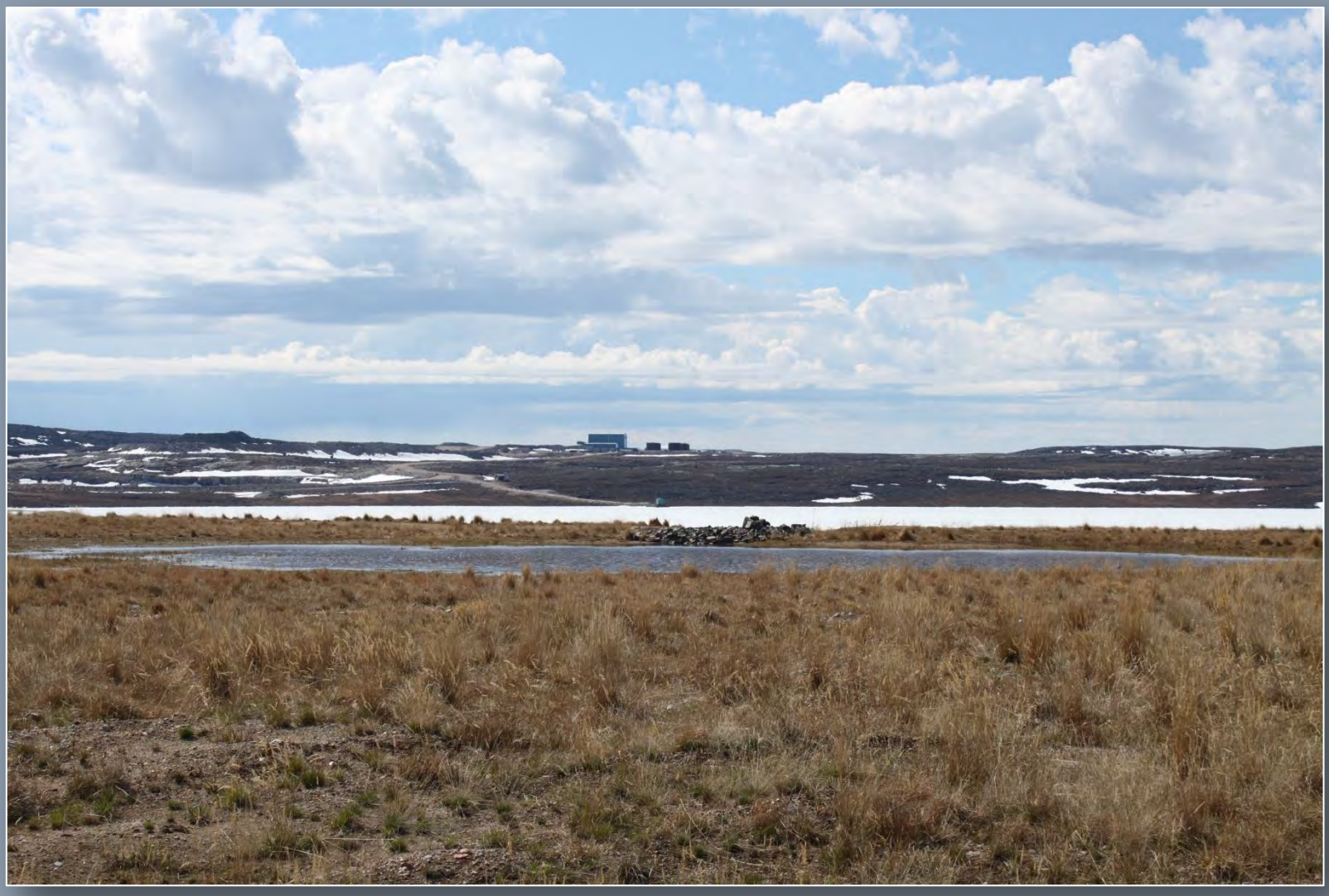
2014-2015 Annual Monitoring Report

for the Jericho Diamond Mine Project



Nunavut Impact Review Board
File No. 00MN059
October 2015

Report Title:	The Nunavut Impact Review Board's 2014 – 2015 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.
Monitoring Officer:	Heather Rasmussen, M.Env-EIA
Monitoring Period:	October 2014 – September 2015
Date Issued:	October 2015
Photos by:	Heather Rasmussen, Nunavut Impact Review Board
Cover photo:	View of the Jericho Mine Site from the Hazardous Waste Storage Area.

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1.0 INTRODUCTION

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the Nunavut Land Claims Agreement (NLCA) and is responsible for post environmental assessment monitoring of projects in accordance with Article 12, Part 7 of the NLCA.

Pursuant to Section 12.7.1 of the NLCA, the establishment of a project specific monitoring program may be outlined by the terms and conditions contained in a NIRB 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.*

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 2014-2015 reporting period as well as to 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 the Proponent regarding Project-specific monitoring.

1.1. Project History and Current Status

On July 14, 2004, pursuant to Section 12.5.12, Article 12 of the NLCA, 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 or the Project). In December 2004 Tahera requested that the Project Certificate be reissued to reflect updated project ownership, and on January 19, 2005 the NIRB issued Amendment #1 of the Project Certificate [No. 002] in the name of Benachee Resources Inc., a wholly owned subsidiary of Tahera. Construction of the mine commenced in March 2005 and operations began in July 2006.

On October 3, 2007 the NIRB issued Appendix D to the Jericho Project, which sets out the responsibilities of the Proponent in carrying out project-specific monitoring, as well as responsibilities of relevant territorial and federal agencies to coordinate with the Proponent and to provide compliance reporting to the NIRB. The NIRB developed its monitoring program for the Project in accordance with Section 12.7.1 of the NLCA.

Tahera filed for creditor protection in January 2008, citing insufficient funds to operate, and the Jericho Mine site was subsequently placed into care and maintenance. Pursuant to Section 89 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act,* Indian and Northern Affairs Canada (INAC, now Aboriginal Affairs and Northern Development Canada or AANDC) intervened 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) completed the purchase of the Jericho Diamond Mine in August 2010 and subsequently requested that the NIRB reassign the Project Certificate to reflect the new ownership. On August 23, 2011 the NIRB issued Amendment #2 to the Project Certificate [No. 002] in the name of Shear Diamonds (Nunavut) Corp. The site remained in care and maintenance until October 2012 when details were made available on the Nunavut Water Board's (NWB) public registry that indicated that, due to financial constraints, the site had been placed into temporary shut down and that all personnel had been moved off site. Shear provided a temporary closure plan and notice that the required environmental monitoring would be suspended.

The NWB issued a renewed Type A Water Licence to Shear for the Jericho Mine site on December 21, 2011. Within the NWB's Reasons for Decision issued to the Minister of Aboriginal Affairs and Northern Development, Shear was required to provide securities totalling $3,389,074 to AANDC to be held in trust.[1] A Compliance Plan for the Jericho site was posted on the NWB's pubic registry site at the end of 2012 which noted that it was not in a financial position to provide the outstanding securities amount of $321,074.[2] On December 19, 2013 AANDC provided additional detail on the status of the securities, indicating that:

> the Department currently has $6,618,556 in cash-equivalent and $1,701,858 in debentured security under the Crown land lease and type A water license for the Jericho mine site. The work done on-site by the Department from June to October

[1] Nunavut Water Board, *Reasons for Decision Including Record of Proceedings in the Matter of Shear Diamonds (Nunavut) Corp. Renewal Application for Type "A" Water Licence.* December 21, 2011.
[2] Author unknown, 2AM-JER1119 Compliance Plan. September 30, 2012.

2013 to manage water levels and ensure tailings management is maintained has cost approximately $232,000.[3]

On March 8, 2013 AANDC issued notice to Shear that due to its continual failure to manage specific environmental issues on-site, AANDC's Contaminated Sites Program would be conducting periodic work at the Jericho Mine site to manage the specific issues identified. On January 22, 2014 AANDC released correspondence indicating that the site was declared abandoned by Shear and that the Minister had the authority to "take any reasonable measures to prevent, counteract, mitigate or remedy any resulting adverse effects on persons, property or the environment" regarding the Jericho mine site, with specific direction that the decision does not terminate any of Shear's existing obligations under the legislation or regulatory instruments.[4]

AANDC subsequently assumed control of the site, which enabled it to draw upon security bonding to facilitate continued site care and maintenance and potential future remediation as may be required. In October 2014 the Nunavut Court of Justice transferred the Jericho mining leases and person property located on Crown lands to the Crown. While the Jericho Mine site is currently in temporary closure under the management of AANDC since being declared abandoned in 2014, the Jericho Project remains subject to conditions of the Project Certificate [No. 002], previously assigned to Shear.

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

Table 1: Process History for the NIRB's Monitoring of the Jericho Diamond Mine

Date		Activity Undertaken
2004	July	The NIRB issued Project Certificate [002] to Tahera Corporation Limited.
2005	January	The NIRB issued Amendment #1 of the Project Certificate [002] to Benachee Resources Incorporated, a wholly owned subsidiary of Tahera Diamond Corporation, to reflect updated project ownership. Mine construction commenced.
2006	July	Jericho diamond mine became operational.
2007	October	The NIRB issued its Monitoring Program, Appendix D of Project Certificate [002].
2008	January	Tahera filed for creditor protection citing insufficient funds to

[3] Dated December 19, 2013. Correspondence from I. Gray, Regional Director General, Nunavut Region, Aboriginal Affairs and Northern Development Canada Letter to R. Barry, Executive Director, NIRB, *Re: Request for clarification regarding ongoing responsibilities for the Jericho Diamond Mine Site.* January 9, 2014.

[4] Correspondence from I. Gray, Regional Director General, Nunavut Region, Aboriginal Affairs and Northern Development Canada, to Manuel Rappaport and Thomas Pladsen, Director and Chief Restructuring Officer, Shear, Re: *Status of the Jericho Diamond Mine.* January 22, 2014.

		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 Project Certificate [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: procedures completed for site shutdown; potential risks at site; a site visit schedule to address the risks; and notice that ongoing monitoring would be discontinued.
2012	December	The NIRB issued its recommendations to Shear regarding the 2012 monitoring commitments and compliance to the Project Certificate [002].
2013	November	The NIRB issued its recommendations to Shear regarding the 2013 monitoring commitments and compliance to the Project Certificate [002].
2013	December	Shear's Chief Restructuring Officer provided notification of its plans regarding refinancing of the project with the goal of re-opening the Jericho Mine Shear's.
2014	January	The Minister of Aboriginal Affairs and Northern Development declared the site abandoned.
2014	April	The NIRB received notice of Shear's Chief Restructuring Officer's resignation.
2014	June	The NIRB conducted its 2014 site visit.
2014	November	The NIRB issued its recommendations to Shear and AANDC regarding the 2013 monitoring commitments and compliance to the Project Certificate [002].
2014	November	The NIRB received notification of resignation by the last remaining Shear Director.
2015	January	AANDC submitted information and site inspection reports regarding water monitoring and sampling, water releases on-site, and mitigation measures to manage previously identified risks.
2015	June	The NIRB requested updates from agencies regarding compliance to the Project Certificate [002].
2015	June	The NIRB conducted its 2015 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 (PKCA) and stockpiles, as well as a camp and support buildings to house approximately 200 persons, fuel tank farm with capacity for 13 million litres of fuel, an airstrip, and roads connecting site infrastructure. The mine is located on Crown land, with access and other infrastructure, particularly the explosives storage and emulsion plant, situated on Inuit Owned Land.

2.0 MONITORING ACTIVITIES

2.1. Reporting Requirements

In Shear's June 3, 2011 request that the Project Certificate [No. 002] be re-issued in its name it had made numerous commitments to ensure monitoring and reporting compliance, including the submission of reports for the 2011 reporting year, would be undertaken. Appendix D of the Jericho Project Certificate prescribes the reports which the Proponent is required to submit to the NIRB, specifically quarterly reports, an annual report, and updated management plans as required. The 2013 and 2014 Board Recommendation 4, for the 2012-2103 and 2013-2014 reporting years, respectively, required Shear to provide a discussion on its reporting intentions while the site continued in care and maintenance.

AANDC noted in correspondence received by the NIRB on July 2, 2013 that the scope of its management of the Jericho Mine site would encompass the management of several specific risks, including: site water during freshet; tailings; and fuel and hazardous waste.[5] On November 12, 2014 the Board issued correspondence to AANDC requesting that it provide an update to the NIRB on water management and sampling practices, including releases of treated site contact water, and an update of activities undertaken to manage the risks identified at the Jericho site (please see Section 2.5 Responses to the NIRB's 2014 Recommendations for additional information).

2.1.1. Proponent Annual Report as per Project Certificate Appendix D

Appendix D of the Project Certificate [No. 002] was developed in accordance with the July 2004 Project Certificate to provide direction to the Proponent, the NIRB's Monitoring Officer, and government departments regarding the monitoring program as

[5] Dated June 7, 2013. Correspondence from E. Paul, Water Resources Officer, Aboriginal Affairs and Northern Development Canada to P. Beaulieu, Manager of Licensing, Nunavut Water Board, Re: *Jericho Mine (2AM-JER1119)*. July 2, 2013.

established pursuant to Section 12.7 of the NLCA. Appendix D of the Jericho Project Certificate requires the Proponent to develop a comprehensive post-environmental assessment monitoring program (PEAMP) and submit an annual report to the NIRB by April 30th of each year the project is in operation until the post-closure phase. As outlined in Appendix D, the annual report must provide details of the Proponent's efforts to comply with the Project Certificate [No. 002]. The annual report must include, at a minimum, a discussion of the results of the PEAMP based on all relevant data collection, analysis of various topics related to the ecosystemic and socio-economic environment, and a discussion of the effectiveness of mitigation measures and recommendations for adaptive management. Furthermore, the Proponent is required to provide a status update of compliance with all authorizations and applicable regulations and guidelines associated with the project.

Appendix D of the Project Certificate [002] further requires the Proponent to submit quarterly reports to the NIRB, due at the end of October, January, April, and July of each year, commencing October 31, 2007, to document current and planned infrastructure development at the site.

After its acquisition of the Jericho Mine site in 2010, Shear committed to submitting the required reports to the NIRB on numerous occasions: during the initial acquisition of the Project and request by Shear that the NIRB reassign the Project Certificate [002];[6] through the renewal process for the Type A Nunavut Water Board water licence;[7] and in person during the NIRB's 2012 Site visit.[8] The last annual report for the Jericho Project was submitted to the NIRB by Tahera on May 16, 2008 for the 2007 reporting year and the last quarterly report submitted to the NIRB was provided by Tahera on January 24, 2008 outlining construction activities taken during the fourth quarter in 2007. To date the NIRB has not received annual or quarterly reports, or supporting information, from Shear as required by Appendix D.

2.2. Wildlife Monitoring

Conditions 3, and 9 through 18, of the Project Certificate [002] outline operational and monitoring requirements with regards to wildlife and birds. The Wildlife Mitigation and Monitoring Plan (WMMP) for the Jericho Project, prepared by Tahera, details the Proponent's proposed methods for conducting wildlife monitoring activities, describes options to mitigate potential impacts to wildlife, and provides direction to site staff. On

[6] Correspondence from P. Strand, President, Shear, to Sophia Granchinho, NIRB Technical Advisor, Re: *Request to assign the Jericho Diamond Mine Project Certificate (No. 002) to Shear Diamonds (Nunavut) Corp.* June 3, 2011.

[7] Dated June 9, 2011. Correspondence from P. Strand, President, Shear, to P. Beaulieu, Manager of Licensing, 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.* June 13, 2011.

[8] NIRB's 2012 Site Visit Report for the Jericho Diamond Mine Project. November 2012.

May 15, 2007 Tahera submitted a fourth draft of its WMMP in accordance with Condition 10 of the Project Certificate [No. 002]. 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 Project Certificate [No. 002].

In the June 3, 2011 correspondence to the NIRB, Shear committed to implementing the measures proposed in the WMMP, which required that Shear compile and submit a Wildlife Mitigation and Monitoring Report annually as well as prepare a comprehensive analysis of the Plan every 3 years beginning in 2009. The submission further 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."[9] The NIRB has not received any of the reports from Shear, nor has it received any annual wildlife data, analyses, or discussion to meet this requirement.

2.3. Socio-Economic Monitoring

Terms and Conditions 42 through 49 of the Project Certificate [No. 002] 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. Although the KIA made recommendations for continued improvement, it noted that since the signing of the IIBA the relationship between the KIA and Tahera had been positive. In its June 3, 2011 letter to the NIRB, Shear clarified 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 Project Certificate [No. 002] requires that as a supplement to the IIBA a Socio-Economic Monitoring Committee (SEMC) be established to monitor and report on socioeconomic impacts in relation to the Jericho Project. While the NIRB received the Jericho Diamond Mine 2007 Socio-Economic Monitoring Report from the Kitikmeot Socio-Economic Monitoring Committee (identified in the report as previously being established as the Jericho Socio-Economic Monitoring Committee) on August 18, 2009, no further correspondence regarding socio-economic monitoring for the Project have been received by the NIRB.

[9] Correspondence from P. Strand, President, Shear, to S. Granchinho, NIRB Technical Advisor, Re: *Request to assign the Jericho Diamond Mine Project Certificate (No. 002) to Shear Diamonds (Nunavut) Corp.* June 3, 2011.

The Kitikmeot SEMC held the fifth, and most recent, regional Kitikmeot SEMC in Cambridge Bay, November 20-21, 2013.[10] As discussed in the NIRB's 2013-2014 Jericho Monitoring Report, Shear was not in attendance at the event and discussion of the Jericho Project was facilitated through a presentation given by AANDC. The reports and discussion provided limited information on the socio-economic impacts of the Jericho Project.

2.4. Compliance Monitoring

Through compliance monitoring, regulators and other parties assess whether a project being carried out meets the terms established through legislation, regulations, instruments, commitments and agreements applicable to project activities. Compliance monitoring is a requirement of the NIRB's Appendix D of the Project Certificate [No. 002]. On June 8, 2015 the NIRB distributed a reminder that authorizing agencies provide any compliance monitoring reports for the 2014 reporting year to the NIRB by April 30, 2015 as outlined in Appendix D of the Project Certificate [No. 002].

2.4.1. Compliance with the NIRB Project Certificate

As previously discussed, Shear has not submitted the reports as required to the NIRB nor undertaken the mitigation and monitoring activities committed to, and has therefore been non-compliant with the requirements of the Project Certificate [No. 002], including Appendix D. Although many terms and conditions of the Project Certificate [No. 002] were not applicable during the 2014-2015 reporting year, as the mine site was non-operational and no Shear staff were on-site, there remain applicable terms and conditions.

Shear is required to undertake caribou monitoring as well as collect wildlife data and submit an annual Wildlife Mitigation and Monitoring Report to the NIRB, pursuant to Conditions 3 and 10 respectively. The NIRB has not received a wildlife report or related data from Shear for the 2010, 2011, 2012, 2013, and 2014 reporting years. As discussed in the 2015 Site Visit Report (see Appendix I), Shear has not met the requirements of Condition 34 which requires that fuel storage areas be bermed, as well as Condition 35 which requires that fencing or suitable deterrents be employed at the landfills or waste storage areas on site.

2.4.2. Compliance Monitoring by Authorizing Agencies

Appendix D of the Project Certificate [No. 002] sets out expectations for authorizing agencies' collaborative monitoring for the Jericho site. Agencies with responsibilities

[10] Kitikmeot Socio-Economic Monitoring Committee Fall 2013 Report on Fifth Kitikmeot SEMC Meeting, Cambridge Bay, Nunavut: 20-21 November 2013 and Kitikmeot Socio-Economic Monitoring, Government of Nunavut Department of Economic Development & Transportation. December 2013.

related to the monitoring program are requested to provide compliance reports to the NIRB by April 30th of each year.

2.4.3. Kitikmeot Inuit Association

The Kitikmeot Inuit Association (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 for the Jericho Project. On September 10, 2014 the KIA provided an update to the NIRB which indicated that the organization views AANDC as the primary regulator for the project, and confirmed that it would be collaborating with AANDC to ensure that the portion of the project site on Inuit Owned Land is properly abandoned. The emulsion plant, explosive storage units, and ammonium nitrate storage pad are located on Inuit Owned Land. As discussed further in the 2015 Site Visit Report, (see Appendix I), representatives were present during the June 10, 2015 site visit to the Jericho Mine site, which was also attended by the NIRB's Monitoring Officer.

2.4.4. Aboriginal Affairs and Northern Development Canada

Aboriginal Affairs and Northern Development Canada (AANDC) is responsible for issuing Crown land leases for the Jericho Project 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.

As previously noted, AANDC's management of site risk would focus on: site water during freshet; tailings and tailings facility management; and fuel and hazardous waste storage and containment. On July 9, 2015 the NIRB received correspondence from AANDC that it had submitted a detailed summary of activities undertaken by AANDC for the 2014 reporting year on January 15, 2015.

On January 15, 2015 AANDC submitted information, including site inspection forms and management reports, regarding work undertaken at the Jericho Mine site during the 2013 and 2014 reporting years. The AANDC Field Operations Water Resource Officer identified multiple contraventions with the Water Licence and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* during three (3) site visits undertaken between April 22 and August 16, 2014. The AANDC inspector noted that further action would likely be required to manage some non-compliances noted.

Management of Water Levels

2013 Reporting Year

In the January 15, 2015 correspondence, AANDC noted that work onsite was focused on managing spring freshet in June, 2013, as well as reducing risks of the previously identified non-compliances at site in August and September 2013. The above correspondence, Water Management Report, and Tailings Encapsulation Report,

indicated that the focus of water level management was placed on Cell B/C and on the lined bermed facilities.

To manage water levels in Cell B/C, water was transferred over the adjacent west dam. In the Water Management Report, a 'significant rise' was noted in the water table in Cell B/C from precipitation and freshet between May 28 and September 12, 2013, totalling 0.94 m. The total water discharged from Cell B/C in June, August and September 2013 was 217,470 cubic metres and it was noted that the water level was less at the end of the September program than when measured in June.

In the January 15, 2015 correspondence and the Tailings Encapsulation Report, the following risk management activities were undertaken to reduce high water levels in the lined bermed facilities: water transference and evaporation. High water levels in the bermed areas surrounding Phase 1 of the main fuel tank farm was noted to be at risk of overflowing due to settling of the bermed wall. To mitigate the observed high water levels, water from the bermed areas was transferred into Phase 2 of the main fuel tank farm through a hose during 'warm dry weather conditions' to facilitate evaporation. Accumulated water in the lined bermed facilities was discharged into the PKCA once it met discharge criteria. Water in the bermed areas of the main fuel tank farm was treated using the on-site Oztech Unit and was transferred to the PKCA if met the discharge criteria and to Phase 2 of the main fuel tank farm if it did not.

2014 Reporting Year

In the January 15, 2015 correspondence it was noted that water levels in Cell B/C and the bermed area surrounding the main fuel tank farm were actively managed by during September 2014. In the Water Licence Inspection Form, which referenced three (3) site visits between April 22 and August 16, 2014, the AANDC Field Operations Water Resource Officer concluded that waste water levels in the PKCA remained at acceptable levels and that freshet flow was not anticipated in large volumes. The Water Resource Officer further concluded that the water levels in most of the fuel berms was unacceptable and would require active management due to water contamination, predominantly from past fuel spills within bermed areas, which would need to be treated prior to discharge.

<u>Management of Tailings Dispersal</u>

2013 Reporting Year

In the Water Management Report, personnel on site had not observed any windblown tailings during its 2013 site visits, even during periods of high winds, but also noted that there remained evidence of windblown tailings at various locations on-site. In the Tailings Encapsulation Report, detail was provided that areas of the PKCA, susceptible to wind erosion had been covered with a 6 inch layer of rock and then encapsulated over

60% of the PKCA in ice. In total, 1,250 cubic metres (m^3) of coarse rock and 95 m^3 of coarse kimberlite had been used to layer rock and to create access roads within the PKCA to facilitate watering activities; 120 m^3 of water was sourced from Carat Lake; and 650 litres of fuel was used to support these activities.

In the Water Management Report Delta further noted the placement of a silt curtain in Cell B/C during the summer of 2012, which was repositioned in 2013 with minimal ice related damage.

2014 Reporting Year
In the January 15, 2015 correspondence it was noted that activities were again undertaken from October 6-8, 2014 to encapsulate the tailings in ice and that a report would be forthcoming once completed. In the Water Licence Inspection Form, which referenced three (3) site visits between April 22 and August 16, 2014, the AANDC Field Operations Water Resource Officer concluded that although mitigation measures undertaken by personnel at site during 2013 had reduced the spread of windblown tailings from the PKCA during the winter months, 'further' measures would need to be undertaken in the future. The Water Resource Officer further noted that sediment remained visible in the southeast dam pond, deposited from the PKCA, and that the silt fences erected in 2012 had not been actively maintained.

Management of Fuel Storage
2013 Reporting Year
In the Tailings Encapsulation Report it was noted that barrels containing hydrocarbon contaminated soils found in the large fuel tank farm had been covered with a tarp to mitigate potential future spills of hydraulic fluid product. Six (6) barrels, identified to contain hazardous waste materials, were also transferred to the Hazardous Waste Treatment Area (HWTA).

2014 Reporting Year
The Water Licence Inspection Form referenced three (3) site visits between April 22 and August 16, 2014, and the AANDC Field Operations Water Resource Officer noted that although all of the barrels containing fuel and hazardous waste had been relocated to the HWTA, the waste still remained on-site and therefore the hazardous waste disposal remains unacceptable. The AANDC inspector further identified potential issues with the integrity of the liner under the HWTA.

Wildlife
In the 2013 Tailings Encapsulation Report, personnel at site noted evidence of wildlife on site through tracks (including caribou, grizzly bear, wolves, and fox) and direct observation of birds during site visits in August and September, 2013. The report further provided consideration that based on observed tracks, potentially thousands of caribou

had migrated through the area between the two site visits. A pack of wolves was directly observed by personnel at site during the October site visit, and individuals appeared healthy and undisturbed by site work.

2.4.5. Fisheries and Oceans Canada

In correspondence submitted to the NIRB on July 7, 2015 Fisheries and Oceans Canada (DFO) staff noted that it had conducted one (1) site visit on June 6, 2014 regarding the authorized Harmful Alteration, Disruption or Destruction (HADD) of fish habitat pursuant to the *Fisheries Act* Authorization, originally issued by DFO on April 15, 2005 (DFO File No. NU-00-0068). The DFO authorization bears relevance to items addressed in Terms and Conditions 4 and 19 through 24 of the Project Certificate [No. 002].

DFO provided detail regarding the status of the authorized HADD of fish habitat and required Fish Habitat Compensation measures observed during the 2014 site visit. DFO noted that based on comparison to its previous July 20, 2011 site visit, additional work related to the outstanding and authorized HADD to fish habitat had not been undertaken and that the conditions related to the construction of fish habitat compensation had not been met at the time of the site visit on June 6, 2014. DFO further stated that it had previously recommended that sediment sampling in the lakes to the south and southeast of the PKCA be conducted to determine the extent of the impacts on Southeast Dam Lake from windblown tailings.[11] DFO added that the recommended sampling had not been undertaken to date and that it had observed sediment deposition along the western shoreline of the Southeast Dam Lake.

DFO concluded that pursuant to the existing *Fisheries Act* Authorization, conditions related to the construction of fish habitat compensation, monitoring, and reporting have not been met. Furthermore, DFO noted its future intent to utilize the collected security funds to complete the remaining fish habitat compensation requirements, or to develop and implement new fish habitat compensation options at the Jericho Mine site.

2.4.6. Natural Resources Canada

In July 2005 Natural Resources Canada (NRCan) issued a licence to Dyno Nobel Nunavut Limited under Section 7 of the *Explosives Act* for the storage and manufacture of explosives at the Jericho Mine site. In correspondence received by the NIRB on May 7, 2014 NRCan provided indication that it would be discontinuing annual reporting regarding the Jericho Diamond Mine Project as there was no longer a licence associated with the site and all explosive materials have been removed from the site.

[11] In correspondence submitted to the NIRB on December 20, 2011, DFO noted its request to Shear to undertake fish sampling activities on Southeast Dam Lake, Ash Lake, Shine Lake and Key Lake to determine and evaluate aquatic impacts resulting from the migration of material from the PKCA.

2.4.7. Canadian Nuclear Safety Commission

As described in the 2015 Site Visit Report, on June 10, 2015 (see Appendix I) a Canadian Nuclear Safety Commission (CNSC) site inspector examined two nuclear gauges located within the mill at the Jericho Mine site. It was noted on-site as well as through follow-up discussions between the NIRB Monitoring Officer and the CNSC site inspector that the license for possession/storage/transfer of the gauges had expired. The CNSC site inspector further explained that the radiation levels outside of the gauges as measured during the 2015 site visit were well below radioactivity requirements. The CNSC recommended that the gauges be transported off-site, noting that the gauges themselves could be transferred, or that the radiation source could be removed, packaged and transported. Through follow-up discussion with AANDC, it was noted that as of September 8, 2015 the gauges were still located on-site and the department was considering the possibility of transporting the gauges off-site during the remainder of 2015. AANDC further stated it was looking into the licensing requirements to authorize the possession and storage of the gauges.

2.5. Responses to the NIRB's 2014 Recommendations

As a result of the NIRB's findings through its 2014 monitoring program, on November 12, 2014 the Board made the following four (4) recommendations to Shear that would assist it in reaching compliance with the Project Certificate [No. 002] and to ensure the NIRB has all information necessary to adequately discharge its mandate with respect to provisions within section 12.7 of the NLCA as such pertain to the Jericho Project:

> ***Recommendation 1****: The Board requests that Shear provide the following outstanding submissions; annual reports for 2010, 2011, 2012, and 2013; quarterly reports for 2010 through 2014; and wildlife monitoring data from 2010-2014. It is requested that this information be provided within 30 days' receipt of this correspondence.*
>
> ***Recommendation 2****: The Board requests that Shear provide a proposed plan of action to remedy the non-compliance to Condition 34 which requires secondary containment, as well as Condition 35 which requires that fencing be implemented around all landfill and waste storage areas. It is requested that this information be provided within 30 days' receipt of this correspondence.*
>
> ***Recommendation 3:*** *The Board requests that Shear, or, given the current site management regime, Aboriginal Affairs and Northern Development Canada provide an update to the NIRB on water monitoring and sampling practices as well as releases of treated site contact water, and an update of activities undertaken to manage the risks as identified at the Jericho site. It is required that this information be provided within 60 days' receipt of this correspondence.*

Recommendation 4: *The Board requests that Shear describe its plans to regain compliance with reporting requirements set out within the Jericho Project Certificate, as well as a proposed plan for reporting going forward, including rationale for the proposed plan, should the site remain in care and maintenance or temporary closure. It is required that this information be provided within 60 of days' receipt of this correspondence.*

In response to the above noted recommendations the NIRB received notification of resignation by the last remaining Shear Director with no further acknowledgment of the above noted recommendations.

On January 15, 2015 AANDC provided a response to the above board recommendation 3 wherein outlined the scope of its management of the Jericho Mine site, and provided subsequent management reports and a site inspection form regarding work undertaken at the Jericho Mine site during the 2013 and 2014 reporting years (please see Section 2.4.4 Aboriginal Affairs and Northern Development Canada). The Water Licence Inspection Form and the Water Management and Tailings Encapsulation reports clearly outline the activities undertaken to manage the three previously identified areas of risk: site water levels; tailings and tailings facility management; and fuel and hazardous waste storage and containment. The documentation included a detailed update of activities undertaken to manage risks as identified at the Jericho Mine site, however, there was a lack of clarity regarding the monitoring and sampling practices of some of the activities undertaken (please see Section 3.0 Findings).

3.0 FINDINGS

During the 2014-2015 monitoring period, the NIRB did not receive any documentation, or observe any evidence at site, that would indicate Shear had been conducting monitoring activities at the Jericho Mine site. Shear remains non-compliant to the monitoring requirements required under Appendix D of the Project Certificate [No. 002], as well as Conditions 34 and 35.

As discussed previously, information has been provided by AANDC on the status of the maintenance activities being undertaken at site.

While it was noted in the Tailings Encapsulation Report that any contaminated water in the bermed area surrounding the main fuel tanks not meeting discharging criteria was pumped back into the main fuel tank, it was unclear what percentage of the total water was not treatable by standards by the Oztec filter. The 2014 Water Licence Inspection Form further identified a need for future active management to manage contaminated

water within the bermed fuel tank farm; it was unclear whether this implied a continuation of current activities or that new management practices should be undertaken.

While the Water Licence Inspection Form stated that sediment deposited from the PKCA remained visible in the southeast dam pond, the level of total suspended solids (TSS) in the pond were not provided. This makes it difficult to determine the level of impact of sedimentation on the waterbody. Further issues with the integrity of existing silt fences were identified.

It was noted in the 2014 Water Licence Inspection Form that the hazardous waste treatment area (HWTA) contained a "growing quantity of hazardous waste" and that in 2011 to 2012 Shear indicated that the liner was 'suspect at the time'.[12] It was unclear from the reports whether water samples were collected from the HWTA. A potential glycol leak from the generator set by the day-tank berm was further identified. It is not clear how the receiving environment surrounding the HWTA and generator has been assessed for potential contaminants.

While it was noted that there was evidence of caribou herds migrating through the area, the proximity to site and the fuel and hazardous waste storage areas was not identified.

4.0 CONCLUSIONS

After purchasing the Jericho Diamond Mine, Shear committed to operating under the plans and procedures put in place by Tahera to address the requirements of the Project Certificate [No. 002], however the site continues to remain unmanned by Shear personnel, and the company remains non-responsive to inquiries.

As a result of Shear's failure to implement requirements of the Project Certificate [No. 002] at site, the Board is unable to provide a detailed assessment, as required by Section 12.7.2 of the NLCA, to determine the success or failure of these terms and conditions to mitigate predicted impacts associated with the Jericho Project. However, due to the site remaining non-operational, most of the impacts for which the terms and conditions of the Jericho Project Certificate [No. 002] were written, are not likely being realized.

The coordination of regulatory authorities as intended through the recommendations of the Appendix D of the Project Certificate [No. 002] remains a key component of the NIRB's ongoing monitoring efforts for the site, and the NIRB will continue to work with these agencies in the absence of Shear.

[12] E. Paul. Field Operations Water Resource Officer, Aboriginal Affairs and Northern Development Canada. *Water Licence Inspection Form.* For the site visits between April 22 to August 16, 2014.

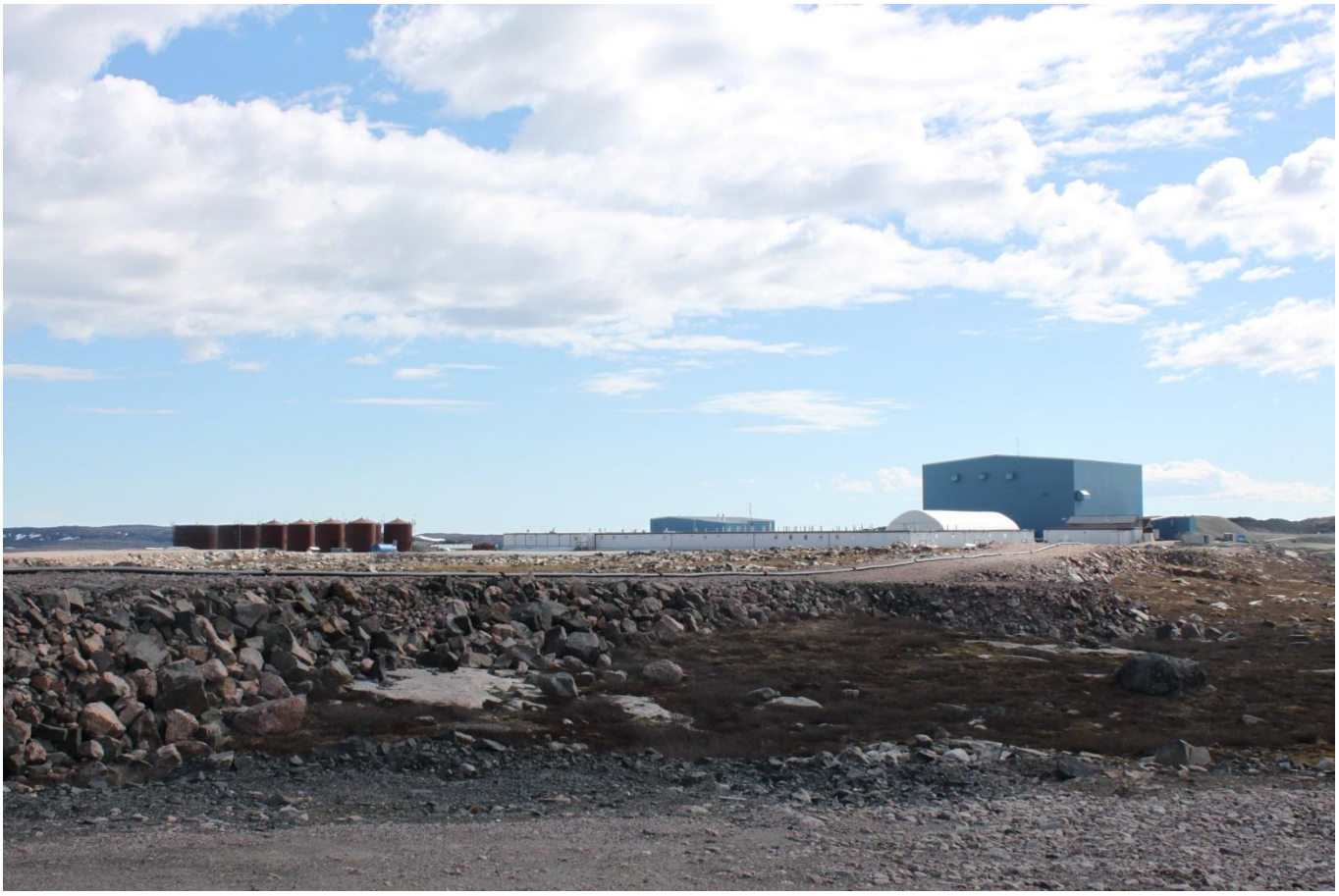
Prepared by:	Heather Rasmussen
Title:	Technical Advisor
Date:	October 5, 2015
Signature:	
Reviewed by:	Tara Arko
Title:	Director, Technical Services
Date:	October 5, 2015
Signature:	
NIRB File No.:	00MN059

APPENDIX I -
2015 SITE VISIT REPORT

2015 Site Visit Report

for the NIRB's Monitoring of the

Jericho Diamond Mine Project



Nunavut Impact Review Board

File No.: 00MN059

Jericho Diamond Mine Project Certificate No. 002

November 2015

Report Title:	The 2015 Site Visit Report for the Nunavut Impact Review Board's Monitoring of the Jericho Diamond Mine Project
Project:	Jericho Diamond Mine
Project Location:	Kitikmeot Region, Nunavut
NIRB File No.:	00MN059 Jericho Diamond Mine Project Certificate No. 002
Project Owner:	Shear Diamonds (Nunavut) Corp.
Visit conducted by:	Heather Rasmussen, Monitoring Officer, Nunavut Impact Review Board
Contact:	(867) 983-4606 or hrasmussen@nirb.ca
Site visit date:	June 10, 2015
Previous site visit:	June 6, 2014
Photos by:	Heather Rasmussen, Nunavut Impact Review Board
Cover photo:	View of the Jericho Mine Site mill, accommodations and office buildings, and bulk fuel storage.

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1. Introduction

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the Nunavut Land Claims Agreement (NLCA) and is responsible for post environmental assessment monitoring of projects in accordance with Part 7 of Article 12 of the NLCA.

The findings provided in this report resulted from the NIRB Monitoring Officer's site visit of the Jericho Diamond Mine on June 10, 2015 that took place as 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 and stockpiles, as well as a camp and support buildings to house approximately 200 persons, explosives storage and emulsion plant, fuel tank farm with capacity for 13 million litres of fuel, airstrip, and roads connecting site infrastructure.

On July 14, 2004, pursuant to Section 12.5.12, Article 12 of the NLCA, 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 or the Project). In December 2004 Tahera requested that the Project Certificate be reissued to reflect the updated project ownership, and on January 19, 2005 the NIRB issued Amendment #1 of the Project Certificate [No. 002] in the name of Benachee Resources Inc., a wholly owned subsidiary of Tahera.[1]

Shear Diamonds (Nunavut) Corp. (Shear) completed the purchase of the Jericho Diamond Mine in August 2010 and subsequently requested that the NIRB reassign the Project Certificate to reflect the new ownership.[2] On August 23, 2011 the NIRB issued Amendment #2 to the Project Certificate [No. 002] in the name of Shear Diamonds (Nunavut) Corp.[3] In October 2012 the site was placed into temporary closure by Shear.

On March 8, 2013 Aboriginal Affairs and Northern Development Canada (AANDC) issued notice to Shear that due to continued failure to manage specific environmental issues on-site,

[1] Project Certificate [No.: 002] Amendment #1 issued via correspondence from S. Briscoe, NIRB Executive Director to G. Missal, Vice-President, Nunavut Affairs for Tahera Diamond Corporation, Re: *Proponent Name Change to Project Certificate for the Jericho Diamond Mine Project [002]*. Letter dated January 19, 2005.

[2] Correspondence from P. Strand, President, Shear, to S. Granchinho, NIRB Technical Advisor, Re: *Request to assign the Jericho Diamond Mine Project Certificate (No. 002) to Shear Diamonds (Nunavut) Corp.* Letter dated June 3, 2011.

[3] Project Certificate [No.: 002] Amendment #2, issued via correspondence from R. Barry, NIRB Executive Director to P. Strand, Shear President, Re: *Proponent Name Change to Project Certificate for the Jericho Diamond Mine Project [002]*. Letter dated August 23, 2011.

AANDC's Contaminated Sites Program would be conducting periodic work at the Jericho Mine site to manage the specific issues noted. On January 22, 2014 the Minister of Aboriginal Affairs and Northern Development declared the site abandoned by Shear and assumed control of the site. While the Jericho Mine site remains in temporary closure under the management of AANDC since being declared abandoned, the Jericho Project remains subject to the conditions of Project Certificate [No. 002], assigned to Shear.

3. Objectives and 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 the establishment of a monitoring program for the Project, which includes conducting periodic site visits. 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 project effects.

Prior to the 2015 site visit the Monitoring Officer read previous project specific correspondence, plans and reports, which specifically included consideration of the following documents:

- NIRB Project Certificate [No. 002], 2014 Board recommendations and NIRB 2014 Monitoring and Site Visit Reports;
- Compliance update from AANDC, including 2014 Care/Maintenance Jericho Mine Site Water Management Report, Care/Maintenance Jericho Mine Site Tailings Encapsulation Report, and Water Licence Inspection Form;
- Compliance update from Fisheries and Oceans Canada; and
- 2011 documents provided by Shear, including:
    - Aquatic Effects Monitoring Plan;
    - Care and Maintenance Plan, and
    - *Draft* Air Quality Monitoring Program.

4. 2015 Site Visit

The 2015 site visit was conducted by Heather Rasmussen, NIRB Monitoring Officer for the Jericho Diamond Mine Project. On June 10, 2015 the NIRB Monitoring Officer accompanied representatives of Aboriginal Affairs and Northern Development Canada (AANDC), the Kitikmeot Inuit Association (KIA), and the Canadian Nuclear Safety Commission (CNSC) on a day trip from Yellowknife, Northwest Territories to the Jericho Mine site. The group were met by representatives of AANDC and Public Works and Government Services Canada (Public Works) who were on-site as of June 8, 2015. Upon arrival at the Jericho site the group established a tentative schedule for the day based on the participants' various priorities and established basic safety protocols to be followed throughout the day.

The NIRB's assessment of the site included visual observation of the following features and focused on general site conditions as well as observations related to compliance with the NIRB Project Certificate [No. 002]:

- airstrip and roads;
- fuel storage areas, generator enclosures, pump stations, and conditions of berms;
- non-hazardous and hazardous waste areas and receptacles;
- stockpiles and waste rock piles;
- mine pit and berm;
- dams and water diversion structures;
- processed kimberlite containment area (PKCA); and
- emulsion plant.

Due to safety concerns the NIRB's Monitoring Officer did not enter the mill, offices, or accommodations buildings.

4.1 General Observations

The Monitoring Officer noted that although the Jericho Mine site was non-operational and there were no Shear personnel on-site during the 2015 site visit, the debris and garbage observed in various locations throughout the main camp area and within the emulsion plant was generally contained within waste receptacles or specific areas. The Monitoring Officer further observed indications of fuel and/or chemical seepage through staining of the ground, as well as odors, near some of the fuel and chemical storage and containment structures (for more information please see Section 4.2.5).

During the 2015 site visit, the CNSC site inspector examined two nuclear gauges located on the ground floor and second level of the mill (see Photo 1). The gauges were likely used to measure density of material within the pipes (potentially tailings) and the license for possession/storage/transfer has expired. The gauges contain a radiation source and are currently 'locked out' (i.e., there is a locked led door on the gauge itself to restrict access).

Photo 1: Mill where two nuclear gauges were found.

4.2 Project Certificate terms and conditions

Sections 4.2.1 through 4.2.9 of this report relate to the monitoring of specific components in the environment as required by of the Jericho Diamond Mine Project Certificate. The following discussion of terms and conditions within the Project Certificate [No. 002] are considered only as could be verified by direct observation due to the absence of Shear staff at the Jericho site and as no active operations were being undertaken when the NIRB 2015 site visit occurred. At the time of the site visit the NIRB had received limited correspondence from Shear since December 19, 2011, and most recently the Chief Restructuring Officer's notice on April 23, 2014 of his resignation.

4.2.1 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.*

During the 2015 site visit, the NIRB Monitoring Officer observed two standing dustfall monitoring stations: one at the West dam adjacent to Cell B/C and one near East Dam adjacent to the PKCA (see Photos 2-3). Although the site is currently non-operational and there are no on-site personnel to collect and analyze samples and verify the functionality of the stations, the Monitoring Officer observed that the dustfall stations themselves appeared to remain intact.

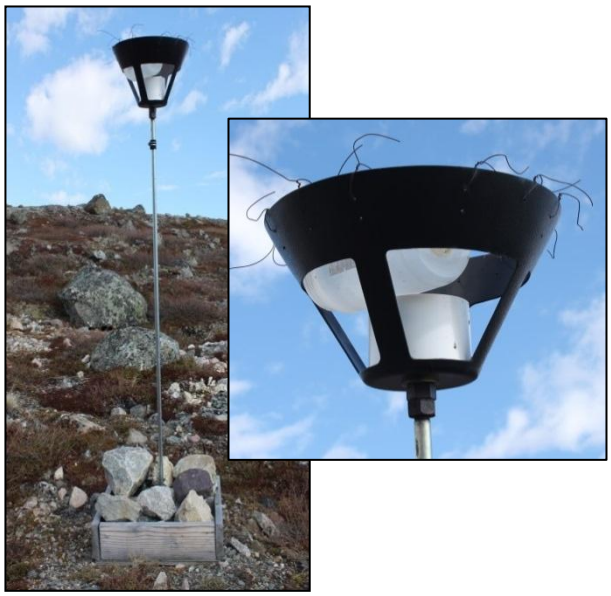

Photo 2: Dustfall monitoring station at West dam with overturned canister.

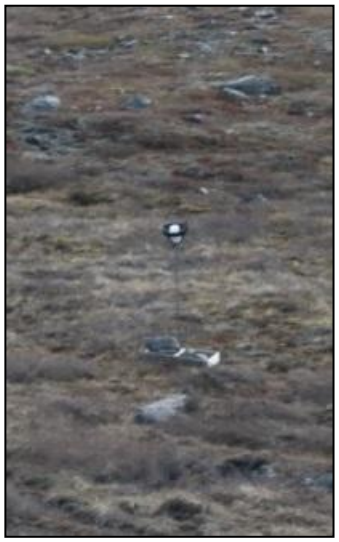

Photo 3: Dustfall monitoring station near East dam and to the left of the Processed Kimberlite Tailings Facility.

4.2.1 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 is currently non-operational there were no observed noise monitoring or mitigation activities being undertaken. The only noise noticed by the Monitoring Officer resulted from the use of vehicles used to transport those on-site at the time of the visit.

4.2.2 Wildlife Monitoring and Mitigation

Conditions 3 and 9 through 18 of the Project Certificate [No. 002] outline operational and monitoring requirements with regards to wildlife and birds. During the 2015 site visit the NIRB Monitoring Officer did not observe monitoring activities taking place, and has not received any related monitoring data during the 2013-2014 reporting period. No wildlife were observed during the site visit and although the Monitoring Officer did not enter the office and accommodations buildings, AANDC and Public Works staff noted that there was no evidence of wildlife presence inside the buildings during the preceding winter months and that few observations of wildlife were made while on-site.

Condition 13 of the Jericho Project Certificate states**:**

> *Tahera shall submit plans to regulatory authorities to include measures that will ensure caribou are not harmed, entrapped, or frightened by any project activity. Tahera shall do everything it can to ensure that caribou do not fall into pits, or slip on roads; this includes the requirement that Tahera use whatever means it finds necessary including ramps and crossings to assist in the free movement of caribou and construction of berms or fences where appropriate to prevent accidents involving wildlife.*

No wildlife was observed during the site visit to identify any constraint to movement. The Monitoring Officer did observe materials used by Shear to weave silt fences with wiring to mitigate the extent of windblown tailings from the processed kimberlite containment area (PKCA), however there was no evidence of interaction with caribou and other wildlife (see Photo 4). The berm surrounding the pit remains intact and there was no visible evidence of wildlife in the pit when looking from the top (see Photo 5).

Photo 4: Silt fence and wire weaving.

Photo 5: Berm surrounding pit.

Condition 14 of the Jericho Project Certificate states:

> *Tahera shall take special care to avoid disturbing nesting sites of any species in the Project area. Sites within 500 meters of the Project area should be also located, marked, and reported by Tahera to NIRB's Monitoring Agent.*

The Monitoring Officer observed two small birds flying out of an empty shed adjacent to the main fuel tank farm and noted a nest inside the shed (see Photo 6). No other nesting sites were observed on-site.

Photo 6: Nest inside a shed near Phase 1 of the fuel tank farm.

4.2.3 Blasting Activities and Impacts Mitigation

Conditions 9 and 26 through 28 of the Project Certificate [No. 002] outline requirements for activities relating to blasting activity and to the use and storage of explosives on-site.

Condition 27 of the Jericho Project Certificate states**:**

> *All blasting constituents (dynamite, ammonium nitrate, or other components), and any accelerants besides fuel, shall be stored in covered and isolated buildings, well marked as being dangerous. Blasting materials buildings shall be protected according to industry standards. Ammonium nitrate that is spilled must be cleaned up immediately.*

Blasting activities are not currently being undertaken and no blasting agents or constituents are being stored on-site. The Monitoring Officer noted that all three of the explosive storage units

remained locked and that bags of cement mix were the only items being stored on the ammonium nitrate storage pad (see Photos 7 and 8, respectively).

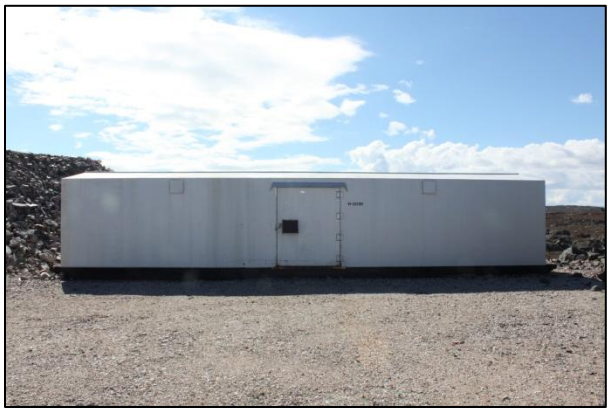

Photo 7: Locked explosive storage unit that no longer stores any explosive material.

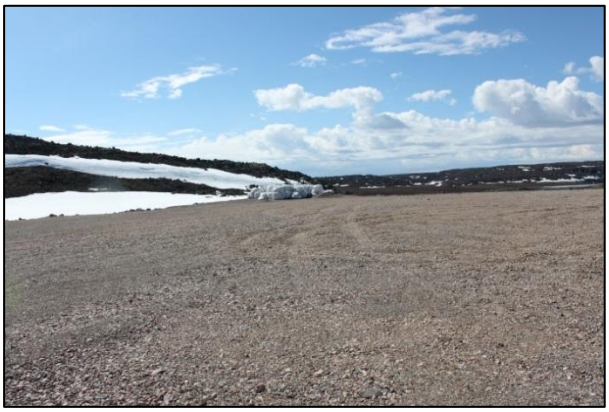

Photo 8: Bags of cement mix at the ammonium nitrate storage pad.

4.2.4 Winter/Seasonal Roads

Conditions 32 and 33 of the Project Certificate [No. 002] outline requirements in relation to winter roads and the movement of materials across winter or other roads. Since Shear last indicated that it had no plans to construct any winter or ice roads, the NIRB has received no further plans for such an activity. As the Jericho Mine site is currently non-operational no observations were made regarding the movement of materials across site roads.

4.2.5 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, generator day tank, bulk fuel tanks, and the majority of barrels located at the airport, emulsion plant and in hazardous waste storage areas, remain within enclosed berms (see Photos 9-21). Similar to observations made during the previous site visit in 2014, it is unclear if all of the berm liners are intact, as some bermed areas contain significant amounts of standing water, and others in the same location contain less. This was particularly evident in Phase 2 of the main fuel tank farm wherein standing water was present in portions of the bermed area whereas other sections were dry (see Photos 9 and 10). While the difference in water levels could be indicative of seepage through an existing liner, other factors could include an uneven surface, difference in properties of the bermed materials, and/or variability in snow and permafrost thawing.

Photo 9: Water in Phase 1 (left) and Phase 2 (right) of the main fuel tank farm.

Photo 10: Water in Phase 2 of the main fuel tank farm, located to the right Photo 9.

The Monitoring Officer observed potential issues with the stability and resulting effectiveness of some of the berms (see Photos 11-15) and a portion of the berm surrounding Phase 1 of the main fuel tank farm was visibly lower in one spot than the rest of the berm (see Photos 11 and 12). As a result of snow covering a portion of the berm it was difficult to identify whether there were any indications of seepage or spillage over or through the berm (see Photo 11).

Photo 11: Low spot in the berm surrounding main fuel tank farm Phase 1.

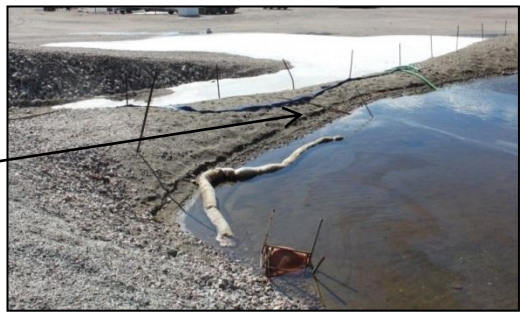

Photo 12: Low spot in berm.

AANDC staff noted to the Monitoring Officer during the 2015 site visit that rocks were being used to hold up the walls of some of the portable berms (see Photos 13-14). Some of the fuel barrel caches were not bermed, although it was unclear whether the barrels contained any fuel (see Photo 15).

Photo 15: Portable berm near the airstrip.

Photo 14: Rock structural support for portable berms near airstrip.

Photo 13: Barrels near bulk fuel tank farm stored without secondary containment.

The water in the majority of the bermed areas surrounding bulk fuel storage tanks was clear with no indication of hydrocarbon contamination via sheen on the water surface or distinct odour (see Photos 16-19). It was indicated to the Monitoring Officer that the Oztech filter had not yet been used in 2015 at the time of the site visit and that the water in the berm was a result of the recent rain event.

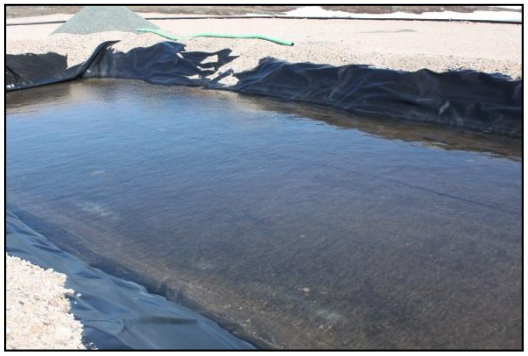

Photo 16: Water in the Oztech berm.

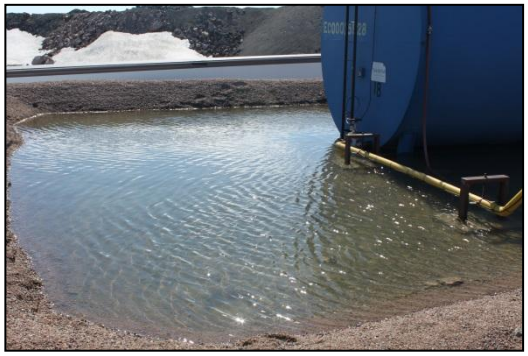

Photo 17: Water in the day tank berm.

Photo 18: Fuel tank berm at the emulsion plant.

Photo 19: Fuel tank berm at the airstrip.

The Monitoring Officer observed that, as in previous years, areas of likely fuel contamination were mostly located within bermed areas with visible indication of hydrocarbon sheen on the standing water or potential staining of the ground, respectively (see Photos 20 and 21). Due to significant snow cover surrounding the generator trailers, visual observation of the ground below the generator storage trailers was not possible (see Photo 22).

Photo 20: Sheen on water in Phase 1 of the main fuel tank farm.

Photo 21: Potential hydrocarbon staining on the ground of Phase 2 of the main fuel tank farm.

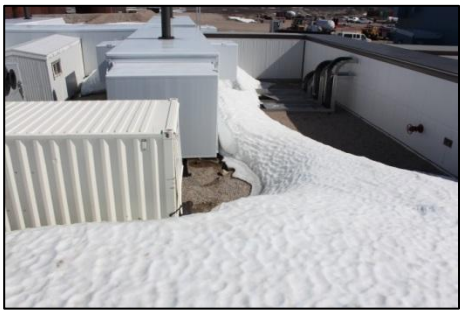

Photo 22: Stained ground below generator buildings.

Photo 23: Hazardous waste containment area.

4.2.6 Water Quality and Aquatic Monitoring

Conditions 6, 29 and 30 of the Project Certificate [No. 002] require the Proponent to establish and participate in a water quality monitoring program. During the 2015 site visit, the AANDC water inspector collected water samples of sitting waterbodies associated with mine infrastructure, including bermed areas and Cell B/C.

Condition 6 of the Jericho Project Certificate states**:**

> *Tahera shall implement a site-specific ecosystem based water monitoring program, which it will fund. Tahera will also meet the requirements of regulators including the Nunavut Water Board and take advice from KIA as to site selection of this ecosystem based water quality monitoring program.*

The Monitoring Officer noted green standing water in the pit, as well as increasing water levels compared to previous site visits (see Photos 24 and 25).

Photo 24: Water height of the pit during the 2014 site visit.

Photo 25: Water height of the pit during the 2015 site visit.

4.2.7 Water Diversion and Impacts to Fish Populations

Conditions 4, 7, 19, and 20-25 of the Project Certificate [No. 002] outline requirements of the Proponent in relation to site water management and recommendations for reducing impacts to fish populations in areas surrounding project activities. At the time of the 2015 site visit no releases were occurring from Cell B/C or any other water retention structures, including Cell A into Cell B/C as portions of Cell A were still frozen (see Photos 26-29). The AANDC inspector noted the presence of small, unidentified fish in Cell B/C during sample collection, although none had been observed in previous years (see Photos 27).

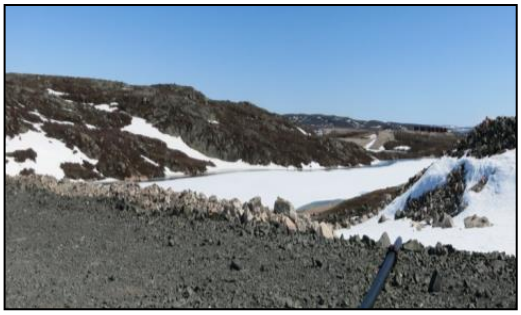

Photo 26: Cell B/C water level during 2014 site visit.

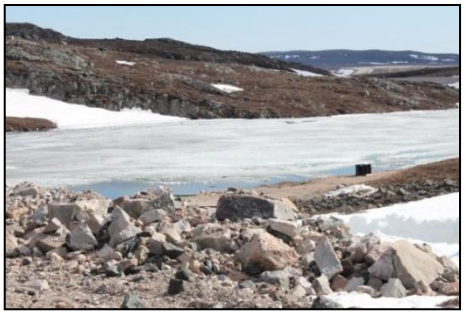

Photo 27: Cell B/C water level during 2015 site visit

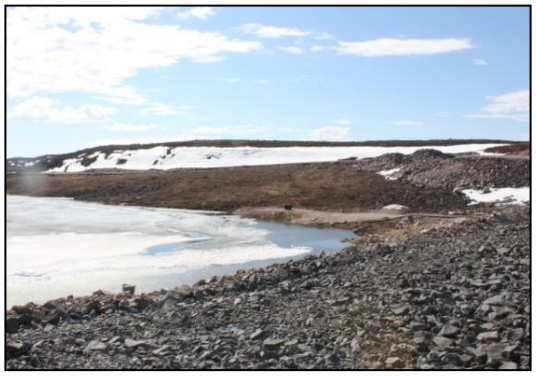

Photo 28: Small, unidentified fish were observed by other site visit participants in Cell B/C during the 2015 site visit.

Photo 29: Water level in Cell A during 2015 site visit.

4.2.8 Processed Kimberlite Containment Area

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.*

During the 2015 site visit, the Monitoring Officer noted that the processed kimberlite containment area (PKCA) remained mostly dry; although standing water was observed in some areas (see Photos 30 and 31). The Monitoring Officer further noted that snow below the East Dam and adjacent to the PKCA was covered in dark dust, indicative of windblown tailings from the PKCA (see Photos 32). Although the geographic extent of the dust cover was unclear, it did not appear to extend to the ice on Long Lake below the discolored snow (see Photo 33).

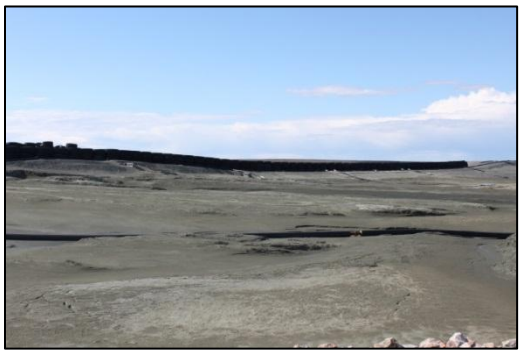

Photo 30: Cell A of the processed kimberlite containment area.

Photo 31: Cell A of the processed kimberlite containment area.

Photo 32: Dirty snow near East dam.

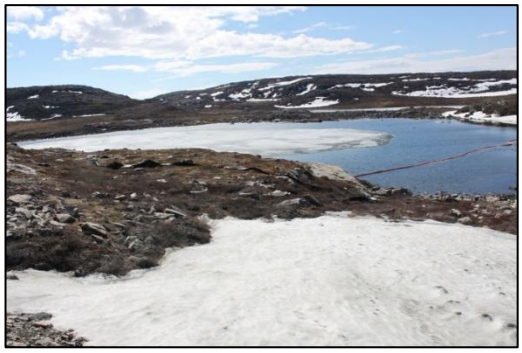

Photo 33: Long Lake.

4.2.9 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.*

Although the Monitoring Officer noted that waste was generally located in or near the waste receptacles located on-site (see Photo 34), some debris was observed scattered throughout the site, particularly near the PKCA (see Photo 35). Although garbage was observed in the emulsion plan (see Photo 36), no evidence of animals being on-site was noted.

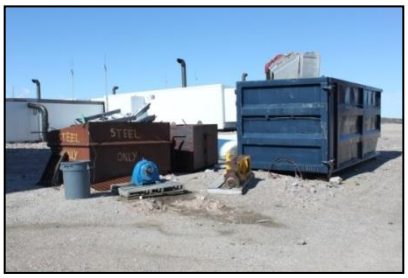

Photo 34: Steel waste bin.

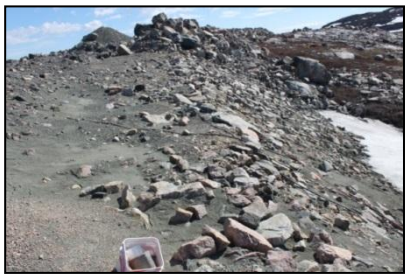

Photo 35: Waste, including bucket and extension cords, near East dam.

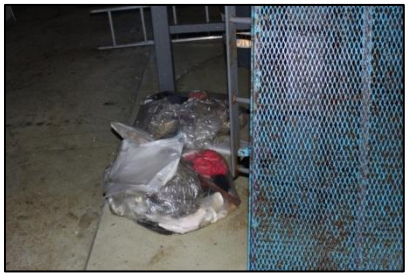

Photo 36: Garbage in the emulsion plant.

The unlabeled barrels of waste previously noted during the 2013 and 2014 site visits remained enclosed within the berm of the main fuel tank farm during the 2015 site visit (see Photos 37 and 38). The barrels were uncovered and a few barrels had fallen over; barrels were not contained within a fence as required by Condition 35 of the Project Certificate [No. 002]. The NIRB Monitoring Officer observed signs that the barrels continued to leak into the water collecting in the berms, although the barrels were filled to varying degrees. While the barrels contain unknown waste material, they are no longer full and generally contain less liquid compared to that observed during previous site visits.

Photo 37: Barrels of waste stored within berm of main fuel tank farm Phase 2 as observed during 2013 site visit

Photo 38: barrels in phase 2 fuel tank farm comparison shot. Tops blown off, water in barrels.

5. Findings and Summary

The Jericho Project Certificate [No. 002] terms and conditions require Shear to meet operation and maintenance requirements; however, due to the site being unmanned since the last site inspection, the majority of these requirements still had not been met. The NIRB Monitoring Officer observed that the site remained in a similar condition to that noted during the previous site visits.

The NIRB Monitoring Officer observed no evidence of monitoring activities being undertaken by Shear at the Jericho site during the 2015 visit. Shear is in non-compliance to Condition 35 which requires installation of fencing or other suitable deterrent around all landfill and waste storage areas. Although some fuel storage areas around site are not bermed, which is in non-compliance to Condition 34, it is unclear how many barrels had been moved into bermed areas since the 2014 site visit.

The Jericho Project Certificate [No. 002] includes numerous terms and conditions which assign responsibilities for responsible authorities to provide assistance and expertise in designing and implementing the various site specific monitoring programs. Following the Minister of Aboriginal Affairs and Northern Development's declaration of the site as abandoned on January 22, 2014, the NIRB Monitoring Officer has observed monitoring, as conducted during the joint 2015 site visit, being undertaken by representatives of various federal branches, the NIRB, and the Regional Inuit Association.

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