talking about design improvements. And I
7 think one (1) of the -- the issues or problems -- and
8 we'll speak to this in our presentation -- is there's
9 been some good engineering work done on this stuff, but
10 they're not very good communicators in telling us what
11 -- what they're doing, and what it means for the final
12 design, and how this is going to work.

13 So how -- how does the Developer
14 actually contemplate involving the public in this
15 design work? And there seems to be a lot of work that
16 still needs to be done to design these frozen blocks.
17 How is the public going to be involved in this?
18 Because they haven't done a good job in -- in telling
19 us about it. We've got to ask, and ask again to get
20 documents.

21 So how are they -- they seeing involving
22 the public with the remaining design work that the --
23 in -- in selecting and evaluating the alternatives that
24 might be available for the frozen block? Thanks.

25 THE CHAIRPERSON: Thank you. I'll go

1 to the Developer.

2

3 (BRIEF PAUSE)

4

5 MR. ADRIAN PARADIS: Adrian Paradis for
6 -- on behalf of the project team. If I can ask Daryl
7 Hockley to speak brief -- briefly to another --
8 previous point here.

9 MR. DARYL HOCKLEY: I just want to
10 clarify the earlier answers about the risk assessment.
11 The -- the statement was that -- from -- from Mr.
12 O'Reilly that the public has not been involved in the
13 assessment of risks, but that wasn't the question that
14 -- that he asked me or the question that I answered.

15 The question was: Was the public
16 involved in the specific risk assessment that I was
17 referring to? And my answer then was, No, the public
18 was not involved in that specific risk assessment. But
19 the fact is in all of those major public workshops that
20 I showed on my slide with the -- with the loops, the
21 fact is that at every one of those we discussed three
22 (3) types of risk.

23 We discussed risk to worker health and
24 safety; we discussed the risk of arsenic release over
25 the short term; and we discussed the risk of arsenic

1 release over the long term. They were very much a part
2 of the discussion with the public at -- at that point.

3 So I believe the public has been
4 involved in the -- in the assessment of risks in
5 general, but not in the particular instance that was
6 being referred to earlier.

7 MR. ADRIAN PARADIS: Adrian Paradis,
8 for the project team. On -- on top of that, I think
9 there has been an ongoing involvement through the
10 environmental assessment process, as well as our work
11 through the environmental management system. The
12 parties to the EA sit as part of that working group,
13 and risks are discussed and -- through the development
14 of those management plans.

15 So there has been an -- very ongoing
16 workshop, and it -- or, discussion. And it's going to
17 continue and it's a continuum of a process that follows
18 along with not only the environment assessment process,
19 but the water licensing as well as the project itself,
20 as it follows through into implementation and in
21 through monitoring.

22 THE CHAIRPERSON: Okay, thank you. I'm
23 going to go to Kevin O'Reilly.

24 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
25 I -- I don't want to get into a mud fight with the

1 Developer on this. But Daryl and I are probably two
2 (2) of the -- the few people -- although if Isadore
3 Tsetta's here, he was at some of those workshops. And
4 we'll have to agree to disagree on what level the --
5 there was in terms of public involvement in -- in
6 assessing risks and so on.

7 But I want to turn back to the question
8 that I asked that wasn't answered. What level and how
9 does the developer look at involving the public in the
10 remaining design work -- not just the monitoring, but
11 the design work -- for the frozen blocks? How is the
12 public going to know and understand how the design work
13 is -- is being evaluated, reviewed, assessed, what sort
14 of tradeoffs there might be involved?

15 How are we going to be involved and
16 engaged in that work? Thank you.

17 THE CHAIRPERSON: Thank you. I'm going
18 to go to the Developer.

19 MR. ADRIAN PARADIS: Adrian Paradis, on
20 behalf of the project team. The public's going to be
21 involved in a variety of ways. One of the var -- one
22 of the big ones in the foundations is going to be
23 through the environmental management system, and the
24 parties sit and work on that.

25 There's also discussions through the

1 Giant Mine community alliance. There's also individual
2 discussions with the City of Yellowknife. There'll be
3 discussions through the Giant Mine advisory committee
4 with the Yellowknives Dene First Nation, as well as
5 workshops on different aspects of the project,
6 including Baker Creek, et cetera.

7 On this particular topic, I think one of
8 the large public inputs that we're going to be seeking,
9 are going to be involving, will be through the
10 environmental management system. Those work -- those -
11 - that work's been ongoing for the past year. It'll be
12 -- continue to go in through the water licensing, and
13 then in through monitoring.

14 It is not a static discussion. It is an
15 ever-evolving one. And there's lots of future
16 discussions that are required to optimize this process.
17

18 THE CHAIRPERSON: Okay, thank you.
19 I'll go back to Alternatives North.

20 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
21 I'll just try one more little angle on this then.
22 Kevin O'Reilly here. I guess what I heard, I think,
23 the Developers say then is that they are prepared to
24 bring various aspects of the design work that needs to
25 be done for frozen block, perhaps other parts of the

1 project, to the environmental management system working
2 group.

3 Is that what they're committing to do?
4 Like we always understood that the work of that working
5 group was to really design the monitoring systems for
6 the mine. If they're proposing to bring the design
7 work and involve and engage people there, that's a good
8 step. They haven't made that commitment yet.

9 So I'm just trying to confirm whether
10 that's indeed what they're proposing to do. It sounds
11 like it's a reasonable approach.

12 THE CHAIRPERSON: I'm going to go to
13 the Developer to the question on the commitments.

14

15 (BRIEF PAUSE)

16

17

18 MR. ADRIAN PARADIS: Hello. Adrian
19 Paradis, on behalf of the project team. I think
20 there's been a misunderstanding, and I think it is --
21 and I think it is ju -- just a general one. Our
22 thought always was that the environmental management
23 system working group with the parties would encompass
24 both elements of the monitoring and elements of the
25 design. They go somewhat hand in hand.

1 And if we weren't clear enough with our
2 discussions tha -- at that working group level, well,
3 we're clarifying it now. The intention always was that
4 that working group essentially involves both aspects of
5 that -- of that design discussion, monitoring and also
6 implementations on design.

7 Monitoring will influence design.
8 Design will influence monitoring. It is all part of
9 how adaptive management on the site is going to be
10 implemented. We're going to have ongoing discussions
11 throughout the week, and I think a lot more of these
12 discussions will occur naturally on Thursday and
13 Friday. But we're happy to try and answer what
14 questions we can now.

15 THE CHAIRPERSON: Okay. We'll go back
16 to Alternatives North.

17 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
18 I was pleased to hear that response and I think we made
19 a little bit of progress on that one, so thank you. I
20 have one (1) more line of questioning. And I think it
21 was clear from the -- the presentation that there
22 wasn't really anything in there that commits to ongoing
23 research and development into a -- a better solution
24 for the underground arsenic.

25 So my -- my first question is: When was

1 the last formal review of technologies for managing
2 and/or treating the underground arsenic? Thanks.

3 THE CHAIRPERSON: Okay. Thank you. I
4 believe that's your final question, Kevin.

5 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
6 I think I might have one (1) or two (2) for follow-ups
7 after that. Thanks.

8 THE CHAIRPERSON: Thank you. I'm
9 going to go to -- to the Developer please, to the
10 question.

11 MR. DARYL HOCKLEY: Daryl Hockley. The
12 -- the bulk of the -- the most thorough review was done
13 in 2001 to 2003. Initially that was part of a -- an
14 arsenic trioxide assessment only.

15 One of the recommendations of the peer
16 review panel was that should be rolled into the
17 remediation plan. And the remediation plan as a whole
18 came together over the next four (4) years. So about
19 2006/2007 would have been when it was finalized.

20 Any -- any statements that were made in
21 2003 that made their way into 2007 would have been re -
22 - reviewed by us. So if anything new had been out
23 there, they would have been reviewed at that -- at that
24 point. Those would have just been internal reviews
25 though. The big public review was 2001 to 2003.

1 THE CHAIRPERSON: Okay. Thank you.

2 I'm going to go to Alternatives North.

3 MR. KEVIN O'REILLY: Thanks, Mr. Chair.

4 As we understand it, the Developers committed to review
5 the technologies -- new technologies that might arise
6 every ten (10) years. But it's sort of like taking a
7 sit back and wait approach -- approach for something
8 better to come along.

9 So I'm just wondering why the Developer
10 will not commit to an ongoing research and development
11 program and do a better solution. Thanks.

12 THE CHAIRPERSON: Okay. I'll go back
13 to the Developer to the question.

14

15 (BRIEF PAUSE)

16

17 MR. MICHAEL NAHIR: Thank you, Mr.
18 Chair, Mike Nahir. We are committing to review, so
19 we've agreed to commit to review of the technologies.

20 THE CHAIRPERSON: Okay. Thank you.
21 Mr. O'Reilly...?

22 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
23 I guess that's not the question that I asked, but --
24 and I understand they're prepared to do a review of new
25 technologies that might come along every ten (10)

1 years.

2 But I guess what we proposed is a more
3 active research and development program, where you set
4 aside some money, you identify what research gaps might
5 be out there, what new technologies might be on the
6 horizon, maybe even fund some of that work, and get --
7 get some of it done to see if we can move this along to
8 something that's better than just keeping the stuff
9 frozen underground forever.

10 So I -- I don't really understand what
11 the -- the problem is in making that commitment. Is it
12 -- is it a question of money? Is it a question of
13 thinking that this frozen block is the -- the best
14 thing that will ever happen with the arsenic? What is
15 the problem with making a commitment to ongoing
16 research and development into something better? We've
17 heard lots of concerns about this here already today.

18 So what's the -- the problem in making a
19 commitment to an ongoing active research and
20 development program? Thanks.

21 THE CHAIRPERSON: Thank you. I'll go
22 to the Developer to the question.

23

24 (BRIEF PAUSE)

25

1 MR. DARYL HOCKLEY: I think when -- I
2 might be able to help a bit with this. The -- the way
3 that we did the review in -- in 2000 -- in 2001 to
4 2003, we didn't look at specific things only that were
5 available. We looked at whole classes of methods.

6 And the reason we did that is that we
7 knew it might be several years before it was
8 implemented. We wanted -- we wanted to look at things
9 in a way that -- that dealt not only with the things
10 that were available on that day, but anything likely to
11 come along in the foreseeable future.

12 So -- so that -- that's how we did it.
13 That's why we feel quite comfortable that things aren't
14 changing very quickly. We -- my -- my company employs
15 probably three hundred (300) mining engineers that --
16 they go all over the world and they're well aware of
17 the very latest in mining technologies, mining
18 techniques.

19 And -- and mining companies do carry out
20 all sorts of research all the time. And we're -- we're
21 on top of that. That's -- that's one of our roles.
22 And I -- I can assure you they don't change that fast.
23 There -- there -- that -- that's why we -- we looked at
24 whole classes of methods.

25 The other danger with -- with focussing

1 on a particular thing is that we found through that
2 alternatives assessment procedure that it wasn't a
3 problem of there being one (1) thing missing. It was a
4 problem of putting all the pieces together.

5 So we -- we have mining methods that can
6 get 90 percent out of the dust -- of the dust out, and
7 some can get the remaining 5 percent of the dust out --
8 or, the next 5 percent. But almost none of them can
9 get that last 5 percent out.

10 Once we get it out, we have methods that
11 can reprocess dust. But they can only reprocess 99
12 percent of the dust; 1 percent of it still remains just
13 as toxic as ever. And -- and there are a number of
14 other things associated: the risk of spills, et cetera,
15 et cetera.

16 So in order for something to be viable
17 tomorrow, it wouldn't take just one (1) research
18 breakthrough. It would take a whole series of things.
19 That -- that's why we believe it's much more reasonable
20 to look at these things on some periodic basis - every
21 ten (10) years, every twenty-five (25) years.

22 But some periodic basis is, I think, a
23 much more reasonable way to -- to deal with this,
24 rather than trying to look at it and trying to push it
25 in a lot of different directions that might not lead

1 anywhere.

2 THE CHAIRPERSON: Okay, thank you. I'm
3 going to go back to Kevin O'Reilly.

4 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
5 I -- I don't mean any disrespect to Mr. Hockley. I
6 think that was a -- a reasonable explanation from an
7 engineer. But I guess I -- I'd prefer to actually hear
8 from the government what -- why -- why they are opposed
9 to providing funding for ongoing research and
10 development.

11 So I -- I'd like to hear from the
12 government, not from the -- the consultant, please.
13 Thanks.

14 THE CHAIRPERSON: Okay, thank you. I'm
15 going to go back to the Developer and spokesperson for
16 the government.

17 MR. MIKE NAHIR: Thank you. Mike
18 Nahir. I guess that would be me that you're referring
19 to. The -- we're satisfied that the assessment, as the
20 Board has been satisfied, that the assessment of
21 options is -- was very thoroughly done and peer
22 reviewed, and that we have a proper option going
23 forward.

24 And we've sought funding and we've --
25 and we're seeking funding to -- to follow through with

1 that. We believe, as we've said and we've described
2 many times, that it's a very thorough option. And
3 we've also committed to, as I've said, a -- a ten (10)
4 year review, every ten (10) years after completion of
5 the project.

6 So I believe that we are, you know, we -
7 - we are meeting the intent of a thorough review, as
8 there is an adaptive management program that we're
9 discussing. And so we believe we're making a proper
10 commitment on that. Thank you, Mr. Chair.

11 THE CHAIRPERSON: Okay, any further
12 question, Mr. O'Reilly?

13 MR. KEVIN O'REILLY: No, thanks, Mr.
14 Chair. We just have to agree to disagree at this
15 point, but thank you for your patience with my
16 questions.

17 THE CHAIRPERSON: Okay, thank you.
18 Okay, I want to go to -- the next one on the list is
19 the Yellowknives Dene First Nation. Any questions to
20 the Developer on their presentation?

21 MR. RANDY FREEMAN: Thank you. My name
22 is Randy Freeman. I'm the Director of Lands and
23 Environment for the Yellowknives Dene First Nation.

24 If I re -- recall correctly, in the
25 scenario -- worst-case scenario discussion, you stated

1 that if people forgot, you know, that there -- it would
2 be -- there would be twenty (20) years in which to
3 rectify the problem if people forgot that, you know,
4 these funny-looking pipes sticking out of the ground
5 had a purpose. How -- how do you plan to inform those
6 people who may come across these funny-looking pipes
7 sticking out of the ground -- and I'm talking very long
8 term.

9 How do you plan on informing them that -
10 - that there is danger below, that -- that someone has
11 to come along and make some repairs to those non-
12 functioning thermosyphons within a, you know, a twenty
13 (20) year period?

14 THE CHAIRPERSON: Thank you. I'll go
15 to the Developer.

16 MR. ADRIAN PARADIS: Adrian Paradis on
17 behalf of the project team. This is one of the -- one
18 of the ones that we need to work on with the parties.
19 This is one of the discussions that have come out
20 through the perpetual care management plan, and it's
21 the commitment that we've made to establish a perpetual
22 care management plan.

23 There's different ideas out there across
24 the world, what is useful or productive, or this case
25 or this scenario still needs to be determined. But

1 it's our intention to work with the parties to try and
2 look at some of that work.

3 Alternatives North them -- and YKDFN
4 have done a little bit of that work. It's some good --
5 good thoughts there. I think there needs to be further
6 discussion about what is appropriate, but it is part of
7 our commitment of establishing a perpetual care
8 management plan. Thank you, Mr. Chair.

9 THE CHAIRPERSON: I'll go back to the
10 YKDFN, Randy Freeman.

11 MR. RANDY FREEMAN: Thank you. I have
12 no further questions.

13 THE CHAIRPERSON: Okay, thank you. I'm
14 going to go to -- next is the City of Yellowknife.

15

16 (BRIEF PAUSE)

17

18 THE CHAIRPERSON: Okay, I don't see
19 anybody here. I'm going to go to the Board technical
20 advisors. Any questions to the Developer on the
21 presentation?

22 MR. ALAN EHRLICH: Mr. Chair, it's Alan
23 Ehrlich for the Review Board. We have two (2)
24 technical advisors who have questions for the
25 Developer. The first one is Dr. Lukas Arenson.

1 THE CHAIRPERSON: Thank you. Please
2 proceed.

3 DR. LUKAS ARENSEN: Lukas Arenson for -
4 - for the record. I have a line of questions related
5 to the frozen block and to kind of what -- what we call
6 a new concept in terms of freezing or just putting it
7 below zero degree in terms of wetting it, frozen block,
8 frozen shell.

9 If I recall, in the FOS document --
10
11 --- Upon recessing at 3:18 p.m.
12 --- Upon resuming at 3:35 p.m.

13
14 THE CHAIRPERSON: Okay. If we're ready
15 to go here, we're going to go to the next presentation
16 by the Developer. Oh, sorry, questions.

17
18 (BRIEF PAUSE)

19
20 THE CHAIRPERSON: Okay, if we can get
21 everybody to sit, we'll start again.

22 I think the power corporation doesn't
23 really want to lose the value of customer; that's why
24 they shut down the power again. Nevertheless, we'll
25 continue on.

1 We were going through questions to the
2 Developer on their presentation, and we had -- we were
3 just ready to proceed with the Board's technical
4 advisor, and the power went out, so we're going to go
5 back there and turn it over to the technical staff.

6 DR. LUKAS ARENSON: Okay, Lu -- Lukas
7 Arenson, for the Board. I have a question related to
8 the concept of the frozen block considering the results
9 that came out of the FOS as well as the bedding study.

10 It's only been touched during the
11 presentation, but in the report just recently filed on
12 the FOS, in Section 3.3 on the dry frozen block you
13 say:

14 "But it is undeniable that the
15 presence of water in the dust does
16 increase risks even if they are
17 manageable."

18 So just generally, the question, I
19 guess, have you done a proper risk assessment or any
20 risk assessment in order to support that particular
21 statement? And how does that statement compare to the
22 sentence we just heard in an answer recently from one
23 of your experts, that saying once everything is frozen,
24 we see the risk dramatically dropping, and that was
25 related to fail -- mechanical failures of the stope?

1 So I need water to freeze it. I mean,
2 personally, I don't like the dry frozen block. I will
3 call it the cryotic block. But how -- how does,
4 mechanically, things get better if you don't let it, if
5 you don't change the state?

6 If you could clarify that for me, that
7 would be great. Thank you.

8 THE CHAIRPERSON: Thank you. I'm going
9 to go to the Developer.

10 MR. DARYL HOCKLEY: I think there was a
11 few questions there. So I'm going to -- I'm going to
12 try to -- sorry, I'll try to -- I'll try to follow them
13 through. And if I get lost, just stop me.

14 The -- the first was about a statement
15 in Section 3.3 of this report that was filed on -- it's
16 the FOS, freeze optimization study, update for the
17 Board and parties. And it does -- it does -- that
18 statement is there, but it's part of a full paragraph,
19 and it -- it's helpful to read the full paragraph. It
20 says:

21 "Information Requests filed by the
22 Board, reviewers, and parties raised
23 concerns about the wetting process.
24 There were questions about the risk
25 of arsenic release during the wetting

1 and about the added difficulty that
2 wet dust would prevent -- present to
3 any future deliberate thawing.
4 Responses to those requests showed
5 the wetting presented no
6 insurmountable obstacles and the
7 short-term risk could be managed.
8 And methods to deliberately thaw the
9 dust could be developed."

10 And it ends with the statement:

11 "But it's undeniable the presence of
12 water does increase the risks, even
13 if they are manageable."

14 So all we're really saying is -- there
15 is that the parties had a good point in raising these
16 issues. We -- we believe they're manageable. We don't
17 believe there are fatal flaws, but they -- but they had
18 a good point in raising these issues. That's -- that's
19 really all we're implying there.

20 The -- the statements about robustness
21 once it's frozen are quite important. I think the --
22 the risks that people are concerned about deal with
23 during the wetting pri -- prior to freezing. And the
24 statements that -- that Greg made earlier -- or, sorry,
25 Darren made earlier about the robustness in -- in an

1 earthquake was after freezing. So I think that's just
2 part of the miscommunication here.

3 THE CHAIRPERSON: Thank you. I'm going
4 to go back to the Review Board technical advisors.

5 DR. LUKAS ARENSEN: Yeah, Lukas
6 Arenson, for the Board. I still don't understand the -
7 - how you mechanically improve the chambers and the
8 stopes and the bulkheads if you do not add any water.
9 Or in the long term, are you expecting -- once you cool
10 it, are you expecting it to freeze over the long term,
11 uncontrolled, just by potential water getting to it?

12 THE CHAIRPERSON: Thank you. I'll go
13 to the Developers.

14 MR. DARYL HOCKLEY: I think I'll just
15 back us up a little bit. The -- we mentioned -- what
16 we're talking about now is -- is the dry frozen block
17 idea: Can we make frozen blocks without adding water?

18 This is -- a current indication from our
19 study of the FOS results shows that the -- the dry
20 frozen block performs as well as the -- the wet frozen
21 block over the long term.

22 We haven't made a decision to go to dry
23 frozen blocks. Those decisions are part of further
24 engineering. They will be subject to a fairly thorough
25 review of all the risks before that decision is made.

1 That's -- that's also stated later in
2 that same report when it talks about a -- a tradeoff
3 study -- tradeoff studies that need to be done on any
4 of these decisions. But we -- we wouldn't just make it
5 on the basis of that one (1) slide you saw. We'd look
6 at all the -- all the implications, positive and
7 negative. We -- we have not done that yet, so I may
8 not be able to answer all of the -- all of the
9 questions here.

10 There -- there seems to be a -- another
11 misunderstanding. We're not seeking to mechanically
12 improve the -- the chambers by freezing them. There
13 would be a program prior to freezing them of
14 backfilling the crown pillars, sill pillars -- if you
15 remember, those are the ones under the dust --
16 backfilling crown pillars, if necessary, and
17 stabilizing bulkheads, adding material in front of
18 bulkheads. That's -- that's where the mechanic --
19 that's where the major mechanical improvement comes
20 from.

21 THE CHAIRPERSON: Okay, I'll go back to
22 the Review Board technical adviser.

23 DR. LUKAS ARENSEN: Yeah, Lukas Arenson
24 for the Board. So you -- you would agree with all the
25 -- let's call them known unknowns you already have with

1 the we -- with potential wetting or the risk result,
2 that this would be a significant change in your concept
3 if you're going with the dry solution.

4 And -- or, or do you see -- you don't
5 see that?

6 THE CHAIRPERSON: Thank you. I'll go
7 back to the Developer.

8 MR. DARYL HOCKLEY: We see it as part
9 of a -- a -- we see it as part of a design improvement,
10 and we think there'll be lots and lots of those as we
11 move forward with this project, as -- as we do with any
12 engineering project.

13 We -- I think we've been pretty clear
14 all along that we -- what we presented were -- were
15 concepts. We certainly were very clear with the Board
16 that we were going to be doing this freeze optimization
17 study. And one of the reasons to do that study was to
18 work out those concepts, work out those designs a
19 little better, give us material to do that. We see
20 this as a -- as one of those many things that we can
21 now consider a lot more carefully with -- with the
22 benefit of the FOS data.

23 THE CHAIRPERSON: Thank you. Back to
24 the Review Board to -- technical adviser.

25 DR. LUKAS ARENSON: Okay, thank you for

1 -- for these answers, so. When I -- I also have a
2 little bit of a detail or answer, again, on the
3 scenarios. We were talking about worst-case scenarios
4 and -- and climate change and what -- what to look at
5 and what not to look at.

6 In your presentation, you were showing a
7 6.1 degree Celsius warming over a hundred years as the
8 -- as the scenario there. I think in the July
9 presentation, you presented 7.2 degree warming in fifty
10 (50) years, and then keep it constant, which is
11 probably a very, very conservative assumption. I -- I
12 see these different scenarios that have been used in
13 the models.

14 And what exactly now is -- is your worst
15 case, or even looking at paleoclimate, what -- what's
16 your worst case again? Sorry.

17 THE CHAIRPERSON: Thank you. We'll go
18 back to the Developer.

19 MR. DARYL HOCKLEY: That -- it's the --
20 the one where -- one we showed here was a 6.1 degree
21 increase in mean annual air temperature over a hundred
22 years, and then remaining constant afterwards. And
23 that comes from the multi-century projections. I don't
24 know if they call them predictions; I think they just
25 call them multi-century projections in the I -- you're

1 probably more familiar than I am -- in the IPCC's
2 documents.

3 That's a -- I think they have a range of
4 four point nine (4.9) to six point one (6.1) is the
5 worst of the eight (8) cases, or seven (7) cases that
6 they present. And we took the -- the highest number
7 from that and -- and used that. If you need any more
8 detail, I can ask Greg to comment on that from the
9 math, but I -- I think that's the...

10 DR. LUKAS ARENSON: And -- and the --
11 and the seven point two (7.2), where did that come
12 from?

13 MR. GREG NEWMAN: Greg Newman speaking.
14 I had tried that 7.2 degrees as -- as a worst-case
15 scenario and crammed it into fif -- fifty (50) years
16 instead of a hundred, just to -- to strictly allow my -
17 - myself to do more simulations in a shorter period of
18 time, because the -- the models are set up to run every
19 day of every year over fifty (50) or a hundred years.

20 So I wanted to see how extreme I could
21 push it. But the -- the official one we're going with
22 here is the 6.1 degrees over the hundred years.

23 THE CHAIRPERSON: Thank you. Back to
24 the technical advisor.

25 DR. LUKAS ARENSON: Okay. Yes, so

1 there it was more and more like a modelling sensitivity
2 game rather than a real -- real scenario. Yeah, okay.

3 MR. GREG NEWMAN: Greg Newman speaking.
4 Yes, that's correct.

5 DR. LUKAS ARENSEN: Okay. Lukas
6 Arenson again for the Board. One (1) last -- one (1)
7 or two (2) questions probably. We have Pit B1 that
8 needs infill. And as my understanding is that there's
9 going to be hazardous waste that's going to be filled
10 into Pit B1.

11 It's going to be frozen too, so -- or,
12 cooled, depending on how much water, I guess, is going
13 to be there. How does that play into that twenty (20)
14 year thawing scenario?

15 So we're not now talking about the
16 arsenic chambers that might be affected, but the
17 additional waste that's being deposited in that Pit B1.

18 THE CHAIRPERSON: Okay. Thank you.
19 To the Developer to the question.

20 MR. DARYL HOCKLEY: Daryl Hockley
21 again. The -- what's going into the B -- B1 Pit is
22 actually contaminated soils above a certain level.
23 Most of those are -- are largely rock and -- and soil
24 from around this site that have high arsenic levels, in
25 part because it's arsenopyrite. It's the -- it's

1 tailings, or it's waste rock or things like that.

2 So -- so it will go into the -- in the -
3 - what we've said is we'll take the worst of that
4 material and we'll put it into the frozen portion of
5 the B1 Pit. That material will also have a cover on it
6 similar to the cover that goes on the tailings
7 impoundment or the sludge sites or many other areas
8 around the site that also contain arsenic.

9 So even in the worst-case scenario that
10 -- that it thaws, it would still be the same as the --
11 as, say, the tailings or the -- or the sludge.

12 THE CHAIRPERSON: Okay. I'll go back
13 to the technical advisor.

14 DR. LUKAS ARENSEN: So you basically
15 physically contain it within the pit and don't depend
16 on the freezing of any material that's going to be put
17 in to -- to fill B1.

18 Is that correct?

19 THE CHAIRPERSON: I'll go back to the
20 Developer.

21 MR. DARYL HOCKLEY: Yes, I think that's
22 essentially -- essentially it. It's -- it really was -
23 - if I can just explain the logic, it might help. Pit
24 B1 -- Stope B208 comes under the B1 Pit. So to freeze
25 around Stope B208, we have to fill the pit.

1 And we -- and by doing, that we would
2 create this zone of frozen material. We thought we
3 might as well take advantage of that by putting the
4 worst material in that zone. And it's at -- it's at
5 least more robust than material that we -- that we put
6 anywhere else on the site.

7 THE CHAIRPERSON: Okay. I'll go back
8 to the Review Board technical advisor.

9 DR. LUKAS ARENSON: And -- and the last
10 question, I think it's also interesting to -- to know.

11 So you think the -- the FOS, is it
12 representative for all the area around the site, or do
13 you expect significant potential changes between one
14 chamber and another, now that you see results from the
15 FOS?

16 THE CHAIRPERSON: Thank you. I'll go
17 back to the Developer. And just before they respond, I
18 guess I just want to just point out is that the
19 Developer again, in this case, is the Aboriginal
20 Affairs and Northern Development Canada and Government
21 of Northwest Territories, AANDC and GNWT.

22 So just to let you know that's why I'm
23 calling them the Developer when I say short. Thank
24 you.

25 MR. DARYL HOCKLEY: I think we -- we --

1 the chamber can is smaller than many of the other
2 chambers, much smaller than, say, Stope B208. But we
3 believe we can take the data there and extrapolate that
4 data to the other shapes, the other geometries.

5 Greg -- Greg was thinking that the
6 thermal -- Greg -- Greg can speak in a minute about the
7 thermal properties. But our next -- our next step is
8 to -- is to take this data and develop -- design
9 guidelines, if you like, for the other chambers.

10 So it certainly wouldn't be the case
11 that we'll take the -- the design and layout of Chamber
12 10 and cookie-cutter that everywhere else, but we'll
13 take the things we learned from Chamber 10 and design
14 proper systems for the rest of the site. That --
15 that's our intention.

16 MR. GREG NEWMAN: Greg Newman speaking.
17 One of the options we do have as -- as we move into a
18 construction phase is that all of these freeze pipes
19 require drilling a freeze hole. And we do have the
20 opportunity to do coring on the drilling and adjust the
21 -- the spacing of freeze pipes if there are variations
22 in the thermal properties that maybe give us any kind
23 of a reason to want to make an adjustment.

24 So there is flexibility right up until
25 the stage of construction from -- for fine tuning the

1 design, and that will be built into the design
2 criteria.

3 THE CHAIRPERSON: Okay. Is there any
4 further questions from the Board technical advisor?

5 DR. LUKAS ARENSEN: I have no more
6 question -- Lukas Arenson for the Board. But we have -
7 - Dr. Franco Oboni has another question.

8

9 (BRIEF PAUSE)

10

11

12 DR. FRANCO OBONI: Thank you very much.
13 I have three (3) questions to ask. The first one:
14 From various -- from various speeches today I've heard
15 that apparently the scoring system used to select among
16 the fifty-six (56) alternatives is not correctly
17 understood by most people.

18 Could you please clarify the authors,
19 the origin of the scoring system, the key indicators
20 that were used, and the weights?

21 Furthermore, we would be interested to
22 know if the scoring system was defined with all the key
23 stakeholders present.

24 THE CHAIRPERSON: Thank you. I'm going
25 to go to the Developer to the question.

1 MR. DARYL HOCKLEY: Daryl Hockley
2 again. The -- the question has an assumption behind
3 it. The assumption is that we used a scoring system,
4 which implies a numerical system. This is a popular
5 trend in -- in modern-day decision analysis to try to
6 put numbers on things and -- and add them up.

7 It's -- it's a trend that I don't --
8 don't like personally. And specifically, I don't like
9 it because I think it disadvantages communities and --
10 and other -- other people who aren't as quick with
11 numbers as engineers are. So we avoided a quantitative
12 scoring system.

13 We -- what we did was we -- we went
14 through the -- the -- I guess the only thing
15 quantitative were -- were costs. We looked at the risk
16 of short term -- risks to worker health and safety, and
17 we classified those as, I think, very low to high.

18 Similarly, we looked at the risk of
19 short-term release, and we classified those from very
20 low to high, and the risks of long term -- arsenic
21 release in the long term and classified those from very
22 low to high. And we used -- we used words rather than
23 numbers, because it's much easier to communicate with
24 people.

25 Behind the scenes, there -- there was

1 some -- some pretty extensive work done to look at the
2 significance of different quantities of arsenic in the
3 environment. And some of our colleagues can talk --
4 will -- will be talking about that I think later in the
5 week, human health and ecological risk assessment.

6 That's a different field that -- there
7 was a lot of that work done to tell us that 100-tonne
8 release would have this much effect, or 1,000 tonne a
9 year would have that kind of effect. That was all very
10 well quantified, but it was behind the scenes. It was
11 presented in public work -- in -- in the meetings, but
12 -- but we didn't have this scoring system that I think
13 the questioner is thinking about.

14 All of that work is -- is thoroughly
15 documented. It's documented -- it's reviewed in the
16 remediation plan. It's reviewed in the DAR. It's most
17 thoroughly documented in the arsenic trioxide
18 alternatives report.

19 As was mentioned, that report was
20 thoroughly reviewed by the independent peer review
21 panel that did include people who were put on that
22 panel for their expertise in risk assessment.

23 THE CHAIRPERSON: I'll go back to the
24 Review Board technical advisor.

25

1 (BRIEF PAUSE)

2

3 DR. FRANCO OBONI: Okay, I will go to
4 my next question then. Is it fair to say that risk
5 deliverability and acceptability were never formally
6 defined for the risk assessments?

7 THE CHAIRPERSON: Thank you. I'll go
8 to the Developer.

9 MR. DARYL HOCKLEY: I -- I didn't -- I
10 only heard half of that question, risk acceptability.
11 I didn't hear the first term, sorry.

12 DR. FRANCO OBONI: Is it fair to say
13 that risk deliverability or acceptability were never
14 formally defined for the risk assessments?

15 THE CHAIRPERSON: Okay, I'll go back to
16 the Developer.

17 MR. DARYL HOCKLEY: No, I -- I don't
18 think that's quite -- quite fair to say that, although
19 I'm quite sure that what we did wouldn't -- wouldn't be
20 exactly what you mean by the question.

21 There were many, many different kinds of
22 risk assessment done. The -- when most people in this
23 room here, risk assessment, they're going to be
24 thinking about the human health and ecological risk
25 assessments. And there was extensive review of

1 appropriate toxicity thresholds and ecotoxicity
2 thresholds. That was a lengthy discussion and very
3 carefully reviewed.

4 The -- I think what Dr. Oboni is
5 referring to are more the engineering risk assessments,
6 yes. And -- and I mentioned that our approach on those
7 was to -- to characterize those in terms of plain
8 English terms that -- that do have an underlying
9 quantitative basis.

10 But at no time did we say that any
11 threshold there was acceptable or not. We simply said
12 that, These ones are low risk, these ones are high
13 risk. And we have these public consultation sessions
14 or engagement sessions to see what people thought of
15 it.

16 THE CHAIRPERSON: Thank you. I'll go
17 back to the Review Board, the technical advisor.

18 DR. FRANCO OBONI: I have one (1) more.
19 If I recall well, during the technical hearings, the
20 Australian Committee for Large Dams was quoted. And
21 the Australian Committee for Large Dams is one (1)
22 entity that has developed acceptability thresholds for
23 hydro dams. I am surprised to see that this committee
24 was quoted, and then their results, which are pretty
25 important in the industry, were not used.

1 Could you explain us why?

2 THE CHAIRPERSON: Thank you. I'll go
3 to the Developer.

4

5 (BRIEF PAUSE)

6

7 MR. DARYL HOCKLEY: Yeah, the -- the
8 ANCOLD designs are -- are well used amongst by dam
9 designers. I -- I'll put this as a question because --
10 because we don't have the transcript in front of us.
11 But were -- was that not raised in the context of the
12 Baker Creek channel design? Yes. Yeah, Dr. Oboni is
13 nodding his head.

14 So that's where those criteria are
15 applied. We were looking for a level to which we
16 should design Baker Creek. Should it be designed for
17 the flood that happens every ten (10) years or the
18 flood that happens only once every hundred years or the
19 flood that only happens once in -- in history?

20 And I think that's where we used it.
21 Those sorts of criteria are very useful for that kind
22 of -- in my experience, at least, they're very useful
23 for that kind of single risk question.

24 When you're balancing a lot of risks
25 over a lot of different periods in time and with a lot

1 of different stakeholder opinions, those sorts of
2 simplified risk thresholds often break down, in -- in
3 my experience.

4 THE CHAIRPERSON: Did you have any
5 further co -- questions?

6 DR. FRANCO OBONI: Thank you very much.
7 I don't have any more questions at this time.

8 THE CHAIRPERSON: Thank you. I'm going
9 to go to the -- on my list here I got Board staff.
10 Review Board staff, any questions for the Developer?

11 MR. ALAN ERHLICH: No questions at this
12 time, Mr. Chair.

13 THE CHAIRPERSON: Okay, thank you.
14 Board counsel...?

15 MR. JOHN DONIHEE: John Donihee. No
16 questions, Mr. Chairman.

17 THE CHAIRPERSON: Okay, thank you. I'm
18 going to go to Board members. To my far left, I'm
19 going to go to Mr. John Curran, Board member.

20 MR. JOHN CURRAN: Thank you, Mr.
21 Chairman. I'd like to ask the Developer: In your
22 mind, what's the greatest single threat to these frozen
23 blocks? Thank you.

24 THE CHAIRPERSON: Thank you. I'm going
25 to go to the Developer.

1

2

(BRIEF PAUSE)

3

4

MR. MIKE NAHIR: Mike Nahir. Thank
you, Mr. Chair. Just -- just to clarify, are you --
are you referring to technical risks? Thank you.

7

THE CHAIRPERSON: Mr. Curran?

8

MR. JOHN CURRAN: I'm referring to
risks that could cause the blocks to fail and release
arsenic. Thank you.

11

THE CHAIRPERSON: Thank you, and we'll
go back to the Developer.

13

MR. DARYL HOCKLEY: The -- the -- Daryl
Hockley. The biggest risk, by far, is -- is today and
what we do in the next few years. That's by far the
biggest risk. That -- that is -- that's one thing we
can all agree on. To -- to be quite honest, we -- we
might not agree on -- on -- all of us wouldn't
necessarily agree on what's the greatest risk in the
future.

21

I think we would all agree that it would
take a combination of problems to cause them to thaw.
There would have to be a -- a lack of insti -- some
sort of institutional failure in the first place.
There would have to be a complete lack of maintenance.

1 There would have to be a long, long time. And even
2 then -- even then, the dust is only beginning to thaw,
3 right? That dust still has to get down -- if -- if the
4 water treatment system is still operating, even that
5 contaminated water still just comes into the water
6 treatment system and -- and is treated.

7 There's -- there's a whole series of
8 about eight (8) -- eight (8) or ten (10) steps that you
9 have to go through. Once the frozen blocks are in
10 place, there is a series of about eight (8) or ten (10)
11 steps before arsenic can get out into -- to Baker
12 Creek.

13 I think we refer to that as a chain of
14 events analysis in one of the documents that I -- we
15 can find that for you, but we -- we list them there.
16 It's -- it's quite surprising how many things have to
17 go wrong before -- well, it's not surprising, I guess.
18 That's -- that's why we like frozen blocks, because a
19 lot of things have to go wrong before you can have a
20 problem, so.

21 THE CHAIRPERSON: Thank you.

22 MR. MIKE NAHIR: Mr. Chair, I -- I'd
23 like to add something to that. I think one of the
24 reasons why we were pondering here is because we had
25 prepared, as in -- in response to one of the

1 Information Requests, a -- an additional failure modes
2 analysis that we had conducted to look at short-term
3 and long-term failure modes. And through that we
4 developed a -- a variety of scenarios and developed
5 mitigation as part of that. So that was part in --
6 that factors into the design.

7 So through that analysis, we didn't find
8 anything that would -- was critical in that respect,
9 that we didn't design for. I -- I realize that's a
10 partial answer. Thank you, Mr. Chair.

11 THE CHAIRPERSON: Can we get your name
12 for the record, again?

13 MR. MIKE NAHIR: Sorry, Mike Nahir.

14 THE CHAIRPERSON: Thank you. John
15 Curran...?

16 MR. JOHN CURRAN: Thank you. And I
17 guess just a follow-up to that. Does that list of
18 critical events leading to failure get -- change
19 length, I guess, in a dry -- a dry freeze scenario
20 versus a wet freeze scenario?

21 THE CHAIRPERSON: Thank you, I'll go
22 back to the Developer.

23 MR. DARYL HOCKLEY: Daryl Hockley
24 again. That's a very good question. And -- and when I
25 mentioned we have to do more than just look at those

1 charts, that's exactly what we have to look at to see
2 if -- I mean, it really looked good on that chart, but
3 is it going to -- is it actually going to be the same
4 on all of those cases? That's exactly the analysis we
5 -- we have to -- have to go through before we would
6 choose one way or the other. So I don't know the
7 answer now to that question.

8 I -- I maybe could add, many of the
9 events have actually -- take place outside the block,
10 right? Once the block fails, the arsenic-contaminated
11 water would end up in the water treatment system. So
12 the treatment system also has to fail. And once it
13 fails, the -- the water has to flood the mine, so the
14 pumping system has to fail. And then water shows up in
15 the pits, and nobody notices that. So, again, some
16 form of oversight has to fail.

17 And a lot of those things are going to
18 be the same, whether it's a dry block or -- dry or
19 frozen block, but -- yeah. But we -- we haven't
20 actually done that analysis completely yet.

21 THE CHAIRPERSON: Okay, thank you.
22 John Curran...?

23 MR. JOHN CURRAN: Thank you, I think
24 that's it for now, Mr. Chair.

25 THE CHAIRPERSON: Thank you. Percy

1 Hardisty, Board member...?

2 MR. PERCY HARDISTY: Mahsi, Mr. Chair.

3 I don't have any questions at the moment.

4 THE CHAIRPERSON: Thank you. Board
5 member James Wah-shee...?

6 MR. JAMES WAH-SHEE: Thank you, Mr.
7 Chair. I don't have any questions at this time.

8 THE CHAIRPERSON: Thank you. Board
9 member Richard Mercredi...?

10 MR. RICHARD MERCREDI: No questions at
11 this time. Thank you, Mr. Chair.

12 THE CHAIRPERSON: Thank you. Board
13 member Rachel Crapeau...?

14 MS. RACHEL CRAPEAU: Mahsi, Mr. Chair.
15 I don't have any questions at this moment.

16 THE CHAIRPERSON: Thank you. Board
17 member Danny Bayha...?

18 MR. DANNY BAYHA: Thank you, Mr. Chair.
19 I just have a couple questions, if I may. Earlier you
20 mentioned issues of risk assessment. You had -- you
21 said you had numerous multitudes of it, I guess, from -
22 - from over the years.

23 And -- and I guess questions earlier
24 from Mr. O'Reilly on public involvement, in the case of
25 maybe First Nations -- affected First Nations

1 involvement in your design. I'm curious as to if
2 there's any policy, protocols, or some sort of some --
3 that you have within the department to -- to have
4 consistent involvement with the affected communities.

5 I would ask if you had any -- anything
6 like that in your department. Thank you.

7 THE CHAIRPERSON: Thank you. I'm going
8 to go to the Developer.

9

10 (BRIEF PAUSE)

11

12 MR. ADRIAN PARADIS: Adrian Paradis, on
13 behalf of the project team. Top of my head, I cannot
14 think of a specific policy or guideline that requires
15 or -- or outlines the public involvement for risk
16 assessments.

17 There's a general policy, or a general
18 requirement, for trying to involve or engaging as much
19 as possible. And -- and I think that's the attempt, or
20 that's what we've always tried to do. Hopefully that
21 answers the question.

22 THE CHAIRPERSON: Thank you. Mr.
23 Bayha...?

24 MR. DANNY BAYHA: Thank you. For this
25 particular project, I guess, do you have anything in

1 place? I imagine this is going to be -- you know,
2 there's anticipation of future risk assessment. I
3 imagine there's going to be some kind of an EMS, like
4 you mentioned earlier, that -- so I guess I want to get
5 your thoughts on, or your -- your plans, I guess, for
6 this conceptual program that -- how you're going to
7 involve the public. How are they going to be engaged?
8 How are they going to -- your feedback
9 in -- in case, for example, there's traditional
10 knowledge that needs to be involved, how are you going
11 to use that in your future design program that
12 hopefully you will put out there? Thank you.

13 THE CHAIRPERSON: Thank you. I'm going
14 to go to the Developer.

15

16 (BRIEF PAUSE)

17

18 MR. ADRIAN PARADIS: Adrian Paradis, on
19 behalf of the project team. There is an existing
20 policy for general engagement for all asp -- for the
21 Aboriginal Affairs. As well as we've got a track
22 record not only through this project, but also Northern
23 contaminants program of involvement of First Nations,
24 Northerners in development of remediation plans and
25 development -- pardon me -- like Col -- including

1 Colomac.

2 As well as through -- on this specific
3 project, we have what is the Giant Mine environmental
4 management system with the parties that tries to
5 present and discuss information on the overall
6 management system, discuss and encourage objectives,
7 subse -- substance remediation activities, closure
8 criteria, proposed monitoring, that will provide a
9 development on to the environmental management plans,
10 which provide guidelines for development of monitoring
11 programs, as well as to present ongoing research
12 engineering studies, be it reclamation research plans
13 for where uncertainties exist, getting input and advice
14 on further engagement considerations, as well as
15 provide advice and input on to identification of
16 specific tra -- thresholds, triggers, adaptive
17 managements that may follow.

18 One (1) example of what we do, we've
19 also, with specifics for the YKDFN, have an engagement
20 process that we are trying to establish for -- with the
21 Giant Mine advisory committee that will seek additional
22 inputs specific there. Thank you.

23 THE CHAIRPERSON: Thank you. Danny
24 Bayha...?

25 MR. DANNY BAYHA: Okay. Thank -- thank

1 you, Mr. Chair. Earlier -- yeah, earlier you mentioned
2 -- thank you for that -- the answers -- you mentioned
3 that there was some past engagements of -- of different
4 stakeholders or different First Nations -- First
5 Nations in some of your work. Have -- you have minutes
6 of these meetings of -- of these sort of things who
7 said what and that was documented that's been part of
8 your ongoing record of -- of when you guys do your risk
9 analysis or assessments?

10 THE CHAIRPERSON: Thank you. We'll go
11 back to the developer.

12

13 (BRIEF PAUSE)

14

15 MR. ADRIAN PARADIS: I -- I think you -
16 - we can answer this on -- in two (2) parts. One (1)
17 is on a general -- general broad basis, and then maybe
18 on specific individual assessments.

19 On a broad base we keep an ongoing
20 engagement log that has been filed with the developer -
21 - with the developer's assessment report. It was also
22 subsequently submitted with the remediation plan before
23 that. It's a standard log that we man -- manage and
24 track all folks that we contact, who we talk up to,
25 what the concerns are, how they're dealt with.

1 Individual meeting notes are then tried to track.

2 As for specific or large scale risk-
3 assessment or other specific workshops, there may be
4 individual reports that are generated, some of which
5 are filed on the Review Board website. If it's -- take
6 an example of the Human Health and Ecological Risk
7 Assessment where we sought input from Yellowknives Dene
8 and other -- other folks to actually get in there and
9 put on what are the traditional food sources, what were
10 the specific dietary consumptions, or dietary concerns
11 that were brought into -- and brought into that -- that
12 specific risk assessment to determine and guide it.

13 So I -- I think that hopefully provides
14 a fairly comprehensive answer. Thank you.

15 THE CHAIRPERSON: Thank you. Mr.
16 Danny Bayha...?

17 MR. DANNY BAYHA: Thank you for that.
18 The other question -- I think earlier there was -- in
19 your presentation you had some -- some reference to Mr.
20 Hockley -- I guess you men -- mentioned the fact that
21 even if you take a lot of the stuff out, a lot of the
22 trioxide, you take it out, and there's -- there's 1
23 percent of it's left, you still have to -- there's
24 still an issue of toxicity.

25 Should that happen -- and of course

1 maybe there was some health studies that's been done,
2 I'm glad it has been done, because the question I have
3 is -- is that is it more the quantity of -- of the --
4 the amount of arsenic trioxide that's there or is the
5 quality, or -- or toxicity in this case, and that's an
6 issue for -- for -- in your risk ana -- that assessment
7 that you've done earlier?

8 I mean, would that -- and plus the other
9 question would be: Would that change today if you were
10 to do it again with a different group of people, maybe
11 more informed people out there? Because back when this
12 risk assessment was done I imagine a lot of people
13 didn't know much about arsenic, and -- and maybe today
14 we have more informed folks out there that have a
15 little bit more background in -- or more experts I
16 guess you would say that have more concerns with this.
17 Thank you.

18 THE CHAIRPERSON: Thank you. I'm
19 going to go back to the developer.

20 MR. DARYL HOCKLEY: The -- the first
21 question is -- is 1 percent of arsenic trioxide as --
22 as bad as a hundred percent? And the answer is it's --
23 it's -- 1 percent is -- is bad enough. You -- you
24 don't have to dissolve all of the arsenic trioxide. If
25 -- even if you left 1 percent of it in the ground you

1 would still have very badly contaminated groundwater
2 for tens of years or longer.

3 That -- that's -- and I think -- I think
4 my -- where I talked about that was in -- in removing
5 it from the ground, that it's possible to remove a lot
6 of it, but even if you leave 1 percent or 5 percent
7 behind you might as well have left it all there,
8 because it can contaminate the ground water that --
9 that much, so.

10 The second question: Would a -- would a
11 group today come to different conclusions? I don't
12 think so. I think actually the -- the general public,
13 or -- I mean, as always, there's a small -- a small
14 group of people who come to a lot of the meetings, and
15 I think that group of people in 2001, 2002, 2003 knew
16 as much as any group of people in the world about
17 arsenic at that time. We -- there -- there were a lot
18 of people to ask questions and a lot -- there were days
19 and days of discussions. So I think that was a very
20 well informed group, and I think if we had a similar
21 group now it would be as well informed but -- but not
22 any better; no, not the same, so.

23 THE CHAIRPERSON: Thank you. Danny
24 Bayha...?

25 MR. DANNY BAYHA: Thank you, Mr. Chair.

1 Thank you for your answers.

2 THE CHAIRPERSON: Okay. Thank you. I
3 want to just one (1) -- one (1) quick question, I
4 guess, and maybe just if you could help me clarify. In
5 your PowerPoint presentation, it talks about freeze and
6 underground, and it was raised a little bit earlier
7 about -- on page 58 and I believe it was alluded to by
8 Kevin O'Reilly.

9 But in your presentation it talks about
10 design improvements, and it talks about an important
11 part of engineering process, the information,
12 optimization, every step, et cetera.

13 In there, it talks about stakeholders' -
14 - stakeholders' input. Can you -- can you maybe
15 explain that a little bit more so that I understand
16 that -- that -- what you're saying there? Because what
17 you're saying is that, you know, the public had input
18 in this process. So maybe you could clarify that for
19 me.

20 MR. DARYL HOCKLEY: Yeah, we should
21 maybe get the slide up, if we could. But the -- the
22 slide talks about a different source. It -- it says:

23 "Design improvements are an important
24 part of the engineering process."

25 And then it says:

1 "New information."

2 And it -- it says new information can
3 come from -- well, it doesn't say this, but it has
4 three (3) sub-bullets: environmental assessment,
5 stakeholder input, and field test and engineering
6 studies. What -- what I intended there was -- was to
7 say that the reason why we -- we have design
8 improvements is that we continually get new
9 information, and new information comes from many
10 different sources.

11 Environmental assessment, when it's done
12 well, brings -- brings lots of new information. That
13 certainly happened here. We've learned a lot through
14 this process.

15 Stakeholder input throughout a design
16 process, we should always be open to stakeholder input.
17 There -- there is always people out there who know
18 something we don't know. And we do change designs on -
19 - on the basis of stakeholder input.

20 And then the third one up there is field
21 test and engineering studies, things like the FOS.
22 It's fifty-six (56) -- fifty (50) -- fifty-eight (58),
23 sorry. Yeah, there it is.

24 Yeah, so all I was trying to say is that
25 -- that we're open to new information from -- from all

1 those sources.

2 Some examples of stakeholder input, I --
3 I -- you -- I guess we could say the -- the concerns
4 about wetting are -- are good examples here. There was
5 a lot of stakeholder input in the 2001 to 2003. At one
6 (1) point, we -- we actually had narrowed the -- the
7 group of options down to four (4) options. And after
8 one (1) of the workshops, we went back and -- and we
9 realized, based on stakeholder input, we needed to look
10 at twelve (12) options, right. So -- so there has been
11 examples of it -- of it here.

12 But that wasn't really my point. My
13 point was, in general, there's always -- a design team
14 should always be open to new input from any of those
15 sources, and they should be prepared to improve the
16 design when -- when they get that input.

17 THE CHAIRPERSON: Okay. Thank you.
18 Because there's a perception -- or saying that there's
19 -- the public itself had input in your design. So
20 that's -- that's the way I read that. Can you -- I
21 guess the other question would be is that: We're at
22 this stage now where we're conducting an environment
23 assessment. And at this point, I guess, when I read
24 that going forward and talk about design improvements,
25 I think it's -- I'm a little concerned here that it's -

1 - you know, here we are at this late stage of the game
2 holding the public hearing on the process, and I'm not
3 sure if this -- you know, if this component is done
4 yet, and are we still seeking more public input on this
5 -- on the design.

6 MR. ADRIAN PARADIS: Adrian Paradis, on
7 behalf of the project team. Frozen bo -- block has
8 been designed. Now, there is refinements that the
9 freeze optimization, as well as the project going
10 forward will get the opportunity -- opportunity to
11 either dry versus wet inputs on all aspects of the
12 project will seek further -- further input.

13 So I guess the intention here is not to
14 say -- to speak to what has happened; it's to speak to
15 where -- a lot of where we're going, and where there is
16 opportunities for further refinements on how -- how the
17 project gets implemented, as well as what the final
18 makeup is.

19 The environmental assessment provides
20 one (1) avenue. The water licensing will provide
21 another avenue, as well as engagement outside of the
22 regulatory process. Environmental management system
23 working group with the parties will be one (1) of a
24 substantial area for future design refinements and
25 design considerations, as well as public input. It's a

1 continuum on -- of -- on the process. Thank you.

2 THE CHAIRPERSON: Okay. We're going to
3 continue on.

4

5 (BRIEF PAUSE)

6

7 THE CHAIRPERSON: Thank you. We're
8 going to continue on with the parties' presentation on
9 freeze and -- and underground. YKDFN has twenty (20)
10 minutes, so I just want to go to YKDFN. Do you want to
11 continue your presentation?

12 MR. RANDY FREEMAN: We have no
13 presentation at this time.

14 THE CHAIRPERSON: Thank you. I'm going
15 to go to Alternatives North presentation. You've got
16 fifteen (15) minutes. And also I guess there's a
17 shuttle going to be leaving to Dettah at 6:00, so we
18 would like to try and accommodate the Elders here. So
19 anyway, just to let you know.

20 Okay, Mr. O'Reilly?

21 MR. KEVIN O'REILLY: I'm just going to
22 get set up here.

23

24 PRESENTATION BY ALTERNATIVES NORTH - FREEZE AND

25 UNDERGROUND:

1 MR. KEVIN O'REILLY: Thanks, Mr. Chair.
2 It's Kevin O'Reilly here for Alternatives North. First
3 off, I want to thank the Board and its staff for
4 accommodating us here today. Joan Kuyek is going to
5 make a presentation on a study that was filed with the
6 Review Board back in July of 2011 on perpetual care
7 case studies and lessons learned.

8 Joan is teaching a law course at Queen's
9 University that requires her to be there on Fridays, so
10 we -- she could only be here for the first part of this
11 week. So we do thank you for accomodating her, and
12 allowing us to make this presentation today.

13 And her curriculum vitae, or resume, has
14 been filed with the re -- Review Board, so you -- you -
15 - if you want to check out Joan's experience and
16 background it's contained there. And I think, without
17 any further ado, Joan's just going to come up and make
18 the presentation, but thank you.

19 MS. JOAN KUYEK: Thank you very much
20 for this -- thank you very much for this opportunity to
21 present this -- a summary of the study to the panel.

22 When I was asked by Alternatives North
23 to undertake the case studies of perpetual care of
24 contaminated sites I was very interested in doing it
25 because I had a long history with Mining Watch Canada

1 and the National Orphaned and Abandoned Mines
2 Initiative looking at abandoned mines. And the whole
3 question of perpetual care was one that I thought
4 people might have done a lot of work on. But when I
5 started working on it, and asking other people for
6 examples, people I'd worked with in NOAMI, reading the
7 literature and so on, there weren't very many, because
8 the problem is really only about seventy (70) years
9 old. It really only started happening around the time
10 of the Second World War, about the time that the Giant
11 Mine was being built. Because it is such a recent
12 problem, finding any examples that are longer than that
13 time are -- is very difficult. After talking to people
14 from industry, government and activists, I chose nine
15 (9).

16 I'd like to say that during the process
17 of working on these case studies, it was extremely
18 painful. I kept looking for best practices and most of
19 them didn't exist. So of the -- I did -- of these nine
20 (9) case studies that were chosen, most of them are
21 mines or to do with nuclear waste. And one (1) of the
22 reasons I looked at nuclear waste is because, in fact,
23 there's a lot of similarities between the long term
24 problems with nuclear waste and arsenic. It's
25 tasteless, colourless, and odourless, and unless you

1 knew what you were dealing with, you wouldn't
2 necessarily protect yourself against it.

3 Seven (7) of the case studies are ex --
4 examples of long term contaminated sites. The last two
5 (2) are different. System accidents, which we'll talk
6 about in a bit -- I actually looked at systemic
7 failures of in -- in sort of amazing circumstances,
8 Three Mile Island and the Challenger explosion.

9 And the ninth looked at UNESCO world
10 heritage sites, and because, in fact, the only examples
11 we have of long term attempts to maintain sites are in
12 their archives: the pyramids, for example, that have
13 been around for about five thousand (5,000) years. And
14 if we're talking about trying to maintain this frozen
15 block, we are talking about at least five thousand
16 (5,000) years.

17 The questions that I asked about the
18 case studies were:

19 What the site is about and how it
20 came to be.

21 The role of the affected community or
22 communities in history and clean up
23 of the site? Because all of these
24 sites took place on the lands of
25 people either indigenous or settlers

1 who had not expected it to be there.

2 What organization was charged with
3 the clean up and ho -- the long term
4 care of the site and how it works?

5 And, of course, that's a whole
6 institutional and organizational
7 study of a number of different
8 agencies.

9 What are some of the problems that
10 have happened in the long term care
11 of the site to date? And again,
12 we're only talking within fifty (50)
13 years.

14 And what can we learn from the case?

15 I hope these are useful in trying to
16 assess the Developer's proposals for the Giant Mine.

17 The first of the studies was Love Canal,
18 which is near Niagara Falls, New York, just over the
19 border from Canada. It was an abandoned canal that was
20 used to store toxic waste from the Hooker Chem --
21 Electrochemical Company, over an eight (8) year period
22 in the 1940s.

23 People were assured that the storage was
24 secure, and during the 1950s a school and some houses
25 were built on the site. However, by 1958, parents were

1 raising concerns about their children's health. Over
2 the next twenty (20) years, the parents organized and
3 fought for clean-up.

4 But it was not until 1978, twenty (20)
5 years -- noteworthy -- later, when the site had become
6 an oozing mess, that something was done. An emergency
7 was declared and the clean up begun. It then took more
8 than sixteen (16) years to complete, and some toxins
9 will need to be stored on the site forever.

10 The uproar that the citizens managed to
11 create over Love Canal lead to the formation of
12 Superfund in 1980, the first and most effective
13 contaminated sites clean-up program in the world.
14 There is nothing like it anywhere else.

15 The case study highlights what Superfund
16 does about these long term sites in some detail. Once
17 the site is remediated and toxins are contained,
18 Superfund, which is a federal program, passes the
19 stites (sic) to the states and occasionally to the
20 tribes, to manage.

21 The most serious problem for Superfund
22 is funding. In the beginning it received substantial
23 federal funding, but it is now dependent on annual
24 appropriations from congress. That's partly because of
25 pressure from the large companies that were forced to

1 pay into the federal fund. The fund was worth \$6
2 billion when it was not renewed, and by 2003 that fund
3 was used up, and now clean ups are funded out of annual
4 appropriations from general revenues, and are subject
5 to the state of the American economy and politics.

6 The next one I looked at was the Hanford
7 Nuclear Reservation and the US Department of Energy.
8 That's a picture from 1960. That Hanford nuclear site
9 is over 500 square kilometres in size and straddles the
10 Columbian River and northeast Washington state.

11 In 1943 the area was selected as the
12 site for the manufacture of plutonium for the man --
13 Manhattan Project, the building of the nuclear bombs
14 that were dropped on Nagasaki and Hiroshima in Japan in
15 1945. The decision displaced the Yakima tribe and many
16 farmers, and brought in fifty thousand (50,000) new
17 residents to work on the project.

18 Over the years, the work at Hanford
19 expanded to include nuclear reactors and nuclear waste.
20 There were a number of releases of radioactive
21 materials that travelled as far away as Spokane. Most
22 of the people in the region didn't question what was
23 happening.

24 However, in 1982 a proposal was made to
25 bury high level nuclear waste at Hanford. For the

1 people living in and around the -- the area, this was
2 too much and they organized. And after 1986 they
3 managed to get a lot of document about the site
4 released from the government under the new Freedom of
5 Information Act. The documents confirmed their worse
6 suspicions: They had been being lied to for a number
7 of years.

8 In response, during the 1990s the
9 Department of Energy and -- the Environmental
10 Protection Agency set up a series of openness panels
11 with tribes and citizens groups to look at the issues
12 and try to come to an agreement what to do. There's a
13 much full -- fuller description of these panels in the
14 bigger document.

15 And in 2000, the Government
16 Accountability Office made a number of excellent
17 recommendations on the role of citizen involvement in
18 the long term management of the site. There were three
19 (3) key challenges with transitioning from clean-up to
20 long term stewardship, the accountability office said.
21 Remedy design and regulation were usually inadequate
22 for long term processes.

23 When establishing goals for clean-up,
24 the focus is on accelerating clean-up in the short
25 term, and not on long term stewardship effectiveness,

1 which often increases risk for future generations. And
2 the remediator often operates in a social environment
3 of public distrust, but community trust is needed to
4 undertake long term stewardship effectively.

5 The result of -- of the work that was
6 done during this time was the creation of a office of
7 legacy management within the Department of Energy,
8 which is charged with the managing of long term
9 perpetual care site. It assumes controls will always
10 fail and attempts to make sure multiple layers of
11 monitoring and protection are in place. It works with
12 tribes to try to develop defence in depth, and it
13 investigates a way to make sure data will be in place
14 for future generations. It is specifically organized
15 to manage these spi -- sites and respond to
16 emergencies.

17 The long-term stewardship planning by DO
18 -- DOE is based on an understanding that over time
19 institutional and engineering controls will fail. This
20 is from their own documents. Engineering failures may
21 be caused by seismic, climatic, or hydrological changes
22 in the environment. They may be caused by inadequate
23 design, process errors, or inability to deal with
24 entropy.

25 Institutional controls, fencing and --

1 and zoning and so on, may fail because of lack of
2 oversight, inadequate public disclosure, information
3 management, site security, record keeping, and a myriad
4 of other factors. The ability to respond effectively
5 when and if these failures happen is key, they say, to
6 long-term stewardship.

7 The next pros -- case I looked at was
8 the Zortman and Landusky Mines. I just looked at how a
9 huge abandoned mine complex in Montana was proceeding.
10 It's built on the traditional lands of the Fort Belknap
11 Tribe by a Canadian company, Pegasus Gold Corporation,
12 in the 1980s. The mine complex consists of a number of
13 open pit gold and silver mines which used heat leaching
14 with cyanide.

15 From 1979 to 1998, when the company
16 filed for bankruptcy, the mine had many accidents,
17 leaks, and spills and had developed a serious acid mine
18 drainage problem, despite previous assurances that it
19 would not. A number of lawsuits in that period were
20 filed from governments in Fort -- from Fort Belknap to
21 try to force the company to deal with the problems, but
22 it did little to change the company's behaviour. After
23 the mines closed in 1998 the company abandoned the site
24 and toxic discharges continued.

25 Some of the key points from that case

1 study are as follows. The remediation at Zortman-
2 Landusky would be unlikely to have happened without the
3 sustained advocacy and legal battles undertaken by the
4 Fort Belknap indigenous people. Not only did they
5 oppose the -- the mines in the first place, but they
6 were forced when they closed to continue to fight to
7 get everything done.

8 The huge cost to taxpayers to remediate
9 these mines and then manage their wastes and perpetuity
10 has focussed attention on the adequacy of the financial
11 assurance that was put up by the company. Annual
12 appropriations from government are an inadequate means
13 by which to ensure costs in perpetuity.

14 There are some very serious problems
15 with the ways in which the long-term financial security
16 is -- has been calculated, using discounting and net
17 present value, for example, as they assume very long-
18 term continuing economic growth, take no account of
19 ecological destruction, and unfairly minimize the cost
20 to future generations if and when something goes wrong.

21 And the other one was: The accuracy of
22 water quality predictions and the effectiveness of
23 mitigation measures, is always questionable. Real
24 world mer -- emergencies will continue and occur during
25 and after remediation.

1 Coming closer to home, I looked at
2 uranium tailings and the management of uranium tailings
3 in Saskatchewan. Saskatchewan has the richest de --
4 uranium deposits in the world, but their tailings and
5 waste rock are also dangerously radioactive and will
6 have to be managed forever. The case study looked at
7 the cleanup process at old mine and mill sites in the
8 region of Uranium City on Lake Athabasca and --
9 processes in Canada and internationally to deal with
10 uranium tailings.

11 In 2003, Ca -- Saskatchewan created the
12 Institutional Control Management Plan with a view to
13 eventually letting the big uranium mining companies off
14 the hook for long-term care of their uranium sites.
15 The ICP is the only regulation of its kind in Canada.
16 In fact, it's one of the few in North America. And it
17 sets up a registry of all sites that require perpetual
18 care and two (2) funds, the Monitoring and Maintenance
19 Fund and the Unforeseen Events Fund. Both funds are
20 built out of con -- contributions from previous mine
21 owners, and conditions are set for acceptance at the
22 site. So far only a few uranium sites have been
23 accepted, none of them with tailings.

24 The case study also notes three (3)
25 things. The consultation process that was undertaken

1 around these -- around nuclear sites in Saskatchewan
2 has been exhausting for First Nations and citizens
3 groups. And because of the exhausting nature of it, be
4 -- it's all on government schedules and industry
5 schedules and not on the schedules of First Nations, it
6 creates problems with participation.

7 The engineer -- according to the Inte --
8 International Atomic Energy Association, engineering
9 approaches to remediation of sites like this should be
10 based on a thousand year timeframe, not twenty-five
11 (25), fifty (50) or a hundred years. And I -- the
12 International Atomic Energy Association also says that
13 designs should have to work with nature in the long-
14 term management of the site in order to be effective.

15 The next one I looked at was the Faro
16 Mine. Faro is in -- is a lead-zinc mine in the Yukon
17 that operated under various owners from 1968 to 1998,
18 thirty (30) years. When it closed it left behind a
19 looming toxic disaster and a reclamation security of
20 only \$14 million. It is estimated it will cost at
21 least 700 million to remediate this site and it will
22 have to be looked after forever. The mine is on the
23 land of the Ross River Dene and leach -- leachate from
24 the mine into the Pelly River will also affect other
25 First Nations downstream. There is urgency to reclaim

1 this site, as the mine is already generating an acid
2 plume.

3 Public awareness and effective
4 government action on orphaned and abandoned mines is
5 fairly recent. It wasn't until 2003 that community and
6 public demands for action secured enough funding
7 federally to set up the Federal Contaminated Sites
8 Action Plan, FCSAP. FCSAP has been working to
9 remediate this site as it has with Giant Mine and other
10 mines in the North.

11 The case study looks at the role of
12 First Nations in the Faro Mine remediation process and
13 how the management of the site has been working. It
14 also reviews the comments of the independent peer
15 review panel which was set up during the Faro planning.

16 There are a few key findings from the
17 case study. The original lump sum, the 3.5 billion
18 that was allocated by the federal government ran out
19 and it -- it's now subject to annual appropriations.
20 There are serious concerns about long-term funding for
21 the work. The engineered covers plan for Faro will
22 likely need to be replaced at some time in the future.
23 They won't last forever.

24 Ensuring trained personnel,
25 transportation systems, essential material supplies,

1 and power supply for the site over the long-term will
2 be difficult. And those are things that need to be
3 thought of in case the urban area, that's Yellowknife,
4 for example, goes. And figuring out and establishing
5 the roles of various interests and monitoring and
6 emergency response is extremely important, because the
7 last thing you need if there's an emergency is a
8 jurisdictional dispute.

9 The next one I -- I looked at is -- was
10 the Sahtu Dene in Port Uranium (sic). And that -- that
11 study -- I'm not going to read this because of the time
12 here, but there -- there's a very good quote from Peter
13 van Wyck's book, the Highway of the Atom. And just the
14 first line:

15 "It is as though our senses, our very
16 own perception, had been
17 expropriated, rendered useless and
18 vestigial in the face of threats that
19 cannot be seen, heard, smelled,
20 tasted, or touched. The appeal to
21 the eyewitness comes to have little
22 value here."

23 And he ends by saying:

24 "Thresholds and limits obscure the
25 fact that they are foremost creatures

1 of politics and not the test tube,
2 objects of persuasion not
3 measurement."

4 More than fifty (50) years after their
5 exposure to the radio nucleides from Port Radium, the
6 Sahtu Dene learned of their exposure. Because those
7 toxins couldn't be seen, smelled, or tasted,
8 communities became reliant on science to reveal that
9 contamination. The clue in Port Radium was that people
10 were dying. The traditional means of protecting
11 oneself is unheeded.

12 In the Canad -- Canada-Deline Uranium
13 Table was formed to deal with the problems. It was
14 funded because of the -- the strong advocacy from the
15 community and -- and -- and probably one (1) member of
16 the federal government at the time. It was funded so
17 that people could start undertaking some -- some
18 studies and involve the community in the work. And as
19 a result, healing workshops worked to protect the
20 watershed and other things flowed from the work that
21 people were doing.

22 So it -- it would be useful for the
23 panel, if they're not already aware of it, to take a
24 look at what happened at Port Radium.

25 It should be noted that although people

1 had asked for an apology and compensation they were not
2 given that. And there were problems also with the fact
3 finder who was sent out to look at the relationship
4 between what happened to the Sahtu Dene and the work.
5 There were not records. And the records that they
6 wanted to access at the National Archives were
7 considered off limits, because Cameco had owned the
8 site and said that they were the owner of the archive.

9 The Waste Isolation Pilot Project was
10 another one I looked at in terms of nuclear waste
11 management. And I looked at nuclear waste management
12 in Canada and in the United States, and actually in
13 Germany.

14 The Waste Isolation Pilot Project is --
15 is located in Carlsbad, New Mexico, and uses a huge
16 salt deposit to contain high level waste, but not spent
17 fuel. Panels of various experts had been meeting to
18 determine how people in the deep future would be kept
19 from disturbing the site. And they went through a
20 number of very detailed scenarios, including one (1)
21 where somebody was trying to mine the site. And this
22 site does exist in a place where there's a lot of
23 prospecting going on.

24 The study recounts, amongst other
25 things, some of their deliberations about markers --

1 whoops -- yeah, markers that would tell people who did
2 not speak any language known today, to stay away. Most
3 of the markers we know for ol -- ancient sites, say
4 "look at me". This study recounts how the problems
5 might exist of trying to tell people to go away from
6 the site and -- and -- instead of going there.

7 It also looks at some of the thinking
8 around early warning systems and monitoring and how the
9 independent oversight might work, and about how
10 organizations that are in charge of these sites would
11 be structured.

12 There's a few key points from this
13 study. It's impossible to predict the effectiveness of
14 contaminated waste isolation facilities centuries and
15 millennia into the future. No human-made structure has
16 shown itself to be effective forever. Everything
17 chemically changes, leaks, or fractures, and attempts
18 to contain salt -- transuranic wa -- waste in salt
19 mines to date, have been fraught with problems and
20 misjudgments. In Germany, there's two (2) attempts to
21 put nuclear waste in salt mines that have ended up
22 being pretty colossal failures.

23 The money and resources to deal with
24 contaminated sites are politically determined and flow
25 only in response to sustained citizen advocacy. Funds

1 for effective adaptive management are often subject to
2 political whim.

3 And for contaminated sites that are
4 invisible to the senses, effective go-away markers may
5 be impossible to design. Signs and markers cannot be
6 assured to operate away from human practice and memory.

7 And just to finish, the Systems
8 Management Study, there were a few key learnings from
9 looking at Three Mile Island and the Challenger
10 incident and then reading a lot of the literature
11 that's available on -- on these kinds of failure.

12 And the first thing that most of the
13 literature does, and those two (2) studies do, is to
14 say that human error is really linked not to -- is --
15 is a result of the kinds of organizations for which
16 people work. So when we blame these problems on human
17 error, it's usually because there's something wrong
18 with the way the organization is structured. And so
19 it's important to look at organizations that are
20 managing them, their structure, culture and operations,
21 in order to understand how technological risk will be
22 managed.

23 Although we assume humans will make
24 rational decisions and we all try to do it, we usually
25 don't. And this can be a result of our ignorance or

1 self-interest. But it can also be the result of
2 expectations imposed by organizations that conflict
3 with safety, of the way labour is divided up, of
4 routinization (phonetic), of ideological
5 indoctrination, or of an unresponsive authority
6 structure.

7 In all the case studies, there --
8 there's -- there were forty (40) lessons learned that
9 are listed in the document that we submitted. One (1)
10 was about the community near the site. And that -- the
11 first thing that I really realized, just to summarize
12 it, was that there were people whose lands these sites
13 were built on, and invariably those people were opposed
14 to what was going on. They endured it while it was
15 there. Most of them didn't gain anything from it. And
16 at the end of it, they were responsible for fighting to
17 try and get it cleaned up. It usually took at least
18 twenty (20) years, maybe longer.

19 And when it was cleaned up, the rest of
20 the people who had benefited from the -- the toxic
21 contamination in the first place, left, and the people
22 who had been there in the first place were expected to
23 become guardians of the site forever, usually without
24 resources, and usually in a marginalized way so that
25 they couldn't marshal the resources they needed, or

1 have the political power to marshal the resources they
2 needed, if and when something went wrong.

3 Keeping people away, institutional
4 controls are dependent on culture. It's dependent on
5 keeping the fence together, knowing you couldn't go
6 there, building laws and regulations. And unless
7 that's integrated into some form that's going to last
8 over a hundred, two hundred (200), three hundred (300),
9 longer, years, they won't work.

10 So thinking about what kind of
11 institutional controls there will be is extremely
12 important. Knowing who's in charge, managing the site
13 over the long haul, is crucial. You don't want
14 jurisdictional battles. How the records are kept and
15 accessing them.

16 The DOE is talking about putting the
17 records of the sites in libraries all over the United
18 States. They have a website that anybody can access.
19 Keeping records and accessing them in Canada is much
20 more difficult. Freedom of infor -- freedom of
21 information laws are difficult here. Access to the
22 national archives is difficult.

23 Electronic records tend to become
24 obsolete very quickly, and paper records often
25 disappear. Anybody looking at abandoned mines will

1 know what happened to a lot of the old abandoned mine
2 records in places like Ontario: flooding, fires.

3 Inspections and data analysis are
4 crucial. But it's not just enough to have inspections
5 and data analysis; there needs to be the ability to
6 respond. Maintenance and making things better. Again,
7 having the ability to look at new research, to invest
8 in new research to find ways to do things better.

9 Responding to slow leaks, emergencies,
10 and failures. A lot of the problems are often slow
11 leaks, not an emergency, and that piles up over time.
12 The money to pay for it is -- there's a lot of
13 literature that's reviewed in here on trust funds and
14 on annual appropriations, how those are calculated.

15 There's some very good work done on
16 critiquing how trust funds are calculated. And, of
17 course, avoiding corruption, because once you have a
18 fund sitting somewhere, corruption becomes an issue.
19 And there's no reason to think that this country will
20 be immune to that for the next two thousand (2,000)
21 years.

22 Protecting future generations. This is
23 fundamentally a question of inter-generational justice.
24 And creating guardians for the future. And there's
25 some good work by the International Indigenous Re --

1 Resource Management Institute on how that can be done.

2 It's discussed in the paper.

3 And using what we learned and making new
4 plans and making sure that the information that people
5 have got is available to our -- to ourselves, to people
6 around the world and to new generations. Thank you.

7 MR. KEVIN O'REILLY: Mr. Chair, it's
8 Kevin O'Reilly here. I do want to thank Joan for her
9 presentation. We think that it was important for you
10 to hear this actually earlier in the -- in the session
11 as well, because we think that it's an important lens
12 to keep in mind as we move through some of the
13 technical issues.

14 But we're at your pleasure now. I have
15 a presentation on the -- the frozen block issue. And
16 I'm not sure if you'd like to hear that now or if you
17 want to wait until tomorrow; whatever you would like to
18 do. Thanks.

19

20 QUESTION PERIOD:

21 THE CHAIRPERSON: Okay. I guess,
22 Kevin, thank you for your presentation. And there's --
23 again, there's a process. So maybe what we could do is
24 we could just fit you in first thing tomorrow morning.

25 I think tomorrow morning we're supposed

1 to start at nine o'clock. Maybe what we could do is we
2 could start at 8:30. And then, that way here, we could
3 fit -- make it work. And if it's okay with the
4 Developer and the parties, if we could start at 8:30
5 tomorrow morning. And that way, here we can make it
6 work.

7 Having said that, I guess the -- I was
8 going to go -- quickly go through the -- there may be
9 some questions from the parties in regards to the
10 presentation. So I'll go to the top of the list.

11 Is there any questions from the
12 Developer on the presentation made by the Alternatives
13 North?

14

15 (BRIEF PAUSE)

16

17 MR. MIKE NAHIR: Thank you, Mr. Chair.
18 No, not at this time. Thanks.

19 THE CHAIRPERSON: Thank you. The City
20 of Yellowknife...? I don't see anybody.

21 I'm going to go to the Yellowknives Dene
22 First Nation? Mr. Freeman has left.

23 I'm going to go to the North Slave Metis
24 Alliance.

25 Environment Canada, any questions for

1 the Alternatives North on their presentation? I don't
2 see nobody. No, I see people in the back and they say,
3 no.

4 The Department of Fisheries and
5 Oceans...?

6 MS. BEV ROSS: No questions, Mr. Chair.

7 THE CHAIRPERSON: Okay, no questions,
8 for the record, from Department of Fisheries and
9 Oceans. Board technical advisers, any questions for
10 the Alternatives North?

11 MR. JOHN DONIHEE: John Donihee, Mr.
12 Chairman. I -- I don't believe there are any technical
13 questions to the presentation. I -- I have one (1)
14 question, sir, if I may?

15 THE CHAIRPERSON: Please proceed.

16 MR. JOHN DONIHEE: Thank you. Thank
17 you for the presentation. And I -- you drew out, I
18 think, some important lessons from each of the case
19 studies that you looked at, but -- but you stopped
20 short of actually providing some specific
21 recommendations with respect to the project that's in
22 front of the Board.

23 Do I anticipate that they'll come later
24 from A1 -- Alternatives North, or are you in a position
25 to provide them right now?

1 THE CHAIRPERSON: Thank you, Mr.
2 Donihee. I'm going to go back to Alternatives North,
3 Kevin O'Reilly.

4 MR. KEVIN O'REILLY: Thanks. It's
5 Kevin O'Reilly with Alternatives North. Yes, we do.
6 We have a presentation on perpetual care that we will
7 provide on Thursday that builds on some of Joan's work
8 and some other examples that we became aware of during
9 the course of the EA. And that background information
10 was filed with the Board, so we do have some specific
11 things to say about this project on Thursday of this
12 week. And we'll be happy to chat further about it
13 then. Thanks.

14 THE CHAIRPERSON: Thank you. Mr.
15 Donihee...?

16 MR. JOHN DONIHEE: Thank you, Mr.
17 Chairman, I'll anticipate them later, then. That --
18 that's it.

19 THE CHAIRPERSON: Thank you. Board
20 staff...?

21 MR. ALAN EHRLICH: No questions from
22 Board staff, Mr. Chair.

23 THE CHAIRPERSON: Okay. Thank you. I
24 want to go to Board counsel. Or, I guess you -- you
25 asked that already. Board members...? I want to go to

1 my far right, Mr. Danny Bayha.

2 MR. DANNY BAYHA: Yeah, Mr. Chair. I
3 just had one (1) question. I would like to know, in
4 your -- in your study, have you noticed that -- in
5 these case studies you've mentioned on the
6 presentation, have you noted that the Developer used
7 any of those case studies lessons learned in their
8 design? Thank you.

9 THE CHAIRPERSON: Thank you.
10 Alternatives North...?

11 MS. JOAN KUYEK: Joan Kuyek, for the
12 record. Well, they have -- the Developer has filed a -
13 - a document on perpetual care. I think that's a
14 fairly recent concern of the Developer. I know that
15 the -- the urgency has been around trying to get the
16 arsenic contained quickly and effectively.

17 And so the document that has been filed
18 around perpetual care does use some of the language
19 that we've used. My perception of it, on -- on reading
20 it, is that it's lacking in -- in specifics. And one
21 of the problems that I found in doing the case studies
22 is that there's -- it's easy to rhetorically support
23 work around this. There's a lot of good language. But
24 when it comes to actually delivering on it, it requires
25 fairly tough and binding agreements and regulations.

1 And -- and certainly in the Hanford
2 site, that was a -- a major concern -- I think it was,
3 actually, in Port Radium too -- that things have to be
4 nailed down. And if they're not, then they tend to
5 float off with the next change of administration or --
6 or the changing of the personalities. That's the --
7 the best I can do. I haven't read all of the
8 Developer's submissions.

9 THE CHAIRPERSON: Thank you. Board
10 member Danny Bayha...?

11 MR. DANNY BAYHA: Thank you for your
12 answer. Thank you. No further questions, Chair.

13 THE CHAIRPERSON: Thank you. Board
14 member Rachel Crapeau...?

15 MS. RACHEL CRAPEAU: Thank you. Thank
16 you for your presentation. No question.

17 THE CHAIRPERSON: Thank you. Board
18 member Rachel -- sorry, Richard Mercredi...?

19 MR. RICHARD MERCREDI: Thank you for
20 your presentation. No questions, thank you.

21 THE CHAIRPERSON: Thank you. Board
22 member James Wah-Shee...?

23 MR. JAMES WAH-SHEE: Thank you, Mr.
24 Chair. I have no questions. Thank you.

25 THE CHAIRPERSON: Thank you. Board

1 member Percy Hardisty...?

2 MR. PERCY HARDISTY: Mahsi, Mr. Chair.

3 I have no questions.

4 THE CHAIRPERSON: Thank you. Board

5 member John Curran...?

6 MR. JOHN CURRAN: Thank you, Mr.

7 Chairman. A question specifically for Joan. I'm just

8 wondering, the -- the Developers put forward an

9 independent monitoring plan, or a commitment for one.

10 And I'm just wondering how you feel that

11 that plan would work to mitigate some of your concerns

12 on perpetual care?

13 THE CHAIRPERSON: Thank you. Joan...?

14 MS. JOAN KUYEK: If there was indeed an

15 independent monitoring and oversight committee, it

16 would make a big difference, I think, over the long-

17 term. For one thing, it would enable the people most

18 affected to be able -- to be informed about what's going

19 on and to have a voice in what was being done.

20 One (1) of the things I'd like to say is

21 that there's a big difference between input and having

22 a voice in what actually happens. And -- and so the

23 nature of that independent monitoring agency, or

24 whatever, is extremely important. And it needs to be

25 spelled out in some detail, and commitments need to be

1 made in a binding form to do it.

2 There were -- certainly that was again
3 the lesson from Hanford. It was the lesson from
4 Zortman-Landusky. There were a number of commitments
5 made to the people of Fort Belknap that weren't
6 followed through, and they ended up in the courts. But
7 at least they could go to the courts because there were
8 binding agreements.

9 And I think that it's -- what -- what
10 I'm concerned about is the lack of those binding
11 agreements and truly independent oversight.

12 THE CHAIRPERSON: Thank you. John
13 Curran...?

14 MR. JOHN CURRAN: I think I'm good, Mr.
15 Chairman.

16 THE CHAIRPERSON: Thank you. I guess
17 that concludes the questions from -- for now for --
18 next I have on the agenda is if there's any public
19 comments, anybody here...?

20

21 (BRIEF PAUSE)

22

23 THE CHAIRPERSON: If not, we have
24 other -- one evening, I believe tomorrow and Wednesday
25 we -- we -- we're going to run into the...

1 (BRIEF PAUSE)

2

3 THE CHAIRPERSON: Okay. So tomorrow
4 we -- as well we have an evening session here that
5 we'll be able to talk to the public from 7:00 to 9:30,
6 and also we're going to be out in Dettah as well on
7 Sunday -- Wednesday evening, again, from 7:00 to 9:30
8 as well. So it gives everybody an opportunity to -- to
9 come out and express their issues and concerns.

10 So that -- that's it for now. We're
11 going to come back tomorrow morning at 8:30, like we
12 said, so we can finish off one (1) item that we didn't
13 get a chance to do. But maybe what I'll do is I'd like
14 to get an Elder to come up to do a closing prayer.

15 Maybe Chief Sangris, did you want to
16 select an Elder?

17

18 (CLOSING PRAYER)

19

20 THE CHAIRPERSON: Thank you. That was
21 Peter Sangris, an Elder from Dettah. Masi for doing
22 the prayer. And we'll see you tomorrow morning at
23 8:30.

24

25 --- Upon recessing at 5:06 p.m.

1 Certified correct,

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8 Lorraine Douglas, Ms.

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