

Report Title: The 2021 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 16–August 20, 2021

Previous site visit: August–September 2, 2020

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

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

TABLE OF CONTENTS

1. Introduction	3
2. Project Description and Ownership	3
2.1 Project History.....	3
2.2 Jericho Diamond Mine Site Stabilization Project Overview	4
3. 2021 Site Update	5
3.1 Summary of Photo Observations.....	6
3.1.1 Processed Kimberlite Containment Area	6
3.1.2 Jericho Pit	8
3.1.3 Carat Lake Jetty Pumphouse	9
3.1.4 Wildlife.....	11
4. Public Information Session.....	12
5. Recommendations and Direction.....	12
APPENDIX A: NIRB PUBLIC INFORMATION MEETING	14
▪ 1.1 Meeting Materials	14
▪ 1.2 Advertisements	14

LIST OF FIGURES

Figure 1: General Site Plan Map.....	5
--------------------------------------	---

LIST OF PHOTOS

Photo 1: Subsidence in PKCA	6
Photo 2: Erosion Channel in PKCA.....	7
Photo 3: Jericho Pit August 2021.....	8
Photo 4: Water Level September 2020	8
Photo 5: Water Level August 2021.....	9
Photo 6: Pumphouse	10
Photo 7: Pumphouse Removed	10
Photo 8: Infrastructure Removed	10
Photo 9: Pumphouse New Location.....	10
Photo 10: Male Caribou	11
Photo 11: Caribou Group	11
Photo 12: Grizzly	11

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 2021 due to operational constraints and restrictions caused by the COVID-19 pandemic and therefore was unable to visually inspect activities occurring related to the Jericho Diamond Mine Project (Jericho or 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 Project. In 2008 after commencing construction, Tahera filed for creditor protection and the mine was managed by Indian and Northern Affairs Canada (INAC) and placed in temporary closure until the site was purchased. Shear Diamonds (Nunavut) Corp. (Shear) purchased 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 Canada (AANDC; formerly, INAC) 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 (formerly INAC then AANDC) 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 OMS plan is in Phase 2 (years 4 to 10). It should be noted that even though the site has been abandoned, the Jericho Project still remains subject to the Terms and Conditions of Project Certificate No. 002 assigned to Shear.

For further information on the site history, please see the NIRB's 2019 – 2020 Annual Monitoring Report for the Jericho Diamond Mine Project (Public Registry ID No.: 332033). 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 remediation and stabilization works at the Jericho Diamond Mine site, proposed by CIRNAC, had 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.

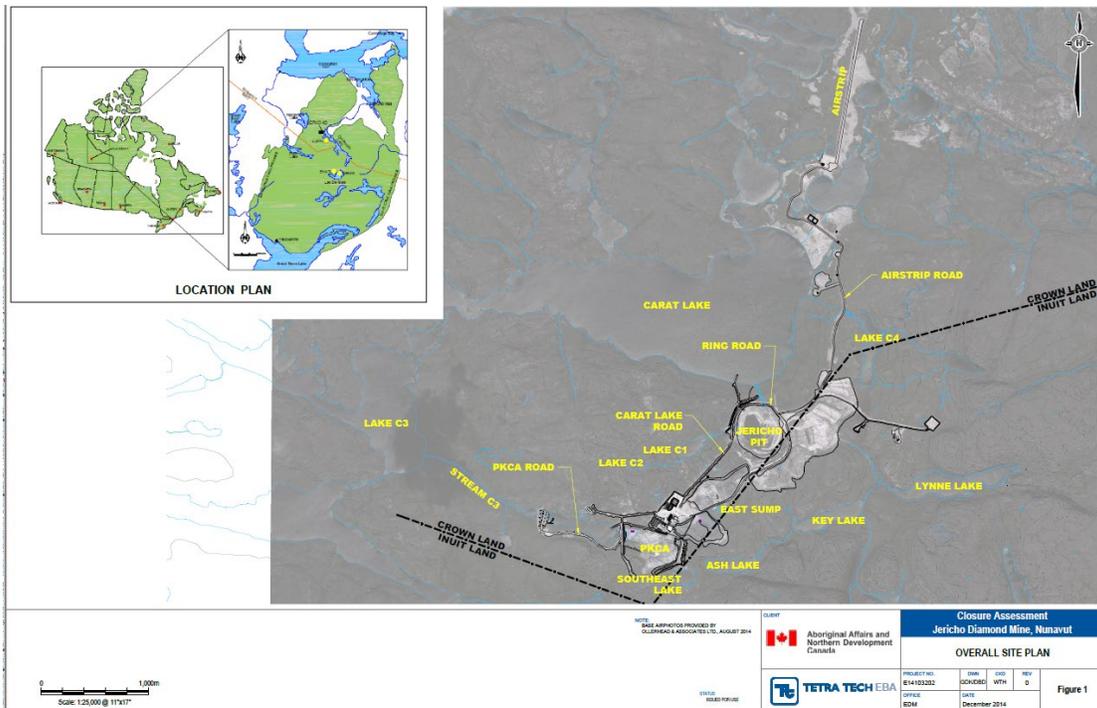


Figure 1: General Site Plan Map

3. 2021 Site Update

As previously stated, the NIRB Monitoring Officer was unable to conduct a site visit in 2021 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 16 and August 20, 2021. 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.

3.1 Summary of Photo Observations

Images provided by CIRNAC in 2021 indicate no significant difference in the site from data provided in 2020, with the following exceptions:

- a) Additional erosion and subsidence in the Processed Kimberlite Containment Area, and
- b) Removal of the Pumphouse from the jetty at Carat Lake by CIRNAC.

3.1.1 Processed Kimberlite Containment Area

The Processed Kimberlite Containment Area (PKCA) was capped with coarse 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 2021 shows continuing erosion of the PKCA, sinkholes/potholes indicating subsurface erosion, and ponding of water. (Photo 1, Photo 2)



Photo 1: Subsidence in PKCA



Photo 2: Erosion Channel in PKCA

3.1.2 Jericho Pit

The water level in the Jericho pit (photo 3) continues to rise. Photos 4 and 5 demonstrate the water level rise in the pit between September 2020 and August 2021.



Photo 3: Jericho Pit August 2021



Photo 4: Water Level September 2020



Photo 5: Water Level August 2021

3.1.3 Carat Lake Jetty Pumphouse

In 2020, damage to the pumphouse on the Carat Lake Jetty and displacement of rocks used to prevent erosion of the jetty was identified and the NIRB recommended in the 2020 Annual Monitoring Report (Public Registry ID: 332033) that the issue be dealt with to prevent further damage. During the 2021 site visit by CIRNAC, the pumphouse was removed from its previous location and pulled back to the shore, protecting it from further damage (Photos 6 to 9). Connecting piping and other infrastructure was likewise removed from the jetty.



Photo 6: Pumphouse



Photo 7: Pumphouse Removed



Photo 8: Infrastructure Removed



Photo 9: Pumphouse New Location

3.1.4 Wildlife

Images provided by CIRNAC showed a grizzly and caribou present around the site during their visit (Photos 10, 11, 12).



Photo 10: Male Caribou



Photo 11: Caribou Group



Photo 12: Grizzly

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 Diamond 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 September 14, 2021 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, please refer to [Appendix II](#).

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 2021 visit. As such, the Proponent remains in non-compliance with the terms and conditions, consistent with findings from past site visits.

The “Jericho Mine Site Stabilization Project” (NIRB File No. 16UN058) was completed by CIRNAC in 2018. The project was designed to stabilize the site which has now been abandoned by Shear and is under official custodial stewardship of CIRNAC. The three (3) year Operation, Maintenance and Surveillance Plan that has been developed 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.¹

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

¹ Public Registry ID:325374

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.

In 2021 actions carried out by CIRNAC involved the removal of the pumphouse from the jetty in Carat Lake, which satisfies the recommendation made in NIRB's 2020 Annual Monitoring Report for the Project.

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: September 23, 2021

Reviewed by: Emily Koide

Title: Acting, Manager Project Monitoring

Date: September 23, 2021

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 Project (00MN059) site stabilization and remediation activities. The sessions consisted of an afternoon open house (2:00-4:00pm) and a planned evening update meeting (7:00-9:00pm) at the Luke Noviligak Community Hall in Cambridge Bay on September 14, 2021 and were open to all members of the public, subject to COVID-19 limits on the number of people gathered.

The Nunavut Water Board had three staff attend to be available to the public.

The afternoon session had no attendance. The evening session had no attendance and was cancelled shortly after 7:00 pm due to circumstances regarding a memorial event taking place in Cambridge Bay.

▪ 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 online through Facebook in Cambridge Bay both in English and Inuinnaqtun in the week prior to the meeting.