



2012-2013 Annual Monitoring Report

*For Shear Diamonds (Nunavut) Corporation's
Jericho Diamond Mine Project*

Nunavut Impact Review Board

Report Title: The Nunavut Impact Review Board's 2012 – 2013 Annual Monitoring Report for the Jericho Diamond Mine Project (NIRB File No. 00MN059)

Project: Jericho Diamond Mine Project

Project Location: Kitikmeot Region, Nunavut

Project Owner: Shear Diamonds (Nunavut) Corp.
Suite 220, 6 Adelaide Street East, Toronto, ON M5C 1T6

Monitoring Officer: Tara Arko

Monitoring Period: October 2012 – September 2013

Date Issued: November 2013

Cover photo: View of site during fly-over

TABLE OF CONTENTS

1.0	INTRODUCTION	3
1.1.	Project History & Current Status	3
1.2.	Project Components	4
2.0	MONITORING ACTIVITIES	5
2.1.	Reporting Requirements	5
2.1.1.	Annual Report as per Project Certificate Appendix D.....	5
2.1.2.	Wildlife Monitoring	6
2.1.3.	Socio-Economic Monitoring	6
2.2.	Compliance Monitoring	7
2.2.1.	Compliance with the NIRB Project Certificate	7
2.2.2.	Compliance Monitoring by Authorizing Agencies	7
2.2.3.	Kitikmeot Inuit Association	7
2.2.4.	Aboriginal Affairs and Northern Development Canada	8
2.2.5.	Fisheries and Oceans Canada.....	9
2.2.6.	Natural Resources Canada	9
2.3.	NIRB Site Visit	9
2.3.1.	Processed Kimberlite Containment Area.....	10
2.3.2.	Aquatic Effects Monitoring	11
2.3.3.	Wildlife	11
2.3.4.	Fuel and Hazardous Waste Management.....	11
2.4.	Follow up to NIRB's 2012 Recommendations	11
3.0	FINDINGS	13
4.0	CONCLUSIONS.....	13
	Appendix I - 2013 Site Visit Report	15

1.0 INTRODUCTION

According to Section 12.7.1 of the Nunavut Land Claims Agreement (NLCA), the establishment of a project specific monitoring program may be outlined by the terms and conditions contained in a Nunavut Impact Review Board's (NIRB or Board) Project Certificate, recommendations stemming from a Part 4 NLCA determination, or approvals issued by the Nunavut Water Board (NWB). Monitoring programs may specify responsibilities for the Proponent, NIRB, or Government. The purpose of such a monitoring program is outlined in Section 12.7.2 of the NLCA as follows:

- a) to measure the relevant effects of projects on the ecosystemic and socio-economic environments of the Nunavut Settlement Area;*
- b) to determine whether and to what extent the land or resource use in question is being carried out within the predetermined terms and conditions;*
- c) to provide the information base necessary for agencies to enforce terms and conditions of land or resource use approvals; and*
- d) to assess the accuracy of the predictions contained in the project impact statements.*

1.1. Project History & Current Status

Upon completion of the environmental assessment (Review) of the proposed Jericho Diamond Mine Project (Jericho or the Project) and the Board approving the Project to proceed, in July 2004 the NIRB issued Project Certificate No. 002 (Jericho Project Certificate).

In addition to the terms and conditions within the Project Certificate, the NIRB has developed a monitoring program for the Project in accordance with Section 12.7.1 of the NLCA. Appendix D to the Jericho Project Certificate was issued by the NIRB on October 3, 2007¹ and sets out the duties of the NIRB and Proponent in carrying out project-specific monitoring, as well as responsibilities of relevant territorial and federal agencies to coordinate with the Proponent and provide compliance reporting to the NIRB.

This document has been prepared by the NIRB to address requirements of Section 12.7.2 of the NLCA and detail monitoring activities that occurred during the 2012-2013 reporting period as well as provide an assessment of the following items:

- Success or failure of the terms and conditions within Project Certificate No. 002;
- Adequacy of the monitoring program including ecosystemic and socio-economic impacts of the Project pursuant to Section 12.7.3(c) of the NLCA; and,
- Adequacy of Appendix D of the Jericho Project Certificate in its direction to both the Proponent and the NIRB regarding monitoring of the Project.

¹ Appendix D to Project Certificate No. 002 was issued on October 3, 2006 and revised in August 2007 as the previous requirements were unclear and led to issues regarding the receipt of information required to monitor the project and to provide meaningful reporting to the Board.

The following table provides an overview of monitoring other activities relevant to the regulatory regime associated with the Jericho project:

2004	July	The NIRB issued PC 002 to Tahera Corporation Limited.
2005	January	The NIRB updated the name on PC 002 to Benachee Resources Incorporated, a wholly owned subsidiary of Tahera Diamond Corporation; mine construction began.
2006	July	Jericho diamond mine fully operational.
2007	October	The NIRB issued its Monitoring Program, Appendix D of PC 002.
2008	January	Tahera filed for creditor protection citing insufficient funds to operate the mine.
2008	April	Jericho Mine site placed under care and maintenance.
2008	December	INAC intervened to assume control of the site and maintain existing environmental protection measures as Tahera could not continue to support the care and maintenance of the Jericho Site.
2009	September	INAC completed site closure, i.e. ensuring the site was in a state that it could be safely left unmanned; contractors ceased occupation but continued to monitor the site.
2010	August	Shear Minerals Ltd., renamed Shear Diamonds (Nunavut) Corp. (Shear), completed its purchase of Tahera's assets including the Jericho Diamond Mine.
2011	August	The NIRB reassigned PC 002 to Shear.
2011	December	The NWB issued the renewal Type A water licence to Shear.
2012	August	The NIRB conducted its annual site visit.
2012	September	Shear issued notice that due to low diamond prices the site would be minimally staffed, stockpile re-evaluation suspended, and discontinue exploration at the site.
2012	October	Shear issued Temporary Shutdown Plan to the NWB and AANDC outlining the procedures completed for site shutdown, potential risks at site, a site visit schedule to address the risks, and notice that ongoing monitoring was being discontinued.
2012	November	The NIRB issued recommendations to Shear regarding compliance to the Project Certificate
2013	June	The NIRB conducted its 2013 site visit

1.2. Project Components

The Jericho Project is a diamond mine situated in the West Kitikmeot region of Nunavut, approximately 430 kilometres (km) southwest of Cambridge Bay and 240 km southeast of Kugluktuk. The site consists of a single open pit mine, processing facility, Processed Kimberlite Containment Areas and stockpiles, as well as a camp and support buildings to house approximately 200 persons, capacity for 13 million litre fuel in tank farm, airstrip and roads connecting infrastructure. The mine is located on crown land, with access and other infrastructure on Inuit Owned Land.

2.0 MONITORING ACTIVITIES

2.1. Reporting Requirements

In August 2011 the NIRB re-issued the Jericho Project Certificate to Shear at the request of the company and based on the commitments made by Shear. Appendix D of the Jericho Project Certificate provides a list of reports which Shear is required to submit to the NIRB including quarterly reports as well as an annual report and updated management plans as required. In its 2012 recommendations the Board requested that Shear provide a discussion on reporting while the site continued in care and maintenance. To date, the NIRB has not received a response from Shear.

2.1.1. Annual Report as per Project Certificate Appendix D

Appendix D of the Jericho Project Certificate requires the Proponent to submit an annual report to the NIRB by April 30th of each year. The annual report must provide details of the company's efforts to comply with the Jericho Project Certificate, present data collected by Shear on various topics, provide an analysis of the data, and include a discussion of the results and recommendations for adaptive management.

After its acquisition of the Jericho site in 2010, Shear committed to submitting the required reports to the NIRB on numerous occasions; during the NIRB process² to reassign the Jericho Project Certificate, through the renewal process for the water licence³, and in person at the NIRB's 2012 Site visit⁴. Despite subsequent attempts to contact the Proponent⁵ to obtain these materials, the NIRB has not received any of the items requested.

According to Appendix D of the Jericho Project Certificate, starting October 31, 2007 the Proponent has been required to submit quarterly reports, due at the end of October, January, April, and July to document current and planned infrastructure development at the site. The last quarterly report submitted was provided to the NIRB by Tahera on January 24, 2008. In 2010, Shear committed⁴ to preparing the quarterly reports for the periods ending December 31, 2010 and March 31, 2011 for submission to the NIRB by June 10, 2011. The NIRB has not received any quarterly reports from Shear since it assumed ownership of the Project.

² Letter dated June 3, 2011 from Pamela Strand, President of Shear Diamonds to Sophia Granchinho, NIRB Re: *Request to assign the Jericho Diamond Mine Project Certificate (No. 002) to Shear Diamonds (Nunavut) Corp.*

³ Letter dated June 9, 2013 from Pamela Strand, President of Shear Diamonds to Phyllis Beaulieu, Manager of Licensing of Nunavut Water Board Re: *Shear Diamonds (Nunavut) Corp. – Licence No. 2AM-JER0410 Notice of Application for Renewal of a Type "A" Water Licence, Jericho Diamond Mine*

⁴ NIRB's 2012 Site Visit Report for the Jericho Diamond Mine Project. November 2012.

⁵ Emails from Tara Arko, NIRB to Stephanie Autut and Julie Lassonde, Shear Diamonds Ltd., Re: *20111219 Letter to NIRB re monitoring report Final.*

2.1.2. Wildlife Monitoring

The Wildlife Mitigation and Monitoring Plan (WMMP) for the Jericho Project details the Proponent's methods for conducting wildlife monitoring activities, options to mitigate potential impacts to wildlife, and provides direction to site staff. On May 15, 2007 Tahera submitted a fourth draft of its WMMP in accordance with Condition 10 of the Jericho Project Certificate. After consultation with the Government of Nunavut – Department of Environment and Environment Canada, it was determined that the WMMP as submitted adequately satisfied the requirements of the Jericho Project Certificate.

In its June 3, 2011 submission to the NIRB, Shear committed to implementing the measures proposed in the WMMP prepared by Tahera⁴.

The WMMP requires that Shear compile and submit a Wildlife Mitigation and Monitoring Report annually as well as preparing a comprehensive analysis of the Plan every 3 years beginning in 2009.

The NIRB received a Wildlife Mitigation and Monitoring Report from Tahera in April 2008 for the 2007 reporting period, but has not received any further reports, nor the comprehensive analysis required for 2009. In Shear's June 3, 2011 submission to the NIRB, it stated that *"during care and maintenance Shear will record wildlife sightings in the field and around the mine site. These sightings will be included in the quarterly report to be submitted to the NIRB."* The NIRB has not received any quarterly reports from Shear, nor has it received any annual wildlife data, analysis, or discussion to meet this requirement.

2.1.3. Socio-Economic Monitoring

Terms and Conditions 42 through 49 of the Jericho Project Certificate outline the Board's requirements for socio-economic monitoring of the Jericho project.

Inuit Impact and Benefits Agreement

On October 1, 2007 the NIRB received a report from the Kitikmeot Inuit Association (KIA) outlining its experience with the implementation of the Inuit Impact Benefits Agreement (IIBA) for the Jericho project, also noting that since the signing of the IIBA, the relationship between the KIA and Tahera had been positive. In the letter dated June 3, 2011 Shear provided clarification to the NIRB that, while the site remained in care and maintenance, obligations in the IIBA had been suspended except for those related to employment and contracting, and that opportunities for these would be limited while the site remained in this phase.

Socio-Economic Monitoring Committee

Condition 44 of the Jericho Project Certificate requires that a Socio-Economic Monitoring Committee (SEMC) be established to monitor and report on socioeconomic

impacts in relation to the Jericho project. The fourth meeting of the Kitikmeot SEMC⁶ was held in Cambridge Bay, Nunavut in November 2012, after which the resulting report was circulated in March 2013. Shear was not in attendance at the event, therefore the report provided limited information on impacts of Jericho.

Temporary Shut Down Plan

Shear provided a Temporary Shut Down Plan⁷ to Aboriginal Affairs and Northern Development Canada in October 2012 which identified three major risks at the Jericho site and provided detail regarding Shear's proposed methods to manage them. The risks identified included site water management during freshet, tailings management involving the PKCA and previous spill, and fuel/hazardous waste management at site and site closure. As Shear did not provide this plan to the NIRB or any additional follow up on the proposed management of the risks, the NIRB's observations of these areas during the 2013 site visit have informed this report and the Board's 2013 recommendations, where possible.

2.2. Compliance Monitoring

2.2.1. Compliance with the NIRB Project Certificate

As previously discussed, Shear has not submitted the required reports to the NIRB and has therefore been non-compliant with the requirements of Appendix D of the Jericho Project Certificate. Shear is required by Condition 10 and the Wildlife Mitigation and Monitoring Plan to submit an annual Wildlife Mitigation and Monitoring Report to the NIRB and as of the date of this report, the NIRB had not received any wildlife report or data from Shear for years including 2010, 2011, and 2012. As noted in the 2013 Site Visit Report (see [Appendix I](#)), Shear has not met the requirements of Condition 35 which requires that fencing or suitable deterrents be employed at the landfills or waste storage areas on site.

2.2.2. Compliance Monitoring by Authorizing Agencies

Appendix D of the Jericho Project Certificate sets out expectations for authorizing agencies' collaborative monitoring for the Jericho site. Agencies with responsibilities related to the monitoring program are requested to provide compliance reports to the NIRB by April 30th of each year.

2.2.3. Kitikmeot Inuit Association

The KIA is responsible for holding land tenure permits for Shear as well as maintaining several agreements with regards to the function of the site and use of resources by the mining project. On March 19, 2013 the KIA provided a compliance update to the NIRB

⁶ Kitikmeot Socio-Economic Monitoring Committee Fall 2012 Report on Fourth Kitikmeot SEMC Meeting, Cambridge Bay, Nunavut: 27-29 November 2012 and Kitikmeot Socio-Economic Monitoring, Government of Nunavut Department of Economic Development & Transportation. March 14, 2013.

⁷ Author unknown, *Temporary Shut Down Plan - 2AM_JER1119_October 2012*, [available online](#).

which indicated that the organization maintains various agreements with Shear relating to the Jericho site and that while they could not disclose specifics of those agreements, Shear remains in arrears on several payments and has been non-compliant to reporting requirements.

2.2.4. Aboriginal Affairs and Northern Development Canada

Aboriginal Affairs and Northern Development Canada (AANDC) is responsible for issuing Crown land leases for the Jericho Diamond Mine and conducting land use inspections required under the *Territorial Lands Act and the Territorial Lands Regulations*, as well as conducting inspections under the *Nunavut Water and Nunavut Surface Rights Tribunal Act* for compliance to water licence(s) that have been issued by the NWB.

The NWB issued a renewed Type A Water Licence to Shear for the Jericho site on December 21, 2011, and its decision to the Minister of AANDC⁸ further noted that the amount of securities which Shear was responsible for furnishing for AANDC to hold in trust was \$3,389,074. The Compliance Plan⁹ for the Jericho site submitted to AANDC at the end of 2012 detailed that Shear was not in a financial position to provide the outstanding securities amount of \$321,074.

On February 19, 2013 the NIRB requested that AANDC provide the NIRB with a compliance report¹⁰ detailing its site inspections, Shear's submissions relating to the site closure, items of non-compliance, and AANDC's inability to successfully contact Shear. This information was provided to the NIRB on March 21, 2013.

In March¹¹ and April 2013¹², AANDC's Inspector and Water Resources Officer provided additional direction to Shear regarding its non-compliance to the water licence and the resultant penalties that would be incurred. These correspondences also provided notification and results of site inspections by AANDC, and direction for Shear to manage various site risks. Given Shear's inability to document how it was addressing these risks, in June 2013 AANDC provided notice¹³ to the NWB that AANDC-Contaminated Sites Division had been engaged to manage these risks for Shear and to oversee immediate environmental protection at the Jericho Mine site. On September 14, 2013 AANDC

⁸ Nunavut Water Board, *Reasons for Decision Including Record of Proceedings In the Matter of Shear Diamonds (Nunavut) Corp. Renewal Application for a Type "A" Water Licence. December 21, 2011.*

⁹ Author unknown, 2AM-JER1119 Compliance Plan, September 30, 2012.

¹⁰ Murray Ball, Acting Director Resource Management for Aboriginal Affairs and Northern Development Canada letter to Tara Arko, Technical Advisor for the Nunavut Impact Review Board. *Re: Requested Compliance Update – Jericho Water Licence 2AM-JER1119.* March 21, 2013.

¹¹ Eva Paul, Inspector designated by the Minister of Aboriginal Affairs and Northern Development Canada to Shear Diamonds (Nunavut) Ltd. *Inspector's Direction Pursuant to Section 87(1) of the Nunavut Waters and Surface Rights Tribunal Act, 2002.* March 8, 2013.

¹² Eva Paul, Inspector designated by the Minister of Aboriginal Affairs and Northern Development Canada to Shear Diamonds (Nunavut) Ltd. *Inspector's Direction of March 8, 2013.* April 4, 2013.

¹³ Eva Paul, Inspector designated by the Minister of Aboriginal Affairs and Northern Development Canada email to Phyllis Beaulieu, Manager of Licensing for Nunavut Water Board. *Jericho Mine (2AM-JER1119).* June 7, 2013

undertook an inspection of the Jericho site and provided notification to Shear¹⁴ on September 27, 2013 regarding continued instances of non-compliance with the water licence, including details regarding activities undertaken by AANDC at site to manage risks, and which further outlined additional risks identified at the site that required mitigation measures to be implemented by Shear. Several deadlines were provided for follow-up and action between October 4 and December 31, 2013.

2.2.5. Fisheries and Oceans Canada

Fisheries and Oceans Canada's authority is legislated pursuant to the *Fisheries Act* to issue an Authorization (NU-00-0068) which bears relevance to items addressed in Terms and Conditions 4, 19-24 of the Jericho Project Certificate. On April 16, 2013 the NIRB received a compliance update from Fisheries and Oceans Canada outlining its attempts to have Shear update this authorization, and which provided its conclusion that Shear remained in non-compliance with the authorization, noting that various reports remained outstanding, and that no response had been received to its latest inquiry.

2.2.6. Natural Resources Canada

In July 2005 Natural Resources Canada issued a licence to Dyno Nobel Nunavut Limited under Section 7 of the *Explosives Act* for storage and manufacture of explosives at the Jericho Mine site. In Natural Resources Canada's compliance update to the NIRB provided on May 16, 2013, it indicated that notice had previously been received from Dyno Nobel that the ammonium nitrate and other raw materials used to manufacture explosives had been removed from site, and that the license had therefore been allowed to expire in July 2008 as the site remained in care and maintenance.

2.3. NIRB Site Visit

The NIRB conducted a site visit on June 11, 2013. The site was observed to be in similar condition to what had been noted during the previous site visit conducted in August 2012. The NIRB's report noted that it did not appear that Shear had been conducting monitoring activities at site (see [Appendix I](#)). The site visit provided an opportunity for the NIRB to follow up on items noted during the previous visit and to verify whether or not any of the outstanding matters had been addressed prior to site closure.

Most of the terms and conditions of the Jericho Project Certificate are designed to manage impacts brought about by operations. As the site has not been in operations since 2008, many of the terms and conditions are not applicable to current site activities during care and maintenance.

¹⁴ Eva Paul, Inspector designated by the Minister of Aboriginal Affairs and Northern Development Canada email directed to c/o Shear Diamonds (Nunavut) Ltd. and addressed to Manuel Rappaport, Director of Shear Diamonds Ltd. *2AM-JER1119 Report of September 14, 2013 Inspection*. September 27, 2013.

2.3.1. Processed Kimberlite Containment Area

During the 2012 site visit, the NIRB had observed activities that Shear had undertaken to contain the dispersion of fine processed kimberlite from the processed kimberlite containment area (PKCA), in order to reduce further particle movement, and to monitor areas around the PKCA using dust fall monitoring stations. Specifically, Shear had begun re-wetting the fine processed kimberlite by pumping water from cell B/C back into cell A of the PKCA and dispersing the water using spray irrigation (see **Photo 1**).



Photo 1: Sprinklers wetting PKCA (2012)



Photo 2: PKCA after spring freshet, top dry, slumping, and developing cracks (2013)

Shear had identified the PKCA as a site risk which required ongoing management as outlined in its Temporary Shut Down Plan. During the NIRB's 2013 site visit, the spray irrigation system was not in use and the PKCA exhibited signs of having dried out; including a lack of surface water and the presence of visible cracks as well as areas of slumping. The NIRB has not received any indication from Shear that the proposed management practices have been implemented, and the observations at site would indicate that Shear had not been conducting activities to manage risks at the PKCA. AANDC indicated that it has taken steps to manage risks at the PKCA site.

During the 2011 water licence renewal proceedings, Shear detailed its findings regarding the release of water from the cell B/C catchment area in amounts above the permitted limits to maintain the appropriate freeboard allowance as were required by dyke design. In 2012, Shear discharged water from cell B/C to maintain the required freeboard allowance and also circulated water back to the PKCA as part of its re-wetting procedure. In its Temporary Shut Down Plan, the water level of cell B/C was identified as a risk that required management, which Shear proposed to address via planned discharges of the

water during visits to site. At the time of the 2013 site visit, the NIRB observed that the water levels were above those observed in previous years.

2.3.2. Aquatic Effects Monitoring

The latest update the NIRB has had from Shear regarding aquatic monitoring activities came via discussions during the Board's 2012 site visit. At that time, Shear indicated that its personnel were in negotiations with Fisheries and Oceans Canada regarding its license renewal and that in the meantime, Shear had continued with its monitoring activities. The Temporary Shut Down Plan for the site provided the results of these activities, specifically indicating that "*Shear had to notify the laboratories and stop all analytical work in early September*" and that "*Shear [was] not financially able to resume the laboratory analyses at [that] time.*"

2.3.3. Wildlife

The NIRB has not received any information from Shear regarding its wildlife monitoring activities since the 2012 site visit, and the NIRB did not observe any evidence of wildlife monitoring being carried out at site during the 2013 site visit.

2.3.4. Fuel and Hazardous Waste Management

In 2012 Shear had been working to upgrade berms encircling some of the fuel and waste storage areas prior to the site's temporary closure. During the 2013 site visit, it was noted that areas previously exhibiting signs of hydrocarbon contamination remained present and untreated. In addition, several berms contained sitting water, and a number of unsealed and unlabeled barrels of waste remained on site within these berms. The areas enclosed by a berm require monitoring, especially the amount and quality of water collecting within the berms as well as identification of the additional materials stored in these areas, and providing for mitigation measures to be implemented.

2.4. Follow up to NIRB's 2012 Recommendations

As a result of the NIRB's 2012 monitoring program, the Board made three recommendations to Shear on December 7, 2012¹⁵ to provide guidance on compliance to the Jericho Project Certificate and expectations moving forward. These recommendations are outlined below, including updates from the NIRB.

Recommendation 1: The Board requested that Shear provide a response to the letter dated August 7, 2012 and where possible, that it provide the outstanding reports and plans requested as follows:

- a) *2010 and 2011 annual reports, including the Air Quality Monitoring Report, Annual Environmental Monitoring Report, Updated*

¹⁵ Tara Arko, Nunavut Impact Review Board Monitoring Officer to Julie Lassonde, Executive Chairperson and CEO of Shear Diamonds (Nunavut) Corp. *The Nunavut Impact Review Board 2011-2012 Monitoring Report for the Jericho Diamond Project and Board Recommendations*, December 7, 2012.

Abandonment and Restoration Plan, and Aquatic Effects Monitoring Program;

- b) Quarterly reports for 2010 through 2012;*
- c) Wildlife monitoring data from 2010-2012 as well as their draft Wildlife Mitigation and Monitoring Plan; and*
- d) A response to issues of non-compliance from the 2011 site visit including a notice of atmospheric monitoring station installation.*

The NIRB did not receive any of the materials requested during the 2012-2013 monitoring period.

Recommendation 2: *The Board required that Shear provide a detailed plan of action to outline Shear's proposed plan of action to remedy the following areas of non-compliance as identified during the 2012 Site Visit, including:*

- a) Condition 12 requiring the Proponent to post maps showing caribou travel routes at the site as well as provide information regarding wildlife sightings to the Monitoring Officer.*
- b) Condition 34 and in particular that the berm in the waste transfer containment area be completely enclosed by replacing the portion of the berm that was removed to allow machinery to enter the area.*
- c) Condition 35 requiring the Proponent to implement fencing around all landfill and waste storage areas.*
- d) Condition 38 requesting the Proponent submit plans or designs of the on-site spray irrigation system in the PKCA for NIRB assessment.*

Shear did not provide a response to Board during the 2012-2013 monitoring period. As such, the NIRB made observations where possible on these conditions during the 2013 site visit. For health and safety reasons, the site visit did not include building interiors; therefore no information was observed in relation to Condition 12. The berms surrounding the waste transfer containment areas and fuel storage areas were intact as required by Condition 34. Fencing and deterrents were not present around the landfill areas as required by Condition 35, and several temporary waste storage containers were present around the site in an unsecured and open manner. Shear did not provide any plans or designs to the NIRB as required by Condition 38; and further, at the time of the 2013 site visit, the spray irrigation system was no longer in use.

Recommendation 3: *The Board required that Shear describe its plans to comply with the reporting requirements as outlined in the Jericho Project Certificate while the site remains in care and maintenance. Where it anticipated that certain reporting requirements may not be met during care and maintenance, the Proponent was asked to provide a rationale and its proposed plan to comply with future reporting requirements.*

Despite attempts to make contact via email and telephone, the NIRB was unable to secure an update from Shear with respect to general project operations or the Board's 2012 recommendations during the 2012-2013 monitoring period.

3.0 FINDINGS

The results of monitoring efforts during the 2012-2013 monitoring period indicate that Shear has not complied with the NIRB's monitoring and reporting requirements as outlined in the Jericho Project Certificate. Further, the NIRB did not observe any indication at site that Shear had been conducting monitoring of the site. As a result of the lack of submissions by Shear during 2012, the NIRB requested that Shear engage in discussions with the Board on its perspective of reporting, should the site remain in care and maintenance; to date the NIRB has received no response from Shear.

As indicated through the Board's request of other agencies, it has been noted that Shear is currently non-compliant in its financial obligations and other reporting requirements. Since Shear placed the site into temporary closure, it has had no contact with the NIRB.

4.0 CONCLUSIONS

After purchasing the Jericho Diamond Mine, Shear committed to operating under the Plans and procedures which were put in place by Tahera to address the requirements of the Jericho Project Certificate; however, Shear has not provided the required information to the NIRB which would enable the Board to comment on whether Shear has met these commitments. As Shear remains in non-compliance with various monitoring and authorization requirements, the NIRB has been unable to provide a detailed assessment of the success or failure of terms and conditions within the Project Certificate to mitigate predicted impacts associated with the Jericho Project.

Regardless of the Proponent's level of participation in the regulatory process, the majority of the terms and conditions of the Jericho Project Certificate are intended to monitor and address potential impacts of mining operations. As a result, there are few mechanisms in the document to allow for re-considerations of reporting or monitoring requirements during times of limited operations or temporary closure. Appendix D of the Jericho Project Certificate requires participation and coordination by authorizing agencies in the monitoring process thus providing a mechanism for information gathering and verification independent of the Proponent. As it appears that Shear has disengaged from the monitoring and regulatory process, this component of the NIRB's framework for monitoring the Jericho site has made a greater contribution to the NIRB's information and understanding of the Jericho site.

Prepared by: Tara Arko
Title: Technical Advisor
Date: November 8, 2013

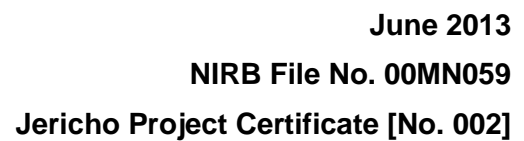
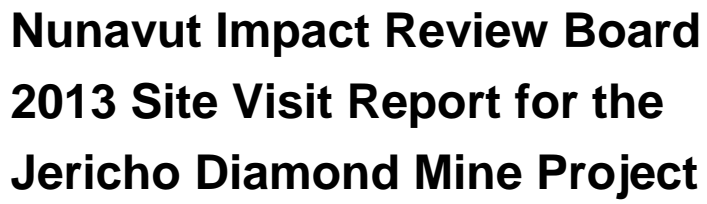
Signature: 

Reviewed by: Amanda Hanson
Title: Director, Technical Services
Date: November 8, 2013

Signature: 

NIRB File No.: 00MN059

APPENDIX I - 2013 SITE VISIT REPORT



Report Title: Nunavut Impact Review Board 2013 Site Visit Report for the Jericho Diamond Mine Project

Project: Jericho Diamond Mine
Project Location: Kitikmeot Region, Nunavut

NIRB File No.: 00MN059
Jericho Project Certificate [No. 002]

Project Owner: Shear Diamonds (Nunavut) Corp.
Suite 220, 6 Adelaide Street East, Toronto, ON M5C 1T6

Contact: 1-866-298-9695

Visit conducted by: Tara Arko, Monitoring Officer, Nunavut Impact Review Board
Contact: (867) 983-4611 or tarko@nirb.ca

Site visit dates: June 11, 2013
Last site visit: August 28 – 30, 2012

Photos by: Tara Arko, Nunavut Impact Review Board

Cover photo: Mine pit viewed over berm, Jericho Mine Site

Table of Contents

1.	INTRODUCTION & FILE HISTORY	3
2.	OBJECTIVES & PURPOSE OF SITE VISIT	4
3.	2013 SITE VISIT	4
3.1	General Observations	5
3.2	Project Certificate terms and conditions	5
3.2.1	Atmospheric Monitoring	5
3.2.2	Noise Monitoring and Mitigation.....	5
3.2.3	Wildlife Monitoring and Mitigation.....	6
3.2.4	Blasting Activities and Impacts Mitigation.....	6
3.2.5	Winter/Seasonal Roads	6
3.2.6	Fuel Storage.....	7
3.2.7	Processed Kimberlite Containment Area	8
3.2.8	Water Quality and Aquatic Monitoring.....	9
3.2.9	Water Diversion and Impacts to Fish Populations	9
3.2.10	Waste Management	10
4.	FINDINGS AND SUMMARY	12

List of Photos

Photo 1: Dust fall monitoring station at west dam, on side opposite road, looking toward cell B/C	5
Photo 2: Barreled fuel found in cache by helipad and spill kits	7
Photo 3: Fuel stores at airstrip	7
Photo 4: Melt water puddle in bermed area of main fuel tank farm	7
Photo 5: Barrels of waste material found within bermed area of main fuel tank farm	7
Photo 6: Hydrocarbon sheen on puddle within berm of Main Fuel Tank Farm	8
Photo 7: Soil staining within berm of Main Fuel Tank Farm	8
Photo 8: Meltwater in Main Fuel Tank Farm	8
Photo 9: Main Fuel Tank Farm	8
Photo 10: Processed Kimberlite Containment Area panorama.....	8
Photo 11: PKCA after spring freshet, top dry, slumping, and developing cracks	9
Photo 12: View of cell B/C from west dam	10
Photo 13: Cell B/C showing flooded vegetation.....	10
Photo 14: Discharge area from cell B/C	10
Photo 15: Outflow diffuser and impact area	10
Photo 16: Incinerator seacan (2012)	11
Photo 17: Incinerator seacan area	11
Photo 18: Waste bins at main camp	11

1. Introduction & File History

The Jericho Project is a diamond mine situated in the West Kitikmeot region of Nunavut, about 430 kilometres (km) southwest of Cambridge Bay and 240 km southeast of Kugluktuk.

Following its environmental assessment of the proposed project, the Nunavut Impact Review Board (NIRB or Board) issued Project Certificate [002] to Tahera Corporation Limited (Tahera) in July 2004 for the development of the Jericho Diamond Mine project (Jericho; the Project) pursuant to Section 12.5.12, Article 12 of the Nunavut Land Claims Agreement (NLCA). Tahera then requested that the Project Certificate be reissued to reflect the new project ownership, and on January 19, 2005 the NIRB issued¹ Amendment #1 of the Jericho Project Certificate in the name of Benachee Resources Inc., a wholly owned subsidiary of Tahera. Construction of the mine commenced in March 2005 and full mine operations began in July 2006.

Tahera filed for creditor protection in January 2008 citing insufficient funds to operate, and the Jericho Mine Site was placed into care and maintenance. Indian and Northern Affairs Canada (INAC, now Aboriginal Affairs and Northern Development Canada or AANDC) intervened² in December 2008 to assume control of the Jericho Mine site, and to complete temporary closure of the site to regulatory standards.

Shear Diamonds (Nunavut) Corp. (Shear; formally Shear Minerals Ltd.) completed the purchase of the Jericho Diamond Mine in August 2010, and subsequently requested³ that the NIRB reassign the Project Certificate to reflect the new ownership. On August 23, 2011 the NIRB issued Amendment #2 to the Jericho Diamond Mine Project Certificate [002]⁴ to Shear.

The site remained in care and maintenance during the following year under the stewardship of Shear as it evaluated the site's mineral resource and updated permitting. On September 4, 2012 the NIRB received notice from Shear announcing changes to site activities as a result of lower market prices for diamonds. In October 2012, a temporary closure plan was available on the Nunavut Water Board public registry indicating that the site was placed into temporary shut down and that all personnel had been moved off site. No further correspondence or reporting from Shear has been received by the NIRB from this point up to the 2013 site visit.

¹ Project Certificate [No.: 002] Amendment #1, Stephanie Briscoe, Executive Director, Re: *Proponent Name Change to Project Certificate for the Jericho Diamond Mine Project [002]*. Letter dated January 19, 2005.

² Pursuant to Section 89 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (S.C. 2002, c. 10), Last amended January 2, 2010.

³ Pamela Strand [Shear Diamonds (Nunavut) Corporation], then-President, Re: *Request to assign the Jericho Diamond Mine Project Certificate (No. 002) to Shear Diamonds (Nunavut) Corp.* Letter dated June 3, 2011.

⁴ Project Certificate [No.: 002] Amendment #2, Ryan Barry, Executive Director, Re: *Proponent Name Change to Project Certificate for the Jericho Diamond Mine Project [002]*. Letter dated August 23, 2011.

2. Objectives & Purpose of Site Visit

In accordance with sections 12.7.1 and 12.7.2 of the NLCA and Project Certificate [No. 002], the NIRB is responsible for monitoring the Project. One objective of the NIRB's site visit is to determine whether and to what extent the land or resource use in question is being carried out within the predetermined terms and conditions [NLCA, Subsection 12.7.2(b)] as outlined in the NIRB Project Certificate. Where possible, observations made from the site visit shall be incorporated into the measurement of relevant effects of the project.

Prior to the 2013 site visit, the following items were considered by the NIRB's Monitoring Officer:

- NIRB Project Certificate [No. 002], 2012 board recommendations, and site visit reports,
- Correspondence from Shear dated June 3, 2011 regarding company expectations to address Project Certificate terms and conditions,
- 2011 document submissions from Shear:
 - Aquatic Effects Monitoring Plan,
 - *draft* Air Quality Monitoring Program,
 - General Monitoring Plan,
- 2012 AANDC Inspection Report⁵ and Shear's response⁶, and
- 2013 AANDC Inspectors Direction⁷.

As a result, the site visit focused upon the following parameters:

- General observations - condition of site in temporary closure,
- Update on clean-up of fine processed kimberlite from processed kimberlite containment area (PKCA) and methods in place to mitigate future spill potential, and
- Provide observations related to Jericho Project Certificate terms and conditions.

3. 2013 Site Visit

On June 11, 2013 the NIRB Monitoring Officer accompanied representatives of Aboriginal Affairs and Northern Development Canada on a day trip from Yellowknife, NWT to the Jericho Mine site. There were no other personnel at the site. Upon arrival to the Jericho site, the group established a tentative schedule for the day based on the group's priorities, assessed the resources at the shelters located by the airstrip, and decided on procedures for the day to ensure health and safety. The NIRB's assessment of the site included visual observation of the following features:

⁵ Eva Paul (Aboriginal Affairs and Northern Development Canada), Water Resources Officer, *September 24, 2012, RE: Inspection of September 13th, 2012*, [available online via the NWB public registry](#).

⁶ Unknown author, *2AM-JER1119 Compliance Plan*, September 30, 2011. [available online via NWB public registry](#)

⁷ Eva Paul (Aboriginal Affairs and Northern Development Canada), Water Resources Officer, *March 8, 2013, RE: Nunavut Waters and Nunavut Surface Rights Tribunal Act, 2002 Inspector's Direction*, [available online via the NWB public registry](#).

- airstrip, roads, pump stations, and fuel storage areas;
- hazardous waste areas located by airstrip and beside landfill;
- landfill and incinerator seacans;
- stockpiles and waste rock piles;
- mine pit and berm;
- water pumps, process plant outflow, outflow diffuser, and discharge area to Carat Lake;
- dams and water diversion structures;
- the PKCA; and
- dust monitoring stations.

3.1 General Observations

The Monitoring Officer noted that at the time of the 2013 site visit, the Jericho site was unmanned, generally free of debris, and that building doors were unlocked and in some cases open.

3.2 Project Certificate terms and conditions

Due to the Jericho site being unmanned at the time of the 2013 site visit, and given that the Board had received no correspondence from Shear since December 19, 2011 or communication since September 4, 2012, the following discussion of terms and conditions within the Jericho Project Certificate are considered only as could be verified by direct observation.

3.2.1 Atmospheric Monitoring

Condition 5 of the Jericho Project Certificate states:

“The installation of an atmospheric monitoring station to be funded and installed by Tahera, to obtain site-specific meteorological data. This station shall meet the requirements of Environment Canada air quality experts and focus if possible on dust from roads and blasting, and windblown dust from stockpiles.”

As the site was unmanned and not powered at the time of the 2013 site visit, the NIRB Monitoring Officer could not verify if the meteorological station was functioning. Dustfall stations remained in the same locations as previously observed around the site, through it is unclear if they are being monitored.

Photo 1: Dust fall monitoring station at west dam, on side opposite road, looking toward cell B/C



3.2.2 Noise Monitoring and Mitigation

Condition 8 of the Jericho Project Certificate states:

“For noise abatement, Tahera shall employ industry best practices to protect people and wildlife from mine activity noise, including vehicles and aircraft. The final noise abatement plan shall be filed with NIRB’s Monitoring Agent. Industry requirements for low-level flying should be maintained.”

As the site remained in temporary closure and was unmanned during the 2012-2013 reporting period, the Monitoring Officer has no details pertaining to vehicle and aircraft traffic to and around the site. No vehicular movements transpired on site during the 2013 visit except for the inspection/site-visit commissioned chartered aircraft.

3.2.3 Wildlife Monitoring and Mitigation

Conditions 3 and 9-18 of the Jericho Project Certificate outline requirements for consideration at site and monitoring with regards to wildlife and birds. During the 2013 site visit the NIRB Monitoring Officer did not observe monitoring activities taking place, and has not received any monitoring data during the 2012-2013 reporting period.

Condition 15 of the Jericho Project Certificate states:

“For the greater protection of wildlife, wildlife must have the right of way, and this principle must be strictly enforced. This means all activity including construction, drilling, blasting, and traffic movements, be stopped in the presence of susceptible raptors, ungulates, and carnivores.”

Personnel associated with the 2013 site visit agreed by verbal consensus that wildlife be given the right-of-way if encountered, but aside from observing and noting wildlife scat, there was no direct observation of wildlife at the site.

3.2.4 Blasting Activities and Impacts Mitigation

Conditions 9 and 26-28 of the Jericho Project Certificate outline requirements for activities relating to blasting and to the use and storage of explosives at site. During 2012, Shear maintained the site in care and maintenance and noted no plans to begin blasting activities on site. In the temporary shutdown notice provided by Shear, there was no indication that blasting would occur at site, and the Monitoring Officer noted no evidence of blasting activities during the 2013 site visit.

3.2.5 Winter/Seasonal Roads

Conditions 32 and 33 of the Jericho Project Certificate outline requirements in relation to winter roads and materials movement. Previously, Shear indicated that it had no plans to construct any winter or ice roads. The NIRB has received no further clarification on this since the site moved into temporary closure.

3.2.6 Fuel Storage

Condition 34 of the Jericho Project Certificate states:

“All fuel storage areas shall be bermed and meet regulatory requirements.”

The main fuel tank farm was enclosed in a completed berm as well as some of the caches of barreled fuel (see **Photo 2**), but other caches like the barrels at the airstrip (see **Photo 3**) were not. The berms that were incomplete as a result of upgrades taking place during the NIRB 2012 site visit were re-established and observed to be completely enclosing the bulk fuel storage areas during the NIRB 2013 site visit.



Photo 2: Barreled fuel found in cache by helipad and spill kits



Photo 3: Fuel stores at airstrip

Areas previously suspected of fuel contamination during the 2009, 2011, and 2012 NIRB site visits remained within bermed areas; however, the bermed areas also contained puddles of sitting water (see **Photo 4**) as well as groups of open drums filled with mixed wastes (see **Photo 5**).



Photo 4: Melt water puddle in bermed area of main fuel tank farm



Photo 5: Barrels of waste material found within bermed area of main fuel tank farm



Photo 6: Hydrocarbon sheen on puddle within berm of Main Fuel Tank Farm



Photo 7: Soil staining within berm of Main Fuel Tank Farm



Photo 8: Meltwater in Main Fuel Tank Farm



Photo 9: Main Fuel Tank Farm

Areas affected by fuel spills at the main fuel tank farm and waste storage areas which had been noted during previous site visits remained untreated during the 2013 site visit.

3.2.7 Processed Kimberlite Containment Area



Photo 10: Processed Kimberlite Containment Area panorama

At the time of the 2013 site visit, any steps that Shear had previously undertaken to monitor or contain the fine processed kimberlite in the PKCA ceased (see **Photo 10**). The NIRB Monitoring Officer also observed that the surface of the PKCA was dry and in certain places, developing cracks (see **Photo 11**). The dust fall monitoring stations previously installed around the PKCA were still present (see **Photo 1**), but due to the site's temporary closure, it was unclear whether these stations would continue to be maintained and monitored.



Photo 11: PKCA after spring freshet, top dry, slumping, and developing cracks

Condition 31 of the Jericho Project Certificate states:

“Further detailed study by Tahera to ensure that water quality exiting the PKCA meets receiving water standards, including further study on the option of a divider/barrier or dyke in the PKCA to improve water quality. This information is to be provided to NIRB’s Monitoring Agent, DFO, NWB and EC.”

As evident in the photos of cell A of the PKCA, the majority of the surface of this area appeared to be dry, and therefore no short term need for water discharge from this cell (see **Photo 11**).

Condition 38 of the Jericho Project Certificate states:

“That Spray Irrigation, it if is incorporated as a project component in the future, is referred back to NIRB with further design detail to be dealt with under NLCA Article 12.4.3”

No use of spray irrigation was apparent during the 2013 site visit, and cracks appeared to be forming on the surface of the PKCA which looked to be dry.

3.2.8 Water Quality and Aquatic Monitoring

Conditions 4, 6, 20, 29 and 30 of the Jericho Project Certificate require the Proponent to establish and participate in a water quality monitoring program. As the site remained unmanned by Shear at the time of the 2013 site visit, the NIRB has no additional information in relation to ongoing water quality monitoring at the Jericho site.

3.2.9 Water Diversion and Impacts to Fish Populations

Conditions 7, 19, and 21-25 of the Jericho Project Certificate outline requirements of the Proponent in relation to site water management and recommendations for reducing impacts to

fish populations in areas surrounding project activities. During the 2013 site visit, the water level of cell B/C was observed to be at or above levels observed during previous site visits (see **Photo 13**) as evidenced by the amount of surface vegetation under water.

Due to the discontinuance of water discharge by Shear, the discharge area and outflow diffuser could be more thoroughly inspected (see **Photo 14** and **Photo 15**). The outflow diffuser consisted of a plate welded to the end of the hose on the metal fitting. Some evidence of surface erosion was present around the discharge area, but due to regrowth of vegetation in the area, the erosion was most likely not caused by discharge that occurred during the last growing season.



Photo 12: View of cell B/C from west dam



Photo 13: Cell B/C showing flooded vegetation



Photo 14: Discharge area from cell B/C



Photo 15: Outflow diffuser and impact area

3.2.10 Waste Management

Condition 35 of the Jericho Project Certificate states:

“Waste management must be controlled in such a way that reduces or eliminates the attraction to carnivores or raptors. Fencing and other suitable deterrents shall be employed in all landfills and waste storage areas. A final waste management plan shall be filed with regulatory authorities including the NWB and NIRB’s Monitoring Agent.”

Condition 40 of the Jericho Project Certificate states:

“Tahera shall enter into written arrangements with its contractors to ensure all site debris is cleaned up off the lands including wind-blown debris.”

During the 2013 site visit it was noted that the incinerator seacan remained closed and locked (see **Photo 17**). Waste materials such as food items as well as wood, plastic, and metal debris were found in open-top, uncovered metal waste bins located by the machine shop and office buildings (see **Photo 18**).



Photo 16: Incinerator seacan (2012)




Photo 17: Incinerator seacan area



Photo 18: Waste bins at main camp

4. Findings and Summary

The Jericho Project Certificate contains terms and conditions which require that Shear meet specific requirements for ongoing site operation and maintenance. At the time of the NIRB's 2013 site visit, the Jericho Mine Site was unmanned and the NIRB had not received any notice that Shear had conducted the activities proposed in the Temporary Shut Down Plan. The NIRB Monitoring Officer observed that the site remained in a similar condition to that witnessed during the previous site visit, but did not conduct inspections inside of the buildings owing to health and safety concerns. The Proponent remains non-compliant to Condition 35 which requires the Proponent install fencing or other suitable deterrent around all landfill and waste storage areas. Bulk fuel storage tanks were observed to be within completed berms; however while some caches of barreled fuel were found within secondary containment, others were not. The NIRB Monitoring Officer observed no evidence of monitoring activities being undertaken by the Proponent at the Jericho site during the 2013 visit.

Prepared by: Tara Arko
Title: Technical Advisor/Monitoring Officer
Date: October 21, 2013
Signature: 

Reviewed by: Amanda Hanson
Title: Director, Technical Services
Date: October 21, 2013
Signature: 