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October 21, 2014

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

Dear Mr. Hagen;

**RE: September 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@aandc-aadnc.gc.ca](mailto:adrian.paradis@aandc-aadnc.gc.ca).

Sincerely,

Adrian Paradis  
Regulatory Manager  
Giant Mine Remediation Plan

Encl. Monthly Report September 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**

**September 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 Parties<sup>1</sup> 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; and
- Summary of outcomes from air and water quality monitoring.

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

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<sup>1</sup> 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"><li>• There are no regulatory milestones to report for September 2014</li></ul> |
|--|---|

## ROASTER COMPLEX DECONSTRUCTION – PROGRESS UPDATE

During the month of September 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.
  - Continued hauling waste bags to the Waste Transport Staging Area (WTSA).
  - Continued a daily cleaning schedule for the trailers.
  - Applied calcium chloride to minimize dust generation.
  - A professional photographer and videographer also on site to document site activities as well as other areas of the Giant Mine Site.
  - 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.
  - Cleared an area outside the project boundary fence and created a new parking area to reduce traffic and congestion inside the fence.
  - Started offsite shipping of equipment that is no longer needed, including cleaned scaffolding.
  - Started winterizing the south decontamination unit (DCU), water lines, and water tanks in preparation for freezing temperatures. Prepared to remove the north DCU from the site.
- AC Roaster Building:
  - Completed deconstruction of the building.
  - Began separating wood from large pieces of metal. (The wood chipper is not damaged by metal up to the size and hardness of rebar.)
  - Mobilized the wood chipper, conducted safety training, and started wood chipping and waste packaging operations.
  - Installed liners in marine containers and loaded chipped wood and debris directly into the containers using the small skidsteer and bucket.

- Cottrell Precipitator Building:
  - Completed the removal of bulk arsenic from the hoppers and precipitators.
  - Scaffolding engineer was onsite to design the fall protection system to be used during removal of the roof panels. Work was completed.
  - Performed building inspection and conducted air clearance sampling.
  - Completed removing water from the sump. Water was treated prior to discharge to the Northwest Pond.
  - Completed removing and decontaminating equipment, scaffolding, and light systems in preparation for deconstruction.
  - Removed scaffolding from the interior and east side of the building.
  - Removed remaining hazardous waste, including switches, fluorescent light fixtures, and lead.
  
- Dorrco Roaster:
  - Completed removal of the shrinkwrap and scaffold dismantling.
  - Continued removing water from the sump. Water was treated prior to discharge to the Northwest Pond.
  - Started deconstruction of Dorrco building.
  
- Calcine:
  - Completed removal of shrinkwrap and scaffolding.
  - Completed deconstruction of building with the exception of the kiln.
  - Continued to sort the metal from deconstruction of the building and move it to the non-hazardous waste storage yard at the WTSA.
  - Wood waste was processed in chipper and was containerized.
  
- 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**

- Surface drilling activities were completed in September near the B3-06, B3-10 mid and C5-09 stope areas with only minor surface casing installation left to complete. Underground drilling of additional monitoring and paste delivery boreholes continued in September as part of the overall drilling contract and is expected to be completed by mid October 2014.

- Det'on Cho Nahanni Construction Ltd. began preparing all project submittals required before mobilizing to the site. Mobilization is anticipated to occur the first week of October 2014. Work required to be completed this fall will be to excavate, process, and stockpile a minimum of 20,000 cubic meters of tailings in preparation for paste production in the spring of 2015.

## **ENGAGEMENT ACTIVITIES**

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

| <b>Engagement Activity/Target</b>                 | <b>Number</b> | <b>Type</b>  |
|---|---------------|--|
| Public Events                                     | 0             | Giant Mine Working Group                               |
| Information Distribution                          | 10            | Meetings, E-Newsletter, e-mails, website               |
| Site Tours  | 1             |  |
| Media Interactions (based on # of media involved) | 12            | emailed responses, interviews, site tour, twitter post |

## **MONITORING and INSPECTIONS**

### **Health and Safety Inspections**

- 0 lost time incidents.
- 0 minor first aid incidents.
- 0 property damages.
- 3 near misses were reported.
- A contractor initiated a Safety Stand down on September 23 to review near misses and any non-reportable spills that had occurred over the month with the work crews.
- Weekly Inspections occurred on September 5, 13, and 20.
  1. All hazards that were identified during the inspections were corrected.
- Monthly Safety Health and Environment (SHE) Committee met on September 27 and conducted a Monthly Inspection on September 26.
  - All hazards that were identified during the inspections were corrected.

### **Spill Events**

No reportable spills occurred during the month of September 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 September 8, 11, 19, 25 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**

| <b>Date</b>              | <b>Volume (Litres)</b> |
|--------------------------|------------------------|
| 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                 |
| <b>Total for Project</b> | <b>914,975</b>         |



## 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**

| <b>Date</b>                    | <b>Volume (Litres)</b> |
|--------------------------------|------------------------|
| 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                  |
| <b>Total for Project</b>       | <b>129,779</b>         |

## 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 (i.e. the roaster or underground), fenceline monitoring and community monitoring.

Task specific and fenceline air monitoring includes daily, real-time monitoring for particulate matter (PM) as well as 24-hour samples collected every three days and analyzed for PM<sub>10</sub>, total suspended particulates (TSP), and arsenic.

Please find below the summary for task specific, fenceline and community air monitoring for the month of September, 2014.

- Task Specific
  - *Roaster Program:*
    - Real time monitoring for PM<sub>10</sub> occurred daily on each deconstruction day from 7:00 to 17:00. In addition, during the month twelve 24-hour samples were collected for arsenic, PM<sub>10</sub> and TSP. There were no readings above the action limits during the September monitoring period.
  - Surface and Underground Drilling Program:
    - There was one event where underground monitoring concentrations were above underground RBAL. PM<sub>10</sub> concentrations above the RBAL criteria were measured at the UBC Portal (Sampler E10) on September 8, 2014. Elevated concentrations are believed to be the result of dust generated by an excavator during roadway surface work adjacent to the monitoring station and not related to underground remediation activities.
    - Analytical 24-hour arsenic results measured for the underground vent and surface locations were less than the analytical detection limit and/or below the referenced criteria. Analytical results are available up to September 11, 2014.
  - Interim Underground Stabilization (IUS)
    - Baseline monitoring initiated for the IUS during week starting September 29, 2014. There were no PM<sub>10</sub> concentrations above the established RBAL.
- Fenceline Program:
  - There were no 15-minute average concentrations above the fenceline real-time PM<sub>10</sub> 15-minute average Risk Based Action Level (RBAL) of 159 µg/m<sup>3</sup> or the fenceline real-time TSP 15-minute average RBAL of 333 µg/m<sup>3</sup> for the month of September 2014
- Community Monitoring
  - There were no continuous PM<sub>2.5</sub> 24-hour average concentrations above the Northwest Territories Ambient Air Quality Standard of 30 µg/m<sup>3</sup>. There were no continuous PM<sub>10</sub> 24-hour average concentrations above the Ontario Ambient Air Quality Standard of 50 µg/m<sup>3</sup>.

- Sampling for TSP (high volumetric air flow), PM10 (high volumetric air flow), asbestos, total inorganics (trace metals), and arsenic for a 24-hour period is conducted every three (3) days for the community sampling program. Sampling of these parameters has been ongoing since June 24, 2013. There were no exceedances of the 24-hour criteria for PM<sub>10</sub>, TSP, asbestos, total inorganics (trace metals), or arsenic during the month of September 2014. Analytical results are available for PM<sub>10</sub>, TSP, total inorganics (trace metals), and arsenic to September 18, 2014. Asbestos analytical results are available to September 20, 2014.

## **Wildlife Observations and Follow-Up Actions**

No wildlife observations occurred in active work areas and no nesting or rearing habitat was disturbed in the course of work activities.

There have been no further sightings of the bear and cub in the vicinity of the Effluent Treatment Plant and I-38 since early August and no further action was required by site personnel or ENR after the site inspection. Site personnel continue to liaise with ENR as required but report that wildlife activity on-site has diminished with the advent of cooler weather.