

NUNAVUT WATER BOARD

Public Hearing
Type "A" Water Licence
2AM-BOS---- New Application
2AM-DOH1323 Amendment Application

HEARING

VOLUME 1

Cambridge Bay, Nunavut

October 24, 2018

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1 Proceedings taken at Cambridge Bay, Nunavut

2

3 October 24, 2018

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5 NUNAVUT WATER BOARD

6 L. Toomasie Chair of Hearing

7 R. Mrazek Panel Member

8 M. Nartok Panel Member

9

10 NUNAVUT WATER BOARD STAFF

11 S. Autut Executive Director

12 K. Kharatyan Director of Technical Services

13 B. Kogvik Director of Board
Administration and Communication

14 D. Donald Technical Advisor

15 I. Porter Licensing Administrator

16 T. Meadows Legal Counsel (Meadows Law)

17

18

19 APPLICANT

20 TMAC Resources Inc.

21 O. Curran Vice President of Environmental
Affairs

22

23 M. Rykaart Practice Leader and Principal
Geotechnical Engineer, SRK
Consulting

24

25 M. Henry Technical Director, ERM
Poitiers

26 C. Kowbel Legal Counsel

1 INTERVENERS

2 Kitikmeot Inuit Association

3 J. Roesch Senior Hope Bay Project
4 Officer

5 J. Donihee Legal Counsel

6 Crown-Indigenous Relations and Northern Affairs
Canada

7 S. Dewar Director of Resource Management

8 I. Parsons Manager of Water Resources

9 Environment and Climate Change Canada

10 B. Summerfield Senior Environmental
11 Assessment Coordinator

12 M. Tobin Water Quality Specialist

13 Fisheries and Oceans Canada

14 A. McLellan Fisheries Biologist

15 M. Janowicz Senior Fisheries Protection
16 Program Biologist

17 INTERPRETERS/TRANSLATORS

18 B. Kogvik Inuktitut Translator

19 H. Ohokannoak Inuktitut Translator

20 K. Schumann, CSR(A) Official Court Reporter

21
22 W. Nicoll Sound Technician

23 _____

24

25

26

1 (PROCEEDINGS COMMENCED AT 3:44 PM)

2 THE CHAIR: Okay, thank you everyone.

3 Before we proceed with the public hearing on this file,
4 I'd like to call Henry Ohokannoak from Cambridge Bay to
5 have opening prayer. Henry.

6 (OPENING PRAYER)

7 Opening Remarks by the Chair

8 THE CHAIR: Qujannamiik, Henry, thank you.

9 Good afternoon, and welcome to the public hearing
10 for the Type "A" Water Licence application submitted by
11 TMAC Resources Inc., seeking authorization for the use
12 of water and deposit of waste associated with a mining
13 undertaking for the Phase 2 Hope Bay Belt Project.

14 We got a late start because our plane did not make
15 it yesterday, and we'll break at 5:30 and have our
16 evening session at 7 tonight as planned.

17 My name is Lootie Toomasie, and I'm the Chair of
18 the Nunavut Water Board and the Hearing Chair for
19 today's public hearing.

20 On behalf of the Nunavut Water Board, I welcome
21 you to Cambridge Bay.

22 Now, to provide some background and set the stage
23 for the hearing, the Nunavut Water Board (which I shall
24 call, refer to it as the Board or the NWB) is an
25 institution of public government created under Article
26 13 of the Nunavut Agreement. The NWB is responsible

1 for the use, management, and regulation of freshwater
2 in the Nunavut settlement area.

3 The purpose of this public hearing is to review
4 the applications filed by TMAC Resources Inc. (I may
5 refer to the company as "TMAC" or the "Applicant"
6 throughout this hearing) for a new Type "A" Water
7 Licence and amendments to the existing Type "A" Water
8 Licence 2AM-DOH1323, to authorize the water uses and
9 waste deposits associated with gold mining at the
10 Madrid and Boston deposits as described in the Phase 2
11 Hope Bay Belt Project proposal assessed by the Nunavut
12 Impact Review Board and approved to proceed to
13 licensing by the Ministers of Northern Affairs and
14 Crown-Indigenous Relations [sic] on October 12, 2018.
15 The project is located approximately 125 kilometres
16 from Cambridge Bay and 150 kilometres northeast of
17 Omingmaktok (Bay Chimo), within the Kitikmeot Region of
18 Nunavut.

19 As permitted under the Nunavut Agreement and
20 Nunavut Waters and Nunavut Surface Rights Tribunal Act,
21 the Board has delegated its power to dispose of all
22 matters related to the processing of this applications
23 for Type "A" Licences 2AM-BOS---- and 2AM-DOH1323,
24 including the conduct of this public hearing to a Panel
25 of three Board Members (which is referred to as the
26 "Doris North Panel").

1 I'll be the chairing the Doris North Panel, and
2 with me today are the other Panel Members: Ross Mrazek
3 is on my right and to my left is Makabe Nartok.

4 Several Staff members, who have contributed to the
5 NWB's administration and technical reviews of the
6 applications, are present along with legal counsel to
7 the Board, and I will introduce the individuals in
8 attendance. Please wave when I call your name so that
9 everyone will know who you are: Stephanie Autut,
10 Executive Director; Karén Kharatyan -- I never
11 pronounce it properly, I'm sorry -- Director of
12 Technical Services; Ben Kogvik, Director of Board
13 Administration and Communication -- he's at the back at
14 the interpreter translation; Derek Donald, Technical
15 Advisor; Ida Porter, Licensing Administrator, and she
16 should be at the back at that white table by the
17 entrance area; and Teresa Meadows, Meadows Law, Legal
18 Counsel to the Board.

19 In addition, we have two interpreters available
20 for simultaneous interpretation: Ben Kogvik, in-house
21 interpreter to the Board, and Henry Ohokannoak from
22 Cambridge Bay is also interpreting in this setting.

23 For audio support, William Nicoll, from the
24 Nunavut Impact Review Board (or NIRB) is helping us out
25 with the audio system. If you experience any
26 difficulties with your headsets, William is able to

1 help and provide assistance.

2 To ensure an accurate record of this proceeding is
3 kept, we have with us a Court Reporter, Karoline
4 Schumann, at the back, from Dicta Court Reporting Inc.
5 To assist Karoline and our interpreters, I ask that all
6 parties please state their names prior to speaking,
7 speak clearly and at a reasonable pace, and avoid using
8 abbreviations.

9 Before I move on to an overview of these
10 applications and what to expect today during this
11 public hearing, there are some important housekeeping
12 items for everyone here.

13 First, as indicated earlier, there is
14 interpretation available throughout the hearing in
15 English and Inuinnaqtun. Interpretation also can be
16 available in Inuktitut if requested. Earpieces can be
17 obtained from the table located just by the door as you
18 enter this room. Channel zero broadcasts English,
19 while Channel 2 broadcasts Inuktitut.

20 Second, the Board appreciates everyone, including
21 the Applicant, interveners, and members of the public,
22 sign in on the sheets located at the table as you come
23 in, on the white table over there by the entrance.
24 This is an important record of those who are
25 participating in the hearing, and we appreciate your
26 help in making sure it is complete. The sign-in sheets

1 will be appended to the Board's record of proceedings
2 and decision report, so please assist the Board by
3 filling them in legibly and accurately.

4 Thirdly, the agendas for the public hearing and
5 the community session are available at the back; please
6 pick one up and follow along with us as we proceed.

7 The washrooms are located at the entrance area in
8 this building. There will be coffee, tea, and snacks
9 brought in throughout the hearing during breaks, and
10 you are welcome to help yourself from the table along
11 the wall or at the back there during the public setting
12 here -- the public hearing setting.

13 I would also like to remind everyone to please
14 turn off your cell phones or put them on silent before
15 we begin. I try to check mine. Yeah, I did it.

16 Finally, to assist both our court reporter and our
17 interpreters, please wait to have a microphone before
18 you speak, then state your name, speak clearly and
19 slowly, and avoid the use of abbreviations. We
20 appreciate your assistance in making sure your comments
21 are recorded and the Board's record of proceedings is
22 accurate and complete.

23 For the benefit of all in attendance today, I
24 would just like to remind parties that the Board
25 appreciates parties being respectful of the Board's
26 decision-making process by limiting their comments to

1 the public or the media about what the Board is going
2 to do, either procedurally or in terms of the final
3 result during the public hearing and afterward before
4 the Board's public hearing decision is released.

5 Since the Board cannot comment on pending matters
6 either by confirming or denying accuracy of statements
7 by others to the media, the Board would appreciate if
8 all parties refrain from any such comments that may
9 imply a certain action or decision by the Board.

10 Board Members are not to discuss the hearing or
11 the matters before the Board with any of the parties or
12 the media.

13 If you have questions regarding the Board and its
14 practices or procedures, please speak with the
15 Executive Director, and she will assist you.

16 Prior to identifying and introducing all of the
17 parties in attendance today, I will provide a brief
18 history of the applications that are before the Board.

19 Since the project falls outside an area with an
20 approved Land Use Plan in effect, the Nunavut Planning
21 Commission was not required to conduct a land use
22 conformity assessment. NPC also determined that the
23 project does not belong to the class of works or
24 activities exempt from screening by the NIRB, as set
25 out in the Nunavut Agreement and, therefore, forwarded
26 the project proposal to the NIRB for screening and

1 impact assessment.

2 Following the NIRB's completion of the assessment
3 of the potential ecosystemic and socio-economic effects
4 of the Phase 2 Hope Bay Belt Project, on June 26, 2018,
5 the NIRB issued a positive final hearing decision,
6 recommending that the project should be allowed to
7 proceed into the regulatory phase. On October 12,
8 2018, the Ministers of Northern Affairs and
9 Crown-Indigenous Relations approved the NIRB's final
10 hearing report and recommendations, and the project was
11 authorized to proceed to the licensing stage. The NIRB
12 is expected to issue a new Project Certificate to guide
13 the gold mining undertaking at the Boston site and
14 amendments to the existing NIRB Project Certificate
15 No. 003 for the Doris North Project to guide the mining
16 activities at the North and South Madrid sites and the
17 use of the Doris North infrastructure to support the
18 additional processing of ore from the Madrid and Boston
19 deposits.

20 The applications that are currently before the
21 Board were received by the Board on December 20, 2017,
22 from TMAC Resources Inc. The applications request that
23 the Board grant a new Type "A" Water Licence
24 No. 2AM-BOS---- and Amendment No. 2 to Type "A" Water
25 Licence 2AM-DOH1323 to TMAC. Together these licences
26 would authorize the use of approximately 2.5 million

1 cubic metres of freshwater annually and allow for
2 deposits of waste associated with the gold mining
3 undertakings at the Madrid and Boston deposits along
4 Hope Bay Belt. TMAC proposes to extract the water used
5 by the project from Doris Lake, Windy Lake, and
6 Aimaokatalok Lake.

7 The Applicant has requested a 25-year term for
8 both 2AM-BOS---- and Amendment No. 2 to 2AM-DOH1323.
9 These will allow for the expansion, construction, and
10 operation of mining-related facilities at the Doris
11 North, Madrid North, Madrid South, and Boston mine
12 sites. In addition, a marine cargo dock will be
13 constructed in Roberts Bay, and a 51-kilometre
14 all-weather road will be constructed south from the
15 existing Doris North site to access the Boston mine
16 site.

17 The following proposed activities will be common
18 to all sites:

- 19 • underground mining and surface crown pillar
20 recovery at the Madrid and Boston sites;
- 21 • construction and operation of maintenance
22 facilities, explosives storage facilities,
23 laydown areas, roads, helipads, and quarries;
- 24 • storage of ore and waste rock on dedicated
25 pads; and
- 26 • construction of runoff-water management

1 facilities (including contact water ponds).

2 Proposed activities at the Doris North site

3 including the following:

- 4 • expansion of accommodation to 400-person
- 5 capacity;
- 6 • increasing the capacity for sub-aerial tailings
- 7 deposition to 18 million tonnes at the existing
- 8 tailings impoundment area;
- 9 • increases to the volumes of water used for
- 10 domestic and industrial purpose from Windy Lake
- 11 and Doris Lake respectively;
- 12 • construction of Windy Lake North freshwater
- 13 intake;
- 14 • construction of two wind turbines;
- 15 • upgrading the existing all-weather road between
- 16 Doris North and Madrid North sites; and
- 17 • use of other existing facilities at the Doris
- 18 North site, including the 7.5 million litre
- 19 (ML) fuel storage facility, waste rock and ore
- 20 storage facilities, solid waste management
- 21 facilities, water management infrastructure
- 22 (including contact water ponds and water
- 23 treatment facilities), site roads, airstrip,
- 24 and explosives storage facilities.

25 Proposed activities at the Madrid North and Madrid
26 South sites including the following:

- 1 • construction of a 1,200 tonne-per-day (tpd) ore
- 2 concentrator;
- 3 • construction of two (2) wind turbines;
- 4 • hauling of concentrate and excess ore to
- 5 the existing processing plant at Doris North
- 6 for gold extraction;
- 7 • construction of a tailings pipeline from Madrid
- 8 North to the Doris North tailings impoundment
- 9 area;
- 10 • trucking of domestic waste to existing
- 11 waste management facilities at the Doris North
- 12 site;
- 13 • construction of a bulk fuel storage facility
- 14 (4.5 million litre capacity);
- 15 • water use for domestic and industrial purposes
- 16 from Windy Lake and Doris Lake respectively;
- 17 and
- 18 • installation of three power plants at Madrid
- 19 North and two power plants at Madrid South;
- 20 • construction of 4.7 kilometre all-weather road
- 21 to the Madrid South site.

22 Proposed activities at the Boston site including
23 the following:

- 24 • construction of a new 300-person-capacity
- 25 accommodation and associated support
- 26 facilities;

- 1 • construction of a 2,400 tpd processing plant at
- 2 the Boston site;
- 3 • some ore and concentrate will initially be
- 4 transported to the existing processing plant at
- 5 Doris North;
- 6 • construction and operation of dry stack
- 7 tailings management area (storage capacity of
- 8 5.1 million tonnes);
- 9 • construction of two wind turbines;
- 10 • construction and operation of a power plant and
- 11 a 7.5 million litre fuel tank farm;
- 12 • construction and operation of a 2 kilometre
- 13 all-weather airstrip;
- 14 • water use for domestic and industrial purposes
- 15 from Aimaokatalok Lake -- it's in Inuktitut,
- 16 but I have a hard time pronouncing it.
- 17 • establishment and operation of an industrial
- 18 wastewater treatment plant with discharge to
- 19 Aimaokatalok Lake;
- 20 • construction and operation of solid waste
- 21 management facilities;
- 22 • installation and operation of eight power
- 23 plants and standby plant.

24 Next, turn to a very brief overview of key
25 documents filed by TMAC with the Board in respect of
26 the applications. Please note my summary is not a

1 complete listing of the many technical documents filed
2 by TMAC and considered by the Board to constitute the
3 applications and supporting documentation. Copies of
4 all submissions received from TMAC in support of the
5 applications, as well as documents related to the
6 review of the applications by the Nunavut Water Board,
7 interveners, and members of the public are available on
8 the NWB's public registry and the FTP site.

9 In addition, our Licensing Administrator, Ida
10 Porter, has available for public viewing at this
11 hearing electronic copies and paper copies of some of
12 the key documents for the applications received to
13 date. If you are interested in reviewing any of the
14 documentation for this file, please ask Ida, and she
15 will assist you.

16 The applications' main documents and supporting
17 documents were filed by TMAC with the Board on December
18 20, 2017, and consisted of the following key documents:

- 19 • Project Executive Summary
- 20 • Project Description
- 21 • NWB Application Documents
- 22 • Various management and monitoring plans
- 23 • Reports and designs of all major
- 24 infrastructure
- 25 • Financial statements and list of officers
- 26 On February 21, 2018, TMAC filed additional

1 information with the Board in response to information
2 requests from the Kitikmeot Inuit Association and
3 Environment and Climate Change Canada.

4 On April 4, 6, and 27, 2018, in advance of the
5 NWB's technical meeting held in Cambridge Bay, in May
6 for the file, TMAC provided additional responses to
7 parties' technical review comments.

8 As a result of commitments made at the technical
9 meeting, on June 19, 2018, TMAC filed additional
10 technical information in support of the applications.

11 On July 23, 2018, TMAC provided its responses to
12 additional technical review comments received following
13 the technical meeting.

14 On September 5, 2018, TMAC filed with the Board
15 draft Water Licence framework documents for all parties
16 to review and provide comment.

17 On October 1 and 5, 2018, TMAC provided
18 information packages in response to the final written
19 submissions of the interveners.

20 Now, I am going to provide you with a brief
21 overview of the procedural history for the applications
22 that are before the Board. This summary captures only
23 the major procedural steps up to today, but the public
24 registry provides a more complete record of all steps
25 in respect of the file. In terms of procedural steps,
26 highlights include the following:

- 1 • December 20, 2017
 - 2 ◦ The Nunavut Water Board (NWB or Board)
 - 3 received two Type "A" Water Licence
 - 4 applications and supporting documentation
 - 5 submitting (the applications) from TMAC
 - 6 Resources Inc. (the Applicant or TMAC) for
 - 7 the proposed Phase 2 Hope Bay Belt
 - 8 Project. One application was for
 - 9 amendments to Type "A" Water Licence No.
 - 10 2AM-DOH1323 and the other application
 - 11 requested a new Water Licence covering
 - 12 mining activities at the Boston site.
- 13 • January 17, 2018
 - 14 ◦ The NWB issued joint correspondence with
 - 15 the NIRB, requesting that interested
 - 16 parties conduct a completeness review and
 - 17 provide information requests for the
 - 18 applications. The NIRB also indicated in
 - 19 this correspondence the start of their
 - 20 technical review of the final
 - 21 environmental impact statement for the
 - 22 Phase 2 Hope Bay Belt Project.
- 23 • February 23, 2018
 - 24 ◦ The NWB deemed the applications to be
 - 25 complete and issued "Notices of
 - 26 Application" for the Type "A" applications

1 and indicated the commencement of the
2 technical review period ending on March
3 23, 2018.

4 • By March 29, 2018

5 ◦ The NWB received technical review comments
6 from the KIA, ECCC, DFO, and CIRNAC, and
7 requested that the Applicant provide
8 relevant responses.

9 • By April 4, 2018

10 ◦ The NWB received and distributed the
11 Applicant's responses to technical review
12 comments received from the KIA, CIRNAC,
13 DFO, and ECCC.

14 • April 13, 2018

15 ◦ The NWB distributed correspondence
16 confirming that, as part of the NIRB and
17 the NWB's coordinated processing of the
18 applications, the NWB's technical meeting
19 for the file would be held in person on
20 May 14 and 15, 2018, in Cambridge Bay (the
21 week following the NIRB's final hearing
22 for the file).

23 • May 14-15, 2018

24 ◦ The NWB hosted the technical meeting,
25 including a community session in Cambridge
26 Bay.

- 1 • May 29, 2018
 - 2 ◦ The NWB provided correspondence to the
 - 3 Applicant and interested parties,
 - 4 summarizing the list of issues discussed
 - 5 and list of commitments made by the
 - 6 Applicant and interested parties during
 - 7 the technical meeting.
- 8 • June 1, 2018
 - 9 ◦ Natural Resources Canada (NRCan) provided
 - 10 the NWB with technical comments in the
 - 11 form of their final written submission
 - 12 (which had originally been submitted to
 - 13 the Nunavut Impact Review Board (NIRB) as
 - 14 part of the environmental assessment).
- 15 • June 19, 2018
 - 16 ◦ TMAC provided and the NWB distributed
 - 17 their responses to the technical meeting
 - 18 issues and commitments.
- 19 • July 3, 2018
 - 20 ◦ The NWB issued a notice of the pre-hearing
 - 21 conference (PHC) to be held by
 - 22 teleconference on July 31, 2018, attaching
 - 23 a draft agenda and provided clarification
 - 24 on the next steps.
- 25 • July 31, 2018
 - 26 ◦ The NWB conducted the pre-hearing

1 conference for this file via
2 teleconference.

3 • August 13, 2018

4 ° NWB issued a notice of this public
5 hearing. The NWB public hearing was
6 scheduled tentatively for the week of
7 October 22, 2018.

8 • August 22, 2018

9 ° NWB released the pre-hearing conference
10 decision report.

11 • By September 28, 2018

12 ° NWB received final written submissions for
13 this public hearing from the KIA, DFO,
14 ECCC, and CIRNAC.

15 • October 1 and 5, 2018

16 ° NWB received TMAC's final written
17 submission for this public hearing.

18 • October 15, 2018

19 ° NWB received copies of presentations to be
20 relied on at the public hearing and
21 executive summaries from the KIA, DFO,
22 ECCC, CIRNAC, and TMAC.

23 • October 16, 2018

24 ° NWB distributed a reminder of the public
25 hearing and agendas for this public
26 hearing and community session.

1 If anyone has any question about this summary of
2 key procedural steps or key submissions received,
3 please advise Stephanie Autut, the NWB Executive
4 Director, as soon as possible.

5 I will now move on to a list of issues to be
6 addressed at this hearing. These issues were
7 identified by the Nunavut Water Board as key issues and
8 were reviewed by the parties during the technical
9 meeting and pre-hearing conference conducted for the
10 file in May and July of this year:

- 11 • Scope of the Licences
 - 12 ◦ Scope of amendments to existing Type "A"
13 Water Licence 2AM-DOH1323 including
14 overlap with 2BB-MAE1727 and 2BE-HOP1222
15 and incorporation of Type "B" exploration
16 licences
 - 17 ◦ Scope of new Boston Type "A" Licence
18 2AM-BOS---- including overlap with
19 2BB-BOS1727 incorporation of Type "B"
20 exploration licences
- 21 • Term of Licences
 - 22 ◦ 25-year term requested
- 23 • Water Supply
 - 24 ◦ Increased water use under existing
25 Type "A" Water Licence 2AM-DOH1323
 - 26 ◦ Changes and additions to water sources

- 1 already authorized under existing Type "A"
- 2 Water Licence 2AM-DOH1323
- 3 ◦ Volume of water use requested under new
- 4 Boston Type "A" Licence 2AM-BOS----
- 5 ◦ Water sources requested under new Boston
- 6 Type "A" Licence 2AM-BOS----
- 7 • Water Management
- 8 ◦ Water load and balance modelling
- 9 ◦ Water management under the existing
- 10 Type "A" Water Licence 2AM-DOH1323 and
- 11 under the new Boston Type "A" Licence
- 12 2AM-BOS----
- 13 ◦ Groundwater and/or saline water management
- 14 under the existing Type "A" Water Licence
- 15 2AM-DOH1323 and under the new Boston
- 16 Type "A" Licence 2AM-BOS----
- 17 • Discussion of potential effects on
- 18 saline water management in response
- 19 to June 1, 2018 amendments to the
- 20 Federal metal mining effluent
- 21 regulations
- 22 • Waste Management
- 23 ◦ Wastewater, contact water, and sewage
- 24 treatment
- 25 ◦ Quarries
- 26 ◦ Landfill/landfarm

- 1 ◦ Incinerator
- 2 ◦ Waste rock management
- 3 • Waste rock storage facilities and
- 4 designs
- 5 ◦ Tailings management
- 6 • Tailings management facilities and
- 7 designs.
- 8 • Water Use Compensation
- 9 ◦ Confirmation of no outstanding issues
- 10 (including Inuit water rights) for
- 11 increased water use under existing
- 12 Type "A" Water Licence 2AM-DOH1323
- 13 and water use requested under new
- 14 Boston Type "A" Licence 2AM-BOS----
- 15 • Management Plans and Reports
- 16 ◦ Timing and review and approval of updated
- 17 and new plans
- 18 • Monitoring Program
- 19 ◦ Integration of belt-wide monitoring under
- 20 both licences
- 21 ◦ Site-specific monitoring programs
- 22 • Closure and Reclamation Planning
- 23 ◦ Updated closure cost estimates
- 24 ◦ Discussion of security management
- 25 arrangements and reclamation security to
- 26 be held under the Water Licences

1 • Including discussions about the
2 requirements and process associated
3 with "staged security".

4 ◦ Post-closure monitoring period

5 If there are no concerns with the Board's
6 descriptions of how these applications came before the
7 NWB, I would like to move forward to a roll call of the
8 parties who will be participating in this public
9 hearing.

10 I will begin the roll call with the Applicant,
11 TMAC Resources Inc.

12 MR. CURRAN: Thank you, Mr. Chair. My name
13 is Oliver Curran, the Vice President of Environmental
14 Affairs with TMAC.

15 So I'll introduce my team starting with the TMAC
16 folks. So we have Kyle Conway, he's our Environmental
17 Supervisor at site, and with me, I have three of my
18 Staff from Toronto: Adam Grzegorzczuk, Ashley Mathai,
19 and Shelley Potter.

20 And to my right is Christine Kowbel, our legal
21 counsel, and to my left, we have Dr. Maritz Rykaart
22 with SRK, and Mike Henry, Dr. Mike Henry, with ERM.
23 And behind me, we have Nicole Bishop, who is the
24 project manager with ERM.

25 And that's everyone. Thank you.

26 THE CHAIR: Thank you, Applicant. I will

1 now go to the local associations and representatives
2 and intervening parties.

3 Kitikmeot Inuit Association?

4 MR. ROESCH: Thank you, Mr. Chair. This is
5 John Roesch for the Kitikmeot Inuit Association.

6 I am the Senior Hope Bay Project Officer for the
7 Hope Bay Project; to my left is John Donihee, our legal
8 counsel for the KIA. Thank you.

9 THE CHAIR: Thank you. Crown-Indigenous
10 Relations and Northern Affairs Canada.

11 MR. DEWAR: My name is Spencer Dewar with
12 Crown-Indigenous Relations and Northern Affairs Canada.

13 I'm the Director of Resource Management. With me
14 today, I have Ian Parsons, who is the Manager of Water
15 Resources; Sarah Forté, who is a Water Management
16 Specialist; and in the back, we have Bridget Campbell,
17 who is a Water Management Coordinator, and Jade Hill,
18 who is a co-op student from the University of Waterloo.

19 THE CHAIR: Thank you. Environment and
20 Climate Change Canada.

21 MR. SUMMERFIELD: Thank you, Mr. Chair. My name
22 is Bradley Summerfield.

23 I'm a Senior Environmental Assessment Coordinator
24 with Environment and Climate Change Canada, and I'm
25 joined by Meagan Tobin, who is a Water Quality
26 Specialist with Environment and Climate Change Canada.

1 THE CHAIR: Thank you. Fisheries and
2 Oceans Canada?

3 MS. MCLELLAN: Koana, Mr. Chair. My name is
4 Angie McLellan.

5 I'm a Fisheries Biologist with Fisheries and
6 Oceans Canada, and to my right is Marek Janowicz, and
7 he is the Senior Fisheries Biologist with Fisheries and
8 Oceans Canada.

9 THE CHAIR: Thank you. Is there any other
10 interveners not mentioned who would like to speak?
11 Please identify yourself. I take that there's none.

12 It is our tradition to give respect to our Elders,
13 therefore, at any time, during the proceedings, an
14 Elder may speak about the applications that are before
15 the Board. I just ask that any Elder wanting to speak
16 about the applications waits until the Board Staff can
17 get you a microphone so that we have a complete record
18 of what you have to say. Is there any Elder in the
19 room? Okay, there's no one at this time.

20 Are there any members of the general public who
21 would like to identify themselves? I also want to
22 mention that any community member who wishes to ask
23 questions or provide comments to the Board about these
24 applications will also have an opportunity to do so
25 tonight during the community session starting at 7.

26 Are there any representatives from agencies,

1 associations, et cetera, who have not submitted
2 interventions but would like to speak?

3 Before proceeding with the hearing, I would also
4 like to remind everyone that, if you haven't already
5 done so, please sign in with Ida Porter, NWB's
6 Administrative Coordinator, at the table located at the
7 entrance so the Board can have a complete and accurate
8 record of everyone in attendance at these proceedings.
9 The sign-in sheets will be attached to the Board's
10 record of proceedings and public hearing decision
11 report for the file.

12 I will now turn to the identification of any
13 motions or any objections to the applications that are
14 before the Board. Okay, we are not --

15 Okay, now, we'll proceed with Item 8 of the
16 agenda, the presentation by the Applicant.

17 Can we take a short break before we proceed with
18 the Applicant.

19 (ADJOURNMENT)

20 THE CHAIR: We shall reconvene from the
21 break. So we're on Item 8 of the agenda. So,
22 Mr. Curran -- if I'm pronouncing it properly -- how
23 much time will you or your representatives require, how
24 much time?

25 MR. CURRAN: Thank you, Mr. Chair, Oliver
26 Curran with TMAC.

1 I think the presentation will probably take an
2 hour and 15 minutes.

3 THE CHAIR: Okay, thank you. Before we
4 proceed, Teresa, can you swear in or affirm.

5 MS. MEADOWS: Thank you, Mr. Chair. Teresa
6 Meadows, legal counsel for the Nunavut Water Board.

7 So as Mr. Chair said, we will be breaking at about
8 5:30, so if we're breaking in the middle of your
9 presentation, we may -- we'll pick it back up again
10 after the community session later -- either later on
11 tonight or starting tomorrow.

12 So, Mr. Chair, if I can have the witnesses state
13 and spell their name for the record, please.

14 MR. CURRAN: Oliver Curran, O-L-I-V-E-R,
15 Curran, C-U-R-R-A-N.

16 DR. RYKAART: Maritz Rykaart, M-A-R-I-T-Z,
17 R-Y-K-A-A-R-T.

18 DR. HENRY: Mike Henry, M-I-K-E,
19 H-E-N-R-Y.

20 MS. MEADOWS: Thank you, Mr. Chair. Teresa
21 Meadows, legal counsel for the Nunavut Water Board.

22 Mr. Chair, if I can have the witnesses identify
23 whether you wish to be sworn or affirmed.

24 MR. CURRAN: Affirmed.

25 DR. RYKAART: Sworn

26 DR. HENRY: Affirmed.

1 MARITZ RYKAART, Sworn

2 OLIVER CURRAN, Affirmed

3 MIKE HENRY, Affirmed

4 MS. MEADOWS: Mr. Chair, Teresa Meadows,
5 legal counsel for the Nunavut Water Board.

6 Mr. Chair, it's my understanding that there are
7 three exhibits currently before us to be filed in this
8 public hearing, consisting of the hard copies of the
9 presentation materials that will about to be presented
10 by these witnesses, but it is also my understanding,
11 Mr. Chair, that there are some additional discussions
12 about future exhibits to come that may be filed by TMAC
13 in support of this presentation as well.

14 MS. KOWBEL: Thank you, Mr. Chair,
15 Christine Kowbel for TMAC.

16 First of all, Mr. Chair, I wanted to also note
17 that TMAC circulated yesterday afternoon three cv's for
18 three experts, for Mr. Henry, Mr. Rykaart, and
19 Ms. Bishop, and so I'm proposing that we file those --
20 mark those electronic copies as exhibits as well, so
21 that's my first request. I have just one more note
22 after that

23 MS. MEADOWS: Thank you, Mr. Chair. Teresa
24 Meadows, legal counsel for the Nunavut Water Board.

25 Yes, thank you, Ms. Kowbel. We did circulate
26 those and have not heard an objection to those being

1 filed, and so those will be marked as electronic
2 exhibits in this public hearing, and we will then
3 mark -- the next three exhibits will be the hard copies
4 of this presentation in English, Inuinnaqtun, and
5 Inuktitut, and I believe there are additional materials
6 yet to come. Thank you, Mr. Chair.

7 THE CHAIR: Thank you. Okay, go ahead.

8 MS. KOWBEL: Thank you, Mr. Chair,
9 Christine Kowbel for TMAC.

10 I also just wanted to note for the Board that TMAC
11 filed on September 4th a proposed revised version of
12 the Doris Type "A" Water Licence and a proposed
13 framework for the proposed Boston Type "A" Water
14 Licence, and since filing those documents on September
15 4th, TMAC received comments from Crown and Indigenous
16 Relations [sic] as well as Kitikmeot Inuit Association.
17 They've made certain changes over the -- since
18 September 4th to the licence to refine the draft, and
19 also to respond to some of those comments.

20 TMAC also has had meetings today with the
21 Kitikmeot Inuit Association and Crown-Indigenous
22 Relations and has a few further changes to make to that
23 document, so we will be updating that draft tonight,
24 and we propose to file it as an exhibit tomorrow.

25 I just wanted to note for the Board that we have
26 given copies of the draft to Crown and Indigenous

1 Northern Affairs Canada [sic], to Kitikmeot Inuit
2 Association, the Department of Fisheries of
3 Oceans [sic] and Environment Canada just so they have
4 the copy in advance, and there will be, as I said, a
5 few changes to one section, but they have the draft
6 generally complete now. Thank you.

7 THE CHAIR: Thank you. Go ahead.

8 MS. MEADOWS: Thank you, Mr. Chair. Teresa
9 Meadows legal counsel for the Nunavut Water Board.

10 So, Mr. Chair, with that, those are my procedural
11 matters, and until we receive the electronic copy
12 tomorrow, those will be the exhibits that I'll file.

13 THE CHAIR: Thank you.

14 EXHIBIT 1 - TMAC Resources Inc. electronic copy of
15 Curriculum Vitae of Dr. Michael Henry, ERM

16 EXHIBIT 2 - TMAC Resources Inc. electronic copy of
17 Curriculum Vitae of Dr. M. Rykaart, SRK Consulting

18 EXHIBIT 3 - TMAC Resources Inc. electronic copy of
19 Curriculum Vitae of Nicole Bishop, ERM

20 EXHIBIT 4 - TMAC Resources Inc. (English), hard
21 copy PowerPoint Presentation Boston-Madrid Project
22 Nunavut Water Board Final Hearing

23 EXHIBIT 5 - TMAC Resources Inc. (Inuktitut), hard
24 copy PowerPoint Presentation Boston-Madrid Project
25 Nunavut Water Board Final Hearing

26 EXHIBIT 6 - TMAC Resources Inc. (Inuinnaqtun),

1 hard copy PowerPoint Presentation Boston-Madrid
2 Project Nunavut Water Board Final Hearing

3 THE CHAIR: Applicant? Okay, go ahead
4 Applicant.

5 Presentation by TMAC Resources Inc.

6 MR. CURRAN: Thank you, Mr. Chair. Oliver
7 Curran with TMAC.

8 Good afternoon everyone. Before I begin my
9 overview of the Madrid and Boston proposal, I thank the
10 Nunavut Water Board and Staff for organizing this
11 hearing and the important efforts this Board, the KIA,
12 the Kitikmeot communities, and all government agencies
13 have invested into reviews and approvals at Hope Bay so
14 far.

15 TMAC's proposal to develop gold mines at Madrid
16 and Boston marks the second development phase on the
17 Hope Bay Belt. Just out of interest, this picture here
18 is looking south on the Hope Bay Belt on our existing
19 Windy road. This is Windy Lake on the right-hand side;
20 Patch Lake here in the distance; and the Madrid North
21 mine would sit right in the distance over here.

22 So this next section of the presentation, I'll
23 describe the project. The project is located in the
24 Kitikmeot Region about 160 kilometres south of
25 Cambridge Bay. The Hope Bay Belt depicted here is
26 approximately 20 kilometres wide by 80 kilometres long,

1 and all of the communities shown in this figure have
2 been consulted and considered during both the NIRB and
3 Water Board process, and in this insert here, you can
4 see the relative positions of our operating Doris Mine,
5 the proposed Madrid mines, and to the south, the Boston
6 mine, and I'll be going into these in a lot more detail
7 later in the presentation.

8 So TMAC is fortunate to have the approved and
9 operating Doris Mine site shown here in this picture.
10 The mine camp went into commercial production in early
11 2017, 53 years after the initial discovery by the Inuit
12 prospector Noel Avadluk. This entire site will be
13 utilized for Phase 2, including the stockpile areas,
14 the process plant, the fuel storage areas, the power
15 generation, the accommodations, and airstrip and all of
16 the water management features. As such, the life of
17 all of this infrastructure will be extended.

18 And you'll notice in this picture, it is a good
19 representation of how mine sites are designed to be as
20 compact as possible and minimize footprint, haul
21 distances, and water management areas.

22 For reference, this mill building here, where all
23 of our ore is processed, is about 150 metres long, and
24 the entire footprint of the Doris Mine site is 650
25 metres wide. So this is our current and active mine
26 site with all of the underground mines accessed through

1 this portal. So under the ground, in this direction
2 here, we have about 14 kilometres of underground
3 tunnels that are all below the surface.

4 TMAC has a number of existing permits and licences
5 to be able to operate the Doris Project. These include
6 our Project Certificate issued by the Nunavut Impact
7 Review Board and the Type "A" Water Licence issued by
8 the Nunavut Water Board. Together these licences allow
9 for commercial mining at the Doris site.

10 In the next few slides, I'll provide an overview
11 of TMAC's existing water licences on the belt before we
12 get into details about the application before the
13 Board.

14 So starting with our exploration licence that
15 covers the use of water and disposal of waste during
16 camp operations and exploration drilling associated
17 with the Hope Bay regional exploration program, and the
18 boundaries are roughly shown in the blue outline here.
19 Associated infrastructure includes fuel storage, water
20 intake, wastewater treatment, quarries, and the Doris
21 to Windy all-weather road. Permanent water use
22 includes potable water, drilling water, and water for
23 dust suppression on the Windy Lake road. The licence
24 includes discharge criteria for treated sewage, contact
25 water from the bulk fuel storage facility, and contact
26 water from quarries.

1 The Madrid Type "B" advanced exploration licence
2 allows for geologic mapping, surface and underground
3 drilling, test doping and bulk sampling of two 50,000
4 tonne samples at Madrid North and at Madrid South.
5 Infrastructure includes roads and culverts, surface ore
6 and waste storage pads, fuel storage facilities,
7 pollution control ponds and sumps, vent raises, and
8 offices and emergency shelters. Permanent water use
9 includes potable and industrial water use, and the
10 licence includes discharge criteria for contact water
11 ponds, fuel facilities, and quarries.

12 Moving down to Boston, this advanced exploration
13 licence allows for prospecting, drilling, and a bulk
14 sample with all associated infrastructure. Current
15 infrastructure at Boston includes a 60-person camp, a
16 sewage treatment facility, a portal and pads to support
17 bulk sampling. Water use is permitted for all
18 purposes. The licence includes discharge criteria for
19 contact water from the containment pond, portal,
20 landfarm, bulk fuel storage area, and for treated
21 sewage. The area that covers the Boston advanced
22 exploration program, as with the other diagrams, is
23 shown here in blue.

24 TMAC is committed to ongoing monitoring and
25 reporting on the project to ensure compliance with all
26 licences, permits, and authorizations. Currently, TMAC

1 reports on an annual and monthly basis to the Water
2 Board. We have recently submitted an updated aquatic
3 effects monitoring plan as part of this process, and
4 Mike Henry will speak more about the monitoring in
5 freshwater lakes later on in this presentation.

6 So moving on to the application before the Board.
7 This slide provides highlights of the Madrid-Boston
8 Phase 2 project. The proposal is to build three
9 underground mines with crown pillar recovery with an
10 expected combined output of up to 6,000 tonnes of ore
11 per day at peak operations. Doris will continue to
12 process up to 2400 tonnes per day, Madrid North will
13 concentrate approximately 1200 tonnes per day, and
14 Boston will process the same as Doris at around 2400
15 tonnes per day.

16 Process plants at Doris and Boston will produce
17 gold bars, while output from Madrid North will produce
18 2400 tonnes of ore for processing at Doris and a
19 further 1200 tonnes per day reduced to a gold
20 concentrate for final processing at Doris. Fuel and
21 supplies will continue to be brought in by sea lift
22 with occasional air delivery for timely or specialty
23 equipment, and roads will connect all sites on the
24 belt.

25 The operation will continue as a fly-in and
26 fly-out site with flights from all five Kitikmeot

1 communities, Yellowknife, and Edmonton. A total of 870
2 workers are expected to be on payroll, with camp space
3 of approximately 400 beds at Doris and 300 beds at
4 Boston.

5 Economic benefits are significant with an
6 estimated \$500 million to be paid in royalties, mineral
7 taxes, and other payments to the Kitikmeot Inuit
8 Association, NTI, the Government of Nunavut, and the
9 Federal Government.

10 In this slide, you can see the arrangement of all
11 approved and proposed sites at Hope Bay in relation to
12 the main marine and freshwater lakes. So the Doris
13 site, which we've already described, and all of its
14 infrastructure is required for Phase 2. This, of
15 course, has significant environmental benefits since
16 Phase 2 is not requesting that this infrastructure and
17 footprints be built elsewhere on the belt.
18 Accommodations will be expanded by approximately 130
19 beds, and the process building will process Phase 2
20 ore.

21 So now I'll move us down the belt and show you the
22 proposed mines at Madrid and Boston, and all of the
23 pop-outs will represent the main infrastructure
24 components proposed.

25 So at Madrid North, this is an important mine for
26 Hope Bay and represents an approximately 13-year life

1 of mine as we know it today. Similar to Doris, waste
2 rock will be brought to surface and placed back
3 underground for stability as the mine progresses. Ore
4 will be concentrated at Madrid, and the concentrate
5 will utilize the cyanide extraction process at Doris.

6 Main components at Madrid North will be the portal
7 to the underground mine, stockpiles, the concentrator,
8 and water management features. Workers will be housed
9 at Doris. Local power generation, fuel storage, and
10 other supporting infrastructure will also be required
11 at Madrid North.

12 Moving down to Madrid South, this mine has an
13 approximate four-year life of mine and will include all
14 the same infrastructure as Madrid North except that the
15 ore produced at Madrid South will report to Madrid
16 North and Doris for processing.

17 Moving to the all-weather road, construction and
18 operations at Boston will require this 51-kilometre
19 road to be built. The road will be very similar to the
20 existing 20 kilometres of road connecting Roberts Bay,
21 Doris, the TIA, and Windy Lake, and this is a picture
22 of the existing road down to Windy Lake. The road will
23 be constructed as a single lane road with occasional
24 pull-ups and will have a sufficient granular base for
25 road stability and protection of permafrost. Quarries
26 will be developed along the road for construction of

1 the road base. Methods for constructing, operating,
2 and monitoring this all-weather road are all very well
3 understood with our current operations. In order to
4 construct our infrastructure, winter roads or tracks
5 will be used to facilitate staging activities during
6 construction.

7 Moving down to Boston, the Boston site will be a
8 self-sufficient site with all components and supporting
9 infrastructure very similar to the Doris site including
10 a 5,000 foot airstrip, and, for reference, the airstrip
11 is shown here.

12 The mine life is approximately eight years as we
13 know it now with the requirement for a process plant at
14 a similar capacity as Doris. Ore may be trucked to
15 Doris for the first few years during production
16 ramp-up. Ore reserves are contained at Boston entirely
17 within the permafrost. Boston will have its own dry
18 stack tailings management area, shown here, and Maritz
19 will talk about this in much more detail. Dry stacking
20 means that the tailings will be dewatered and stacked.
21 A water treatment system at Boston will treat water to
22 discharge criteria, and the water will be discharged to
23 Aimaokatalok Lake.

24 So moving back up to our existing tailings
25 impoundment area at Doris, this existing and approved
26 tailings impoundment area will be also utilized for

1 Phase 2. The expanded footprint to 18 million tonnes
2 is shown here in the green shading. So at the full
3 extent of 18 million tonnes, this will be the full
4 extent or the full footprint of tailings.

5 In order to accommodate these tailings, the south
6 dam will be raised. So this dam is already in
7 existence, and that will need to be raised, and this
8 west dam will also need to be constructed, and a
9 tailings line from Madrid North will support or
10 transport tailings to the south end of this facility.

11 And now moving on to Roberts Bay. So as part of
12 Phase 2, a new cargo dock is proposed to support
13 cheaper, safer, and faster unloading of fuel and
14 supplies for all the sites at Hope Bay. We are also
15 proposing an extra 10 million litres of fuel storage to
16 be built in this location here, and, of course, there
17 will need to be this access road to the cargo dock so
18 that when the fuel applies are unloaded, they can be
19 transported to the existing Roberts Bay facility.

20 So now moving on to the application. The scope of
21 the proposed Type "A" Water Licence amendment
22 application is to expand the scope of the existing
23 Type "A" Water Licence Amendment No. 1 to allow
24 commercial mining at Madrid North, Madrid South,
25 including a concentrator at Madrid North.

26 TMAC is requesting that the Madrid advanced

1 exploration licence be maintained with the amended
2 Type "A" Licence to support ongoing exploration
3 activities at Madrid.

4 The scope of the proposed Boston Type "A" Water
5 Licence includes construction and operation of the
6 Boston site, including an approximately 300-person
7 camp. There will also be a tailings management area
8 with a capacity of up to 5.1 million tonnes, and water
9 intake for both domestic and industrial water use will
10 come from Aimaokatalok Lake. And as mentioned before,
11 a processing plant with an approximate nominal capacity
12 of 2400 tonnes per day would be built at Boston.

13 With regard to closure and reclamation, separate
14 closure plans and closure cost estimates were developed
15 for Phase 2, which includes Madrid North, Madrid South,
16 and the all-weather road and Boston site. These
17 closure management plans describe the activities
18 expected to be required at closure and their estimated
19 costs.

20 Overall the objectives of closure planning are to
21 ensure physical stability, chemical stability, and to
22 ensure that the future use and aesthetics of the
23 project site following reclamation activities meet the
24 requirements of the Kitikmeot Inuit Association and
25 Crown-Indigenous Relations and Northern Affairs Canada.
26 Maritz will speak to closure in more detail later in

1 this presentation.

2 With that I will now hand the presentation off to
3 Maritz to review tailings and waste rock
4 management.

5 DR. RYKAART: Maritz Rykaart, Mr. Chairman,
6 gentlemen of the Board.

7 The next series of the slides will discuss the
8 details of tailings and waste rock management for the
9 project site.

10 The first thing I would like to do is describe
11 exactly what we talk about when we talk about tailings.
12 We have an underground mine. There's two products that
13 come out from underground; the first is the waste rock
14 and the second part is the ore. The ore contains the
15 product that we're interested in, which is gold.

16 To extract this, we have to send it through a
17 processing plant. Out of that processing plant, we get
18 the gold, and we also get two other products. The
19 first is flotation tailings, and what flotation
20 tailings is is ground-up rock that no longer contains
21 gold. We also contain another product which is only
22 about 6 to 8 percent of the total amount of tailings,
23 which is called detoxified tailings. This product is
24 made as part of the processing for the very fine gold
25 which we have to extract through a leaching process.

26 I'll explain flotation tailings and detoxified

1 tailings in a bit more detail here. As I said, the ore
2 contains the gold. To get to that gold, we've got to
3 crush the ore, so we send it through a crushing plant,
4 which is within the processing facility. Once we've
5 done that, we now contain crushed rock that have got
6 the pieces of gold contained with it. We send that
7 through a gravity separation plant. What happens here
8 is the gold, which is very heavy, settles out and
9 allows us to separate that from the crushed rock. This
10 is similar to what you may have seen on television
11 shows where they pan for gold. That is exactly the
12 same process.

13 What comes out of that on the one end is clean
14 rock where it no longer contains any gold. And on the
15 other side, you get concentrate and gold. The gold is
16 solid gold, which is similar to nuggets, and the
17 concentrate is the very fine gold which still contains
18 some of the very finer crushed rock. So that gives us
19 flotation tailings.

20 The next piece is that concentrate and the
21 remaining gold that we take out. Like I said, the
22 very, very fine gold that you can't see with the naked
23 eye is still contained in some of this rock. To
24 extract that, we send that through a leach plant. In
25 order to get this process going, we add a chemical, and
26 the chemical we add is cyanide. Adding this allows us

1 to liberate that remaining gold from that crushed rock.
2 We can then pour out our gold from that process. What
3 we then have is the very fine tailings, which is now
4 called leach tailings because we send it through the
5 leach plant. These tailings contains some of the
6 residual cyanide that we used in the process. Before
7 we actually discharge these tailings, we send it
8 through a cyanide destruct circuit so that we
9 completely destroy the cyanide so that it no longer
10 becomes of concern to us. After we've destroyed the
11 cyanide, we're left with a detoxified tailings, which
12 we can now safely manage on land or underground, and
13 for this project, all of that material will go
14 underground and will be permanently stored in the
15 permafrost.

16 So now that I've explained what tailings is in the
17 context of this project, I'll explain to you where the
18 tailings is going to be stored. The first location is
19 in what's called the Doris tailings impoundment area.
20 This is conventional tailings, and I'll explain to you
21 in greater detail what I mean by that in a few slides.
22 The second area where we'll store tailings on the
23 project is the Boston dry stack tailings management
24 area. And again, when I get to that part of the
25 presentation, I'll explain to you what I mean with "dry
26 stack".

1 The first thing we did when we analyzed Phase 2 is
2 we went back to the starting block, back to the drawing
3 board, and we decided what is the best location and the
4 best technology to use for tailings. Through that
5 process, we concluded that, for Doris, the best thing
6 we could do is to continue the use of Tail Lake, which
7 is currently used in Phase 1, and by developing an
8 appropriate deposition strategy, this provides the most
9 environmentally safe area to deposit tailings.

10 The tailings impoundment area at Doris is --
11 involves depositing the tailings into Tail Lake. Tail
12 Lake was placed on Schedule 2 under the metal mining
13 effluent regulations, which designates it as a tailings
14 impoundment area. In order to deposit tailings here
15 safely, we have to build a couple of engineered
16 structures. The first structure we built is the north
17 dam at the top of the slide there, and the second
18 structure is the south dam. This ensures that any
19 water and any tailings deposited in this facility
20 remain contained. As part of Phase 1, we also had an
21 interim dike. The intent behind the interim dike was
22 to contain the footprint of the physical tailings to
23 allow us to close the site economically.

24 In Phase 2, we're increasing the volume of
25 tailings substantially. Because of this, we've got to
26 make a few changes. The first change we do is we've

1 got to raise the south dam at the bottom of your slide
2 there. We also got to build a new dam called the west
3 dam, and you'll see the area in grey has expanded
4 substantially, so the surface area of the tailings
5 grows, and the pond in front of it diminishes.

6 I mentioned earlier conventional tailings. What
7 conventional tailings is is a slurry tailings. The
8 ground-up rock that I explained earlier is the
9 tailings. In order to get the tailings to the tailings
10 impoundment area, the most economical method is to pump
11 it there. In order to pump it there, we add water to
12 the tailings. This is a very conventional tailings
13 depositional strategy. It is used all over the world,
14 and it's probably the most longest used system that's
15 out there. It's also very commonly used in Arctic
16 settings with Meadowbank and Nanisivik sites that you
17 may be familiar with that uses this technology.

18 In order to ensure that we have environmental
19 containment of both supernatant water, which is the
20 pond, and the tailing solids, we have to build
21 engineered structures. The first structure we've built
22 is a frozen core dam, which is the north dam. This is
23 a permanent water-retaining structure that's going to
24 act to retain water for its entire design life of 30
25 years. This is a very rigorously engineered structure
26 with a host of engineering analysis, as listed on the

1 slide there, that's being completed. This structure
2 was completed in 2012 and continues to operate in
3 accordance with the design parameters.

4 This is a photograph of the north dam. It's about
5 300 metres long at its crest, and it's about 10 metres
6 high at its maximum height. This is a slide of the
7 initial key trench excavation of this dam. In order to
8 ensure that the dam remains intact, we dig down through
9 the active layer, which is typically about 1 metre
10 thick in this part of the world, but we dug down
11 between 3 and 5 metres deep to ensure a good bond. The
12 next thing we did is installed thermosyphons.
13 Thermosyphons are heat pumps. They allow us to take
14 advantage of the cold air in the winter and pump that
15 cold air back into the ground to supercool the
16 foundation. Any of you living in the Arctic will be
17 very familiar with these structures. Across the road
18 from us at the school, there's many of them that you
19 can see next to the building.

20 The primary water retaining measure of this dam is
21 the frozen core. A frozen core dam is essentially an
22 ice block. How we built this was by producing a fine
23 crushed rock, completely saturating it, heating it in
24 an asphalt plant, and then building this in lifts to
25 allow us to build a completely saturated core. This
26 can only be done in the winter, and the air temperature

1 outside has to be colder than minus 15 degrees to allow
2 us to build this dam.

3 We also added some lines of insurance in this dam
4 by putting an upstream geosynthetic liner on the dam.
5 It provides us an added level of protection if, for any
6 reason, we were to find any cracking in our core. The
7 final stage of the dam is to protect all the innards of
8 it by putting a transition material and a shell over
9 it. This material ensures that the dam is protected
10 against any outside factors including wave action and
11 thermal action.

12 The southern end of the tailings impoundment area
13 also requires an engineered structure. This dam will
14 never see water against it. It will only see tailings
15 solids against it. Therefore, we don't need a frozen
16 core dam, so what we've designed and built there is a
17 frozen foundation dam. The frozen foundation dam is a
18 dam where we tie in an impermeable liner to the
19 permafrost to act as our water-retaining measure. The
20 south dam is about 400 metres long and about 7 metres
21 high, and we'll beach tailings against it throughout
22 the life of the project.

23 As part of Phase 2, we're going to increase the
24 size of this dam. We're going to double its height by
25 raising it by about 8 metres, and we're going to
26 increase its length to about 500 metres. A downstream

1 raise is the safest possible technology you can use
2 when you're raising dams, and that is why we selected
3 this technology. Ultimately we will beach up all the
4 way against the top of this dam to provide a stable
5 land form when we close.

6 This is a photograph of the construction of the
7 south dam which shows a 4-metre deep key trench with
8 the various layers of material as we build up out of
9 the key trench and ultimately up into the body of the
10 dam. This dam was completed this past winter and is
11 currently in operation and has a beach formed against
12 it.

13 Later on in life, we'll build a west dam. The
14 west dam will be exactly the same design and technology
15 as the south dam. This is a long section through the
16 tailings impoundment area looking from the left, which
17 is the north, to the right, which is the south. On the
18 north -- on the left side there, you've got the north
19 dam, which is a water-retaining dam; on the right,
20 you've got a south dam; and in the middle, you'll see a
21 structure which is the interim dike. The section in
22 yellow is the tailings that we'll beach there as part
23 of Phase 1.

24 As part of Phase 2, we've raised the south dam,
25 and we continue to deposit tailings from the south dam,
26 and you'll see the area shaded in orange completely

1 covers the interim dike and the Phase 1 beach. The
2 pond reduces in size as we advance this facility.

3 The next series of slides just shows you a plan
4 view of how that beach development works similar to the
5 cross-section. What you see in these pictures is, in
6 yellow, the beach; in blue, the pond. So you'll see as
7 the beach grows, this pond reduces in size. This is
8 the third stage, and this is the final stage when we're
9 ready to close the site.

10 I'll briefly run you through some of the key
11 changes between the Phase 1 tailings and the Phase 2
12 tailings. The most important change is the volume of
13 tailings that we're placing here. Under Phase 1, we
14 have 2.5 million tonnes. Under Phase 2, we go all the
15 way up to 18 million tonnes. The rate at which we put
16 the tailings into the facility increases from 2,000
17 tonnes per day to 3,600 tonnes per day. None of the
18 other features of this facility changes.

19 The south dam gets raised by 8 metres, which
20 doubles its height, and we build a new west dam. Other
21 than that, there's no changes in the structures.

22 The next slide I'll show you is the closure of
23 this facility. On the left sides there, the area in
24 grey is the exposed tailings surface area when we're
25 done.

26 THE CHAIR: Can we start these slides

1 after the supper break? It's now 5:30, so -- before
2 you go any further, just cut off from the next fresh
3 one and start after break.

4 DR. RYKAART: No problem.

5 THE CHAIR: We're breaking until 7:00.
6 We're starting at 7:00 again tonight for our community
7 session. If there's no community session, we will
8 reconvene after half an hour, wait for the community
9 session, and then if there's no community members show
10 up, we'll proceed with your sitting here.

11 (SUPPER ADJOURNMENT AT 5:29 PM)

12 (PROCEEDINGS RECOMMENCED AT 7:15 PM)

13 THE CHAIR: Good evening, welcome back for
14 the evening session. I'd like to recognize the
15 Mayor Chair of Gjoa Haven, Joanni. Stand up, please.
16 Thank you. Thank you for joining us. And there's
17 another local member here as well, so we'll proceed
18 with the community session tonight.

19 Community Session Opening Remarks by the Chair

20 THE CHAIR: So Nunavut Water Board's
21 public hearing for the Type "A" Water Licence
22 applications filed by TMAC Resources Incorporated with
23 the Nunavut Water Board for the Phase 2 Hope Bay Belt
24 Project. This public hearing is related to the use of
25 water and deposit of waste associated with the gold
26 mining undertaking at the North and South Madrid and

1 Boston deposits as proposed in the Phase 2 Hope Bay
2 Belt Project.

3 My name is Lootie Toomasie, and I'm the Chair of
4 the Nunavut Water Board and the Hearing Chair for this
5 public hearing.

6 Before we proceed with this session, I'd like to
7 call upon Henry Ohokannoak from Cambridge Bay to have
8 an opening prayer. Henry?

9 (COMMUNITY SESSION OPENING PRAYER)

10 THE CHAIR: Thank you, Henry, for the
11 prayer. Thank you.

12 For those of you were not here this afternoon when
13 we started the public hearing, I have a few brief
14 housekeeping and introductory remarks, and then I will
15 turn the microphone over to the Executive Director and
16 Staff of the Nunavut Water Board and the Applicant and
17 the interveners.

18 Before I do, please note that there's
19 interpretation available throughout the hearing, and
20 the earpieces are available from the table located as
21 you come in. Channel 00 is English and Channel 2 in
22 Inuktitut. I also want to remind everyone to sign in
23 on the sign-in sheet located at the table just before
24 you come in. To ensure we have an accurate and
25 complete record of those who have participated in this
26 part of our public hearing, we ask everyone to sign in.

1 As the sign-in sheets will be attached to the Board's
2 record of proceedings and decision report for this
3 file, please fill in the sheet legibly and accurately.

4 The washrooms are located just outside of here, by
5 the entrance area, and the coffee is available on the
6 side in the canteen area.

7 There are agendas for the public hearing and this
8 community session available at the table as you come
9 in; please pick one up if you haven't already done so.

10 Now, I would like to introduce all of the Board
11 and Staff before we proceed to the presentation on the
12 agenda. I will be chairing this Panel, and with me
13 today as Members of the Panel are Board Members Ross
14 Mrazek on my right, and to my left, Makabe Nartok.

15 Several Staff members who have contributed to the
16 NWB's administration and the technical review of the
17 applications are present along with legal counsel to
18 the NWB, and I will now introduce the individuals
19 attending today.

20 When I say your name, please wave so that people
21 know who you are: Stephanie Autut, Executive Director;
22 Karén Kharatyan, Director of Technical Services; Ben
23 Kogvik, Director of Board Administration and
24 Communication; Derek Donald, Technical Advisor; Ida
25 Porter, Licensing Administrator; and Teresa Meadows,
26 Meadows Law, Legal Counsel to the Board.

1 In addition, we have two interpreters available
2 for simultaneous translation: Ben Kogvik, in-house
3 interpreter to the Board and Henry Ohokannoak from
4 Cambridge Bay.

5 For audio support, we have William Nicoll from the
6 Nunavut Impact Review Board. If you experience any
7 difficulties with your headsets, William will be able
8 to help and assist you.

9 To ensure an accurate record of the proceeding is
10 kept, we have with us a court reporter, Karoline
11 Schumann, from Dicta Court Reporting Incorporated. To
12 assist Karoline, I ask that all parties please state
13 their name prior to speaking.

14 With that, I will now turn the microphone over to
15 Stephanie Autut, the Board's Executive Director, to
16 give you an overview of tonight's session. Stephanie?

17 MS. AUTUT: Okay, thank you, Mr. Chair.

18 The Board will start tonight's session with a
19 presentation by the Nunavut Water Board's Technical
20 Staff, which will be followed by a presentation by the
21 Applicant, TMAC Resources Inc., following that, we will
22 have presentations by the following interveners: The
23 Kitikmeot Inuit Association, Crown-Indigenous Relations
24 and Northern Affairs Canada, Environment and Climate
25 Change Canada, and Fisheries and Oceans Canada.

26 I will note that each intervening party will have

1 to be sworn in before they give their presentation to
2 the public, so this is a minor change from other
3 meetings that you may have attended.

4 After each presentation, I will invite anyone who
5 wishes to ask questions or provide the Panel with their
6 comments to step up to a microphone and speak on the
7 record. If you are an Elder, you can raise your hand
8 at any time, and one of our Staff members will help
9 ensure your comments are included on the record.

10 I encourage everyone with questions or comments to
11 please step up to the microphone and speak. You can
12 direct your questions to the Staff of the Nunavut Water
13 Board, the Applicant, TMAC, the interveners, the
14 Kitikmeot Inuit Association, Crown-Indigenous Relations
15 and Northern Affairs Canada, Environment and Climate
16 Change Canada, and Fisheries and Oceans Canada.

17 As Mr. Chair said at the start of the public
18 hearing this morning, it is very important to the
19 Nunavut Water Board that we have an accurate record of
20 the information, questions, and comments that we hear
21 during this public hearing. We ask that, to assist our
22 interpreters and the court reporter, please wait until
23 you have a microphone before you speak, then state your
24 name, and speak directly, clearly, and slowly into the
25 microphone. Please be mindful of the interpreters as
26 you go and avoid the use of abbreviations if you can.

1 We appreciate your participation and assistance in
2 making sure we are all heard and understood in this
3 hearing, and that this hearing is conducted in a
4 productive and respectful manner.

5 I will now turn the microphone over to the Board's
6 Technical Staff to walk you through how these
7 applications have progressed to this point. Derek?
8 Community Session Presentation by the Nunavut Water
9 Board

10 MR. DONALD: Thank you, Stephanie, and
11 thank you, Mr. Chair. Give me one second, and I'll
12 load the presentation up here.

13 Thanks again. My name is Derek Donald with the
14 NWB, and I'll be presenting our community session
15 presentation on the two applications for the Phase 2
16 Hope Bay Belt Project.

17 Just to briefly go over the list of topics, I'll
18 give a bit of a background about the Nunavut Water
19 Board, the different types of authorizations we
20 provide. I will then go over the Type "A" licensing
21 process, followed by the scope of applications that are
22 before the Board; then a bit about the applications'
23 procedural history; intervener participation, public
24 participation; then next steps in the process for a
25 Type "A" application; followed by the Nunavut Water
26 Board's Staff contact information if anyone wants to

1 get a hold of us; and, finally, there will be time at
2 the end for any questions or comments from the public.

3 So the Nunavut Water Board is an institute of
4 public government established under Article 13 of the
5 Nunavut Agreement. It has the responsibilities and
6 powers over the regulation, use, and management of
7 freshwater in the Nunavut Settlement Area.

8 The objects of the NWB are to provide for the
9 conservation and utilization of waters in Nunavut
10 except in National Parks and to do so in a manner that
11 will provide the optimum benefit of those waters for
12 Nunavut residents followed by residents of Canada in
13 general.

14 Based on our mandate, the NWB may issue any of the
15 following types of authorizations for the use of water
16 and deposit of waste for undertakings in Nunavut. So
17 the first one is an approval without a licence for very
18 minor operations. Following that, for slightly more
19 substantial projects such as exploration mining, we
20 would issue Type "B" Licences, and then, finally,
21 Type "A" Licences are fairly major projects such as
22 operational mines.

23 This week's public hearing is for two Type "A"
24 Water Licence applications. So these flow diagrams
25 sort of briefly outline the process that a Type "A"
26 application will go through. First of all, the NWB

1 receives the application and confirms the
2 classification of the undertaking as a Type "A"
3 Licence. Following that, the NWB will conduct an
4 initial concordance review and, if necessary, will ask
5 the applicant to provide any additional information
6 that might be required.

7 The NWB will then issue a notice of application
8 and request a technical review and submission of
9 comments with a 30-day minimum period of this.
10 Following that, interested parties will submit written
11 representations, and, again, if required, the applicant
12 can provide additional information in response to those
13 requests by parties. And so this is really the major
14 technical review stage of the project.

15 Following that, the NWB will hold a technical
16 meeting and a pre-hearing conference, and then it would
17 issue a pre-hearing conference decision report, and if
18 directed in this report, the applicant can provide
19 additional information. Following this, the NWB will
20 then issue a notice of public hearing providing a
21 minimum of 60 days' notice for this.

22 Then here, in our current stage, parties will
23 exchange written interventions and prepare for the
24 public hearing, and then at the stage we're at right
25 now, the NWB will hold a public hearing.

26 So following this, the NWB will issue a decision

1 to approve the application and provide a draft licence
2 to the Minister, or, alternatively, the NWB can issue a
3 decision not to approve the application with reasons to
4 the Minister.

5 So if, initially, we approve the applications, the
6 Minister can either approve the issuance of the licence
7 or does not necessarily have to approve the issue of
8 the licences; and then, alternatively as well, the
9 Minister can approve the NWB's negative decision or can
10 disagree with it as well.

11 So moving on to the scope of the application.
12 There are, in fact, two applications, as mentioned,
13 before the Board by TMAC Resources Incorporated for
14 25-year terms. They have requested a new water licence
15 for their Boston site, and then an extension of their
16 Doris North licence, which will then also include the
17 Madrid North and Madrid South sites. This will allow
18 for the expansion, construction, and operation of
19 mine-related facilities at the Doris North mine, the
20 Madrid North, the Madrid South, and the Boston mine
21 sites. This will also include an expansion and
22 construction of a marine cargo dock and a 51-kilometre
23 all-weather road from Madrid South to the Boston site.

24 The camp size at Doris will be about 400 persons,
25 and this will house people for the Doris Madrid North
26 and Madrid South sites, and then the camp at Boston

1 will be 300 persons.

2 They're requesting the use of 44,000 cubic metres
3 per year from Windy Lake for domestic purposes and 1.9
4 million cubic metres from Doris Lake for industrial
5 purposes. And then for the Boston site, they're
6 requesting about half a million cubic metres per year
7 from Aimaokatalok Lake.

8 In terms of water management, they will have both
9 industrial and domestic water treatment facilities.
10 Water will be discharged to the tundra. Domestic water
11 will be discharged to the tundra if it meets discharge
12 criteria; otherwise, it will be discharged to the Doris
13 tailings impoundment area for the Doris-Madrid sites or
14 Aimaokatalok Lake at the Boston site. Water management
15 at these sites will also include contact water ponds
16 and noncontact water ponds to manage surface runoff.

17 In terms of waste and hazardous materials
18 management, they will have fuel and explosive storage
19 facilities, waste rock and ore storage facilities,
20 quarries and borrow pits, solid waste management
21 facilities at Doris and Boston, both domestic and
22 industrial water treatment facilities at Doris and
23 Boston, land farms at both Doris and Boston, and much
24 of the waste management or wastewater from Madrid will
25 be transported to the Doris site.

26 Their mining activities will include underground

1 and surface crown pillar recovery mining, explosives
2 use. Ore will be processed by crushing gravity
3 separation and cyanide leaching. And at Doris and
4 Boston, they will have 2400-tonne-per-day processors,
5 and a 1200-tonne-per-day concentrator at Madrid in
6 which the concentrate will be hauled to the Doris site
7 for final gold extraction.

8 As mentioned, some of the other activities is the
9 construction of a marine cargo dock in Roberts Bay and
10 the construction of the 51-kilometre all-weather road
11 down to the Boston site.

12 Now, to briefly go over the procedural history of
13 the applications before the Board. They were received
14 by the NWB on December 20th. Following that, on
15 January 17th, the Board publicly distributed the
16 applications for a completeness check and initial
17 technical assessment. Between February 9th and 14th,
18 the NWB received comments on completeness from DFO,
19 CIRNAC, ECCC, and KIA. On February 21st, the NWB
20 received TMAC's responses to interveners' initial
21 completeness check. Then on February 23rd, the NWB
22 publicly distributed the applications for a full
23 technical review. Between March 23rd and 29th, the NWB
24 received technical comments from the four major
25 intervening parties involved: DFO, INAC [sic], ECCC,
26 and KIA. The NWB received TMAC's technical responses

1 to these comments on -- between April 4th and 6th. On
2 April 13th, the NWB confirmed the dates for the
3 technical meeting, and then on April 26th, the NWB
4 distributed a proposed agenda for the technical
5 meeting. Between May 3rd to 7th, the Board received
6 confirmation of attendees, and then, finally, on May
7 14th and 15th, the Nunavut Water Board hosted the
8 technical meeting in Cambridge Bay.

9 On May 29th, the NWB distributed a list of
10 commitments made by TMAC at the technical meeting, and
11 then, on June 19th, received response to these
12 commitments made at the technical meeting. On July
13 3rd, the NWB issued a notice of public hearing -- or of
14 the pre-hearing conference to be held via
15 teleconference. Between July 16th and 27th, the NWB
16 received additional technical comments and responses
17 and confirmation of participation in the pre-hearing
18 conference. Then on July 31st, the NWB conducted the
19 pre-hearing conference via teleconference and, on
20 August 13th, issued a notice of public hearing and, on
21 August 22nd, issued the pre-hearing conference decision
22 report.

23 Then between September 21st and September 28th,
24 the NWB received final submissions from -- for the
25 public hearing from the KIA, CIRNAC, ECCC, and DFO.
26 Between October 1st and 5th, the NWB received TMAC's

1 responses to final submissions for the public hearing.
2 And on October 12th, the NWB received CIRNAC's comments
3 on draft licences submitted by TMAC. On October 15th,
4 the NWB received public hearing presentations from the
5 Applicant and the intervening parties. And, finally,
6 on October 16th, the NWB distributed a public hearing
7 reminder and final agenda.

8 In terms of the participation of the parties
9 involved, as mentioned TMAC, the Kitikmeot Inuit
10 Association, Crown-Indigenous Relations and Northern
11 Affairs, Environment and Climate Change Canada, and
12 Department of Fisheries and Oceans, have all
13 contributed to the review process for these
14 applications. They've participated in formal and
15 informal discussions aimed at resolving all relevant
16 issues. They've also provided the Board and the
17 Proponent with valuable, technical information on
18 relevant issues.

19 In terms of the public participation, everyone is
20 encouraged to participate here at the public hearing
21 and in this community session. Interested persons can
22 also contact Ida Porter, if needed, to provide written
23 comments or review documents filed on the applications.
24 And also note that all documents received have been
25 posted on the NWB's FTP site and are available to
26 everyone from the general public.

1 So the next steps for the Type "A" applications,
2 the public hearing is being held this week and chaired
3 by the Board Panel and led by the Board's Chair. The
4 NWB Panel is here to consider the evidence provided
5 during the hearing before issuing a decision in about
6 30 to 45 days following the public hearing. The NWB
7 will inform the public of the Board's decision once it
8 is rendered.

9 And so here's a list of the contact information
10 for the NWB Staff: For the public, as mentioned, Ida's
11 email address is up there, and you can also come to us
12 after the community session if you wish to submit any
13 written submissions, and feel free to contact any of
14 us.

15 And, finally, are there any questions or comments
16 from the public? If not, I will turn the mic back to
17 you, Stephanie.

18 MS. AUTUT: Okay, thanks, Derek, for the
19 overview of the Water Board's process and walking us
20 through the applications. So, again, are there any
21 questions from the public with respect to the Water
22 Board process?

23 Questions/Comments from the Community

24 MS. AUTUT: Okay, Joanni, if you want
25 to -- William will bring you the mic there if you'd
26 like to just state your name for the record, please.

1 MR. SALLERINA: Thank you very much,
2 Stephanie, and Mr. Chair. My name is Joanni Sallerina.
3 I'm Mayor of Gjoa Haven.

4 I guess my question is that I know there's mining
5 going on on part of Back River, and from the past that
6 we hear that there's some high minerals or -- in the
7 trout in Back River area, are there any more testing
8 going to be done in the future or how much is too much
9 contaminant to the fish for somebody to really look
10 into the mining and their effect on our fish and
11 animals? Thank you.

12 MS. AUTUT: Okay, thank you, Joanni. So
13 that's not a question specific to the Water Board, so
14 I'm going to defer to DFO on monitoring fish. So I'm
15 not sure if this is something that will be addressed in
16 your presentation, or if you have a comment at this
17 point to -- in response, and we may also defer to the
18 company, TMAC, as well. It may be something that comes
19 up in your presentation or that you may be able to
20 respond at this point.

21 So I'll first defer to DFO, if you have anything
22 to provide to the question with respect, specifically,
23 to monitoring of fish health.

24 MS. McLELLAN: I think I would actually defer
25 that first to TMAC to answer, as they're studying ...

26 MS. AUTUT: Okay, please, Oliver.

1 MR. CURRAN: Yeah, thank you. My name is
2 Oliver Curran, and I'm with TMAC Resources.

3 I guess just one -- and thank you very much for
4 the question; it's a good question. The first thing I
5 would say is, you know, I think your question pertains
6 to the Sabina project, Back River, so I can't speak
7 specifically to the question that you ask. However,
8 it's a question that pertains to all mine sites in
9 Nunavut about monitoring fish, and in a little bit,
10 we'll be going through a presentation, and we have a
11 couple slides that describe the monitoring we do in
12 lakes for fish health, so we'll do that presentation in
13 a little bit, but maybe I'll just ask Mike Henry to
14 explain a little bit about the aquatics effects
15 monitoring program that we currently do at Doris and
16 what we're proposing to do as part of the Madrid-Boston
17 project to give you a bit of an appreciation for the
18 monitoring we do in lakes.

19 DR. HENRY: Thank you. Being also
20 familiar with the Back River program, but as part of
21 all of the water licences that are granted and the
22 federal regulations, there's aquatic effects monitoring
23 programs that are developed that measure how safe the
24 water is, how safe the sediment is, how safe the fish
25 food is, and also the health of the fish and the
26 numbers of the fish.

1 There's also federal regulations as well, where
2 you have to measure the same sorts of things when the
3 project is discharging directly into a water body.

4 There's also a required -- if there's demonstrated
5 that harm to fish cannot be avoided, then there's
6 offsetting that's happened where the balances of losses
7 are -- enhancements are made to fish habitat, so the
8 fish -- more fish can be there, more fish food, or they
9 can migrate to certain areas.

10 There's also monitoring under the water licences
11 to make sure that the waters have a certain criteria or
12 certain levels or limits that they have to meet to make
13 sure that they're safe for fish and their habitat as
14 well.

15 So there's several layers of monitoring that
16 happen. And these plans also have measures such that,
17 if changes are identified, then there's certain
18 management actions that can happen to make things more
19 safe for fish. So the monitoring is comprehensive, and
20 it kind of hits everything from water to sediment to
21 fish food to the fish themselves. Thank you.

22 MS. AUTUT: Thank you, TMAC. Did DFO wish
23 to add to that response with respect to the federal
24 requirements?

25 MS. MCLELLAN: The only thing I would add is
26 that we look at the fish habitat and fish but not

1 specifically the health and -- especially when it comes
2 to like chemical levels.

3 Sorry, that's Angie McLellan with Fisheries and
4 Oceans.

5 MS. AUTUT: Okay, thank you to both
6 parties.

7 Joanni, does that help answer the question?

8 MR. SALLERINA: M-hm.

9 MS. AUTUT: Okay, so there will be --
10 we've got some additional presentations, as noted, that
11 will highlight some of this information as well.

12 Any other questions for the Water Board at this
13 point? If not, okay, we're going to move on to our
14 Agenda Item 5, which is a presentation by TMAC. So,
15 Oliver, I'll hand the mic over to you. You've already
16 been sworn in, so you're free to begin your
17 presentation.

18 So we're just checking on presentation materials
19 that may need to be entered as exhibits, so if you just
20 give us a moment.

21 MS. MEADOWS: Thank you, Stephanie. Teresa
22 Meadows, legal counsel for the Nunavut Water Board.

23 Mr. Chair, I have three additional exhibits to
24 file in the public hearing, being the community
25 sessions in English, Inuktitut, and Inuinnaqtun, and I
26 propose to file those as the next exhibits in this

1 public hearing. Thank you, Mr. Chair, those are my
2 procedural matters.

3 EXHIBIT 7 - TMAC Resources Inc. Community Session
4 (English) hard copy Boston-Madrid PowerPoint
5 presentation Nunavut Water Board Final Hearing

6 EXHIBIT 8 - TMAC Resources Inc. Community Session
7 (Inuktitut) hard copy Boston-Madrid PowerPoint
8 presentation Nunavut Water Board Final Hearing

9 EXHIBIT 9 - TMAC Resources Inc. Community Session
10 (Inuinnaqtun) hard copy Boston-Madrid PowerPoint
11 presentation Nunavut Water Board Final Hearing

12 MS. AUTUT: Okay, thank you, Teresa. So
13 TMAC, the floor is yours.

14 Community Session Presentation by TMAC Resources Inc.

15 MR. CURRAN: Thank you, Mr. Chair. Oliver
16 Curran with TMAC Resources.

17 Thank you for coming to hear our presentations
18 tonight. So what I'll do is provide an overview of the
19 Boston-Madrid project.

20 Out of interest for you, this picture here is
21 looking south from our existing Windy Lake road, so
22 we're looking south towards the Madrid deposit over
23 here, and this is Windy Lake on the right and Patch
24 Lake is right over here. So future developments that
25 we're proposing are down in the Madrid area and then
26 another 50 kilometres to the south at Boston.

1 This is just a picture showing the existing Doris
2 Project, so this is the mine site that we've built and
3 that we're currently operating. It's a relatively
4 tight and compact site, about 650 metres wide, and this
5 is the entrance to our underground mine. And so our
6 underground mine goes to gold deposits in this
7 direction and also towards -- under Doris lake. And
8 all of this infrastructure here that we're currently
9 operating will continue to be used to process ore at
10 Madrid. So all of this infrastructure, if Phase 2 --
11 if we were to get a water licence for Phase 2, all of
12 this infrastructure would continue to be utilized for
13 the life of the Madrid project.

14 So just to give you a bit of an overview of what
15 the project is, so it's a proposal to create three new
16 underground mines, and it also includes surface mining
17 or crown pillar recovery, and all of the waste rock
18 that we pull out of the ground is put back underground
19 prior to closure, and it's put in in the underground
20 mine during operations as well for stability in the
21 mine.

22 The proposal is to increase our processing up to
23 6,000 tonnes a day. So, at the moment, at the Doris
24 project, we're processing around 2,000 tonnes a day,
25 and this proposal would increase that to 6,000 tonnes.
26 Of course, the product is going to be gold, and from

1 Doris and Boston, we can fly the product to market, and
2 we would also produce a gold concentrate at Madrid
3 North, which would be further processed at Doris.

4 The transportation for the project, we'll continue
5 to use the sea lift, just like in the communities;
6 we'll continue to receive all of our fuel and supplies
7 at Roberts Bay. Our product will be flown to market,
8 and we'll have roads that connect all of our mine
9 sites. So right now we have roads that connect from
10 Roberts Bay to Doris, and we'll continue those roads to
11 connect to Madrid and Boston.

12 Employment for the project will be about 870
13 workers and will continue to be a fly-in, fly-out
14 operation, so our flights will continue to be from all
15 five Kitikmeot communities, as well as from Edmonton
16 and Yellowknife.

17 And our -- the economic benefit of our project
18 will expand in that there will be additional royalties
19 and taxes paid to the KIA, NTI, the Territorial
20 Government, as well as the Federal Government.

21 So this is a layout showing the Hope Bay Belt;
22 it's a depiction of the Hope Bay Belt, which is about
23 80 kilometres by 20 kilometres wide. We have Roberts
24 Bay at the top, we have our operating Doris mine, and
25 I'll just go through and show you layouts for each of
26 the Madrid North and Madrid South and Boston areas to

1 give you an idea of the infrastructure that would be
2 built on the land.

3 So I've already described the Doris mine to you,
4 which is in the north of the belt, which is currently
5 operating.

6 At Madrid North, we would build an underground
7 mine. It would be a much simpler site in that it would
8 just be an underground mine with waste rock stockpiles,
9 a concentrator, and water catchment areas, so the site
10 is designed that all contact water is captured and can
11 be analyzed and tested to make sure it meets criteria
12 before it goes into the environment. And all of the
13 workers that would work at Madrid North would all be
14 housed at Doris.

15 Then moving down to Madrid South, this will also
16 be an underground mine. It will be similar to Madrid
17 North in that it will have an underground mine, and, at
18 surface, there will be pads for waste rock and ore, and
19 there will be water management features to make sure
20 that all the water is captured and meets criteria
21 before discharge to the environment.

22 As part of this proposal, we also have to build an
23 all-weather road that extends from the Madrid area all
24 the way down to Boston. So as Derek explained, this is
25 going to be about a 51-kilometre road, and it will be
26 very similar to what we have currently built on the

1 project. So the road is typically -- it's one lane,
2 it's about 10 metres wide, and it's typically on
3 average about 1 metre high above the permafrost, and
4 that's to keep the road stable and safe and also, of
5 course, to protect the permafrost.

6 And then down at Boston, the proposal is to build
7 a full integrated site, very similar to what you saw at
8 Doris, so there will be a 5,000-foot airstrip, there
9 will be a tailings management area, and there will be a
10 site to accommodate around 300 people with offices.
11 And like the mine at Doris, we'll have pads at surface
12 to store waste rock and ore, and we'll also have a
13 processing facility similar to the one we have at
14 Doris.

15 And all the water that we use at the camp will
16 come from Aimaokatalok Lake, and prior to discharge,
17 all the mine contact water, all of the wastewater,
18 water from our sewage treatment plant, all that water,
19 we'll have to make sure that it meets the right
20 criteria before we discharge it back into the lake.

21 Now, moving to our tailings impoundment area. So
22 currently, we were already utilizing this impoundment
23 area and will continue to use it for Phase 2. The
24 footprint of tailings will expand to around 18 million
25 tonnes shown here in green, and in order to accommodate
26 those tailings, we'll have to raise the south dam,

1 we'll have to build this west dam, and the dam in the
2 north, there's no change to that. It's currently
3 built, and that does not need to change for Phase 2.

4 And, finally, like with any project, we have to
5 have the ability to bring fuel and supplies to the
6 project, so we'll continue to do that from Roberts Bay.
7 We already have an extensive area here that can receive
8 fuel and supplies, but we're also proposing to build
9 this cargo dock, which will extend into deeper water,
10 and that will allow us to more efficiently and more
11 quickly offload fuel and supplies, and we'll build this
12 road here which will connect the cargo dock to Roberts
13 Bay, and the project will also need an additional 10
14 million litres of fuel, which we propose to build in
15 this tank farm here.

16 So now that I've explained the project to you, as
17 part of this water licensing process, we also have to
18 describe to all of the reviewers how the project will
19 be closed, and Maritz will speak to this in a little
20 bit more detail. However, the basics of closure and
21 reclamation is that we have to demonstrate that, when
22 we close the project, that all the land will be
23 physically stable; that our tailings areas and other
24 areas will be chemically stable, meaning that, when the
25 project is shut down and closed, that we maintain, for
26 example, water quality in our lakes; and also there is

1 money left aside to ensure that the project is closed
2 in a way that we return it as best we can back to its
3 previous condition, meaning that all the buildings are
4 removed, so that the future use and aesthetics of the
5 project or of the area are restored.

6 So now that I've described the project, I've
7 provided you with an overview of the project, I'll turn
8 it over to Maritz to explain tailings and waste rock
9 management.

10 DR. RYKAART: Good evening, my name is
11 Maritz Rykaart.

12 When we mine, we produce two byproducts, one is
13 waste rock and the other is tailings, and in these few
14 slides, I'll explain how we're going to manage these
15 two byproducts.

16 First, I'm going to explain exactly what tailings
17 is. We've got an underground mine, and out of the
18 underground mine, we've got two products, one is waste
19 rock and the other is ore. The ore is what contains
20 the gold, and we -- to get the gold out, we send it to
21 a processing plant. That allows us to pour gold bars,
22 and then the product that comes out on the other side
23 that is not gold is flotation tailings or detoxified
24 tailings. And I'll explain to you in greater detail
25 what those two types of tailings actually mean.

26 So let's start with the flotation tailings. The

1 ore is contained within rock, so the gold is actually
2 part of the rock mass. To get that gold out, we need
3 to send it through a crusher. So we grind the rock
4 fine, and that allows us to actually extract the gold.
5 So once we've ground up the rock, we've got a very fine
6 rock with pieces of gold in it. To actually get the
7 gold out of that finely ground rock, we use a gravity
8 separator. How that works is the gold has got a very
9 high density, and it settles out and falls to the
10 bottom of the pan. So this is similar to what you
11 would have seen on TV when people pan for gold. This
12 is, on a large scale, what we're doing here.

13 Once we've taken the gold out, what we're left
14 with is clean crushed rock that no longer has any gold
15 product in it. So we can get nuggets of gold out
16 through this process, and we also get some of the very,
17 very fine gold out. It's fine enough that you can't
18 see it with the naked eye, and that's still bound up in
19 very fine rock. So that comes out as what we call a
20 concentrate. So I'll explain now what the concentrate
21 is and how we get the gold -- the rest of the gold out
22 of the concentrate.

23 To get the rest of the gold out of that
24 concentrate, we need to add chemicals to the rock so
25 that we can actually get a solution to extract that
26 last bit of gold out. The chemical that we will use at

1 this project site is cyanide. By doing that, we can
2 get that last bit of fine gold out of the rock, and we
3 can pour our gold bars.

4 What we're left then is a small volume of tailings
5 which is called the leach tailings. This is actually
6 less than 10 percent of the total volume of tailings
7 that we've got to deal with. These tailings still
8 contains some of the cyanide. We then need to get rid
9 of the cyanide, because we don't want to send the
10 cyanide out into the environment. We do that through a
11 cyanide destruction circuit. So we add oxygen and
12 carbon dioxide to the system which destroys the
13 cyanide. That leaves us with a clean, fine tailings,
14 which is called the detoxified tailings. We then take
15 that tailings, and we take it back underground and use
16 it for mine backfill where it's permanently stored
17 within the permafrost environment.

18 So that explains to you what the tailings is. Now
19 where do we store these flotation tailings? We're
20 going to do that in Tail Lake. Tail Lake is a tailings
21 impoundment area, which we've designated as such. In
22 order to safely store the tailings in this area, we're
23 going to build a series of engineered containment dams.
24 We're going to build a north dam, which is at the top
25 of the slide, and we're going to build a south dam,
26 which is at the bottom of the slide.

1 As part of the Phase 1 project, which is currently
2 underway, there's also an interim dike planned which
3 will contain the footprint of the tailings to as small
4 as practical.

5 As part of Phase 2, we're going to increase the
6 volume of tailings from 2 million tonnes to 18 million
7 tonnes. By doing that, we're going to extend the area
8 over which we're placing tailings, which is the area
9 shown in grey. To do that safely, we need to raise the
10 south dam, and we need to build a new dam, which is
11 called the west dam.

12 This is a photograph of the north dam. This dam
13 was built in 2012, and it's been operating since then
14 and is behaving very well in accordance with the
15 original design. This is not a big dam. This dam is
16 about 10 metres high, which is about twice the height
17 to the ceiling, to give you a perspective.

18 This is a photograph of the south dam, which was
19 completed this year, and this shows the excavation down
20 to the key trench to ensure that we can tie the liner
21 into the dam itself.

22 Oliver explained to you that we need to close the
23 mine in a good way. This is an illustration of how
24 we're going to do that. For the tailings impoundment
25 area, when we close -- when we're ready to close the
26 mine, all of the area in grey will be exposed tailings.

1 We're then going to place a rock cover over that entire
2 surface of the tailings. The purpose of that rock
3 cover is to ensure that there is no dust that's going
4 to blow off the tailings and ensure that there's no
5 physical contact with any animals or people that may
6 access the area.

7 There's a pond in front of the dam, and once the
8 water quality in that pond meets discharge criteria,
9 we'll actually drain that pond, and we'll breach the
10 dam. Breaching the dam means we'll actually take the
11 dam away, so there's no long-term risk of any dams in
12 this environment. And that leaves us with a land form
13 that blends into the surrounding tundra.

14 At the Boston site, we'll also have a tailings
15 area. This tailings technology is going to be very
16 different. We're going to build a dry stack tailings
17 facility there. What a dry stack tailings facility is
18 rather than pumping the tailings into an impoundment
19 behind dams, we actually take all the water out of the
20 tailings to create a dry product which looks pretty
21 much like beach sand. We can then take this sand, use
22 trucks and shovels, and build it up into a pile very
23 much like a big sand castle.

24 To explain to you the difference between these
25 tailings and the tailings impoundment area where we
26 have the dams, I'll remind you again that the product

1 is crushed rock. At Doris and Madrid, we add water to
2 this crushed rock to allow us to pump it out and place
3 it into the tailings impoundment area. In contrast, at
4 Boston, we're sending this material through a filter
5 press, and by sending it through a filter press, we're
6 squeezing out all the water, and we're left with a dry
7 product -- or a virtually dry product. This is pretty
8 much like your coffee grounds in your coffee machine in
9 the morning: Once the coffee is poured through, you're
10 left with a fairly dry product. We can then load that
11 material into trucks, and we can build the dry stack
12 facility. This is a very good technology because we
13 reuse our water immediately without having to send it
14 out behind the dam, and we also have no water
15 containment dams that we need to maintain.

16 I said at the beginning that there's two waste
17 products associated with mining, the one was tailings,
18 the other was waste rock. One unique thing about this
19 project is that because of the mining method that's
20 being used and because of how they develop the mine,
21 there will be sufficient void space in the mine to take
22 all the waste rock that gets excavated during the
23 mining process and put it back underground prior to
24 closure. That means we'll only have temporary waste
25 rock piles.

26 There's three areas where we'll have waste rock

1 placed: One is at Madrid North, one is at Madrid
2 South, and one is at Boston. For those of you that may
3 be familiar with mines in other parts of Canada, other
4 parts of Northwest Territories, this is an underground
5 mine, so these waste rock piles are small. These waste
6 rock piles are less than half a million cubic metres
7 each, where a typical open-pit mine, that you may be
8 familiar with, is about ten times greater than this.
9 So these are really small piles which ultimately go
10 back underground.

11 MS. AUTUT: Maritz, I'm going to ask you
12 just to back off the mic a little bit, and that goes
13 for anybody using the mic; it's really distorting for
14 the interpreters, so if we can just give a bit more
15 distance, that would be appreciated. Thank you.

16 DR. RYKAART: So with that, I've explained
17 the tailings management at the site.

18 In the next three slides, I'll explain the water
19 management component of the project. The Doris site,
20 which is part of Phase 1, will stay exactly the same as
21 it is for Phase 2. The primary discharge system of any
22 water that we do not reuse on the site goes to the
23 tailings impoundment area and, from the tailings
24 impoundment area, it is discharged to Roberts Bay into
25 the ocean.

26 The second site that we've got to manage water

1 from is the Madrid North and the Madrid South sites.
2 The Madrid North and Madrid South sites each has waste
3 rock sites and various contact water ponds. At the
4 Madrid North site, we also have a concentrator, and a
5 concentrator is similar to the mill that processes the
6 tailings. Any water from these two sites gets
7 internally recycled, and what cannot be internally
8 recycled, gets sent to the Doris tailings impoundment
9 area, from where it is discharged to Roberts Bay.

10 I had some animation there. So these are the
11 contact water ponds and the concentrator shown on the
12 slide.

13 At the Boston site, which is down south, we have a
14 similar situation; we've got a series of contact water
15 ponds or stockpiles and waste rock piles. All of these
16 facilities have water that collect in them, and all of
17 these facilities drain back out into the environment.
18 In this case, we do not send the water back into the
19 Roberts Bay, but we actually treat all the water
20 through a water treatment plant before we discharge it
21 back into Aimaokatalok Lake.

22 And with that, I'll hand it over to Mike.

23 DR. HENRY: Thank you.

24 So as part of the Phase 2 environmental process,
25 we evaluated the Phase 2 activities against five
26 important ecosystem characteristics, freshwater

1 ecosystem characteristics, and this included surface
2 hydrology or how water flows, the quality of the water,
3 the quality of the sediment, and fish and their
4 habitat.

5 And what we found through the extensive mitigation
6 measures applied by TMAC that we predicted that there'd
7 be no significant effects anywhere in the freshwater
8 environment due to Phase 2 activities. And what we've
9 seen with the Doris project, which is through the
10 construction or operations over several years, is we
11 found that TMAC's mitigations have, in fact, been
12 effective as we've never seen any effects in the
13 freshwater environment under the Doris project.

14 So as I just mentioned with respect to the Back
15 River project, the same applies for the Phase 2
16 project. There's many monitoring measures that go on
17 at site as part of this process to ensure that the
18 water is safe and that the fish are safe, and this
19 includes an aquatic effects monitoring program,
20 environmental effects monitoring under Environment
21 Canada's metal and diamond mining effluent regulations,
22 monitoring under the Type "A" Water Licences, as well
23 as Fisheries Act authorizations and offsetting.

24 Collectively, these programs monitor water and
25 sediment, and the primary producers are algae, benthic
26 food for the fish, as well as food in the water column

1 for the fish, and fish.

2 And these programs are designed to assess if, in
3 fact, if effects are determined, that management
4 actions will be triggered, so further mitigations. So
5 TMAC will do more to make sure that things don't
6 increase and make sure that the water is safe for fish.

7 What is also important about these monitoring
8 programs are -- is that we also monitor lakes that are
9 not close to the project so we can compare the project
10 lakes and the lakes far away, because sometimes what
11 happens is that climate in the whole area can cause
12 things to increase, and so we look at that as well.

13 So the important features to take home from this
14 is that the monitoring is comprehensive. It evaluates
15 everything in the freshwater environment in that, if
16 things increase, then we take -- then TMAC takes
17 further measures to make sure things are safe.

18 Thank you.

19 MS. AUTUT: Okay, so thank you TMAC for
20 the presentation. So, again, we're going to open the
21 floor up to questions from the public. Does anyone
22 want to ask questions of TMAC specifically at this
23 point?

24 Questions/Comments from the Community

25 MS. AUTUT: Joanni, go ahead, we'll get
26 you a microphone.

1 MR. SALLERINA: Thank you, Stephanie. Thank
2 you, Mr. Chair, for the opportunity to speak again.

3 The question going to TMAC, I know you have in
4 your diagram there at Boston, the Boston TIA, the dry
5 waste. Have they done any testing as to if there's any
6 chemical or materials within the dry waste, and if so,
7 are they being covered so that the rain doesn't run the
8 water down to the rivers or lakes or ponds? Thank you.

9 DR. RYKAART: Maritz Rykaart.

10 Thank you for that question. Yes, in fact, the
11 tailings has been tested geochemically. The tailings
12 is potentially acid-generating; therefore, we do need
13 to cover it at closure. So the closure plan for that
14 tailings facility is to place a low infiltration cover
15 on it, and the way we're going to do that at this site
16 is by placing a geomembrane liner over it, and on top
17 of that, we're placing different layers of rock with,
18 finally, a thick layer of crushed rock. That ensures
19 that the liner, which is providing the infiltration
20 reduction, that it stays protected from the
21 environment, and that will prevent seepage and runoff
22 from entering into the environment.

23 In addition to that, the facility will also freeze
24 back over time, which will further inhibit seepage and
25 infiltration.

26 MS. AUTUT: Joanni?

1 MR. SALLERINA: Thank you, Stephanie.

2 You said when it's closing that you will be doing
3 that, but what are you doing at this time that, you
4 know, the mine has, I'm assuming, a decade to go yet
5 before you close it down, and before then, what are you
6 doing to prevent it from going into the environment?
7 Thank you.

8 DR. RYKAART: Maritz Rykaart.

9 Yeah, the laser pointer works.

10 If you look at this figure, this area here is the
11 dry stack tailings. These areas around here are
12 containment berms, so any runoff that happens here will
13 collect into three containment ponds, one over there,
14 one over here, and one over here. So they will collect
15 the water. These are lined ponds, and any water that
16 collects there gets pumped from there to the surge
17 pond, which is located at the mill, and from there, it
18 is sent through a water treatment plant to ensure that
19 before it gets discharged, it remains safe.

20 MS. AUTUT: Any further questions from the
21 public? If not, thank you for your presentation. We
22 will take a short break, Mr. Chair, and if we could
23 come back in 15 minutes. We'll resume with the
24 Kitikmeot Inuit Association, getting you sworn in.
25 Thank you.

26 (ADJOURNMENT)

1 MS. AUTUT: So, thank you. So moving on
2 to the Kitikmeot Inuit Association, I'm going to hand
3 the mic over to legal counsel to swear parties in.

4 MS. MEADOWS: Thank you, Stephanie. Teresa
5 Meadows, legal counsel for the Nunavut Water Board.

6 If I could have the witness state and spell his
7 name for the record, please.

8 MR. ROESCH: My name is John Roesch,
9 J-O-H-N, R-O-E-S-C-H.

10 MS. MEADOWS: Thank you, Mr. Roesch.

11 JOHN ROESCH, Sworn

12 MS. MEADOWS: Teresa Meadows, legal counsel
13 for the Nunavut Water Board.

14 Mr. Chair, I have two additional exhibits to be
15 filed in this public hearing, being the PowerPoint
16 presentations, hard copy of the PowerPoint
17 presentations for the community session from the
18 Kitikmeot Inuit Association in English and translated
19 into Inuinnaqtun.

20 Thank you, Mr. Chair, those are my procedural
21 matters.

22 MR. ROESCH: Just a point of correction,
23 there are two translations; you should have it in
24 Inuktitut as well.

25 MS. MEADOWS: My apologies, Mr. Chair. I
26 was missing the third copy. I'll have to go grab it.

1 Thank you. So there were three exhibits. Thank you.

2 Mr. Chair.

3 EXHIBIT 10 - Kitikmeot Inuit Association (English)

4 hard copy PowerPoint Technical Review of Hope Bay

5 Project Phase 2 Type "A" Water Licence

6 EXHIBIT 11 - Kitikmeot Inuit Association

7 (Inuktitut) hard copy PowerPoint Technical Review

8 of Hope Bay Project Phase 2 Type "A" Water Licence

9 EXHIBIT 12 - Kitikmeot Inuit Association

10 (Inuinnaqtun) hard copy PowerPoint Technical

11 Review of Hope Bay Project Phase 2 Type "A" Water

12 Licence

13 MS. AUTUT: Thank you, Teresa. So, John,

14 if you're ready, please.

15 Community Session Presentation by Kitikmeot Inuit

16 Association

17 MR. ROESCH: This is John Roesch for the

18 Kitikmeot Inuit Association.

19 First of all, I'll make a statement for the record

20 is that, as of today, this presentation is out of date

21 due to our ongoing discussion with both TMAC and

22 CIRNAC, and we have resolved several outstanding

23 security issues. So some slides are specifically out

24 of date, and I will speak to them. Thank you.

25 Hello everyone, I am John Roesch, the senior

26 Hope Bay Project officer for the Department of Lands

1 and Environment for the Kitikmeot Inuit Association. I
2 am responsible for the project oversight for the KIA
3 and provide input into the regulatory process for the
4 Hope Bay Project to both the Nunavut Water Board and
5 NIRB.

6 In performing this role, I make use of KIA's
7 consultants, who are subject matter experts in the
8 areas of wildlife, fisheries, aquatic environment, and
9 geotechnical engineering.

10 The purpose of this presentation is to provide a
11 brief summary of our technical review of the Hope Bay
12 Project Phase 2 Type "A" Water Licence application.
13 Our review covered fish and fish habitat, aquatic
14 environment, and water quality monitoring. KIA
15 conducted the review in a collaborative manner with
16 TMAC Resources, out of which we brought forward eight
17 issues that were resolved either before or prior to the
18 technical meeting in May.

19 KIA's mandate is to manage Kitikmeot Inuit lands
20 and resources and to protect and promote the social,
21 cultural, political, environmental, and economic
22 wellbeing of Kitikmeot Inuit. The Kitikmeot region is
23 generally within the red boundary. The pink/blue lands
24 are lands which KIA owns the surface rights. The
25 Kitikmeot Inuit Association is a democratically
26 elected, not-for-profit society, that represents the

1 Inuit in the Kitikmeot region.

2 As a result of the Nunavut Agreement, Inuit are
3 one of the largest private landowners in the world.
4 Much of this privately owned land is in areas with high
5 potential for mineral development. The land is a
6 significant opportunity for Inuit if it is managed
7 properly. We must optimize opportunities and manage
8 liabilities that are inherent with being a private
9 landowner. If not, we will affect the wellbeing of our
10 Kitikmeot Inuit membership.

11 The Hope Bay Project is located on the mainland
12 near the coast and approximately in the middle of the
13 region.

14 When the Inuit-owned land was selected for a
15 Nunavut Agreement, Inuit knew that the Hope Bay area
16 was highly prospective for mineral development. A
17 120-kilometre length of surface lands that includes
18 some mineral rights were selected in this area. The
19 brown areas are surface lands owned by KIA, these being
20 BB56, 57, 58, and 60, include our agreement with TMAC
21 for the Hope Bay Project.

22 The Hope Bay green belt [sic] has been explored
23 since 1965. Within this greenstone belt, over 850
24 kilometres of drilling has occurred since 1965. Most
25 of the drilling has been focussed around Doris, Madrid,
26 and Boston. This project has changed ownership many

1 times. Prior to TMAC, the last company to operate the
2 Hope Bay Project was Newmont, who failed to develop a
3 profitable business case for the development of the
4 project. TMAC took over the project in 2012. On the
5 map, you can see the locations of some of the highest
6 priority development sites in the belt, Doris, Madrid,
7 and Boston.

8 So much exploration has occurred since 1965 that
9 people know that there are many development
10 opportunities in the belt. The Hope Bay greenstone
11 belt is unique because it demonstrates the capacity to
12 hold several mining operations across the belt in
13 different stages of development operated by one
14 company. In other more developed parts of the world,
15 it could be that several different companies would have
16 exploration and mining proposals in a greenbelt such as
17 this.

18 This greenbelt includes a permitted mine at Doris
19 North; several advanced exploration targets, such as
20 Boston, which has preliminary mine plans developed;
21 many other identified high-quality exploration targets.
22 There is also a vast exploration potential. TMAC has
23 rights to all minerals in this area. Once an operating
24 mine is established, the efficiency of belt-wide
25 operations will increase.

26 As indicated previously, eight issues were brought

1 to the technical meeting with the Nunavut Water Board
2 pertaining to the Phase 2 Type "A" Water Licence
3 application. These four issues concern the fish, fish
4 habitat, and aquatic environment. We raised concerns
5 about the need to calculate potential gains in
6 Fisheries for fish offsetting, the monitoring of lake
7 surface levels, and the aquatic effects monitoring
8 plan, the calculations for lost fish habitat due to
9 water withdrawal, and the setting of site-specific
10 water quality objectives for total arsenic in all water
11 bodies affected by the project.

12 KIA considers these issues to be of high and
13 medium importance. TMAC has responded to our
14 recommendations, and these issues are resolved.

15 These four issues concerned sampling frequency
16 during freshet, under ice, and open water -- the open
17 water season for the aquatic effects monitoring plan,
18 the inclusion of dis-associable cyanide and total
19 cyanide in the aquatic effects monitoring plan
20 parameters to meet Canadian Council Ministers of the
21 Environment and metal and diamond mine effluent
22 regulations and guidelines, preparation for use of new
23 guidelines in monitoring water quality, and
24 confirmation of water quality model predictions. The
25 KIA considers these to be of high and medium
26 importance.

1 TMAC has responded to our recommendations, and
2 these issues are resolved.

3 Now, this slide is out of date, which I point out,
4 and I'll speak to.

5 The KIA has agreed with TMAC -- had agreed with
6 TMAC back in April on an overall quantum of 61.2
7 million for the Doris-Madrid security, with an 85
8 percent and 15 percent split for Inuit-owned land and
9 Crown land and water respectively. KIA also agreed
10 with TMAC in April to an overall security of 36.7
11 million for the Boston security with a split of 23
12 percent and 77 percent for Inuit-owned land and Crown
13 land and water.

14 Our review of reclamation security was conducted
15 by our geotechnical engineering consultant, and the
16 split of IOL and Crown land and water was based on 100
17 percent allocation of specified mine site components to
18 either land or water as per TMAC's request to
19 facilitate execution and reclamation of work.

20 The KIA is open to the receipt of staged security
21 from TMAC subject to particular water licence
22 conditions. TMAC has provided both KIA and CIRNAC with
23 a proposed staged split of security for the Hope Bay
24 Project Phase 2. The KIA has had discussions with TMAC
25 and CIRNAC on the overall reclamation security for
26 Doris, Madrid, and Boston, the split in land and water

1 for each water licence and the staging of security,
2 which I point out we have brought to total agreement
3 today -- as of today.

4 This slide is out of date as of today. Originally
5 CIRNAC had proposed 65.8 million in total security for
6 Doris Madrid and 40.5 million for Boston. This
7 represents a difference of 4.6 million and 4.2 million
8 respectively, which we have closed through ongoing,
9 three-way dialogue.

10 Originally CIRNAC's land and water split of
11 security was 56.2 percent and 43.8 percent for Doris
12 Madrid and 50.2 percent and 49.8 percent for Boston,
13 which has now been resolved, and it's more in line with
14 what we had originally proposed of 85 percent and 15
15 percent for Doris Madrid, and 24 percent and 76 percent
16 for land and water at Boston.

17 TMAC has proposed staged security for Doris,
18 Madrid, and Boston, which KIA has reviewed and agrees
19 with. The tranches for staged security meet KIA's
20 requirements for receiving staged security for major
21 mine site components on a geographic basis and a
22 planned construction schedule, and I believe some of
23 the tranches have been consolidated as well.

24 As stated previously, the KIA is open to receiving
25 security using the proposed staged split under
26 particular water licence conditions. KIA must receive

1 security 60 days prior to construction for each phase
2 of construction for a defined set of major mine site
3 components in infrastructure on a geographic basis.
4 The receipt of staged security is subject to the
5 Nunavut Water Board process where TMAC is required to
6 provide proof of security being issued. The
7 reclamation costs must be updated periodically and
8 reviewed by KIA and CIRNAC and provided to the Nunavut
9 Water Board. If additional security is determined to
10 be required by the NWB, TMAC must provide it within 60
11 days of determination. The KIA has discussed these
12 conditions with TMAC, and TMAC has met these
13 conditions, and the KIA is satisfied.

14 As of today, the remaining issues on reclamation
15 have been resolved. Given this and the substantial
16 benefits that have been obtained for Inuit from the
17 Hope Bay Project Phase 2 and its IIBA, we believe that
18 issuing the Type "A" Water Licences for Doris-Madrid
19 and Boston is warranted and in the best interests of
20 the Inuit people.

21 We thank you for listening, and we are now open to
22 any questions.

23 MS. AUTUT: Thank you, John. Are there
24 any questions from the public for the Kitikmeot Inuit
25 Association? No questions. Okay, thank you very much.

26 We will move on to Crown-Indigenous Relations

1 Northern Affairs Canada [sic], and I'll ask legal to do
2 the appropriate swearing in at this time.

3 MR. ROESCH: Just a moment. Mr. Chair, may
4 I be excused; I have to go make some phone calls?

5 THE CHAIR: Yeah.

6 MS. MEADOWS: Thank you, Mr. Chair. Teresa
7 Meadows, legal counsel for the Nunavut Water Board.

8 If I can have the witnesses state and spell their
9 name for the record, please.

10 MR. DEWAR: Spencer Dewar, S-P-E-N-C-E-R,
11 D-E-W-A-R.

12 MR. PARSONS: Ian Parsons, I-A-N,
13 P-A-R-S-O-N-S.

14 SPENCER DEWAR, Sworn

15 IAN PARSONS, Affirmed

16 MS. MEADOWS: Teresa Meadows, legal counsel
17 for the Nunavut Water Board.

18 Mr. Chair, I have three additional exhibits to
19 file in this public hearing, being the presentation
20 materials about to be presented by Crown-Indigenous
21 Relations and Northern Affairs Canada, the English and
22 Inuktitut translations, and the English and Inuinnaqtun
23 translations, and also a third document, which is the
24 Executive Summary of the presentation that is about to
25 be given by Crown-Indigenous Relations and Northern
26 Affairs Canada. So those will be marked as the next

1 three exhibits in the public hearing. Thank you,
2 Mr. Chair, those are my procedural matters.

3 EXHIBIT 13 - Crown-Indigenous Relations and
4 Northern Affairs Canada (English/Inuktitut) hard
5 copy PowerPoint presentation TMAC Resources Inc.
6 Water Licence Applications for the Hope Bay Phase
7 2 Project Renewal/Amendment #2 for 2AM-DOH1323 and
8 New for 2AM-BOS----

9 EXHIBIT 14 - Crown-Indigenous Relations and
10 Northern Affairs Canada (English/Inuinnaqtun) hard
11 copy PowerPoint presentation TMAC Resources Inc.
12 Water Licence Applications for the Hope Bay Phase
13 2 Project Renewal/Amendment #2 for 2AM-DOH1323 and
14 New for 2AM-BOS----

15 EXHIBIT 15 - Crown-Indigenous Relations and
16 Northern Affairs Canada (English) hard copy
17 Executive Summary

18 MR. PARSONS: I believe we had more than one
19 Executive Summary.

20 MS. MEADOWS: Thank you, Mr. Chair. Teresa
21 Meadows, legal counsel for the Nunavut Water Board.

22 Mr. Chair, I also have the translated copies of
23 the Executive Summary, so that's two additional
24 exhibits, the Executive Summary in Inuktitut and the
25 Executive Summary translated into Inuinnaqtun. My
26 apologies, Mr. Parsons, I did not have those.

1 So thank you, Mr. Chair, those are all my
2 procedural matters.

3 EXHIBIT 16 - Crown-Indigenous Relations and
4 Northern Affairs Canada (Inuktitut) hard copy
5 Executive Summary

6 EXHIBIT 17 - Crown-Indigenous Relations and
7 Northern Affairs Canada (Inuinnaqtun) hard copy
8 Executive Summary

9 MR. DEWAR: Mr. Chair, before we get
10 started in consideration of the late start, I know it's
11 been traditional that we'd have a public presentation
12 and also a technical presentation. The Government of
13 Canada's interveners, Crown-Indigenous Relations and
14 Northern Affairs Canada, the Department of Fisheries
15 and Oceans, Environment Canada and Climate Change [sic]
16 would like to request that we present once during this
17 public hearing. Of course, that being said, we will be
18 available for questions at any time for the remainder
19 of the hearing, and, of course, this is subject to any
20 concerns that would be raised from the Nunavut Water
21 Board or any other presentations with this proposal.

22 MS. MEADOWS: Thank you, Mr. Chair. Teresa
23 Meadows, legal counsel for the Nunavut Water Board.

24 Mr. Chair, as I've discussed in the break with the
25 Federal family, the discussions at the community
26 session that are expected to take place do not include

1 questioning from the Proponent and also questioning
2 from the Nunavut Water Board Staff and the Panel, and
3 so those questionings would be deferred till tomorrow,
4 and also at that time, we would expect that if there
5 are any resolutions that take place outside of the
6 hearing venue, either tonight or tomorrow morning
7 before we're in session, that you would be following up
8 and addressing those directly to the Panel and
9 addressing the technical issues arising out of the
10 public hearing and your submissions tomorrow in that
11 deferred questioning and also in any additional updates
12 that you wish to provide or any additional exhibits
13 that you wish to file.

14 So with that, Mr. Chair, those are sort of my
15 comments in terms of procedure in terms of accelerating
16 the presentation materials.

17 MS. AUTUT: Please proceed with your
18 community presentation.

19 Community Session Presentation by Crown-Indigenous
20 Relations and Northern Affairs Canada

21 MR. DEWAR: Koana, Mr. Chair.

22 Good evening, my name is Spencer Dewar. I'm the
23 Director of Resource Management for Crown-Indigenous
24 Relations and Northern Affairs Canada in Nunavut.

25 I'd like to thank the Nunavut Water Board and
26 Staff for your work in facilitating the review process

1 to date and providing Crown-Indigenous Relations and
2 Northern Affairs Canada the opportunity to make a
3 presentation and intervene today.

4 Today we're discussing TMAC Resources' application
5 to renew and amend its Doris-Madrid Water Licence and
6 their new Water Licence application for the Boston
7 deposit, both for Hope Bay Phase 2 Project.

8 We'd like to thank the community of Cambridge Bay
9 for hosting us, and we'd also like to thank our fellow
10 interveners for participating in this review, and, of
11 course, TMAC for collaborating with each of us to solve
12 our issues while advancing their project.

13 I'm joined today by Ian Parsons, the Manager of
14 Water Resources, Sarah Forté, who's the Water
15 Management Specialist, Bridget Campbell, a Water
16 Management Coordinator, and Jade Hill, a co-op student
17 from the University of Waterloo.

18 Throughout this presentation, I will refer to
19 Crown-Indigenous Relations and Northern Affairs Canada
20 as the Department, while on the slide show, you'll see
21 the acronym of CIRNAC.

22 I'll provide a brief overview of the Department's
23 responsibilities with respect to the Water Licence
24 applications, and I will also list contributions that
25 have been made by the Department during this process.

26 The topics that were discussed are categories

1 under six headings on this slide. To be clear, the
2 vast majority of our technical comments have been
3 addressed by TMAC.

4 The Department has a broad mandate for
5 co-management of freshwater resources and the
6 management of Crown land in Nunavut under the acts,
7 regulations, and the Nunavut Agreement as listed on
8 this slide.

9 The Department administers and enforces regulatory
10 authorization that pertain to the Crown land and
11 freshwater resources. The Department participates in
12 water licence processes administered by the Nunavut
13 Water Board along with other interested parties,
14 providing technical advice and expertise for the
15 Board's consideration. The Department also issues land
16 use permits and lease authorizations on Crown land.

17 To date, the Department has made three submissions
18 to the Nunavut Water Board in the course of TMAC's
19 Water Licence applications. The Department provided a
20 preliminary complete list review on February 14th,
21 2018. The Department conducted a technical review of
22 the application, providing comments in a written
23 memorandum on March 29th, 2018. And our final
24 submission was shared last month on September 28th.

25 As mentioned earlier, there are two Water Licence
26 applications under consideration: The amendment to the

1 Doris licence, which currently covers the operations of
2 the mine pictured at the top of the slide. The
3 amendment would integrate two more mines under this
4 licence, Madrid North and Madrid South. We will refer
5 to this as the Doris-Madrid project.

6 The second application is for the new Type "A"
7 Water Licence for the Boston site pictured at the
8 bottom of the slide. What you see is the
9 infrastructure associated with the bulk sample licence
10 at Aimaokatalok Lake stretching across the top. We
11 refer to this project as Boston.

12 The first bullet of this slide summarizes the
13 project's division discussed in the last slide, and it
14 is the format we use to differentiate the two
15 applications. The second bullet has to do with
16 integrating the licences. Currently, TMAC holds two
17 Type "B" Water Licences for bulk samples at Madrid and
18 Boston sites. The Department recommends that the scope
19 of the Type "B" Licences be incorporated into any new
20 Type "A" Licences to allow the bulk sample licences to
21 be cancelled. At the sites discussed, mining
22 activities for the bulk sample or for the production
23 require almost identical infrastructure. The principal
24 difference is one of scale and the quantity of water
25 used. Having both a Type "B" and a Type "A" Licence
26 for the same activity on the same site can lead to

1 confusion about water use, discharge criteria,
2 security, and inspections.

3 Permitting bulk sampling activities under a
4 Type "A" Water Licence would simplify the
5 authorizations and is the Department's preferred route.
6 The Department supports a licence that matches the
7 project schedule, meaning the Water Licence would be
8 valid for the life of the mine, including post-closure.

9 For the Doris-Madrid project, TMAC is requesting
10 authorizations to use water from the Doris Lake for
11 industrial purposes and Windy Lake for potable water.
12 The mill's processed water is managed in the tailings
13 impoundment area, and any excess tailings impoundment
14 water as well as groundwater encountered at the mines
15 will be discharged into the marine environment in
16 Roberts Bay.

17 For the Boston project, TMAC is requesting
18 authorizations to use water from Aimaokatalok Lake for
19 both potable and industrial uses. Water collected at
20 the tailings management area as well as process water
21 from the mill will be managed in a surge pond and
22 treated in an industrial water treatment plant before
23 being discharged into Aimaokatalok Lake.

24 Our primary concern with this issue was related to
25 the use of water at Doris-Madrid and efforts to treat
26 the water if required. Our Department has reviewed

1 TMAC's various management plans and models related to
2 water, and our concerns have been addressed.

3 Two landfills are proposed for nonhazardous waste,
4 one at Doris-Madrid and another at Boston, and the
5 hazardous waste will be shipped offsite. Flotation
6 tailings will be disposed of in the tailings
7 impoundment area at Doris-Madrid and the tailings
8 management area at Boston. Detoxified tailings will be
9 disposed of in the mine's permafrost zones. The mine's
10 workings will also be used for disposal of waste rock
11 and hydrocarbon-impacted soils. Waste and water will
12 be managed with two sewage treatment plants,
13 Doris-Madrid and Boston; industrial water treatment
14 plants, one at Boston and possibly one at Doris-Madrid;
15 and through ocean discharge.

16 One of our main concerns with this issue was
17 related to the storage capacity for the detoxified
18 tailings. The Department has reviewed TMAC's various
19 management plans related to waste, and our concerns
20 have been addressed.

21 Both Doris-Madrid and Boston include many
22 management plans, which are listed in the draft water
23 licence. The Department has reviewed these plans and
24 our concerns either have already been addressed or TMAC
25 has committed to updating the plans at a later date.
26 The two plans which we are expecting updates are the

1 Doris-Madrid water management plan, as TMAC is still
2 determining if it will be necessary to build an
3 industrial water treatment plant for the mill water
4 when they're processing ore from Madrid North. They
5 have committed to updating the plan should it be
6 necessary to build one. We recommend TMAC include in
7 the plan what -- the parameters they will monitor and
8 what would trigger the decision to build such a plant.

9 The other plan is the nonhazardous waste
10 management plan. The application package included
11 details on how the landfills will operate such lift
12 thickness. TMAC has committed to incorporating this
13 information in their plan prior to building the
14 landfills. The Department recommends capturing these
15 commitments in any licence and stating that the changes
16 at site cannot be undertaken before the plans are
17 approved.

18 With the development of the new deposits, new
19 station locations for the surveillance network program
20 will be required. We recommend that the new stations
21 be captured by the Nunavut Water Board in any new
22 licences. When creating amendment licences, the
23 Nunavut Water Board does a thorough job, and the
24 Department is confident they will do so for these
25 licences.

26 Regarding the aquatic effects monitoring plan, the

1 updated one for both proposed projects, the Department
2 thinks the plans will do a good job at checking that
3 the project's effects on water are adequately
4 mitigated.

5 TMAC presented closure and reclamation plans for
6 both the Doris-Madrid and the Boston project. The
7 Department agreed with the principles and used them as
8 the basis to calculate reclamation costs. We shared
9 our final reclamation estimates with the parties, and
10 the Department's total reclamation costs for
11 Doris-Madrid is approximately 62 million and for Boston
12 37 million.

13 We're in discussions with the Kitikmeot Inuit
14 Association about a cooperation agreement dividing the
15 responsibilities between parties in the event of site
16 reclamation in the event that TMAC is unavailable.
17 TMAC has requested that the total amount of security be
18 divided into phases and triggers, indicating when
19 security will need to be posted.

20 Crown-Indigenous Relations and Northern Affairs
21 Canada, the Kitikmeot Inuit Association, and TMAC are
22 in agreement with the overall amount of security and
23 the schedule that TMAC will be required to post
24 security.

25 In closing, the Department's concerns related to
26 this project have been addressed by TMAC.

1 Koana, nakurmiik, thank you.

2 MR. KHARATYAN: Thank you, Mr. Chair. Thank
3 you, CIRNAC. Karén Kharatyan, Nunavut Water Board.

4 We will now open up the floor for questions from
5 public. Are there any questions from public? It seems
6 no --

7 Questions/Comments from the Community

8 MR. SALLERINA: Thank you, Joanni Sallerina,
9 Gjoa Haven.

10 More of a comment, I guess. I'm glad that you are
11 presenting and making recommendation for TMAC regarding
12 the tailing and their policies and procedures. I think
13 it's very important to have those in place so that we
14 don't have tragedy in the future, and, if there is one,
15 that they have a plan in place that will take care of
16 any issues. Thank you.

17 MS. AUTUT: I'll take that as a comment,
18 Joanni.

19 Any other questions from the public? If not,
20 thank you, CIRNAC, for your presentation.

21 We'll move next to Environment and Climate Change
22 Canada, and I'll hand it over to legal for the
23 swearing-in matters.

24 MS. MEADOWS: Thank you, Stephanie. Teresa
25 Meadows, legal counsel for the Nunavut Water Board.

26 If I can have the witnesses state and spell their

1 name for the record, please.

2 MR. SUMMERFIELD: Bradley Summerfield,
3 B-R-A-D-L-E-Y, S-U-M-M-E-R-F-I-E-L-D.

4 MS. TOBIN: Meagan Tobin, M-E-A-G-A-N,
5 T-O-B-I-N.

6 MS. MEADOWS: Thank you, Mr. Chair. Teresa
7 Meadows, legal counsel for the Nunavut Water Board.

8 Mr. Chair, it's my understanding that there are
9 several presentation materials for Environment and
10 Climate Change Canada. At this time, I was just going
11 to ask whether or not you want us to file, as it's my
12 understanding that you will not be presenting again,
13 but you do have two different presentation materials,
14 so a community presentation and a technical session
15 presentation. Do you want us to file both of those
16 tonight?

17 MR. SUMMERFIELD: It's Bradley Summerfield with
18 Environment and Climate Change Canada.

19 Actually we only have one presentation, so
20 there's -- just in all the different languages.

21 MS. MEADOWS: Thank you, Mr. Chair. Teresa
22 Meadows, legal counsel for the Nunavut Water Board.

23 I'm having a rough day. Apparently I do not -- I
24 apparently do not know what is coming at me here in
25 terms of exhibits. So let the record show that we do
26 have presentation materials, so three copies of

1 presentation materials being English, Inuktitut, and
2 Inuinnaqtun, which is the presentation that you will be
3 presenting tonight, and then we also have the
4 translated copies of your Executive Summary in English,
5 Inuktitut, and Inuinnaqtun, and those are the next six
6 exhibits that I propose to file in the public hearing.

7 EXHIBIT 18 - Environment and Climate Change Canada
8 (English) hard copy PowerPoint Presentation to the
9 Nunavut Water Board Respecting TMAC Resources Inc.
10 Application for a Type "A" Water Licence and Type
11 "A" Water Licence Amendment

12 EXHIBIT 19 - Environment and Climate Change Canada
13 (Inuktitut) hard copy PowerPoint Presentation to
14 the Nunavut Water Board Respecting TMAC Resources
15 Inc. Application for a Type "A" Water Licence and
16 Type "A" Water Licence Amendment

17 EXHIBIT 20 - Environment and Climate Change Canada
18 (Inuinnaqtun) hard copy PowerPoint Presentation to
19 the Nunavut Water Board Respecting TMAC Resources
20 Inc. Application for a Type "A" Water Licence and
21 Type "A" Water Licence Amendment

22 EXHIBIT 21 - Environment and Climate Change Canada
23 (English) hard copy Executive Summary TMAC
24 Resources Inc.'s Hope Bay Phase 2 Project Final
25 Written Submission

26 EXHIBIT 22 - Environment and Climate Change Canada

1 (Inuktitut) hard copy Executive Summary TMAC
2 Resources Inc.'s Hope Bay Phase 2 Project Final
3 Written Submission
4 EXHIBIT 23 - Environment and Climate Change Canada
5 (Inuinnaqtun) hard copy Executive Summary TMAC
6 Resources Inc.'s Hope Bay Phase 2 Project Final
7 Written Submission

8 MS. MEADOWS: Do the witnesses wish to be
9 sworn or affirmed?

10 MR. SUMMERFIELD: Just before that, I just
11 wanted to note too that French translations were
12 submitted at the Nunavut Water Board's request, only
13 electronically, so I don't know if they get entered or
14 not but -- of both the Executive Summary and of the
15 presentation.

16 MS. AUTUT: We thank you for being on the
17 ball.

18 MS. MEADOWS: Let the record show I will be
19 filing that exhibit electronically, thank you.

20 I think I have them all now. So that will be
21 seven exhibits that we will be filing, one of which
22 will be --

23 MS. AUTUT: No, it's eight.

24 MS. MEADOWS: Eight, oh.

25 MS. AUTUT: The presentation and the
26 summary.

1 MS. MEADOWS: So there will be eight.
2 EXHIBIT 24 - Environment and Climate Change Canada
3 (French) electronic copy Executive Summary TMAC
4 Resources Inc.'s Hope Bay Phase 2 Project Final
5 Written Submission
6 EXHIBIT 25 - Environment and Climate Change Canada
7 (French) electronic copy PowerPoint Presentation
8 to the Nunavut Water Board Respecting TMAC
9 Resources Inc. Application for a Type "A" Water
10 Licence and Type "A" Water Licence Amendment
11 MS. MEADOWS: And do you wish to be sworn or
12 affirmed?
13 MR. SUMMERFIELD: Affirmed.
14 MS. TOBIN: Affirmed.
15 BRADLEY SUMMERFIELD, Affirmed
16 MEAGAN TOBIN, Affirmed
17 MS. MEADOWS: Thank you, Mr. Chair. Those
18 are my procedural matters.
19 Community Session Presentation by Environment and
20 Climate Change Canada
21 MR. SUMMERFIELD: Good evening. My name is
22 Bradley Summerfield. I'm a Senior Environmental
23 Assessment Coordinator with Environment and Climate
24 Change Canada, and I'm joined by Meagan Tobin, who is a
25 Water Quality Specialist with Environment and Climate
26 Change Canada.

1 Just going to briefly do an introduction into our
2 presentation, quickly go over our mandate and
3 legislation, and then I'm going to pass the
4 presentation over to Meagan to explain the resolution
5 of Environment and Climate Change Canada's remaining
6 issues -- or previously remaining issues before this
7 hearing.

8 Environment and Climate Change Canada's mandate is
9 the preservation and enhancement of the quality of the
10 natural environment. This includes renewable
11 resources, migratory birds, and other non-domestic
12 flora and fauna. Specifically with respect to the
13 Nunavut Water Board process, Environment Canada is
14 responsible for the pollution prevention provisions
15 under the Fisheries Act.

16 And that will cover that off, and I'm going to
17 pass it over to Meagan to talk about the issues that we
18 brought up in our final technical report.

19 MS. TOBIN: Meagan Tobin with Environment
20 and Climate Change Canada.

21 So Environment and Climate Change Canada comment
22 number 1 related to the aquatic effects monitoring
23 program. So throughout the Water Licence process, we
24 have been working with TMAC on the development of the
25 aquatic effects monitoring program, and in our final
26 submission, we had identified several additional

1 details that had yet to be provided in the AEMP. In
2 response, TMAC provided the updated version of the AEMP
3 that incorporated details that had been requested by
4 Environment and Climate Change Canada.

5 After review of this final plan, we had just one
6 outstanding comment relating to the inclusion of a
7 plume delineation study, and this was discussed with
8 TMAC today. In response, TMAC has committed to
9 including a plume delineation study to assess the
10 appropriateness of the selected sampling sites, and,
11 therefore, all comments related to the aquatic effects
12 monitoring program have been addressed.

13 Environment and Climate Change Canada comment
14 Number 2 related to the effluent quality predictions
15 and clarification on the proposed effluent quality
16 criteria. This comment was seeking to ensure that the
17 uniquely sensitive nature of the northern aquatic
18 ecosystem will be protected.

19 So in response, TMAC has pointed to their
20 modelling and how it has demonstrated that the proposed
21 discharge will be protective, that acute and chronic
22 toxicity testing will be applied, and through the
23 development of the AEMP and the environmental effects
24 monitoring program and the aquatic response framework
25 that any potential impacts to the receiving environment
26 would be monitored and managed.

1 TMAC has, therefore, proposed that the water
2 licence criteria be consistent with the recently
3 established metal and diamond mining effluent criteria.
4 Environment and Climate Change Canada agrees that the
5 monitoring programs are robust and will include
6 thresholds for action if changes are detected. These
7 programs should be sufficient to monitor and address
8 any potential impacts to the aquatic environment, and,
9 therefore, Environment and Climate Change Canada
10 considers this issue to be resolved as well.

11 Environment and Climate Change Canada comment 3
12 related to the monitoring and mitigation of in-water
13 construction activities. So Environment and Climate
14 Change Canada had recommended that an in-water
15 construction plan be submitted for approval prior to
16 any in-water construction. This comment was seeking to
17 ensure that adequate review of in-waterworks section of
18 the environmental protection plan is completed prior to
19 construction.

20 So in discussions with TMAC today, TMAC has agreed
21 to including this plan as a plan to be submitted and
22 approved later in the general condition section of the
23 licence. We are still working on the specific wording
24 there, which we can likely provide tomorrow. But based
25 on this, Environment and Climate Change Canada
26 considers this issue to be resolved as well.

1 And that is the end of our presentation, and we'll
2 take any questions now. Thank you.

3 MS. AUTUT: Thank you, Environment and
4 Climate Change Canada.

5 Are there any questions from the public to
6 Environment Canada? Okay, I see no hands. Thank you
7 very much.

8 So we will move on to Department of Fisheries and
9 Oceans and have Teresa go through the evidence and do
10 the swearing in -- my apologies, the exhibits.

11 MS. MEADOWS: Thank you, Stephanie. So I
12 only -- I have three hard copies, I think, so I don't
13 know if additional copies would be filed
14 electronically, so I will go through what I actually
15 have in-hand, and then you can correct me if I'm wrong.

16 So I have a copy of the presentation materials, a
17 hard copy of the PowerPoint presentation in English, I
18 have the Executive Summary in Inuktitut and the
19 Executive Summary in Inuinnaqtun. I don't seem to have
20 additional copies of your presentation materials in
21 terms of hard copies.

22 MS. McLELLAN: Angie McLellan, Fisheries and
23 Oceans Canada.

24 We submitted electronically the Inuinnaqtun as
25 well as the Inuktitut and English presentation copies,
26 and then we just provided, as per the Board's request

1 today, to have the English presentations and then the
2 translated Executive Summaries.

3 MS. MEADOWS: So let the record show, we
4 will file the other presentation materials that are not
5 provided in hard copy in electronic copy only then. So
6 that would be I'm assuming then two additional
7 PowerPoint presentations, being the translated copies.
8 Do you have them translated into Inuinnaqtun and
9 Inuktitut?

10 MS. MCLELLAN: All three translations were
11 provided to the Board.

12 MS. MEADOWS: Teresa Meadows, legal counsel
13 for the Nunavut Water Board.

14 Are they also translated into French as well?

15 MS. MCLELLAN: I can get you the French if
16 you want. I just -- originally I was asked for just
17 the other ...

18 MS. MEADOWS: I'm just asking you what was
19 filed with the Board, that's all.

20 MS. MCLELLAN: Yeah, no French.

21 MS. MEADOWS: All right, I will file those
22 exhibits as the next several exhibits in the public
23 hearing. I will clarify the exact number with you
24 afterwards offline.

25 EXHIBIT 26 - Fisheries and Oceans Canada (English)
26 hard copy Phase 2 Hope Bay Belt Project

1 Presentation to the Nunavut Water Board Public
2 Hearing
3 EXHIBIT 27 - Fisheries and Oceans Canada
4 (Inuktitut) electronic copy Phase 2 Hope Bay Belt
5 Project Presentation to the Nunavut Water Board
6 Public Hearing
7 EXHIBIT 28 - Fisheries and Oceans Canada
8 (Inuinnaqtun) electronic copy Phase 2 Hope Bay
9 Belt Project Presentation to the Nunavut Water
10 Board Public Hearing
11 EXHIBIT 29 - Fisheries and Oceans Canada (French)
12 electronic copy Phase 2 Hope Bay Belt Project
13 Presentation to the Nunavut Water Board Public
14 Hearing
15 EXHIBIT 30 - Fisheries and Oceans Canada (English)
16 electronic copy Executive Summary
17 EXHIBIT 31 - Fisheries and Oceans Canada
18 (Inuktitut) hard copy Executive Summary
19 EXHIBIT 32 - Fisheries and Oceans Canada
20 (Inuinnaqtun) hard copy Executive Summary
21 EXHIBIT 33 - Fisheries and Oceans Canada (French)
22 electronic copy Executive Summary
23 MS. MEADOWS: If I can have the witnesses
24 state and spell their name for the record, please.
25 MS. MCLELLAN: Angie McLellan, A-N-G-I-E,
26 M-C-L-E-L-L-A-N.

1 MR. JANOWICZ: Marek Janowicz, M-A-R-E-K,
2 J-A-N-O-W-I-C-Z.

3 MS. MEADOWS: Teresa Meadows, legal counsel
4 for the Nunavut Water Board. Do the witnesses wish to
5 be sworn or affirmed?

6 MS. MCLELLAN: We both wish to be affirmed,
7 please.

8 ANGIE MCLELLAN, Affirmed

9 MAREK JANOWICZ, Affirmed

10 MS. MEADOWS: Thank you, Mr. Chair. Teresa
11 Meadows, legal counsel for the Nunavut Water Board.

12 Those conclude my procedural matters, Mr. Chair.

13 MS. AUTUT: Please proceed.

14 Community Session Presentation by Fisheries and Oceans
15 Canada

16 MS. MCLELLAN: Good evening, Mr. Chairman,
17 Members of the Nunavut Water Board, and community
18 members.

19 My name is Angie McLellan. I'm a Fisheries
20 Biologist, and I'm accompanied by Marek Janowicz, he is
21 the Senior Fisheries Protection Program Biologist, and
22 we work with the Fisheries protection program of the
23 Fisheries and Oceans Canada department.

24 Fisheries and Oceans Canada wishes to thank the
25 Nunavut Water Board for providing this opportunity to
26 present our department's technical comments and

1 recommendations originating from our written submission
2 of TMAC's Phase 2 Hope Bay Belt Project in regards to
3 the application for the new Type "A" Water Licence and
4 amendment. By providing advice and potential impacts
5 to fish and fish habitat, Fisheries and Oceans Canada's
6 comments are designed to provide clarification of the
7 technical issues and recommendations as they relate to
8 our mandate.

9 Fisheries and Oceans Canada will first discuss the
10 fisheries protection programs, mandate,
11 responsibilities, and applicable legislation relating
12 to the Phase 2 Hope Bay Belt Project. Second, the
13 presentation provides an overview of the technical
14 comments and recommendations made by the fisheries
15 protection program. Please note that, to date, the
16 Proponent and Fisheries and Oceans Canada have worked
17 collaboratively to resolve all issues and none remain
18 outstanding.

19 On behalf of the Government of Canada, the
20 fisheries protection program's mandate is to work
21 collaboratively with all partners to manage impacts to
22 commercial, recreational, and aboriginal fisheries
23 resulting from habitat degradation or loss, alterations
24 to fish passage and flow, and aquatic evasive [sic]
25 species to ensure the ongoing productivity and
26 sustainability of fisheries.

1 The fisheries protection program ensures that
2 projects in or near water meet the requirements of the
3 Fisheries Act and Species at Risk Act. The fisheries
4 protection program provides guidance to the Proponent
5 on how to avoid, mitigate, or offset impacts to fish
6 and fish habitat. Our regulatory role is defined by
7 the Fisheries Act Section 35(1), which prohibits any
8 works that cause serious harm to fish that are part of
9 a commercial or recreational or aboriginal fishery or
10 to fish that support such fishery. Serious harm is
11 defined in the Fisheries Act as the death of fish,
12 permanent alteration of habitat, or destruction of
13 habitat. Section 35(2) allows a project to be carried
14 out without violation of Section 35(1) through the
15 issuance of the Fisheries Act authorization by the
16 Minister of Fisheries and Oceans with specific
17 conditions.

18 The fisheries protection program is guided by two
19 policies: The fisheries protection policy statement,
20 which provides guidance for the application of the
21 fisheries protection provisions of the Fisheries Act;
22 and the fisheries productivity investment policy, a
23 proponent's guide to offsetting which provides guidance
24 on undertaking effective measures to offset serious
25 harm to fish.

26 Fisheries and Oceans Canada has considered the

1 Fisheries Act and the Species at Risk Act in its
2 technical comments to determine what aspects of the
3 project could impact fish and their habitats. The
4 technical comments and recommendations to the Nunavut
5 Board -- Water Board, sorry, are the following areas:
6 Water crossings, water and load balance, water intake
7 and discharge pipes, and timing assessment.

8 Fisheries and Oceans Canada recommended that the
9 Proponent provide detailed water cross -- watercourse,
10 and site-specific engineering plans for all watercourse
11 crossing supported by a measured or modelled stream
12 flow data. This information can be provided prior to
13 construction.

14 Fisheries and Oceans Canada also recommended that
15 the Proponent work with the fisheries protection
16 program and the Kitikmeot Inuit Association to develop
17 a site-specific construction work plan during the
18 regulatory phase. This construction plan should
19 include but not be limited to a full suite of
20 mitigations measures that will be implemented to reduce
21 the impact on fish and fish habitat during the
22 construction phrase.

23 Fisheries and Oceans Canada further recommended
24 that an appropriate water crossing maintenance and
25 monitoring plan be developed to ensure that barriers to
26 fish passage do not form over time. The Proponent

1 agreed with Fishery [sic] and Oceans' recommendations
2 for water crossings. As a result, this issue is
3 resolved.

4 With respect to water and load balance, Fisheries
5 and Oceans Canada recommended that the Proponent
6 include stations to monitor water levels and stream
7 flows in the aquatic effects monitoring plan for all
8 fish-bearing lakes and streams that are predicted to be
9 potentially impacted by the project. The Proponent
10 agreed with Fisheries and Oceans' recommendations for
11 water and load balance. As a result, this technical
12 issue is resolved.

13 Fisheries and Oceans Canada recommended that the
14 Proponent work with our program and the Kitikmeot Inuit
15 Association to develop a site-specific construction
16 work plan during the regulatory phase. The Proponent
17 agreed with Fisheries and Oceans Canada's
18 recommendations for water intake and discharge pipes.
19 As a result, this technical issue is resolved.

20 Fisheries and Oceans Canada recommended that the
21 Proponent clarify whether water quantity impacts that
22 may result in timing issues were assessed and accounted
23 for in the impact assessment. Our department also
24 recommended that the Proponent conduct an analysis of
25 water quantity timing impacts on fish access to key
26 habitats. In their response to our technical comments,

1 the Proponent clarified that an assessment of water
2 quantity impacts on timing of flow and associated
3 impacts on fish access to habitat was conducted and
4 considered in their impact assessment. Based on their
5 responses, this technical issue is resolved.

6 In summary, Fisheries and Canada -- Fisheries and
7 Oceans Canada has reviewed the fisheries protection
8 program's mandate, responsibilities, legislation as
9 they relate to the Phase 2 Hope Bay Belt Project and
10 offered technical comments and recommendations. The
11 fisheries protection program is satisfied that the
12 technical issues our department raised have been
13 resolved, and will continue to work cooperatively with
14 the Proponent and the Kitikmeot Inuit Association to
15 ensure that appropriate mitigation measures, follow-up,
16 and monitoring programs are implemented.

17 Fisheries and Oceans Canada wishes to thank the
18 Chairman, the Nunavut Water Board for providing this
19 opportunity to present the department's technical
20 comments and recommendations for our written submission
21 of this project. And thank you to the community
22 members. Koana.

23 MS. AUTUT: Thank you. Going to the
24 floor, are there any questions from the public for
25 Fisheries and Oceans? Joanni?
26 Questions/Comments from the Community

1 MR. SALLERINA: Joanni Sallerina, Gjoa Haven,
2 Mayor. Thank you, Stephanie.

3 I guess a question to DF0. You're making
4 recommendations, and how are you going to make sure
5 that the recommendations are being followed? Are you
6 going to be going in and making -- and checking out
7 whether the recommendations are being followed? How
8 are you going to be doing that? Thank you.

9 MS. McLELLAN: Thank you for your question,
10 Joanni. We receive monitoring reports, and we also do
11 site inspections. Does that answer your question?

12 MR. SALLERINA: Yeah.

13 MS. AUTUT: Anything further, Joanni?
14 You're good? Okay. Any other questions? Okay, I
15 don't see any hands, so we will move on.

16 Okay, thank you to the parties for your
17 presentations.

18 Mr. Chair, that concludes the community
19 presentations, and I'll do one final call for questions
20 from the public before we hand the mic back over to the
21 Chairman.

22 So, Mr. Chair, there are no further questions from
23 the public, so I'll hand things back to you. Thank
24 you.

25 Community Session Closing Remarks by the Chair

26 THE CHAIR: Yeah, thank you, Stephanie.

1 Now, I'll move on to closing of the community
2 session.

3 Once again, thank you, Stephanie, and everyone who
4 attended tonight's community session at the Community
5 Hall in Cambridge Bay. Your questions and comments
6 about TMAC Resources Inc. Water Licence applications
7 for the Phase 2 Hope Bay Belt Project were appreciated
8 by me and my Panel Members, Ross Mrazek, on my right,
9 and, to my left, Makabe Nartok.

10 Please remember that we still have a full day
11 scheduled for the public hearing tomorrow. The hearing
12 will start at 9:00 AM back here at this location. I
13 encourage you to continue attending the hearing. As
14 well, please let other members of the community know
15 that they are also welcome to attend the public hearing
16 tomorrow.

17 On behalf of the Nunavut Water Board, I would also
18 like to thank the Applicant and interveners for their
19 presentations and answers to questions from members of
20 the public here tonight.

21 Got advice from my legal counsel.

22 Special thanks to all the Elders, youths, and
23 other community members of Cambridge Bay for sharing
24 their views, stories, and information with the Panel
25 and the participants and contributing to a productive
26 and respectful community session.

1 Also tomorrow, the forecast for -- is not that
2 great as of today, so we want to make sure that we came
3 here alive, and, please, it's getting winter, so we
4 need to take care of ourself on our side when we come
5 back here.

6 Okay, thank you, everyone. Once again, let's have
7 a closing prayer. Let's stand and pray.

8 (COMMUNITY SESSION CLOSING PRAYER)

9 MS. AUTUT: Mr. Chair, if I could maybe
10 just add to your storm comments, so it is the -- as
11 Mr. Chair notes, they are calling for some inclement
12 weather to come in tonight and carry on throughout the
13 day tomorrow. Community members are indicating that
14 it's possibly going to be a storm day, which means they
15 may shut down government offices and schools. The
16 Board is planning, at this point in time, however, to
17 carry out and continue with the public hearing at this
18 venue tomorrow morning at 9:00.

19 Obviously, as Mr. Chair noted, safety is first and
20 foremost, so we will, in the morning, do an assessment,
21 and if, in fact, it is too dangerous to be coming to
22 this location, the Board will issue a notice. Thank
23 you.

24 _____

25 PROCEEDINGS ADJOURNED UNTIL 9:00 AM, OCTOBER 25, 2018

26 _____

1 CERTIFICATE OF TRANSCRIPT:
2

3 I, Karoline Schumann, certify that the foregoing
4 pages are a complete and accurate transcript of the
5 proceedings, taken down by me in shorthand and
6 transcribed from my shorthand notes to the best of my
7 skill and ability.

8 Dated at the City of Calgary, Province of Alberta,
9 this 4th day of November, 2018.

10

11

12

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Karoline Schumann

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Karoline Schumann, CSR(A)

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Official Court Reporter

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1	EXHIBITS ENTERED	
2	OCTOBER 24, 2018	
3		PAGE NUMBER:
4	EXHIBIT 1 - TMAC Resources Inc.	33
5	electronic copy of Curriculum Vitae of	
6	Dr. Michael Henry, ERM	
7		
8	EXHIBIT 2 - TMAC Resources Inc.	33
9	electronic copy of Curriculum Vitae of	
10	Dr. M. Rykaart, SRK Consulting	
11		
12	EXHIBIT 3 - TMAC Resources Inc.	33
13	electronic copy of Curriculum Vitae of	
14	Nicole Bishop, ERM	
15		
16	EXHIBIT 4 - TMAC Resources Inc.	33
17	(English), hard copy PowerPoint	
18	Presentation Boston-Madrid Project	
19	Nunavut Water Board Final Hearing	
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21	EXHIBIT 5 - TMAC Resources Inc.	33
22	(Inuktitut), hard copy PowerPoint	
23	Presentation Boston-Madrid Project	
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3	Presentation Boston-Madrid Project	
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22	(English) hard copy PowerPoint Technical	
23	Review of Hope Bay Project Phase 2 Type	
24	"A" Water Licence	
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1	EXHIBIT 11 - Kitikmeot Inuit Association	90
2	(Inuktitut) hard copy PowerPoint	
3	Technical Review of Hope Bay Project	
4	Phase 2 Type "A" Water Licence	
5		
6	EXHIBIT 12 - Kitikmeot Inuit Association	90
7	(Inuinnaqtun) hard copy PowerPoint	
8	Technical Review of Hope Bay Project	
9	Phase 2 Type "A" Water Licence	
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11	EXHIBIT 13 - Crown-Indigenous Relations	99
12	and Northern Affairs Canada	
13	(English/Inuktitut) hard copy PowerPoint	
14	presentation TMAC Resources Inc. Water	
15	Licence Applications for the Hope Bay	
16	Phase 2 Project Renewal/Amendment #2 for	
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7	hard copy Executive Summary	
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10	and Northern Affairs Canada (Inuinnaqtun)	
11	hard copy Executive Summary	
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13	EXHIBIT 18 - Environment and Climate	111
14	Change Canada (English) hard copy	
15	PowerPoint Presentation to the Nunavut	
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17	EXHIBIT 21 - Environment and Climate	111
18	Change Canada (English) hard copy	
19	Executive Summary TMAC Resources Inc.'s	
20	Hope Bay Phase 2 Project Final Written	
21	Submission	
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3	Executive Summary TMAC Resources Inc.'s	
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7	EXHIBIT 23 - Environment and Climate	112
8	Change Canada (Inuinnaqtun) hard copy	
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