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November 28, 2014

Mr. Willard Hagen, Chair
Mackenzie Valley Land and Water Board
7TH FLOOR – 4910 50TH AVENUE
YELLOWKNIFE, NT X1A 2P6

Dear Mr. Hagen;

RE: October 2014 Monthly Report for Water Licence, MV2012L8-0010, Part B, Item 7

Aboriginal Affairs and Northern Development Canada (AANDC) was issued Water Licence MV2012L8-0010 (the Licence) on March 28, 2013 for water use and waste disposal associated with roaster complex deconstruction and underground stabilization at the Giant Mine. Part B, Item 7 of the Licence requires that the commitments made in the *Communications Plan for Duration of Site Stabilization Activities* (SSP Communications Plan) be fulfilled. One of the commitments in the SSP Communications Plan is to provide monthly updates to the Mackenzie Valley Land and Water Board and identified Parties during active operations.

If you have any questions or concerns, please contact the undersigned at (867)669-2425 or adrian.paradis@aadnc-aadnc.gc.ca.

Sincerely,

Tara Kramers for
Adrian Paradis
Regulatory Manager
Giant Mine Remediation Plan

Encl. Monthly Report October 2014

c.c.: AANDC Inspector
Jane Amphlett, AANDC Giant Mine Operations Manager
Distribution List

**GIANT MINE ROASTER COMPLEX DECONSTRUCTION
AND UNDERGROUND STABILIZATION**

WATER LICENCE MV2012L8-0010 – PART B, ITEM 7

SSP COMMUNICATIONS PLAN

MONTHLY REPORT

October 2014

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INTRODUCTION

Water Licence MV2012L8-0010 (the Licence) was issued to Aboriginal Affairs and Northern Development Canada (AANDC) on March 28, 2013 for water use and waste disposal associated with roaster complex deconstruction and underground stabilization at the Giant Mine. Part B, Item 7 of the Licence requires that the commitments made in the *Communications Plan for Duration of Site Stabilization Activities* (SSP Communications Plan) be fulfilled. One of the commitments in the SSP Communications Plan is to provide monthly updates to the Mackenzie Valley Land and Water Board (MVLWB) and identified Parties¹ during active operations.

The SSP Communications Plan requires that the monthly updates include the following items:

- Progress/status update of the work
- Summary of outcomes from environmental and health and safety related inspections
- Summary of outcomes from air and water quality monitoring

This report has been prepared for the Licence and describes activities that took place in October 2014.

¹ Parties identified in the SSP Communications Plan include the following:

Residents of Yellowknife, N'Dilo and Dettah	North Slave Métis Alliance
Yellowknives Dene First Nation	Lutsel K'e First Nation
Giant Mine Advisory Committee	NWT Métis Nation
Tlicho First Nation	City of Yellowknife
Back Bay Community Association	Alternatives North
Ecology North	Workers Safety & Compensation Commission
City Emergency Services	Media
Members of the NWT Legislature	Giant Mine Community Alliance
Federal and territorial government agencies and inspection agencies, including Government of the Northwest Territories, Fisheries and Oceans and Environment Canada	

REGULATORY MILESTONES

A list of major regulatory milestones and activities is provided in the table below for reference purposes.

Table 1: Regulatory Milestones during the Reporting Period

	<ul style="list-style-type: none">• There are no regulatory milestones to report for October 2014
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ROASTER COMPLEX DECONSTRUCTION – PROGRESS UPDATE

During the month of October 2014 the following on site activities occurred:

- General:
 - Continued operation of all site facilities.
 - Continued the medical monitoring program for all site employees.
 - Continued daily inspections of the bird chirpers (audio repellants).
 - Arriving personnel received site and project orientation and technical training.
 - Held the monthly meeting of the site occupational health and safety (OHS) committee on October 18.
 - Continued hauling waste bags to the Waste Transport Staging Area (WTSA).
 - Continued a daily cleaning schedule for the trailers.
 - Continued with dust suppression activities.
 - Received and inspected shipping containers in the Material Storage Area (MSA).
 - Moved all of the available non-hazardous waste (primarily scrap metal) from the deconstructed buildings and from the MSA to the new storage area in the WTSA.
 - Continued with cleaning and decontaminating tools, equipment, and scaffolding in preparation for offsite shipping.
 - Cleaned, decontaminated and shipped offsite, north decontamination unit (DCU) as well as lunchroom trailer.
 - Shipped one truckload of non-asbestos, non-arsenic hazardous waste to a licensed facility for disposal on October 30, 2014. This included recovered cyanide system, waste oil and miscellaneous materials such as batteries and fluorescent bulbs.
 - Operated frost fighters to keep water collection lines, tanks and treatment facilities in operation.
 - Cleaned up surface debris within work boundary and containerized wastes
- AC Roaster Building:
 - Processed all wood waste in chipper. Wood waste placed in bags and containerized.
 - Wood chipper was cleaned and decontaminated prior to being shipped offsite.
 - Continued to sort the metal from deconstruction of the building and move it to the non-hazardous waste storage yard at the WTSA.

- Cottrell Precipitator Building:
 - Completed the removal of bulk arsenic from the hoppers and precipitators.
 - Completed removal of arsenic containing fiberglass insulation.
 - Removed remaining internal ducts and precipitator unit.
 - Containerized metals impacted with arsenic and hauled waste to MSA.
 - Removed scaffolding and hoarding from the building perimeter.
 - Completed deconstruction of Cottrell building.
 - Conducted segregation of wastes from building deconstruction including:
 - moved clean steel to the non-hazardous waste storage yard at the WTSA.
 - loaded metal with adhered arsenic in lined containers for transport to the MSA.

- Dorrco Roaster:
 - Completed deconstruction of Dorrco Building
 - Cut open roaster vessels and removed all bricks. Bricks were containerized and transported to MSA.
 - Containerized metals impacted with arsenic waste including the flues and cyclones and hauled waste to MSA.
 - Transported clean steel to the non-hazardous waste storage yard at the WTSA.
 - Removed all water from below grade floor sump. Water was treated prior to discharge to the Northwest Pond.

- Calcine:
 - Steel rotary kiln was cut open and all bricks were removed. Bricks were containerized and hauled to MSA.
 - Removed all water from below grade floor sump. Water was treated prior to discharge to the Northwest Pond.
 - Continued to sort the metal from deconstruction of the building and transport it to the non-hazardous waste storage yard at the WTSA.

- Baghouse:
 - Removed arsenic containing fiberglass insulation.
 - Completed deconstruction of Baghouse Building and exterior hopper.
 - Transported clean steel to the non-hazardous waste storage yard at the WTSA.

- Material Storage Area:
 - Performed inspections of the shipping containers received at the MSA.
 - Continued receiving pallets and marine containers for the storage and management of waste bags, loading containers with bags of contaminated waste, and using a crane to stack the loaded marine containers in their final configuration for waste storage in the MSA.

UNDERGROUND STABILIZATION – PROGRESS UPDATE

- All underground drilling of additional monitoring and paste delivery boreholes were completed in October, 2014 as part of the overall drilling contract. The final surface casings were installed on all remaining surface holes. This completes the current drilling contract supporting Advanced Underground Stabilization activities.
- Det'on Cho Nahanni Construction Ltd. began excavating and stockpiling tailings in preparation for paste production in the Spring of 2015.
- A pilot paste plant was constructed to test various components and to run paste batching trials. These trials will help to determine the various paste mixture recipes for production next year.

ENGAGEMENT ACTIVITIES

Table 2: Engagement Activities Related to Site Stabilization Plan during the Reporting Period

October 2014

<i>SUMMARY: Engagement Activities Completed during the Reporting Period</i>		
Engagement Activity/Target	Number	Type
Public Events	4	GMCA, Working Group, YKDFN, City of YK
Information Distribution	8	Meetings, E-newsletter, e-mails, website
Site Tours	3	Author, Global 16x9, YKDFN.
Media Interactions (based on # of media involved)	9	Interviews, site tour, emailed responses, twitter posts

MONITORING and INSPECTIONS

Health and Safety Inspections

- 0 lost time incidents.
- 2 minor first aid incidents.
- 0 property damages.
- 1 near miss was reported.
- Weekly Inspections occurred on October 3, 18, and 24.
 - All hazards that were identified during the inspections were corrected.

Spill Events

No reportable spills occurred during the month of October, 2014.

Water Quality Monitoring

Samples were collected from the waste water treatment system that processes the water collected from washing activities as well as dust control inside the buildings. The results of the samples taken on October 1, 20, 24, and 30 were all under the MVLWB criteria for oil and grease.

The following table presents a summary of all the project discharges during the 2013 and 2014 construction seasons.

Table 3: Treated Wastewater Discharged to Date to the Northwest Tailings Pond

Date	Volume (Litres)
Total for 2013	384,745
May 25, 2014	15,140
June 8, 2014	22,700
June 15, 2014	30,280
June 22, 2014	22,700
June 29, 2014	22,700
July 6, 2014	22,700
July 13, 2014	22,700
July 20, 2014	38,250
July 27, 2014	53,000
August 1, 2014	22,710
August 6, 2014	22,710
August 12, 2014	30,285
August 16, 2014	30,285
August 20, 2014	22,710
August 26, 2014	30,285
August 30, 2014	30,285
September 8, 2014	30,280
September 11, 2014	30,280
September 25, 2014	30,280
October 2, 2014,	30,280
October 21, 2014	7,570
October 22, 2014	26,497
October 27, 2014	39,746
Total for Project	1,019,068

Sanitary Waste Management

The following table presents a summary of all the sanitary sewage discharges during the 2013 and 2014 construction seasons.

Table 4: Sanitary Wastewater Discharged to Date to the Dettah Sewage Lagoon

Date	Volume (Litres)
Total for 2013	67,364
Week ending April 20, 2014	152
Week ending May 4, 2014	1,893
Week ending May 25, 2014	3,400
Week ending June 1, 2014	3,785
Week ending June 8, 2014	2,840
Week ending June 15, 2014	2,270
Week ending June 22, 2014	3,030
Week ending June 29, 2014	3,785
Week ending July 6, 2014	3,030
Week ending July 13, 2014	3,400
Week ending July 20, 2014	3,030
Week ending July 27, 2014	3,400
Week ending August 4, 2014	3,785
Week ending August 10, 2014	3,030
Week ending August 17, 2014	3,030
Week ending August 24, 2014	3,410
Week ending August 31, 2014	3,030
Week ending September 7, 2014	3,030
Week ending September 14, 2014	3,785
Week ending September 21, 2014	2,650
Week ending September 28, 2014	2,650
Week ending October 5, 2014	2,649
Week ending October 12, 2014	6,435
Week ending October 19, 2014	1,892
Week ending October 26, 2014	5,299
Week ending October 31, 2014	2,649
Total for Project	148,703

Air Quality Monitoring

A tiered ambient air quality monitoring program made up of three distinct parts has been implemented at the Giant Mine site. The three parts to the air quality program include task specific perimeter monitoring around the roaster, fenceline monitoring and community monitoring.

Perimeter air monitoring includes daily, real-time monitoring for Particulate Matter (PM₁₀) as well as 24-hour samples collected every three days and analyzed for PM₁₀, total suspended particulates (TSP), and arsenic.

Please find below the summary for air monitoring for the month of October:

Community Monitoring

There were no continuous 24-hour average concentrations for PM_{2.5} and PM₁₀ greater than the reference criteria for the community stations for the month of October. It should be noted that BAM equipment at the NAPS location was off line for the month of October. The NAPS BAM equipment is maintained by others independent of the Giant Mine Remediation project. Twenty-four hour PM₁₀ concentrations will be confirmed upon receipt of filter sample analytical results.

Sampling for TSP (high volumetric air flow), PM₁₀ (high volumetric air flow), asbestos, total inorganics (trace metals), and arsenic for a twenty-four hour period is conducted every three (3) days for the community sampling program. Sampling of these parameters has been ongoing since June 24, 2013. Laboratory results up to October 14, 2014 were below detection limits or reference criteria for all parameters. Laboratory results collected after October 14, 2014 are pending.

Fenceline Program:

There were no measured concentrations greater than the 15-minute average PM₁₀ Risk Based Action Level (RBAL) of 159 µg/m³ or the TSP 15-minute average TSP RBAL of 333 µg/m³ at the fenceline monitoring stations for the month of October.

Underground Drilling Program:

There were two events where measured concentrations were greater than the drilling 15-minute average PM₁₀ of 390 µg/m³. Measured concentrations were likely caused by road maintenance or drilling equipment passing by the UBC Portal monitor. There was very little dust reported and concentrations appear to be related to combustion sources. All other monitoring locations were below the drilling RBAL and all fenceline locations were also below the fenceline RBAL. Underground drilling was completed during week ending October 25, 2014.

Analytical 24-hour arsenic results measured for the underground vent locations up to October 14, 2014 were less than the detection limit and/or below the referenced criteria. Analytical results after October 14, 2014 are pending.

Interim Underground Stabilization (IUS) Program:

There was one event where measured concentrations were greater than the IUS 15-minute average PM₁₀ of 180 µg/m³. This event occurred during a period of iced fog and no onsite activity.

Analytical 24-hour arsenic results measured for the IUS locations up to October 14, 2014 were less than the detection limit and/or below the reference criteria. Analytical results after October 14, 2014 are pending.

Asbestos Clean Up Programs

Laboratory results for samplers set up for the Boneyard and Conveyor Gallery asbestos clean ups were below asbestos reference criteria. Boneyard clean up ended week of October 4, 2014. Gallery clean up ended week of October 18, 2014.

Arsenic Repackaging

There were no measured concentrations greater than the 15-minute average PM₁₀ RBAL of 159 µg/m³ at the arsenic repackaging monitoring locations for the month of October. Clean up started week ending October 25, 2014 but is currently on hold until November 17, 2014.

Roaster Program:

Real time monitoring for PM₁₀ occurred daily on each deconstruction day from 7:00 to 17:00, there were no readings above the action levels during the October reporting period.

During the month twelve 24-hour samples were collected for arsenic, PM₁₀ and TSP. One sample from October 17 - 18 showed levels of Arsenic above the established 24-hour action level. The sample was collected partially downwind of the major deconstruction activities in a location adjacent to the old Highway 4. Highway 4 is closed and is no longer in use by the public. On October 17 the internal siding of the Baghouse building (approximately 35 m away from the monitor) was being removed, the Baghouse hopper and cyclone (located 30 m away) were taken down (intact) and brought to inside the Cottrell building for further processing.

The only visible dust generated throughout this period was from the placement of gravel, however the low TSP and PM₁₀ levels indicate that the exceedance was caused from dust with a very high concentration of Arsenic – as much as 2/3 of the fine fraction (PM₁₀). Dust suppression (water application) was in use during removal of the siding, removal of the hopper and cyclone, and processing of the hopper and cyclone.

Area samples were also being collected during the work day nearby at the Baghouse and Cottrell work area perimeters as part of the occupational hygiene monitoring program. The hygiene and ambient air results were comparable; however, the hygiene sample did not exceed the eight hour occupational exposure criterion for workers without respiratory protection. There were no unprotected workers or members of the public downwind at the time.

Wildlife Observations and Follow-Up Actions

Wildlife observations during the month were limited to squirrels, a fox and ravens around the perimeter areas.