

December 20, 2017

File: S095

Ms. Kierney Leach
Mackenzie Valley Land and Water Board
Box 2130
7th Floor, 4910-50th Avenue
Yellowknife, NT.
X1A 2P6

Dear Ms. Leach:

Re: **Snap Lake Mine**
Land Use Permit – MV2010D0053, Water License MV2011L2-0004
Follow-Up Report on Spill Report # 17-440

BACKGROUND

At approximately 13h00 hours December 7, 2017 a spill of diesel was reported to the Environment department. Approximately 5,903 L of diesel overtopped Day Tank 2 at the Auxiliary genset (EC- 00004572) at the power house building. The coordinates for the spill are: Latitude: 63° 36'10" N Longitude: 110° 51'56" W (Figure 3).

SPILL INVESTIGATION AND CONTINUAL IMPROVEMENT (ADAPTIVE MANAGEMENT)

Incident Description

At approximately 13h00, a spill of diesel was discovered around Day Tank 2 at the auxiliary generators at the power house. The outlet valve had been left open to gravity fill the day tank but the attendant forgot to return to close it as the crew was preparing for a shift change. At the time of the spill event, volumes were estimated to be at least 500 liters outside of containment based on visual observation, and the initial spill report was provided to the GNWT Spill Line within 24 hours of the event. During clean up and upon reconciliation of available information, a more accurate volume estimate was determined.

An estimated volume of 5,903 liters of diesel is suspected to have been released into the environment after filling and overtopping the containment berm.

The containment capacity is estimated at ~178% (~9000 L) of the content of the Day Tank 2, which is a double-walled tank. The surface area of contamination outside of containment is approximately 8.0 square meters based on visual discoloration around the containment. No pooling has been observed at the time of first response.

Response & Containment

The outlet valve was immediately closed upon discovery and the spill cleanup commenced. Approximately 7,500 L of reusable diesel was immediately recovered from the containment by pumping it into the fuel truck. An additional 1,500 L of diesel contaminated with snow was pumped from the containment into totes. A maximum of approximately 5,903 L of diesel is estimated to have been released outside containment into the surrounding snow and gravel.

Impacted snow and contaminated non frozen ground outside the containment was shoveled into drums, which are labeled and stored in the waste management area. The ground around the containment berm is solidly frozen, so removal by hand shoveling is not practical at this time.

The use of an excavator was attempted, but due to lack of safe space to maneuver the excavator, work with the equipment was stopped. Four drums of contaminated ground was removed during follow-up cleaning. No free diesel product or pooling could be detected during visual inspection and it is assumed that rapid vertical infiltration occurred, resulting in a limited surface area and potentially deeper vertical penetration.

Soil profiling and determination of vertical pollution plume will resume in summer. A comprehensive remedial approach shall be implemented during the decommissioning of Day Tank 2 as part closure planning.

Root Cause

During the incident investigation the root cause was found to be that there was a failure to identify the risk of manual operation of the refueling between the utility tank and the Day Tank 2, which used to be an automated operation during operation. As part of the extended care and maintenance it was planned for the automation to be decommissioned and redesigned during the non-activity period and commissioned upon resuming of camp activities prior to freshet 2018. However, when the camp remained occupied during winter the daytanks had to be refueled manually up to twice per day relying on operator control. Contributing factors were that the refueling process commenced within an hour of a crew change and that the operator had spent a lengthy time the previous night restoring power after an power outage.

Corrective Actions


Key findings resulting from the internal investigation has led to the following corrective actions being implemented for manual fuel transfer operations:

- Review of work procedures and other training documents with personnel;
- Notification to site crew not to start refueling until crew change is complete;
- Review of current risk assessment and critical controls for winter camp conditions.

The internal investigation relating to the this incident has been concluded and corrective actions will be implemented and assessed for effectiveness along with the investigation whether the reactivation of automated logic control system for refueling between tanks can be done sooner.

Should you have any questions, comments or require further clarification, please contact me at 767-8567 or e-mail Michelle.Peters@debeersgroup.com

Sincerely,
DE BEERS CANADA INC.



Digitally signed by Michelle H. Peters
DN: cn=Michelle H. Peters, o=De Beers
Canada Inc., ou=Snap Lake Mine,
email=michelle.peters@debeersgroup
.com, c=CA
Date: 2017.12.20 16:00:52 -07'00'

Michelle Peters
Environment and Asset Superintendent
Snap Lake Mine

Copied to:	M. Sanderson, T. Covey	GNWT
	P. di Pizzo, Z. Liu	SLEMA
	M. Morapeli, A. Williams	DBCI

Attachments:

- 1) Figure 1: Copy of original Spill Report
- 2) Figure2:
 - i) Photo 1: Tank before recovery started
 - ii) Photo 2: After berm was pumped out and snow removed
 - iii) Photo 3: Drums of snow recovered outside of berm perimeter
 - iv) Photo 4: Soil excavated adjacent to tank containment
 - v) Photo 5: Soil excavation closed up after inspection and recovery
- 3) Figure 3: Location of Daytank 2

Figure 1: Original Spill Report

REPORT DATE: MONTH - DAY - YEAR		REPORT TIME		ORIGINAL SPILL REPORT, OR UPDATE # TO THE ORIGINAL SPILL REPORT		REPORT NUMBER
A Dec-08-2017		1200 hrs		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # TO THE ORIGINAL SPILL REPORT		17 - 440
B OCCURRENCE DATE: MONTH - DAY - YEAR Dec-07-2017		OCCURRENCE TIME 1300				
C LAND USE PERMIT NUMBER (IF APPLICABLE) MV2010D0053			WATER LICENCE NUMBER (IF APPLICABLE) MV2011L2-0004			
D GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Snap Lake Mine Power house			REGION <input checked="" type="checkbox"/> NWT <input type="checkbox"/> Nunavut <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN			
E LATITUDE DEGREES 63 MINUTES 36 SECONDS 10		LONGITUDE DEGREES 110 MINUTES 51 SECONDS 56				
F RESPONSIBLE PARTY OR VESSEL NAME De Beers Canada Inc. Snap Lake		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 300-5120 49th Street, Yellowknife, NT. X1A 1P8				
G ANY CONTRACTOR INVOLVED n/a		CONTRACTOR ADDRESS OR OFFICE LOCATION n/a				
H PRODUCT SPILLED Diesel		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Approximately 500 Liters			U.N. NUMBER n/a	
SECOND PRODUCT SPILLED (IF APPLICABLE) n/a		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES n/a			U.N. NUMBER n/a	
I SPILL SOURCE Auxiliary Genset Day Tank 2		SPILL CAUSE Overfilled tank			AREA OF CONTAMINATION IN SQUARE METRES Approximately 8.0	
J FACTORS AFFECTING SPILL OR RECOVERY Snow/Frozen ground		DESCRIBE ANY ASSISTANCE REQUIRED None			HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT Environmental/health	
K ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS At approximately 1300hrs, a spill of diesel was discovered around day tank 2 by the auxiliary generators at the power house. The inlet valves had been left open to fill up the day tank but the attendant forgot to close it as the crew was preparing for a shift change. An initial estimate of 6.5 cubic meters of diesel was released with the vast majority staying within the containment berm. The valve was immediately closed upon discovery and the spill was contained. Approximately 500 litres of diesel was released outside containment. Residual diesel inside the containment was immediately recovered by pumping it into the fuel truck. Impacted snow and contaminated ground outside the containment is currently being shovelled into drums.						
L REPORTED TO SPILL LINE BY Felix M- Yeboah		POSITION Environmental Suprv	EMPLOYER De Beers Canada	LOCATION CALLING FROM Snap Lake		TELEPHONE 867-767-8763
M ANY ALTERNATE CONTACT Michelle Peters		POSITION Environmental Supt	EMPLOYER De Beers Canada	ALTERNATE CONTACT LOCATION Yellowknife		ALTERNATE TELEPHONE 867-767-8567
REPORT LINE USE ONLY						
N RECEIVED AT SPILL LINE BY		POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT		REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> COG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

FIGURE 2: SPILL AND SPILL RECOVERY

i) After Valve was shut, before clean up operation commenced



ii) After contaminated snow was removed



iii) Drums of snow recovered after clean up



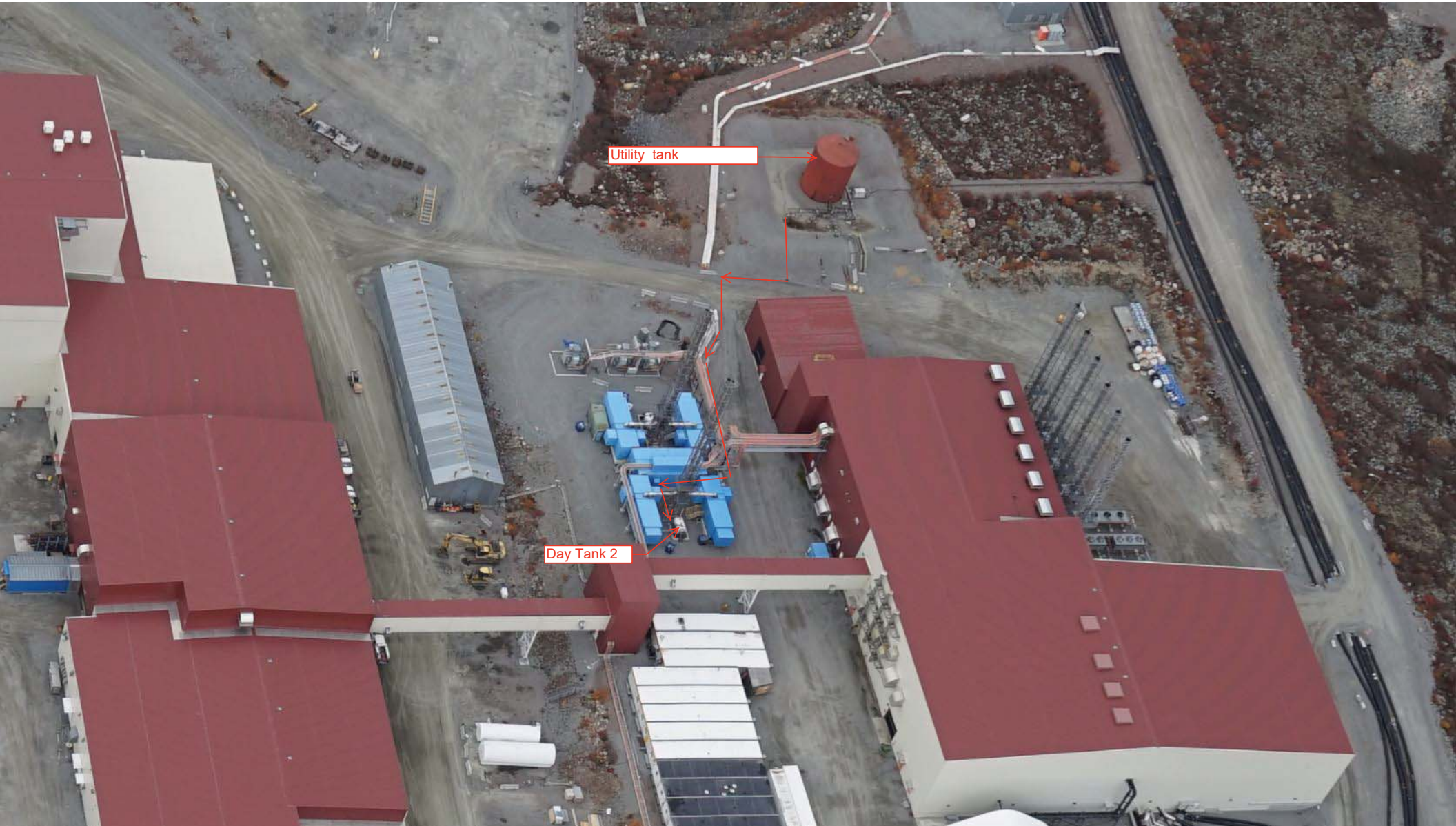
iv) Follow-up : Excavated soil to determine extent of spill



v) Follow- up: Excavated area closed up after inspection and removal of contaminated soil



Figure 3: LOCATION OF DAYTANK 2



Utility tank

Day Tank 2