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November 21, 2013

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

Dear Mr. Hagen;

RE: October 2013 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.

Sincerely,

Adrian Paradis
A/ Manager
Giant Mine Remediation Plan

c.c.: Nahum Lee, AANDC Inspector
Anne-Marie Guedon, 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 2013

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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 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 2013.

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

There are no regulatory milestones for the month of October, 2013

ROASTER COMPLEX DECONSTRUCTION – PROGRESS UPDATE

During the month of October, 2013 the following activities occurred:

- Daily dust suppression activities occurred within the work area.
- Continued transporting waste containers to the temporary waste transfer areas. Delivery of marine containers commenced to the Material Storage Area (MSA). Waste containers were placed on pallets and transported from temporary waste transfer area to MSA and placed into marine containers. This work is ongoing.
- Continued with air monitoring and environmental inspections.
- Personnel received site and project orientation and technical training.
- Continued with abatement work at the AC Roaster including:
 - Removing equipment and debris
 - Removing and disposing of mineral waste
 - Washing and removing of scrap metal
 - Draining oils from equipment
 - Deconstruction of Tank 6 and started Tank 7.
 - Cut and removed steel piping from interior.
 - Completed removal of asbestos piping materials along both the east and west walls.
 - Completed new waste transfer area outside the AC Roaster.
 - Removal and containerization of arsenic impacted wood materials
- Commenced work at the Dorrco Roaster Building including:
 - Removing and packaging non-arsenic hazardous waste materials
 - Completed the erection of scaffolding at the waste transfer area.
 - Completed the erection of the base course of exterior scaffolding.
- Continued with abatement work at the Cottrell Precipitator Building including:
 - Removing arsenic materials
 - Removing debris and construction materials
 - Steel structure wash down
 - Continued to hammer precipitator walls to remove arsenic scale.
 - Continued removing arsenic from ducts and flues.
 - Washed down parts of the building that are decontaminated.
 - Cleaned and removed excess scaffolding from the facility.
 - Removed mechanical and electrical equipment.
 - Completed shrink wrapping the southwest exterior duct.
- Continued with abatement work at the Baghouse including:
 - Developed detailed procedures for deconstruction of the arsenic sandwiches.

- Continued air monitoring in the Baghouse area.
- Excavated around "mystery raise" to the east of the building - no end was found (bedrock not encountered) and it is still unclear what the wood box on the surface was for. It was identified to be completely infilled with dirt part-way down.
- Continued with abatement work at the Exterior Flues including:
 - Decontamination work including removal and packaging of asbestos containing insulation and arsenic trioxide dusts
 - Abated arsenic in the Dorrco/Cottrell flue.
 - Began deconstruction of exterior flues.
 - Completed deconstruction and removal of exterior flues.
 - Waste materials from flues transferred to staging area
- Continued with abatement and deconstruction work on the Arsenic Silo including:
 - Cutting up Silo and transferring all waste materials to staging area.
- Commenced work on the Calcine Building including:
 - Completed installation of task lighting systems.
 - Removed non-hazardous waste from the building.
 - Completed erection of scaffolding for the waste transfer area.
 - Completed erection of the base course of scaffold around the exterior of the structure.
 - Started erection of scaffolding for interior roof access.
- Joint Health and Safety Committee meeting held on October 16, 2013.
- Winterizing equipment and general housekeeping and consolidation of equipment for winter.
- Tested wastewater from treatment plant for disposal into Northwest Tailings pond.
- The water license Inspector completed an inspection of the MSA and did not identify any significant issues or concerns.
- Cleaning up any staining on the ground in the temporary waste storage areas.
- Completed wet wipe samples in Contractor trailers', men's and women's washrooms, lunch room and decontamination units.
- Collected 6 samples for PCB analysis from transformers in the AC Roaster.
- Continued with 100% arsenic urinalysis monitoring for workers.
- Ongoing site maintenance and cleaning.

UNDERGROUND STABILIZATION – PROGRESS UPDATE

B1-18 Stope Paste Back Filling Program

- 1400 cubic meters of paste has been delivered to date.
- Initial production has focused on filling the small voids and drifts that are difficult to fill.
- Production has been delayed due to the compaction of clay in the tailings and small metals fragments that need to be broken down and separated out before being turned into paste.
- Barricades 1 and 2 are completely constructed
- Barricade 3 has been started and needs to be completed before further filling in this part of the stope

- All required U/G cameras have been installed for the current back filling and we are receiving high quality imagery of the paste fill in realtime.

Drilling

- All required drilling of paste delivery and monitoring holes have been completed for Stope B1-18.
- The drillers have moved to Stope B3-06 and work is proceeding.
- RFQ for the balance of drilling requirements was sent tp PWGSC on 31-Oct-13

Paste Testing

- All paste testing with cement and tailings has been completed for the voids in and around Stope B1-18.
- Expanding foam testing has also taken place and the resulting data has been logged for future use.
- Further paste testing with various other binders has yet to take place, however most of the binding material has arrived onsite this past week.

ENGAGEMENT ACTIVITIES

October 2013:

| <i>SUMMARY: Engagement Activities Completed during the Reporting Period</i> | | |
|--|---------------|---|
| Engagement Activity/Target | Number | Type |
| Public Events | 4 | Public Forum, Meet & Greet, City Council, Working Group, GMCA |
| Information Distribution | 4 | Meetings, E-newsletter, e-mails |
| Site Tours | 0 | |
| Media Interactions (based on # of media involved) | 2 | Interviews, site tour, emailed responses |

MONITORING and INSPECTIONS

Health and Safety Inspections

- 0 loss time incidents
- 0 first aid incidents:
- Property Damage

- 1) The Telehandler was placing marine containers had boom push against a window on the machine and glass shattered (October 12, 2013)
- Due to the receipt of elevated levels of total arsenic in urine for 6 workers, WSCC issued a stop work order which applied to high risk arsenic abatement activities (October 7, 2013). Stop work order lifted on Friday, October 11, 2013 at the end of the day.

Spill Events

No spills of a reportable volume occurred during the reporting period.

Small volume of leaking oil noticed from equipment removed from Cottrell Building. The leak impacted area was very small (less than 0.5 m diameter). An incident report was filed. The liquid impacted soil was excavated and containerized. (October 21, 2013)

Several bags ripped during transport to staging/loading area onto the trailer. The outer bag ripped (bags were double-bagged). It was determined that the bags being used were classified for a much lower weight than the original accepted bags (1000 kg vs 6000 kg). No material was spilled.

Water Quality Monitoring

Waste water sampling:

- Samples were collected from the holding tank in the decontamination showers water that is used for rinsing down contamination and dust control inside the buildings for decontamination activities on 2013-10-07 and 2013-10-17. All results were Non Detect for Oil and grease.
- During the month of October water was discharged to the Northwest Tailings Pond on 2013-10-02, 2013-10-08 and 2013-10-22 for a total of 68,136 L. Approval was given by AECOM prior to discharge.

Sanitary Waste Management

The following table shows all project discharges of sanitary wastewater to date.

Sanitary Wastewater Discharged to Date to the Dettah Sewage Lagoon

| Date | Volume (Liters) |
|--------------------|-----------------|
| July 25, 2013 | 3,000 |
| August 9, 2013 | 3,785 |
| August 16, 2013 | 2,650 |
| August 23, 2013 | 3,785 |
| August 30, 2013 | 3,040 |
| September 6, 2013 | 4,921 |
| September 13, 2013 | 4,543 |
| September 18, 2013 | 5,300 |
| September 27, 2013 | 4,921 |
| October 4, 2013 | 5,300 |

| Date | Volume (Liters) |
|-------------------|-----------------|
| October 11, 2013 | 5,300 |
| October 18, 2013 | 5,300 |
| October 25, 2013 | 4,164 |
| Total for Project | 56,009 |

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 roaster work area perimeter monitoring, fenceline monitoring and community monitoring.

The following sections provide a summary of the fence-line and community air monitoring data collected during the month of October.

- There were no 15-minute average concentrations exceeding the fenceline PM10 RBAL concentration of 159 $\mu\text{g}/\text{m}^3$ and the TSP RBAL concentration of 333 $\mu\text{g}/\text{m}^3$
- There were no PM2.5 24-hour average concentrations exceeding the Northwest Territories Ambient Air Quality Standard of 30 $\mu\text{g}/\text{m}^3$
- There were no PM10 24-hour average concentrations exceeding the Ontario Ambient Air Quality Standard of 50 $\mu\text{g}/\text{m}^3$
- 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. Sampling of these parameters has been ongoing since June 24th, 2013. There were no exceedances of any parameter for the month of October. Analytical data is available up to and including October 13th. Results are one to several orders below criteria or below laboratory detection limits.

The following provides a summary of the perimeter monitoring data collected during the month of October:

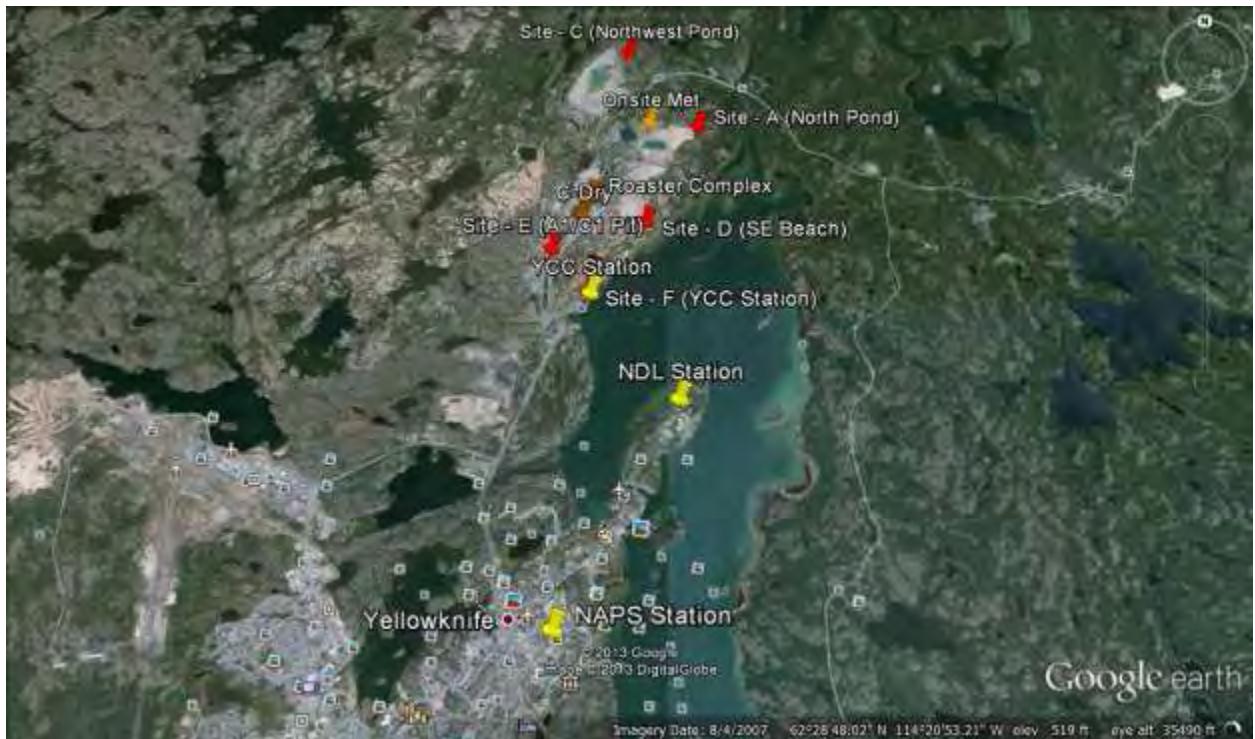
In October there was one incident that exceeded the 24-hour action level for arsenic. On October 7-8 there was an action level exceedance for arsenic in samples collected during the time the Silo was lowered. The arsenic exceedances consisted of 3.5 ug/m^3 at a sampling point on the north site boundary fence and 0.32 ug/m^3 at a sampling point along the west site boundary. The action level is 0.3 ug/m^3 . It was determined that the elevated concentrations of arsenic in these samples were the result of a momentary release of dust that occurred at approximately 4:15 pm, at the moment when the silo structure was lowered to the ground and visual dust was observed. The ground crew immediately attempted to immobilize the dust by spraying the dust with water upon its release, preventing the cloud from migrating any further than just beyond the site boundaries. Air monitoring data for particulate matter (PM₁₀) were subsequently reviewed that day to confirm that action levels were not exceeded as no visual alarms were observed. To determine if the potential arsenic concentrations in the Highway 4 right-of-way at the time of the dust release posed an acute health hazard to anyone passing by on the highway at the time, the contractor applied measured air concentrations along with

air dispersion modeling to estimate the potential concentration of arsenic in the dust plume. The results of this modelling concluded that there were no human health safety concerns for anyone using the highway. There were no other exceedances for arsenic or PM₁₀ in the month of October.

Figure 1: Fenceline Monitoring Station Locations



Figure 2: Community Monitoring Station Locations



Wildlife Observations and Follow-Up Actions

- Swallows and ravens continue to be observed in the vicinity of the site but they are not using the roaster complex buildings.
- A fox and squirrel have been spotted in the area but tend to stay away from any activity on site.