



## NUNAVUT WATER BOARD

### REASONS FOR DECISION INCLUDING RECORD OF PROCEEDINGS

In the Matter of:

Applicant: Shear Diamonds (Nunavut) Corp.

Subject: Renewal Application for a Type "A" Water Licence

Date: December 21, 2011

Precedence: Where there is any inconsistency or conflict between the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWSRTA)*, the Agreement prevails to the extent of the inconsistency or conflict. Where there is any inconsistency or conflict between the *NWSRTA* and any other act of Parliament, except the *Nunavut Land Claims Agreement Act*, the *NWSRTA* prevails to the extent of the inconsistency or conflict.

## **RECORD OF PROCEEDINGS**

Applicant:	Shear Diamonds (Nunavut) Corp., a wholly owned subsidiary of Shear Diamonds Ltd.	
Address:	Suite 220, 6 Adelaide Street East Toronto, ON, M5C 1H6 <a href="http://www.sheardiamonds.com">www.sheardiamonds.com</a>	
Purpose:	Renewal of Type "A" Water Licence 2AM-JER0410 – Mining and Milling Undertaking	
Application Received on:	February 28, 2011	
Application Received from:	Pamela Strand, President & CEO	
Date & Location of Hearing:	Day 1: November 30, 2011 Day 2: December 1, 2011	Kugluktuk, NU Kugluktuk, NU
Board Panel Members Present:	Chairman Vice-Chairman Member	Thomas Kabloona Lootie Toomasie (via Telephone) Ross Mrazek
Board Staff:	Executive Director Board Secretary/Interpreter Director Technical Services Technical Advisor Assistant Technical Advisor	D. Filiatrault B. Kogvik D. Hohnstein K. Kharatyan E. Skiby
Interpreter(s):	Inuktitut/Inuinnaqtun Inuktitut/Inuinnaqtun	J. Otokiak B. Kogvik
NWB Legal Counsel:	Miller Thomson LLP	T. Meadows
Court Reporter:	Dicta Court Reporting	T. Rizzoli, (CSR)A
Sound Technician:	Pido Productions	T. Bourque
Applicant:	Shear Diamonds (Nunavut) Corp. <ul style="list-style-type: none"><li>• J. Lassonde, CEO, Executive Chairman &amp; Director</li><li>• S. Autut, VP Environmental and Community Affairs</li><li>• C. Morton, VP Operations</li><li>• K. Conway, Site Environmental Coordinator</li><li>• Bill Horne, Sr. Technical Reviewer EBA Engineering</li><li>• G. Koop, Engineering Team Lead EBA Engineering</li><li>• A. Rippen-Armstrong, Environment Team Lead EBA</li></ul>	

Engineering

- W. Lui, Environmental Scientist, EBA Engineering
- J. Jamieson, Lawson Lundell (Legal Counsel)
- C. Kowbel, Lawson Lundell (Legal Counsel)

Parties:

Environment Canada

- A. Wilson, Sector Specialist

Aboriginal Affairs and Northern Development Canada

- B. MacIssac, Director of Operations
- T. Trenholm, Pollution Policy Specialist
- E. Paul, Water Resources Technician
- H. Hartmaier, BGC Engineering
- K. Bigger, BGC Engineering
- C. Hall, Brodie Consulting

Kitikmeot Inuit Association

- P. Emingak, Executive Director
- G. Clarke, Director, Lands and Environment
- L. Toretti, Senior Environmental Officer

Participants:

See Appendix B to this document for a full listing of participants by venue.

Full Transcript Proceedings  
Available from:

<ftp://nunavutwaterboard.org/1%20PRUC/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-JER0410/2%20ADMIN/4%20HEARING/2%20HEARING/>

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## REASONS FOR DECISION

### Executive Summary

This decision is in relation to an application by Shear Diamonds (Nunavut) Corp. (Applicant) to renew an existing Type “A” Water Licence 2AM-JER0410 (Licence) that authorized the use of water and deposit of waste associated with a mining and milling undertaking at the Jericho Diamond Mine located approximately 200 kilometres south east of Kugluktuk, NU (Application). The current Licence expires on March 1, 2012. The Application was submitted by the Applicant to the Nunavut Water Board (NWB or Board) in February, 2011. Subject only to some minor revisions and updating, the Application sought to have the Licence renewed on substantially the same terms as the existing licence, 2AM-JER0410.

As the Application involved the renewal of a Type “A” licence, the Board was required to hold a public hearing. In advance of the public hearing, as part of the Board’s process to consider the renewal, the Board’s staff held a technical meeting and pre-hearing conference in June 20-21, 2011 at the Community Hall, in Cambridge Bay, NU in which all intervening parties and members of the community were invited to provide their technical review comments on the Application. As a result of these meetings, the Board identified the key issues to be considered at the Public Hearing, which was originally set for October 12 and 13 in Kugluktuk, NU. In September, the Applicant requested, and the Board granted the Applicant’s request to adjourn the Public Hearing until November 30 and December 1, 2011.

On November 30 and December 1, 2011 the Board conducted the Public Hearing in Kugluktuk, NU to consider the Application. On the basis of the written submissions filed with the Board, the evidence provided by the Applicant and the parties present at the Public Hearing, as well as the comments of the community members, the Board has decided the following:

- To grant the Applicant’s request to renew the Type “A” Water Licence in accordance with the terms and conditions outlined in the attached Decision and Licence;
- Specific terms and conditions of note include the following:
  - the term of the Licence is eight years, with the requirement that the Licensee apply for renewal of the Licence one year before the Licence is set to expire;
  - the scope of the Licence does not include two Type “B” Water Licences 2BE-TAK0204 and 2BE-ROC0305 in relation to exploration projects known as Rockinghorse and Muskox Lake;

- at the time the Licence is approved by the Minister, the Applicant will be required to pay the water use fee deposit in accordance with the applicable Regulations, including for the first year of the Licence;
- the Applicant is required to provide quarterly reports to the NWB (posted on the public registry), and to the Kitikmeot Inuit Association and the applicable Hunters and Trappers Organization(s);
- the Applicant will be required to post security under the Licence in the total amount of \$3,389,074, in a form to be determined by the Minister ;
- effluent discharge criteria will be changed as outlined in Part F of the decision and the Licence;
- the Applicant will be required to file an updated Interim Closure and Reclamation Plan (ICRP) within one year of the issuance of the Licence, a preliminary Human Health and Ecological Risk-based Assessment, to support the Interim and Final Closure and Reclamation Plan, within two years of the issuance of the Licence, a comprehensive update to the Interim Closure and Reclamation Plan within three years of the issuance of the Licence and at the time the Licensee submits the renewal application for the Licence (seven years after the issuance of the Licence) the Licensee must submit the first draft of the Final Closure and Reclamation Plan;
- the Applicant must provide written notice to the Board at least 30 days prior to entering into a planned temporary closure (as defined in the Licence) or as soon as practicable after an unforeseen temporary closure occurs;
- the Applicant must provide written notice to the Board at least 60 days prior to commencing commercial operation (as defined in the Licence); and
- the Applicant is reminded that compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with all applicable legislation, guidelines and directives, including, without limitation the requirements to obtain the necessary authorizations from agencies such as the Department of Fisheries and Oceans, the Nunavut Impact Review Board, the Kitikmeot Inuit Association and Aboriginal Affairs and Northern Development Canada.

## **SECTION I: BACKGROUND AND REGULATORY HISTORY**

### **Application**

This application for renewal of 2AM-JER0410 a Type “A” water licence (Application) was received from Pamela Stand, President and CEO of Shear Diamonds (Nunavut) Corp., a wholly owned subsidiary of Shear Diamonds Ltd. (formerly Shear Minerals Ltd.) (Applicant), for the Jericho Diamond Mine on February 28, 2011. For the purposes of these Reasons for Decision and for all documents submitted to the public record in relation to the Application, Shear Diamonds (Nunavut) Corp., Shear Minerals Ltd. and Shear Diamonds Ltd. may be referred to as “Shear, SDL or the Applicant”.

### **Site History**

Lytton Minerals Ltd. and New Indigo Resources Inc. began preliminary exploration in the project area through the staking of a large area of the Slave Province in the area north of the Point Lake kimberlite discovery. In 1993 and 1994, Tahera Diamonds Corporation (TDC) commenced an aggressive exploration program, consisting of a regional airborne geophysical survey covering some 5 million acres of ground.

The discovery of the Jericho kimberlite pipes started with the recovery of kimberlite indicator minerals from till samples in the spring of 1994. Follow-up airborne and ground geophysical surveys identified a number of targets within Carat Lake, and on land south of the lake. In February and March 1995, the JD-1 (Jericho land-based pipe) and JD-2 (a small satellite pipe) were discovered south of the lake.

Subsequent drilling showed that the Jericho kimberlite forms an elongate body with a straight, nearly vertical eastern wall and three lobate pipe-lobe protrusions on the west side. The majority of the drilling was completed in 1995 and 1996. In 1997, an underground decline was excavated. A total of 14,555 tonnes (t) of kimberlite were mined from the underground decline, of which approximately 9,435 t were processed at the diamond pilot plant constructed at the Lupin Mine. The majority of the drilling was completed in 1995 and 1996, although several additional holes were drilled in 1999 and 2000.

### **The Project**

The Jericho Diamond Mine Project (Project) is located near Carat Lake, approximately 200 kilometres south east of Kugluktuk and 200 kilometres southwest of Bathurst Inlet. (Latitude 65°59'50"N and Longitude 111°28' 30"W). The Project will be self-sufficient and will have a



footprint of approximately 220 hectares. It lies within the Bathurst Inlet Burnside River watershed, however being close to the border with other watersheds, the Project may influence the Lower Coppermine Mouth and Upper Back River watersheds as well. The Project represents the construction, operation, maintenance, reclamation, closure and monitoring of an open pit diamond mine located on Inuit-owned lands and Crown lands in the Kitikmeot Region of Nunavut.

The original mine plan proposed<sup>1</sup> to construct a project that would have an eight-year operating mine life and would utilize a combination of open pit and underground mining methods to extract the kimberlite ore. Initial mine reserves estimated that the mine will produce approximately three million carats (c) of diamonds. Processing of the kimberlite would occur on site and the diamonds will be sold to global markets. Ore mining was originally scheduled to maintain a plant processing rate of 330,000 t per year. Initial estimates for the original licence forecast an ultimate detailed pit design containing reserves of 1.92 Mt of ore at a recovered grade of 1.25 c/t. Waste, including low grade, inferred kimberlite material was estimated at 16.1 Mt giving a strip ratio of 8.4 to 1.<sup>2</sup>

Between 2006 and 2008, Jericho operated by the Tahera Diamond Corporation with 1.5 million tonnes of ore mined, 1.2 million tonnes of ore processed and resulting in 780,000 carats recovered.<sup>3</sup>

At the Public Hearing, Shear indicated that the mine life projections are now based on a revised production rate of 1250 tonnes/day.<sup>4</sup>

The mining project is supported by on site infrastructure including, accommodation and office buildings, wastewater treatment system, airstrip, fuel facilities, open pit, waste rock piles, process plant, landfill, land farm, process kimberlite containment area (PKCA), and coarse processed kimberlite stockpiles<sup>5</sup> as well as water retention sumps, dykes & dams to form the PKCA and diversion structures.

Environmental baseline studies were conducted in the project area for hydrology, permafrost, groundwater, water quality, sediment, geochemistry, lake bathymetry, biology and engineering

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<sup>1</sup> Original applicant for Type A Water licence Benachee Resources Incorporated (BRI) dated September 11, 2000.

<sup>2</sup> Information taken from the Tahera Corporation - Jericho Diamond Project Description; Section 5.4.4.1.

<sup>3</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 45, lines 23-26.

<sup>4</sup> See Exhibit 1, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation, Slide 71 and Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 70, lines 22-24.

<sup>5</sup> See Exhibit 3, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED, slide 43, which shows the potentially impacted Jericho site waterways and pathways.

studies.<sup>6</sup> To facilitate mine operations, Shear will be required to withdraw and divert water from surrounding lakes, and from areas within the mine footprint and to handle, manage and treat waste. Additional environmental studies were completed by the Applicant in support of the Application and are listed below.

## Regulatory History

The regulatory history for the Project is long and complex. Therefore, for the purposes of this decision, only the most recent regulatory history directly related to the current renewal application is provided in this section. For a more detailed chronological overview of the past regulatory history of this Project please refer to Appendix A.

Shear Minerals Ltd. purchased various assets, including the Jericho Diamond Mine, from the mine's former owner on July 27, 2010, under the auspices of the Tahera receivership (Court File No. 08-CL-7355). As part of the court proceedings, the Ontario Superior Court of Justice approved the sale of Tahera's assets to Shear Minerals Ltd. and in the order approving the sale, the Honourable Justice Morawitz directed the NWB to consider the application for assignment of the Existing Licence to Shear Minerals Ltd. "forthwith". After a period of due diligence, the purchase by Shear Minerals Ltd. was completed at the end of August, 2010.

The application for renewal of the Type "A" Water Licence was submitted by Pamela Strand, President & CEO of Shear Diamonds (Nunavut) Corp. on February 28, 2011. The current Licence will expire on March 1, 2012.

The Application filed by Shear included the following supplemental documents:

- Emergency Preparedness and Response Plan for Dam Emergencies;
- C1 Diversion Construction Summary;
- Contingency Management Plan;
- Fuel Storage Containment Facility Design Plan;
- Interim Closure And Reclamation Plan;
- Landfill Management Plan;
- Preliminary Landfill Design Plan;
- Landfarm Management Plan;
- Preliminary Landfarm Design Plan;
- Waste Management Plan;
- Waste Rock Management Plan;
- Wastewater Treatment Management Plan; and

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<sup>6</sup> See Final Environmental Impact Statement submitted by Tahera Corporation to the Nunavut Impact Review Board, received on January 21, 2003.

- Operations, Maintenance and Surveillance Manual PKCA Dams (OMS Manual).

It should be noted that prior to the official filing of the Application, Shear filed<sup>7</sup> the following documents with respect to care and maintenance and the application for assignment and short term renewal:

- Care and Maintenance Plan, complete with the following appendices:
  - A-Site Water Management Plan, Care and Maintenance
  - B-PKCA (Processed Kimberlite Containment Area) Management Plan, Care and Maintenance;
  - C-General Monitoring Plan, Care and Maintenance; and
  - D-Aquatic Effects Monitoring Plan, Care and Maintenance

On February 18, 2011 the Nunavut Planning Commission, confirmed that the project proposal falls outside the boundaries of an approved land use plan.<sup>8</sup>

Upon receipt and initial review of the Application the NWB acknowledged receipt of the Application on March 21, 2011 and requested parties to review and comment on the scope and completeness of the Application by April 29, 2011.

On March 22, 2011, the NWB requested clarification from the NIRB on whether or not the Application would require further screening, review or reconsideration of terms and conditions of the Project Certificate. The NWB was subsequently advised by the NIRB:

...that the project activities outlined by Shear and relating to the water licence renewal and amendment application are within the scope of those considered during NIRB's previous Review of the Jericho Project (NIRB File No. 00MN059). Provided that Shear operates in accordance with its stated commitments and with all previously issued authorization, the activities proposed as part of the current application for the renewal of water licence 2AM-JER0410 do not require further

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<sup>7</sup> This information was initially provided as supporting material associated with the Type "A" Renewal Application filed by the Applicant to support their request to amend the term of the water licence from March 1, 2011 to March 1, 2012, under "Emergency Circumstances" which was received by the Board on January 31, 2011. These documents were carried forward for consideration in the full Type "A" renewal application subsequently filed by the Applicant on February 28, 2010.

<sup>8</sup> Email from Brian Aglukark, NPC to Phyllis Beaulieu, Manager Licensing, NWB, and to Pamela Strand, President CEO, [Shear], RE: 110204 2AM-JER0410 Shear Diamonds (Nunavut) Corp., - Type A - Amendment to Alter Term of Licence - Kitikmeot Region - Jericho Diamond Project, dated Friday, February 18, 2011.

screening by the Board and remain subject to the terms and conditions of NIRB Project Certificate [No. 002].<sup>9</sup>

Pursuant to Article 13 Clause 13.3.6 of the Nunavut Land Claims Agreement and s. 29<sup>10</sup> of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA), the Board delegated its power to dispose of all matters relating to the Type “A” Licence renewal Application 2AM-JER0410 for the Jericho Diamond Mine Project, including the conduct of the public hearing, to a panel of the Board.

In order to facilitate the hearing process for the Application, on March 30, 2011, the Board directed that in accordance with Rule 14 of the *NWB Rules of Practice and Procedure* (the Rules), the staff of the NWB hold a Pre-Hearing Conference (PHC) for the Application.<sup>11</sup>

On May 11, 2011 the Board provided Notice of the Application in accordance with s. 55(1) of the NWNSRTA.<sup>12</sup> Further, on May 22, 2011, the NWB provided notice that the Technical Meeting and Pre-hearing Conference (TM/PHC) would take place on June 20-21, 2011 at the Community Hall, in Cambridge Bay, NU. In addition, to facilitate the hearing process, the Board invited interested persons to make written technical comments on the Application to the Board to be received no later than June 10, 2011. Following a request from AANDC, the NWB granted an extension to the deadline for written submissions to June 13, 2011. Written submissions were received on or before June 13, 2011, from the following:

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<sup>9</sup> Letter from R. Barry, Executive Director, NIRB to D. Filiatrault, Executive Director, NWB Re: NIRB consideration of Shear Diamonds (Nunavut) Corp.’s amendment and renewal application for NWB Type A Water Licence 2 AM-JER0410 for the Jericho Diamond Mine, dated September 27, 2011.

<sup>10</sup> Section 29 of the NWNSRTA states:

(1) The Board may establish panels of the Board and delegate any of its powers, duties and functions to them.

<sup>11</sup> Section 14.1 of the Rules states:

In order to facilitate the hearing process, the Board may, through its staff or in conjunction with staff, hold a pre-hearing conference with parties, either in writing, by teleconference, or in person, in order to deal with any of the following matters:

- (a) To set a timetable for the pre-hearing exchange of information;
- (b) To finalize the list of issues to be dealt with at the hearing;
- (c) To identify interested parties;
- (d) To consider the desirability of amending an application for the purposes of clarification;
- (e) To finalize procedures to be following in a hearing; and
- (f) To consider any other matters that may aid in the simplification and disposition of the application at the hearing.

<sup>12</sup> Section 55(1) of the NWNSRTA requires:

The Board give notice of every application in relation to a licence to the council of each municipality in the area affected by the application and shall publish the notice in a newspaper of general circulation in the area affected or.... In such other manner as the board considers appropriate. The notice shall invite interested persons to make representations within a specified period and shall advise them of the consequences....of any failure to respond to the notice.

- Kitikmeot Inuit Association (KIA)
- Fisheries and Oceans Canada (DFO)
- Environment Canada (EC)
- Aboriginal Affairs and Northern Development Canada (AANDC)

The TM/PHC was held on June 20-21, 2011, in Cambridge Bay, NU. The TM provided an informal meeting for all parties to discuss issues raised during the technical review of the Application. All documents provided to the Board in support of the TM/PHC have been placed on the Board's public registry at the link set out at the end of this section of the Reasons for Decision.

On July 4, the NWB issued the PHC Decision. Formal notice of the Public Hearing originally scheduled for October 12 and 13 in Kugluktuk, Nunavut was given on July 12, 2011, and provided to the Board's distribution list and published in News North.<sup>13</sup> The PHC Decision also provided a deadline for submissions as follows:

- Shear to provide responses to several commitments made at the TM/PHC by August 15, 2011; and
- Interventions or formal submissions for the hearing to be provided no later than September 23, 2011 to include executive summaries in English, Inuktitut and Inuinnaqtun.

It should be noted that Shear filed documents in response to the list of commitments developed and accepted during the technical meeting and PHC, on July 15, 2011 with additional submissions made between July 31, 2011 and August 15, 2011.<sup>14</sup>

On August 23, 2011, the Nunavut Impact Review Board (NIRB) advised the Board that the Jericho Diamond Mine Project Certificate (No. 002) was assigned to Shear Diamonds (Nunavut) Corp.

On September 14, 2011, the NWB received a request from the KIA for a one-week extension to the deadline for the submission of comments in advance of the Hearing to September 30, 2011. Shortly thereafter, on September 15, 2011, a formal request was received from Shear to

<sup>13</sup> Notice of the Public Hearing was given in accordance with section 55(2) of the NWNSRTA.

<sup>14</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 22-24 and List of Submissions and Correspondence, Appendix C.

postpone the Public Hearing in order to allow Shear and the KIA adequate time to discuss matters of mutual interest related to the Project.

As a result of the requests from the KIA and Shear, the Board decided on September 21, 2011 to postpone the hearing to be held in Kugluktuk until November 30 and December 1, 2011 and revised the deadline for interventions or formal submissions to November 15, 2011.

A notice of public hearing postponement consistent with the requirements of s. 55(2) of the NWNSRTA was given on September 20, 2011. In addition, at the beginning of the week of October 31, 2011 local radio announcements regarding the new date, location and nature of the Public Hearing were initiated.

On November 15, 2011, interventions or formal submissions for the Public Hearing were received from the following parties:

- Kitikmeot Inuit Association (KIA)
- Fisheries and Oceans Canada (DFO)
- Aboriginal Affairs and Northern Development Canada (AANDC)
- Environment Canada (EC)

The Hearing was conducted in Kugluktuk on November 30<sup>th</sup> and December 1, 2011. A list of participants at the Public Hearing is provided in Appendix B.

On the evening before the Hearing (November 29<sup>th</sup>), one of the NWB Board members who had been appointed to the Panel to hear the Application was suddenly and unexpectedly required to return home to tend to a family emergency. Consequently, the Public Hearing was adjourned for a short period on the morning of November 30, while the NWB sought to have a replacement Panel Member attend in his place. When the Public Hearing subsequently commenced on the morning of November 30, arrangements had been made for a replacement Panel Member, Mr. Lootie Toomasie, to attend the Hearing via teleconference, with all Public Hearing materials having been provided to Mr. Toomasie in electronic form.<sup>15</sup>

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<sup>15</sup> It should be noted that Mr. Toomasie's participation ensured that the equal representation required of s. 29(2) of the NWNSRTA was maintained. That section states:

Every panel shall consist of equal numbers of members appointed to the Board on the nomination of the designated Inuit organization or Makivik, as the case may be, and other members.

A complete list of submissions and correspondence in support of this Application is provided in Appendix C. A list of Exhibits from the Public Hearing is provided in Appendix D. All listed submissions, correspondence, Exhibits and transcripts of the Public Hearing have been placed on the Board's public registry and are available from the NWB's ftp site using the access username of "public" and the password of "registry" (without the quotes) at the following link: <ftp://nunavutwaterboard.org/1%20PRUC/2%20mining%20milling/2A/2AM%20Mining/2AM-JER0410/2%20ADMIN/4%20Hearings/>

The Board's decision to hold a public hearing is also consistent with giving due regard and weight to Inuit culture, customs and knowledge pursuant to Article 13, Clause 13.3.13(b) of the NLCA and s. 33 of the NWNSRTA.

## **SECTION II: SUMMARY OF FINAL HEARING SUBMISSIONS OF THE PARTIES**

### **Environment Canada**

The primary relevant legislation and standards that Environment Canada (EC) administers or adheres to and that are applicable to the Application are the *Department of the Environment Act*,<sup>16</sup> *Canadian Environmental Protection Act, 1999*<sup>17</sup> and the pollution prevention provisions of the *Fisheries Act*.<sup>18</sup>

EC filed a formal submission<sup>19</sup> to the NWB and presented<sup>20</sup> their submission and recommendations at the hearing in Kugluktuk.

EC made submissions on issues related to water quality, monitoring, including aquatic effects monitoring program (AEMP), management of contaminated soil, closure and reclamation, specifically providing recommendations regarding the open pit (specifically fill rate and water quality).

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<sup>16</sup> R.S.C. 1985, c. E-10.

<sup>17</sup> S.C. 1999, c. 33.

<sup>18</sup> R.S.C. 1985, c. F-14.

<sup>19</sup> Environment Canada Written Intervention for the NWB Hearing submitted to Phyllis Beaulieu, Manager of Licensing, NWB from Carey Ogilvie, Head Environmental Assessment Northern (NT & NU) Environmental Protection Operations, dated November 15, 2011.

<sup>20</sup> Environment Canada was represented at the hearing by Anne Wilson, Water Pollution Specialist. A summary of EC's submission was provided as Exhibits No. 19 & 20 Environment Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application PowerPoint Presentation (hard copy and electronic copy).

With respect to water quality, EC supported the existing licence limits with the exception of the limits for nitrate, nitrite, chloride and total dissolved solids. EC recommended lower limits for nitrite and nitrate than the current Licence. EC did not recommend setting effluent quality criteria for TDS and chloride at this time as there are no Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of freshwater aquatic life for these parameters. EC recommended that the levels for TDS and chloride should be monitored for the next 24 months and thresholds be determined once data is available to support environmentally relevant and operationally appropriate objectives. In addition, EC recommended that Total Extractable Hydrocarbons (TEH) be regulated instead of Total Oil and Grease.

On the issue of nitrate EC concluded:

The expiring licence had limits of 56 and 28. Those came directly from the Snap Lake licence. That was some eight or nine years ago, and at the time, that was based on what we knew about who lived in the lake and what the likely chronic toxicity would be to them. Now we feel the limit in the expiring licence is higher than would be warranted in the context of the current work on nitrate toxicity and note that the CCME guideline for nitrate, which is still draft and not yet published, is expected to be approximately 3.6 milligrams per litre, nitrate is nitrogen, and that's for long-term exposure. Environment Canada recommends that lower limits be set to provide better environmental protection. We would be open to a staged approach with higher limits for the initial years, provided that the commitment made earlier by Shear to respect the CCME numbers at the edge of the mixing zone, would be committed to and met for that period.<sup>21</sup>

EC recommended that routine algae and water flea chronic toxicity testing of the PKCA discharge effluent be added to the Licence to identify potential harm to plants and animals in the water bodies. Further, EC recommended the chronic toxicity testing as provided in the current licence for the receiving environment be removed (i.e. Schedule L, Item 4(d)(iv)). EC also submitted that testing of the discharge effluent at 100% strength would be more useful in determining whether receiving environment impacts are of concern. EC recommended that testing be done once prior to discharge and a second time prior to the completion of discharge.

With respect to monitoring, EC supported Shear's proposal to modify the plan for the Aquatic Effects Monitoring Plan (AEMP) submitted with the renewal application to address concerns with reference sites, sampling locations, aquatic biota, QA/QC, and other aspects of the

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<sup>21</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 277-278, lines 22-26 and lines 1-18.



sampling program identified in Technical Memorandum C.<sup>22</sup> As such EC recommended that Shear conduct sampling as proposed, with the goal of refining the AEMP and requiring Shear to submit a revised study design document within two years of the issuance of the Licence. When reporting on AEM results, EC recommended that the Licensee provide results with the outliers in and out, an explanation for the cause of the outlier, justification for why the outliers were excluded, including statistical tests used and how the outliers impact the analysis and interpretation of the results. In addition, EC indicated that it should be demonstrated how normality assumptions were met before applying any statistical tests for the purpose of removing an outlier.

To gain a clear understanding of the effluent behaviour and further delineate the mixing zone in the receiving environment, EC recommended that a plume delineation study be done late in the discharge season to examine the extent and behaviour of the plume in three dimensions. Water quality objectives should be stated and comparisons drawn where they are expected to be met in Lake C3 (based on tracer concentrations).

With respect to treatment of contaminated soils and landfarming, EC recommended that a revised plan for the management and disposal of hydrocarbon-contaminated materials be submitted within one (1) year of the issuance of the Licence.

With respect to closure and reclamation and the Interim Closure and Reclamation Plan and in particular, with respect to open pit fill rates, EC acknowledged Shear's commitment to re-evaluate the pit fill rate by April 2012 and committed to reviewing the information once available. Further, EC did raise concerns with respect to the open pit water quality and recommended that Shear consider the impacts of pit wall weathering and the introduction of blast residue and poor quality PKCA water when re-modelling pit water quality. EC also recommended that if remodelling identifies new contaminants of concern, the Licensee should revise the Plan to include other treatment options. EC requested that the Applicant commit to a timeline for delivering its pit water quality re-modeling.

EC also requested that the NWB circulate a draft version of the new licence for intervener review prior to finalizing the terms and conditions of the Licence.

In closing, EC expressed appreciation to the NWB for the opportunity to comment on the Application.

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<sup>22</sup> Shear Diamonds Ltd., Technical Memorandum C, Re: List of Commitments: Proposed Changes to the Aquatic Effects Monitoring Plan – Jericho Diamond Mine, Nunavut, July 15, 2011

## Aboriginal Affairs and Northern Development Canada

Aboriginal Affairs and Northern Development Canada (AANDC) has a broad mandate for the co-management of water resources and the management of Crown land in Nunavut under the following applicable law and policy: the *Department of Indian Affairs and Northern Development Act*,<sup>23</sup> the *Nunavut Land Claims Agreement* and the *Nunavut Land Claims Agreement Act*,<sup>24</sup> the *Territorial Lands Act*<sup>25</sup> and applicable *Regulations*,<sup>26</sup> the *Nunavut Waters and Surface Rights Tribunal Act*,<sup>27</sup> the *Canadian Environmental Assessment Act*,<sup>28</sup> and the *Mine Site Reclamation Policy for Nunavut*.<sup>29</sup> AANDC (which underwent a name change to AANDC from the Department of Indian and Northern Affairs Canada on May 18, 2011) administers Crown land and resources and enforces regulatory permits affecting land and water resources in Nunavut.

AANDC filed a formal submission<sup>30</sup> to the NWB and presented<sup>31</sup> their submission and recommendations at the hearing in Kugluktuk.

AANDC submitted recommendations on a number of matters related to the management of the Project, including the term of licence, security, reporting, timing or scheduling of submission, conformity in general and the language of licence terms and conditions for the Board's consideration.

Specifically, AANDC recommended that Shear be required to comply with the outstanding conformity requirements summarized in Appendix 1 of AANDC's written submission. In general, AANDC provided a draft conformance table summarizing outstanding information requests and conformity requirements in respect of Shear's existing Licence. AANDC acknowledged that some of the issues would not be resolved in advance of, or at, the Public

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<sup>23</sup> R.S.C. 1985, c. I-6.

<sup>24</sup> S.C. 1993, c. 29.

<sup>25</sup> R.S.C. 1985, c. T-7.

<sup>26</sup> See for example *Territorial Land Use Regulations*, C.R.C. c. 1524 and the *Northwest Territories and Nunavut Mining Regulations*, C.R.C. c. 1516.

<sup>27</sup> S.C. 2002, c. 10.

<sup>28</sup> S.C. 1992, c. 37.

<sup>29</sup> Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002) available on-line: [http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna\\_1100100036043\\_eng.pdf](http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf).

<sup>30</sup> AANDC Written Intervention for the NWB Hearing submitted to Phyllis Beaulieu, Manager of Licensing, NWB from Robin Aiken, Regional Director General Nunavut Regional Office, AANDC, dated November 15, 2011.

<sup>31</sup> See Exhibits No. 21, 22, 23 and 24 Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point Presentation (hard copy, electronic copy, Inuktitut and Inuinnaqtun translated copies).

Hearing but rather by way of proposed plans to be submitted for some time after the Public Hearing. A proposed schedule of submissions was provided as Appendix 2 of AANDC's submission. AANDC highlighted in Appendix 1 to their written submissions, various recommendations related to the following:

- PKCA Management Plan;
- pit dewatering Addendum;
- Site Water Management Plan;
- General Monitoring Plan;
- preliminary Landfill Management and Design Plans;
- preliminary Landfarm Management and Design Plans;
- Wasterock Management Plan;
- Aquatic Effects Monitoring Program;
- Interim Closure and Reclamation Plan;
- Explosives Management Mine Plan;
- Borrow Management Plan;
- RECLAIM estimate;
- Wastewater Treatment Plan;
- OMS (Operation Maintenance and Surveillance) for PKCA;
- QA/QC plan;
- Fuel Storage Containment Facilities; and
- Emergency Preparedness Plan for Dam Emergencies.

On the issues related to the PKCA Management Plan and site water management planning, AANDC requested additional information on chronic toxicity testing of the flocculants, and water balance verification of peak flow events, respectively. AANDC recommended that an updated Site Water Management Plan should be required from Shear.

With respect to pit dewatering AANDC requested that Shear re-assess water quality dilution modelling after production and that Shear include in the mine plan or AEMP testing for mineralization of pit water.

AANDC submitted that Shear, as part of the general monitoring requirements be required to complete a third party geotechnical review, as it has been 5 years since construction and change of ownership of the site. In addition, the General Monitoring Plan should include more detail on site annual training of staff, data management and implementation, suggested field parameter testing for conductivity, pH and visual estimates of turbidity. Finally, the General Monitoring Plan should clarify that seepage mitigation is threshold dependent.

AANDC acknowledged that the original Landfill and Landfarm Management and Design Plans were not approved by the NWB. AANDC therefore recommended that Shear develop their own plans, taking into account prior comments provided by the parties through previous reviews. Specifically, with regards to the Landfill plans AANDC indicated that Shear should include operational procedures to address wind dispersion of incinerated material or ash and plans for sludge management through the revisions to the preliminary Landfill Management and Design Plans.

With respect to Waste Rock Management, AANDC requested that results from Acid Rock Draining and Metal Leaching testing be made available for review before any segregation of the rock is required during mining operations. In addition, AANDC recommended that Shear confirm geotechnical inspections of waste rock piles be undertaken yearly. Further, AANDC requested that Shear clarify the target thickness layer needed to maintain a frozen state of the granitic pad and coarse processed kimberlite (CPK).

AANDC recommends that Shear update the Aquatic Effects Management Program (AEMP) for operations and submit the revision prior to or in conjunction with the mine going into commercial operation. AANDC provided recommendations regarding the selection of the control lake, monitoring frequency, justification of sampling locations for dioxins and furans, lack of control sample locations for benthic invertebrates, actual water quality criteria to be referenced in the plan and details on action to be taken if exceedances are observed.

In addition, AANDC recommended that the AEMP be updated to include toxicity testing of effluent discharged to stream C3 and that monitoring for phytoplankton and zooplankton be moved to sampling location JER-AEM-06 to be more representative of the mixing zone.

With respect to the Mine Plan, AANDC requested additional information on geotechnical test results for testing proposed by Shear on the granite rock paired with kimberlite and clarification on why single benches were chosen with reference to the development of the pit.

AANDC recommends that the Borrow Management Plan be updated to include borrow sites undertaken in 2011 and acknowledged that no records were kept by the previous licensee for current or historical borrow activities at the site, but that it appears to AANDC that the original Borrow Management Plan was implemented as proposed.

AANDC retained the services of Brodie Consulting Ltd. to undertake a third party RECLAIM (Mine Reclamation Cost Estimating Model) estimate of reclamation security for the Project.<sup>32</sup> AANDC provided a summary<sup>33</sup> and detailed assessment as completed by Brodie Consulting Ltd. which can be summarized as follows:

A	Total Reclamation Estimate Lands	\$8,527,431
	KIA Lands	\$1,264,034
	Crown Lands	\$7,263,397
	Crown already holds	\$6,120,414
	Balance for Lands	\$1,142,983
B	Total Reclamation Estimate Waters	\$3,389,074
	Crown already holds	\$2,200,000
	Balance for Waters	\$1,189,074
C	Total Reclamation Estimate for Land and Waters (A+B)	\$11,916,505

AANDC recommended that the NWB require only the amount of security necessary for water-based reclamation. In addition, AANDC confirmed that the Lands Division of the Nunavut

<sup>32</sup> A short summary was provided in Appendix 3 of AANDC Technical Review Memorandum for the Public Hearing dated November 15, 2011 and Exhibit No. 25, Brodie Consulting Ltd. Retained by AANDC For Reclamation Security (hard copy) please note: the electronic copy was included within AANDC's Presentation Exhibit 22, 111130 2AM-JER0410 AANDC Public Hearing Intervention-ICHE (electronic copy of Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point presentation). The full detailed assessment provided by Brodie Consulting Ltd. was subsequently provided in electronic format only, by AANDC at the Hearing as Exhibit No. 32, 111130 2AM-JER0410 AANDC Detailed Reclamation Security Cost Estimate – ICHE.

<sup>33</sup> Memo to Phyllis Beaulieu, Manager of Licensing, NWB, from Tanya Trenholm, Pollution Policy Specialist, AANDC, Water Resources Division, Re: Executive Summary Prepared by the Department of Aboriginal Affairs and Northern Development Canada for Nunavut Water Board Final Hearing dated November 15, 2011, p. 2.

Regional Office will work with Shear to obtain the additional amount related to land-based liability.<sup>34</sup>

With respect to the OMS (operation, maintenance and surveillance) for the PKCA, QA/QC Plan and the Emergency Preparedness Plan for Dam Emergencies AANDC provided editorial comments that should be taken into account in future revisions, and where appropriate, the Applicant's implementation of the Plans.

AANDC recommended that the contractor construction plan should be reviewed for the Fuel Storage Containment Facilities by a qualified geotechnical engineer and the assessment should be provided to the NWB as an addendum to the construction drawings and specifications.

AANDC recommended that the revised and updated Final Closure and Reclamation Plan (FCRP) should address permafrost aggradations and the potential for talik formation at the bottom of the pit when mining concludes. AANDC recommended that Shear be required to produce a FCRP 60 days after issuance of the Licence. In addition, Appendix 2 of AANDC's submission provides for a detailed review for the Interim Closure and Reclamation Plan which should be taken into account by Shear.

In addition, AANDC requested the Board to consider the following licensing considerations:

- a schedule of plan submissions which incorporates timelines that allow for interveners to conduct a formal review and provide comments on outstanding and updated plans;<sup>35</sup>
- specific language be included related to plan submission that identifies the plans that require Board review and approval, and also that the time required for review and comment of interested parties is included in the proposed timelines applicable to the Board's plan review and approval processes, and a request that the Licence state explicitly that activities shall not occur until such time as Board approval is obtained; and
- including a requirement for quarterly reporting/projections of plans and activities in the Licence.

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<sup>34</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 297, lines 4-9.

<sup>35</sup> Refer to AANDC November 15, 2011 Final submission - Appendix 2 Proposed Schedule of Submissions or conformity.

AANDC's written submission supported Shear's initial proposal for a licence term of 10 years however, in response to Shear's submission at the Hearing seeking a term of 14 years, AANDC supported Shear's modified request for a "life of mine" term, subject to quarterly report and a compliance report after seven years.<sup>36</sup>

Finally, AANDC expressed appreciation for Shear's hospitality, cooperation and willingness to openly discuss and resolve outstanding information requests.

### **Kitikmeot Inuit Association**

The Kitikmeot Inuit Association (KIA) provided a detailed submission to the NWB on the application filed by Shear for the renewal for the Jericho water licence. The KIA is the representative of the Kitikmeot Inuit and is the owner of Inuit Owned Land (IOL) parcel C0-05, upon which approximately 40% of the Jericho Diamond Mine footprint is located. The KIA is also the Designated Inuit Organization (DIO) for the Kitikmeot Region for the purposes of Article 20 of the Nunavut Land Claims Agreement (NLCA) and has both water rights and management authorities on IOL. KIA confirmed that the rights and interests of Kitikmeot Inuit and the KIA are directly affected by the mining project and the Application.<sup>37</sup>

Issues raised by the KIA can be classified into two areas: water licence terms such as term of licence, closure and reclamation; and jurisdictional issues relating to the Inuit rights affected by the Project, such as the requirements for an Inuit Impact Benefit Agreement (IIBA), Inuit Water Rights, water compensation and requirements for the surface land lease for the portion of the Jericho Diamond Mine located on IOL, including reclamation security for IOL.

The KIA confirmed that an IIBA initially issued to Tahera Diamond Corporation was assigned to Shear when it purchased the Jericho Mine in 2010. However, until Shear resumes production, only the employment and contracting provision for the IIBA are in force. In addition, as part of the IIBA, the KIA confirmed that a Water Compensation Agreement was negotiated under the provisions of Article 20 of the NLCA and was in place between the KIA and Shear at the time of the Hearing. On the issue of water compensation payments, the KIA requested that the Board should require Shear to confirm to the NWB under the annual reporting requirements of the Licence that Shear's water compensation payments to the KIA are up to date.

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<sup>36</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 305, lines 10-24.

<sup>37</sup> Letter from Geoff Clark, Director Land and Environment, KIA to Dionne Filiatrault, Executive Director, NWB Re: Submission of the Kitikmeot Inuit Association for the Water Licence Hearing for the Shear Diamonds (Nunavut) Corp. Water Licence Renewal (NWB1JER0410) dated November 15, 2011.

With respect to closure and reclamation security, the KIA confirmed their support for the Board's holistic approach to security that does not separate land-based reclamation from water-based reclamation when assessing the extent of security that needs to be held. However, the KIA did note that for this Project "virtually all water related reclamation activities are on Crown land..."<sup>38</sup> The KIA confirmed they will continue to hold reclamation security for IOL under the KIA's surface lease with Shear and KIA supported to the figures provided in the assessment of reclamation security for IOL-related security as proposed by Shear.<sup>39</sup>

Specifically with respect to the closure and reclamation plan itself the KIA supports a coordinated approach to closure and reclamation planning to avoid duplication of processes and as such KIA will continue to provide input into the plan on areas which affect IOL as part of the NWB licensing administration processes. The KIA recommends that Shear be required to submit a final Closure and Reclamation plan within 2 years from the date of issuance of the water licence.

On the issue of the term of the Licence, in their written submission the KIA supported a term of 5 years, requiring a renewal hearing partway through the life of mine, which would allow parties to review Shear's closure and reclamation plan and address outstanding issues at that time. Subsequently, at the Hearing, in response to Shear's request for a 14 year term, the KIA proposed that a slightly longer term may be acceptable, and indicated that an appropriate term of the licence would be eight years.<sup>40</sup>

### **Fisheries and Oceans Canada**

The Department of Fisheries and Oceans Canada (DFO) respectfully submitted expert advice to the NWB and informed the Board of DFO's regulatory role in relation to the water licence renewal filed by Shear in the form of written submissions.<sup>41</sup> Unfortunately, DFO was not present at the final hearing on the Application in Kugluktuk, NU.

DFO confirmed they are actively engaged in discussions with Shear to resolve issues related to the *Fisheries Act* authorizations that were previously issued to Benachee Resources Inc. and is confident that discussions are progressing and resolution will occur in a timely manner. Shear has committed to developing plans and timelines to achieve completion of the outstanding fish habitat compensation and monitoring for the Project.

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<sup>38</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 336, lines 12-20.

<sup>39</sup> See the KIA's response to a direct question on the issue, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 337, lines 9-10.

<sup>40</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, pp. 325, line 3-20.

<sup>41</sup> Letter from Bobby Bedingfield, Fish Habitat Biologist, DFO, to Phyllis Beaulieu, Manager of Licensing, NWB, Re: DFO Final Comments – Type A Water Licence Renewal for the Jericho Diamond Mine, dated November 3, 2011.



DFO acknowledged that several plans are still outstanding and will require completion if the Project receives a renewed water licence. Specifically, DFO recommended that the NWB circulate plans that will require updating for an operational mine to interested parties for review prior to NWB approval. DFO also expressed specific interest in respect of activities such as culvert installations or replacement, as well as any modification or construction activities that have the potential to impact fish or fish habitat. DFO indicated that their review would be performed under the authority of the habitat provisions of the *Fisheries Act*.

### **SECTION III: JURISDICTION OF THE BOARD**

This Board has jurisdiction over Shear's application pursuant to Division 2 of the NWNSRTA.<sup>42</sup> Relevant sections in that Division allow the Board to issue a licence,<sup>43</sup> amend a licence,<sup>44</sup> or in certain circumstances, cancel a licence.<sup>45</sup> In deciding to issue a licence or engage in any other statutory function, the Board must follow the objects of the governing legislation, which are:

“... to provide for the conservation and utilization of waters in Nunavut, except in a national park, in a manner that will provide the optimum benefit from those waters for the residents of Nunavut in particular and Canadians in general”<sup>46</sup>

In setting the Terms and Conditions of this licence, the Board is guided by the objects and by the Project Certificate that covered these same matters.<sup>47</sup> The Board must also meet its statutory duty to make *all* reasonable efforts to minimize *any* adverse effects on aquatic ecosystems. Reading the several Articles of the NLCA together,<sup>48</sup> the Board relies on the broad definition of “ecosystemic” found in Article 12, Clause 12.1.1. of the NLCA to require not only the NIRB but also the NWB to ensure all components of the ecosystem such as fish and fish habitat are protected within the parameters of s. 71 of the NWNSRTA.

For all matters relating to its licence application, the burden of proof in this Hearing rests with the Applicant. The NWB Rules of Practice state:

In cases in which the Board accepts evidence, any party offering such evidence shall have the burden of introducing appropriate evidence to support its position. Where there is conflicting evidence, the Board will

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<sup>42</sup> Section 42-81 of the NWNSRTA.

<sup>43</sup> See ss. 42, 48, 55, 56, and 70 of the NWNSRTA.

<sup>44</sup> See s. 43(1)(b) of the NWNSRTA.

<sup>45</sup> See s. 43(1)(c) of the NWNSRTA.

<sup>46</sup> See s. 35 of the NWNSRTA.

<sup>47</sup> For reference to the specific considerations relevant to this Licence see footnotes 53-57 that follow.

<sup>48</sup> This approach is consistent with the direction provided in Article 2, section 2.9.1 of the NLCA.

decide which evidence to accept and will generally act on a balancing other evidence.<sup>49</sup>

Where a party presents no evidence supporting or rejecting the applicant's evidence, the NWB will base its decision on its own assessment of the Applicant's request.

## **SECTION IV: REQUIREMENTS OF THE NWNSTRA AND NLCA**

### **Objects of the Board and its Relationship to other Bodies**

#### **Land Use Planning**

The Jericho Mine site is located within the Kitikmeot region of Nunavut in an area where no valid land use plan exists. Therefore, a conformity determination by the Nunavut Planning Commission (NPC) in accordance with Article 11, Clause 11.5.10 of the NLCA is not required.<sup>50</sup>

#### **Environmental Assessment**

For The purpose of Shear's Application, two Articles of the NLCA are relevant and binding: Article 12 (Impact Assessment) and Article 13 (Water Management). Where possible the two Articles must be read together and should be interpreted in an integrated manner.

The NWB provided Notice of the Application on March 21, 2011. At this time the NWB also advised Shear of the environmental impact assessment requirements of the Nunavut Impact Review Board (NIRB) and Article 12.

In advance of the water licence being granted to the original Licensee, the NIRB completed a full environmental assessment review under Article 12 which resulted in the issuance on July 20, 2004 of Project Certificate No. 002 for the Jericho Project.

With respect to Shear's Application, on September 27, 2011, the NWB received notification from the NIRB of its decision that the existing Project Certificate dated July 20, 2004 and assigned to Shear Diamonds (Nunavut) Corp on August 23, 2011, continues to apply.<sup>51</sup>

The NIRB Project Certificate has several conditions relating directly, or by implication, to the water licence including conditions related to monitoring,<sup>52</sup> fish and aquatics,<sup>53</sup> environmental

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<sup>49</sup> See section 8.13 of the Nunavut Water Board *Rules of Practice and Procedure for Public Hearing*.

<sup>50</sup> Email from Brian Aglukark, NPC to Phyllis Beaulieu, Manager Licensing, NWB, and to Pamela Strand, President CEO, [Shear], RE: 110204 2AM-JER0410 Shear Diamonds (Nunavut) Corp., - Type A - Amendment to Alter Term of Licence - Kitikmeot Region - Jericho Diamond Project, dated Friday, February 18, 2011.

<sup>51</sup> Letter from R. Barry, Executive Director, NIRB to D. Filiatrault, Executive Director, NWB Re: NIRB consideration of Shear Diamonds (Nunavut) Corp.'s amendment and renewal application for NWB Type A Water Licence 2 AM-JER0410 for the Jericho Diamond Mine, dated September 27, 2011.

management,<sup>54</sup> abandonment and restoration<sup>55</sup> and others.<sup>56</sup> The NWB confirms that the Licence meets the requirements of the Project Certificate as it relates to the jurisdiction of the NWB.

Following questioning of Shear by EC on the issue of investigation of alternative treatment options for effluent,<sup>57</sup> the Board clarified that there are requirements of the Project Certificate issued by NIRB that are relevant.<sup>58</sup> The Board reiterates from the original decision of the Board,<sup>59</sup> that two conditions of the Project Certificate prohibited licensing of certain activities (such as spray irrigation) and this Licence does not approve water use or deposit of waste from these prohibited activities. Should Shear wish to incorporate Spray Irrigation and/or the use of an outflow Diffuser as a project component in the future it must be “referred back to NIRB with further design detail to be dealt with under NLCA 12.4.3.”<sup>60</sup>

### **Inuit Water Rights**

The Kitikmeot Inuit Association (KIA) confirmed to the Board that water compensation requirements pursuant to s. 63(1) of the NWNSRTA have been satisfied in regard to the Application.<sup>61</sup>

### **Recommendations on Marine Areas**

Section 41 of the NWNSRTA permits the Board to advise and make recommendations respecting any marine matters that may arise to any department or agency of the Government of Canada or the Government of Nunavut.<sup>62</sup> The Board has no recommendations on marine areas for this Application.

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<sup>52</sup> See NIRB Project Certificate Conditions No. 6 and 7.

<sup>53</sup> See NIRB Project Certificate Conditions No. 19-21.

<sup>54</sup> See NIRB Project Certificate Conditions No. 25, 29-37.

<sup>55</sup> See NIRB Project Certificate Conditions No. 41.

<sup>56</sup> See NIRB Project Certificate Conditions No. 50 and 52.

<sup>57</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 122, lines 13-19.

<sup>58</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, p. 123, lines 15-25.

<sup>59</sup> Licence NO. NWB1JER0410 Benachee Resource Incorporated Reasons for Decision and Record of Proceeding dated December 22, 2004, pp. 9.

<sup>60</sup> See NIRB Project Certificate Conditions No. 38 and 39.

<sup>61</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 334, lines 8-9.

<sup>62</sup> Section 41 of the NWNSRTA states:

The Board may, either jointly with the Nunavut Planning Commission, the Nunavut Impact Review Board and the Nunavut Wildlife Management Board, as established by the Agreement, acting as the Nunavut Marine Council referred to in section 15.4.1 of the Agreement, or on its own, advise and make recommendations respecting any marine area to any department or agency of the Government of Canada or the Government of Nunavut, and those governments

## Fisheries Act and Regulations

The NWNSRTA s. 73 provides that any condition of NWB Licence relating to the deposit of waste in respect of any water to which regulations are made s. 36(5) of the *Fisheries Act* shall be at least as stringent as the conditions prescribed by those regulations. However, for this type of undertaking, a diamond mine, it should be noted that the *Metal Mining Effluent Regulations*<sup>63</sup> do not apply.

Further, the Board emphasizes that the licences issued by the NWB do not authorize habitat alteration disruption or destruction pursuant to s. 35 of the *Fisheries Act*,<sup>64</sup> nor does a water licence authorize the deposit of deleterious substances into waters frequented by fish pursuant to s. 36 of the *Fisheries Act*.<sup>65</sup> Separate authorizations are required by DFO to authorize such activities.

## SECTION V: DECISION TO ISSUE

Following the Public Hearing and for reasons elaborated further below, the Board has decided to issue Water Licence 2AM-JER1119 (Licence) subject to the conditions set out therein.<sup>66</sup> The Licence contains terms and conditions the Board feels are necessary to protect the environment, conserve the water resources and provide appropriate safeguards in respect of the Licensee's use of waters and deposit of wastes. The Licence also parallels the

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shall consider that advice and those recommendations when making any decision that may affect that marine area.

<sup>63</sup> *Metal Mining Effluent Regulations* SOR/2002-222.

<sup>64</sup> See s. 35 of the *Fisheries Act* which states:

35. (1) No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.

(2) No person contravenes subsection (1) by causing the alteration, disruption or destruction of fish habitat by any means or under any conditions authorized by the Minister or under regulations made by the Governor in Council under this Act.

<sup>65</sup> See s. 36 of the *Fisheries Act* which states:

36. (1) No one shall...

(3) Subject to subsection (4), no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water.

(4) No person contravenes subsection (3) by depositing or permitting the deposit in any water or place of

(a) waste or pollutant of a type, in a quantity and under conditions authorized by regulations applicable to that water or place made by the Governor in Council under any Act other than this Act; or

(b) a deleterious substance of a class, in a quantity or concentration and under conditions authorized by or pursuant to regulations applicable to that water or place or to any work or undertaking or class thereof, made by the Governor in Council under subsection (5).

<sup>66</sup> The Licence has been issued under separate cover as 2AM-JER1119.

recommendations and suggestions made by the NIRB in the Environment Assessment Report approved by the Minister.

### Conditions for Issuance of a Licence

Section 57 of NWNSRTA provides several key legislative requirements that must be satisfied before the Board may issue a licence.<sup>67</sup> On the issue of waste produced by the undertaking the Applicant has satisfied the Board that in combination with mitigation measures proposed by the Licensee and the licence terms and conditions of the Licence, the Project can maintain and meet acceptable water quality and effluent standards.

### Financial Responsibility of the Applicant

Specifically with respect to the requirements under the NWNSRTA, s. 57(b), the Board's consideration of the financial responsibility of the Applicant involves three aspects:

- the financial ability of the Applicant to complete the appurtenant undertaking;
- the ability of the Applicant to undertake measures to mitigate, and in the Board's view, also monitor for, impacts; and
- thirdly the Applicant's ability to maintain and restore the site during closure and abandonment.

This third aspect of financial responsibility has been considered and will be addressed in the section of this decision discussing reclamation security.

Section 57 also makes it clear that the NWB's assessment of the Applicant's financial responsibility is a contextual analysis that considers not only the licensed undertaking in context, but also the Applicant in context, with particular regard to the Applicant's past performance. In this respect, the Board heard evidence regarding the Applicant's environmental record in Nunavut prior to acquiring the Jericho site in July, 2010:

Shear also has an environmental track record. Shear won the Thomas Kudloo Award in 2007. Shear also won the environmental stewardship

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<sup>67</sup> Section 57 of the NWNSRTA states:

The Board may not issue a licence unless the applicant satisfies the Board that

(a) any waste produced by the appurtenant undertaking will be treated and disposed of in a manner that is appropriate for the maintenance of the water quality standards and effluent standards that are prescribed by the regulations or, in the absence of such regulations, that the Board considers acceptable; and

(b) the financial responsibility of the applicant, taking into account the applicant's past performance, is adequate for

(i) the completion of the appurtenant undertaking,

(ii) such measures as may be required in mitigation of any adverse impact, and

(iii) the satisfactory maintenance and restoration of the site in the event of any future closing or abandonment of that undertaking.

award from the Kivalliq Inuit Association in 2007 and also won a community award from NTI in 2006.<sup>68</sup>

In addition, the Board heard evidence specifically regarding the Applicant's activities since acquiring the Jericho site to bring the site into compliance, including commitments to continue to work co-operatively with regulatory agencies such as Environment Canada, the Department of Fisheries and Oceans and Aboriginal Affairs and Northern Development Canada in respect of issues where compliance has not been fully achieved.<sup>69</sup>

However, in contrast to the normal renewal situation where the applicant has an operating history applicable to the licensed undertaking, in this case, the Applicant has no operating history with respect to the Jericho site or indeed any other operating diamond mine. Further, the Board is also mindful of the fact that the previous operator of the Jericho site experienced significant financial difficulties in their attempt to operate the mine from 2006 to 2008, culminating in the mine going into receivership and being put into care and maintenance since that time. The Applicant did provide evidence regarding why, in their view, the original Licensee/operator experienced financial difficulties and how the Applicant intends to do things differently,<sup>70</sup> but with the innumerable variables affecting such a project, whether the Applicant's approach successfully addresses the issues of the previous Licensee remains to be seen. In particular, as issues with the development and use of the winter road to the site appeared to impose significant limits on the previous Licensee's operations, the Board specifically asked the Applicant regarding whether a contingency for winter road development had been built into the Applicant's financial model. The Applicant stated in response: "...we did absolutely consider costs such as the winter road. That is a half million dollar fee that we've included in our -- in our cash flows."<sup>71</sup>

On this basis, the Board has determined that the Applicant's past performance as a well-respected exploration company in Nunavut factors positively into the Board's overall assessment of their financial responsibility, but this is balanced against the Applicant's operational inexperience and the history of operations at this site.

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<sup>68</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 45, lines 9-14.

<sup>69</sup> See for example, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 at pp. 62-67.

<sup>70</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 at pp. 50-52.

<sup>71</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 268, lines 12-16.

Moving from the contextual analysis of the Applicant and the undertaking, to the Applicant's financial ability to complete the licensed undertaking, the Board finds that this question is linked to the term of the Licence, which is discussed more fully in a later section of this decision discussing the term. For the purposes of the analysis in this section, the Board notes that if the Board had issued the Licence for the entire life cycle of the mine, there was insufficient evidence and there are too many variables impacting operations to establish the financial ability of the Applicant to bring the mine into and through full commercial operation and into abandonment and reclamation.

The Board acknowledges that it is not unusual for the Applicant's immediate focus to be on conducting the exploration and operating review necessary to get the mine into operation, with financing for on-going operations to be obtained in a future phase. As stated by the Applicant:

Money has been used to assess the site and adjust the mine plans, conduct appropriate studies and fieldwork, and confirm site operations. As at today, Shear has taken steps to arrange financing to get the project through to startup, and this financing ongoing is contingent on receiving the water licence. Once Shear commences recovery plant trials, the mine will be generating its own income. However, Shear will still have to take steps to arrange additional financing for both capital investment and operating cost, not unlike, most -- in fact, all junior exploration companies that move into the development phase, which is what Shear is.<sup>72</sup>

Based on the Applicant's current financing and commitments, the Applicant has established the financial ability to get the mine from care and maintenance and into operations. However, given the Applicant's lack of mine operating experience and the difficulties experienced by the prior Licensee, the Board believes a cautious approach to assessing the financial ability of the Applicant to meet the obligations associated with the entire lifecycle of the mine is called for in this case. Consequently, the Board has considered the Applicant's financial responsibility in light of a shorter term of the Licence rather than the entire life cycle of the licensed undertaking, and has determined that the extent of the Applicant's established financial responsibility is to take the mine from care and maintenance and into an initial 3-5 year period of operations, during which assumptions can be tested to gain a fuller and truer picture of the on-going financial commitment necessary to operate, abandon and reclaim the undertaking.

With respect to the second aspect of the assessment of the Applicant's financial responsibility, involving impact monitoring and mitigation, the Board directly questioned the Applicant:

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<sup>72</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 260, lines 1-15.

With respect to the financial commitments necessary to mitigate the adverse impacts that are referred to in item 2, [NWNSRTA, s. 57(b)(ii)] the NWB includes monitoring and mitigation commitments as part of that obligations. We've heard a lot of extensive commitments that have been proposed, either through the written application and through the public hearing process. Does Shear currently have an estimate for those costs? And follow up to that, is there... any evidence that can be provided to us in the ability to meet those estimated costs...<sup>73</sup>

With respect to the financial commitments required to get the mine to full production in 20-24 months, the Applicant's evidence in response was unequivocal:

Yes, we have indeed a tally for the commitments that we have made, and the approximate is \$850,000 in terms of cost. Just to be clear, we actually have budgeted \$1.26 million for the costs over the next year, so that's an over 40 percent contingency. I believe that should be robust enough to cover any additional costs.<sup>74</sup>

With respect to future monitoring and mitigation costs once the mine is in production, the Board recognizes that these estimates, are in some respects, dependent on the specific terms and conditions of the Licence itself, but as with the analysis of the Applicant's financial responsibility to complete the licensed undertaking, the Board notes that there is insufficient evidence to establish the Applicant's financial responsibility to meet these costs for the entire life cycle of the mine. As a result, the Board finds that with respect to this aspect of the Applicant's financial responsibility, the Applicant has established the ability to meet the monitoring and mitigation costs associated with the undertaking during care and maintenance and into an initial 3-5 year period of operations.

In summary, the Board has determined that the evidence establishes that the Applicant has the financial responsibility to support the Project during care and maintenance and into an initial 3-5 year period of operations, but the Applicant has not provided sufficient evidence to demonstrate financial responsibility required for the entire life cycle of the mine.

### **Compensation of Existing or Other Users**

The NWNSRTA requires that the Board be satisfied that compensation of existing or other users has been or will be paid.<sup>75</sup> Notice of the application<sup>76</sup> was given and the NWB confirms that no representations regarding compensation were made to Board within the time period specified.

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<sup>73</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 264, lines 11-22.

<sup>74</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 268, lines 5-11.

<sup>75</sup> See ss. 58-60 of the NWNSRTA.

<sup>76</sup> Notice of the Application in accordance with s. 55 of the NWNSRTA was issued on March 21, 2011.



In addition, the Applicant further confirmed that they did not receive any requests related to compensation of existing or other users.<sup>77</sup>

The Board notes that the DFO has been actively engaged in discussions with Shear for the development of plans to address the completion of outstanding fish habitat compensation and monitoring for the Jericho mine project. However it should be noted that “compensation” under the *Fisheries Act* is not considered to be the same as the compensation provided for in the NWNSRTA. As noted above, the Licence is not intended nor is it to be used as evidence to remove or usurp the DFO’s discretion with regard to authorizations that may be required under the *Fisheries Act*.

### Issuance of a Licence

As stated above and pursuant to s. 42(1) of the NWNSRTA, the Board has decided to issue Water Licence NWB1JER0410 subject to the terms and conditions set out therein and explanations provided herein. In issuing the licence, the Board is satisfied that the Application contains the required information and is in the proper form having regard to the requirements of the NWNSRTA<sup>78</sup> and associated regulations.<sup>79</sup>

### Assumptions

When faced with choices regarding monitoring requirements such as standards or parameters to be imposed under the Licence, the Board has opted to impose stringent monitoring requirements in an effort to ensure that the Applicant meets their on-going environmental protection obligations. In addition, it should be noted that the Board and the parties participating in the licensing process have also assumed that Shear will meet the commitments Shear has made throughout the licensing renewal process and outlined in the table of commitments filed by Shear after the TM/PHC,<sup>80</sup> as well as those presented by the Applicant in Kugluktuk at the Public Hearing.<sup>81</sup> Where appropriate, the Board has also incorporated some of Shear’s key commitments expressly into the Licence.

### Applications in Relations to the Licences

Overall, the Board is satisfied that the requirements of s. 48 of the NWNSRTA have been met. Shear filed an application which complied with the Board’s Rules, accompanied by the fees

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<sup>77</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, p. 77, lines 24-25.

<sup>78</sup> See s. 48 of the NWNSRTA.

<sup>79</sup> *Northwest Territories Water Regulations*, S.O.R./93-303 [hereinafter Regulations] and Application of Regulations made under paragraph 33(1) (m) or (n) of the *Northwest Territories Waters Act* in Nunavut Order, S.O.R./2002-253.

<sup>80</sup> See 2AM-JER0410 Water Licence Renewal Pre-Hearing Conference Decision, July 4, 2011, Appendix E: Table of Pre-Hearing Commitments.

<sup>81</sup> See for example the commitments outlined by Shear in the Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 44-45 lines 22-26 and lines 1-8 and pp. 62-71 all lines.

required by regulation including the application fee<sup>82</sup> and water use fees.<sup>83</sup> In addition, the Licensee also provided the necessary information to evaluate the qualitative and quantitative effect of the use of water or the deposit of waste into water.

### **Application to Amend or Application for future Modifications**

In relation to future applications to amend or modify the Project, the Board reminds Shear that it must comply with all requirements of the NLCA<sup>84</sup> and NWNSRTA<sup>85</sup> where applicable.

### **Assignment of a Licence**

The Board reminds Shear that s. 44 of the NWNSRTA states:

A sale or other disposition by a licensee of any right, title or interest in an appurtenant undertaking constitutes, subject to the authorization of the Board, an assignment of the licence to the person to whom the sale or other disposition is made.

A licence is only assignable if the requirements of s. 44 have been met. Further any application for assignment should be consistent with the requirements as provided for under the Regulation.<sup>86</sup> All necessary forms for filing an application for assignment can be obtained from the NWB Licensing Department.

### **Cancellation or Expiry of the Licence**

The Board notes that s. 46 of the NWNSRTA states: “The expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence.”

In addition the Board advises the Licensee that based on the Board’s authority under s. 43(1)(c)(iii) of the NWNSRTA, the Board may, on application by a licensee, or on its own motion, cancel a licence when the Board considers the cancellation to be in the public interest.

### **Term of Licence**

In accordance with s. 45 of the NWNSRTA, the term of a licence or any renewal shall not exceed twenty-five years. Originally, when the Licence was issued to the previous licensee the term was six years. Although the previous licensee sought a longer term, the Board indicated that a

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<sup>82</sup> In accordance with section 7 of the Regulations a fee of \$30.00 was provided with the application and received on April 5, 2010.

<sup>83</sup> A water use fee of \$30.00 was provided with the application and received on April 5, 2010.

<sup>84</sup> See Article 12, Clause 12.4.3 (b) of the NLCA.

<sup>85</sup> See s. 43 of the NWNSRTA.

<sup>86</sup> See s. 10 of the Regulations which states:

- (1) An application for authorization for the assignment of a licence ...shall be submitted to the Board, accompanied by the fee set out in section 7, not less than 45 days before the date on which the applicant proposes to assign the licence.
- (2) An application referred to in subsection (1) shall be signed by the assignor and the assignee and shall include the name and address of the assignee.

six year term was appropriate because it allowed for one year of construction and five years of active mining and processing. Based on the projected mine life, the six year term was intended to ensure that the renewal would coincide with the requirement to submit a final Closure and Reclamation plan three years prior to closure of the mine, and would provide the parties with an opportunity to review this plan in conjunction with the renewal application. In addition, the Board noted that the term would be sufficient to allow for the accumulation of monitoring information which could be used by the Board to assess the performance of the licensee in the context of the licence renewal.<sup>87</sup>

In the renewal application filed by the Applicant in February, 2011, the Applicant applied for a ten-year term, on the basis that ten years would encompass the two year period to get the mine into operation, six years to operate (based on the remaining life of the mine as calculated by the previous licensee) and two years to decommission and reclaim the site. However, at the Hearing, the Applicant changed the term requested to 14 years to reflect that revisions to the original licensee's operating plans suggest a longer mine life of ten years and to allow for a two year period to ramp up to production and a two year closure and reclamation period.<sup>88</sup> In seeking a "life of mine" term, two central rationales were provided by the Applicant:

...the uncertainty of having one's operation permits in place significantly affects a company's ability to apply for and receive financing. These include equity raises and debt financing. It is difficult to convince a future investor that although you do have a water licence now, it is only good for five years, so in reality, Shear could only possibly guarantee that for the next five years Shear would be able to produce. The second point is that the cost, both in money and in human resources, to renew a water licence is substantial.... It is without a doubt a significant burden to any company to renew its water licence.<sup>89</sup>

The Applicant suggested that to ensure that regulators are kept informed regarding the Applicant's activities at the mine site throughout a 14 year term, the Applicant committed to providing quarterly updates and half way through the 14 year term, would also provide a comprehensive "compliance report".<sup>90</sup>

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<sup>87</sup> Licence No. NWB1JER0410, Benachee Resources Incorporated, Reasons for Decision and Record of Proceedings, December 22, 2004 at pp. 11-12.

<sup>88</sup> Exhibit 1, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type 'A' Water Licence Renewal, Powerpoint Presentation, Hard Copy, slides 70 and 71.

<sup>89</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 68-69, lines 22-26, lines 1-8 and 13-15.

<sup>90</sup> Exhibit 1, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type 'A' Water Licence Renewal, Powerpoint Presentation, Hard Copy, slide 72 and Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 22, lines 8-14, outlining what the compliance report will contain:

...it won't be just a compliance update. It will be a full review of, for example, a review of the predicted models and a confirmation of those models, review of the mine plan, a review of the

Environment Canada's position with respect to the Applicant's request of a "life of mine" term was summarized at the Hearing as follows:

We also want to note the increased term that Shear is proposing to the licence, tying this to the life of mine, and we would respectfully suggest that eight to ten years would be more of a reasonable timeframe. This would allow the mine to develop its own track record, and things may change within the life of mine that might want to be looked at in a licence renewal, such as the potential for moving underground or new pipes.<sup>91</sup>

Aboriginal Affairs and Northern Development's conditional support for a 14 year term was stated at the Hearing as follows:

Considering the arguments and requests that the proponent has made with respect to a 14-year licence in the special case of this particular project, ... not going into operation, according to our time schedule, for at least another two years, which is quite different than other projects, which normally do go into operation after the water licence has been issued, Aboriginal Affairs and Northern Development Canada would not be adverse to a 14-year licence provided that there is robust quarterly reporting with a compliance element to it; the seven-year compliance audit, as described by the proponent this morning to questions; and a mechanism for adjusting security when required.<sup>92</sup>

In their written submissions filed in advance of the hearing, the Kitikmeot Inuit Association<sup>93</sup> indicated that a five year term was appropriate as the renewal of the licence partway through the life of the mine would afford the Board and the parties with an opportunity to review the Applicant's closure and reclamation plan, as well as to address any other outstanding issues at that time. Subsequently, at the Hearing, in response to the request by the Applicant to have a 14-year term, the KIA modified their position as follows:

Under the terms of the water licence, Shear originally applied for a ten-year water licence. The evidence here at the hearing obviously suggested a revision to a 14-year water licence. KIA recommended that the Shear licence be renewed for a maximum term for five years;

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AMP, and a review -- a full review of the water quality at site. That's what Shear is committing to today.

<sup>91</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 284-285, lines 24-26 and lines 1-7.

<sup>92</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 305, lines 10-24.

<sup>93</sup> Kitikmeot Inuit Association, Hearing Submissions, dated November 15, 2011 at p. 7.

however, given the consideration of the evidence that has been provided here at the hearing, KIA is willing to -- has revised its recommendation and suggests that the Jericho water licence be renewed for -- with a maximum term of eight years, and the reason for that is that this timeframe will provide KIA, the Board, and other participants in the regulatory process with an opportunity to review outstanding issues, as well as reduce cost and uncertainty for Shear. Instead of five years, a longer -- eight years, giving them three additional years on that water licence.<sup>94</sup>

In addition, at the community sessions, a community member from Kugluktuk stated that he felt that in order to ensure that water quality monitoring data is not only generated under the Licence, but is also acted upon, a shorter term of licence (5 years) is more appropriate.<sup>95</sup>

The Board has determined, after due consideration of the positions of the parties and the factors outlined below that the Licence be issued for a term of eight years. While the Board is mindful of the Applicant's position that a longer term would serve the interests of investor certainty and minimizing the burden of costs associated with participating in a renewal process, the Board must balance these considerations against several factors that support a shorter term. These factors include:

- the considerable uncertainty regarding the operating conditions likely to be encountered by the Applicant and the extent to which the existing mine operating plans will need to be significantly modified as a result;
- the difficulty the Board has with accurately assessing, at this time, the on-going financial commitments required to maintain the mine, monitor and mitigate impacts once the mine returns to commercial operation, as well as assessing the ability of the Applicant to meet those commitments ; and
- uncertainty surrounding what will be necessary to ensure appropriate mine closure and reclamation before the mine has returned to commercial operation and the Applicant has had an opportunity to determine its own approach to operations.

Although the Board commends the Applicant's commitment to transparency and maintaining a dialogue with the mine's regulators during the term of the Licence and recognizes the

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<sup>94</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 325, lines 3-20.

<sup>95</sup> See comments by Donald Haviyok, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 171, lines 4-26.

Applicant's willingness to provide quarterly reports and a compliance report at the half way point of a 14-year term, the Board emphasizes that while these measures are useful to the regulators, such written reporting is not a substitute for the engagement of community members and interested parties that occurs during the public hearing processes associated with a renewal application. As was apparent in the participation of community members at this Hearing, a licence renewal gives the community an opportunity to ask questions regarding monitoring data,<sup>96</sup> review and consider proposed mitigation measures and provide the Applicant with the benefit of local knowledge and wisdom regarding effects that may not otherwise be identified solely through the monitoring and reporting measures required by regulators.

In addition, under the NLCA and the Board's Rules, the Board is responsible for ensuring the NWB processes give "due regard and weight to Inuit culture, customs and knowledge,"<sup>97</sup> and the Applicant's proposed filing of several technical written reports over the course of the proposed 14 year term does not reflect the strong oral tradition inherent in Inuit culture. These measures also do not provide sufficient opportunity for elders and other community members to share their local and traditional knowledge and their concerns in a format that is appropriate and respectful of their customs. Although the Board is not suggesting that the NWB's licensing process is the only way the Applicant can engage the community, the Board does note that this is an essential and important component of the Board's licensing process that is not addressed by the measures proposed by the Applicant.

In the Board's view, a term of eight years strikes the appropriate balance between certainty and flexibility as the Licensee will have two years to ramp up to commercial operation and gain five years of operating experience before the Licensee is required to file the renewal application (one year before the expiry of the term). With five years of operating experience, the Applicant, the Board, the community and the other participants in the licensing process will be better positioned to fully consider the mine operations, financial responsibilities, security requirements and closure and reclamation plans during the subsequent renewal of the Licence.

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<sup>96</sup> See for example comments by Donald Haviyok, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 172, lines 3-30 and p. 245, lines 4-20, and comments by Barbara Adjun, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 243, lines 12-17.

<sup>97</sup> NLCA, Article 13, Clause 13.3.13(b) and NWB Rules, s. 22.1.

## **SECTION VI: WATER LICENCE 2AM-JER1119 TERMS AND CONDITIONS**

The Licence does not take effect until approval of the Minister is given pursuant to s. 56 of the NWNSRTA.<sup>98</sup> As indicated in Section V, the Board has decided to issue Water Licence No. 2AM-JER1119 subject to the conditions set out therein and further clarified below. In general, where the Board has not provided specific comments with respect to a section of the Licence, the Board has determined that the terms and conditions of the existing Licence are to be carried forward to the renewed Licence, subject only to updating for consistency with regulatory requirements and standard licensing terminology.

### **Part A: Scope, Definitions and Enforcement**

In accordance with Schedule II (Section 2) of the Regulations, the Project is classified as a mining and milling undertaking. The scope of the Licence is consistent with the original licence issued by the Board in December 2004, including the following:

For Water use:

- Water for the purpose of processing and related industrial uses and domestic camp use from Carat Lake; and
- Water for the purpose of winter road construction and maintenance from Lynne Lake.

For Deposit of Waste:

- Discharge of PKCA effluent to Stream C3 to meet licence discharge criteria;
- Discharge of sewage effluent from the Waste Water Treatment Facility to the PKCA or as otherwise approved by the Board;
- Discharge of Pit water via the PKCA for the purpose of resuming development activities and eventual open pit mining;
- Treatment and discharge of petroleum contaminated water from Petroleum storage facilities, landfarm and site water collection ponds; and
- Closure of landfill and construction and operation of a new landfill facility.

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<sup>98</sup> Subsection 56(1) of the NWNSRTA states:

the issuance, amendment, renewal and cancellation of a Type A licence and if a public hearing is held a Type A licence are subject to the approval of the Minister. The licence is considered approved ninety days following issuance of the licence or as otherwise approved by the minister under section 56 of the Act.

Detailed assessment of the Scope is provided under Part A, Item 1(a) of the Licence, allowing the Licensee to conduct mining, milling and associated activities at the Jericho Diamond Mine.

It should be noted, Shear in their submission to the Hearing provided supporting evidence of other assets held by Shear including near mine exploration potential;<sup>99</sup> on this basis, the Board wishes to advise Shear that any water use or waste disposal activities in relation to these exploration projects would require submission of separate stand alone application(s) and the authorizations necessary to carry out these projects are not considered as part of this mining and milling undertaking. Notice was provided to the previous licensee in this regard specifically for the ROC, TAK and MUS properties.<sup>100</sup>

### **Enforcement and Compliance**

For the purpose of ensuring compliance with the Licence, an Inspector designated by the Minister may inspect or examine works, waters or waste and exercise other powers according to the NWNSRTA.<sup>101</sup> The NWNSRTA includes serious penalties for breach of the Licence including furnishing or maintaining security.<sup>102</sup> Investigations or inspections to support enforcement and compliance are carried out by persons designated and empowered by the Minister.<sup>103</sup>

The Applicant should also note that the Licence states that “Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with all applicable legislation, guidelines and directives.”

In closing, the Board recognizes that Shear has worked diligently to assess compliance and respond to outstanding issues since taking ownership in 2010, and the Board looks forward to Shear’s on-going and continued commitments in this regard.

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<sup>99</sup> Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slide 38-40.

<sup>100</sup> Inspection report June 10, 2011 for 2BE-TAK0204, Ian Rumbolt, and 2BE-ROC0305 carried out on June 11, 2011 (This inspection report refers to the licence as “Rockinghorse Property-Muskox Lake Project”). In the response letter from Shear to Baba Peterson, Resource Management Officer, Kitikmeot Region, AANDC, July 11, 2011, Shear indicated that Shear had not been assigned or granted any of the approvals associated with either the Takajuak or Rockinghorse properties.

<sup>101</sup> Section 85-94 of the NWNSRTA.

<sup>102</sup> Section 90 of the NWNSRTA.

<sup>103</sup> Section 85-88 of the NWNSRTA.



## Part B: General Conditions

### Water Use Fees

The Licensee is required under the Regulations to provide a fee for the right to use water. This fee must be calculated on an annual basis in accordance with s. 9(1)(b) of the *Northwest Territories Water Regulations* (Regulations). As no “deposit” for the water use fee was provided by the Applicant,<sup>104</sup> the water use fee in this case shall be paid in accordance with s. 9(6)(b) of the Regulations, including for the first year of the Licence, at the time the Licence is approved by the Minister. For each subsequent year of the Licence, the water use fee shall be paid in advance, on the anniversary of the date on which the Licence was issued. Payments shall be made to the Manager of Licensing with a cheque payable to the Receiver General for Canada. The Board encourages Shear to consult with the NWB staff for confirmation regarding the calculation of water use fees.

### Reports Filed with the Board

With the exception of the Annual Report all other plan(s) or report(s) (Plan, or collectively Plans) submitted to the Board under this Licence shall include a proposed timetable for implementation. Unless listed as approved in the Licence, a Plan cannot be undertaken without subsequent written Board approval. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Applicant in writing of acceptance, rejection, or alteration of the Plan. The Plan must then be carried out in a manner and timeframe consistent with the Board’s direction.

For any Plans, drawings, figures or other documentation that are required to be stamped and/or sealed by an engineer or other accredited professional, the Board’s review and approval is limited to reviewing the documentation for compliance with the requirements of the Licence and does not constitute verification or any other form of approval with respect to the design, engineering controls, construction, operating plans or implementation measures included in such documentation.

Every Plan to be carried out pursuant to the terms and conditions of the Licence shall become a part of the Licence, and any additional terms and condition imposed upon approval of a Plan by the Board also become part of the Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.

The Application and documentation filed in support of the Application contains several plans and engineered designs that were submitted and approved by the Board:

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<sup>104</sup> The NWB Manager of Licensing acknowledges receipt of a minimum water use fee of \$30 from the Applicant on April 5, 2011.

- Care and Maintenance Plan (submitted in January 2011);
- Aquatic Effects Monitoring Plan (AEMP);
- PKCA Management Plan;<sup>105</sup>
- Waste Rock Management Plan (WRMP);
- Landfill Management Plan;
- Landfarm Management Plan;
- General Monitoring Plan (GMP);
- Site Water Management Plan (SWMP);
- Waste Management Plan including the Incineration Management Plan (WMP);
- Wastewater Treatment Management Plan (WTMP); and
- Contingency Management Plan (CMP).

The Board has approved these Plans as presented unless otherwise indicated in the terms and conditions of the Licence. While the plans listed above have been approved by the Board, recommendations and/or commitments were made for revisions of these plans which are detailed in the appropriate Parts below. All plans within the Licence, are subject to annual review and revision as necessary to reflect changes in operation, technology as provided in Part B of the Licence.

The following plans and engineered designs will be submitted to the Board for review and approval in accordance with the timelines specified in the Licence:

- Updated Interim Closure and Reclamation Plan (ICRP);
- Final Abandonment and Restoration Plan (FARP); and
- Emergency Preparedness and Response Plan for Dam Emergencies.

In addition, the Board notes that preliminary design plans were received with respect to the following, but that these Plans, due to their preliminary nature, have not been approved by the

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<sup>105</sup> Future revisions to this Plan may be required in accordance with recommendations from AANDC to address the new or revised design requirements as provided in Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 303, lines 15-21 and as provided for in further detail in this decision under Part D.

Board. The Applicant is advised that these Plans must be approved by the Board prior to the Applicant proceeding to construction and implementation of the design or plan:

- Preliminary Landfill Design Plan; and
- Preliminary Landfarm Design Plan.

In addition, the Board notes that some Plans are subject to Board **review only** (i.e. no Board approval is required), and these include:

- Explosive Management Plan;
- Quality Assurance/Quality Control Plan (QA/QC); and
- Borrow Management Plan.

The Annual Report shall include a statement with respect to the status of water compensation agreement(s), however, the Board wishes to reiterate that the enforcement of water compensation agreements with the KIA and any other users is outside the scope of the Licence.

The Applicant has committed to providing the Board with Quarterly Reports which will include:

... a summary of the sampling program that have been undertaken in that quarter; a summary of construction and building plans that have been undertaken in that quarter; ...a schedule of operational plans; construction and building plans for following quarter, so the quarter forward; a bullet-point list of all correspondence that has been to the regulators over the course of that quarter; and an update of the timeline. ...if there are any additional documentation or information that the regulators would like to see in that quarter, Shear is committed to being open and transparent about our processes, so we would appreciate any additional input...<sup>106</sup>

The Board recognizes that the Applicant proposed to submit Quarterly Reports as a mechanism to provide a higher degree of accountability and transparency given the proposed life of mine,<sup>107</sup> and the Board has not chosen to issue the Licence for the full term requested. Nonetheless, the Board believes that based on the level of community concerns with respect to monitoring, Quarterly Reports are advisable, and as such have been included as a requirement of the Licence. Further, the Board believes that in order for the Quarterly Reports to be effective and useful for all parties, including regulators, the KIA and the community, reports shall be submitted to the Board within 14 days following the end of the quarter.

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<sup>106</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 223, lines 4-19.

<sup>107</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 p. 69-70, lines 25-26 and lines 1-2.

On the issue of provision of a Compliance Report as proposed by the Applicant<sup>108</sup> and confirmed by Shear in response to questioning by AANDC<sup>109</sup>, the Board has determined, following the clarification by the Applicant at the Public Hearing regarding the proposed contents of a Compliance Report, that the information that would be conveyed in a Compliance Report is largely the same as the contents of the Annual Report. Consequently, the Board is not requiring the submission of a separate Compliance Report, but rather is requiring the Applicant to provide compliance information in the Annual Report.

## **Part C: Conditions Applying to Security**

### **Financial Responsibility of the Applicant and Requirement of Security**

The NWNSRTA allows the Board to require a licensee to furnish and maintain security with the Minister in a form determined by the regulations or satisfactory to the Minister.<sup>110</sup> Further, as referred to in the section discussing the financial responsibility of the Applicant, the Board may not issue a licence unless the Board is satisfied regarding the financial responsibility of the Applicant, including reviewing any costs associated with the closing or abandonment of the undertaking.<sup>111</sup>

### **The Board's Jurisdiction over Land and Water Security**

As previously stated in the Board's decisions, the Board takes a holistic approach to the assessment of the security required to be held by an applicant under the terms of a water licence. As summarized by the Board in its 2001 decision in the *BHP Boston* Licence renewal:

The NWB takes a holistic but also practical approach to reclamation: on the one hand, the NWB believes that the elements of the environment, including land and water, are interconnected: what affects one part of the environment can ultimately have an impact on other environmental elements (water and vegetation, for example). By altering the natural elements of the environment, traditional Inuit culture and use of the water can be directly affected; on the other hand, the NWB believes, where possible, that a proponent should be required to submit one

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<sup>108</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 71, lines 9-10. Shear committed to provided "a full compliance report over seven years".

<sup>109</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 222, lines 9-14 which states:

It will be a full review of, for example, a review of the predicted models and a confirmation of those models, a review of the mine plan, a review of the AMP, and a review – a full review of the water quality at site. That's what Shear is committing to today.

<sup>110</sup> Subsection 76(1) of the NWNSRTA states:

The Board may require an applicant, a licensee or a prospective assignee to furnish and maintain security with the Minister in the form, of the nature, subject to such terms and conditions as an amount prescribed by, or determined in accordance with, the regulations or that is satisfactory to the Minister.

<sup>111</sup> See footnote 68 for the full text of s. 57(b) of the NWNSRTA.

single reclamation plan, without segregating land-related reclamation and water-related reclamation because reclamation activities upon abandonment will likely be more efficient and undoubtedly less onerous if conducted at the same time by the same person.<sup>112</sup>

In addition, prior decisions have recognized that the Board has broad jurisdiction over the assessment of both land and water related security and is obligated to ensure that the overall reclamation of the licensed undertaking is secured, not just reclamation of the water-related impacts associated with the undertaking. As stated in the *Reasons for Decision for the Doris North Gold Mine*:

After careful consideration, the Board accepts the submissions of both KIA [Kitikmeot Inuit Association] and MHBL on the matter of the Board's jurisdiction pursuant to section 76(1) of the NWNSRTA. In particular, in the Board's mind, the language of subsections 76(1) and 70(1)(d), as well as the wording of the section 12 of the NWT Water Regulations, including the use of the words "appurtenant undertaking" provide the Board with jurisdiction to determine the total amount of security – water and land-related - for the Project. Furthermore, while the Board is not bound by its previous decisions, the Board has reviewed and re-affirms its reasons in its 2001 Boston Renewal Decision, particularly those reasons cited above by MHBL. Most importantly, the Board agrees with MHBL that this decision is consistent with the Federal Court's interpretation of section 76(1) of the NWNSRTA in the CanZinco decision.<sup>113</sup>

Very often, this has resulted in the Board requiring an applicant to post security under the water licence for the total outstanding reclamation liability for both land and water because the Board had no evidence establishing that an applicants' responsibilities for reclamation of all aspects of the undertaking had otherwise been secured. However, in the Public Hearing for this Application, the Board heard extensive evidence regarding the fact that a holistic approach was used by the two primary holders of land-based security (AANDC and the KIA) in order to assess and secure reclamation security from the Applicants under land-based instruments that are in addition to the water licence.

In response to questioning from the Board, the KIA specifically addressed the Board's concerns regarding the splitting of land and water-based security and the requirement to take a holistic approach to reclamation:

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<sup>112</sup> From the Board's 2001 renewal of the Boston Licence, as cited in the Hope Bay decision, see Nunavut Water Board, *Reasons for Decision for 2AM-DOH0713*, September 19, 2007, at p. 23.

<sup>113</sup> Nunavut Water Board, *Reasons for Decision for 2AM-DOH0713*, September 19, 2007, at p. 25.

It's KIA's view that we take a holistic view of reclamation, and we don't separate out land from water when we look at reclamation on Inuit-owned land. However, I would like to say that for this particular project where the water footprint is, there is very little water reclamation involved. Virtually all of the water-related reclamation activities are on Crown land, so that question of splitting really isn't that relevant for -- for splitting of land versus water or the possibility of overbonding as a result of duplicate reclamation security held for water is very low in this circumstances. I know in INAC's estimate, they did have a small amount for water on IOL, but we consider it to be negligible.<sup>114</sup>

Similarly, AANDC, in response to questioning from the Board provided the following reassurances regarding the AANDC's use of a holistic approach to arrive at the initial estimates:

If I understand your question correctly, the security estimate that we did was originally -- was a holistic estimate for security on the project area, which included both land and water. The estimate was then divided, based on a formula equal to land area and other considerations, on what portion of that land security was attributable to the Crown and what portion of that land security was attributable to the KIA lands, and as mentioned earlier, there was no discussion with the KIA in terms of how we arrived at that number. The methodology that we used to arrive at that number is one that we've used in the past. The model that we used is one that we've used in the past.<sup>115</sup>

On the basis of the evidence presented and the Board's prior decisions, the Board accepts the opinion expressed by the KIA that, when approached holistically, the total \$2,892,000 security held by the KIA is sufficient to ensure land and water related reclamation associated with the undertaking as carried out on Inuit-owned lands. Accordingly, in this case, the Board will not require Shear to hold additional security under the Licence in relation to Inuit-owned lands. As a result, it is not necessary for the Board to address the dispute between the KIA and AANDC regarding the appropriateness of AANDC's estimate for land reclamation security on Inuit-owned lands.

Further, in keeping with the Board's holistic, but practical approach to establishing reclamation security, the Board has considered the evidence of the KIA and AANDC regarding the fact that the Applicant has furnished security to AANDC and to the KIA through other instruments and has reduced the aggregated land and water outstanding reclamation liability amount that

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<sup>114</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 336-337, lines 12-26 and line 1.

<sup>115</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 315-316, lines 17-26, and lines 1-5.

needs to be included in the Licence by the amount of security the Applicant has already posted. However, the Board wishes to emphasize that although the Board has considered the extent and amount of security required to be posted by the Applicant with AANDC and the KIA via land-based instruments in arriving at the Applicant's outstanding reclamation liability to be secured under the Licence, this is not to be interpreted as acceptance by the Board that reclamation security should be split between land and water related reclamation. Rather, it signifies that the Board's focus in assessing security is that the Applicant must have posted sufficient security, through all means, when taken together, to ensure that the overall reclamation of the site (land and water) has been adequately addressed. Consequently, the Board's starting point to assess security remains considering the security requirements holistically and then deducting from the aggregate land and water reclamation totals any security held under other instruments, with the remainder being secured under the water licence.

The Board believes this approach is also consistent with the Principles set out in the *Mine Site Reclamation Policy for Nunavut, 2002*<sup>116</sup> which state:

- The total financial security for final reclamation required at any time during the life of the mine should be equal to the total outstanding reclamation liability for land and water combined (calculated at the beginning of the work year, to be sufficient to cover the highest liability over that time period).
- Estimates of reclamation costs, for the purposes of financial security, should be based on the cost of having the necessary reclamation work done by a third-party contractor if the operator defaults. The estimates should also include contingency factors appropriate to the particular work to be undertaken.
- The recognized methodology for calculating reclamation costs, for the purposes of financial security, should be the RECLAIM or some other appropriate model. Consideration should be given to alternate or innovative forms of security, such as mine reclamation trusts, provided they meet certain criteria that protect the government's interests and objectives.
- Financial security requirements related to reclamation should be clearly set out in water licences, land leases and other regulatory instruments, though there may be circumstances where security requirements may be more appropriately dealt with through an agreement.

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<sup>116</sup> Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002) available on-line: [http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna\\_1100100036043\\_eng.pdf](http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf).

- Mining operators should be credited for approved progressive reclamation, and the value of financial security required should be adjusted in a timely fashion.

### Form of Security

Pursuant to s. 76(1) of the NWNSRTA, the final determination with respect to the most appropriate form of security must be left to the Minister. The Board recommends to the Minister that the decision as to the form of security be made in consultation with the Shear and the KIA. On the basis of comments received at the Public Hearing Shear advised:

[they] would appreciate continuing [to post a promissory note], if there is additional posting that is required; however, once we are in production, and there is positive cash flow, ...the promissory note is to be replaced with cash, and I would expect that on a yearly basis that that would -- we would continue, if there is any other security required during full production, that that would be topped up with cash as well. As I understand that's AANDC's preference.<sup>117</sup>

### Amount of Security

Agreement on the amount of reclamation security for the Project as a whole was not reached between AANDC, the KIA and the Applicant. However, the Board believes sufficient evidence was provided to allow the Board to establish a reasonable amount of security for this Application based on the Board's holistic approach and the objects of the Board under s. 35.<sup>118</sup>

As stated by AANDC with respect to Crown lands:

So for Crown lands only, subtracting the KIA portion, we end up with \$7,263,397. The Crown already holds security in respect of lands of \$6,120,000, so the balance required for lands would be \$1,142,000...In respect to the balance on -- for lands, for Crown lands, the land administration unit of Aboriginal and Northern Development (sic) is committed to working with Shear to furnish the remaining balance with respect to land.<sup>119</sup>

With respect to water-based security specifically, AANDC's evidence was that the total reclamation estimate for water-related security was \$3,389,074, and as Shear has provided

<sup>117</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 224, lines 10-20.

<sup>118</sup> Section 35 states:

The objects of the Board are to provide for the conservation and utilization of waters in Nunavut, except in a national park, in a manner that will provide the optimum benefit from those waters or the residents of Nunavut in particular and Canadians in general.

<sup>119</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 296-297, lines 19-23 and lines 4-9.



\$2,200,000 under the current licence, AANDC asked the Board to require the Applicant to post an additional \$1,189,074.<sup>120</sup>

Although the Board heard that the KIA did not adopt AANDC's estimate of the appropriate amount of reclamation liability for Inuit owned lands, but rather accepted the evidence of Shear regarding the appropriate amounts for reclamation of lands and water on Inuit owned lands, the KIA also expressed their view that the KIA currently holds adequate security as follows:

The KIA lease addresses security, so we do have an agreement in place to address reclamation security with Shear. The IOL used by the Jericho project needs to be fully secured and the KIA currently has an agreement with Shear to ensure that. The KIA has its own process for estimating reclamation security.<sup>121</sup>

With respect to the additional security for water-based security requested by AANDC, the Board notes that given the evidence presented by AANDC that they are confident that they will soon hold sufficient security for all reclamation of lands, the Board accepts that if the total security held under the Licence is increased to \$3,389,074, it will be sufficient to ensure overall reclamation of the undertaking, both land and water when combined with the AANDC land lease security requirements and the security held under the KIA agreement.

Also, the Board reminds Shear that Part C, Item 3 of the Licence permits Shear to submit, with supporting evidence, a request to the Board to reduce the amount of the security requirements established under the Licence.

In addition, AANDC requested that:

...we would like the Board to consider amending the amount of security from time to time, as it might be in the public interest to revisit that security amount based on changes that might happen within that particular project as time goes on.<sup>122</sup>

The Board appreciates and has noted the request of AANDC and points out that the Board does have the authority to revisit security under a Licence in accordance with s. 43(1)(c)(iii) of the NWNSRTA. In addition, the Board notes the commitment of Shear to review the reclamation

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<sup>120</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 296-297, lines 23-26 and lines 1-4.

<sup>121</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 327, lines 19-23.

<sup>122</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 299-300, lines 22-26 and line 1.

security with the KIA on an annual basis<sup>123</sup> and encourages Shear to work with AANDC to update security as appropriate.

#### **Part D: Conditions Applying to Construction**

The Board acknowledges that in the administration of the previous licence, the Licensee at that time proceeded with the construction, implementation and operation of several design plans (e.g. Waste Water Treatment Plant, C1 Diversion ) without receiving the required approvals to proceed from the Board. Consequently, the Board recognizes that there were several legacy issues inherited by Shear on the assignment of the Licence. Moving forward, the Board takes this opportunity to remind Shear that:

...the licence should explicitly state that the Board must complete its review and approval of such a plan prior to the specific undertaking or activity becoming permissible.<sup>124</sup>

The Applicant proposed the construction of several infrastructure components including: landfill, landfarm, Fuel Storage Containment Facility Set 3 Tank Farm, West Dam (completion), Divider Dyke A, Divider Dyke B, Perimeter Berm, North Dam, Settling Pond Dam (potential).

Specifically, with respect to the PKCA Shear confirmed the following:

- The east dam and southeast dam are built as designed;
- About 3.5 metres of build up of the filter layer is required on Divider dyke A;
- North Dam needs to be constructed and is proposed to be constructed before the mine goes back into production (year zero);
- Divider dyke B will need to be constructed and is proposed to be constructed after the mine goes into production (year one);
- West dam core also need to be increased by approximately 3.5 metres and will be done in year one;
- Dyke around cell A (perimeter berm) will need to be constructed in stages starting in year one;
- The southeast dam was built as designed however need to be raised with the perimeter berm being built on top of the raised southeast dam; and

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<sup>123</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 225, lines 8-23.

<sup>124</sup> See AANDC Written Intervention for the NWB Hearing submitted to Phyllis Beaulieu, Manager of Licensing, NWB from Robin Aiken, Regional Director General Nunavut Regional Office, AANDC, dated November 15, 2011, Technical Memorandum, p. 4.

- Shear has indicated that there are no current plans to construct a spillway across the west dam as was originally planned in 2004.<sup>125</sup>

Further, recognizing that the Applicant has legacy issues for infrastructure that has been partially completed or is proposed to be partially modified, the Board requests the submission of final design criteria and drawings when the Applicant will be modifying or adding to the existing infrastructure. The Board also highlights for the Applicant that in keeping with the standard requirements of the Board's licences, the Licence requires the submission of a construction summary report and as-built drawings.

## **Part E: Conditions Applying to Water Use and Water Management**

Section 11 of the NWNSRTA states "... no person shall use, or permit the use of, water in Nunavut except in accordance with the conditions of a licence."

### **Water Use**

In general, the Board has determined the terms and conditions in this Part of the current Licence are to be carried forward in the renewed Licence, subject to updating for consistency with regulatory requirements and standard licensing terminology.

Water use includes water use requirements for the winter road construction and maintenance is authorized from Lynne Lake and Contwoyto Lake.

The Applicant confirmed that the camp domestic and processed plant raw water is sourced from Carat Lake. In addition, Shear confirmed they have in place a reclaimed water system for use of reclaim water from the PKCA.<sup>126</sup> Other water use considerations include: use for dust control, with the source being the east sump if the water meets Effluent water quality limits as set out in the Licence.

### **Water Management**

#### **Site Water Management**

As previously stated, Shear submitted with the Application, a Site Water Management Plan (SWMP),<sup>127</sup> and the Board heard no objections from the parties to Shear's follow-up recommendation to revise and resubmit a SWMP by the end of 2012. Shear committed:

<sup>125</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 81-82 and December 1, 2011, p. 213, lines 5-13

<sup>126</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript p 57, lines 21-23

<sup>127</sup> Site Water Management Plan submitted as part of the Care and Maintenance Plan, January 31, 2011.

To incorporate the recommendations from the interveners and the knowledge that Shear has gained through its monitoring and sampling programs over the course of 2011.<sup>128</sup>

The revised SWMP will contain the following specific revisions:

- Site water quality prediction for production update to address AANDC concerns with regard to a reassessment water quality dilution modeling after production with respect to pit water quality and the PKCA;<sup>129</sup>
- The conceptual designs of ponds, berms, retentions ponds as listed in conditions applying to construction; The Board notes the results of the detailed seepage surveys for 2011 and the program proposed for 2012 will assist Shear in determine the need for and the design requirements for any collection system.<sup>130</sup>

As proposed, the Board expects the SWMP to also include the results, analysis and recommendations for mitigation of seepage, and the Board requests that seepage results be provided on an annual basis, guided by the monitoring requirements of Part I of the Licence and in the annual reports as required by Part B, Item 2.

The Board accepts the Applicant's recommendation to provide a revised SWMP by December 31, 2012 and ninety (90) days prior to resuming commercial operation. Further, the Board recommends that to minimize duplication, improve transparency and streamline the administration of the Licence, the revised SWMP must include:

- a revised water balance for the PKCA (pre-production and during operations);<sup>131</sup>
- revised pit water quality model.

In addition, with respect to the management of water quality associated with the open pit, the Board has included monitoring requirements in Part I of the Licence and direction regarding infill rates are included in Part J of the Licence in relation to abandonment, reclamation and closure.

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<sup>128</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 109, lines 7-11.

<sup>129</sup> See Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slide 137 for the commitment provided by Shear at the Public Hearing.

<sup>130</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 111-112, lines 25-26 and lines 1-2.

<sup>131</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 58-60.

## **Part F: Conditions Applying to Waste Disposal and Waste Management**

From an enforcement and compliance perspective, the Board has endeavoured to prepare this Licence in a manner that fairly reflects the Project, the Applicant's requests, the issues and concerns presented to the Board during the review process, including the Public Hearing, and the Board's mandate and jurisdiction. The Board has attempted to adopt clear and effective discharge parameters and other limits in the Licence while balancing the burden of over-regulation of the Project with the risks to water quality in Nunavut posed by under-regulation.

### **Waste Disposal**

#### Discharge Rate from the PKCA

With respect to the discharge rate from the PKCA, Shear requested changes to Part G, Item 2 and Item 8 of the original licence because Part G, Item 2(e) and Item 8 make reference to simulating the natural stream or seasonal flows for discharges to Stream C3. In support of this request, Shear indicated that historical records showed the previous licensee was unable to comply with the licence requirement to simulate natural flows and further suggested that even under maximum discharge, at an average of 0.7 cubic metres per second [not typical of natural stream flows in stream C3], no adverse effects to Stream C3 were reported. According to Shear's evidence (which was not challenged), if the restriction respecting stream flow remained, the discharge rates would be so restricted that Shear would not be able to maintain the required 1 metre freeboard. Therefore, Shear proposed that the terms be changed to authorize a maximum discharge rate to stream C3 of 0.2 cubic meters per second (12m<sup>3</sup>/min).<sup>132</sup>

The Board supports the change with respect to the maximum discharge rate, and therefore believes that the alternative of reducing the freeboard level of 1 m is not warranted.

#### Regulated Effluent Quality

Shear has not proposed any changes to the current licence effluent limits. However, EC has recommended the following:

- the reduction in effluent discharge limits for nitrite and nitrate;
- the addition of discharge limits for total extractable hydrocarbons;
- the removal of discharge limits for dissolved solids and chloride (to be monitored only); and

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<sup>132</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 74, lines 1-26.

- the removal of discharge limits for oil and grease (unless untreated camp waste is directed to the PKCA).

### *Nitrite*

In their written submission, EC initially recommended that the nitrite effluent discharge limits be reduced from the current maximum average concentration of 2.5mg/L to 1.0mg/L in order to better reflect the proposed lowering of the CCME Water Quality Objectives (WQO) to 0.075 mg/L from 0.25mg/L. EC recommended that lower limits be set to provide better environmental protection.

Having reviewed historical information and trends, Shear accepted the recommendation made by EC<sup>133</sup> to take effect once commercial operations resume. For the period of time effective on the issuance of this Licence, until such time as commercial operations resume, EC and Shear have agreed<sup>134</sup> that to address effluent discharge for Nitrite, that the original Licence limits of 2.5 and 5.0mg/L would remain in effect, given that Shear also has agreed to weekly monitoring of the Lake C3 200 metre mixing zone to ensure CCME WQO's are observed.

The Board accepts the recommendations of EC and the Applicant in this case.<sup>135</sup>

### *Nitrate*

EC recommended that the effluent discharge limits for nitrate be reduced from 28mg/L to 20mg/L for the maximum average concentration and from 56mg/L to 40mg/L for the maximum grab sample concentration. The lowering of these limits is in line with the proposed update to the CCME guideline which is expected to be set at 3.6mg/L nitrate for long term exposure. Taking into account the minimum 10 times dilution factor for the receiving environment (Lake C3), the limit of 40mg/L would result in a concentration of 4.0mg/L at the edge of the 200 metre mixing zone within Lake C3, slightly above the 3.6 mg/L limit proposed. As the dilution factor derived from modeling of the discharge with the lake basin and outlet ranges from 24:1 in the basin to 95:1 at the Lake C3 outlet, EC is satisfied that the proposed effluent limit would be protective of the environment, resulting in a concentration below 3.6mg/L.<sup>136</sup>

<sup>133</sup> Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slide 127.

<sup>134</sup> For EC's acceptance of a staged approach to increased limits, see Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 278, lines 12-18 and for Shear's agreement to work with EC to develop appropriate limits see Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 381-382, lines 22-26 and line 1.

<sup>135</sup> Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slides 101 and 121.

<sup>136</sup> See EC's questions and Shear's commitments in response Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 208-209.

Given the current effluent criteria in the current Licence, and understanding that the proponent has committed to meeting the recommended CCME proposed guideline of 3.6 mg/L at the edge of the 200 metre mixing zone, EC agreed to maintain the effluent limits for Nitrate during the pit dewatering phase, similar to the nitrite recommendations. However, following pit dewatering, EC has recommended that the effluent limits be lowered to the 20mg/L and 40mg/L for the maximum average concentration and maximum grab concentration respectively, still maintaining the guideline of 3.6mg/L at the edge of the mixing zone.<sup>137</sup>

Shear agreed that they would commit to weekly monitoring in Lake C3 and in Stream C3 and that discharge rates will definitely be reduced to respect the 10:1 times dilution ratio, maintaining nitrate levels below 3.6mg/L.<sup>138</sup>

The Board accepts the recommendations of EC and the Applicant in this case. The Board recognizes that the long term regulated discharge parameter is dependent upon various monitoring results.<sup>139</sup> Therefore, the Board retains, through the condition of ‘as otherwise approved by the Board’, the ability to modify or otherwise amend the Effluent quality limits for the discharge of the PKCA, without the requirement to amend the Licence. The Board commits to consult fully with all parties prior to the consideration of any change.

#### *Total Extractable Hydrocarbon (TEH)*

EC recommends the removal of Oil and Grease and inclusion of TEH with a maximum acceptable concentration of 3mg/L<sup>140</sup> as a “practical matter” with a higher focus on analysis of effluent with characteristics of petroleum origin rather than biological lipids associated with domestic wastewater, which would be of lower concern. The EC recommendation was based on information from the INAC (now AANDC) Inspection report dated December 18, 2008.<sup>141</sup> Shear

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<sup>137</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 288, lines 3-12.

<sup>138</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011 pp. 209-211.

<sup>139</sup> Studies include plume delineation of Lake C3, pit dewatering water quality analysis, explosives management, etc.

<sup>140</sup> Environment Canada Written Intervention for the NWB Hearing submitted to Phyllis Beaulieu, Manager of Licensing, NWB from Carey Ogilvie, Head Environmental Assessment Northern (NT & NU) Environmental Protection Operations, dated November 15, 2011, p. 5.

<sup>141</sup> INAC Inspector’s report dated December 18, 2008 suggested that the previous licensee disposed of petroleum hydrocarbon contaminated waters from all secondary containment areas and the waste transfer station to the PKCA.

believes the TEH discharge limit of 3mg/L can be achieved however further proposed a Maximum Grab Concentration limit of 6 mg/L.<sup>142</sup>

The Board accepts the recommendations of EC and the Applicant in this case.

#### *Total Dissolved Solids and Chloride*

EC recommended the removal of the discharge limits and that only monitoring be required. However due to review of historical information and trends, Shear proposed that the current criteria remain in the Licence while they work with EC to consider the recommendations over the next two years.<sup>143</sup>

The Board accepts Shear's recommendation in this regard.

#### *Oil and Grease*

EC recommended the removal of the discharge limit for oil and grease if there is no deposition of untreated camp waste directly into the PKCA. Shear confirmed that all wastewater from the camp is treated in the Wastewater Treatment Plant prior to being discharged into the PKCA; and no camp waste will be directly deposited in the PKCA.<sup>144</sup> Further, Shear accepts EC's recommendation to remove Oil and Grease from the regulated parameters.

The Board accepts the recommendations of EC and the Applicant in this case and will maintain the requirements in the Licence with the specific provision that oil and grease will only be regulated if camp wastes are directed to the PKCA for any reason.

### **Waste Management**

#### Processed Kimberlite Containment Area (PKCA) Management

As stated previously, if on-land treatment of PKCA effluent were to be considered by the Licensee, a re-evaluation by the NIRB under the Project Certificate would be required.<sup>145</sup>

With respect to flocculent use, EC and AANDC raised concerns associated with residual flocculants and coagulants in the processed water that is deposited into the PKCA and the

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<sup>142</sup> See Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slide 130. See also Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 108, line 16-23.

<sup>143</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 100-101 lines 13-26 and lines 1-5.

<sup>144</sup> See Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slide 129.

<sup>145</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 123, lines 11-25.



effects from the discharge from the PKCA. The Board acknowledges Shear's commitment to undertake due diligence testing on flocculants to address AANDC concerns and the Board looks forward to receiving the information from the Applicant. The due diligence testing results should be included in the revised PKCA Management Plan.

#### Chronic and acute toxicity

EC stated that chronic<sup>146</sup> and acute toxicity tests help us understand effects upon the environment rather than define effluent quality and recommends that chronic toxicity testing with *Ceriodaphnia dubia* be added for monitoring<sup>147</sup> and that 100% strength PKCA effluent be tested rather than from the mixing zone for with a frequency of once prior to discharge and a second time prior to completion of discharge.<sup>148</sup>

Shear accepted the recommendation to monitor both chronic and acute toxicity in the 100 % effluent while the results will be used to track the potential for sublethal effects.<sup>149</sup>

The Board accepts the recommendation of EC and the commitments of the Applicant in this case.

#### Other Plans

Additional waste management plans have been submitted and required under this part and are covered under Part B of this decision, "Reports Filed With the Board".

The Incineration Management Plan, committed to at the TM/PHC was to be initially provided in advance of the Hearing on November 1, 2011, but the Plan was not received until recently. The NWB will review and process the Incineration Management Plan in conjunction with the processing of the renewed Licence, following the direction of the Minister.

#### Landfill

Shear provided the Board with a preliminary Landfill Design Plan at the time the Application was filed. In essence the existing landfill has been taken "out of service" and Shear has

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<sup>146</sup> See discussion in Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 279, line 24-26, that states: "...if you are an alga and you turn over every few days, you know, your lifetime is pretty short..."

<sup>147</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 280, lines 1-4 which states "Chronic bioassays are not intended to be used as regulated tests. These are not reference methods. They are biological test methods."

<sup>148</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 279-280, lines 14-26 and lines 1-22.

<sup>149</sup> Table of Technical Submissions and Shear's responses and commitments dated November 30-December 1, 2011.

proposed a new landfill location. The Board acknowledges that under the scope of the original Water Licence a “short term landfill” was approved which was to eventually be replaced by a more permanent landfill facility. Accordingly, the Board acknowledges that the proposed new Landfill will replace the existing short term landfill, and that the construction of a new Landfill is consistent with the original scope in the existing Licence.

### Landfarm

The original Licence provided for the construction and eventual operation and maintenance of a landfarm for the treatment of hydrocarbon contaminated material. At the Hearing, Shear acknowledged “the need to clean up numerous minor legacy spills, which were inherited at the time of acquisition, was addressed....[and it was confirmed] ...that all fuel on site is contained within secondary containment.”<sup>150</sup> While the Board acknowledges the efforts made by Shear, they recognize the ongoing need for long term treatment option for hydrocarbon contaminated material.

Shear provided a preliminary Landfarm Design Plan to the Board with the Application, however, it is acknowledged that several final decisions regarding the Plan have yet to be made. Shear has advised of a new location<sup>151</sup> as the low-grade kimberlite stockpile will occupy the original location proposed for the landfarm.

Further, Shear confirmed that they were developing a plan for addressing the old fuel on site and was assisting in the design of a mobile hydrocarbon treatment system<sup>152</sup> which treats hydrocarbon contaminated effluent which then could be sampled and eventually discharged to the PKCA.

Following questioning by EC, Shear confirmed that incineration was being considered as an alternative to landfarming<sup>153</sup> but that additional characterization and assessment was needed before a final proposal is put forth for consideration. The Board notes if incineration is chosen as an alternative, the Board would need an opportunity to fully consider the proposal prior to its implementation.

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<sup>150</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 65-66, lines 22-25 and lines 9-11.

<sup>151</sup> See Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slide 59 with respect to the proposed location of the landfarm

<sup>152</sup> Technical Memo H, Final Specification of the Hydrocarbon Contact Water Remediation Unit, August 15, 2011.

<sup>153</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 121, lines 4-9.

As previously stated under Part B of the Decision, the Landfarm Management Plan has been approved by the Board. Should Shear decide that Landfarming is the preferred alternative, the Board will require the submission of final design specifications and drawings for the facility under the conditions applying to construction.

### **Part G: Conditions Applying to Modifications**

Pursuant to Article 12 and Clause 12.4.3<sup>154</sup> of the NLCA, a proposed modification submitted under this Licence may require a screening determination by the NIRB. It is the responsibility of the Licence holder to notify and consult with NIRB to ensure Article 12 requirements are met prior to submission of a modification request to the NWB under the Licence.

### **Part H: Conditions Applying to Emergency Response and Contingency Planning**

Shear submitted with the Application a Contingency Management Plan (Plan) for the period of care and maintenance. No substantive issues or requirements were presented to Board during the review of the Application with respect to the Contingency Management Plan or the requirement for more detail regarding emergency response and contingency planning prior to the mine commencing commercial operations. The Board has approved the Contingency Management Plan as presented and reminds Shear that the Plan is subject to annual revision by way of supplemental addendum to the current approved plan should there be changes in operation or technology that may impact the effective implementation of the plan.

With regards to Commercial Operation, Shear committed to a full revision of the plan 6 months prior to Commercial Operation. The Board supports the commitment and requests that Shear take into account the recommendations of the interveners in the Plan development.

### **Part I: Conditions Applying to General and Aquatic Effects Monitoring**

As previously noted, s. 73 of the NWNSRTA requires the Board to set conditions at least as stringent as conditions prescribed by regulation pursuant to s. 36(5) of the *Fisheries Act*.<sup>155</sup>

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<sup>154</sup> Article 12, Clause 12.4.3 of the NLCA states:

Any application for a component or activity of a project proposal that has been permitted to proceed in accordance with these provisions shall be exempt from the requirements for screening by NIRB unless

- (a) Such component or activity was not part of the original proposal [i.e. not part of the original scope of the project]; or
- (b) Its inclusion would significantly modify the project.  
[emphasis added]

<sup>155</sup> Section 73 of the NWNSRTA states:

Where the Board issues a licence in respect of any waters to which regulations made under subsection 36(5) of the *Fisheries Act* apply, any conditions in the licence relating to the deposit of waste in those waters shall be at least as stringent as the conditions prescribed by those regulations.

Furthermore, for the purpose of ensuring compliance with the licence or regulations, an Inspector designated by the Minister may inspect or examine works, waters or waste and exercise other powers according to the NWNSRTA.<sup>156</sup> For the purpose of monitoring, the Board may include conditions in the licence regarding monitoring programs to be undertaken.<sup>157</sup>

Although the local community members did not refer to the scientific characteristics of monitoring when identifying their issues for the Board, their comments clearly communicated that access to monitoring data, reporting and responding to water quality issues identified as a result of monitoring were all community priorities. Local Kugluktuk resident, Donald Havioyak stated: “As an Inuit, the water quality is very important to us, and also the monitoring....”<sup>158</sup>

It was evident to the Board, based on the significant amount of public concern expressed with regards to monitoring,<sup>159</sup> reporting,<sup>160</sup> analysis, frequency<sup>161</sup> and quality control/quality assurance<sup>162</sup> and overall accountability, to ensure that adequate monitoring is in place at all times.

As previously indicated, reflecting the emphasis that the community provided in terms of monitoring, the Board supports the Applicant’s commitment to keep all regulators and interested parties informed, via the provision of Quarterly Reports, and suggest the Applicant ensure that the local community and relevant Hunters and Trappers Organization(s) for the region have access to these reports.<sup>163</sup>

#### Site Water Management Plan Reporting

Two main issues with respect to Site Water Management Plan reporting are addressed in this Part of the Licence: seepage and pit water quality modelling.

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<sup>156</sup> See ss. 85-94 of the NWNSRTA.

<sup>157</sup> See s. 70(1)(c) of the NWNSRTA.

<sup>158</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 p. 172, lines 15-16.

<sup>159</sup> See for example, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 p. 171, lines 2-4, p. 176, lines 13-20.

<sup>160</sup> See for example Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 pp. 179-180, lines 13-26 and lines 1-4.

<sup>161</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 p. 243, lines 11-17.

<sup>162</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011 p. 245, lines 9-19.

<sup>163</sup> The Board notes that the Kugluktuk Hunters and Trappers Organization participated at the Public Hearing and clearly have an interest in the Project, but encourages the Applicant to determine whether there are other organizations that have an interest as well.

On the issue of seepage Shear committed to monitoring sulphate levels especially and any other parameters where there are “exceedances” with respect to seepage, as well as monitoring general water quality data with reference to the discharge criteria.<sup>164</sup> The Board agrees and has included sulphate monitoring in Schedule I.

In addition, the KIA expressed concern with respect to the water quality of seeps from waste rock piles, noting elevated levels of TSS and nitrate. The KIA also questioned the distinction between seepage and runoff and inquired about mitigation measures that will be taken if water quality does meet discharge criteria or the flow rates are found to be unacceptable.<sup>165</sup> Shear’s response with regard to water quality not meeting discharge criteria was to potentially initiate the design of Collection Ponds A and C.<sup>166</sup> In general, the Board requires seepage results to be reported within the annual report. The Board agrees with Shear and has included the requirements in Schedule I.

EC also supported Shear’s commitment to provide additional information with respect to “the ways blasting reagent use can be managed better” to further reduce the nitrate levels with respect to seepage from waste rock and/or pit water quality.<sup>167</sup>

On the issue of pit water quality modelling, AANDC recommended that Shear reassess the pit water quality model after commercial operations commence, and EC has expanded the recommendation to request Shear commit to a timeline for submission of a pit water quality remodeling. In response, Shear proposed:

...sampling and monitoring pit water quality for a period of two years, at which time the company will update the pit water quality model. Shear is requesting two years because the first year of mining will not be representative of a typical year of operations.<sup>168</sup>

AANDC and EC did not object to Shear’s suggested timeline for modeling pit water quality, therefore the Board accepts the recommendation to provide a revised pit water quality model

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<sup>164</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 120, lines 10-15.

<sup>165</sup> See questions from the KIA to the Applicant, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 232-236.

<sup>166</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 237, lines 3-12.

<sup>167</sup> See the discussion, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 116-118 and Exhibits 3 and 4, Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED (hard copy and electronic copy), Slides 134 and 135.

<sup>168</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 109-110, lines 22-26 and line 1.

two years following notification of the commencement of commercial operation (as defined in Schedule A of the Licence).

#### Waste Management – Plume Delineation Study

EC recommends that:

a plume delineation study be done late in the discharge season and have this examine the extent and behaviour of the plume in three dimensions. [WQO's] should be stated and comparisons drawn for where they are expected to be met in C3 based on the tracer concentrations...<sup>169</sup>

Shear is planning to collect additional confirmatory sampling of tracer parameters (sodium and Chloride) in the winter of 2012.<sup>170</sup>

Shear agrees to commence a plume delineation study when commercial operation resumes and proposed that two years after commercial operations have resumed a technical meeting should be convened to review results and reassess discharge limits.<sup>171</sup> In addition Shear proposed that in the plume delineation study, Shear will confirm the chronic toxicity testing location within Lake C3.<sup>172</sup> In addition, Shear is to provide verification of the dilution factor in Lake C3 mixing zone once commercial operations resume.

#### Revised Aquatic Effects Monitoring Program (AEMP)

While the Project is not subject to the stringent requirements of the *Metal Mining Effluent Regulations*, because it is a diamond mine, the Board recognizes that EC still has expert advice to provide the Board regarding the establishment of effective project-specific AEMP. This being said, the Board encourages the ongoing cooperation and coordination between the Licensee and EC in the development of a revised comprehensive AEMP to be submitted to the Board for approval.

EC provided that:

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<sup>169</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 282, lines 6-12.

<sup>170</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 206, lines 1-7.

<sup>171</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript. November 30, 2011, p. 98, lines 1-2.

<sup>172</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 88, lines 5-8. In addition, Shear proposed testing be done once a week following the start of discharge and once prior to the completion of discharge.

- EC would like to see an integrated plan provided, which includes details of the sampling program and explicitly describes the study design statistical tests which would be used, and QA/QC protocols.<sup>173</sup>
- EC recommended that Shear conduct sampling and reference investigations as proposed. with a goal to refine the AEMP and submit a revised study design document within two years of licence issuance, stating specifically “As an update to this presentation, we do note that Shear is going to provide this by April of 2012, and we're very pleased to hear that.”<sup>174</sup>

In addition, a commitment was provided by Shear in response to AANDC, that clarifies for the NWB the chronic toxicity testing that will be done as part of the AEMP.<sup>175</sup>

In addition, as proposed by AANDC and agreed to by the Applicant,<sup>176</sup> the Licence incorporates a change in the general monitoring site at Lake C3 from JER-07 to JER-06.

#### Other

Standard terms and conditions with respect to Quality Assurance and Quality Control as well as Geotechnical Inspection requirements are included as general conditions in the Licence.

### **Part J: Conditions Applying to Abandonment, Reclamation and Closure**

The Board requires Shear to prepare an Interim and eventually a Final Closure and Reclamation Plan in accordance with the *Mine Site Reclamation Guidelines for the Northwest Territories, 2007*<sup>177</sup> (Guidelines) and consistent with the *Mine Site Reclamation Policy for Nunavut, 2002* (Policy).<sup>178</sup>

The Board acknowledges that the current water Licence required the submission of a final closure and reclamation plan, at the time of the water licence renewal. Understanding the legacy of the project to date, and given that mining ceased and the site has been in temporary

<sup>173</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 281, lines 5-13.

<sup>174</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 281, lines 13-20.

<sup>175</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 312, lines 3-4.

<sup>176</sup> See the discussion in Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 306, lines 6-22.

<sup>177</sup> Indian and Northern Affairs Canada, (Yellowknife: Indian and Northern Affairs Canada, 2007) available on-line: [http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-NWT/STAGING/texte-text/msr\\_1320177195268\\_eng.pdf](http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-NWT/STAGING/texte-text/msr_1320177195268_eng.pdf)

<sup>178</sup> Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002) available on-line: [http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna\\_1100100036043\\_eng.pdf](http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STAGING/texte-text/recpolnuna_1100100036043_eng.pdf).

shutdown since 2008, the requirement and submission of the final closure and reclamation plan at the time of renewal of the Licence by this Applicant was unrealistic.

Shear submitted with the Application, an Interim Closure and Reclamation Plan with the objective of addressing closure requirements for the mine in both its current condition and its expected condition at the end of mining based on the existing mine plan.<sup>179</sup> In January 2011, the Applicant provided a Care and Maintenance Plan, that addresses some aspects of site reclamation, for the Board's review and approval as part of the Licence renewal. In the Licence, the Board indicated that it has approved the Care and Maintenance Plan as submitted.

Shear further provided that some components "critical to the development of a final closure and reclamation plan, a number of studies, including a Human Health and Ecological Risk Assessment, a multi-staged environmental site assessment and results of landfarming and revegetation trials"<sup>180</sup> had yet to be developed. On this basis, Shear committed to providing a revised Interim Closure and Reclamation Plan within 12 months of issuance of the Licence, with the submission of a Final Closure and Reclamation Plan within 3 years of the date of issuance of the Licence.<sup>181</sup>

With respect to closure and reclamation, the KIA clearly expressed the view that the basis for their recommendation that a final closure and reclamation plan be provided within two years of the issuance of the Licence was concern regarding the safety of the reclaimed site with respect to human and animal health: "...for project closure, the site needs to be safe for future use by humans and animals...that was made loud and clear to KIA by Inuit Beneficiaries..."<sup>182</sup> Further, while stated with respect to security, the KIA observed that the "KIA has a strong interest in ensuring that IOL is reclaimed to Inuit standards and that KIA does not incur residual reclamation liability on IOL."<sup>183</sup> Consequently, the KIA recommended that Shear provide a final closure and reclamation plan within two years of the issuance of the water licence.<sup>184</sup>

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<sup>179</sup> Interim Closure and Reclamation Plan Jericho Diamond Mine Nunavut, February 2011 by EBA, p. 9.

<sup>180</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 71-72, lines 23-26 and lines 1-2.

<sup>181</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 72, lines 13-20.

<sup>182</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 326, lines 15-18.

<sup>183</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 327, lines 12-15.

<sup>184</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 327, lines 5-8.



The KIA also noted that at present there is considerable uncertainty regarding the Project, and the mine's eventual operating plan. Reflecting this uncertainty until the mine returns to commercial operation, the KIA further stated that two years is an appropriate time period for the Applicant to make a determination on whether to proceed with the project.

Within AANDC's written submission they proposed that a final closure and reclamation plan be submitted sixty days following the issuance of the licence. However, at the Public Hearing, when AANDC and the Applicant were questioned by the NWB staff and other parties there appeared to be differing expectations and understanding regarding the types and contents of closure and reclamation plans (such as the differences between "interim" and "final" closure and reclamation plans). For example, AANDC requested clarification from the Applicant regarding how the proposed Interim Closure and Reclamation Plan would be different than the current plan filed with the application.<sup>185</sup> Also in response to questioning of AANDC regarding their expectations for the FCRP, the following exchange occurred:

[Dionne Filiatrault, NWB]: ...I believe it is the basis of discussions with Aboriginal Affairs that this conclusion has been reached, and this proposal has been put forward, they're recommending that a final closure and reclamation plan be submitted to the Board in three years, from the issuance of the licence. That would, in effect, put the requirement of a final closure and reclamation plan, in essence, in the Board's hands one year, only one year after the company would supposedly flip the switch to begin operating, and I guess I'm trying to get a better understanding based on this Board's past history in closing down two mine development projects in Nunavut, it has a significant level of experience in understanding the needs and the requirements and standards required to put together a human health and ecological risk assessment and Canadian standards association environmental site assessment plans that really, to be able to have the most complete thorough information, you need to actually know what your site is, and I just want to get an understanding from you of whether or not it really is reasonable and practical to require a final closure and reclamation plan with only one year of operation when typically for previous licences in Nunavut, the requirement has been three years prior to the closure of a site, which actually, in this case, if we use that methodology would put, in fact, a closure and reclamation plan seven years into operation, as opposed to three years -- or as opposed to one year...<sup>186</sup>

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<sup>185</sup> See Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 214, lines 20-25.

<sup>186</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 318-319, lines 7-26 and lines 1-13.

[Bernie MacIsaac, AANDC]: ...Your point is well taken. I guess our understanding of the final reclamation plan is that it is a living document to be revised, as time progresses through the project and things do change. We do acknowledge that there is a lot of information that to be fed into this – into the reclamation plan, including the human health and ecological risk assessment. I guess our view was that we would like an opportunity, acknowledging that work is maybe not complete, but an opportunity to look at that to ensure we're comfortable with the approach and the various types of plans and analysis that was actually going into the final plan, so maybe, to be clear, and excuse our inability maybe to communicate properly, but we would like to review the approach that's taken with the plan with an acknowledgement that the plan is going to be modified as time goes on and information that's going to form it.<sup>187</sup>

[Dionne Filiatrault, NWB]: So just a final point of clarification. So what really, in essence, Aboriginal Affairs is looking for is the methodology associated with the final closure and reclamation definitely after year one of operation leading toward closure, but not necessarily a fully complete detailed final closure and reclamation plan that includes the components that are listed on slide 73?<sup>188</sup>

[Bernie MacIsaac, AANDC]: Yes. It's Bernie MacIsaac, yes. And, you know, we would even consider an earlier date than three years to examine that methodology as well.<sup>189</sup>

Therefore, for the sake of clarity for this decision and future decisions regarding reclamation, the Board commends to the parties the Guidelines and Policy and draws on the Board's prior experience in relation to mine closure (i.e Nanisivik and Polaris), to assist in the development of a consistent approach to reclamation planning moving forward while taking into account the comments of the parties as outlined above.

The Board's approach to reclamation reflects the four main objectives outlined in the Policy:

The Mine Site Reclamation Policy for Nunavut serves four main objectives:

- Ensure the impact of mining on the environment and human health and safety is minimized.

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<sup>187</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 319-320, lines 19-26 and lines 1-13.

<sup>188</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 320, lines 14-22.

<sup>189</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, pp. 320-321, lines 24-26 and line 1.

- Reduce the environmental liability that falls to government to the greatest extent possible.
- Provide industry and the public with a clear signal of the government's expectations.
- Build positive and supportive relationships with the new regulatory authorities coming into operation in the North.<sup>190</sup>

In terms of the details surrounding the Board's expectations regarding the specific contents of the plans required to fulfill the Applicant's obligations, the Board adopts the Guidelines, which are expressly stated to be based on the principles and objectives laid out in the Policy. In particular, the Board notes:

Key principles to bear in mind when planning for closure include: fully considering both traditional knowledge and other scientific information, to apply adaptive management principles making use of the best available information and technology, to promote environment protection, and to apply the precautionary principles in the absence of conclusive information.<sup>191</sup>

With respect to the specific components of the plans, the Board adopts the approach put forward in the Guidelines that recognizes that there are three stages in the development of a Closure and Reclamation Plan (CRP). The first stage involves the preparation of a Preliminary Closure and Reclamation Plan that is typically prepared as part of the environmental assessment of the project that demonstrates "how the mine site is proposed to be reclaimed and to describe the likely residual risks to human health and the environment".<sup>192</sup> The second stage involves the development of one or more Interim Closure and Reclamation Plans through the operating life of the mine, which build on the Preliminary CRP and are updated to reflect significant changes to the mine plan or key milestones in terms of the mine life. As stated in the Guideline:

The general purpose of the Interim CRP is to update preceding plans according to the current mine operating plan, updated or renewed community values, or advances in mine reclamation technology. Interim Reclamation Plans provide conceptual detail on the reclamation of mine components which will not be closed until near the end of the mining operations, and operational detail for components which are to be progressively reclaimed earlier in the mine life. The Interim CRP should include increased detail and more specific closure criteria regarding

<sup>190</sup> Minister of Indian Affairs and Northern Development, (Ottawa: Minister of Public Works and Government Services Canada, 2002), p. 2.

<sup>191</sup> Indian and Northern Affairs Canada, (Yellowknife: Indian and Northern Affairs Canada, 2007), p. 1.

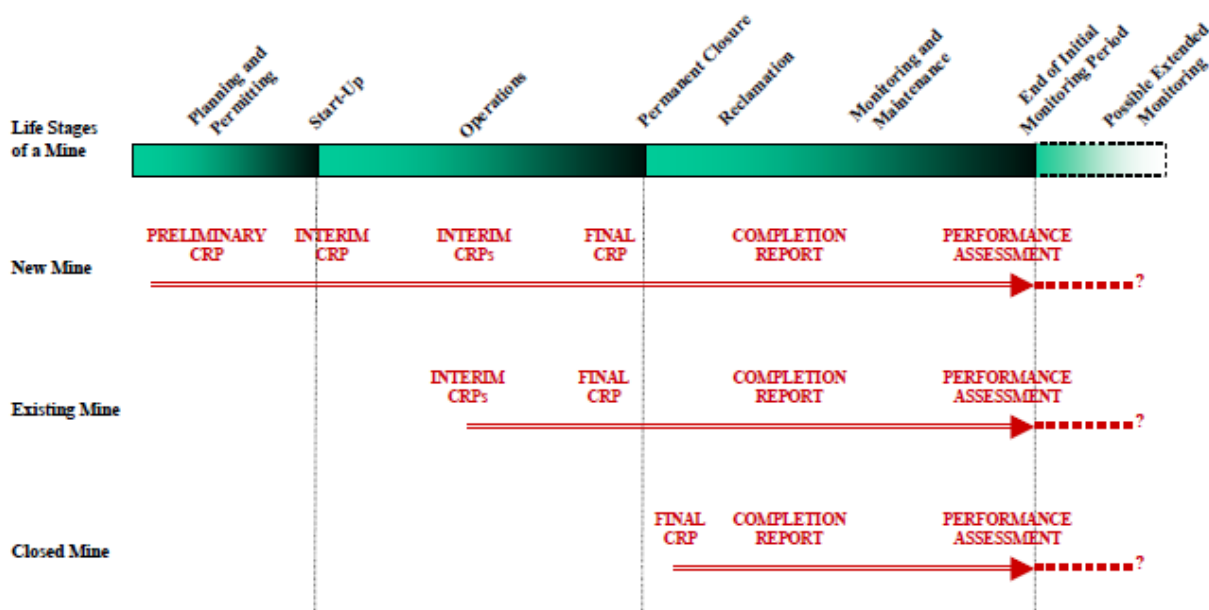
<sup>192</sup> The Guidelines as cited in footnote 192 above, p. 3.

reclamation components as these become available and as those areas of the mine are developed (e.g. rock piles that are completed or reclamation test studies that have been conducted).<sup>193</sup>

The third stage involves the preparation of a Final CRP that should be provided and approved before a scheduled permanent closure or as soon as is practical after an unplanned closure. According to the Guideline: “The general purpose of the Final CRP is to provide complete details, usually for regulatory approval, regarding the proposed reclamation activities such that they can be subsequently implemented.”<sup>194</sup>

For the convenience of the parties, the Board also adopts and has included Figure 3.2 from the Guidelines to show the relationship between the various plans that will be required correlated to the stages in the operation of the mine.

**Figure 3.2. Stages of Closure and Reclamation Planning Through Life of the Mine**



**Figure 3.2: Mine Site Reclamation Guidelines for the Northwest Territories, 2007<sup>195</sup>**

On this basis, in contrast to the position of AANDC cited above, the Board takes the view that it is the Interim CRP that is the “living document” that may be modified considerably over time to reflect changes to operations, responses to monitoring data and any on-going reclamation, with the Final CRP, as it is based on a more fulsome understanding of operating history and is

<sup>193</sup> The Guidelines as cited in footnote 192 above, p. 4.

<sup>194</sup> The Guidelines as cited in footnote 192 above, p. 5.

<sup>195</sup> Indian and Northern Affairs Canada, (Yellowknife: Indian and Northern Affairs Canada, 2007), p. 3.

required to be filed in closer proximity to when closure will actually take place to be a Plan that is more established and less likely to undergo significant revision prior to implementation.

With this common background and understanding, the Board turns to the specific application of the Policy and Guidelines to this case. The Board agrees with the KIA that coordination and streamlining of closure and reclamation planning is the preferred approach, but also recognizes that at present, unknowns with respect to the actual “mine plan” limits the Applicant’s ability to generate the useful and complete information required to yield a true Final Closure and Reclamation Plan within the next two years. However, the Board does acknowledge that there are key baseline components that will eventually be included in the Final Closure and Reclamation Plan, as well as the selection of the methodology for their development that can, and should, be initiated earlier in the process than is the case at present.

The Board notes that in Nunavut, the environmental assessments of mines since the Jericho Diamond Mine was reviewed have included the development and presentation in the Environmental Impact Statement of conceptual assessments of eventual reclamation standards, based on a preliminary Human Health and Ecological Risk-based Assessment.<sup>196</sup> Accordingly, the Interim CRPs in such cases are based on baseline data that has been developed in the environmental assessment process. With respect to this application, the Board notes that the Applicant is, unfortunately not working from baseline data, but given the expressed concern of the KIA with respect to human and animal use of the site following abandonment and reclamation, the Board views this information as a central component of the Applicant’s updates to the Interim Closure and Reclamation Plan and eventual development of a Final Closure and Reclamation Plan going forward.

On the basis of the evidence of the parties and with a recognition of the Policy and Guidelines, the Board has included the following requirements for abandonment, reclamation and closure in the Licence:

- Within one year of the issuance of the Licence, the Applicant will file, as agreed to at the Hearing, an updated Interim Closure and Reclamation Plan;
- Within two years of the issuance of the Licence, the Applicant will file, a preliminary Human Health and Ecological Risk based assessment that will form the basis for the subsequent Interim and Final Closure and Reclamation Plan;
- Within three years of the issuance of the Licence (one year after commercial operation commences), the Applicant will file a comprehensive update to the

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<sup>196</sup> See for example the preliminary Human and Ecological Risk Assessment, prepared by Golder Associates Ltd. (Report No. 05-1373-008), dated October 2005.

Interim Closure and Reclamation Plan to reflect changes (including modifications to the operating plan, and changes to reflect the results of the HHERA); and

- At the time the renewal application is filed with the Board, the Applicant will file the first draft of the Final Closure and Reclamation Plan, which will be reviewed as part of the Licence renewal.

Further, given the experience of the previous Licensee, which involved suspending operations in 2008 and entering into care and maintenance with little or no notice being provided to regulators and the community, the Licence also requires the Licensee to provide at least 30 days written notice of its intention to enter into a planned temporary closure (as defined in the Licence). In the event the temporary closure is the result of unforeseen circumstances, the Licence requires the Licensee to provide the Board with notice as soon as practicable after the temporary closure occurs. If temporary closure occurs, modifications to the associated Plans must be provided to the Board in accordance with Part J of the Licence.

The Board expects that the recommendations provided by the parties in their written submissions will be considered for inclusion in revisions to the Interim CRP, but the Board has not specifically included these comments in the terms and conditions of the Licence unless otherwise stated. The Board further encourages Shear to consider the submissions that have been made with respect to abandonment, reclamation, and closure in preparation of all subsequent revisions to the Interim and Final Closure and Reclamation Plans.

Specific technical recommendations that should be considered by Shear in the subsequent revisions of the Interim CRP include:

- EC provided specific comments with respect to the pit that should be considered during closure planning.<sup>197</sup>
- EC requested clarification on “weatherability of the coarse PK” and Shear acknowledged that observations will be made to see how the coarse PK will behave over time.<sup>198</sup> The Board recommends that Shear’s observations be documented and the results and conclusions associated with these observations be included in the Interim and Final CRPs.

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<sup>197</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 284, lines 2-17.

<sup>198</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 125, lines 11-12.

- AANDC requested and Shear agreed to include contingency measures in its updated Final CRP to facilitate filling of the pit if it does not fill as projected in the schedule.<sup>199</sup>
- Shear committed to re-evaluating the pit infill rates and to providing a technical memo in April of 2012.<sup>200</sup> Further Shear confirmed that scenarios and options for infilling will also be included in the Interim and Final Closure and Reclamation Plans.<sup>201</sup> Accordingly, the Board recommends the technical memo be submitted as a supplemental document to the current Interim CRP.

## Schedules

Schedules provide instructive detail to the conditions appearing in more general terms in the main body of the Licence and are spelled out in this format for greater clarity. Except for Schedule A, the schedules provide specific requirements for Plans to be submitted to the Board. It should be noted that if the Board determines that an item in the schedules requires revision in order to better reflect the conditions and intent of the Licence, the Board may, in its discretion, and upon providing notice to the Licensee of the revision, revise the item in the schedule. Unless the Board directs otherwise, such a revision will not be considered to be an “amendment” to the Licence

## SECTION VII: ISSUES OUTSIDE THE JURISDICTION OF THE BOARD

As noted in the Board’s discussion of monitoring requirements in the Licence, during the Public Hearing in Kugluktuk, a central community concern was raised regarding a lack of community awareness and access to not only the monitoring being conducted by the mine’s operator, but also a lack of information regarding the activities of the regulatory agencies responsible for reviewing and responding to the monitoring data being provided by the operator.<sup>202</sup> As stated by Donald Havioyak:

<sup>199</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 168, lines 8-15.

<sup>200</sup> See Shear’s commitment, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 113, lines 4 and 5 and the acknowledgement of this commitment by EC at the Hearing, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, December 1, 2011, p. 283, lines 8-15.

<sup>201</sup> Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 113, lines 3-14.

<sup>202</sup> See for example comments by Donald Havioyak, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, p. 171, lines 8-26 when he is discussing the need for ongoing reports to go into the community and the Kugluktuk region and also requested that AANDC provide information regarding monitoring information collected while AANDC was under their care, custody and control. See also comments by Barbara Adjun, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing

Let's say it happened today at the site, just using it as an example, something -- I don't know. Bad water quality was cited or learned about the water quality, how soon can our community hear from the company that the test is not good today. We need to know those things and through the process, how soon? The reason I'm saying that, past experience in different -- different companies or different activities in Nunavut. Sometimes the results don't come back to the community. I'm just using those as an example, and I don't want to see it delayed or hear about it six (sic) to a year down the road or never hear at all about some incidents that happen or occur during the operations of the -- of the diamond mine. I just need to be assured that, yes, Community of Kugluktuk will hear about these things.<sup>203</sup>

The Board recognizes that this request may be relevant not only to the NWB, but also to several other parties who have on-going monitoring responsibilities in addition to those imposed under the Licence, such as the Nunavut Impact Review Board (the NIRB) and the Department of Fisheries and Oceans (DFO). Unfortunately, due to weather conditions, representatives from the NIRB who had attended at the TM/PHC and who had intended to be present at the Public Hearing were unable to attend. In addition, DFO did not attend at the TM/PHC or the Public Hearing. Consequently, the Board wishes to highlight for all regulators responsible for on-going monitoring and compliance at the mine that the community clearly indicated their need for more information with respect to the monitoring data being received by such agencies, as well as the steps being taken by regulatory agencies to respond to the monitoring information, including addressing issues of non-compliance.

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Transcript, December 1, 2011, pp. 238-239, lines 2-26 and lines 3-8 expressing that the community wants monitoring information to be brought back to the community.

<sup>203</sup> Donald Haviyok, Nunavut Water Board Hearing Re: Shear Diamonds (Nunavut) Corp., Hearing Transcript, November 30, 2011, pp. 179-180, lines 8-26 and lines 1-4.



## **APPENDIX A – Chronological History of the Jericho Project**

<b>Date</b>	<b>Key Regulatory Decisions</b>
1991-1996	Initial exploration by Lytton Minerals Ltd. And New Indigo Resources Inc did not require a water licence. (The Northwest Territories Waters Regulations SOR/93-303 Schedule V Column II allowed water use and Deposit of Waste permitted without a licence for this scale of undertaking)
1996	Northwest Territories (“NWT”) Water Board issued a Type B Water Licence (Licence No. N7L2-1666 for Lytton’s water use and waste disposal at the Jericho site.
1998	Nunavut Water Board (“NWB”) issued NWB1JER9801, renewal of the Lytton water licence. Type B
1999	NWB hearing/decision on security. Type B
September 2000	Tahera Diamond Corporation filed FEIS with NIRB and Type A Water Licence Application to NWB.
2001	NWB extension of NWB1JER9801 for one year. Type B
2001	NWB amendment to NWB1JER9801 to allow for Pilot spray irrigation study Type B
2003	NWB issued Type B water licence No. NWB1JER0306, renewal to Tahera Corporation Ltd.
July 2004	NIRB issues Project Certificate No: 002 for Jericho Mine Development Project to Tahera Corporation Ltd.
September 2004	NWB receives Type A Water Licence Application from Benachee Resources Incorporated, a wholly-owned subsidiary of Tahera Diamond Corporation. from and provides notice to parties of the Application and Hearing.
December 2004	NWB hold public hearings for the Type A Water Licence Application for water licence
December 2004	NWB issues Type A Water Licence and Reasons for Decision to Minister of AANDC (formerly Indian and Northern Affairs Canada)
January 2004	Minister of AANDC approved Type A Water Licence No. NWB1JER0410

<b>Date</b>	<b>Key Regulatory Decisions</b>
January 10, 2008	Tahera Diamond Corporation goes into bankruptcy protection
January 16, 2008	Initial Order filed with Ontario Superior Court of Justice
December 2, 2008	NWB notified by KIA of Motion Record and Order from the Ontario Superior Court of Justice (Court File No. 08-CL-7355) dated November 28, 2008.
December 22, 2008	Notice of shut down of operations for water licence 2AM-JER0410(formerly NWB1JER0410)
December 11, 2008	Inspector Direction pursuant to 87(1) of the NWNSRTA issued to Tahera Diamond Corporation and Benachee Resources Inc. and to Price Waterhouse Coopers, Inc. in its capacity as Monitor of Tahera Diamond Corporation and Benachee Resources, Inc. regarding December 10, 2008 notification to the Department of Justice of cease in operations including care and maintenance effective December 11, 2008. Specific direction given to required reasonable measure consistent with licence requirements for safety, and prevention of possible adverse environmental affects.
April 21, 24, 27, 2009	NWB received letter and motions records with respect to motions served upon the NWB from the Ontario Superior Court.
April 27, 2009	NWB files with Ontario Superior Court with copy to service list letter of clarification of NWB regulatory authority for water licence No. 2AM-JER0410 (formerly NWB1JER410) issued to Benachee Resources Inc., a wholly owned subsidiary of Tahera Diamond Corporation.
April 28, 2009	Two order received by NWB from Justice Morawetz and accompanying endorsements. [note: specific direction given to NWB to proceed with assignment of licence forthwith]
June 9, 2009	Application for Assignment received
July 31, 2009	Assignment of water licence 2AM-JER0410 from Benachee Resources Inc, a wholly owned subsidiary of Tahera Diamond Corporation to Benachee Resource Inc., formerly known as Newco.
July 19, 2010	Notice of intent for sale/purchase by Shear
July 21, 2010	NWB served by motion record in respect of Motion Record Returnable July

Date	Key Regulatory Decisions
	27, 2010 from Ontario Superior Court.
July 26,28, 2010	NWB served by in respect of additional court filings for record returnable July 27, 2010 from Ontario Superior Court. [included twelfth report of the Monitor to the Court]
July 28,2010	NWB in receipt of endorse and orders of the Honourable Mr. Justice Morawetz dated July 27, 2010.
August 27, 2010	Sale of Jericho Diamond Mine to Shear complete
September 17, 2010	NWB served by in respect of additional court filings for record returnable September 27, 2010 from Ontario Superior Court. [Included thirteenth Report of the Monitor to the Court].
September 27, 2010	NWB in receipt of endorse and orders of the Honourable Mr. Justice Morawetz dated September 27, 2010.
November 15, 2010	NWB received application to assign the Licence from Benachee Resources Inc. to Shear Diamonds (Nunavut) Corp.
December 2, 2010	Assignment of water licence 2AM-JER0410 from Benachee Resources Inc. to Shear Diamonds (Nunavut) Corp.
November 17, 2010	Application from Shear for NWB consideration for amendment of type A Water licence renewal for 60 days in accordance with 174(1)(a)(iii) of the NWNSRTA
December 3, 2010	NWB decision to grant 60 day renewal of 2AM-JER0410
January 31, 2011	Application from Shear for Amendment of licence 2AM-JER0410 on an emergency basis pursuant to 174(1)(a)(ii).
February 21, 2011	NWB request to the Minister for consent to authorize application on an emergency basis granting extension of expiry of the licence term from March 1, 2011 to March 1, 2012
March 1, 2011	Minister's consent to granting authorization to extend licence 2AM-JER0410
February 28, 2011	Application for renewal of Type A water Licence Application

## **APPENDIX B – List of Participants for the Public Hearings**

1. Holgar Hartmaier – BGC Engineering
2. Andrew Campbell – Justice Canada
3. Eva Paul – AANDC
4. Kevin Biggar – AANDC
5. Tanya Trenholm – AANDC
6. Cassandra Hall – AANDC
7. Anne Wilson – EC
8. Stanley Anablak – KIA
9. Nathaniel Kusugak – Kikiak
10. Geoff Clark – KIA
11. Luigi Torretti – KIA
12. Barbara Adjun – HTO Kugluktuk
13. Baba Pedersen – AANDC
14. Tomy Pigalak – HTO Kugluktuk
15. Christine Kowbel – Lawson Lundell
16. Bernie MacIsaac – AANDC
17. Elvora Elatiak – Resident of Kugluktuk
18. Laura Kohoktak – Resident of Kugluktuk
19. Allison Rippin Armstrong – EBA
20. Alice Ayalik – Resident of Kugluktuk
21. JoAnn Jamieson – Shear Minerals
22. Margaret Havioyak – Resident of Kugluktuk

23. Donald Havioyak – MMG
24. Arthur Oniakak – Resident of Kugluktuk
25. Jordan Kukilukak – Resident of Kugluktuk
26. Jason Taptuna – Resident of Kugluktuk
27. George Hayohok – Resident of Kugluktuk
28. Agnes Kokak – Resident of Kugluktuk
29. Doris Nancy – Resident of Kugluktuk
30. Glen Tiktalek – Resident of Kugluktuk
31. Cheryl Egotak – Resident of Kugluktuk
32. David Onipkak – Newmont
33. Helen Kuneluk – Resident of Kugluktuk
34. Christine Kaiyogana – Resident of Kugluktuk
35. Abe Kimitsana – Resident of Kugluktuk
36. Abby Atatahak – Resident of Kugluktuk
37. Cam Atatahak – Resident of Kugluktuk
38. Neil Evaglok – Resident of Kugluktuk
39. Lauren Talgetok Akana – Resident of Kugluktuk
40. Sophie Kokak – Resident of Kugluktuk
41. Mabel Kilgik – Resident of Kugluktuk
42. Shanda Pigalak – Resident of Kugluktuk
43. Jenny Elgok – Resident of Kugluktuk
44. Emily Hala – Resident of Kugluktuk

## APPENDIX C – List of Submissions and Correspondence

### Application

1. Cover letter and initial submission of application by Shear Diamonds Ltd, for the renewal of Water Licence 2AM-JER0410 for the Jericho Project, dated February 28, 2011.

### Submissions & Correspondence

1. Letter submitted by Shear Diamonds Ltd., Shear Diamonds (Nunavut) Corp., to request an amendment to the term of the water licence from March 1, 2011 to March 1, 2012, under “Emergency Circumstances”, dated January 31, 2011.
2. Submitted by Shear Diamonds Ltd, C1 Diversion Construction Summary Jericho Diamond Mine, Nunavut, dated February 28, 2011.
3. Submitted by Shear Diamonds Ltd, C1 Diversion Construction Summary Appendix A and B, dated February 28, 2011.
4. Submitted by Shear Diamonds Ltd, C1 Diversion Construction Summary Appendix C and D, dated February 28, 2011.
5. Submitted by Shear Diamonds Ltd, C1 Diversion Construction Summary - photographs, dated February 28, 2011.
6. Submitted by Shear Diamonds Ltd, Contingency Management Plan, dated, February 28, 2011.
7. Submitted by Shear Diamonds Ltd, Contingency Management Plan Appendix A, dated February 28, 2011.
8. Submitted by Shear Diamonds Ltd, Contingency Management Plan Figure, dated February 28, 2011.
9. Submitted by Shear Diamonds Ltd, Contingency Management Plan Figure 2, dated February 28, 2011.
10. Submitted by Shear Diamonds Ltd, Contingency Management Plan Figure 3-13, dated February 28, 2011.
11. Submitted by Shear Diamonds Ltd, Contingency Management Plan Figure 14, dated February 28, 2011.

12. Submitted by Shear Diamonds Ltd, Emergency Preparedness and Emergency Response Plan for Dam Emergencies at the Jericho Project, Nunavut, dated February 28, 2011.
13. Submitted by Shear Diamonds Ltd, Fuel Storage Containment Facility Design Plan Set 3 Tank Farm Jericho Project, Nunavut, dated February 28, 2011.
14. Submitted by Shear Diamonds Ltd, Fuel Storage Containment Facility Design Plan Appendix A-B-C, dated February 28, 2011.
15. Submitted by Shear Diamonds Ltd, Fuel Storage Containment Facility Design Plan Appendix D Set 3 Desktop Geotechnical Assessment, dated February 28, 2011.
16. Submitted by Shear Diamonds Ltd, Fuel Storage Containment Facility Design Plan Appendix E Desktop Geotechnical Assessment, dated February 28, 2011.
17. Submitted by Shear Diamonds Ltd, Fuel Storage Containment Facility Design Plan Appendix E Proposed Set 3 Tank Farm – Geotechnical Recommendations Jericho Project, Nunavut, dated February 28, 2011.
18. Submitted by Shear Diamonds Ltd, Interim Closure and Reclamation Plan Jericho Diamond Mine, Nunavut, dated February 28, 2011.
19. Submitted by Shear Diamonds Ltd, Jericho Diamond Mine Water Licence Renewal Executive Summary, dated February 28, 2011.
20. Submitted by Shear Diamonds Ltd, Landfill Management Plan Jericho Diamond Mine, Nunavut, dated February 28, 2011.
21. Submitted by Shear Diamonds Ltd, Preliminary Landfill Design Plan Jericho Diamond Mine, Nunavut, dated February 28, 2011.
22. Submitted by Shear Diamonds Ltd, Waste Rock Management Plan Jericho Diamond Mine, Nunavut, dated February 28, 2011.
23. Submitted by Shear Diamonds Ltd, Waste Rock Management Plan Jericho Diamond Mine, Nunavut, dated February 28, 2011.
24. Submitted by Shear Diamonds Ltd, Wastewater Treatment Management Plan Jericho Diamond Mine, Nunavut, dated February 28, 2011.
25. Submitted by Shear Diamonds Ltd, Wastewater Treatment Management Plan Figures 2-7 Jericho Diamond Mine, Nunavut, dated February 28, 2011.
26. Submitted by Shear Diamonds Ltd, Operations, Maintenance, & Surveillance Manual PKCA Dams Jericho Diamond Mine, Nunavut, dated February 28, 2011.

27. Letter L.Torretti, Kitikmeot Inuit Association, to P. Beaulieu, Nunavut Water Board, Re: NWB 110311 2AM-JER0410 Care and Maintenance Plan, dated April 07, 2011.
28. Letter B. Bedingfield, Fisheries and Oceans Canada, to P. Beaulieu, NWB, Re: DFO Comments, Care and Maintenance Plan, Jericho Diamond Mine, dated April 11, 2011.
29. Letter T. Trenholm, Aboriginal Affairs and Northern Development Canada, to P. Beaulieu, NWB, Re: 2AM-JER0410 – Jericho Diamond Mine – Shear Diamonds Ltd. – Application for Renewal, dated April 21, 2011.
30. Letter A. Dunn, Environment Canada, to R. Dwyer, NWB, Re: Shear Diamonds Ltd. – Renewal of Water Licence 2AM-JER0410 – Review if Application and Plans, Dated April 29, 2011.
31. Submitted by Shear Diamonds Ltd, Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites, dated May 2010.
32. Letter D. Filiatrault, NWB, to P. Strand, Shear Diamonds (Nunavut) Corp, Re: Licence No. 2AM-JER0410; Notice of Application for Renewal of a Type “A” Water Licence, dated May 11, 2011.
33. Submitted by Shear Diamonds, 2011 Pit Dewatering Addendum to Processed Kimberlite Management Plan Jericho Project, Nunavut, dated May 25, 2011.
34. Submitted by Shear Diamonds Ltd, 2011 Pit Dewatering Addendum to Processed Kimberlite Management Plan Jericho Diamond Mine, Nunavut, dated May 26, 2011.
35. Letter M. Tanguay, Shear Diamonds, to P. Beaulieu, NWB, Re: Water Licences NWB1JER0410 Monthly Report – April 2011, dated May 31, 2011.
36. E-mail T. Trenholm, AANDC, to P. Beaulieu, Re: 2AM-JER0410 Application for Renewal, dated June 07, 2011.
37. Letter B. Bedingfield, DFO, to P. Strand, Shear Diamonds. Re: Shear Diamonds (Nunavut) Corp. - Fisheries Authorization NU-00-0068, Jericho Diamond Mine, dated June 09, 2011.
38. Letter B. Bedingfield, Fish, DFO, to P. Beaulieu, NWB, Re: DFO Comments, Renewal of the Nunavut Water Board, Type A Water Licence, Jericho Diamond Mine, dated June 10, 2011.
39. Letter A. Dunn, EC, to P. Beaulieu, NWB, Re: Shear Diamond Ltd. – Renewal of Water Licence 2AM-JER0410 – Review of Application and Plans Diamond Mine, dated June 10, 2011.



40. E-mail A. Armstrong, to P. Beaulieu, Re: Jericho Pre-Hearing Technical Submissions, dated June 10, 2011.
41. Submitted by Shear Diamonds, Air Quality Management Plan Jericho Project, Nunavut: Air Quality Management Plan, dated June 10, 2011.
42. Letter P. Strand, Shear Diamonds Ltd, to P. Beaulieu, Re: Shear Diamonds (Nunavut) Corp. – Jericho Diamond Mine Deposition of Fine Processed Kimberlite Outside of the Processed Kimberlite Containment Area, dated June 10, 2011.
43. Letter P. Strand, Shear Diamonds Ltd, to P. Beaulieu, Re: Shear Diamonds (Nunavut) Corp. – Jericho Diamond Mine Deposition of Fine Processed Kimberlite Outside of the Processed Kimberlite Containment Area - photos, dated June 10, 2011.
44. E-mail M. Tanguay, Shear Diamonds Ltd, to P. Beaulieu, Re: Notice of discharge from the Process Kimberlite Containment Area (PKCA), dated June 10, 2011.
45. Letter B. MacIsaac, AANDC, to P. Beaulieu, NWB, dated Re: 2AM-JER0410 – Shear Diamonds (Nunavut) Corp. – Application for Renewal – Indian and Northern Affairs Canada Intervention to June 20-21, 2011 Pre-Hearing Technical Meeting, June 13, 2011.
46. Submitted by Shear Diamonds, Acute Toxicity Bioassay Update (L1012896 2D48), dated June 13, 2011.
47. Submitted by Shear Diamonds, Acute Toxicity Bioassay Update L1012896-2 T96), dated June 13, 2011.
48. E-mail M. Tanguay, Shear Diamonds Ltd, to P. Beaulieu, Re: Discharge from the Process Kimberlite Containment Area (PKCA), dated June 15, 2011.
49. Submitted by Shear Diamonds Ltd, Jericho Core Sampling Materials and Methods Response, dated June 20, 2011.
50. Submitted by Shear Diamonds Ltd, Technical Meeting – Table of Submissions, dated June 20, 2011.
51. Submitted by Shear Diamonds Ltd, Shear Jericho Response 55, dated June 20, 2011.
52. Submitted by Shear Diamonds Ltd, Technical Meeting List of Commitments (Appendix E), dated June 21, 2011.
53. Submitted by Shear Diamonds, Technical Meeting List of Commitments – Revised, dated June 21, 2011.

54. Letter D. Hohnstein, NWB, to P. Strand, Shear Diamonds (Nunavut) Corp, dated Re: Licence No. Technical Meeting and Pre Hearing Conference for the Renewal of the Type "A" Water Licence 2AM-JER0410; Shear Diamonds (Nunavut) Corp. Responses to interested persons comments, and List of Commitments, June 22, 2011.
55. Letter B. MacIsaac, AANDC, to P. Beaulieu, NWB, Re: 2AM-JER0410 – Shear Diamonds (Nunavut) Corp. – Application for Renewal – Aboriginal Affairs and Northern Development Canada's (AANDC) Response to NWB Post Technical Meeting Request, dated June 29, 2011.
56. Submitted by Shear Diamonds, Table of Submissions with AANDC additions, dated June 29, 2011.
57. Submitted by Shear Diamonds, Technical Memorandum A List of Commitments: Schedule of Monitoring Activities, dated June 29, 2011.
58. Letter M. Tanguay, Shear Diamonds, to P. Beaulieu, NWB, Re: Water Licences NWB1JER0410 Monthly Report – May 2011, dated June 30, 2011.
59. Letter D. Hohnstein, NWB, to Distribution List, Re: 2AM-JER0410 Water Licence Renewal Pre-Hearing Conference Decision, dated July 04, 2011.
60. Letter J. Lassonde, Shear Diamonds, to I. Rumbolt, AANDC, Re: Notification of Intent to Begin Dewatering from the Pit – Jericho Diamond Mine, dated July 05, 2011
61. Letter J. Lassonde, Shear Diamonds, to P. Beaulieu, NWB, Re: Notification of Intent to Begin Process Evaluation – Jericho Diamond Mine, dated July 05, 2011.
62. Submitted by Shear Diamonds, List of Commitments Item 15 Revised, dated July 06, 2011.
63. Letter B. Bedingfield, DFO, to P. Beaulieu, NWB, Subject: DFO Comments Regarding Proponent's Responses and Commitments made at Water Licence Renewal Technical Review Meeting, Jericho Mine, dated July 08, 2011.
64. Letter P. Strand, Shear Diamonds (Nunavut) Corp, to B. MacIsaac, AANDC, 2011 Re: 2AM-JER0410 – Shear Diamonds (Nunavut) Corp. – Application for Renewal – Indian and Northern Affairs Canada Intervention to June 20-21, 2011 Pre-Hearing Technical Meeting, dated July 11, 2011.
65. Letter T. Trenholm, AANDC, to P. Beaulieu, NWB, Re: 2AM –JER0410 – Jericho Diamond Mine – Aboriginal Affairs and Northern Development Canada – Response to Commitment Table, dated July 15, 2011.
66. Submitted by Shear Diamonds, Technical Memorandum B List of Commitments: Current Operational Plans – Jericho Diamond Mine, dated July 15, 2011.

67. Submitted by Shear Diamonds, Technical Memorandum D List of Commitments: Operational Commitments – Jericho Diamond Mine, Nunavut, dated July 15, 2011.
68. Submitted by Shear Diamonds, List of Commitments: Proposed Changes to the Aquatic Effects Monitoring Plan – Jericho Diamond Mine, Nunavut, dated July 15, 2011.
69. Submitted by Shear Diamonds, List of Commitments: Proposed Changes to the Aquatic Effects Monitoring Plan – E14101118 Figure 3-9, dated July 15, 2011.
70. Letter D. Hohnstein, NWB, to P. Strand, Shear Diamonds (Nunavut) Corp, Re: Licence No. 2AM-JER0410; 2011 Pit Dewatering Addendum to Processed Kimberlite Management Plan, Jericho Diamond Mine, Nunavut, dated July 21, 2011.
71. Letter M. Tanguay, Shear Diamonds, to P. Beaulieu, NWB, Re: Water Licences NWB1JER0410 Monthly Report – June 2011, dated July 30, 2011.
72. Submitted by Shear Diamonds, Technical Memorandum E List of Commitments: Landfill and Sludge Pit Location Addendum to Landfill Management Plan, dated July 31, 2011.
73. Letter C. Smith, Nuna Logistics Limited, to P. Strand, Shear Diamonds (Nunavut) Corp, Re: Jericho Site Reclamation – Crown Owned Lands Only, dated Aug 05, 2011.
74. Letter P. Strand, Shear Diamonds, to P. Beaulieu, NWB, Re: Renewal Application of Type A Water Licence 2AM-JER0411 – General Commitment #16, Operational commitment list as made at the Technical Meeting and Pre-Hearing Conference, June 20<sup>th</sup> and 21<sup>st</sup> 2011, dated August 15, 2011.
75. Submitted by Shear Diamonds, Life of Mine Water Balance Summary Sheet, dated August 15, 2011.
76. Letter P. Strand, Shear Diamonds, to P. Beaulieu, NWB, Re: Renewal Application of Type A Water Licence 2AM-JER0411 – General Commitment #16, Operational commitment list as made at the Technical Meeting and Pre-Hearing Conference, June 20<sup>th</sup> and 21<sup>st</sup> 2011, dated August 15, 2011.
77. Letter P. Strand, Shear Diamonds, to P. Beaulieu, NWB, Re: Renewal Application of Type A Water Licence 2AM-JER0411 – General Commitment #17, Proposed amendments to existing terms and conditions and any proposed discharge criteria for the Project as made at the Technical Meeting and Pre-Hearing Conference, June 20<sup>th</sup> and 21<sup>st</sup>, 2011, dated August 15, 2011.

78. Letter P. Strand, Shear Diamonds, to P. Beaulieu, NWB, Re: Renewal Application of Type A Water Licence 2AM-JER0411 - Shear Diamonds Ltd. submission in accordance with the Table of Commitments generated at the Technical Meeting and Pre-Hearing Conference, June 20th and 21st, 2011, dated August 15, 2011.
79. Submitted by Shear Diamonds, Technical Memorandum F Onsite Nitrate and TSS Analysis Methods, dated August 15, 2011.
80. Submitted by Shear Diamonds, Technical Memorandum G Proposed PKCA Effluent Discharge Criteria, dated August 15, 2011.
81. Submitted by Shear Diamonds, Technical Memorandum H Final Specifications of the Hydrocarbon Contact Water Remediation Unit, dated August 15, 2011.
82. Submitted by Shear Diamonds, PKCA Management Plan, dated August 15, 2011.
83. Submitted by Shear Diamonds, Technical Memorandum G Operational Commitment List Jericho Diamond Mine, Nunavut, dated August 22, 2011.
84. Letter M. Charbonneau, Shear Diamonds, to P. Beaulieu, NWB, Re: 2AMJER0410 Monthly Report – June 2011, dated August 30, 2011.
85. Letter L. Torretti, KIA, to D. Filiatrault, NWB, Re: Deadline Extension Request – Application by Shear Diamonds for Jericho Water Licence Renewal (NWB1JER0410), dated September 14, 2011.
86. Letter K. Kharatyan, NWB, to P. Strand, Shear Diamonds (Nunavut) Corp, Re: Licence No. 2AM-JER0410; Submissions Pertaining to the List of Commitments Developed During the Technical Meeting and Pre-Hearing Conference, dated September 13, 2011.
87. Letter D. Filiatrault, NWB, to Parties, Re: Application for renewal of a Type ‘A’ Water Licence, 2AM-JER0410 Request for One-Week Extension of Timeline for Receipt of Intervener’s Submissions, dated September 14, 2011.
88. Letter K. Kharatyan, NWB, to P. Strand, Shear Diamonds (Nunavut) Corp, Re: Licence No. 2AM-JER0410; Submissions Pertaining to the List of Commitments Developed During the Technical Meeting and Pre-Hearing Conference, dated September 14, 2011.
89. E-mail J. Lassonde, Shear Diamonds, to D. Filiatrault, NWB, Re: Request for Rescheduling – Public Hearing for Renewal of Water Licence 2AM JER4010, Jericho Diamond Mine, dated September 15, 2011.
90. Letter J. Lassonde, Shear Diamonds, to P. Beaulieu, Re: Type A Water Licence 2AM-JER0410 – Annual Geotechnical Inspection, dated September 15, 2011.

91. Submitted by Shear Diamonds Ltd, 2011 Annual Geotechnical Inspection Jericho Diamond Mine Pages 1 to 20, dated September 15, 2011.
92. Submitted by Shear Diamonds Ltd, 2011 Annual Geotechnical Inspection Jericho Diamond Mine Pages 21 to 40, dated September 15, 2011.
93. Submitted by Shear Diamonds Ltd, 2011 Annual Geotechnical Inspection Jericho Diamond Mine Pages 41 to 60, dated September 15, 2011.
94. Submitted by Shear Diamonds Ltd, 2011 Annual Geotechnical Inspection Jericho Diamond Mine Pages 61 to 80, dated September 15, 2011.
95. Submitted by Shear Diamonds Ltd, 2011 Annual Geotechnical Inspection Jericho Diamond Mine Pages 81 to 100, dated September 15, 2011.
96. Submitted by Shear Diamonds Ltd, 2011 Annual Geotechnical Inspection Jericho Diamond Mine Pages 111 to 12, dated September 15, 2011.
97. Submitted by Shear Diamonds, Technical Memorandum J Surface Water Management – C4 Diversion Jericho Diamond Mine, Nunavut, dated September 15, 2011.
98. E-mail A. Dunn, EC, to P. Beaulieu, NWB, Re: 2AM-JER0410 KIA Extension Request Letter, dated September 16, 2011.
99. Letter D. Abernethy, AANDC, to P. Beaulieu, NWB, Re: Water Licence 2AM-JER0410 – Jericho Diamond Mine – Aboriginal Affairs and Northern Development Canada – Response to request by the Kitikmeot Inuit Association for one-week extension for Intervener’s Submissions, dated September 16, 2011.
100. Letter D. Filiatrault, NWB, to Distribution List, Subject: 2AM-JER0410 Water Licence Renewal Addendum to July 4, 2011 Pre-Hearing Conference Decision Regarding Postponement of Hearing, dated September 21, 2011.
101. Letter M. Charbonneau, Shear Diamonds, to P. Beaulieu, NWB, Re: 2AMJER0410 Monthly Report – August 2011, dated September 22, 2011.
102. Letter B. Bedingfield, DFO, to P. Beaulieu, NWB, Subject: DFO Final Comments, - Type A Water Licence Renewal for the Jericho Diamond Mine, dated November 03, 2011.
103. Letter R. Aiken, AANDC, to P. Beaulieu, NWB, Re: 2AM JER0410 – Jericho Diamond Mine – Shear Diamonds Ltd. – Application for Renewal – Aboriginal Affairs and Northern Development Canada’s intervention to the Type ‘A’ Water Licence Final Hearing, November 30 – December 1, 2011, dated November 15, 2011.

104. Letter R. Aiken, AANDC, to P. Beaulieu, NWB, Re: 2AM JER0410 – Jericho Diamond Mine – Shear Diamonds Ltd. – Application for Renewal – Aboriginal Affairs and Northern Development Canada’s intervention – Appendix 1. Draft conformance Table, dated November 15, 2011.
105. Letter R. Aiken, AANDC, to P. Beaulieu, NWB, Re: 2AM JER0410 – Jericho Diamond Mine – Shear Diamonds Ltd. – Application for Renewal – Aboriginal Affairs and Northern Development Canada’s intervention – Appendix 2. Proposed Schedule of Submissions or Conformity, dated November 15, 2011.
106. Letter C. Ogilvie, EC, to P. Beaulieu, NWB, Re: Environment Canada’s Written Intervention for the Nunavut Water Board Hearing on Type A Water Licence Renewal Application 2AM JER0410 for Shear Diamond’s Jericho Diamond Mine – Shear Diamonds Ltd, dated November 15, 2011.
107. Letter G. Clark, KIA, to D. Filiatrault, NWB, Re: Submission of the Kitikmeot Inuit Association for the Water Licence Hearing for the Shear Diamonds (Nunavut) Corp. Water Licence Renewal (NWB1JER0410), dated November 15, 2011.
108. E-mail K. Kharatyan, NWB, to S. Autut, Re: Confirmation of Ownership, dated November 22, 2011.
109. Submitted by Shear Diamonds Ltd, Consolidated Financial Statements for the years ended November 30, 2010 and 2009, dated November 22, 2011.

## **APPENDIX D – List of Exhibits from the Public Hearings**

<b>Exhibit</b>	<b>Document</b>	<b>Form</b>
1	Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation	Hard Copy
2	111130 2AM-JER0410 Public Hearing PPT - ICHE (True Copy of Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation)	Electronic Copy
3	Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - REVISED	Hard Copy
4	111130 2AM-JER0410 Public Hearing PPT REVISED - ICHE (True Copy of Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation – REVISED )	Electronic Copy
5	Shear Diamonds Ltd. Type A Water Licence Renewal Public Hearing “In Response to AANDC Submission”, Appendix 2 Proposed Schedule of Submission on Conformity	Hard Copy
6	111130 2AM-JER0410 Public Hearing Shear Response to AANDC Submission- ICHE (True Copy of Shear Diamonds Ltd. Type A Water Licence Renewal Public Hearing “In Response to AANDC Submission”, Appendix 2 Proposed Schedule of Submission on Conformity)	Electronic Copy
7	Shear Diamonds Public hearing for Renewal of The Jericho Project Type A Water Licence 2AM-JER0410 “Table of Technical Submission and Shear’s responses and commitments dated November 30-December 1, 2011	Hard Copy
8	111130 2AM-JER0410 Public Hearing Shear Response Table of Technical Submissions – ICHE (True Copy of Shear Diamonds Public hearing for Renewal of The Jericho Project Type A Water Licence 2AM-JER0410 “Table of Technical Submission and Shear’s responses and commitments dated November 30-December 1, 2011)	Electronic Copy

9	Shear Diamonds Public hearing for Renewal of The Jericho Project Type A Water Licence 2AM-JER0410 Figures Package dated November 30-December 1, 2011	Hard Copy
10	111130 2AM-JER0410 Public Hearing Shear Figure Package - ICHE (True Copy of Shear Diamonds Public hearing for Renewal of The Jericho Project Type A Water Licence 2AM-JER0410 Figures Package dated November 30-December 1, 2011)	Electronic Copy
11	Shear Diamonds Water Quality Monitoring Location Plan Figure 3 dated June 2011	Hard Copy
12	111130 2AM-JER0410 Water Quality Monitoring Location Plan Figure 3 – ICHE (True Copy of Shear Diamonds Water Quality Monitoring Location Plan Figure 3 dated June 2011)	Electronic Copy
13	Technical Memorandum C submitted to Nunavut Water Board by Shear Diamonds Ltd. ref. Jericho Diamond Mine: 2AM-JER0410, dated July 15, 2011	Hard Copy
14	111130 2AM-JER0410 Public Hearing Tech Memo C - ICHE (True Copy of Technical Memorandum C submitted to Nunavut Water Board by Shear Diamonds Ltd. ref. Jericho Diamond Mine: 2AM-JER0410, dated July 15, 2011)	Electronic Copy with figures
15	Letter from Shear Diamond, Julie Lassonde, Executive Chairman & CEO to Nunavut Water Board, Phyllis Beaulieu, Manager of Licensing, RE: Technical Memorandum E: Landfill and Sludge Pit Location Addendum to Landfill Management Plan.	Hard Copy
16	111130 2AM-JER0410 Public Hearing Shear Tech Memo E - ICHE (True Copy of Letter from Shear Diamond, Julie Lassonde, Executive Chairman & CEO to Nunavut Water Board, Phyllis Beaulieu, Manager of Licensing, RE: Technical Memorandum E: Landfill and Sludge Pit Location Addendum to Landfill Management Plan.)	Electronic Copy
17	Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation – Community	Hard Copy
18	111130 2AM-JER0410 Public Hearing PPT Community – ICHE	Electronic Copy



	(True copy of Shear Diamonds Jericho Diamond Mine, 2AM-JER0410 Type A Water Licence Renewal PowerPoint Presentation - Community)	
19	Environment Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application PowerPoint Presentation	Hard Copy
20	111130 2AM-JER0410 EC Public Hearing Intervention (True copy of Environment Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point presentation)	Electronic Copy
21	Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point Presentation	Hard Copy
22	111130 2AM-JER0410 AANDC Public Hearing Intervention-ICHE (True copy of Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point presentation)	Electronic Copy
23	Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point Presentation - Inuktitut	Hard Copy
24	Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point Presentation – Inuinnaqtun	Hard Copy
25	Brodie Consulting Ltd. Retained by AANDC For Reclamation Security (electronic included within AANDC PPT Presentation Exhibit 22)	Hard Copy
26	Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Appendix 3 Reclaim Summary - Inuinnaqtun	Hard Copy
27	Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine	Hard Copy

	Water Licence Renewal Application Appendix 3 Reclaim Summary – Inuktitut	
28	Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Appendix 2 Proposed Schedule of Submission on Conformity - Inuinnaqtun	Hard Copy
29	Aboriginal Affairs Northern Development Canada's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Appendix 2 Proposed Schedule of Submission on Conformity – Inuktitut	Hard Copy
30	Kitikmeot Inuit Association's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point Presentation	Hard Copy
31	111130 2AM-JER0410 KIA Public Hearing Intervention-ICHE (True copy of Kitikmeot Inuit Association's Intervention to the NWB Public Hearing for the Jericho Mine Water Licence Renewal Application Power Point Presentation)	Electronic Copy
32	111130 2AM-JER0410 AANDC Detailed Reclamation Security Cost Estimate - ICHE	Electronic Copy
33	Shear Diamonds (Nunavut Corp) 2011 Seepage Survey Report - November 2011, EBA File :E14101140	Hard Copy
34	111130 2AM-JER0410 Public Hearing Black Line Draft Water Licence - ICHE (True Copy of "Black Line" version of Draft water licence consolidation provided by Shear Diamonds)	Electronic Copy

## **APPENDIX E – Project Maps**

- Figure 1: Aquatic Effects Monitoring Plan

(Note: No Figure 2 has been provided)

- Figure 3: General Monitoring Plan
- Figure 4: PKCA Management Plan