NWB Annual Report **Year being reported:** 2011

License No: 2AM-DOH0713 **Issued Date:** September 19, 2007
Expiry Date: September 30, 2013

Project Name: Doris North Project

Licensee: Hope Bay Mining Ltd.

Mailing Address:
300-889 Harbourside Dr.
North Vancouver, BC
V7P 3S1

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

In 2008 this licence was transferred from the previous owner Miramar Hope Bay Mining Ltd. to Hope Bay Mining Ltd.

General Background Information on the Project (*optional):

Doris North facilities are currently being used to support advanced exploration in the Hope Bay Greenstone Belt. The Doris North underground mine development began in October 2010. The tailings impoundment facility has not been completed and the mill has not been constructed.

Licence Requirements: the licensee must provide the following information in accordance with

Part B | Item 3

A. A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management. [See Schedule B]

Water Source(s): Doris Lake

Water Quantity:

480,000 cu.m/yr	Quantity Allowable Domestic (cu.m)
29,567 cu.m/yr	Actual Quantity Used Domestic (cu.m)

Waste Management and/or Disposal

- [x] Solid Waste Disposal
- [x] Sewage
- [x] Drill Waste
- [x] Greywater
- [x] Hazardous
- [x] Other: Fuel Farm Berm Effluent

Additional Details:

Water for domestic use at Doris Camp is obtained from Doris Lake via a 2 inch diameter submerged pipe with a DFO compliant fish screen. This intake is located approximately 30 metres from shore and linked to a pumphouse on the shore of Doris Lake.

Waste produced on site is treated according to Part G of the license.

-Food waste is burned in the incinerator as per Part G Item 5.
-Paper products, paperboard packing, and untreated wood waste is open burned as per Part G Item 8.
-HBML is authorized to dispose of all non-hazardous solid waste in a landfill on site as per Part G Item 10. At the request of the land owner, Kitikmeot Inuit Association, HBML has not constructed a landfill. Solid waste that cannot be burned is taken offsite for disposal at an approved site. In 2011, a total of 1,003,915 kg was removed from the Hope Bay Belt .
-Sewage and greywater produced onsite is processed in the sewage treatment plant as per Part G Item 3. Sludge produced by the treatment plant is burned in the incinerator.
-Hazardous materials such as waste oil, glycol, and contaminated soil are being shipped offsite for disposal at an approved site as per Part G Item 12.
-Fuel farm berm effluent is sampled for water quality against the discharge criteria of the licence. Effluent that meets the standards for discharge is released in accordance with the licence following a notification to the Inspector; effluent that does not meet the licence criteria is treated onsite until it is remediated to acceptable levels for discharge, or it is removed offsite for treatment/disposal.

B. A list of unauthorized discharges and a summary of follow-up actions taken. [See Schedule B Item 9]

Spill No.: (as reported to the Spill Hot-line)
Date of Spill:
Date of Notification to an Inspector:
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Please see Item 9 of attached supplement for a list, including details, of all unauthorized discharges that occurred in 2011 under licence 2AM-DOH0713.

C. Revisions to the Spill Contingency Plan [See Part I, Item 4 and Schedule B Item 8]

Other: (see additional details)

Additional Details:

The NWB approved the revised Spill Contingency Plan in October 2010. Since then, updates have been made to the contact numbers, as well as tank location information and drawings showing tank locations. An updated copy of this plan is included with the submission of the annual report.

D. Revisions to the Abandonment and Restoration Plan [See Part L, Item 5]

AR plan submitted and approved - no revision required or proposed

Additional Details:

The Abandonment and Restoration Plan submitted in April 2007 has not been modified or revised.

E. Progressive Reclamation Work Undertaken [See Schedule B, Item 15]

Additional Details (i.e., work completed and future works proposed)

Construction activities at the Doris North project continued throughout 2011 so no reclamation work was undertaken.

F. Results of the Monitoring Program including: [See Part J, Item 5 and Schedule B, Item 17]

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details attached

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

Additional Details: (date of request, analysis of results, data attached, etc)

N/A

G Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported [See Schedule B Item 19]

Additional Details: (Attached or provided below)

N/A

H. Any responses or follow-up actions on inspection/compliance reports [See Schedule B Item 18]

Inspection Report received by the Licensee (Date):

Additional Details: (Dates of Report, Follow-up by the Licensee)

See Item 18 of attached supplement for details on inspection action items and how these were addressed.

I. Any additional comments or information for the Board to consider

Please see attached supplement for additional information requirements set out in Licence No. 2AM-DOH0713.

Date Submitted:	March 31, 2012	
Submitted/Prepared by:	Chris Hanks	
Contact Information:	**Tel:**	(720) 917-4489
	Fax:	(604) 980-0731
	email:	chris.hanks@newmont.com

GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
ST-7 Doris Freshwater Intake	68	8	17.04	106	36	52.68

Source Description	UTM Easting	UTM Northing
Doris Lake	433604	7558710
Doris Lake	433644	7558565
Doris Lake	433648	7557929
Doris Lake	433652	7557805
Doris Lake by water truck	434147	7559743
Doris Lake	433615	7558178
Doris Lake	433861	7557708
Doris Lake	433580	558470
Doris Lake	433839	7559821
Doris Lake	433719	7559898

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
ST-6 Roberts Bay Fuel Storage Discharge and Containment Sump	68	10	35.6	106	36	59.8
ST-8 STP Discharge	68	8	14.52	106	36	50.46
ST-9 STP Tundra Discharge	68	8	20.22	106	39	55.86

Source Description	UTM Easting	UTM Northing
TL-2	434053	7559507
TL-3	434204	7559985
TL-10	434914	7558239

2011 2AM-DOH0713 Type A Water License Annual Report Supplemental Document

Doris North Project

Nunavut Water Board

Prepared by
Hope Bay Mining Ltd.
North Vancouver, BC

Prepared for
Nunavut Water Board
Gjoa Haven, NU

March 2012

Executive Summary
2AM-DOH0713 Annual Report

Hope Bay Mining Ltd. ("HBML") has filed its Annual Report on its activities during 2011 under Water Licence No. 2AM-DOH0713 issued by the Nunavut Water Board on September 19, 2007. Note in 2008 this licence was transferred from the previous owner, Miramar Hope Bay Mining Ltd., to HBML. As set out in Schedule B, Item 1 of the Licence, the report includes information with respect to the following topics:

- summary of monthly monitoring data
- summary of the Construction Monitoring Report
- information with respect to geochemical monitoring and waste rock storage assessment
- summary of the results of monthly water balance and water quality model assessments
- update on current capacity of the Tailings Impoundment Area
- a comparison of flows at monitoring stations
- consideration of Management Plans and Emergency Response and Contingency Plan
- a list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up actions taken
- results of continuing baseline data collection
- consideration of adequacy of reclamation security
- a summary of modification and or major maintenance work carried out n the water supply and waste disposal facilities, including all associated structures and an outline of any work anticipated for the next year
- a summary of any closure and reclamation work undertaken and an outline of any work anticipated for next year
- GPS locations of areas of waste disposal
- a summary reporting consultation with public and participation with local organizations and residents of nearby communities
- a summary of actions taken to address concerns or deficiencies listed in the inspection reports filed by an Inspector

Aolapkaeyin Naetomik Okaohen
2AM-DOH0713 Ukeogoagaagan Unipkaak

Hope Bay Mining Ltd.-kon ("HBML") tonihihimaliktun Ukeotoagaagan Unipkamiknik havaamigun 2011-mi ukeommi ilagani Imaknik Atogeagani Laeseoyum Napaa 2AM-DOH0713 toniyaohimayok Nunavumi Imalikiyin katimayenin September 19-mi 2007-mi. Kaoyimalogo 2008-mi una laeseoyok nuhimayok hivoagun nanminikaktugaloamin, Miramar-konin Kapihiliktumi Oyagaktakvik-kunin ukunuga HBML-kunin. Okakhimayumi Naonaepkun B-mi, Ilikuktok 1 Laeseoyumi, unipkak ilakaktok hivunikhiyotikhanik ukununa:

- naenakhugin okaotaoyun tatkikheotini amigiyutinun naonaepkotin
- naenakhugin okaotaoyun Hanatilogin Amigiyutinun Unipkak
- hinonikiyutikhan nunami halomaelguvaloknik monagiyutin oyagaktaniklo atulimagitonik tukoktigivikmik ilitokhaenik
- naenakhugin okaotaoyun kanogilinigin tatkikheotini imakakniginik imaginigagulo ilitokhaenikmik
- kanogiliniga taya inikageakmaga Atagukveoyok Nunami
- naonaeyaknigin kuknigin amigiyutin inigiyani
- ihomaginigin Monagiyotinun Upalogaeyaotin Upaloknaktokakalo Upigeagutin Ihoakhaotikhanulo Upalogaeyaon
- titigakhimayomik okateakhimalotiklo tamaeta agiktaohimagitun kuvigaeyun kanogaaloklo, kuveyokakan hunaoniga nahaotagun naetomiklo okaoheoyonik upiyotinik kigoagun
- kanogilivaleanigin ilitokhaotikhanun naonaepkotinik katitiyiyutin
- ihomamilogo naamaniga nunanik utiktiyotikhak manik kolaknaeyaon
- naetomik okaoheoyonik notaguktitiyutinik ihoakhaotiniklunen imiktakvikon havaoheoyun ikagukvelo kanoginiginun, ukoalo tamaeta ilagiyaen napayun kanolo havaohikhan nahugiyaoyun atoktukhami ukeomi inmagaa
- naetomik okaoheoyonik umiktokaknikan nunalo utititaagani ilitkohenun havaagiyaolikmagaa kanoklo havaohikakneakmagaa aepaagu
- GPS-mi homenigin nunan ikagukveoyun
- naetomik okaoheoyonik okakatigegutinun inuknik ilaoniginiklo nunalikni timeoyuni inoelo haneanetun nunalikni
- naetomik okaoheoyonik upiyotinik ihoakhiyaagani ihomalutaoyun ihoeliyotilo titigakhimayun ilitokhaeyutinin makpigaagini Ilitokhaeyim tunihimayaeni

ᐱᒋᐊᕈᑎᖓ
2AM-DOH0713 ᐅᑭᐅᒧᑦ ᐅᓂᑳᓕᐅᕐᓯᒪᔪᖅ

Hope Bay Mining Ltd. ᐅᔾᕿᒃᓯᐅᕐᑎᑦ ᐅᑭᐅᒧᑦ ᐊᑐᕐᑕᒥᓐᓂᒃ ᐅᓂᑳᓕᐅᕐᑐᑦ ᑐᓴᖓᒃᓴᓕᐅᕐᑐᑦ ᐱᓕᕆᐊᕆᔭᒥᓐᓄᑦ ᐅᑭᐅᒧᑦ 2011 ᐃᒪᕐᒧᑦ ᓚᐃᓴᖕᒐ ᓇᓴᐅᑖ 2AM-DOH0713 ᐊᕿᑕᐅᓚᐅᕐᑐᖅ ᓄᓇᕗᒥ ᐃᒪᓕᕆᔨᑦ ᑲᑎᒪᔨᖏᓐᓂᑦ ᓴᑕᐸ 19, 2007. ᑐᑭᓯᒋᐊᓕᒃ 2008-ᒧᑦ ᓚᐃᓴ ᑖᓐᓇ ᓄᒃᑎᕐᑕᐅᓚᐅᕐᑐᖅ ᓯᕗᑦᓕᐅᔪᓂᑦ ᑕᐃᑯᓇᖓᑦ ᓇᒃᒥᓂᖃᓚᐅᕐᑐᓂᑦ, Miramar Hope Bay Mining_ᑯᓐᓂᑦ, HBML_ᑯᓐᓄᑦ. ᐊᕿᑕᐅᓯᒪᔪᖅ ᒪᓕᒃᑯᒍ Schedule B, ᓇᓴᐅᑎᖃᕐᑐᖅ 1 ᓚᐃᓴᒥ, ᑐᓴᒃᓴᓕᐅᕐᓯᒪᔪᖅ ᐅᓂᑳᓕᐅᕐᓯᒪᔪᖅ ᑐᕿᖓᔪᖅ ᑕᑯᓄᖓ ᐊᑖᓂ ᑎᑎᕋᕐᓯᒪᔪᓄᑦ:

- ᓇᐃᓈᕐᓯᒪᑉᑐᑎᒃ ᑕᕿᒧᑦ ᖃᐅᔨᓴᕐᑕᐅᖃᑦᑕᖅᑐᑦ ᑎᑎᕋᕐᓯᒪᔪᑦ
- ᓇᐃᓈᕐᓯᒪᑉᑐᑎᒃ ᑎᑎᕋᕐᓯᒪᔪᑦ ᐃᒡᒍᕐᐸᒃᓂᒃ ᐊᓯᖏᓐᓂᒃᑯ ᓴᓇᔭᐅᓂᖏᓐᓄᑦ
- ᑐᓴᒃᓴᓕᐅᕐᓯᒪᔪᑦ ᑐᕿᖓᔪᖅ ᐅᔭᖃᓄᑦ ᖃᐅᔨᓴᕐᑕᐅᓂᖏᓐᓄᑦ ᐊᒻᒪᑯ ᐊᑐᕐᑕᐅᓂᐊᖏᑦᑐᑦ ᐅᔭᖃᑦ ᐊᒃᑕᑰᕐᑕᐅᕙᑦᑕᐊᓂᖏᓐᓄᑦ
- ᓇᐃᓈᕐᓯᒪᑉᑐᑎᒃ ᑎᑎᕋᕐᓯᒪᔪᑦ ᑕᕿ ᑕᒫᑦ ᐃᒪᖅ ᖃᐅᔨᓴᕐᑕᐅᖃᑦᑕᖅᓂᖓᓄᑦ ᐊᒻᒪᑯ ᐃᒪᑦᑕᐅᔭᕆᐊᒃᓴᖓᓄᑦ ᖃᐅᔨᓴᕐᓃᑦ
- ᐅᖃᐅᓯᐅᔪᕐᑕᐅᖅ ᓴᒧᒪᐃᑦᑐᒧᑦ ᐅᔾᕿᒃᓯᐅᕐᕕᒃᒥᑦ ᑯᕕᕿᕕᐅᔪᖅ ᓄᓇ
- ᑰᒃᐸᑦᓚᐊᔪᖅ ᖃᐅᔨᓴᕐᑕᐅᓂᖓᓄᑦ ᐊᑐᕐᑐᑦ
- ᖃᐅᔨᓴᕐᑕᐅᙱᓚᐊᔪᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐊᑐᕐᑕᐅᔪᑦ ᐸᕐᓇᐅᑎᑦᑯ ᑐᐊᕕᕐᓇᕐᑐᖃᕋᔭᕐᐸᑦᑯ ᐊᑐᕐᑕᐅᓇᔭᕐᑐᑦ ᐊᒻᒪᑯ ᑯᕕᔪᖃᕐᐸᑦ
- ᑎᑎᕋᕐᓯᒪᔪᑦ ᐊᒻᒪᑯ ᓱᓇᐅᓂᖏᑦ ᐊᕿᑕᐅᓯᒪᖏᑦᑐᑦ ᓴᕿᐸᑦᓚᐊᔪᑦ ᖃᓄᖅᑯ ᐊᖏᓂᖏᑦ, ᑯᕕᔪᓄᑦ ᑐᓴᒃᓴᓕᐅᕐᓯᒪᔪᑦ ᓇᓴᐅᑎᖏᑦᑯ ᐊᒻᒪᑯ ᑐᑭᓕᐅᕐᓯᒪᔪᖅ ᖃᖓᑯᑦ ᖃᐅᔨᓴᕐᑕᐅᒋᐊᖃᕐᓂᖏᑦ
- ᖃᐅᔨᓴᕐᑕᐅᖃᑦᑕᖅᑐᖅ ᐃᒪᐅᑉ ᐃᒪᐃᕐᑎᐸᑦᓚᐊᓂᖓ ᓱᓐᓂᕐᐸᑦᓚᐊᖏᓐᓂᖓᓗᓐᓃᑦ
- ᐊᕿᐅᒪᑦᑎᐊᕋᓗᐊᕐᐸᑦ ᑕᒪᑯᐊᑦ ᓴᓇᕕᐅᕋᓂᒃᐸᑦ ᓴᓕᒍᑕᐅᓗᑎᒃ ᐊᑐᕐᑕᐅᓂᐊᕐᑐᑦ ᐸᕐᓇᐅᑎᑦ
- ᓇᐃᓈᕐᓯᒪᔪᑦ ᓄᑖᖑᕐᑎᕐᑕᐅᙱᓚᐊᓂᖏᑦ ᐊᓯᖏᑦᑯ ᐊᕿᐅᒪᑎᑕᐅᔪᑦ ᓴᓇᔭᐅᖃᑦᑕᖅᑐᑦ ᐃᒥᖅᑕᕐᕕᒃᒧᑦᑯ ᐊᑐᕐᑕᐅᔪᑦ ᐊᒻᒪᑯ ᐊᒃᑕᑰᕐᓂᕐᒧᑦ, ᐊᒻᒪᑯ ᑕᒪᑯᐊᑦ ᑕᐃᑲᓂ ᓇᐸᔪᑦ ᓴᓇᔭᐅᓯᒪᔪᑦ ᑕᒪᕐᒥᑦ ᓴᓇᔭᐅᙱᓚᐊᒋᐊᖅᖃᑦᕐᑐᑦ ᐊᕐᕿᒍᑦ ᑕᒪᑦ ᓱᓇᑦᑯ ᐊᕐᕿᒍ ᓴᓇᔭᐅᓂᐊᕐᓂᖏᑦ ᐸᕐᓇᒃᓯᒪᔪᑦ
- ᓱᓇᑦᑯ ᐊᕐᕿᒍ ᐊᑐᕈᐃᕐᐸᑕ ᐊᕿᓱᕐᑕᐅᑉᑎᒃ ᓴᓕᒃᑕᐅᓂᐊᕐᓂᖏᑦ ᓴᓕᒃᑕᐅᙱᓚᐊᔪᑦᑯ ᐊᓯᖏᑦᑯ ᑕᒪᑯᐊᑦ ᐊᕐᕿᒎᑦ ᓴᓇᔭᐅᑲᓐᓂᕐᓂᐊᕐᑐᑦ
- ᑕᒪᕆᑯᒻᒧᑦ ᐊᕿᑕᐅᓯᒪᔪᑦ ᐊᒃᑕᑰᕐᕖᑦ ᓱᒥ ᐃᓕᔭᐅᓯᒪᒃᒪᑕ
- ᖃᖓᑯᑦᑯ ᑐᓴᕐᑎᑦᑎᖃᑦᑕᖅᑲᐊᖃᕐᒪᑕ ᐅᔾᕿᒃᓯᐅᕐᑎᑦ ᓄᓇᓕᒃᓂᒃ ᐊᕿᓱᐃᖃᑎᖃᕐᑐᑎᒃᑯ ᓄᓇᓕᒃᓂ ᑲᑎᒪᔨᐅᕕᖃᕐᑐᓄᑦ ᐃᓄᖏᓐᓄᑦᑯ ᓄᓇᓕᒃᓂ ᖃᓂᓛᖑᔪᓂ
- ᑎᑎᕋᕐᓯᒪᔪᑦᑯ ᓱᓇᑐᐃᓐᓇᐃᑦ ᐃᓱᓪᓗᒋᔭᐅᔪᑦ ᖃᐅᔨᒋᐊᕐᑕᐅᒋᐊᓖᑦ ᐅᕙᓘᓐᓃᑦ ᐊᕿᐅᒪᖏᑦᑐᑦ ᖃᐅᔭᐅᓚᐅᕐᑐᑦ ᐅᖃᐅᓯᐅᓚᐅᕐᑐᑦ ᖃᐅᔨᓴᕐᑐᓂᑦ ᑕᑯᔭᕐᑐᖅᑐᓂᑦ

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Figures

1. Summary of monthly monitoring reporting [see Part J Item 21]

During 2011, Hope Bay Mining Ltd. (HBML) collected data from and submitted monthly reports on the following active or seasonally active monitoring stations: ST-1, ST-2, ST-5, ST-6a, ST-6b, ST-7, ST-8, and ST-9. With the partial construction of the North Dam on Tail Lake and subsequent dewatering activities that occurred during August and September 2011, monitoring was also undertaken at the following stations: TL-1, TL-2, TL-3, TL-4, and TL-10; in accordance with the sampling criteria specified in licence 2AM-DOH0713. Tail Lake, however, is still not considered a Tailings Impoundment Area (TIA) because the dam infrastructure is not complete, the mill does not exist, ore processing is not occurring, and no tailings or other prescribed wastes were deposited into Tail Lake during 2011.

- **ST-1 – Sedimentation Pond:** This facility was constructed and first used in 2011. Samples were collected from a depth of 0.25 m below the water surface, when possible, with some representative samples taken from the end-of-pipe of a water management recirculation pump during the construction of the sedimentation pond, or from a temporary holding tank used as a component of the temporary water management and treatment process. Samples were taken daily during periods of discharge.
- **ST-2 – Pollution Control Pond:** This facility was constructed and was active between May and October 2011. Samples were collected from a depth of 0.25 m below the water surface, when possible, with some representative samples taken from the end-of-pipe of a water management recirculation pump during pond construction. A temporary pond was created to retain freshet water flows which started before the construction of the pollution control pond was completed; water was pumped from the Pollution Control Pond to this temporary facility and ST-2 samples were collected from this pond. Required frequency for sampling is once per month during open water season.
- **ST-5 – Plant Site Fuel Storage and Containment Area Facility:** During 2011, the new permanent fuel storage facility construction was completed and effluent samples (when present) were collected from the sump at monitoring location ST-5 prior to any discharge from the facility.
- **ST-6a and ST-6b – Roberts Bay Bulk Fuel Storage Facilities:** Effluent samples (when present) were collected from the sump at monitoring location ST-6a prior to any discharge from the facility. The new Roberts Bay Bulk Fuel Storage Facility (ST-6b) was completed but effluent did not accumulate prior to freeze-up.
- **ST-7 – Freshwater pumped from Doris Lake:** Samples were taken from a valve on the discharge end of the freshwater pump. Required frequency for sampling is once per month, though there is no water quality criteria specified in the licence.
- **ST-8 – Discharge from Sewage Treatment Plant Bio-Membrane:** HBML operated tandem plants during 2011 to support the Doris North camp facility; subsequently, samples were collected from two sampling ports inside the plant representing effluent quality that is being discharged to the tundra. In-plant sampling facilitates year-round compliance evaluation of plant performance. Sampling points ST-8#1 and ST-8#2 were renamed during the year to ST8a and ST8b to accommodate implementation of a new database system for managing analytical data.

- **ST-9 – Runoff from Sewage Treatment Plant Discharge:** Samples are taken downstream of sewage treatment plant discharge point just prior to flow entering Doris Lake. This location, agreed upon with INAC mid-year in 2009, is between the ST-8 outfall and Glenn Lake. Samples can only be collected from this location seasonally.
- **TL-1 – TIA at the Reclaim Pump Barge:** The reclaim pump barge did not exist during 2011 but representative monitoring was undertaken from Tail Lake at a depth of 1.5m below the water surface, or opportunistically from a valve on dewatering pumps when in operation to lower lake level.
- **TL-2 – Doris Outflow Creek Upstream at the Flow Monitoring Station:** Monitoring was undertaken from a point established at UTM 7559507 N, 434053 E
- **TL-3 – Doris Outflow Creek 80m Downstream of Base of Waterfall:** Monitoring was undertaken from a point established at UTM 7559985 N, 434204 E
- **TL-4 – TIA Discharge End-Of-Pipe:** This monitoring point was temporarily established during the 2011 dewatering activities at the discharge erosion-control/flow monitoring structure downstream of TL-2 on Doris Creek.
- **TL-10 – Water Column in Deepest Portion of Tail Lake and at a Location Away from the TIA Reclaim Water Floating Pump House, Sampled at Surface, Mid-depth and Near Bottom:** Monitoring was undertaken from a point established at UTM 7558239 N, 434914 E

During 2011, the landfarm facility was completed and monitoring station ST-4 (Landfill Pollution Control Sump) established. There were no discharges from the facility; therefore no samples were collected from this location.

Site runoff from Sediment Controls (ST-10) was not sampled in 2011 as runoff did not occur from any sediment control structures installed.

Monitoring station ST-11 (discharge from the reagent and cyanide storage facility sumps) was not sampled as this facility was not constructed during 2011.

HBML uses an external certified laboratory to carry out all analyses reported in the monthly and annual reports. The QA/QC data produced by ALS Canada Ltd. are used to determine the accuracy and precision of results in these reports. The following tables set out a summary of these data.

ST-1

As per Part G Items 1 and 21 (a, b, c) of licence 2AM-DOH0713, HBML provided written notice to the Inspector Aug 4, 2011 prior to a planned discharge of the water from the sedimentation pond (ST-1). As described in the Interim Water Management Plan, water from the temporary pollution control pond was to be treated by a reverse osmosis (RO) treatment system, and then pumped to a post-treatment holding tank located in the sedimentation pond prior to discharge. Samples collected on July 19, 2011 were compliant with the effluent quality standards for discharge as specified in the licence under Part G Item 21(a). The results of water quality monitoring at station ST-1 July 19, 2011 are provided in Table 1.

Table 1 – Water quality monitoring program results for ST-1, July 2011, in mg/L, unless specified otherwise

Parameter/SNP Sites	ST-1
ALS Lab Reference #	L1034072-1
Sample Date and Time	19/07/11@16:19
pH	8.24
TSS	<3.0
Total Ammonia –N	3.97
Total CN	0.0098
Total Oil & Grease	<1; no visible sheen
Total Aluminum – T-Al	0.446
Total Arsenic – T-As	0.00116
Total Copper – T-Cu	0.0038
Total Iron – T-Fe	0.397
Total Lead – T-Pb	0.0002
Total Nickel – T-Ni	<0.0020
Total Zinc – T-Zn	0.0066

HBML received approval for the discharge from the Inspector on August 17, 2011. Beginning August 22, 2011, the water from the temporary pollution control pond was treated, pumped into a post-treatment holding tank placed in the sedimentation pond (ST-1), and subsequently discharged to the tundra on a daily basis.

Daily water samples were collected from the post-treatment holding tank and sent to ALS Laboratory for rush analysis. HBML only began to receive results for the daily samples on September 1, 2011. The results indicated that ammonia and zinc were above discharge criteria for each daily sample collected from ST-1 between August 22 and 29, 2011. Upon receipt of these non-compliant ammonia results, HBML immediately shut down the water treatment system and discharge pumps. In total, 4,130.56 m^3 of water was discharged between August 22 and September 1, 2011.

Daily monitoring results in accordance with Schedule J of 2AM-DOH0713 for August 2011 are provided in Table 2 below.

Table 2 – Water quality monitoring program results for ST-1, August 2011, in mg/L, unless specified otherwise

Parameters	ST-1	ST-1	ST-1	ST-1	ST-1	ST-1	ST-1	ST-1
ALS Lab Reference #	L1049760-1	L1049760-3	L1050037-1	L1050037-2	L1051255-1	L1051255-2	L1051255-3	L1051255-4
Field Sample Details	ST1-22AUG11	ST1-23AUG11	ST1-24AUG11	ST1-25UG11	ST1-26AUG11	ST1-27AUG11	ST1-28AUG11	ST1-29AUG11
Sample Date/Time	22/08/11@16:42	23/08/11@16:11	24/08/11@7:45	25/08/11@7:45	26/08/11@14:20	27/08/11@10:40	28/08/11@10:55	29/08/11@9:15
pH	7.00	6.86	6.64	6.56	6.52	6.51	6.51	6.55
TSS	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Ammonia –N	**6.23**	**6.85**	**7.54**	**7.83**	**8.11**	**9.39**	**9.83**	**10.9**
Nitrate - N	16.0	18.0	18.0	17.4	16.3	17.6	17.9	19.1
Nitrite - N	0.134	0.143	0.144	0.137	0.069	0.066	0.071	0.070
Total CN	<0.0050	<0.0050	<0.0050	0.0067	<0.0050	<0.0050	<0.0050	0.0060
Total Oil & Grease	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen
Total Sulphate (SO_4)	<0.50	<0.50	<0.50	<0.050	<0.50	<0.50	0.52	0.53
Total Aluminum – T-Al	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total Arsenic – T-As	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Total Copper – TCu	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Iron – T-Fe	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total Lead – T-Pb	<0.00010	<0.00010	0.00021	0.00014	0.0015	0.00021	0.00029	0.00028
Total Nickel – T-Ni	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Zinc – T-Zn	0.0040	**0.0377**	**0.121**	**0.118**	**0.164**	**0.239**	**0.266**	**0.222**

Adjustments were made to the RO treatment system and samples collected on September 26 and 29, 2011 were compliant with the effluent quality standards for discharge specified in the licence. Results for these samples are presented in Table 3. Written notice prior to a planned discharge of the water from the sedimentation pond (ST-1) was provided to the Inspector October 4, 2011.

Table 3 – Water quality monitoring program results for ST-1, September 2011, in mg/L, unless specified otherwise

Parameters	ST-1	ST-1
ALS Lab Reference #	L1064721-1	L1066268-1
Field Sample Details	ST1-26SEP11	ST1-29SEP11
Sample Date/Time	26/09/11@8:30	29/09/11@15:55
pH	6.33	6.06
Total Suspended Solids	<3.0	<3.0
Ammonia (as N)	3.4	2.08
Cyanide, Total	0.0054	0.0151
Oil and Grease	<1.0, no visible sheen	<1.0, no visible sheen
Aluminum (Al)-Total	<0.010	<0.010
Arsenic (As)-Total	<0.00040	<0.00040
Copper (Cu)-Total	<0.0010	<0.0010
Iron (Fe)-Total	<0.010	<0.010
Lead (Pb)-Total	<0.00010	<0.00010
Nickel (Ni)-Total	<0.0020	<0.0020
Zinc (Zn)-Total	<0.0040	<0.0040

HBML received approval for the discharge from the Inspector on October 7, 2011. Beginning October 8, 2011, the water from the temporary pollution control pond was treated, pumped into a post-treatment holding tank placed in the sedimentation pond (ST-1), and subsequently discharged to the tundra on a daily basis.

Daily water samples were collected from the post-treatment holding tank and sent to ALS Laboratory for rush analysis. HBML only began to receive results for the daily samples on October 13, 2011. The results indicated that ammonia was above the 2.0 mg/L average discharge criteria for each daily sample collected from ST-1 between October 8 and 13, 2011 but was below the 4.0 mg/L maximum concentration for a grab sample. Upon receipt of these non-compliant ammonia results, HBML immediately shut down the RO treatment system and discharge pumps. In total, 1,640 m^3 of water was discharged to the tundra before the water treatment system was shut down on October 13, 2011.

Daily monitoring results in accordance with Schedule J of 2AM-DOH0713 for October are provided in Table 4 below.

Table 4 – Water quality monitoring program results for ST-1, October 2011, in mg/L, unless specified otherwise

Parameters	ST-1	ST-1	ST-1	ST-1	ST-1	ST-1
ALS Lab Reference #	L1070827-1	L1070827-2	L1070827-3	L1070827-4	L1071512-1	L1071512-2
Field Sample Details	ST1-08OCT11	ST1-09OCT11	ST1-10OCT11	ST1-11OCT11	ST1-12OCT11	ST1-13OCT11
Sample Date and Time	08/10/11@18:05	09/10/11@16:50	10/10/11@17:55	11/10/11@6:30	12/10/11@14:15	13/10/11@7:27
pH	6.16	6.15	6.14	6.15	7.12	6.69
TSS	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Ammonia –N	2.38	2.29	2.21	2.27	2.83	2.84
Nitrate - N	4.98	4.95	4.96	5.00	5.78	83.1
Nitrite - N	<0.050	<0.050	<0.050	<0.050	<0.050	0.358
Total CN	<0.0050	0.0059	0.0051	<0.0050	<0.0050	0.0073
Total Oil & Grease	<1; no visible sheen	1.3; no visible sheen	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen	<1; no visible sheen
Total Sulphate (SO_4)	<0.50	<0.50	<0.50	<0.50	<0.50	115
Total Aluminum – T-Al	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total Arsenic – T-As	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Total Copper – TCu	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Iron – T-Fe	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Total Lead – T-Pb	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Nickel – T-Ni	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Zinc – T-Zn	<0.0040	<0.0040	<0.0040	<0.0040	0.0084	**0.0635**

ST-2

The results of monthly water quality monitoring under Schedule J of water licence 2AM-DOH0713 from May to June 2011 at station ST-2 are presented in Table 5. Required frequency for sampling is once per month during open water season. No water quality criteria are specified in the licence.

Table 5 – Water quality monitoring program results for ST-2, May to October 2011, in mg/L, unless specified otherwise

Parameters	ST-2	ST-2	ST-2	ST-2	ST-2	ST-2
ALS Lab Reference #	L1010764-1	L1011594-1	L1027722-1	L1049760-2	L1060723-2	L1067204-1
Field Sample Details	ST2-29MAY11	ST2-01JUN11	ST2-05JUL11	PPRTP-22AUG11	ST2-18SEP11	ST2-02OCT11
Sample Date/Time	29/05/11@16:49	01/06/11@7:40	05/07/11@10:30	22/08/11@17:15	18/09/11@17:32	02/10/11@12:00
pH	7.79	7.80	7.79	7.80	7.77	7.78
TSS	20.0	<3.0	15.0	5.0	13.0	34.0
Alkalinity	74.4	65.1	104	100	126	78.3
Total Ammonia –N	24.0	28.7	40.9	43.3	45.2	39.9
Chloride	1080	1100	1700	3360	3140	2090
Nitrate – N	44.5	44.2	86.8	145	122	86.5
Nitrite – N	1.45	0.980	1.51	<0.50	<1.0	<0.50
Total CN	0.142	0.0873	0.140	0.0602	0.0744	0.0176
Total Oil & Grease	1.6	<1.0	<1.0	<1.0	<1.0	4.7
Sulphate (SO_4)	49.7	40.7	84.5	158	178	110
Total Aluminum – T-Al	0.66	0.141	0.443	0.067	0.090	0.135
Total Arsenic – T-As	0.0106	<0.0080	0.00137	0.00092	0.00098	0.00063
Total Copper – T-Cu	0.021	0.0214	0.0100	0.0057	0.0078	0.0055
Total Iron – T-Fe	0.90	0.204	0.707	2.41	1.33	0.640
Total Lead – T-Pb	<0.0020	<0.00010	0.00027	0.00019	0.00024	0.00030
Total Nickel – T-Ni	0.0191	0.0125	0.0037	0.0056	0.0074	0.0043
Total Zinc – T-Zn	<0.080	<0.0040	0.0074	0.132	0.174	0.112

ST-5

Snow melt and accumulated precipitation at monitoring station ST-5, Plant Site Fuel Storage and Containment Area Facility, was sampled May 26, 2011. The effluent was compliant for discharge and a notification of discharge was provided to the Inspector June 7, 2011. From June 17 to 18, 2011, a total of 196 m^3 of effluent was evacuated from the containment area and discharged to the tundra northwest of the facility at UTM 7559236 N, 432905 E.

On Sept 11, 2011, accumulated precipitation at monitoring station ST-5 was sampled and found to be compliant for discharge. Notification of discharge was provided to the Inspector September 15, 2011. A total of 104 m^3 of effluent was pumped from the facility sump between September 16 and 18, 2011 and used as dust suppressant on the project road system.

Results of all sampling conducted at ST-5 in 2011 are provided in Table 6.

Table 6 – Water quality monitoring program results for ST-5, 2011, in mg/L, unless specified otherwise

Parameters	ST-5	ST-5
ALS Lab Reference #	L1010252-1	L1010252-1
Sample Date and Time	26/05/11@15:00	11/09/11@7:00
pH	8.20	8.35
TSS	6.0	<3.0
Oil & Grease	1.6	<1.0
Benzene	<0.00050	<0.00050
Toluene	<0.00050	<0.00050
Ethylbenzene	<0.00050	<0.00050
Lead	0.00043	<0.00010

ST-6a

Monitoring station ST-6a at the Roberts Bay Fuel Storage Facility was sampled twice during 2011. Results are presented in Table 7.

In June, water quality at ST-6a was found to be compliant for all parameters with the exception of TSS, which measured 53 mg/L. A request to utilize this effluent for dust suppression on the project road system was granted by the Inspector so from July 12 to 15, 604 m^3 was removed from ST-6a and used as dust suppressant on the project road system and airstrip.

In September, ST-6a was sampled and accumulated effluent was found to be compliant for all parameters. Notification was made to the Inspector and on September 20, 56 m^3 was removed from ST-6a and used as dust suppressant on the project road system.

Table 7 – Water quality monitoring program results for ST-6a, 2011, in mg/L, unless specified otherwise

Parameters	ST-6a	ST-6a
ALS Lab Reference #	L1020372-1	L1010252-2
Sample Date and Time	19/06/11@15:30	11/09/11@7:00
pH	8.21	8.24
TSS	**53**	<3.0
Oil & Grease	<1.0	<1.0
Benzene	0.00050	<0.00050
Toluene	<0.00050	<0.00050
Ethylbenzene	0.00075	<0.00050
Lead	0.00070	0.00011

ST-6b

Monitoring station ST-6b was not sampled in 2011 because the new Roberts Bay Fuel Storage Facility was completed late in the year and minimal accumulated effluent was available for sampling. No discharges occurred from the facility.

ST-7

Table 8 provides the volumes of water usage at the Doris North project area as required under Part E Item 1 of water licence 2AM-DOH0713. The water extraction pump for Doris Camp is located off the northwest shoreline of Doris Lake and the sampling station ST-7 is located within the Doris Lake pump house.

Water usage reported in Table 8 includes volumes used for domestic camp usage, development of ice road portages, construction of ice berms for fuel offload containment on Doris Lake and Roberts Bay during the winter season, dust suppression on roads and at the crusher during the summer season, production of frozen core and cement at the batch plants, filling of fire trucks, fire suppression practice, and supplying water for temporary washroom facilities located in various working areas of the Doris North project. During April and May, Windy Lake water was used to construct an ice road needed for the construction of the Windy Lake habitat compensation shoals, a part of the Tail Lake habitat compensation plan.

An error was detected in the cumulative annual calculations for April as reported in the monthly monitoring report. The cumulative values for the remainder of the year have been corrected and are provided in Table 8. Doris Camp was operational throughout 2011 and water usage was within the value specified by the licence.

Table 8 – Doris North water usage in 2011 measured at ST-7 and other uses, in cubic metres (m^3)*

Month	Water Source	Monthly Usage	Cumulative Usage
January	Doris Lake	2216	2216
February	Doris Lake	2108	4324
March	Doris Lake	3654	7978
April	Doris Lake/Windy Lake	2998	10976
May	Doris Lake/Windy Lake	1913	12889
June	Doris Lake	2908	15797
July	Doris Lake	6054	21851
August	Doris Lake	3408	25259
September	Doris Lake	1101	26360
October	Doris Lake	1218	27578
November	Doris Lake	1197	28775
December	Doris Lake	792	29567

**values rounded to nearest whole cubic meter*

Table 9 provides the results of water quality sampling for monitoring station ST-7. The analyses requested are intended to be compliant with the specific requirements of water licence 2AM-

DOH0713. To date, not all the infrastructure associated with the Doris North Project has been constructed. As such, the analyses reflect the requirements for activities currently taking place at Doris North. For example, cyanide was not historically monitored at ST-7 because no processes were occurring on site to generate cyanide. Cyanide analyses did commence at ST-7 in October 2011 to generate baseline data before any cyanide is brought to site. Analysis for Total Ammonia-N, Nitrate-N, Nitrite-N and Orthophosphate-P was inadvertently omitted from several of the analytical requests for ST-7 between July and September due to administrative errors. These omissions were rectified in October and for subsequent monthly sampling.

Table 9 – Water sampling monitoring program results for 2011 taken from ST-7, in mg/L, unless otherwise specified

Parameter	January	February	March	April	May	June	July	August	September	October	November	December
ALS Lab Reference #	L967601-1	L975275-1	L983938-1	L991939-1	L1000341-1	L1014116-1	L1026379-1	L1039876-5	L1060574-1	L1067204-2	L1081431-3	L1094960-2
Field Sample Details	ST7-05JAN11	ST7-01FEB11	ST7-07MAR11	ST7-04APR11	ST7-01MAY11	ST7-06JUN11	ST7-03JUL11	ST7-02AUG11	ST7-18SEP11	ST7-02OCT11	ST7-03NOV11	ST7-12DEC11
Sample Date and Time	05/01/11@7:10	01/02/11@15:00	07/03/11@15:00	04/04/11@7:15	01/05/11@16:15	06/06/11@09:20	03/07/11@20:30	02/08/11@18:21	Sep 18/11 @	Oct 02/11 @	Nov 03/11@	Dec 12/11@
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.2
Total Cyanide	-	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050
Free Cyanide	-	-	-	-	-	-	-	-	-	<0.0050	<0.0050	<0.0050
Fecal Coliforms	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1 CFU/100mL	<1 CFU/100mL	<1 CFU/100mL
Total Oil and Grease	<1.0	<1.0	2.0	<1	<1	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0
pH (pH unit)	7.73	7.60	7.70	7.36	7.52	7.78	7.71	7.74	7.70	7.68	7.62	7.37
TSS	<3.0	<3.0	5.0	<3.0	<3.0	<3.0	<3.0	<3.0	6.0	8.0	11.0	<3.0
Ammonia-N	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	-	<0.050	<0.050	<0.050
Nitrate-N	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrite-N	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050
Orthophosphate-P	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	-	-	-	<0.010	<0.010	<0.010
Total Phosphate (as P)	0.027	<0.020	0.030	0.029	0.026	<0.027	<0.020	<0.020	0.025	<0.020	0.026	0.044
Total Aluminum	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.101	0.040	0.038	0.061	0.052	0.055
Total Arsenic	<0.00040	0.00043	0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Total Cadmium	<0.000050	<0.0030	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Total Copper	0.0022	0.0018	0.0022	0.0019	0.0026	0.0089	0.0026	0.0023	0.0036	0.0018	0.0017	0.0019
Total Chromium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Iron	0.018	0.020	0.026	0.019	0.039	0.040	0.191	0.107	0.119	0.097	0.076	0.056
Total Mercury	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Molybdenum	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Nickel	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Lead	0.00015	0.00014	0.00025	0.00016	0.00022	0.00078	0.00059	0.00021	0.00011	<0.00010	0.00014	0.00014
Total Selenium	<0.00040	<0.0020	<0.0040	<0.0040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Total Silver	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Thallium	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Total Zinc	0.0845	<0.0040	<0.0074	0.004	0.0052	0.0117	0.0093	0.0073	<0.0040	<0.0040	0.0049	0.0064
ALS Lab Reference #	L967610-1	L976886-1	L983928-1	L991924-1	L1000322-1	L1014236-1	L1026387-1	L1038699-1	L1055041-1	L1070830-1	L1082093-1	L1094929-1
Field Sample Details	PDC10-04JAN11	PDC10-08FEB11	PDC10-06MAR11	PDC10-03APR11	PDC10-01MAY11	PDC10-03JUN11	PDC10-04JUL11	PDC10-01AUG11	PDC10-05SEP11	PDC10-10OCT11	PCD10-06NOV11	PCD10-12DEC11
Sample Date/Time	04/01/11@19:10	08/02/11@10:30	06/03/11@8:45	03/04/11@17:05	01/05/11@16:15	06/06/11@9:20	04/07/11@8:50	01/08/11@9:02	05/09/11@17:38	10/10/11@19:00	06/11/11@18:08	12/12/11@7:51
Blue-green Algae (cells/mL)	33,400	135,000	127,000	120,000	143,000	195,000	66,200	32,600	125,000	116,000	85,400	106,000

ST-8

The Doris Camp Sewage Treatment Plant is comprised of tandem biomembrane systems that are located directly east of the main building complex. Monitoring station ST-8 is located within the plant and consists of two stations representing the final treated effluent from each plant that feeds to a single discharge line to the tundra (ST-8). Having the sampling points located within the sewage treatment plant allows sampling to occur on a year-round basis, and verifies the performance of each biomembrane system. During 2011, the two sampling stations were re-named from ST8#1 and ST8#2 to ST8A and ST8B, respectively, to facilitate implementation of a new analytical result database.

The data reported for 2011 at ST-8 was compliant for all parameters with the following exceptions:

- January 2011: The sample for BOD for the month of January was inadvertently omitted and no analysis was performed. The error was not identified in time to re-collect the sample for the month.
- May 2011: The sample collected May 2, 2011 was non-compliant because of a visible sheen for oil and grease and elevated levels of fecal coliforms that exceeded licence criteria. A second set of samples was collected May 9, 2011 and the fecal coliform levels had returned to within compliance values, but oil and grease was still non-compliant. Adjustments were made to the UV disinfection system in the sewage treatment plant and maintenance performed on the camp kitchen grease traps. The plant returned to full compliance in June and remained compliant for the remainder of the year.

Table 10 – Water quality monitoring program results for ST-8 (Tandem Treatment Plants ST-8 #1 and ST-8 #2 / ST8A and ST8B), 2011, in mg/L, unless otherwise specified

	January		February		March		April	
Parameters	**ST-8 #1**	**ST-8 #2**	**ST-8 #1**	**ST-8 #2**	**ST-8 #1**	**ST-8 #2**	**ST-8 #1**	**ST-8 #2**
ALS Lab Reference #	L967601-2	L967601-2	L975275-2	L975275-3	L983938-2	L983938-3	L991939-2	L991939-3
Field Sample Details	ST-8 #1	ST-8 #2	ST81-1FEB11	ST82-1FEB11	ST81-07MAR11	ST82-07MAR11	ST81-04Apr11	ST82-04Apr11
Sample Date/Time	05/01/11@7:30	05/01/11@8:00	01/02/11@7:30	01/02/11@8:00	07/03/11@8:40	07/03/11@8:40	04/04/11@7:15	04/04/11@7:40
BOD_5	**No sample**	**No sample**	<2.0	4.1	<2.0	12.2	5.8	2.8
TSS	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Fecal Coliform (CFU/100mL)	<1	<1	<1	<1	<1	6	237	<1
pH (pH unit)	7.62	7.28	6.67	7.00	7.39	7.80	7.33	7.34
Oil & Grease (Visibility)	No visible sheen	No visible sheen	No visible sheen	No visible sheen	No visible sheen	No visible sheen	No visible sheen	No visible sheen
Oil & Grease	<1.0	1.9	<1.0	<1.0	<1.0	1.1	<1.0	1.7

	May		May		June		July	
Parameters	**ST-8 #1**	**ST-8 #2**	**ST-8 #1**	**ST-8 #2**	**ST-8 #1**	**ST-8 #2**	**ST-8 #1**	**ST-8 #2**
ALS Lab Reference #	L1000341-2, 3	L1000341-4	L1003037-1	L1003037-2	L1014116-2	L1014116-3	L1026379-2	L1027780-1
Field Sample Details	ST81-02MAY11	ST82-02MAY11	ST81-09MAY11	ST82-09May11	ST81-06JUN11	ST82-06JUN11	ST81-04JUL11	ST82-04JUL11
Sample Date/Time	02/05/11@7:30	02/05/11@ 7:30	09/05/11@7:55	09/05/11@8:05	06/06/11@10:15	06/06/11@ 10:15	04/07/11@8:15	04/07/11@8:15
BOD_5	21.9	8.5	4.6	2.9	<2.0	<2.0	<2.0	<2.0
TSS	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Fecal Coliform (CFU/100mL)	26,000	4	<2	<1	<1	7	<1	0
pH (pH unit)	7.97	7.97	7.77	7.90	7.59	7.69	7.13	7.15
Oil & Grease (Visibility)	**Visible Sheen**	-	**Visible Sheen**	No visible sheen	No visible sheen	No visible sheen	No visible Sheen	No visible Sheen
Oil & Grease	<1.0	1.2	5	2	1.6	1.5	1.2	2.5

	August		September		October		November		December	
Parameters	**ST8A**	**ST8B**	**ST8A**	**ST8B**	**ST8A**	**ST8B**	**ST8A**	**ST8B**	**ST8A**	**ST8B**
ALS Lab Reference #	L1039876-6	L1039876-7	L1060574-2	L1060574-3	L1067204-3	L1067204-4	L1081431-1	L1081431-2	L1094960-1	Plant not operational in December due to low camp population numbers
Field Sample Details	ST8A-03AUG11	ST8B-03AUG11	ST8A-19SEP11	ST8B-19SEP11	ST8A-02OCT11	ST8B-02OCT11	ST8A-03NOV11	ST8B-03NOV11	-	
Sample Date and Time	03/08/11@6:00	03/08/11@6:00	19/09/11@9:30	19/09/11@9:30	02/10/11@16:30	02/10/11@16:25	03/11/11@9:20	03/11/11@9:15	12/12/11@7:42	
BOD_5	5.1	3.3	13.9	6.1	2.6	2.9	<2.0	<2.0	2.8	
TSS	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	4.0	4.0	<3.0	
Fecal Coliform (CFU/100mL)	<1	<1	<1	<1	<1	<1	<1	<1	<1	
pH (pH unit)	7.46	7.20	7.54	7.60	6.56	6.63	6.41	6.82	6.20	
Oil & Grease (Visibility)	No visible Sheen	No visible Sheen	No visible Sheen	No visible Sheen	No visible Sheen	No visible Sheen	No Visible Sheen	No Visible Sheen	No Visible Sheen	
Oil & Grease	<1.0	<1.0	<1.0	<1.0	2.8	3.5	<1.0	1.0	<1.0	

Treated effluent volumes released from ST-8 are metered daily and reported in the monthly monitoring reports. The volumes discharged in 2011 are presented in Table 11.

Table 11 – Treated effluent released from the Doris sewage treatment plant (ST-8), 2011, in cubic meters (m^3)

Month	Monthly Volume	Cumulative Volume
January	744	744
February	715	1459
March	813	2272
April	858	3130
May	807	3937
June	771	4708
July	828	5536
August	833	6369
September	903	7272
October	772	8044
November	745	8789
December	518	9307
Total Volume of Treated Effluent Released		**9307**

The sludge produced at the sewage treatment plant is pressed regularly to remove processed solids and to allow for proper functioning of the plant. Each press produces approximately 0.11328 m^3 of sludge. Pressed sludge is promptly sent to the incinerator to prevent attraction of wildlife. The volume of pressed sludge produced in 2011 is presented in Table 12.

Table 12 – Volume of pressed sludge removed from the Doris sewage treatment plant, 2011, in cubic meters (m^3)

Month	Monthly Volume	Cumulative Volume
January	2.49	2.49
February	3.06	5.55
March	2.95	8.50
April	3.17	11.67
May	1.81	13.48
June	2.49	15.97
July	2.72	18.69
August	2.15	20.84
September	2.49	23.33
October	2.95	26.28
November	0.34	26.62
December	1.25	27.87
Total Volume of Sludge Removed and Incinerated 2011		**27.87**

ST-9

In consultation with INAC during the 2009 inspection tour, the location of sampling point ST-9 was set at geographical coordinates 68°8'20" N, 106°39'55" W. This point is east of Glenn Lake and down slope from the ST-8 tundra discharge location. Monthly monitoring was conducted at ST-9 during July through September 2011. The station is frozen during the remainder of the year. Results are provided in Table 13.

Table 13 – Water quality monitoring program results for ST-9, 2011, in mg/L, unless otherwise specified

Parameter	July	August	September
ALS Lab Reference #	L1026379-3	L1039876-4	L1060574-4
Sample Date and Time	03/07/11@20:30	02/08/11@16:30	19/09/11@10:20
BOD_5	<2.0	5.6	<2.0
TSS	<3.0	6.0	4.0
Fecal Coliform	<1	2	18
pH (pH unit)	7.78	7.88	7.52
Oil & Grease (Visibility)	No visible sheen	No visible sheen	No visible sheen
Oil & Grease	<1.0	<1.0	<1.0

TL-1, TL-2, TL-3, TL-4 and TL-10

This section provides information on the dewatering monitoring in compliance with the applicable sections of Part G (Conditions Applying to Waste Management and Waste Management Plans) and Part J (Conditions Applying to General and Aquatic Effects Monitoring) of the water licence. Not all Schedule J listed samples were collected. This was because of the following:

1. No mine-effluent has been placed in Tail Lake to date
2. There were tight timelines in starting the dewatering
3. There were some sample collection oversights (which would be corrected before any tailings impoundment area discharge occurred post-mine effluent input).

Tables 14 through 20 present the water quality data at monitoring stations TL-1, TL2, TL-3, TL-4, and TL-10. The water discharged from Tail Lake was not contaminated, and lake trout and stickleback inhabited the lake at the time of dewatering. Acute lethality testing was not conducted at monitoring station TL-1 prior to discharge. Acute toxicity testing was conducted at TL-4 in August (Table 18), but not monthly thereafter.

Dewatering began on August 2, 2011 and ceased on September 18, 2011. During this period, a total of 90,114 m^3 of water was pumped from Tail Lake into the outflow of Doris Lake. Table 19 shows daily volumes discharged.

Samples were collected at TL-10 during the Aquatic Effects Monitoring Plan sampling program. Results are included in Table 20.

TL-1

Table 14 – Water Quality from the Tailings Impoundment Area taken from Reclaim Pump Barge area* (TL-1)

Station Name		TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1	TL-1
Collect Date/Time		30/07/11	01/08/11	04/08/11	06/08/11	08/08/11	11/08/11	12/08/11	20/08/11	27/08/11	03/09/11	10/09/11	17/09/11
Sample No.		30-Jul-11	5-Jul-11	24-Jul-11	30-Jul-11	4-Aug-11	6-Aug-11	12-Aug-11	20-Aug-11	22-Aug-11	27-Aug-11	3-Sep-11	10-Sep-11
Parameter	Units												
	pH												
pH-L	units	7.89	7.80				7.73	7.68	7.71	7.89	7.86	7.85	7.65
TDS	mg/L		119				79.3	74.6	71.2	72.0	77.2	71.8	78.9
TSS	mg/L	10.0		<3.0	<3.0	<3.0				<3.0	<3.0	<3.0	<3.0
Cl-D	mg/L	27.5	37.5				26.5	25.2	25.0	25.1	26.1	25.6	28.1
CN-Free	mg/L									<0.0050			<0.0050
CN-T	mg/L	0.0059	0.0082	0.0081	0.0080	0.0086	0.0084	0.0070	<0.0050		0.0054	<0.0050	0.0054
P-D-Ortho	mg/L	<0.010			<0.010	<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050
N-NO2	mg/L	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	<0.050	1.17				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L		<0.020						<0.020	<0.020	<0.020	<0.020	<0.020
Ag-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	0.058	0.050	0.020	0.019	0.018	0.019	0.020	0.015	0.038	0.018	0.035	0.026
As-T	mg/L	<0.00040	<0.00040	0.00087	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	7.40	9.99	7.99	8.40	8.30	8.08	7.51	6.67	6.51	6.77	7.33	7.11
Cd-T	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Cr-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	0.0017	0.0022	0.0059	0.0015	0.0025	0.0015	0.0013	0.0013	0.0015	0.0011	0.0014	0.0013
Fe-T	mg/L	0.537	0.308	0.415	0.284	0.538	0.526	0.463	0.224	0.218	0.319	0.275	0.175
Hg-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
K-T	mg/L	1.62	2.20	1.89	1.87	1.85	1.67	1.73	1.40	1.31	1.55	1.63	1.50
Mg-T	mg/L	4.96	6.02	5.17	5.35	5.18	5.13	5.17	4.71	4.62	4.76	4.82	4.62
Mo-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	13.8	18.3	14.1	14.9	14.2	13.5	13.9	13.3	12.4	12.7	14.1	12.9
Ni-T	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	<0.00010	<0.00010	0.00181	0.00025	0.00031	0.00019	0.00018	0.00024	0.00021	<0.00010	0.00013	0.00011
Se-T	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Tl-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	<0.0040	<0.0040	0.0321	0.0210	0.0284	0.0228	0.0195	0.0166	0.0165	0.0135	0.0128	0.0104

Discharge began on August 2, 2011, and ended on September 18, 2011
**Reclaim barge has not yet been constructed; water sample was taken from raw water at north end of Tail Lake*
Dissolved oxygen and redox potential was not collected for this site.

TL-2 and TL-3

Table 15 – Water Quality Results of Station TL-2*

Station Name		TL-2	TL-2	TL-2	TL-2	TL-2	TL-2	TL-2	TL-2	TL-2	TL-2	TL-2	TL-2
Collect Date/Time		30/07/11	01/08/11	04/08/11	06/08/11	08/08/11	11/08/11	12/08/11	20/08/11	27/08/11	03/09/11	10/09/11	17/09/11
Parameter	Units												
	pH												
pH-L	units	7.86	7.66				7.74	7.73	7.68	7.81	7.76	7.83	7.57
TDS	mg/L		124				123	121	123	123	129	124	78.3
TSS	mg/L	<3.0		<3.0	<3.0	<3.0				5.0	7.0	<3.0	<3.0
Cl-D	mg/L	58.0	58.0				58.1	58.1	58.7	59.0	60.3	61.0	27.3
CN-Free	mg/L									<0.0050			<0.0050
CN-T	mg/L	<0.0050	0.0051	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	0.0050
P-D-Ortho	mg/L	<0.010			<0.010	<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050
N-NO2	mg/L	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L		<0.020						<0.020	<0.020	0.027	<0.020	<0.020
Cr-6+	mg/L				<0.0010	<0.0010					<0.0010	<0.0010	<0.0010
Oil and Grease	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ag-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	0.051	0.048	0.044	0.034	0.041	0.043	0.037	0.069	0.036	0.143	0.049	0.027
As-T	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	7.79	7.75	7.90	7.65	7.64	8.01	8.18	7.90	8.22	8.26	8.83	7.06
Cd-T	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Cr-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	0.0016	0.0013	0.0021	0.0015	0.0016	0.0017	0.0017	0.0014	0.0014	0.0017	0.0016	0.0012
Fe-T	mg/L	0.119	0.103	0.114	0.068	0.078	0.086	0.114	0.145	0.139	0.311	0.137	0.175
Hg-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
K-T	mg/L	1.68	1.89	1.98	1.93	1.96	1.87	2.01	1.83	1.77	2.31	2.08	1.49
Mg-T	mg/L	5.48	5.58	5.73	5.74	5.62	5.78	6.02	5.64	5.95	5.79	5.98	4.54
Mo-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	23.9	25.2	25.7	27.0	26.7	26.6	27.7	24.9	26.9	25.6	29.9	12.6
Ni-T	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010	<0.00010
Se-T	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Tl-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0046	<0.0040	0.0467

Discharge began on August 2, 2011, and ended on September 18, 2011
**There are no specified water quality criteria for station TL-2*

Table 16 – Water Quality Results of Station TL-3

Station Name		TL-3*	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3	TL-3
Collect Date/Time			30/07/11	01/08/11	04/08/11	06/08/11	08/08/11	11/08/11	12/08/11	22/08/11	27/08/11	03/09/11	11/09/11	17/09/11
Parameter	Units	Max Concentration of Any Grab Sample (mg/L)												
	pH													
pH-L	units	**6.0-9.0**	7.84	7.69				7.75	7.72	7.70	7.82	7.78	7.83	7.57
TDS	mg/L	-		124				121	122	123	122	127	126	127
TSS	mg/L	**15.0**	<3.0		<3.0	<3.0	<3.0				4.0	4.0	<3.0	4.0
Cl-D	mg/L	**150**	58.4	58.1				57.3	57.9	57.7	58.5	59.3	60.4	60.7
CN-Free	mg/L	**0.005**									<0.0050			<0.0050
CN-T	mg/L	**0.10**	<0.0050	<0.0050	0.0051	0.0083	0.0056	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050
P-D-Ortho	mg/L	-	<0.010			<0.010	<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L	**1.54**			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050
N-NO2	mg/L	**0.06**	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	**2.9**	<0.050	<0.050				<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L	-		<0.020						<0.020	<0.020	<0.020	<0.020	0.021
Cr-6+	mg/L	**0.001**				<0.0010	<0.0010					<0.0010	<0.0010	<0.0010
Oil and Grease	mg/L	**5**	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ag-T	mg/L	**0.0001**	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	**0.100**	0.049	0.051	0.044	0.038	0.038	0.039	0.040	0.069	0.047	0.047	0.044	0.057
As-T	mg/L	**0.0050**	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	-	7.87	7.90	7.84	7.94	7.99	8.28	8.67	8.19	8.58	8.09	10.1	8.28
Cd-T	mg/L	**0.000017**	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*	*<0.000050*
Cr-T	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	**0.002**	**0.0026**	0.0013	0.0018	0.0014	0.0016	0.0016	0.0014	0.0014	0.0018	0.0017	0.0017	0.0019
Fe-T	mg/L	**0.300**	0.116	0.136	0.131	0.090	0.105	0.125	0.138	0.201	0.188	0.170	0.153	0.144
Hg-T	mg/L	**0.000026**	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*
K-T	mg/L	-	1.71	1.87	1.99	2.01	1.90	2.03	2.08	1.91	1.88	1.92	2.19	1.79
Mg-T	mg/L	-	5.50	5.90	5.90	5.70	5.61	6.08	6.16	5.78	5.99	5.48	6.54	5.36
Mo-T	mg/L	**0.073**	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	-	24.6	25.3	26.1	26.5	26.2	27.9	28.1	25.0	25.7	23.5	30.0	24.5
Ni-T	mg/L	**0.025**	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	**0.001**	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Se-T	mg/L	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Tl-T	mg/L	**0.0008**	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	**0.030**	0.0040	<0.0040	0.0043	<0.0040	0.0042	0.0043	0.0047	0.0048	0.0056	0.0067	<0.0040	0.0071

Discharge began on August 2, 2011, and ended on September 18, 2011
**Water quality at site TL-3 should not exceed the greater of background water quality at the time of discharge as measured at monitoring station TL-2, or the above water quality limits.*
Italicized values indicate detection limits above maximum allowable concentrations.

TL-4

Table 17 – Water Quality Results from Station TL-4

Station Name		TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4	TL-4
Collect Date/Time				05/07/11	24/07/11	30/07/11	04/08/11	06/08/11	12/08/11	20/08/11	22/08/11	27/08/11	03/09/11	10/09/11	17/09/11
Sample No.				5-Jul-11	24-Jul-11	30-Jul-11	4-Aug-11	6-Aug-11	12-Aug-11	20-Aug-11	22-Aug-11	27-Aug-11	3-Sep-11	10-Sep-11	17-Sep-11
Parameter	Units	Maximum Average Concentration (mg/L)	Maximum Concentration of Any Grab Sample (mg/L)												
pH-L	pH units	6.0-9.5		7.51	7.91	8.06			7.68	7.73		7.87	7.82	7.84	7.65
TDS	mg/L	-	-						72.9	73.4		71.9	75.5	75.9	123
TSS	mg/L	15.00	30.00	<3.0	<3.0	<3.0	<3.0	<3.0				<3.0	<3.0	<3.0	6.0
Cl-D	mg/L	-	-	22.6	26.8	59.8			25.6	25.1		25.0	25.9	25.8	60.2
CN-Free	mg/L	-	-	<0.010	<0.010							<0.0050			<0.0050
CN-T	mg/L	1.00	2.00	<0.0020	<0.0020	0.0234	0.0086	0.0066	0.0061	<0.0050			0.0072	<0.0050	<0.0050
P-D-Ortho	mg/L	-	-	<0.010	<0.010	<0.010		<0.010					<0.010	<0.010	<0.010
N-NH3	mg/L	6	-	<0.050	0.107		<0.050	<0.050	<0.050	<0.050			<0.050	<0.050	<0.050
N-NO2	mg/L	-	-			0.207			<0.050	<0.050		<0.050	<0.050	<0.050	<0.050
N-NO3	mg/L	-	-	<0.050	0.102	4.28			<0.050	<0.050		<0.050	<0.050	<0.050	<0.050
P-PO4-T	mg/L	-	-	<0.020						<0.020		<0.020	<0.020	<0.020	0.021
Ra-226	Bq/L	0.37	1.11	<1.01							<1.01			<0.005	
Coli-Fecal	CFU/100mL	10,000	10,000	3	<1	<1									
BOD	mg/L	80	160	<2.0	<2.0	4.1				<2.0					
Ag-T	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
Al-T	mg/L	-	-	0.037	0.043	0.099	0.020	0.019	0.013	0.021		0.042	0.018	0.032	0.055
As-T	mg/L	0.50	1.00	<0.00040	<0.00040	0.00062	<0.00040	<0.00040	<0.00040	<0.00040		<0.00040	<0.00040	<0.00040	<0.00040
Ca-T	mg/L	-	-	6.84	8.89	15.7	8.25	7.86	7.84	6.31		6.70	6.47	7.52	7.61
Cd-T	mg/L	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050	<0.000050	<0.000050
Cr-T	mg/L	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050
Cu-T	mg/L	0.30	0.60	0.0015	0.0018	0.0060	0.0012	0.0014	0.0010	0.0011		0.0010	<0.0010	0.0012	0.0015
Fe-T	mg/L	-	-	0.068	0.253	0.403	0.413	0.259	0.445	0.279		0.215	0.323	0.319	0.112
Hg-T	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
K-T	mg/L	-	-	1.15	1.94	4.25	1.81	1.80	1.70	1.42		1.28	1.40	1.65	1.74
Li-T	mg/L			<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010
Mg-T	mg/L	-	-	4.00	5.25	10.3	5.26	4.93	5.33	4.40		4.85	4.59	4.93	5.20
Mo-T	mg/L	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050
Na-T	mg/L	-	-	11.5	14.6	51.6	14.1	13.6	14.8	12.4		12.6	12.0	13.9	24.5
Ni-T	mg/L	0.50	1.00	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020		<0.0020	<0.0020	<0.0020	<0.0020
Pb-T	mg/L	0.20	0.40	<0.00010	<0.00010	0.00019	0.00013	0.00013	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
Se-T	mg/L	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040		<0.00040	<0.00040	<0.00040	<0.00040
Tl-T	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010
Zn-T	mg/L	0.50	1.00	<0.0040	<0.0040	<0.0040	0.0798	0.0707	0.0946	0.0695		0.0687	0.0646	0.0598	<0.0040

Discharge began on August 2, 2011, and ended on September 18, 2011

Table 18 – Acute Toxicity Bioassay at sampling station TL-4

Parameter	TL-4	
ALS Lab Reference #	L1049686-4	L1049686-6
Sample Date/Time	20/08/11@10:15	20/08/11@10:15
Test Organism	Rainbow Trout	Daphnia magna
Test Description	Acute, 96 hour, Static, LC50	Acute, 48 hour, Static, Pass/Fail
Sublethal Biological effects		
Mortality/Immobility observed	No	No
Toxicity observed	No	No
Pass/Fail	Pass	Pass

Discharge began on August 2, 2011, and ended on September 18, 2011

Table 19 – Daily volumes discharged from the Tailings Impoundment Area (TIA)

Date	Maximum Allowable Discharge (10% of TL-2, m^3)*	Water Quantity Discharged (m^3)	Percentage of Allowable Volume Discharged (%)
01/08/11	6,409	0	0
02/08/11	6,155	49	1
03/08/11	5,949	470	8
04/08/11	5,816	43	1
05/08/11	5,642	645	11
06/08/11	5,533	1,783	32
07/08/11	5,372	2,091	39
08/08/11	5,192	2,097	40
09/08/11	5,034	2,035	40
10/08/11	4,887	2,079	43
11/08/11	4,758	2,068	43
12/08/11	4,650	2,102	45
13/08/11	4,558	2,089	46
14/08/11	4,444	2,098	47
15/08/11	4,334	2,093	48
16/08/11	4,167	2,083	50
17/08/11	4,060	2,084	51
18/08/11	4,166	2,061	49
19/08/11	4,149	2,071	50
20/08/11	4,075	2,031	50
21/08/11	4,032	2,063	51
22/08/11	4,001	1,980	49
23/08/11	3,958	2,050	52
24/08/11	3,952	2,064	52
25/08/11	3,870	2,087	54
26/08/11	3,828	2,073	54
27/08/11	3,796	2,089	55
28/08/11	3,740	2,036	54
29/08/11	3,747	2,046	55
30/08/11	3,706	2,029	55
31/08/11	3,665	2,023	55
01/09/11	3,613	1,942	54
02/09/11	3,567	1,972	55
03/09/11	3,542	1,924	54
04/09/11	3,518	1,980	56
05/09/11	3,468	1,988	57
06/09/11	3,457	1,917	55
07/09/11	3,791	1,785	47
08/09/11	4,250	1,780	42
09/09/11	4,420	1,851	42
10/09/11	4,506	2,038	45
11/09/11	4,552	2,061	45
12/09/11	4,614	2,078	45
13/09/11	4,679	2,018	43
14/09/11	4,779	2,051	43
15/09/11	4,733	2,014	43
16/09/11	4,798	2,030	42
17/09/11	4,823	2,043	42
18/09/11	4,885	2,030	42
19/09/11	4,910	0	0
TOTAL (m^3)	**222,550**	**90,114**	

Discharge began on August 2, 2011, and ended on September 18, 2011
Water quantity discharged based on an average of flow rates measured at TL-1 and TL-4

**These values were calculated based on continuous and instantaneous readings from a flow meter installed at Station TL-2.*

Table 20 – Water Column Sampling at TL-10 (July – September, 2011)

Sample ID	TAIL LAKE-Surface1	TAIL LAKE-Surface2	TAIL LAKE-Surface3	TAIL LAKE-Deep1	TAIL LAKE-Deep2	TAIL LAKE-Deep3
Date Sampled			**24/07/11**			
Physical Tests						
pH	7.68	8.15	8.14	8.17	8.15	8.13
Total Suspended Solids	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	81	77	79	79	82	81
Turbidity	0.92	0.71	0.67	0.74	0.8	0.77
Anions and Nutrients						
Acidity (as CaCO3)	1.5	3.9	4.1	3.8	4	4.1
Alkalinity, Total (as CaCO3)	26.5	27.2	27.2	27	27	27.1
Ammonia (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride (Cl)	24.5	24.5	24.5	24.5	24.5	24.6
Nitrate (as N)	-	-	-	-	-	-
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.484	0.453	0.393	0.441	0.348	0.305
Total Nitrogen	0.46	0.42	0.44	0.43	0.43	0.43
Orthophosphate-Dissolved (as P)	<0.0010	<0.0010	0.004	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0045	0.0038	0.0066	0.0034	0.0034	0.0073
Phosphorus (P)-Total	0.0165	0.0074	0.0247	0.0255	0.0079	0.0198
Silicate (as SIO2)	1.3	1.4	1.4	1.4	1.4	1.4
Cyanides						
Cyanide, Weak Acid Diss	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cyanide, Total	0.0053	0.0042	0.0053	0.0048	0.005	0.0047
Organic Carbon						
Total Organic Carbon	6.56	6.44	6.47	6.46	6.58	6.51
Total Metals						
Aluminum (Al)-Total	0.0339	0.0317	0.0346	0.0371	0.0337	0.0339
Arsenic (As)-Total	0.000167	0.000157	0.000153	0.000155	0.000154	0.000134
Cadmium (Cd)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	5.68	5.93	6.02	6.16	6.13	6.09
Chromium (Cr)-Total	0.00027	0.00035	0.00031	0.00031	0.00031	0.0003
Copper (Cu)-Total	0.00159	0.00188	0.00121	0.00132	0.00127	0.00251
Iron (Fe)-Total	0.086	0.085	0.085	0.085	0.087	0.09
Lead (Pb)-Total	0.000123	0.00635	0.00133	0.00232	0.00305	0.00348
Magnesium (Mg)-Total	4.65	4.57	4.59	4.82	4.47	4.45
Mercury (Hg)-Total	0.0016	0.0013	0.0012	0.0013	0.0013	0.0013
Molybdenum (Mo)-Total	0.000135	0.000137	0.000136	0.000152	0.000171	0.000159
Nickel (Ni)-Total	0.00068	0.00066	0.00064	0.00073	0.00069	0.00065
Potassium (K)-Total	1.46	1.44	1.44	1.52	1.41	1.4
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Table 20 – Water Column Sampling at TL-10 (July – September, 2011), continued

Sample ID	TAIL LAKE-Surface1	TAIL LAKE-Surface2	TAIL LAKE-Surface3	TAIL LAKE-Deep1	TAIL LAKE-Deep2	TAIL LAKE-Deep3
Date Sampled			**18/08/11**			
Physical Tests						
pH	7.8	7.8	7.81	7.81	7.81	7.82
Total Suspended Solids	<1.0	<1.0	<1.0	1.4	1.8	1.4
Total Dissolved Solids	69	86	89	90	85	87
Turbidity	0.86	1.1	0.7	0.65	0.67	0.71
Anions and Nutrients						
Acidity (as CaCO3)	2	2	2	2	2	2
Alkalinity, Total (as CaCO3)	28.3	28.9	28.7	28.5	28.3	28.8
Ammonia (as N)	<0.0050	0.0324	0.0183	0.0166	0.0159	0.0062
Bromide (Br)	<0.050	0.055	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	25	25.1	25	25	25	25
Nitrate (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.419	0.34	0.336	0.313	0.352	0.405
Total Nitrogen	0.42	0.38	0.37	0.37	0.37	0.37
Orthophosphate-Dissolved (as P)	0.0016	0.0011	<0.0010	0.002	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0048	0.0044	0.0041	0.0053	0.0036	0.0039
Phosphorus (P)-Total	0.0093	0.0118	0.0083	0.0106	0.0093	0.0235
Silicate (as SIO2)	<1.0	<1.0	1.1	<1.0	1	1.03
Cyanides						
Cyanide, Weak Acid Diss	0.0034	0.0027	0.0011	0.0013	0.0011	0.0011
Cyanide, Total	0.0042	0.0043	0.0044	0.0042	0.0044	0.0041
Organic Carbon						
Total Organic Carbon	7.76	7.46	7.49	7.29	7.3	7.34
Total Metals						
Aluminum (Al)-Total	0.0295	0.0315	0.032	0.032	0.0332	0.0343
Arsenic (As)-Total	0.000173	0.000179	0.000179	0.000157	0.000193	0.000177
Cadmium (Cd)-Total	<0.000010	0.000023	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	6.78	6.33	6.46	6.5	6.76	6.48
Chromium (Cr)-Total	0.00019	0.00014	0.00017	0.00017	0.00024	0.00016
Copper (Cu)-Total	0.0012	0.00114	0.00118	0.00114	0.0012	0.00118
Iron (Fe)-Total	0.112	0.107	0.11	0.111	0.142	0.116
Lead (Pb)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium (Mg)-Total	4.68	4.53	4.53	4.53	4.65	4.52
Mercury (Hg)-Total	0.00137	0.00144	0.00145	0.00132	0.00149	0.00113
Molybdenum (Mo)-Total	0.00016	0.000153	0.00015	0.000166	0.000166	0.000154
Nickel (Ni)-Total	0.00066	0.00065	0.00066	0.00066	0.00067	0.00065
Potassium (K)-Total	1.47	1.42	1.42	1.45	1.49	1.46
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030

Table 20 – Water Column Sampling at TL-10 (July – September, 2011), continued

Sample ID	TAIL LAKE Surface1	TAIL LAKE-Surface2	TAIL LAKE-Surface3	TAIL LAKE-Deep1	TAIL LAKE-Deep2	TAIL LAKE-Deep3
Date Sampled			**17/09/11**			
Physical Tests						
pH	7.77	7.81	7.81	7.67	7.92	7.75
Total Suspended Solids	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Dissolved Solids	85	91	89	89	87	90
Turbidity	1.63	1.46	1.71	2.06	1.61	1.69
Anions and Nutrients						
Acidity (as CaCO3)	<1.0	<1.0	<1.0	<1.0	2.6	<1.0
Alkalinity, Total (as CaCO3)	29.6	30.8	30.2	30.1	29.9	29.8
Ammonia (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	0.056	0.072	0.076	0.07	0.059	0.065
Chloride (Cl)	25.4	25.4	25.3	25.3	25.3	25.3
Nitrate (as N)	0.0781	<0.0050	<0.0050	0.0148	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.402	0.353	0.385	0.411	0.426	0.404
Total Nitrogen	0.25	0.19	0.18	0.23	0.22	0.21
Orthophosphate-Dissolved (as P)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0044	0.0044	0.004	0.0043	0.0046	0.004
Phosphorus (P)-Total	0.0101	0.0096	0.0092	0.01	0.0097	0.0095
Silicate (as SIO2)	1.2	1.1	1.1	1.1	1.8	1.2
Cyanides						
Cyanide, Weak Acid Diss	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cyanide, Total	0.0053	0.0055	0.0034	0.0053	0.0051	0.0039
Organic Carbon						
Total Organic Carbon	6.96	6.95	6.93	7.01	6.97	6.93
Total Metals						
Aluminum (Al)-Total	0.0512	0.0485	0.0455	0.0484	0.0507	0.0515
Arsenic (As)-Total	0.000171	0.000189	0.000181	0.000181	0.000204	0.000177
Cadmium (Cd)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	6.58	6.72	6.68	6.7	7.01	6.69
Chromium (Cr)-Total	0.00039	0.00038	0.00032	0.00037	0.0003	0.00025
Copper (Cu)-Total	0.00189	0.0014	0.00134	0.00141	0.00139	0.00126
Iron (Fe)-Total	0.117	0.11	0.107	0.109	0.111	0.107
Lead (Pb)-Total	0.00021	0.000203	0.000147	0.000101	0.000153	0.000088
Magnesium (Mg)-Total	4.68	4.82	4.85	4.89	5.05	4.87
Mercury (Hg)-Total	0.00242	0.00161	0.00207	0.00211	0.0024	0.00189
Molybdenum (Mo)-Total	0.000201	0.000181	0.000168	0.00038	0.000168	0.000167
Nickel (Ni)-Total	0.00081	0.00071	0.0007	0.00071	0.00072	0.00068
Potassium (K)-Total	1.44	1.5	1.51	1.5	1.57	1.51
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	0.005	0.0033	0.003	<0.0030	<0.0030	<0.0030

Table 20 – Water Column Sampling at TL-10 (July – September, 2011), continued

Sample ID	TAIL LAKE-MID1	TAIL LAKE-MID2	TAIL LAKE MID3
Date Sampled		**27/09/11**	
Physical Tests			
pH	7.66	7.78	7.78
Total Suspended Solids	504	504	500
Total Dissolved Solids	1.4	<1.0	1.4
Turbidity	1.31	1.42	1.35
Anions and Nutrients			
Acidity (as CaCO3)	2.5	2.3	2.3
Alkalinity, Total (as CaCO3)	29.5	29.3	29.1
Ammonia (as N)	0.0068	0.0059	0.0187
Bromide (Br)	0.06	0.063	0.058
Chloride (Cl)	25	25.1	25
Nitrate (as N)	<0.0050	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.353	0.35	0.356
Total Nitrogen	0.39	0.41	0.35
Orthophosphate-Dissolved (as P)	<0.0010	<0.0010	<0.0010
Phosphorus (P)-Total Dissolved	0.0043	0.0043	0.0046
Phosphorus (P)-Total	0.0111	0.0103	0.0087
Silicate (as SIO2)	1.2	1.2	1.1
Cyanides			
Cyanide, Weak Acid Diss	<0.0011	<0.0011	<0.0011
Cyanide, Total	0.006	0.0058	0.0052
Organic Carbon			
Total Organic Carbon	7.03	7.02	7.09
Total Metals			
Aluminum (Al)-Total	0.0548	0.0607	0.0533
Arsenic (As)-Total	0.000196	0.000181	0.000189
Cadmium (Cd)-Total	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	6.72	6.8	6.81
Chromium (Cr)-Total	0.00029	0.00028	0.00036
Copper (Cu)-Total	0.00122	0.00125	0.00123
Iron (Fe)-Total	0.108	0.111	0.109
Lead (Pb)-Total	0.00061	0.000083	0.000098
Magnesium (Mg)-Total	4.89	5.06	5.01
Mercury (Hg)-Total	0.00097	0.00111	0.00111
Molybdenum (Mo)-Total	0.000161	0.000172	0.000186
Nickel (Ni)-Total	0.00071	0.0007	0.00075
Potassium (K)-Total	1.48	1.54	1.51
Selenium (Se)-Total	<0.00010	<0.00010	<0.00010
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010
Thallium (Tl)-Total	<0.000050	<0.000050	<0.000050
Zinc (Zn)-Total	<0.0030	<0.0030	<0.0030

2. Summary of the Construction Monitoring Report [see Part D, Item 8 and outlined in Schedule D]

SRK provided on site engineering services between January 13, 2011 and November 14, 2011. Daily construction reports, 307 in total, were prepared by SRK during this period and are provided in Appendix A of the 2011 SRK Construction Support Report (submitted with the 2011 Construction Monitoring Report). Construction activities focused on the following infrastructure:

- Three 5 million litre fuel tanks at Roberts Bay tank farm
- High wall stabilization at Roberts Bay tank farm
- Base for airstrip expansion
- Roberts Bay fuel offload access road
- Jetty de-armouring
- Pollution pond construction and upgrade
- Sedimentation pond construction and upgrade
- Water treatment plant (for pollution pond water treatment)
- Doris camp sewage effluent diffuser line
- New power plant (commissioning to be completed in 2012)
- Vent raise pad
- Vent raise heating and ventilation system (not commissioned)
- Underground shop concrete slab on grade
- Landfarm
- Doris Creek bridge
- Tail Lake access road and fish out dock
- Tail Lake access road to frozen core plant
- Frozen core plant
- North Dam at Tail Lake (to be completed in 2012)
- Windy road bridges
- Quarry D development and extension of road to Windy Camp
- Windy Lake shoals
- Windy Camp diversion berm
- Quarry 2 drill, blast, and crush work to support construction activities

3. Summary of Geochemical Monitoring and Waste Rock Storage Assessment [see Schedule B Item 3]

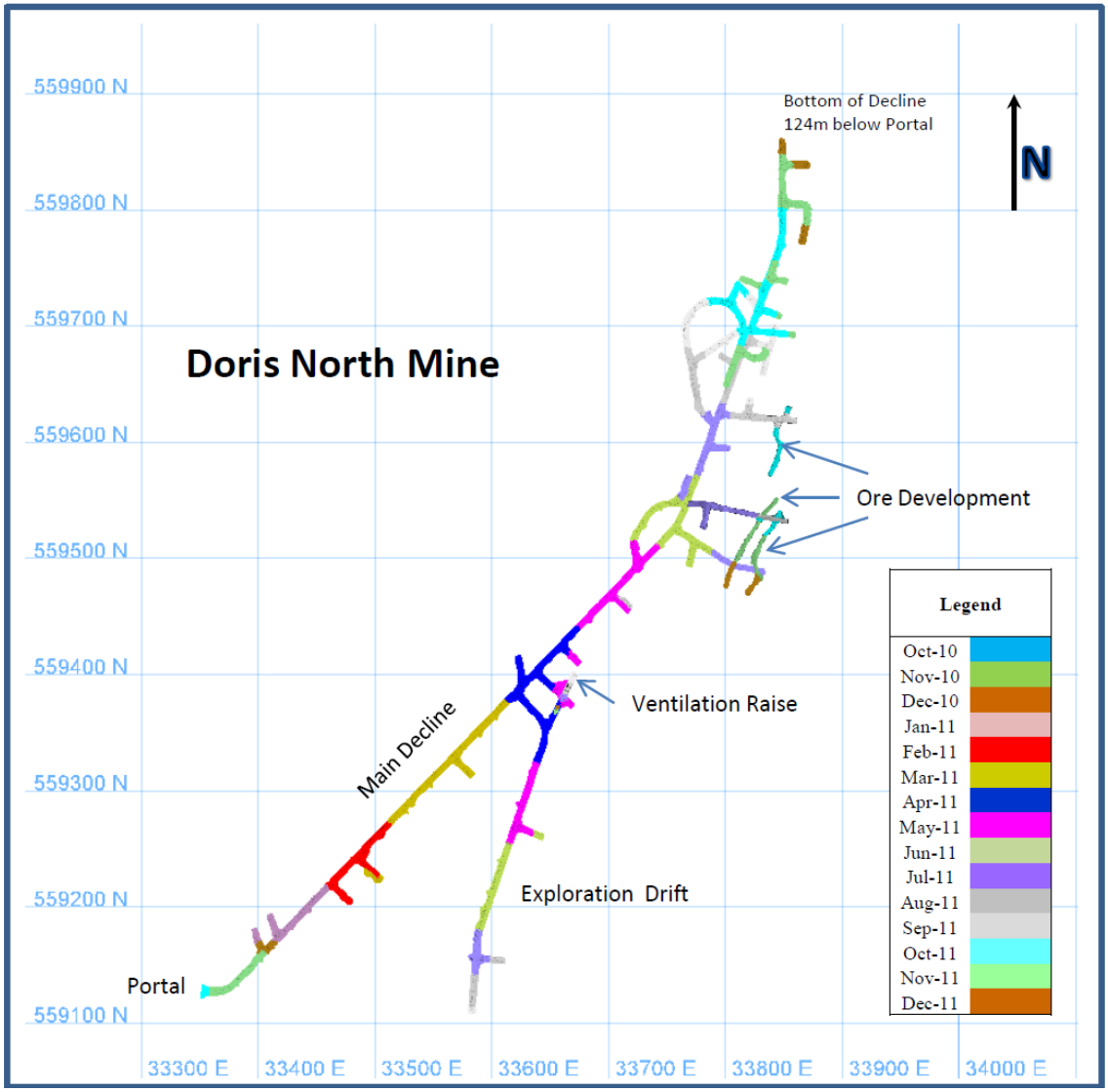
Underground development continued in 2011 advancing a total of 3,073 metres, of which 329 metres was in mineralized zones. At year end, the main decline elevation was at 124 metres below the portal elevation. Total unmineralized material added to the waste stockpile on surface is 182,716 tonnes and total mineralized material added to the mineralized stockpile is 9,411 tonnes. Table 21 shows the volume, in bank cubic metres (BCM), and mass, in tonnes, of waste rock produced from the Doris North decline since October 2010. The volume, in BCM, represents the volume of rock in situ underground. Once blasted and moved to either the waste rock or ore pads, the rock volume increases by about 30%. Therefore, the volume of rock stored

on the waste rock pad at the end of 2011 (including 2010) was approximately 86,487.7 m^3. Figure 1 shows the progress made by month.

Table 21 – Volume and mass of waste rock produced from Doris North decline, 2010-2011

Year	Month	Waste (BCM)	Ore (BCM)	Total (BCM)	Waste (Tonnes)	Ore (Tonnes)	Total (Tonnes)	Advance in Waste (m)	Advance in Ore (m)
2010	October	277	-	277	789	-	789	5	-
	November	1,656	-	1,656	4,720	-	4,720	62	-
	December	485	-	485	1,382	-	1,382	22	-
	Total	**2,418**	**-**	**2,418**	**6,891**	**-**	**6,891**	**89**	**-**
2011	January	2,514	-	2,514	7,165	-	7,165	103	-
	February	3,114	-	3,114	8,875	-	8,875	132	-
	March	4,640	-	4,640	13,224	-	13,224	181	-
	April	6,044	-	6,044	17,225	-	17,225	253	-
	May	7,290	-	7,290	20,777	-	20,777	282	-
	June	6,966	-	6,966	19,853	-	19,853	289	-
	July	7,127	42	7,169	20,312	114	20,426	323	4
	August	7,119	84	7,203	20,289	228	20,518	331	8
	September	6,093	149.1	6,242	17,365	406	17,770	247	14
	October	6,233	1131	7,364	17,764	3,076	20,840	287	108
	November	5,312	1537	6,849	15,139	4,181	19,320	249	146
	December	1,659	517	2,176	4,728	1,406	6,134	68	49
	Total	**64,111**	**3,460**	**67,571**	**182,716**	**9,411**	**192,128**	**2,744**	**329**

Figure 1 – Plan view of Doris North mining completed in 2011, showing monthly advance



Geochemical monitoring was begun at the same time as underground work began on the Doris North decline in October 2010. Geological inspections were made at least once per day when the mining was in diabase and alteration zone, and once per shift in other rock units. Where possible, both the working face and the muck pile were inspected to identify the rock type, quantity of sulphide minerals, quartz veining, carbonate mineralization and the presence of fibrous minerals. This data was recorded in geological inspection logs.

Of the 182,716 tonnes of waste rock brought to surface, approximately 86% was non-mineralized and 14% was mineralized. Approximately 55% of the waste rock was diabase, while the remainder was basalt. A total of 9,411 tonnes of ore was brought to surface consisting mainly of a mixture of basalt with quartz veins. Basalt within approximately 15 metres of the diabase,

including most of the basalt along the main decline was altered by contact metamorphism (heat) from the diabase.

The survey of the waste rock from the underground decline indicated that the diabase, which comprised approximately 55% of the waste rock, had a consistently low sulphide content and was classified as non-PAG. Basalt had a lower than expected TIC and NP content, resulting in a small proportion of samples being classified as PAG based on TIC/AP ratios. Given the relatively low sulphur content of this material, the presence of silicate NP, alkalinity contributed by other rock in the pile, and the relatively coarse grain size of this rock, it is considered unlikely that acidic conditions would develop in this material.

More information can be obtained from the 2011 Waste Rock and Quarry Monitoring Report produced by SRK and submitted to the NWB at the same time as this report.

4. Summary of the results of the monthly water balance and water quality model assessments referred to in Part G, Item 31 and any re-calibrations that have been carried out [see Schedule B, Item 4]

The TIA has not yet been commissioned and as a result detailed operational information regarding the water balance is not available to update the water quality model.

5. Summary of the Geotechnical Inspection Report referred to in Part J, Item 18 [see Schedule B, Item 5]

HBML contracted SRK Consulting (Canada) Inc. (SRK) to conduct the annual geotechnical site inspection of the Doris North Project in accordance with the stipulated license conditions. This investigation was carried out during the week of July 25-29, 2011. Table 22 below provides a summary of the inspection components and the primary recommendations stemming from the inspection. HBML is currently in the process of preparing an implementation plan for the 2012 geotechnical recommendations and will submit this to the NWB upon completion.

Table 22 – Geotechnical Inspection Recommendations

Inspection Item	2011 Recommendations
Thermistors	• Re-evaluate thermistor requirements taking into considering the surface infrastructure elements currently on site • Continue to collect quarterly thermistor data as a minimum (August, November, February and May) • Consider installing data loggers for select remote thermistors to ease the burden of frequent manual data downloads
Old Lay Down Area	• Relocate the last two explosives magazines from the tundra vegetation onto the beach • Remove any remaining debris
Jetty	• Continue to collect quarterly thermistor data as a minimum (August, November, February and May) • Conduct annual survey of the jetty to allow for actual measurement of ongoing settlement

Inspection Item	2011 Recommendations
	• Remind operational staff annually about the operational limitations of the jetty
Shoreline Lay Down Area	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion
5ML Roberts Bay Tank Farm	• Monitor overburden ponding immediately above the high wall and construct a new drainage channel in 2012 • Install permanent sumps within the secondary containment area to facilitate complete surface water drainage • Install settlement beacons along the fuel transfer station and sections of the secondary containment facility not constructed on bedrock. Monitor the beacons quarterly
20ML Roberts Bay Tank Farm	• No action required
Roberts Bay Lay Down Area	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion • Monitor flow from drainage channels beneath pad. If flow stops, the blockage must be traced to prevent onset of thermal erosion • Monitor areas where rock was relocated from the tundra for signs of thermal erosion
Quarry #1 Overburden Dump	• Monitor surface runoff and consider requirement for alternate sedimentation control measures • If the surface is used as a laydown area implement appropriate management protocols to account for sinkhole and differential settlement risk
Airstrip	• Monitor areas where rock was relocated from the tundra for signs of thermal erosion • Maintain practice of inspecting the runway toe line during freshet and after significant or prolonged rainfall events. Pump ponded water to prevent onset of thermal erosion • Conduct daily inspections of the airstrip shoulder to monitor the tension cracks
All Weather Roads (Doris Site)	• Inspect road toe lines during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion • Monitor areas where rock was relocated from the tundra for signs of thermal erosion • Implement a monitoring protocol and erect warning signs at the site of the slope failure until the buttress have been installed
Wash Bay/Explosives Mixing Plant	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion
Upper and Lower Reagent Pads	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Ponded water should be pumped to prevent onset of thermal erosion
Quarry #2 and Crusher Area	• Continue to follow the Quarry Management Plan
Batch Plant Pad (previously Crusher Pad)	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion
Landfarm	• HBML to continue to follow the designated Landfarm Management Plan • Conduct regular visual inspections to monitor for signs of settlement
Sewage Treatment Plant Outfall	• Develop and implement a long-term solution for discharge of grey water to prevent vegetation dieback and subsequent thermal and physical erosion. *An improved system is currently under construction*
Quarry #2 Overburden Dump	• No action required
Doris North Camp	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion • Construct a catch berm at the toe of the high wall and install appropriate signage and barricades to warn people and equipment of the danger • High wall stabilization measures designed for the tank farm and mill pad should be installed as planned • Develop and implement a differential settlement monitoring protocol for heated buildings

Inspection Item	2011 Recommendations
	constructed directly onto the thermal rock fill pads
7.5 ML Doris North Camp Tank Farm	• No action required
Other Site Wide Fuel Storage	• Revisit the secondary containment requirements for fuel tanks on site
Sedimentation and Pollution Control Ponds	• Implement remedial measures as designed
Doris North Portal	• No action required
Waste Rock Pile	• HBML to continue to follow the designated Waste Rock Management Plan
Temporary Pond	• Conduct daily visual inspections to check for obvious signs of distress
Doris Freshwater Intake	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion
Frozen Core Plant Pad	• Inspect pad perimeter during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion
North Dam	• Complete construction of dam and installation of required instrumentation in accordance with the stipulated design • Implement monitoring program for dam instrumentation in accordance with recommendations by the Engineer-of-Record • Conduct thorough review of the dam performance monitoring data during the 2012 geotechnical inspection
Doris-Windy All Weather Road	• Inspect road toe lines during freshet and immediately following significant or prolonged rainfall events. Pump out ponded water to prevent onset of thermal erosion • Monitor areas where rock was relocated from the tundra for signs of thermal erosion • Implement inspection protocol to monitor shoulder cracks and potholes
Doris-Windy All Weather Road Stream Crossings	• Install the required thermistor strings and commence monitoring in accordance with recommendations in Section 3.2
Quarry A	• Continue to follow the Quarry Management Plan
Quarry B	• Continue to follow the Quarry Management Plan
Quarry D	• Continue to follow the Quarry Management Plan

6. An update on the current capacity of the Tailings Impoundment Area [See Schedule B, Item 6]

The North Dam which ensures containment of TIA is currently under construction and therefore the TIA has not yet been commissioned. The available capacity is therefore 100%.

7. A comparison of the flows (m^3/day) at monitoring stations TL-1, TL-2, TL-3, and TL-4 [See Schedule B, Item 7]

TL-1 is the intake for the pump used to dewater Tail Lake and TL-4 is the discharge end of the same pipe (measured from the v-notch weir box constructed to minimize erosion risk in Doris Creek). TL-2 is the background Doris Creek flow (upstream of TL-4), and TL-3 is the flow measured just downstream of TL-4 in Doris Creek. Table 23 presents a flow comparison between the four monitoring stations.

Table 23 – Comparison of flows between monitoring stations TL-1, TL-2, TL-3, and TL-4, in cubic metres (m^3) for 2011.

Date	TL-1 Flows	TL-4 Flows	TL-2 Flows	TL-3 Flows
02/08/11	49	50	61555	64355
03/08/11	515	426	59495	62045
04/08/11	43	43	58161	60669
05/08/11	701	588	56420	58785
06/08/11	1986	1580	55325	57589
07/08/11	2229	1953	53721	55700
08/08/11	2190	2004	51922	53620
09/08/11	2144	1927	50337	51666
10/08/11	2180	1979	48875	49846
11/08/11	2183	1953	47582	48254
12/08/11	2200	2004	46499	46943
13/08/11	2173	2004	45582	45885
14/08/11	2165	2030	44442	44560
15/08/11	2181	2004	43339	43183
16/08/11	2161	2004	41671	41134
17/08/11	2164	2004	40600	39844
18/08/11	2144	1979	41656	40271
19/08/11	2138	2004	41491	39386
20/08/11	2083	1979	40751	38487
21/08/11	2148	1979	40317	38045
22/08/11	2007	1953	40007	37504
23/08/11	2146	1953	39575	37184
24/08/11	2175	1953	39516	37413
25/08/11	2177	1996	38697	36398
26/08/11	2167	1979	38285	35865
27/08/11	2174	2004	37959	35513
28/08/11	2119	1953	37401	34923
29/08/11	2140	1953	37473	35047
30/08/11	2132	1927	37065	34551
31/08/11	2092	1953	36651	34077
01/09/11	2104	1780	36132	33454
02/09/11	2095	1849	35673	32848
03/09/11	2033	1814	35419	32500
04/09/11	2068	1892	35180	32358
05/09/11	2075	1901	34682	31717
06/09/11	2029	1806	34573	31551
07/09/11	1903	1668	37914	38224
08/09/11	1896	1663	42497	43534
09/09/11	1965	1737	44197	44741
10/09/11	2107	1970	45065	45437
11/09/11	2144	1979	45520	45659
12/09/11	2152	2004	46144	46291
13/09/11	2032	2004	46792	46964
14/09/11	2097	2004	47786	48197
15/09/11	2170	1858	47329	47688
16/09/11	2134	1927	47981	48382
17/09/11	2134	1953	48226	48716

Date	TL-1 Flows	TL-4 Flows	TL-2 Flows	TL-3 Flows
18/09/11	2108	1953	48846	49416
19/09/11	*End of discharge*			

8. Annual review and any revisions submitted in the form of addendums to the Management Plans or Emergency Response and Contingency Plan [See Schedule B, Item 8]

In 2011, HBML submitted the following plans:

- Monitoring and Follow-Up Plan
- Waste Rock Management Plan
- QA/QC Plan

An updated Monitoring and Follow-Up Plan was submitted in June and represents the first update to the plan since it was originally submitted with the water licence application. The Waste Rock Management Plan, originally submitted in early 2011, was resubmitted as part of the Amendment 3 package in October. Although Amendment 3 has been approved, HBML has still not received approval for the Waste Rock Management Plan. An update to the QA/QC Plan was submitted in January. No revisions to this plan have been made since then.

In 2011, HBML revised the following plans:

- Spill Contingency Plan
- Emergency Response Plan

The Spill Contingency Plan was approved by the NWB in October 2010 and was updated in fall 2011 to cover changes in contact information, fuel storage facilities information, and drawings that show fuel storage facilities locations. The Emergency Response Plan has been updated since it was submitted in 2010. These revised and updated plans are included with the submission of this annual report.

Over the course of 2011 and early 2012, HBML revised the following plans:

- Hazardous Waste Management Plan
- Incinerator Management Plan

Previous revisions to the Hazardous Waste Management Plan and the Incinerator Management Plan were submitted to the NWB in September 2009 and July 2009, respectively. These revised and updated plans are included with the submission of this annual report. The revisions reflect the numerous changes to waste management that have been implemented by HBML since 2009.

HBML is submitting the following plan for the first time:

- Interim Non-Hazardous Waste Management Plan

This plan was developed because HBML has not constructed a landfill, and therefore, a landfill management plan has not been implemented at this time. The Interim Non-Hazardous Waste Management Plan is being submitted with this annual report to complete the series of waste management plans prepared by HBML to cover the various types of waste managed on site.

9. A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken [See Schedule B, Item 9]

Date of Spill: January 7, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A Manitou Zoom Boom developed a hydraulic oil leak while parked in the Nuna line-up at Roberts Bay spilling approximately 10 litres of hydraulic oil. The contaminated snow was shoveled up and delivered to the waste management area for disposal. The machine was removed from service and the hydraulic hose repaired.

Date of Spill: January 12, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A MacLean Bolter spilled approximately 4 litres of hydraulic oil on the ground at ~ sta 120 m on the Portal ramp as a result of a leak in the park brake casing. The contaminated soil was shovelled up and brought to waste management. The bolter was tagged out pending repairs.

Date of Spill: January 13, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Oil
Details of Spill: Compressor supporting underground work shutdown and a small amount of oil had come out through the dipstick and onto the ground. Spill pads were placed under the drip, the machine removed for servicing and the contaminated snow cleaned up.

Date of Spill: January 21, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: Frozen hydraulics on water truck caused a leak of <5L at the Doris Camp Kitchen lift station. The spill was cleaned up and contaminated snow removed for disposal.

Date of Spill: January 24, 2011

Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Fluid
Details of Spill: Minor leaks of hydraulic fluid detected from drill on percolation holes at North Dam construction. Drill removed for service and replaced. Second drill also experiencing leaks, but catchment was placed beneath and any contaminated snow was cleaned up and removed. A dedicated environmental monitor was placed on site during all further operations until work was complete.

Date of Spill: January 27, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Fluid
Details of Spill: On start-up of the skid steer at Roberts Bay waste management facility, <1/8L of hydraulic fluid spilled on the ground from a blown hydraulic hose. The machine was shut down and removed for servicing and a minor amount of soiled snow was cleaned up and removed.

Date of Spill: March 6, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A spill of approximately 5 liters of hydraulic oil occurred at the waste management yard as a result of a leak in a hydraulic line on a front end loader working in the yard. The contaminated snow was shoveled up, and the front end loader was repaired.

Date of Spill: March 6, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Antifreeze
Details of Spill: A spill of approximately 20 liters of antifreeze occurred on the airstrip apron as a result of a blown radiator hose on a dozer clearing snow in the area. The contaminated snow was shoveled up and the dozer repaired.

Date of Spill: March 15, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A spill of approximately 10 liters of hydraulic oil occurred on the Windy Lake portage as a result of a failure in the transmission cooler on a front end loader working in the area. The contaminated snow was shoveled up and the loader repaired.

Date of Spill: March 31, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Diesel

Details of Spill: A spill of approximately 3 liters of diesel oil occurred within the containment berm constructed on the ice at the area of the fuel off-load in Roberts Bay, as a result of a leak in the fuel transfer hose. Absorbents were applied to the spill area, and then shovelled into a container. The surface of the ice was scraped over to remove any residual oil. The leaky hose was replaced.

Date of Notification to an Inspector: April 1, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Diesel
Details of Spill: Approximately 2 litres of diesel spilled from a defective Wiggins nozzle on the discharge end of the fuel transfer hose between the fuel tanker (Primula) and the truck being re-fuelled inside the ice containment berm at Robert's Bay. The fuel was immediately cleaned up and the Wiggins nozzle on the transfer hose was replaced.

Date of Spill: April 2, 2011
Spill No: 11-098
Date of Notification to an Inspector: April 12, 2011
Product Spilled: Diesel
Details of Spill: Approximately 60 litres of diesel spilled as a result of a surge (of an undetermined source) that occurred in the refuelling line between the fuel tanker (Primula) and a fuel truck being re-fuelled within the ice containment berm at Roberts Bay. The fuel transfer was immediately stopped and the spill was thoroughly cleaned up prior to restarting the transfer. This incident was reported to the NT-NU Spill Line (Spill # 11-098) and subsequently a follow-up letter was submitted April 12, 2011.

Date of Spill: April 4, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Glycol
Details of Spill: Approximately 8 litres of glycol spilled when a bucket fell to the ground at the frozen core dam area at Tail Lake. The spill was immediately cleaned up.

Date of Spill: April 6, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Diesel
Details of Spill: Approximately 30 litres of diesel spilled during the fuel offload between the Primula and a fuel truck being re-fuelled within the ice containment berm at Roberts Bay. The spilled fuel was immediately cleaned up.

Date of Spill: April 18, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil

Details of Spill: Approximately 16 litres of hydraulic oil spilled as a result of a blown hose on a piece of equipment at the entrance to the U/G mine. The contaminated snow was cleaned up and the hose was replaced.

Date of Spill: May 10, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: Approximately 20 litres of hydraulic oil was spilled at the Geotech Laydown area as a result of a blown hose on a Zoom Boom. Spill was cleaned up and hose was replaced.

Date of Spill: May 17, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: Approximately 15 litres of hydraulic oil spilled on the ground in the vicinity of the Doris North sediment pond construction area, as a result of a blown hydraulic hose on a Cat 773 rock truck. Spill was cleaned up and hose was replaced.

Date of Spill: May 22, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Run-off Water from Pollution Pond
Details of Spill: Discharge of approximately 291 m^3 of run-off water from Pollution Control Pond without water quality sample results and notification to regulatory authorities. Detailed follow-up reports have been issued.

Date of Spill: May 27, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: Approximately 3-5 litres of hydraulic oil leaked from a hose on the packer working on the berm of the Pollution Control Pond. Spill was cleaned up and hose was replaced.

Date of Spill: June 5, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydrocarbon
Details of Spill: Some hydrocarbon residue noted off Doris Lake Road east of the Tail Lake Road junction, possibly from an old drill hole location. Sorbent materials were applied to the area to contain the sheen. The drill hole was remediated with fill material once residues were no longer detectable.

Date of Spill: June 6, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A

Product Spilled: Gasoline
Details of Spill: A punctured gasoline drum inside the 5M L tank farm berm potentially contaminated complaint effluent pending discharge from ST-6. Sorbents were deployed to contain and remove the spilled fuel. The berm was not discharged until further sampling was conducted to verify the effluent was not contaminated.

Date of Spill: June 14, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: Approximately 1 litre of hydraulic oil spilled as a result of a leak on a diamond drill parked on the parking lot adjacent the mine portal. The contaminated soil/gravel was removed for disposal and the leak on the drill repaired.

Date of Spill: June 24, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Diesel
Details of Spill: Approximately 1 litre of diesel oil leaked from a weeping oil line on a Toyo stove in a cabin at Doris Camp. The fuel line was replaced and the contaminated gravel was cleaned up and removed.

Date of Spill: July 3, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Fuel
Details of Spill: An RC drill was working at drill hole #11DRC021 on the tundra near the Doris camp. A new fuel tank was brought to the location to service the equipment. Upon set-up, it was noticed that the tank was weeping fuel through a seam weld. The crew immediately put down absorbents and arranged to fly the tank back to the laydown, and have its contents drained. It appears that far less than 0.5 liters was spilt on the tundra.

Date of Spill: July 13-21, 2011
Spill No: 11-294
Date of Notification to an Inspector: July 21, 2011, updated July 22, 2011 and August 9, 2011
Product Spilled: Sediment Control Pond
Details of Spill: The new Sediment Control Pond was being filled with RO treated water originating in the temporary pollution control pond, but the Sediment Control Pond was found to be leaking. A spill report was filed with the Nunavut Spill Line on July 21, 2011, and updates provided on July 22, 2011 and August 9, 2011 (#11-294).

Date of Spill: July 23, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Jet A Fuel

Details of Spill: Less than 1 litre of Jet A spilled from an un-level drum of fuel at the Doris helipad. A small amount of contaminated gravel was cleaned-up, contained, and removed for disposal.

Date of Spill: July 23, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Compressor Fluid
Details of Spill: Approximately 15 L of compressor fluid spilled from an unsecured pail in the back of a truck travelling on the road at Doris Camp just east of the Pollution Control Pond. Sorbent pads were used to clean-up the fluid and the contaminated road surface was shovelled up and removed.

Date of Spill: July 24, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Fluid
Details of Spill: A broken hydraulic line on a drill operating in Quarry 2 near Doris Camp leaked approximately 8 L of hydraulic fluid on to the ground under the machine. Sorbent pads were used to clean-up the engine compartment and contaminated waste was put into a container for disposal.

Date of Spill: July 26, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Transmission Oil
Details of Spill: A transmission bolt screen on the D8 dozer was broken off while moving rock in the overburden dump adjacent to Doris Camp and Quarry 2. The damage caused approximately 80 L of transmission oil to leak on to the ground which impacted an area of approximately 25 m^2. Sorbent pads were used to collect the fluid and then a machine was used to scrap up several inches of surface material which was then contained for proper disposal.

Date of Spill: August 6, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A hydraulic hose on a genie lift aerial platform failed resulting in approximately 5 litres of hydraulic oil being spilled on the ground at the Roberts Bay lay down area. The oil contaminated soil was shoveled up and brought to waste management pending proper disposal.

Date of Spill: October 12, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil

Details of Spill: A spill of approximately 20 litres of hydraulic oil occurred at the 5 million litre tank farm (within the lined berm area) from an unidentified source. The contaminated gravel was removed and brought to the on-site waste management facility pending proper disposal.

Date of Spill: October 18, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Motor Oil
Details of Spill: A spill of approximately 4 litres of motor oil occurred at the Doris Camp pad as a result of a leak in the base pan on a Genie lift. The contaminated soil was removed and brought to waste management. The leak was repaired on the Genie lift and it returned to service.

Date of Spill: October 20, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Jet Fuel
Details of Spill: A spill of approximately 50 litres of Jet fuel occurred at the Doris airstrip as a result of a frozen vent on an aircraft that was travelling to the airstrip apron. The contaminated material was removed and sent to waste management. The aircraft was inspected and returned to service.

Date of Spill: October 25, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A spill of approximately 2 litres of hydraulic oil occurred at the frozen core plant at Tail Lake as a result of a leaking hose on a Genie lift. The contaminated material was removed and brought to waste management. The hose was repaired and the unit put back into service.

Date of Spill: October 28, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A spill of approximately 2 litres of hydraulic oil occurred near the warehouse from an unknown source. The contaminated material was removed and brought to waste management for proper disposal.

Date of Spill: November 23, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Antifreeze
Details of Spill: A spill of approximately 4 litres of antifreeze occurred on the down line at a contractor shop at Roberts Bay (68° 10’ 27” N; 106° 36’ 58” W) as a result of a leaking heater hose on an articulating truck that was parked there awaiting service. The contaminated snow was

shovelled up and placed in a container pending proper disposal. The leaking hose was repaired and truck returned to service.

Date of Spill: December 1, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A spill of approximately 3-4 litres of hydraulic oil occurred on the snow on the surface of Doris Lake as a result of a leaking hydraulic hose on a snow blower being operated there. The contaminated snow was removed for proper disposal. The leaky hose was replaced and the equipment returned to service.

Date of Spill: December 4, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A spill of less than 1 litre of hydraulic oil was discovered on the floor inside the concrete batch plant. The contaminated gravel was shovelled up and sent to waste management for proper disposal.

Date of Spill: December 10, 2011
Spill No: 11-455
Date of Notification to an Inspector: December 10, 2011
Product Spilled: Antifreeze
Details of Spill: A spill of approximately 70 litres of antifreeze occurred on the upper reagent laydown area as a result of a leaking valve on a 1000 litre tote that was housed inside a seacan container. The spilled product was both inside the seacan and on the frozen ground immediately outside the seacan doors. The contaminated snow was removed, and the floor of the seacan cleaned. The remaining product was transferred to an empty container, and brought to the equipment service area for immediate usage.

Date of Spill: December 30, 2011
Spill No: N/A
Date of Notification to an Inspector: N/A
Product Spilled: Hydraulic Oil
Details of Spill: A spill of approximately 2 litres of hydraulic oil was caused by a leaking hose fitting on a genie lift. The contaminated snow was removed and brought to waste management for proper disposal. The leaking fitting was repaired and the equipment returned to service.

10. The results of continued aquatic effects baseline data collection, and the results of the Aquatic Effects Monitoring Program in accordance with Part K, Item 4 [See Schedule B, Item 10]

The executive summary of the 2011 Aquatic Effects Monitoring Program Report is presented below. The complete report is included with the submission of the annual report.

This report presents the results from the second year of the AEMP. As outlined in the Plan, three streams, three lakes, and two marine exposure sites were monitored along with two reference streams, two reference lakes, and one marine reference site. Aquatic components evaluated in 2011 included: lake and marine under-ice dissolved oxygen levels; lake Secchi depth; stream, lake, and marine water and sediment quality; stream periphyton biomass; lake and marine phytoplankton biomass; and stream, lake, and marine benthic invertebrate community descriptors (total density, taxa richness, evenness, diversity, and the Bray-Curtis Index). Lake and marine fish communities were surveyed in 2010 (Rescan 2011) and were not scheduled to be resurveyed in 2011.

Streams

There were no apparent Project-related effects in 2011 on water or sediment quality parameters, periphyton biomass levels, or benthic invertebrate communities in the AEMP streams. There were increases in the concentrations of total suspended solids (TSS) in Little Roberts Outflow and total molybdenum in Doris Outflow in 2011 compared to baseline concentrations; however, parallel increases from baseline means also occurred at the reference streams. Thus, there was no evidence that these increases were due to Project activities. The total organic carbon (TOC) content of sediments from Little Roberts Outflow decreased slightly in 2011 compared to the baseline mean; however, a parallel trend occurred at the reference streams, suggesting that this was a natural occurrence that was unrelated to Project activities. Total lead and mercury concentrations in sediments from Little Roberts Outflow also decreased in 2011 compared to baseline levels, but decreases in concentrations of these heavy metals are not of environmental concern. There were differences in 2010 to 2011 trends for some benthic community descriptors between exposure and reference streams; however, these differences in trends are unlikely Project-related, and probably reflect natural annual variability or patchiness in the composition and distribution of the benthos community within streams.

Lakes

There were no apparent Project-related effects on under-ice dissolved oxygen concentrations, Secchi depths, water or sediment quality parameters, phytoplankton biomass levels, or benthic invertebrate communities in the AEMP lakes. There was evidence of a decrease in the mean arsenic concentration in Doris Lake North in 2011 compared to baseline years; however, a decrease is not of environmental concern. In sediments collected from Doris Lake North, total copper, lead, and zinc concentrations decreased in 2011 compared to baseline levels, but decreases in concentrations of these metals are also not of environmental concern. There were differences in 2010 to 2011 trends for some benthic community descriptors between exposure and reference lakes; however, these differences in trends are unlikely Project-related, and probably reflect natural annual variability or patchiness in the composition and distribution of the benthos community within lakes.

In several AEMP streams and lakes, total cyanide concentrations measured in 2011 were similar to concentrations measured in 2010, but were elevated compared to pre-2010 baseline levels. However, concentrations of free cyanide measured in the exposure streams and lakes in 2011

were near or below analytical detection limits and were always below the CCME guideline of 0.005 mg/L as free cyanide. The similarity of 2011 mean total cyanide concentrations between exposure and reference waterbodies suggests that the recent increase in cyanide at the exposure streams and lakes is an analytical anomaly or a natural phenomenon that also occurred in lakes outside of the Project area. It is highly unlikely that there was an anthropogenic cause for the elevated cyanide concentrations measured in 2011, as no cyanide was used on site or brought to site in either 2010 or 2011. Cyanide concentrations will continue to be closely monitored in AEMP streams and lakes.

Marine

There were no apparent Project-related effects on winter dissolved oxygen levels, water and sediment quality parameters, phytoplankton biomass levels, or benthic invertebrate communities in AEMP marine sites. All dissolved oxygen concentrations and water quality parameters measured at the marine exposure sites during 2011 remained similar to baseline conditions, indicating that 2011 Project activities had no effects on the water chemistry in the surrounding marine habitat. Several metals increased in sediments at a monitoring site in Roberts Bay (RBW) between 2002 and 2011. However, greater increases occurred at the marine reference site between 2009 and 2011, indicating that this variability was likely natural. Similar to stream and lake benthos communities, there were differences in 2010 to 2011 trends for some benthic community descriptors between marine exposure and reference sites; however, these differences in trends are unlikely Project-related, and probably reflect natural annual variability or patchiness in the composition and distribution of the benthos community within marine sites.

Mitigation measures to reduce the potential for adverse effects to stream, lake, and marine habitats in the Doris North area included surface water runoff management, dust abatement measures, site water compliance monitoring, tailings and site geotechnical monitoring, quarry and waste rock monitoring and management, and waste management. 2011 results indicate that these mitigation measures were successful in preventing adverse effects to dissolved oxygen levels, Secchi depths, water and sediment quality parameters, periphyton and phytoplankton biomass levels, and benthic invertebrate communities in Project area waterbodies.

11. Annual adjustments to reclamation security including any additional security that may be required [See Schedule B, Item 11]

No adjustments to reclamation security were required or made in 2011.

12. Annual Incineration stack testing results [See Schedule B, Item 12]

An incinerator stack emissions testing program was implemented in 2009 to collect samples for dioxin, furans, and mercury. At that time, the results showed that the emissions were in compliance with Canada Wide Standards (CWS) for mercury but were not for dioxin and furans. In response to these results, HBML decided to carry out changes to the waste management

system at site and to implement incinerator best management practices prior to re-sampling stack emissions.

Waste management and incinerator improvements undertaken between August 2009 and August 2011 include:

- Construction of a building around the incinerator to help maintain optimum chamber and stack temperatures
- Waste sorting station incorporated into the incinerator building
- Waste sorting stations throughout camp for domestic waste
- Implementation of a site-wide waste management standard operating procedure
- Dining room renovation to incorporate a station for cleaning re-usable lunch kits
- Dining room renovation to enable the use of bulk condiments
- Removal of all disposable lunch packaging

Incinerator stack testing was conducted on the Doris incinerator stack in late August and early September 2011. The results showed that the emission sampling results were in compliance with CWS for mercury, but not for dioxins/furans. Nevertheless, there was an order of magnitude reduction in dioxin/furan levels after the implementation of incinerator and waste management improvements, as shown in Table 24, which compares CWS standards to 2009 and 2011 results.

Table 24 – Comparison of stack emissions test results for 2009 and 2011

Parameter	CWS Standard	2009	2011
Mercury (ug/Rm^3 @ 11% O_2)	20	1.0	0.61
Dioxin/Furan (pg/Rm^3 TEQ @ 11% O_2)	80	**2,170***	**128***

**bold indicates non-compliant*

13. Annual Landfill Management Report [See Schedule B, Item 13]

HBML is authorized to dispose of all non-hazardous solid waste in a landfill on site as per Part G Item 10. At the request of the land owner, Kitikmeot Inuit Association, HBML has not constructed a landfill. All waste that cannot be incinerated on site is backhauled to an approved facility off site. Because HBML has not constructed a landfill, no landfill management report has been prepared. Nevertheless, HBML has been managing waste produced in Hope Bay according to three waste management plans:

- Interim Non-Hazardous Waste Management Plan
- Hazardous Waste Management Plan
- Incinerator Management Plan

These plans describe how various streams of waste are managed. All three plans are being submitted with this annual report as either updates to plans previously submitted or as new plans. See Item 8 of this supplement for details.

14. A summary of modifications and/or maintenance work carried out on the Water Supply and the Waste Disposal Facilities, including all associated structures, and an outline of any work anticipated for the next year [See Schedule B, Item 14]

The following modifications were made to the water treatment systems at Doris North.

Freshet Water Treatment Plant

A water treatment plant (WTP) was designed and installed to treat contact runoff water that collects in the Pollution Control Pond (PCP) during freshet and throughout the open water season. The water from the PCP is pumped through the treatment plant and deposited into the Sediment Control Pond for storage until lab analysis results can confirm the water meets discharge criteria.

The WTP was designed primarily to reduce the chlorides and ammonia the runoff water contains. The main components of the WTP are a series of filters, pH adjustments and a reverse osmosis unit. It is housed inside four converted sea cans and it can treat up to 22.7 m^3/hr.

Effluent Diffuser

The temporary sewage treatment effluent tundra discharge location (discharge point for ST-8) was relocated in fall 2011, from its previous location west of Quarry 2, to a location slightly further away from Quarry 2. Discharge commenced at the new location on November 2, 2011. The location change was due to the identified potential that long term use of the first location and the method of dispersal used could create ponding and permafrost degradation erosion issues at the point of discharge. In order to meet Part G Item 2, an effluent diffuser was designed for the new discharge location to disperse effluent over a larger area, primarily onto bedrock, in order to prevent erosion issues from occurring. The final engineered design plans were submitted to the board on June 9th, 2011.

Camp water distribution

Improvements made to the domestic water distribution system in previous years, as a result of algae and microbe contamination, have been effective in improving Doris Camp drinking water quality. Results from water sampling analysis for algae and microbes indicate that there have been no new algae and microbe problems in the drinking water system. The pipeline from the pump house and the campsite potable water distribution system were shock chlorinated a number of times in 2011 to destroy any algae and microbes that may have colonized within the distribution system. Periodic shock chlorination is ongoing and all residual chlorinated water from this process is de-chlorinated before being released to the waste water treatment facility. Weekly water quality sampling of camp water is ongoing. Bottled water is no longer supplied at site. Reusable water bottles are supplied to camp personnel at the time of their camp orientation to encourage the use of the reverse osmosis water available in the kitchen and other location within the accommodation complex.

15. A summary of any closure and reclamation work undertaken and an outline of any work anticipated for the next year, including any changes to implementation and scheduling [See Schedule B, Item 15]

Construction activities at the Doris North project continued throughout 2011. Reclamation work was not undertaken.

16. A summary report describing public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events/information sessions [See Schedule B, Item 16]

Community consultation continued in accordance with the Community Relations Plan and is a responsibility of the Environment and Social Responsibility (ESR) department of HBML. Community consultation continued to focus on the construction of the Doris North Project, the proposed changes to Doris North, and providing information to stakeholders on Phase II of staged development of the Hope Bay Belt.

HBML maintained two staff members in Cambridge Bay in 2011: Manager of Community and External Relations, primarily responsible for implementing the Community Relations Plan, with support from the ESR Director and the IIBA Coordinator. The resident HR representative transitioned to Braden Burry Expediting as a Logistics Coordinator for Cambridge Bay. The resident HR Representative position was based out of Doris North for the remainder of the year.

Cambridge Bay Logistics Hub

Cambridge Bay continues to be the logistics hub for HBML in the Kitikmeot. Employees from across the region are flown to Cambridge Bay, and are then transported to Doris North. Under the auspices of the Doris North IIBA Implementation Committee, KIA and HBML have investigated the optimization of travel arrangements for Inuit workers to and from work. Due to improvements in camp load planning and accommodation at Hope Bay it was not necessary to house any workers at Cambridge Bay and shuttle them to work as in previous years.

Alcohol and Drugs

Although security and safety measures cannot ensure a 100% drug and alcohol free workplace, we are confident that our measures against alcohol and drug consumption on site are reasonably effective while respecting the individual privacy rights of our workforce. Safety statistics are a reasonable proxy to measure the success of alcohol and drug interdiction; in 2011 HBML passed the 3 million person hour safety milestone without a lost time accident.

Community Relations Monthly Summary

January

- HBML had 10,000 core boxes for the Hope Bay exploration program built in Cambridge Bay. By building these boxes in Cambridge Bay, it is hoped that local employment can be promoted in favor of southern contractors and freight costs into the Arctic.
- HBML met with the Ekaluktutiak Hunters and Trappers Association (EHTO) to update them on the DNA hair snagging program for both grizzly bears and wolverine at Hope Bay. Ultimately, the EHTO was interested in becoming involved in this program, and provided an experienced hunter as a field assistant for this important wildlife research in 2011.
- HBML ESR staff worked with Rescan Environmental socio-economic consultants to conduct a tour of the Kitikmeot region, gathering information and conducting interviews with key informants in order to update our socio-economic baseline of information in preparation for Phase II development.

February

- Beginning in February, HBML ESR staff began planning for the Doris North Portal Ceremony. The intention of this event was to commemorate, with invited northern stakeholders, HBML going underground at Doris North.
- HBML attended and sponsored the Kitikmeot Trade Show held in Cambridge Bay. Supply Chain personnel were on hand to deliver a 2010 business forecast and ESR delivered a project update to delegates. HBML facilitated a KIA Lands Division inspection of the Hope Bay facilities.
- HBML announced the signing of the KIA Capacity Agreement. HBML also worked with KIA to finalize a Kitikmeot Skills Strategy funding application for mine training under the federal Strategic Partnerships Fund.
- HBML provided Nunavut content for sustainable development and community relations reporting. Our 2010 activities can be viewed at: www.beyondthemine.com.

March

- The primary community relations event for the month was the Doris Portal Ceremony attended by a number of Nunavut politicians and community leaders to celebrate underground mining progress at Hope Bay. A dedication to Saint Barbara was performed, as well as a comprehensive mine tour for all visitors.
- HBML began regularly attending Hamlet of Cambridge Bay Canadian High Arctic Research Station (CHARS) local committee monthly meetings. The purpose of these meetings is to help prepare the community of Cambridge Bay for the construction and operation of this research facility. Significant opportunity exists for partnerships and collaboration between HBML and the Government of Canada in relation to resource development studies and science.
- An IIBA Implementation Committee meeting was held in Cambridge Bay, focusing on human resource issues.
- Our contract archeologist went to both Kugluktuk and Cambridge Bay to deliver public presentations on the archeological fieldwork that is routinely conducted annually at Hope Bay. There was a great deal of interest from the Elders Committee of the Kitikmeot Heritage Society in this work, and informative feedback provided in interpreting various types of heritage sites.

- HBML facilitated a dialogue with Kitikmeot Caterers and Kitikmeot Foods to support more country food being served at Site.
- HBML facilitated a number of sign translations for various site locations and activities into Inuktitut and Inuinnaqtun pursuant to the *Inuit Language Protection Act*.

April

- HBML attended the Government of Nunavut sponsored Uranium Forum held in Cambridge Bay on behalf of the Nunavut/NWT Chamber of Mines.
- HBML supported Kitikmeot Catering in obtaining additional country foods from Kitikmeot Foods to serve at site.
- HBML discussed a draft Wildlife Monitoring MOU with the GN Department of the Environment (DOE). A draft MOU was submitted to HBML from DOE that in part allowed for HBML funding support to regional scale caribou surveys. HBML provided four comments back to DOE on the draft document. Further to this, HBML and other Chamber of Mines members provided industry comment on the draft Nunavut Caribou Study.

May

- Early in May, a face to face meeting was facilitated between Jim Spenceley and Charlie Evalik in Cambridge Bay, primarily to touch base regarding various issues facing the two parties.
- HBML staff worked to fill summer field assistant positions, focused on supporting baseline and monitoring work programs, with interested Inuit from the Kitikmeot who may be considering or were already enrolled in environmental post-secondary training.
- Work was completed on preparation for a community consultation tour in June.
- In mid-May, HBML facilitated another KIA Lands inspection trip to Site.
- At the end of May, work was completed on the redraft of a mine training MOU between the Government of Nunavut, Nunavut Arctic College, the Kitikmeot Economic Development Commission, the Kitikmeot Inuit Association, and HMBL. The purpose of this redraft was to update the document originally signed in 2007.

June

- At the beginning of June, HBML conducted a community consultation tour of the Kitikmeot Region. All communities were visited except for Gjoa Haven, which could not be reached due to poor weather. The purpose of the tour was to provide a Doris North project update and provide the public with information on HBML proposals to amend the Doris North Type A water licence and to mine at other locations in the Hope Bay district (Phase II).
- A meeting was held in the middle of June in Edmonton between the KIA and HBML to discuss technical aspects of water licence Amendment 3 and the Phase II Project Proposal.

July

- HBML provided logistical and camp support to joint DOE/GNWT caribou aerial survey teams conducting post calving aerial surveys of Bathurst and Ahiak caribou.

- Two Inuit elders participated in the 2011 archeological field program with Gabriella Prager, a contract archeologist for HBML. This participation was facilitated by Cambridge Bay ESR.
- A brine spill was discovered emanating from a diamond drill adjacent to the Boston Camp. Details of this accident were reported to our project stakeholders as part of crisis management communications.
- In addition to staffing regular environmental field assistants, additional Inuit assistants were hired in order to conduct the fish out of Tail Lake.

August

- A crisis response training exercise was held at site this month. The purpose of this training was to ensure timely and effective communications at times when emergency events occur at any Newmont site.
- HBML responded to a request from Cambridge Bay RCMP to use a Hope Bay helicopter to rescue a boat in distress in the Coronation Gulf area. Upon investigation, it was concluded that the distress call was too far away for helicopters at site to respond.
- During August and into September, HBML transported lake trout harvested from Tail Lake to Cambridge Bay for consumption. The EHTO and local Elders were consulted as to which fish were fit for human consumption, and which fish were to be used for dog food. All fish considered fit for people to eat were distributed to the Cambridge Bay Food Bank for use by food bank recipients. Fish fit for dogs only were stored at the Cambridge Bay expediting building and distributed to dog owners upon request.

September

- During the first part of the month, HBML contracted two fishermen through the EHTO in order to catch fish near Hope Bay. The purpose of this harvest was to provide fish tissue samples for baseline purposes.
- HBML Geology staff provided a presentation to Kilinik High School students in Cambridge Bay. The presentation focused on geology, how to find gold, and careers in geology.
- At the end of the month, HBML facilitated the annual NIRB Site Inspection of Doris North Mine.

November

- In the middle of the month, a focus group of hunters met in Cambridge Bay to provide HBML with land use information related to the Hope Bay project area. The focus group was well attended and provided useful information that contributed to the Phase II project proposal.
- A significant amount of effort was placed in developing Traditional Knowledge research options for Phase II environmental assessment.
- HBML attended a Nunavut Mine Training Strategy session in Rankin Inlet.

At the end of the month, HBML made a presentation to the Kitikmeot Mayor's Meeting. The purpose of this meeting was to provide local administrators and mayors with a project update and answer any questions that they had regarding the Hope Bay Project.

17. GPS locations of monitoring stations as confirmed with the Inspector Part J, Item 5 [See Schedule B, Item 17]

Please refer to main part of the annual report for the GPS locations of the monitoring stations.

18. A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector [See Schedule B, Item 18]

Two AANDC inspections took place in 2011 with the first on March 16, 2011 and the second between July 11 and 13, 2011. An inspection report was provided for the March 16 inspection only. HBML submitted a follow-up report, regarding the March 16 inspection, to the Inspector and the NWB on June 20, 2011. The following list outlines the issues brought up during the March 16 inspection and includes the follow-up action taken by HBML:

- Water Supply: MSDS should be visible and in an easy to access location.
    - No chemicals are stored in the water supply pumphouse so there are no MSDS sheets to display.
- Waste Disposal: No MSDS could be located for the chemicals stored in the sewage treatment plant. An updated MSDS binder should be placed in the plant and should be easily located if needed.
    - A binder with MSDS sheets has been put together and placed in an easy to access location in the sewage treatment plant.
- Solid Waste: Metals and wires were found burned and placed outside of the burn shed, this is not permitted. The company is aware of the issue and will monitor the situation so it doesn't happen again.
    - The area continues to be monitored and clear instructions have been provided to the contractor. The area is in the process of being cleaned-up.
- Fuel Storage: It was noticed that a couple of the bermed areas were filled with snow and one also had a gas can (open cap/funnel) placed there. It is recommended that the bermed areas be shovelled out to avoid dealing with possible contaminated water when the snow melts. Gas cans should be capped properly and not stored in the bermed area designated for diesel storage.
    - Snow was removed from the bermed areas.
    - The open jerry can was removed.
    - A plan for removing and treating potentially contaminated effluent in spring is being developed by Facilities.
- Contrators
    - Swick – Fuel tank located outside of their building and within a secondary containment berm/liner, however the liner is not properly constructed and the sides of the liner are sticking out. There is a low end in the liner next to the pipes that should be dealt with also, so fuel is contained in the event of a spill.
        - The fuel tank berm has been improved to provide spill control and the piping no longer exists.
    - McCaw North – Waste oil should be properly stored or removed from the shack. This waste oil must be disposed of properly. MSDS are required for the shack and should be available if needed.
        - The waste oil has been properly dealt with and only minimal quantities of any product are in the shop.
        - A small berm has been constructed inside the shop for containment.
        - MSDS sheets are in the shop and accessible.

- Geotech – Waste oil scattered throughout the warehouse. This should be properly stored or removed for proper disposal. MSDS are required for the warehouse.
    - Waste oil is being managed properly and MSDS sheets are in the shop and accessible.

The following list outlines the issues brought up during the July 11-13 inspection and includes the follow-up action taken by HBML:

- MSDS binders were not readily visible in several work areas.
    - Contractors were reminded to keep their MSDS binders up to date and in a visible location. HBML has also purchased an online MSDS database that is customized to the project. Populating this database is nearly complete.
- The burn pan is approved for burning clean wood and plywood, however, metal was found in the ash in the pan and the pan appears to be in need of repair.
    - HBML has built a new burn pan and contractors have been reminded to place items into the collection bin rather than the burn pan to allow the waste management personnel to have better control over what is burned.
- Snow and water present in spill containment berms, as well as gas cans.
    - HBML has created a spill containment maintenance SOP outlining the expectations for the conditions.
- Housekeeping in some contractor areas needs work.
    - HBML contractors cleaned work areas and have been maintaining them in better order.
- Waste oil and fuel berms are in poor condition.
    - HBML has designed permanent containments, however, the project has been placed into care and maintenance so the containments will not be built at this time. As a temporary solution, HBML is placing waste oil and fuel into lined seacans, and is placing the seacans into the Roberts Bay 5 million litre tank berm. The 5 million litre tank is nearly empty and the fuelling module is being moved to the Doris Bulk Fuel containment behind the Doris Camp. The damaged berms will be removed as soon as possible in 2012.
- Hydrocarbon stains visible in various locations around site.
    - HBML has picked up some of the stained gravel and has scheduled a spring clean-up to remove all visible stains. Drip trays have been placed under some of the stationary mobile equipment. Additional drip trays have been ordered. HBML will continue to include stains in the housekeeping inspections.
- The helipad instaberm had the front wall laid down to allow equipment access.
    - An appropriate access plan will be developed for 2012 to avoid laying down the front wall for equipment access.