

October
2020

Report Title: The 2020 Site Update Report for the Nunavut Impact Review Board's Monitoring of the Jericho Diamond Mine Project

Project: Jericho Diamond Mine

Project Location: Kitikmeot Region, Nunavut

Land Tenure: Inuit Owned and Crown Land

NIRB File No.: 00MN059
Jericho Diamond Mine Project Certificate No. 002

Project Owner: Shear Diamonds (Nunavut) Corp.

Report Written By: Keith Morrison, Manager – Impact Assessment

Contact: Keith Morrison, Manager – Impact Assessment
(867) 983-4617 or kmorrison@nirb.ca

Photos Date: August 31-September 2, 2020

Previous site visit: June 19, 2019

Photos by: M. Yeltman, Crown-Indigenous Relations and Northern Affairs Canada

Cover photo: View of the Jericho Diamond Mine Project processing plant.

TABLE OF CONTENTS

1. Introduction	4
2. Project Description and Ownership	4
2.1 Project History.....	4
2.2 Jericho Diamond Mine Site Stabilization Project Overview	5
3. 2020 Site Update	6
3.1 Summary of Photo Observations.....	6
3.1.1 Processed Kimberlite Containment Area	7
3.1.2 Jericho Pit	9
3.1.3 Carat Lake Jetty Pumphouse	10
4. Public Information Session.....	10
5. Recommendations and Direction.....	11
APPENDIX A: NIRB PUBLIC INFORMATION MEETING	13

LIST OF FIGURES

Figure 1: General Site Plan Map.....	6
--------------------------------------	---

LIST OF PHOTOS

<i>Photo 1: PKCA Water Ponding and Erosion</i>	<i>7</i>
<i>Photo 2: PKCA Sinkholes/Pothole.....</i>	<i>8</i>
<i>Photo 3: PKCA Sinkhole.....</i>	<i>8</i>
<i>Photo 4: PKCA Erosion.....</i>	<i>8</i>
<i>Photo 6: September 2020.....</i>	<i>9</i>
<i>Photo 5: June 2019</i>	<i>9</i>
<i>Photo 8: Damage to Pumphouse</i>	<i>10</i>
<i>Photo 7: Carat Lake Jetty.....</i>	<i>10</i>

1. Introduction

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and is responsible for post environmental assessment monitoring of projects in accordance with Part 7 of Article 12 of the *Nunavut Agreement*.

The NIRB Monitoring Officer was unable to conduct a site visit in 2020 due to operational constraints and restrictions caused by the COVID-19 pandemic and therefore was unable to visually inspect activities occurring related to the project and assess compliance to the requirements of the Jericho Project Certificate. Therefore, to ensure parties are kept up to date at site, the NIRB has developed a Site Update Report based on discussions, updates, and photos provided by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). This update will form a part of the NIRB's monitoring program.

2. Project Description and Ownership

The Jericho Diamond Mine Project is a diamond mine situated in the 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 (PKCA) and stockpiles,
- camp and support buildings to house approximately 200 persons,
- explosives storage and emulsion plant,
- decommissioned fuel tank farm,
- airstrip, and
- roads connecting site infrastructure.

2.1 Project History

On July 14, 2004, pursuant to Section 12.5.12, Article 12 of the Nunavut Agreement, the NIRB issued the Jericho Diamond Mine Project Certificate No. 002 (Project Certificate No. 002) to Tahera Corporation Limited (Tahera) following the environmental assessment of the Jericho Diamond Mine Project (Jericho Project or the Project). In 2008 after commencing construction, Tahera filed for creditor protection and the mine was managed by Indian and Northern Affairs Canada and placed in temporary closure until the site was purchased. Shear Diamonds (Nunavut) Corp. (Shear) purchased of the Jericho Diamond Mine in August 2010 and on August 23, 2011 the NIRB issued Amendment #2 to the Project Certificate No. 002 in the name of Shear Diamonds (Nunavut) Corp.

On January 22, 2014 the then Minister of Aboriginal Affairs and Northern Development declared the Jericho Diamond Mine Site abandoned by Shear and assumed control of the site as per the Nunavut Waters and Nunavut Surface Rights Tribunal Act and the Territorial Land Use Regulations. The Jericho Mine site remains in temporary closure under the management of CIRNAC who conducted remediation and stabilization activities at the site in 2017 and 2018 under NIRB File No. 16UN058.

The Project is currently under surveillance and monitoring by CIRNAC in accordance with their Operation, Maintenance and Surveillance plan (OMS). The plan involves three (3) years of monitoring the effectiveness of the site stabilization work. Further OMS will be defined by the results of the initial three (3) year program. It should be noted that even though the site has been abandoned the Jericho Project still remains subject to the conditions of Project Certificate No. 002 assigned to Shear.

For further information on the site history, please see the 2019 – 2020 Annual Monitoring Report for the Jericho Diamond Mine Project¹. All documentation regarding the Jericho project is available on the NIRB's public registry at www.nirb.ca/project/123035.

2.2 Jericho Diamond Mine Site Stabilization Project Overview

The project proposed remediation and stabilization works at the Jericho Diamond Mine site with the goal of restoring the abandoned site to an environmentally safe condition, stabilizing the area to prevent water accumulation, and preventing the environmental migration of contaminants into surrounding ecosystems. Stabilization activities were carried out in the summer of 2017 and completed in the summer of 2018. The Project is under surveillance and monitored by CIRNAC in accordance with the Operation, Maintenance and Surveillance plan (OMS), with 2018 being the first year of monitoring. The current plan involves three (3) years of monitoring the effectiveness of the site stabilization work. Further OMS will be defined by the results of the initial three (3) year program.

¹ NIRB File no: 00MN059

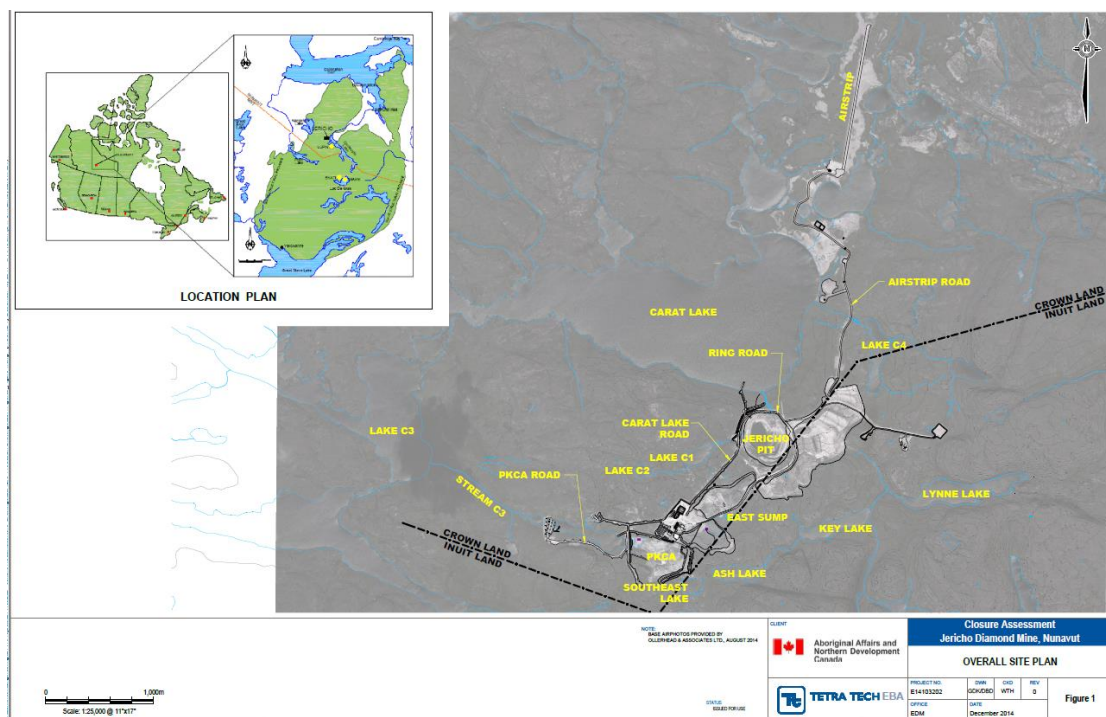


Figure 1: General Site Plan Map

3. 2020 Site Update

As previously stated, the NIRB Monitoring Officer was unable to conduct a site visit in 2020 due to operational constraints and restrictions caused by the COVID-19 pandemic and therefore was unable to visually inspect activities occurring related to the Project and assess compliance to the requirements of the Jericho Project Certificate.

CIRNAC Personnel visited the site for an annual inspection and monitoring as part of the OMS Plan between August 31 and September 2, 2020. At the NIRB's request, CIRNAC personnel provided images of the project area and activities based on a list provided by the NIRB.

NIRB's evaluation of the site and recommendation is based on these images. Due to the late arrival of the images, in-depth analysis is not possible.

3.1 Summary of Photo Observations

Images provided by CIRNAC in 2020 indicate no significant difference in the site from

observations made in 2019 and reported in the 2019 NIRB site visit report².

3.1.1 Processed Kimberlite Containment Area

The Processed Kimberlite Containment Area (PKCA) was capped with course tailings in 2017 to prevent erosion; however, during the 2019 site visit it was observed that there are some surface melt erosion channels, potholes, and a large ponded area before Divider Dyke A. Imagery from 2020 shows continuing erosion of the PKCA, sinkholes/potholes indicating subsurface erosion, and ponding of water at the foot of the PKCA near Cell A. (Photo 1, Photo 2, Photo 3, Photo 4).



Photo 1: PKCA Water Ponding and Erosion

² NIRB File No. 327006



Photo 3: PKCA Sinkhole



Photo 2: PKCA Sinkholes/Pothole



Photo 4: PKCA Erosion

3.1.2 Jericho Pit

The water level in the Jericho pit continues to rise. Photos 5 and 6 demonstrate the water level rise in the pit between June 2019 and September 2020.

Photo 6: June 2019



Photo 5: September 2020



3.1.3 Carat Lake Jetty Pumphouse

Photos taken by CIRNAC show damage caused to the pumphouse on the Carat Lake Jetty and displacement of rocks used to prevent erosion of the jetty. (Photo 7, Photo 8)



Photo 8: Carat Lake Jetty



Photo 7: Damage to Pumphouse

It is unknown when this damage occurred, but presumably was due to pressure caused by ice buildup.

As previously noted, due to the restrictions caused by COVID-19, NIRB staff were unable to make a site visit and CIRNAC monitoring staff arrived late in the season, thus observations and data available to assess the site at this time are limited.

4. Public Information Session

Pursuant to the *Nunavut Agreement* and the Jericho Diamond Mine Project Certificate No. 002; the NIRB monitoring responsibilities include providing periodic updates regarding its Monitoring Program for the communities most affected by the Jericho Mine Project. To further ensure ongoing awareness of Project-specific terms and conditions, and encourage effective participation throughout the Board's monitoring process, the NIRB scheduled a community information session in Cambridge Bay on August 20, 2020 in conjunction with the update for the Doris North Gold

Mine Project (05MN047), Phase 2 Hope Bay Belt (12MN001), and the Back River Project (12MN036).

For a summary of the NIRB's Public information session and questions that were asked, please refer to [Appendix II](#). These comments help the Board identify items that need to be addressed or considered throughout the NIRB's monitoring program for the Jericho Diamond Mine Project.

5. Recommendations and Direction

The Jericho Project Certificate No. 002 terms and conditions require the Proponent to meet operational and maintenance requirements; however, due to the absence of Shear staff at site since the last site visit, the majority of these requirements still have not been met. Additionally, the CIRNAC staff reported no evidence of monitoring activities being undertaken by the Proponent at the Jericho site during the 2020 visit. As such, the Proponent remains in non-compliance with the terms and conditions, consistent with findings from past site visits.

Based on communications from CIRNAC staff, the 2019 site visit, and imagery from 2020, the "Jericho Mine Site Stabilization Project" (NIRB File No. 16UN058) appears to have now been completed by CIRNAC. The project was designed to stabilize the site which has now been abandoned by Shear and is under official custodial stewardship of CIRNAC. A three (3) year Operation, Maintenance and Surveillance (OMS) Plan has been developed that includes:

- A list of residual risks following stabilization of the site;
- No planned operational activities;
- No planned preventative maintenance; however, reactive-based maintenance if stabilization components fail their specific design intent;
- Surveillance activities focused on mitigating the residual risks;
 - In general, to have the site remain in physical and environmentally stable condition, and
- Outline of OMS parameters and triggers, for actions and closure.³

The first year of surveillance and monitoring was in 2018 and visual inspections of stability of the physical features was conducted. There was some notable erosion at some features and it was recommended in the Jericho Mine Site – Operation, Maintenance and Surveillance Program 2018 Report prepared for Public Services and Procurement Canada that continued surveillance and monitoring for years two (2) and three (3), with no further actions. The final outcome of the stabilization works, their effectiveness, and long-term maintenance and monitoring requirements are not known at this time. Further OMS will be determined after the initial three (3) year program.

The Monitoring Officer is encouraged by additional monitoring with cameras at the PKCA and the Open Pit to observe if the stabilization of these features is functioning as designed and looks

³ Public Registry ID:325374

forward to future updates. CIRNAC has noted that in response to concerns raised and a recommendation issued by the NIRB regarding water testing that it has expanded the water testing and monitoring program.

The Monitoring Officer also notes that there continues to be no monitoring of the waste rock piles which are on Inuit Owned Land. Seepage from waste rock piles into the receiving environment could possibly be a concern if left unmonitored.

Prepared by: Keith Morrison
Title: Manager – Impact Assessment
Date: October 5, 2020

Reviewed by: Kelli Gillard, PAg CTAJ
Title: Manager, Project Monitoring
Date: October 5, 2020

Signature:



Signature:



APPENDIX A: NIRB PUBLIC INFORMATION MEETING

To further ensure ongoing awareness of Project-specific terms and conditions, and encourage effective participation throughout the Board's monitoring process, the NIRB scheduled a community information session for TMAC's Doris North Gold Mine Project (05MN047) and Phase 2 Hope Bay Belt Project (12MN001), Sabina's Back River Project (12MN036) and an update on the Jericho Diamond Mine (00MN059) site stabilization and remediation activities. The sessions consisted of an afternoon open house (2:00-4:00pm) and an evening update meeting (7:00pm-9:00pm) at the Luke Noviligak Community Hall in Cambridge Bay on August 20, 2020 and were open to all members of the public, subject to COVID-19 limits on the number of people gathered.

All in attendance, including government, industry representatives and media, were asked to sign in and identify the community or organization they represented. The afternoon session had no attendance and the evening session three (3) people. The NIRB Staff in attendance included Keith Morrison, Technical Advisor II/Monitoring Officer for Doris North, Phase 2 Hope Bay, Back River, and Jericho; Karen Costello, Executive Director; Kelli Gillard, Manager Project Monitoring; Emily Koide, Technical Advisor; and Francis Emingak, Jr. Technical Advisor.



The NIRB Monitoring Officer made a PowerPoint presentation covering each Project and providing a general update of the NIRB's Monitoring Process, with a focus on update on the project, including an overview of project activities and key components, and issues identified through the project specific monitoring programs. The presentation also outlined the ways in which the public can participate in the Board's monitoring process. The public was encouraged to comment and ask questions relating to the NIRB's process, activities undertaken, project effects, and any concerns related to the Project. Both written and verbal comments were accepted and verbal comments were recorded by NIRB staff members.

■ 1.1 Meeting Materials

At the public meeting, the following materials were provided by the NIRB:

- The NIRB's PowerPoint presentation (in English and Inuinnaqtun)
- Comment Forms (in English and Inuinnaqtun)

All document received and pertaining to this project, including copies of consultation materials, the presentation, and advertisements, can be accessed from the NIRB's online public registry at:

Doris North Gold Mine: www.nirb.ca/project/123632

Phase 2 Hope Bay: www.nirb.ca/project/124148

Back River Project: www.nirb.ca/project/124149.

Jericho Diamond Mine: www.nirb.ca/project/123035

▪ 1.2 Advertisements

The NIRB advertised the meeting through radio, poster, and online through Facebook in Cambridge Bay both in English and Inuinnaqtun in the three (3) weeks prior to the meeting.

▪ 1.3 Meeting Notes

The following sections summarize the comments and concerns that were raised both verbally and in writing at the community information sessions. The comments help the Board identify items that need to be addressed or considered throughout the NIRB's monitoring program for each.

Doris North / Hope Bay Belt

Tailings Impoundment Area:

- Is Tails Lake still full of water?
- They fished out Tails Lake?

Operations:

- Are they still working at Madrid?
- How long until they start hiring again?

Back River Gold Mine

COVID-19 Restrictions:

- Comment from Sabina rep that current restrictions on Nunavut employees are likely to continue until December.

Jericho Diamond Mine

Open Pit:

- Someone once fell and slid down the pit.