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Your file – Votre référence
00MN059
Our file – Notre référence
IQA-N 5510-5-10

December 10, 2015

Ms. Heather Rasmussen
Nunavut Impact Review Board
P.O. Box 1360
CAMBRIDGE BAY, NU X0B 0C0

Sent via email to hrasmussen@nirb.ca

Re: Request for information regarding ongoing activities at the Jericho Diamond Mine

Dear Ms. Rasmussen:

Thank you for your letter of October 23, 2015 providing a copy of the board's annual monitoring report and recommendations, with follow-up requested within 60 days of receipt of your correspondence.

Since the Minister of Aboriginal Affairs and Northern Development declared the Jericho site abandoned as per section 89 of the *Nunavut Waters and Nunavut Surface rights tribunal Act* in January 2014, the AANDC Contaminated Sites Program has continued to address and mitigate specific environmental risks at the Jericho site during site visits. During 2015, the site was attended June 8 to 10 and August 11 to 13, with a two person team remaining until September 5, 2015. Specific activities conducted during these visits included:

- Water Management
 - Testing and discharge of PKCA Cell B/C water
 - Testing and discharge of rain and melt water from tank berms
- Inspection and care of mine facilities
 - Posting of "Warning/No Trespassing" signs
- Fuel Management
 - Inspection and maintenance of fuel storage facilities
- Tailings and Waste Management
 - Securing barrels to prevent spills



In addition, an AANDC Field Operations Water Resource Officer inspected the Jericho mine site on June 10 and July 16, 2015. Field Operations will continue to inspect the site at least once a summer or more if required. Information regarding the 2015 inspections is provided in Attachment 1.

Your October letter contains two recommendations directed to the department:

Recommendation 4: *The Board requests that AANDC provide the following information regarding the status of the nuclear gauges:*

- a) Location of the gauges and whether they remain at the Jericho Mine site or have been transferred off-site;*
- b) Licence number, licensee name, and applicable terms and conditions of any issued licenses; and*
- c) Future plans regarding the storage, transfer, or disposal of the gauges as applicable.*

Response:

- a) The nuclear gauges remain at the Jericho site.
- b) An application for a licence to store and transfer the gauges was submitted to Canadian Nuclear Safety Commission in October 2015 and notice of licence issuance received December 4, 2015. Once we receive the signed licence we will provide a copy to the Board. A summary is provided below:

Licence #:	15733-1-16.0
Issued:	December 4, 2015
Licensee:	AANDC
Valid:	Dec 1, 2015 to Nov 30, 2106

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- c) The current plan is to have the gauges removed and disposed of in August 2016.

Recommendation 5: *The Board requires that Shear, or, given the current site management regime, requests that AANDC continues to provide the NIRB with details of its water monitoring and sampling practices as well as releases of treated site contact water, and activities undertaken to manage the risks identified above at the Jericho site. The Board requests that the following details be included for the 2015 reporting year:*

- a) Clarification on the percentage of total water from the main fuel tank farm not treatable by the Oztec filter to standards;*
- b) The amount of total suspended solids found in water bodies tested, particularly in southeast dam pond; and*
- c) Plans to monitor for potential contaminants from the hazardous waste treatment area and generator set on the receiving environment and any long-term management plans.*



Response:

- a) No water was treated by the Oztec system this year. All samples met discharge criteria without treatment.
- b) The southeast dam pond was not sampled in 2015. Cell B/C was sampled as part of the June inspection for total suspended solids with results returning 3 mg/L.
- c) The Phase III Environmental Site Assessment (ESA) completed by the department in 2014 investigated areas around the hazardous waste treatment area and generator.

The hazardous waste treatment area includes the Contaminated Soils Containment Area and the Hazardous Waste Transfer Area. The table below summarizes the PHC contaminated soil identified in these areas during the Phase III ESA:

AREA	DESCRIPTION	VOLUME (m ³)
Contaminated Soils Containment Area	Contaminated soil stockpile	1,728
	Soil bag	2
	Drums of soil	100
	Berm material	1,249
Hazardous Waste Transfer Area	Berm material	275
TOTAL		3,354

During the Phase III ESA 3 monitoring wells were installed down gradient from the Contaminated Soils Containment Area. A sample from one well returned a toluene level of 0.002mg/L (equal to but not exceeding CCME-PFAL). Additional sampling will be undertaken in 2016.

The area around the Gensets at the site was also investigated during the Phase III ESA. The pad was constructed of blast rock which made sampling difficult and prevented full delineation. The volume of PHC contaminated soil was estimated to be 332 m³.

Management plans include ongoing with care and maintenance until a path forward (which may include full remediation) has been determined.

AANDC will continue to assess and manage the Jericho site to ensure that the environmental integrity is maintained as it assesses long term options, including being open to possible private sector solutions for the site. As a partner in ensuring environmental protection in Nunavut, we are committed to clear and regular communication. The Department continues to have regular calls with the Kitikmeot Inuit Association on the on-going management of the site and will keep the NIRB and the



Nunavut Water Board updated on the on-going care and maintenance of the Jericho site.

Sincerely,

Karen D. Costello
Director, Resource Management

List of Attachments:

Attachment 1: AANDC 2015 Inspection Report

cc: Stephanie Autut, Executive Director, Nunavut Water Board
Paul Emingak, Executive Director, Kitikmeot Inuit Association
Shear Diamonds Nunavut Inc.



Field Operations Division
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30 July 2015

#2015-KIT007-EP

AANDC Contaminated Sites Program
PO Box 2200
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RE: INSPECTION OF JERICO MINE JUNE 10, 2015 [2AM-JER1119]

Shear Diamonds (Nunavut) Corp. left the Jericho Mine site in September 2012. In March 2013 an Inspector's Direction was issued to Shear to undertake work to prevent impacts to persons, property and the environment. Shear failed to carry out the requirements in the Direction. AANDC's Contaminated Sites division has been conducting environmental protection activities at Jericho Mine site since June 2013 at the request of the Inspector, pursuant to s.87(4) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA). In January 2014, Jericho Mine was declared abandoned. AANDC Field Operations continues to inspect and assess the site.

An inspection of the Jericho Mine was conducted on June 10 2015. The Inspector was accompanied by Wynter Kuliktana and Tannis Bolt of the Kitikmeot Inuit Association, Heather Rasmussen of NIRB, Peter Larkin of the CNSC, Mark Yetman of AANDC's CSP, Michael Bernardin of PWGSC, and Bob Johnson and Andy Uyarrai of Delta Engineering. The latter four had been on site since June 8 to assess the work that will be required in 2015 for environmental protection (EP) at the site.

A thorough inspection of the site was conducted in order to assess risks to persons, property or the environment, and particularly, the likelihood of any discharges to water.

It was determined that an unauthorized party used the site this winter: the trespassers burned a significant amount of the limited fuel supply and stole a number of valuable items including the satellite dish, firearms, ammunition, and other survival equipment. The theft was reported to the RCMP in Kugluktuk.

Inspection findings are as follows:

Discharges to water:

The fine processed kimberlite (FPK) remains the primary concern with respect to deposits to water. The act of freezing-in the FPK over winter appears to have reduced the amount of FPK blown from the Processed Kimberlite Containment Area (PKCA); however, no measures are in place to determine its actual effectiveness. FPK was still visible on the remaining snow above the SE Dam Pond, and it is likely that some FPK was deposited again in the pond. DFO conducted a site visit in June 2014 and determined that the issue of windblown FPK was not of significant concern; nevertheless, efforts should be made to minimize the deposition. The silt curtain and silt fence have not been maintained and as such are likely not working effectively to reduce further dispersion of the FPK to the SE Dam Pond.



No other imminent risks to water were identified.

Risks to persons, property or the environment:

Unauthorized access of the site is the primary risk to persons. The airstrip is not maintained. While it is not possible to eliminate unauthorized access to the site, warning signage will be posted. As discovered during this visit, the unauthorized use of the already-low fuel stock means that in case of environmental emergency there may not be sufficient resources available to address the situation in a timely manner.

Integrity of earthworks: There were no visible signs of degradation of the PKCA dams. Mr. Johnson was satisfied with the integrity of the PKCA at this time. Mr. Yetman observed that the filter dam between cells A and B/C had not yet thawed, allowing the spring freshet water to pass through the dam and into cell B/C. He estimated that 10-14 days pumping will be required this summer to draw the water in cell B/C down to an acceptable level. This will require that fuel be brought in as, due to the theft, there is now insufficient fuel at site to conduct the necessary work.

Roads and other built structures, including the airstrip, are demonstrating a lack of regular maintenance. Minor sunken areas are now evident in the road, although no erosion of concern was noted at this time. The Oztek berm liner has slumped into the containment structure and will require some repairs prior to use in the water treatment process. There remains a low point in the wall of the Phase 1 fuel farm berm, which precipitates the need to treat and pump the water from the berm prior to accidental discharge. While this does not currently pose a threat to water, it is impossible to maintain an acceptable freeboard within the berm without pumping it out frequently. At the time of the inspection there was approximately 6 inches of freeboard within the berm. There is risk of fuel-contaminated water discharging from the berm and increasing the amount of contaminated soil requiring management. Approximately 60 barrels of hydraulic-oil-contaminated water remain in the Phase 2 fuel farm berm. Attempts have been made to cover these to prevent precipitation from overtopping the barrels and causing further contamination within the berm; however, the tarps have blown off and torn, and barrels have fallen over.

The Hazardous Waste Transfer Area (HWTa) presents an unknown risk at this time. There is no visual evidence of contamination outside the HWTa, however, there is heavy contamination within the HWTa and the integrity of the liner is unknown. It was noted that the piles of contaminated soil in the HWTa merge into the north berm wall, which could allow runoff from the piles into the environment. AANDC CSP is expecting results in the fall from test pits that were sampled to determine whether there is contamination outside the HWTa (and also around the fuel farm).

At the time of the June 10 inspection there were approximately 50 barrels of fuel (mostly expired) stored at the airstrip by Bruno Croft of the GNWT. His fueling practices left small spills next to the berm. He has committed to removing these barrels by the end of June. No further third-party use of the site will be permitted in order to reduce the risk of incident.

RECOMMENDATIONS OF THE INSPECTOR:

It is understood that subject to the NWNSRTA AANDC can only utilize the security furnished under the Water Licence to carry out activities to mitigate risks to persons, property and the environment. As such, the following activities are recommended for 2015:



1. Maintain the silt fence/silt curtain to prevent further deposition to the SE Dam Pond.
2. Ensure that fuel required for EP activities is located more than 30m from any water body (it is currently placed too close to the PKCA).
3. Seek solutions to prevent the hydraulic-oil-contaminated-water in the Phase 2 berm from causing further contamination of the berm. This may include treatment, backhaul, placement in the HWTa, tight-fitting lids to prevent over-topping, or other solutions.
4. All water from the fuel farm berms requires treatment and testing prior to discharge.

UPDATE: I returned to site July 16 2015 for a brief site inspection. The contractor had not yet been to site to begin work. The ENR fuel was removed, and replaced by a delivery of diesel for 2015 site work. No new concerns were noted, however, the weatherhaven that serves as vehicle storage at the airstrip has sustained weather damage and the canvas was partially ripped off.

Sent electronically

Eva Paul

Water Resources Officer | Agent des ressources en eau

Aboriginal Affairs and Northern Development Canada | Affaires autochtones et Développement du Nord Canada

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