MEADOWBANK GOLD PROJECT

2011 Annual Report

Prepared for:
Nunavut Water Board
Fisheries and Oceans Canada
Aboriginal Affairs and Northern Development Canada
Kivalliq Inuit Association

Prepared by:
Agnico-Eagle Mines Limited – Meadowbank Division

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SECTION 1 • INTRODUCTION

The Meadowbank Gold Project operated by Agnico-Eagle Mines Limited - Meadowbank Division (AEM) is located approximately 70 km north of the Hamlet of Baker Lake, Nunavut. The project components include marshalling facilities in Baker Lake, the 110 km All Weather Private Access Road (AWPAR) between Baker Lake and Meadowbank and the Meadowbank mine site.

The first quarter of 2011 was difficult for the Meadowbank team. The year started with a serious accident at the mill which resulted in a mill employee becoming paralysed. In February the onsite fuel inventory was extremely low and all mining operations had to cease for a short period. Then in March the kitchen and the main entrance building were destroyed by a major fire. Despite these obstacles, the mine produced 60,407 oz of gold in the first quarter and 59,566 oz in the second quarter of the year. Gold production increased to 78,141 oz and 71,132 oz in the third and fourth quarters, respectively.

Installation of instrumentation on the Bay Goose dike and the jet grouting program were completed in the third quarter of the year. Construction of the Central dike coffer dam was also completed, in addition to earthworks on Saddle Dam 1, Saddle Dam 2 and the Stormwater dike. The Sulphur Dioxide (SO2) plant was commissioned at the beginning of May and construction of the Secondary Crusher was completed at the end of June. The main project for the Construction group during the fourth quarter of the year was the new kitchen; on December 17, 2011 the new kitchen became operational.

These various components and activities associated with the project require a number of different authorizations from regulatory agencies including the Nunavut Water Board (NWB), the Environment Canada (EC) Metal Mining Effluent Regulations (MMER); the Department of Fisheries and Oceans Canada (DFO), Aboriginal Affairs and Northern Development Canada (AANDC) (formerly Indian and Northern Affairs Canada (INAC)); the Kivalliq Inuit Association (KIA) and the Nunavut Impact Review Board (NIRB).

This report is written to address all of the 2011 annual reporting requirements of the project under these authorizations:

- NWB Type A Water License 2AM-MEA0815;
- DFO HADD Authorization NU-08-0013 Western Channel Temporary Crossing;
- DFO HADD Authorization NU-03-190 AWPAR;
- DFO HADD Authorization NU-03-191 Mine Site;
- INAC Land Leases 66A/8-71-2 (AWPAR) and 66A/8-72-2 (AWPAR Quarries); and
- KIA Right of Way KVRW06F04.

Annual reporting requirements for the NIRB Project Certificate No. 004 are presented in the "*2011 Annual Report - NIRB*", to be submitted at a later date. Reporting requirements for the MMER have been submitted directly to Environment Canada; results are presented herein to comply with the NWB Type A water license.

Table 1.1 outlines each requirement by authorization and report section. Table 1.2 presents the status of each of the sampling stations stipulated in Part I, Schedule 1 of Water License 2AM-MEA0815.

SECTION 2 • CONSTRUCTION / EARTHWORKS

The following section discusses reporting requirements related to site construction and earthworks activities associated with dikes, dams and quarries.

2.1 DIKES AND DAMS

2.1.1 Performance Evaluation

As required by water license 2AM-MEA0815, Schedule B, Item 1:
a. An overview of methods and frequency used to monitor deformations, seepage and geothermal responses;

The surveillance program consists of several types of inspection:

- Routine Inspection – carried out daily by designated qualified engineer or technician;
- Engineering Inspection – carried out annually by a qualified engineer (consultant), during open water if possible, to verify that the facilities are functioning as intended.

Table 2.1 describes the routine geotechnical monitoring program.

b. A comparison of measured versus predicted performance;

Comparison of the measured performance to the predicted performance will be undertaken in 2012, as sufficient data will be available for analysis.

c. A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk;

On July 2009, a sinkhole was observed in the upstream of the East dike cutoff wall, in the general vicinity of Sta. 60+472. The sinkhole has been inspected by AEM, Golder and the Meadowbank Review Board (2009, 2010 and 2011).

An investigation of the sinkhole and apparent leakage area consisting of the temporary installation of thermistor strings and monitoring of the thermal condition was initially conducted in 2010 and repeated in 2011. Based on the thermal results, it appears that a pervious zone exists within the cutoff wall and shallow bedrock between approximately Sta. 60+440 and 60+504. Based on pumping tests conducted within the sump installed near the downstream toe at about Sta. 60+500, seepage has been stable at a rate of about 10 L/s, and consistent with rates recorded during previous years with no visual signs of turbidity noted. A second seepage zone is present near the downstream toe at about Sta. 60+300 and based on pumping rates, the seepage appears stable at around 4 L/s with no visual signs of turbidity noted. This rate is also consistent with measurements from 2010. A third small zone of seepage exists near Sta. 60+550, estimated at around 1 L/s. The installation started in 2011 of a seepage collection system downstream of East Dike to capture seepage, such that the volume can be measured, water quality visually observed (turbidity), and the water removed (pumped), on a year round basis. Although seepage through the

dike has been stable, potential mitigation options to reduce seepage through the dike and/or to provide contingency protection for the Portage Pit could be considered in the future. Geotechnical instrumentation data on the dike do not show deteriorating conditions, and consistent trends have been observed over the past 3 years. Monitoring will be continuing in 2012 and information will be useful if further mitigation work is required.

d. As-built drawings of all mitigative works undertaken;

The installation of a seepage collection system downstream of East Dike to capture and pump the seepage water started in September 2011. As-built drawings from the pumping system will be completed upon completion of the system installation. No mitigative works were undertaken in 2011 for the Tailings Storage Facilities (TSF).

e. Any changes in the design and/or as-built condition and respective consequences of any changes to safety, water balance and water quality;

The South Portion of Bay Goose dike was completed in 2011. The only major change in design during the dike construction was to seal the dike with a partial cutoff followed by a jet grouting program at Bay Goose Dike South. That decision has been taken with the collaboration of the MDRB in 2010 to have a better control on the existing conditions in the deep sections without exceeding the limit of the equipment available. A long boom has been constructed especially for that project.

The connection between Saddle Dam 2 and Stormwater Dike was completed in 2011. Slight realignment of the centerline of Saddle Dam 2 and Stormwater to fit the connection and future construction of Saddle dam 3 was done in 2010. The connection was completed in 2011 with the placement of subgrade and geomembrane liner installation. The geomembrane liner installation on Saddle Dam 2 was also completed in 2011 from El. 146 m to El. 150 m.

The cofferdam for Central Dike was constructed in 2011. The cofferdam will be integrated in the design of the Central Dike, as the upstream bottom part. The basin upstream of the cofferdam is used as a retention pond to contain water pumped from the pit.

None of the changes in the design and/or as-built conditions stated above have consequence on safety, water balance and water quality.

f. Data collected from instrumentation used to monitor earthworks and an interpretation of that data;

Section 4.0 of the '*2011 Annual Geotechnical Inspection'*, provided in Appendix A1, presents the instrumentation data collected in 2011. AEM's implementation plan in response to the geotechnical inspection is provided in Appendix A1, for informational purposes.

The document '*Annual Review of Portage Pit Slope Performance (2011)*', which presents the pit wall geotechnical inspection results, is also provided in Appendix A1, for informational purposes.

g. A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams; and

No major maintenance work has been undertaken in 2011. Small repairs on the geomembrane liner were done during 2011 on Saddle Dam 1 and Stormwater Dike.

h. The monthly and annual quantities of seepage from dikes and dams in cubic metres.

See Section 7.8 below for a discussion of seepage from the East dike.

2.1.2 Independent Geotechnical Expert Review Panel Reporting

As required by water license 2AM-MEA0815 Part I, Item 14: ***The Licensee shall submit to the Board as part of the Annual Report required under Part B Item 5, all reports and performance evaluations prepared by the Independent Geotechnical Expert Review Panel.***

Three reports (Reports 8, 9 and 10) were prepared by the Independent Geotechnical Review Board in 2011. Reports 8 and 9 were formal reports; Report 10 was a summary of a conference call. These reports, and AEM's responses to Reports 8 and 9, are included in Appendix A2.

2.1.3 East Dike and Bay-Goose Dike Construction – TSS Effects Study Follow-Up

AEM commissioned studies in each of the last four years (2008 - 2011) to address concerns regarding the potential impacts of elevated TSS concentrations on the local receiving environment from dike construction. Based on the literature, elevated TSS concentrations can directly or indirectly affect the entire range of organisms in the aquatic environment, so these studies have addressed a broad array of ecosystem elements. The "*Aquatic Effects Monitoring Program – Targeted Study: Dike Construction TSS Effects Assessment Study 2011*" is attached as Appendix A3.

The East Dike TSS EAS (2008 – 2011) targeted the effects of total suspended solids (TSS) on Second Portage Lake. The Bay-Goose TSS EAS (2009 – 2011) targeted the effects of TSS from Bay-Goose construction on the east basin of Third Portage Lake. Collectively, the results of these studies have improved our understanding of the potential short-term and long-term effects of elevated TSS on a broad range of ecosystem components in local receiving environments. Construction-related sediment inputs were initially found (lasting weeks to months) in the water column (pelagic zone), but settled over time (sedimentation) onto the lake bottom (benthic zone). In both cases, the primary concern was TSS, but nutrients and metals were also present.

From a water column (pelagic zone) perspective, both TSS EAS studies identified some short-term effects to primary productivity (e.g., phytoplankton biomass). However, these did not appear to affect zooplankton. Laboratory studies confirmed no adverse effects to zooplankton or fish. Thus, while some effects were seen initially in the water column, they were limited in time and were not shown to propagate up the food chain.

In the benthic zone, sediment trap results showed increased sedimentation closer to the dikes. A 2009 coring study confirmed elevated metals in Second Portage Lake relative to baseline conditions. However, in 2010 sediment toxicity tests and specialized chemical analyses confirmed that sediment metals were not toxic. Initial studies on periphyton biomass in 2009 showed reductions close to the East Dike; follow-up studies in 2010 confirmed that effects were limited to the area closest to the dike. A broader study in 2011 across both lakes confirmed the initial results for periphyton. Benthic invertebrates showed an initial drop in abundance in Second Portage Lake in 2008. However, the subsequent recover pattern to 2011 has been inconsistent due to high natural variability. Results of a graduate research project conducted in Second Portage Lake corroborated these findings. For the east basin of Third Portage Lake, changes since 2009 appear to be more consistent with natural variability than with TSS exposure patterns, suggesting that no impacts occurred there.

As for fish and fish habitat, the main concerns were effects due to sedimentation on high value habitats. These concerns were based on the sediment trap results and on a trout embryo development test that suggested possible impairment. Underwater video surveys of high-value habitats in 2009 and 2011 showed conditions improving in Second Portage Lake; minimal impacts were observed in Third Portage Lake. Habitat compensation monitoring conducted in 2009 and 2011 had higher catch-per-unit-effort (CPUE) near the East Dike than in reference areas, suggesting that fish may prefer the dike habitat.

At this stage, we have no further recommendations for additional follow-up studies.

2.2 QUARRIES

The annual reporting requirements listed in the following sections apply only to quarries located along the All Weather Private Access Road (AWPAR).

As required by INAC Land Lease 66A/8 72-2, Condition 8: ***The lessee shall file a report, annually, with the Minister in the manner and format stipulated by the Minister. The report shall include:***
i. Quantity of material removed and location of removal, for the immediately preceding calendar year; and
ii. Such other data as are reasonably required by the Minister from time to time.

And

As required by INAC Land Lease 66A/8 72-2, Condition 25: ***The lessee shall file, annually, a report for the preceding year, outlining the ongoing borrow area operations completed in conformity with the approved Borrow Management Plan, as well as any variations from the Plan.***

And

As required by KIA Right of Way Authorization KVRW06F04, Schedule E, Condition 8: ***The lessee shall file annually a report for the preceding year, outlining the ongoing borrow area operations completed in conformity with the approved Borrow Management Plan, as well as any variations from the Plan.***

No material was blasted from the quarries on INAC or KIA leased lands in 2011. Road maintenance used crushed rock from the mine site.

SECTION 3 • WATER MANAGEMENT ACTIVITIES

The following section addresses reporting requirements related to water management activities.

3.1 LAKE LEVEL MONITORING

As required by Water License 2AM-MEA0815 Schedule B, Item 2: ***Results of lake level monitoring conducted under the protocol developed as per Part D Item 11 (Water Quality Monitoring and Management Plan for Dike Construction and Dewatering).***

The dewatering of the northwest arm of Second Portage Lake impoundment area began on March 17, 2009 and was completed on October 21, 2011. Throughout 2011, the impoundment water was discharged into Third Portage Lake.

Dewatering of the Bay Goose impoundment area began on July 25, 2011 and was suspended on November 14, 2011, due to ice buildup in the impoundment area. This impoundment water was also discharged into Third Portage Lake, at the same location as mentioned above.

A description of the dewatering monitoring program is provided in Section 7.2.

The elevation, in metres above sea level (masl), of Third Portage Lake was monitored on a weekly basis, weather and ice conditions permitting, throughout the year. The location of the lake level survey monitoring is identified as TPL-survey on Figure 1. The lake level monitoring results are presented in Table 3.1; the lake level remained within the range of naturally occurring levels.

Lake levels of the Second Portage Lake impoundment area and Bay Goose impoundment area were also monitored. Table 3.1 presents the elevation monitoring results at the two dewatering intakes; the monitoring locations are identified as SPL-IN and BG-IN on Figure 1. This information is provided for informational purposes only.

3.2 WATER BALANCE WATER QUALITY MODEL REPORTING SUMMARY

As required by Water License 2AM-MEA0815 Schedule B, Item 3: ***Summary of reporting results for the Water Balance Water Quality model and any calibrations as required in Part E Items 6 and 7.***

A water balance update was completed in July 2011 and December 2011. The draft report, entitled "*Site Wide Water Balance Model Update, Meadowbank Gold Project*", is included in Appendix B1.

Details of the site wide water balance for the Meadowbank Project are provided in the "*Meadowbank Gold Project Updated Water Management Plan* (July 2011)". The model was developed to assist in the evaluation of the maximum operating storage volume of the

contact water management infrastructure under average year climate conditions over the life the mine and under closure conditions. The model focuses specifically on contact water management infrastructure and areas that have been physically or chemically affected by mining activities.

The following summarizes the updates made to the model based on information provided by AEM:

- Actual milling rates (tonnes/month) and tailings slurry percent solids were entered for February 2010 to November 2011 inclusive;
- Estimated milling rates and tailings slurry percent solids (50%; assumed constant for the remainder of the mine life) were entered for December 2011 through to December 2012 inclusive;
- Estimated milling rate of 3,666,060 tonnes/year was entered for 2013 through 2015 (8,350 tonnes/day assumed for remainder of mine life to achieve 31.8x106 tonnes milled by January 2020);
- Actual ore water, reclaim and freshwater rates to process for February 2010 to October 2011, inclusive (November and December 2011 estimated as the average of September and October 2011 values) were used to calibrate model results;
- Ore water for remainder of mine life was calculated assuming that the average percentage moisture content of incoming ore in 2011;
- Tailings slurry percent solids provided were used to calibrate modelled freshwater and reclaim rates to process to actual values provided by AEM for the same period;
- Minimum freshwater water make-up rate to process 95.1 m3/hr for 2010 and 2011, increasing slightly to 95.8 m3/hr for the remainder of the mine life; and
- Other freshwater usage rates sourced from Third Portage Lake, Second Portage Lake and/or no-name lake for February 2010 to October 2011, inclusive.

Under the current mine plan, the Tailings Storage Facility will ultimately comprise the north and central basins and will be isolated from the east basin through the construction of the Central Dike.

In accordance with the existing mine water management plan, the updated model results assume that the Portage Attenuation Pond will be operated to minimize the amount of water stored within the facility during the open water season. This will facilitate the construction of the Central Dike and maximize the storage capacity available for the spring freshet reporting from the pond tributary area. Based on this approach, 474,000 m^3 to $7.1x10^6$ m^3 of water will be decanted annually to Third Portage Lake from the Portage Attenuation Pond during its operation (2010 to 2013, Years 1 to 4).

Based on the updated water balance model results, the water volume within the Tailings Reclaim Pond is expected to increase over the mine life. Nevertheless, the TSF is predicted to have sufficient capacity to store all excess water (once reclaim demands are satisfied) reporting to the Tailings Reclaim Pond during mine operations providing that reclaim treatment is in place by May 2017 (Year 8, model month 127). A reclaim treatment rate of 15,000 m^3/day, expanding to 25,000 m^3/day at the end of mine life, has been assumed for the updated water balance model, with the treated effluent being discharged to the Portage

Pit Lake. It is noted that the treatment and discharge of excess Tailings Reclaim Pond water to the Portage Pit Lake may occur as early as January 2016 (Year 7, model month 111), if required.

The estimated total annual freshwater requirements from all modeled sources is comparable at approximately 1.15 to 1.36x10^6 m^3/yr prior to diversion of Third Portage Lake water to assist with pit flooding in 2018 (Year 9). These values are greater than the currently licensed value of 700,000 m^3/yr (NWB water licence No. 2AM-MEA0815). The estimated water discharges to Third Portage Lake in 2010 to 2012 (Years 1 to 3) exceed the freshwater demands during the same period. In 2013 to 2018 (Years 4 to 9), a maximum of approximately 1.35x10^6 m^3/year of freshwater water will be required from Third Portage Lake. However, the diversion of Third Portage Lake water to assist with pit reflooding has been delayed by 3 years, from 2015 (Year 6) under the previous mine plan to 2018 (Year 9) under the updated mine plan (i.e., total freshwater demand in Years 6 to 8 are less than modelled previously). As a result, the modelled average annual reflooding requirement from Third Portage Lake has been reduced by approximately 400,000 m^3/year. Given the above, and the relatively large surface area and volume of Third Portage Lake (approximately 33 km^2 and 446x10^6 m^3, respectively), a total annual freshwater requirement of 1.35x10^6 m^3/yr is expected to have minimal impact on Third Portage Lake water levels relative to anticipated levels under the previous mine plan and current license conditions.

Flooding of the Portage Pit via diversion of Stormwater Management Pond #1 water (Tear Drop Lake), groundwater and dike seepage and runoff collection is assumed to commence in January 2016 (Year 7, model month 111). As indicated above, flooding via controlled discharge from Third Portage Lake will not commence until 2019 (Year 9, model month 135) when Goose Island Pit operations cease, and will continue at an average annual rate of approximately 4.52x10^6 m^3/yr (pumped June through September) through 2023 (Year 14). The average annual discharge rate from Third Portage Lake was set to accommodate all of the Portage and Goose Island pit inflows and tributary area runoff, the mill site runoff, and reclaim pond treatment discharge over an eight year period (assuming average annual conditions). A reduction in the estimated average annual (4.88x10^6 m^3/yr from 5.28x10^6 m^3/yr) and total (26.7x10^6 m^3 from 42.2x10^6 m^3) Third Portage Lake water requirement for Portage and Goose Island pit flooding is realized under the updated mine plan due to the greater proportion of pit inflows, tributary area runoff, Stormwater Management Pond water diversions, and treated reclaim water being sent to the pit within the eight year flooding period. The estimated reflooding volumes within the Goose Island and Portage pit dike areas, including the mined out pits, is approximately 12.7x10^6 m^3 and 42.2x10^6 m^3, respectively, for a total reflooding volume of approximately 54.9x10^6 m^3.

Vault Lake dewatering and mining operations within the Vault Pit commence in 2014 (Year 5) and 2015 (Year 6). The existing TSS treatment capacity on site for the dewatering of Second Portage Lake impoundment area is estimated to be sufficient to complete dewatering of Vault Lake by January 2015 (Year 6, model month 99) without the need for the additional TSS management. During mining operations, Vault Pit and Waste Rock Storage Facility runoff will be redirected to the Vault Attenuation Pond prior to treatment (if necessary) and discharge to Wally Lake. The Vault Attenuation Pond was assumed to be operated such that the annual volume of water collected within the pond on a hydrologic

year basis (Oct. 1 through Sept. 30) would be decanted during the open water period between June and September. This limits the amount of water that will be stored over the winter period and maximizes the storage capacity available for the spring freshet from the pond tributary area.

Flooding of the Vault Pit and Attenuation Pond via controlled discharge from Wally Lake is assumed to commence February 2020 (Year 11, model month 160) and continue at an average annual rate of approximately 4.0×10^6 m^3/yr (pumped June through September) through 2025 (Year 16). Estimated average annual and total Wally Lake water requirement for pit flooding is 24.2×10^6 m^3. The estimated reflooding volume within the Vault Dike, including the mined-out pit, is approximately 26.9×10^6 m^3.

3.3 BATHYMETRIC SURVEYS

As required by Water License 2AM-MEA0815 Schedule B, Item 4: ***The bathymetric survey(s) conducted prior to each year of shipping at the Baker Lake Marshalling Facility.***

The bathymetric survey in Baker Lake was completed on July 22, 2011 and is included in Appendix B2.

3.4 PREDICTED VS. MEASURED WATER QUALITY

As required by Water License 2AM-MEA0815 Part E, Item 8: ***The Licensee shall, on an annual basis during Operations, compare the predicted water quantity and quality within the pits, to the measured water quantity and quality. Should the difference between the predicted and measured values be 20% or greater, then the cause(s) of the difference(s) shall be identified and the implications of the difference shall be assessed and reported to the Board.***

Because the Portage Pit was not deep enough to collect sufficient data from the sumps in 2011, this comparison was postponed to 2012. See Section 7.3 for an explanation of the data collected.

3.5 ADDITIONAL INFORMATION

As required by Water License 2AM-MEA0815 Schedule B, Item 24: ***Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.***

The Board did not request any additional details on water use in 2011.

SECTION 4 • WASTE ROCK MANAGEMENT ACTIVITIES

4.1 GEOCHEMICAL MONITORING

In accordance with Water License 2AM-MEA0815 Schedule B, Item B-5:
Geochemical monitoring results including:

a. Operational acid/base accounting and paste pH test work used for waste rock designation (PAG and NPAG rock);

In 2011, AEM sampled every blast hole and analyzed the percentages of sulphur and carbon. The results from these analyses are used to differentiate Non-Potentially Acid Generating (NPAG) from Potentially Acid Generating (PAG) materials. The Total Sulphur (S) analysis is converted into a Maximum Potential Acidity (MPA) value by multiplying the Total S weight % by 31.25 which yields an MPA value in Kg CaCO3 equivalent. The Total Inorganic Carbon analysis is similarly converted into a Carbonate Neutralization Potential (NP) by multiplying the Total weight % Inorganic Carbon (reported as %CO2) by 22.7 which yields an NP value in Kg CaCO3 equivalent. The Net Potential Ratio (NPR) for the blast hole drill cutting sample is then calculated as follows: NPR = NP/MPA.

The mine geology staff uses the derived NPR to characterize the rock in the blast pattern. The mine surveyor uses this information to delineate the dig limits within the blasted rock to guide the shovel and loader operators in directing where the rock is to be taken. See Section 4.2 and Table 4.1 for a discussion of the use and location of waste rock.

The results and the resultant NPAG-PAG classification confirmation are logged in the Meadowbank GEMCOM database. Due to the large volume of data, the results are not included in this annual report. These results can be provided on demand.

To validate the method used by AEM, 150 samples (including ultramafic volcanic, intermediate volcanic and iron volcanic rock types) from production drill holes were sent to an accredited commercial lab (external lab) for acid base accounting (ABA) analysis using the Modified Sobek Method for determination of NP/AP and metal leaching using the Shake Flask Method.

b. As-built volumes of waste rock used in construction and sent to the Waste Rock Storage Facilities with estimated balance of acid generation to acid neutralization capacity in a given sample as well as metal toxicity;

Refer to the discussion in Sections 4.1a and 4.2.

c. All monitoring data with respect to geochemical analyses on site and related to roads, quarries, and the All Weather Access Road;

Routine water quality sampling results along the AWPAR are presented in the document '*All Weather Private Access Road 2011 Water Quality Management Report'* included in Appendix C1.

d. Leaching observations and tests on pit slope and dike exposure;

No leaching was observed on the pit slope or dike faces. As mentioned in Section 2.1.1 c, seepage rates and volumes through the East dike have been stable for the past three years. A seepage collection system is currently being constructed downstream of the East Dike, such that the volume can be accurately measured, water quality visually observed (turbidity), and the water removed (pumped), on a year round basis.

As mentioned in Section 7.8, water samples were collected monthly from July to December from the north sampling station (EDS-North) at the East dike to measure seepage water quality as per the NWB water license requirements. The results don't show any signs of leaching.

e. Any geochemical outcomes or observations that could imply or lead to environmental impact;

In 2011 there were no geochemical outcomes or observations that could imply or lead to environmental impact.

f. Geochemical data associated with tailings solids, tailings supernatant, cyanide leach residue, and bleed from the cyanide destruction process including an interpretation of the data;

The mill commenced operations in February 2010; all data associated with the tailings and cyanide destruction process is kept at the mill. Due to the large volume of data, the results are not included in this annual report. These results can be provided on demand.

g. Results related to the road quarries and the All Weather Private Access Road.

Routine water quality sampling results along the AWPAR are presented in the document '*All Weather Private Access Road 2011 Water Quality Management Report'* included in Appendix C1.

4.2 WASTE ROCK VOLUME

In accordance with Water License 2AM-MEA0815 Schedule B, Item B-6: ***Volumes of waste rock used in construction and placed in the Rock Storage Facilities.***

The total volume of waste rock from the Portage Pits in 2011 is 21,011,673 tonnes; 4,429,393 tonnes of non-potential acid generating (NPAG) and 16,582,280 tonnes of potential acid generating (PAG). The use and location of all of the rock, by volume, is presented in Table 4.1 and identified by the following categories:

- Tailings Dams – used for the construction of dams or dikes adjacent to the tailings pond;
- Other Dams and Dikes - used for construction of dams or dikes necessary for water control (not adjacent to the tailings pond);
- Roads – used for road construction;
- Crushers – taken to the mobile crusher and used for construction or maintenance purposes;
- Waste Dump – taken to the waste rock storage facilities;
- Overburden Till – taken to the till stockpile; and
- Other – miscellaneous uses.

4.3 TAILINGS STORAGE FACILITY

4.3.1 Tailings Storage Facility Capacity

As required by Water License 2AM-MEA0815 Schedule B-7: ***An update on the remaining capacity of the Tailings Storage Facility.***

A total of 1,894,473 m^3 of tailings was placed in the tailings storage facility in 2011. A monthly summary of the tailings volume is provided in Table 4.2.

A revision of the tailings deposition plan was completed in July 2011. The model deposition planning was completed for the first four years of operation of the Tailings Storage Facility. The model was based, when possible, on the data collected during the first year of operation. The filling scheme for the North cell, elaborated for a single point end of pipe discharge, aimed at minimizing the number of displacements during the year for the tailings discharge points, while maintaining the pond away from the perimeter dikes. The main conclusions from the modeling results are:

- The total estimated capacity is 34.9 M t (27.5 M m3):
- North cell: 14.1 M t (11.1 M m3)
- South cell: 20.8 M t (or 16.3 M m3)
- The North cell could be used for deposition until December 2014 provided the crest of Stormwater dike is raised to 150 m;
- The local discharge of tailings above 148 m along Stormwater dike should start during the July through September 2013 deposition period;

- Deposition in the northern section of the North cell could start in 2014, structures such as SD6 should be operational by that time; and
- The reclaim causeway would need to be raised for the May 2012 and July-September 2013 deposition periods.

4.3.2 Fault Testing and Monitoring

As required by Water License 2AM-MEA0815 Schedule B, Item 15: ***Results of monitoring pursuant to the Fault Testing and Monitoring Plan (August 2007).***

The '*Fault Testing and Monitoring Plan'* outlines the testing and monitoring procedures that will be conducted to determine the permeability of faults that extend through the Central Dike. A geotechnical investigation of the Central Dike, including faults that extend through the dike, was completed during the winter of 2011. The results of this investigation are provided in the '*2011 Central Dike Geotechnical Investigation*' report included in Appendix A1.

4.3.3 Capping Thickness

As required by Water License 2AM-MEA0815 Schedule B, Item 17: ***A summary of on-going field trials to determine effective capping thickness for the Tailings Storage Facility and Waste Rock Storage Facilities for the purpose of long term environmental protection.***

AEM started to determine effective capping thickness in 2010 by installing a thermistor (SD2-T2) on Saddle Dam 2. The results are illustrated in Figure 4, showing the temperature vs. height, in function of time. The results show the active layer is above 0°C in August and September at a height of between 2 and 4 m. In 2012, AEM will install other thermistors on the first bench of the waste rock storage facilities.

SECTION 5 • WASTE MANAGEMENT ACTIVITIES

5.1 LANDFILL MONITORING

As required by Water license 2AM-MEA0815 Schedule B, Item 8: ***Summary of quantities and analysis of seepage and runoff monitoring from the landfills.***

Seepage and runoff monitoring of the Landfill is discussed below in Sections 7.4 and 7.5.

5.2 SOLID WASTE DISPOSAL ACTIVITY

As required by Water License 2AM-MEA0815 Schedule B, Item 9: ***A summary report of solid waste disposal activities including monthly and annual quantities in cubic metres of waste generated and location of disposal.***

A monthly summary of the amount of waste transferred to the landfill and sent to the incinerator in 2011 is included as Table 5.1.

In 2010, AEM partnered with the Hamlet of Baker Lake to extract, package and prepare for shipment accumulation of hazardous waste (old car batteries, waste antifreeze, etc.) that had built up in the community landfill and was threatening the local environment. In 2011, 25 sea containers of hazardous materials were shipped from Baker Lake to Becancour, Quebec by sealift. The materials were subsequently shipped to licensed hazardous waste recycling companies in the Province of Quebec for recycling or permanent disposal.

In 2011, AEM partnered with the Hamlet of Baker Lake to clean-up the old landfill. A total of 52 sea containers of scrap steel (354 tonnes) and 19 sea containers of old tires (94 tonnes) were shipped from Baker Lake to Becancour, Quebec by sealift in 2011. The materials were subsequently shipped to licensed recycling companies in the Province of Quebec.

In 2011, a total of 91 seacans filled with hazardous waste materials (662 tonnes) were collected from the Meadowbank project area. The seacans were shipped from the spud barge at AEM's Baker Lake marshalling facilities to Becancour, Quebec by sealift. The materials were subsequently shipped to licensed hazardous waste recycling companies in the Province of Quebec for recycling or permanent disposal. These materials were sent out under Waste Manifest number 9466060-2; a copy of this Waste Manifest is attached in Appendix D1. A description of the types of waste, packaging and volume is provided in Table 5.2.

5.3 INCINERATOR

As per Water License 2AM-MEA0815 Schedule B, Item 10: ***Report of Incinerator test results including the materials burned and the efficiency of the Incinerator as they relate to water and the deposit of waste into water.***

The incinerator was in operation throughout 2011. The incinerator daily report logbook is included in Appendix D2. Of the materials incinerated, approximately 40% of the material was food waste; the other 60% was dry waste comprised of: food containers, cardboard boxes, paper and absorbent rags. The location of the incinerator is highlighted on Figure 1.

Incinerator stack testing was completed by Exova Consultants from July 30 to August 1, 2010. After discussion with Environment Canada, the stack testing is not necessary each year. We will do another stack testing in 2012.

Ash samples were collected from the incinerator on February 23, 2011 and September 13, 2011, in accordance with AEM's '*Incinerator Waste Management Plan'* (AEM, May 2009, v2). The purpose of sampling ash is to determine its acceptability for disposal in the landfill, pursuant to the Government of Nunavut (GN) Environmental Guidelines for Industrial Discharge (2002). Results from this monitoring are provided in Table 5.3. The samples met all of the GN discharge guidelines and therefore demonstrate the incinerator ash is acceptable for disposal in the Meadowbank landfill.

For 2011, it is estimated that 427,216 L of waste oil was generated on site; 5,878 L of this oil was incinerated or consumed in a waste oil furnace at site. Table 5.4 provides a breakdown of the volume of incinerated waste oil by month and location.

In addition to the above testing, waste oil destined for burning in the incinerator was randomly sampled on a monthly basis and compared to the NWT Used Oil and Waste Fuel Management Regulations (NWT, 2003). This data is presented in Table 5.5. All metals and PCB parameters met the NWT guidelines; flash point for one sample was below the criteria, and chlorine for three samples were elevated above the maximum allowable concentration. Certificates of analysis for the samples are included in Appendix F1.

5.4 ADDITIONAL INFORMATION

As required by Water License 2AM-MEA0815 Schedule B, Item 24: ***Any other details on Water use or Waste Disposal requested by the Board by November 1st of the year being reported.***

The Board did not request any additional details on waste disposal in 2011.

SECTION 6 • SPILL MANAGEMENT

As per Water License 2AM-MEA0815 Schedule B, Item 11 ***A list and description of all unauthorized discharges including volumes, spill report line identification number and summaries of follow-up action taken.***

A summary of unauthorized discharges that occurred in 2011 is presented in Table 6.1. This data was also included in monthly monitoring reports submitted to the NWB. GN Spill Report Forms for the 12 reported spills are included in Appendix E1. AEM has never received the spill report line identification number.

Spill prevention training was emphasised in 2011 for employees to prevent and to report spills, as follows:

- All employees and contractors must participate in an induction session upon arrival at the mine site, which includes a training section on spill management (prevention, reporting and cleaning); and
- Every employee and contractor who operates a vehicle on the site must participate in training on vehicle operation. Spill management is a component of this training session.

There were no spill reports from Northern Transportation NTCL with respect to transit of the barges en-route to Baker Lake.

Follow-up on the October 6, 2010 spill at KM 22 on the AWPAR

Responsive Actions:
Since the 3,000L spill at KM 22 on the AWPAR (GN Report #2010-408), AEM has put many plans into place to prevent its reoccurrence.

- Speed limits have been reposted along the AWPAR; dispatch routinely remind drivers of the speed limit and security officers have been enforcing the speed limit of the AWPAR with a radar gun. Furthermore, speeds are tracked through security dispatch communication records which provide an estimate of the speed of the driver based on the total time travelled along the road. This data is monitored and warnings are made to drivers accordingly.
- All users of the AWPAR are required to go through the AEM Meadowbank site induction which also includes Surface SOP (Standard Operating Procedure). The Surface SOP is an induction to driving vehicles on the Meadowbank mine site and on the AWPAR. This induction goes through the rules for driving on the site and the AWPAR, the procedures that must be followed while driving, and what potential incidents can occur if these rules and procedures are not followed. Points that are focused on are speed, road conditions, and proper communication.
- All drivers of heavy loads are also required to make regular stops on the AWPAR to check their equipment and the load they are carrying. During these stops drivers do visual inspections on load security, tire pressure, and look for any other abnormalities with their equipment. If any problems are noticed these problems are remediated prior to continuing on.

- The road supervisor for AEM also preforms daily checks on the road. If weather conditions jeopardize the safe passage on the AWPAR, the road is closed to all traffic. In some cases, when road conditions are questionable an escort leads a convoy of vehicles that require travel (ex. crew bus, fuel trucks) in a safe manner.

Pro-Active Actions:
Since the time of the spill, AEM has put in place Environmental Emergency Seacans at each water crossing along the AWPAR. These Seacans are equipped with spill supplies that will assist in minimizing the spread of contaminants in the case of an incident. The contents of these Environmental emergency Seacans are as follows:

- Empty drums (Sealed)
- Mini berm 36"x36" x4'
- 4 drum spill berm 4x8
- Tarp 20'x30'
- Tarp 30'x50'
- oil white spill pads
- Universal boom 5"x10' (Chemical)
- Universal boom 8"x10' (Chemical)
- Oil only booms 5"x10' (Hydro-carbons)
- Maritime barrier (Baffle)
- ABS pipe : 10' (4")
- Cell U-Sorb
- Amerisorb peat moss
- Oil gator absorbant
- Plug pattie
- Quattrex bags
- Long handle round point shovel
- Ice braker chisel
- Sledge hammer 12 lbs 36"
- Rod bar (4')

Although some members of the environment department have formal spill response training, during 2012 there will be advanced spill response training provided to current ERT members as well as the Environment department personnel, and selected supervisors (Road Supervisor, Mine Foreman). This training will be in a class room setting and will include simulated spill response for individuals to put into practice the knowledge gained from these training sessions to improve our ability to react in the case of a large spill. These simulations will be repeated routinely to ensure efficient and safe spill response in the future.

Follow-up Action:
Throughout the summer of 2011, AEM preformed continuous clean-up of the KM 22 spill site. Maritime barrier lined with absorbent booms were installed in the stream immediately after freshet and throughout the summer. These booms were inspected at a minimum of once a week. When the booms became saturated with contamination the booms were then removed and replaced with clean booms. Surface water quality samples were taken

downstream of the contained spill site and were below detection limit for hydrocarbons and BTEX.

AEM also maintained the water contained in the pits that were created during the excavation of contaminated soil. These pits serve as sumps for the remaining hydrocarbon contaminated soil to leach into; through a recirculation system these sumps prevent any additional hydrocarbons from entering the stream. AEM contracted BLCS (Baker Lake Contracting & Supplies Ltd.) to install an Oil Water Separator. This system was a gravity separator which cycled the water from the dug-out containment cells, and separated the hydrocarbons from the water. A vacuum truck was also taken to this site to skim the surface liquids off of the containment cells.

For 2012, AEM has contracted Sana to help with the cleaning of the water contained in these sumps. Sana will bring up a fuel water separating system that will remove the hydrocarbon contamination from the water remaining in the sumps. After this system is in place and running, AEM will begin monitoring the water until the water quality returns to acceptable levels.

Furthermore, AEM has left the maritime barriers in place throughout the winter, so that during the 2012 freshet there is a line of defense preventing contamination to flow downstream if it enters the watercourse with the melting of snow. The environment department will also re-deploy absorbent booms as soon as the thaw of ice allows the booms to work. As in 2011, inspections of these booms will take place at a minimum of once a week.

SECTION 7 • AQUATIC MONITORING

This section includes the aquatic monitoring requirements from all aspects of the Meadowbank Project.

As required by Water License 2AM-MEA0815 Schedule B-13: ***The results and interpretation of the Monitoring Program in accordance with Part I and Schedule I.***

And

As required by Water License 2AM-MEA0815 Schedule B, Item 14: ***The results of monitoring under the Aquatics Effect Management Plan (AEMP).***

And

As required by DFO HADD Authorizations NU-03-0191 Condition 6.1 (Mine); NU-03-0190 Condition 6 (AWPAR); NU-03-0190 Condition 6 (Western Channel Temporary Crossing): ***Submit written report summarizing monitoring results and photographic record of works and undertakings.***

A list of the sampling location GPS coordinates for aquatic monitoring programs conducted by AEM is provided in Table 7.1. Figures 1, 2 and 3 illustrate the location of sampling stations at the Meadowbank mine site, EEM receiving environment monitoring program, and Baker Lake marshalling facilities, respectively. Certificates of Analysis are included in Appendix F1.

7.1 CONSTRUCTION ACTIVITIES

All contact water around the mine site was diverted to stormwater management pond #1, the tailings pond, or the attenuation pond in 2011. Consequently, there were no incidences where runoff water from any facility under construction may flow directly or indirectly into a water body.

7.2 DEWATERING ACTIVITIES

Second Portage Lake Impoundment Area

Dewatering of the northwest arm of Second Portage Lake (the impoundment area) was completed in 2011. A brief summary and timeline for this dewatering project is provided below.

- Dewatering of the Second Portage Lake impoundment area started on March 17, 2009. The elevation of the impoundment area was 133.44 metres above sea level (masl).
- Up to July 9, 2009, the water was pumped directly from the impoundment area to the receiving environment. At this time the Total Suspended Solids in the impoundment area exceeded license limits, and the dewatering program was suspended.

- On October 26, 2009, the dewatering program was resumed, with water from the impoundment area being treated at the Water Treatment Plant prior to release into the receiving environment.
- On January 1, 2010 the dewatering program became subject to the MMER regulations.
- The Second Portage Lake impoundment area dewatering program was completed on October 21, 2011. The elevation of the impoundment area was 98.73 masl.
- The following volumes of water were discharged from the Second Portage Lake impoundment area:
    - 2009 – 11,615,489 m^3
    - 2010 – 6,881,583 m^3
    - 2011 – 2,045,338 m^3

  The total volume of water remaining in the Second Portage Lake impoundment area at the time of the dewatering program completion is 120,834 m^3.

Two TSS actiflo water treatment plants were used for the dewatering process in 2011, although for a large portion of the year only one of the two plants was in operation at any one time. Turbidity and Total Suspended Solids (TSS) were monitored daily at each operating water treatment plant and once per week in Third Portage Lake near the receiving outlet. In addition, pH and total aluminum were measured weekly from each of the water treatment plants and pH in the receiving outlet. All of this data was previously reported to the NWB in the monthly monitoring reports. The sampling locations, named DD-WTP for the water treatment plants (plants #1 and #2) and TPL for the receiving outlet, are highlighted on Figure 1.

Samples of the discharge water are collected from a valve on each of the water treatment plants; during periods of bad weather (white out conditions) the road is closed and technicians are not able to access the plant. Sampling at the receiving outlet in Third Portage Lake is conducted during periods of discharge, weather and ice conditions permitting. A turbidity depth profile is performed; samples are collected from the depth with the highest turbidity value.

The results of the 2011 turbidity and TSS monitoring are presented in Table 7.2. Turbidity values were measured in the field by representatives of AEM; quality control calibration for the field equipment is discussed in Section 7.13.

The license criteria for turbidity are 30 NTU for the 24 hour maximum, and 15 NTU for the 30 day mean maximum. For TSS, the 24 hour maximum criterion is 22.5 mg/L and 15 mg/L for the 30 day mean maximum. Exceedences of the license criteria are discussed below:

- On July 31, 2011 the mean 24-hour TSS concentration (80 mg/L) exceeded the license criteria.
- ON August 15, 2011 the mean 24-hour TSS concentration (56 mg/L) exceeded the license criteria.

For both exceedance events, the TSS water treatment plants were inspected and any necessary corrective actions taken to improve the functioning of the plants.

The results of the 2011 pH and total aluminum monitoring are presented in Table 7.3. pH values were measured in the field by representatives of AEM; quality control calibration for the field equipment is discussed in Section 7.13.

The license criteria for pH are between 6.0 and 9.0. For total aluminum, the 24 hour maximum criterion is 3.0 mg/L and 1.5 mg/L for the 30 day mean maximum. Only one value, pH in the receiving environment on April 20, 2011, fell outside the license criteria; pH was measured at 5.91 units. As there were no issues with pH in the discharge water on this date or the preceding dates, this pH valve was considered a sampling anomaly.

Bay Goose Impoundment Area

Dewatering of the Bay Goose impoundment area began in 2011. A brief summary and timeline for this dewatering project is provided below.

- Dewatering of the Bay Goose impoundment area started on July 25, 2011. The elevation of the impoundment area was 133.11 masl. The water was pumped directly from the impoundment area to the receiving environment.
- At the completion of the dewatering of the Second Portage Lake impoundment area, the dewatering discharge pipes for the Bay Goose impoundment area were connected to the Water Treatment Plant. On October 22, 2011, the dewatering program for the Bay Goose impoundment area began treating the water at the Water Treatment Plant prior to release into the receiving environment. At this time the water became subject to the MMER regulations.
- The Bay Goose impoundment area dewatering program was suspended on November 14, 2011 due to ice build-up in the impoundment area. At this time, the elevation of the impoundment area was 126.01 masl.
- A total of 2,719,356 m^3 of water (580,190 m^3 via the Water Treatment Plants) was discharged from the Bay Goose impoundment area in 2011. A small volume of water remains to be dewatered; the dewatering program is expected to resume in the spring of 2012 immediately following freshet.

Two dewatering pumps are located on the shore of the Bay Goose impoundment area; the location of the pumps is identified as BG-Pump on Figure 1. From July 25 to October 21, 2011, water quality monitoring samples were collected from a valve on each of the pumps; the samples were named BG-PUMP-1 and BG-PUMP-2. From October 22 to November 14, 2011, water quality monitoring samples were collected from a valve on each of the water treatment plants; the samples were named BG-WTP-1 and BG-WTP-2. The location of these sampling stations is identified on Figure 1.

Turbidity and Total Suspended Solids were monitored daily at each of the operating dewatering pumps or water treatment plants. In addition, pH and total aluminum were measured weekly from each of the operating dewatering pumps or water treatment plants. All of this data was previously reported to the NWB in the monthly monitoring reports.

The results of the 2011 turbidity and TSS monitoring are presented in Table 7.4. Turbidity values were measured in the field by representatives of AEM; quality control calibration for the field equipment is discussed in Section 7.13. The license criteria are the same as discussed for the Second Portage Lake impoundment area dewatering program. For the

2011 Bay Goose impoundment area dewatering program, there were no exceedences of any of the Turbidity and TSS license criteria.

The results of the 2011 pH and total aluminum monitoring are presented in Table 7.5. pH values were measured in the field by representatives of AEM; quality control calibration for the field equipment is discussed in Section 7.13. The license criteria are the same as discussed for the Second Portage Lake impoundment area dewatering program. For the 2011 Bay Goose impoundment area dewatering program, there were no exceedences of any of the pH and Aluminum license criteria.

Channel Crossing Inspections

Inspections of the Eastern and Central Channel Crossings were undertaken during the open water season in 2011 to ensure the banks of the channels were not being eroded as a result of the increase water flow due to the dewatering programs. The inspections were undertaken on June 14, July 25 and September 7, 2011 by AEM environmental technicians. There were no signs of erosion of the channel banks and no visible turbidity plumes in the channels during any of the inspections. The dewatering program has had no adverse erosion effect on the channel crossings.

7.3 WATER COLLECTION SYSTEM

A water collection system comprised of stormwater management ponds, attenuation ponds, ditches and sumps has been developed to control surface water for the Meadowbank project.

All surface water runoff around the mine site is directed to Stormwater Management Pond #1, often referred to as Tear Drop Lake. In June 2011 the water level in the pond was lowered by 2 m; this represents approximately 120,000 m^3 of water. The water was not released into the environment; the water was pumped from Stormwater Management Pond #1 to the Tailings Pond. This information is presented in Table 7.6.

As discussed in Section 7.2 above, dewatering of the Second Portage Lake Impoundment Area was completed on October 21, 2011. Consequently, the Attenuation Pond at the Meadowbank mine site became operational as of October 22, 2011. Water from the Attenuation Pond was sampled monthly as per the requirements in the NWB water license (sampling station ST-18). No water from the Attenuation Pond was discharged into the environment; consequently, there are no applicable license limits. The data is presented in Table 7.7 for informational purposes only. The location of sampling station ST-18 is illustrated on Figure 1.

In 2011 a sump was constructed in the North Portage pit in an area of water accumulation. Water from the North Portage Pit sump was sampled monthly during open water as per the requirements in the NWB water license (sampling station ST-17). The data is presented in Table 7.8; the sampling location is illustrated on Figure 1. The water that collected in the North Portage pit sump was pumped to the Attenuation Pond in August 2011. The total volume of water pumped was 6500 m^3; this information is presented in Table 7.6. There are

no applicable license limits for this data as the water has not been released into the environment; the data is presented for informational purposes only.

In 2011 a sump was constructed in the South Portage pit in an area of water accumulation. Water from the South Portage Pit sump was sampled monthly during open water as per the requirements in the NWB water license (sampling station ST-19). The data is presented in Table 7.9; the sampling location is illustrated on Figure 1.

The water that collected in the South Portage pit sump, including the water that was pumped from the East Dike Seepage, was transferred monthly. From January to August, the water was pumped to Stormwater Management Pond #1; from September to December, the water was pumped to the Attenuation Pond. A total volume of 328,285 m^3 was transferred; the volume of water per month is provided in Table 7.6. There are no applicable license limits for this data as the water has not been released into the environment; the data is presented for informational purposes only.

Water accumulated at the base of Saddle Dam 1. It is believed this water originated from non-contact surface runoff from the surrounding terrain. A water sample was collected at the end of September to assess water quality. There are no applicable license limits for this data as the water was not been released into the environment; the data is presented in Table 7.10 for informational purposes only. The sampling location (SD1S) is illustrated on Figure 1.

7.4 TAILINGS STORAGE FACILITY, RECLAIM POND AND WASTE ROCK STORAGE FACILITIES

During the operations phase of the project, water quality monitoring is conducted from the Tailings Storage Facility at the Tailings Reclaim Pond (sometimes referred to as the Tailings Pond) and the Waste Rock Storage Facilities.

The Tailings Storage Facility became operational as of February 2010. Water from the Tailings Reclaim Pond was sampled monthly and annually, immediately following freshet, as per the requirements in the NWB water license (sampling station ST-21). There are no applicable license limits for this data as the water has not been released into the environment; the data is presented in Table 7.11 for informational purposes only. The location of sampling station ST-21 is illustrated on Figure 1. Further information regarding the Tailings Storage Facility is presented in Section 4.3.

The Waste Rock Storage Facilities have been in operation since 2009. No water accumulated on the Waste Rock Storage Facility; consequently there is no data to report for NWB sampling station ST-16. However, seepage, likely originating from the landfill, was observed at the base of the Waste Rock Storage Facility. In addition, surface runoff (non-contact water from the nearby lake) accumulated at the base of the Waste Rock Storage Facility, mixing with the seepage water. Monthly samples were collected to assess water quality; the data is presented in Table 7.12. The water that accumulated at the base of the Waste Rock Storage Facility was pumped to the Tailings Pond. A total of 45,974 m^3 was

pumped from July to October to the Tailings Pond; a monthly summary of the pumping volume is presented in Table 7.6. There are no applicable license limits for this data as the water has not been released into the environment; the data is presented for informational purposes only. The location of this sampling station (SW-RSF) is illustrated on Figure 1.

7.5 MINE SITE

Locations for water quality monitoring at the mine site include the Sewage Treatment Plant (STP), runoff water from the landfill, runoff water from the landfarm, and any runoff water collected in the secondary containment area of the bulk fuel storage tank that is discharged to land. The site layout is presented in Figure 1.

Sewage Treatment Plant

The Meadowbank mine site has one Seprotech L333 sewage treatment plant (STP) and three Little John 100 units in operation; the equipment operates together with one sewage discharge stream directed to Stormwater Management Pond #1.

From January to August 2011, the discharge from the Seprotech and Little John units was measured from a single valve inside the STP building. In October, the discharges were measured separately, due to a change in the piping inside the STP plant. However, the discharges continued to mix prior to being discharged to the Stormwater Management Pond #1.

Samples of the discharge stream(s) are collected weekly. From January to August, the sample was named “STP-OUT”. From October on, the samples were named “Sepro” (for samples collected from the Seprotech discharge) and “LJ-Mix” (for samples collected from the Little John units’ discharge). No samples were collected in September; a sampling error occurred during the changeover with the piping inside the sewage treatment plant.

Water quality monitoring data from the STP discharge is presented in Table 7.13; the sampling location is highlighted on Figure 1. All of this data was previously reported to the NWB in the monthly monitoring reports. There are no applicable license effluent quality limits for this dataset; this data is being presented in the annual report for informational purposes only.

The total volume of liquid sewage discharge in 2011 is 31,214 m^3, with a total volume of sewage sludge of 735.2 m^3. A monthly summary of the volume of STP waste is presented in Table 7.14.

Landfill

The Meadowbank Landfill #1 has been operational as of November 2008. A summary of the solid waste disposal activity for the site is presented in Section 5.2 above. Seepage at the landfill was observed in the 2011 season; the sampling and results are discussed in Section 7.4 above in conjunction with the Waste Rock Storage Facilities.

Landfarm

The Meadowbank landfarm is not yet constructed; consequently, there is no monitoring data to report for 2011.

Meadowbank Bulk Fuel Storage Facility

Runoff water in the secondary containment area of the bulk fuel storage tank at the Meadowbank mine site was sampled on June 1 and September 1, 2011 and analyzed for hydrocarbons, metals, ammonia and TSS. The data is presented in Table 7.15; the sampling location (called Mb-fuel) is highlighted on Figure 1. One parameter, Lead, on the September 1, 2011 sample (0.1051 mg/L) exceeded the water quality limit (0.001 mg/L) stipulated in Part F, Item 6 in the water license.

Two discharges from the secondary containment area of the bulk fuel storage tank at the Meadowbank mine site occurred in 2011. No water was released directly into the environment.

- On June 22, the water inspector (Ian Rumbolt) was notified of AEM's intent to discharge water and was provided the required monitoring data. The discharge took place on July 5 and 6, 2011, at the time of the water inspector's annual inspection. Approximately 1140 m^3 of water was discharged from the secondary containment area to Stormwater management pond #1 (often referred to as Tear Drop Lake).
- On August 31, the water inspector (Ian Rumbolt) was notified of AEM's intent to discharge water from the secondary containment area. The discharge took place on or around September 10th, with approximately 400 m^3 of water discharged to Stormwater management pond #1.

7.6 BAKER LAKE MARSHALLING FACILITIES

The design of the Baker Lake marshalling facility includes a number of facilities that were not constructed; these include: two storage ponds to collect site precipitation runoff (east and west), an explosives storage area and an ammonium nitrate storage area. Consequently, no water quality monitoring of these facilities was conducted.

Runoff water in the secondary containment areas of the bulk fuel storage tanks at the Baker Lake marshalling facility was sampled on June 1 and September 18, 2011. Two samples were collected per sampling event; one from the secondary containment area for Tanks 1 to 4, and the other from the secondary containment area for Tanks 5 and 6. The sampling station is identified as ST-40 in the NWB water license and called BL-fuel on Figure 3.

The samples were analyzed for hydrocarbons, metals, ammonia and TSS; the results are presented in Table 7.16. One parameter, total suspended solids (TSS), on the June 1, 2011 sample for Tanks 5 and 6 (42 mg/L) exceeded the water quality limit (30 mg/L) stipulated in Part F, Item 23 in the water license.

The water license provides two water quality criteria for Lead in Part F, Item 23; 0.1 mg/L and 0.001 mg/L. The two samples collected on September 18, 2011 exceeded the Lead

criteria of 0.001 mg/L (at 0.0027 and 0.0017 mg/L for Tanks 1 to 4 and Tanks 5 and 6, respectively), but did not exceed the Lead criteria of 0.1 mg/L.

Two discharges from the secondary containment area of the bulk fuel storage tank at the Baker Lake marshalling facility occurred in 2011.

- On June 22, the water inspector (Ian Rumbolt) was notified of AEM's intent to discharge water and was provided the required monitoring data. The discharge took place at the end of June. Approximately 5000 m^3 of water was discharged from the secondary containment area to the land on the east side of the tank farm, approximately 150 m north of Baker Lake (water body).
- On September 14, the water inspector (Andrew Keim) was notified of AEM's intent to discharge water from the secondary containment areas. The inspector responded via email on September 15, stating that discharging the water was approved providing the monitoring data met the water quality criteria. The required monitoring data was sent to the inspector on September 26. The discharge took place from September 26 to 28, with approximately 151.2 m^3 of water discharged to the land on the east side of the tank farm, approximately 150 m north of Baker Lake (water body). On October 5 the water inspector confirmed via email the monitoring data results and discharge approval.

As part of the Core Receiving Environment Monitoring Program (CREMP), water quality samples are collected from Baker Lake. Four monitoring stations are sampled; one at the Baker Lake community barge dock, one at the Baker Lake marshalling area, and two upstream reference locations. The marshalling area monitoring station meets the sampling requirements of ST-37. For more details, please refer to the report entitled ''*Aquatic Effects Monitoring Program – Core Receiving Environment Monitoring Program 2011'* prepared for AEM by Azimuth Consulting Group, attached as Appendix F2.

7.7 ALL WEATHER PRIVATE ACCESS ROAD (AWPAR) AND QUARRIES

The construction of the AWPAR between the Hamlet of Baker Lake and the Meadowbank mine was completed on March 21, 2008. Monitoring along the AWPAR continued throughout the 2011 season to include water quality sampling along the road and in quarries, erosion and flow inspections, structural crossing inspections and fisheries studies.

The sampling design and results of the 2011 AWPAR and quarry water quality monitoring are available in the report entitled '*All Weather Access Road: 2011 Water Quality Management Report*' prepared by AEM, attached as Appendix C1. Visual inspections to monitor erosion and sediment transport are included in this report.

A geotechnical structural inspection of the AWPAR, including all culverts, bridges and quarries, was conducted by Golder Associates in September 2011. The findings are presented in the report entitled '*2011 Annual Geotechnical Inspection, Meadowbank Gold Mine, Nunavut*', attached in Appendix A1.

The results of the 2011 AWPAR fisheries monitoring are available in the report entitled '*2011 All Weather Access Road Fisheries Report'* prepared by AEM, attached as Appendix F3. This report includes the results and a discussion of the fisheries habitat compensation monitoring at bridge crossing R02.

7.8 SEEPAGE

As required by Water License 2AM-MEA0815 Part I, Item 16: ***The results and interpretation of the Seepage Monitoring program in accordance with Part I, Item 15***
The Seepage Monitoring program includes the following locations:

- **Lake water Seepage Through Dewatering Dikes;**
- **Seepage (of any kind) Through Central Dike;**
- **Seepage and Runoff from the Landfill(s);**
- **Subsurface Seepage and Surface Runoff from Waste Rock Piles;**
- **Seepage at Pit Wall and Pit Wall Freeze/Thaw; and**
- **Permafrost Aggradation.**

Lake water seepage through dewatering dikes
As mentioned in Section 2.1.1 c, seepage rates and volumes through the East dike have been stable for the past three years. A seepage collection system is currently being constructed downstream of the East Dike, such that the volume can be accurately measured, water quality visually observed (turbidity), and the water removed (pumped), on a year round basis.

Water samples were collected monthly from July to December from the north sampling station (EDS-North) at the East dike to measure seepage water quality as per the NWB water license requirements. In November sampling frequency was increased to daily, from both the north sampling station and south sampling station (EDS-South) for an internal monitoring project. There are no applicable license limits for this data; it is presented in Table 7.17, for informational purposes only. The sampling locations are highlighted on Figure 1.

Seepage water collected at the East dike was pumped to the South Pit basin from June to October, 2011. A total volume of 64,000 m^3 of water was pumped; the volume of water per month is provided in Table 7.6. From the South Pit basin, the water was pumped to Stormwater Management Pond #1 (in June, July and August) and the Attenuation Pond (in September and October).

Seepage (of any kind) through Central Dike
Not applicable; construction of this dike will begin in 2012.

Seepage and runoff from the landfill
See Sections 7.4 and 7.5 above.

Subsurface seepage and surface runoff from waste rock piles
See Section 7.4 above.

Seepage at pit wall and pit wall freeze/thaw and permafrost aggradation
No seepage was observed in 2011.

7.9 GROUNDWATER

The results of the 2011 groundwater monitoring program are available in the report entitled '*2011 Groundwater Monitoring Well Installations and Water Quality Results, Meadowbank Mine'* prepared for AEM by Golder Associates, attached as Appendix F4.

The groundwater monitoring program was conducted in September 2011. Monitoring wells MW11-01, MW11-02 were installed. Both of the new installations and MW08-02 were sampled in triplicate. Groundwater chemistry at MW11-01 was found to have higher concentrations compared to samples taken from wells in previous years. This likely reflects the presence of deep bedrock aquifer brine but the presence of a small portion of drilling brine may be remaining in the groundwater. Overall, groundwater chemistry at MW11-02 and MW08-02 was similar to results obtained previously. Groundwater quality at MW08-02 and MW11-02 does not appear to be affected by or have traces of process water from the Tailings Pond.

7.10 RECEIVING ENVIRONMENT

The results of the 2011 core receiving environment monitoring program are available in the report entitled '*Aquatic Effects Monitoring Program – Core Receiving Environment Monitoring Program 2011'* prepared for AEM by Azimuth Consulting Group, attached as Appendix F2.

The CREMP focuses on identifying changes in basic limnological parameters, water and sediment chemistry, or changes to zooplankton and benthic community structure associated with major mine development activities. CREMP reporting changed substantially in 2011, with an emphasis on assessing temporal/spatial trends in the data.

CREMP monitoring started in 2006, two years prior to the onset of mine construction. Key mine development activities that could result in changes to the aquatic receiving environment include: East Dike construction (2008), Bay-Goose Dike construction (2009-10), dewatering of both impoundments (2009-11), and general site-related mining activities that mostly generate dust (e.g., rock crushing, blasting, ore and waste hauling; 2008 to present). Key findings to date are:

- Dike Construction – As documented previously, dike construction resulted in changes to water chemistry, sediment chemistry and some biological parameters (e.g., short-term effects to phytoplankton and possibly benthic invertebrates); detailed follow-up studies were initiated immediately to address potential ecological effects and water quality improved after the dikes were completed. The only follow-up management action for the 2012 CREMP is the implementation of sediment coring at all areas.

- Dewatering – Monitoring to date has shown only minor changes potentially associated with this activity; these will continue to be monitored in 2012. TSS, the major effluent constituent of concern, was rarely found above detection limits in TPN. In May 2011, a change in conductivity was measured at depth in TPN near the dewatering discharge point, possibly indicating the presence of a submerged plume. However, no evidence of this was found in July 2011, suggesting that it was temporally and spatially limited. Sampling protocols will be revised in 2012 to ensure more thorough assessment of water quality associated with anomalous profiles in the future. As TPN will be included in the sediment coring study in 2012, no additional follow-up management actions are required for 2012.
- General Site-Related Activities – No changes have been directly attributable to these activities. No follow-up management actions needed for 2012.

The results of the habitat compensation monitoring program are available in the report entitled '*Aquatic Effects Monitoring Program (AEMP) – 2011 Meadowbank Mine Site Habitat Compensation Monitoring'* prepared by AEM, attached as Appendix F5. The habitat compensation feature along the AWPAR at bridge crossing R02 is discussed in the report entitled '*2011 All Weather Access Road Fisheries Report'* prepared by AEM, attached as Appendix F3.

7.11 BLASTING ACTIVITIES

The results of the 2011 blast monitoring program are available in the report entitled *'2011 Blast Monitoring and Recommendations for Future Monitoring'* prepared by AEM, attached as Appendix F6.

Peak particle velocity (PPV) concentrations exceeded the DFO limit of 13 mm/s on 16 occasions over the entire year (n = 311 blasts for the entire year). During the period of egg incubation (for lakes near the Meadowbank mine the period is from August 15 to June 30) PPV concentrations exceeded the DFO limit on 12 occasions (n = 256). The instantaneous pressure change (IPC) measurements were all below the DFO limit of 50 kpa. The blast monitoring results are reviewed after each blast and the blast mitigation plan is implemented immediately if the vibrations or the overpressure exceed the guidelines. This plan includes a retroactive analysis to determine what caused the higher than expected results. From August to December 31st, 2011, there were only two exceedences of the 13 mm/s PPV limit. In 2011, the average PPV was 6.33 mm/s with a maximum of 22.3 mm/s. From August 15 to June 30, twelve exceedences were mostly at Portage (South) station and were around 15 mm/s.

7.12 MMER AND EEM SAMPLING

The Meadowbank gold mine became subject to the Metal Mines Effluent Regulations (MMER) on January 1, 2010. There is one discharge location (named DD-FD1) from the TSS water treatment plants. This is the same discharge water that is sampled for the dewatering monitoring program. Water quality samples are collected weekly and acute

toxicity samples quarterly, as per the approved 'reduced sampling frequency' program. The volume of water discharged to the environment is reported on a daily basis under the MMER monitoring program. Under the Environmental Effects Monitoring (EEM) program, AEM also collects sub-lethal toxicity and water quality samples four times per year from the discharge location, the receiving environment exposure area (TPN [named TPL in the dewatering program]) and reference area (TPS). These sampling locations are highlighted on Figures 1 and 2. Results of the MMER and EEM water quality monitoring programs are presented in Tables 7.18 and 7.19, respectively. The volume of water discharged to the environment is presented in Table 7.20. This data was previously reported to Environment Canada via the RISS electronic database reporting system.

There were no exceedences of the MMER regulations. On several occasions there was no discharge to monitor; these sampling weeks are identified with 'NDEP' on Table 7.18. Parameters identified with 'NMR' on the table are not required due to the approved reduced sampling frequency program. However, on June 6, 2011, the sample was erroneously not collected.

From the beginning of January to October 23, 2011, the discharge water originated from the Second Portage Lake impoundment area. From October 24 to November 14, 2011 the discharge originated from the Bay Goose impoundment area. Discharge was suspended on November 15, 2011 due to ice build-up in the impoundment area. Further details of the dewatering program are discussed in Section 7.2.

The EEM monitoring samples were collected in January, April, August and December 2011. For the December sample, no water was being discharged to the environment. Samples were collected from the exposure (TPN) and reference (TPS) areas, but no sample could be collected from the effluent discharge (DD-FD1) location.

7.13 QAQC SAMPLING

The objective of quality assurance and quality control (QA/QC) is to assure that the chemical data collected are representative of the material being sampled, are of known quality, are properly documented, and are scientifically defensible. Data quality was assured throughout the collection and analysis of samples using specified standardized procedures, by the employment of accredited laboratories, and by staffing the program with experienced technicians.

All chemical analyses were performed by Multi-Lab Direct in Val d'Or, Quebec. All data from Multi-Lab underwent a vigorous internal QAQC process, including the use of spiked samples and duplicate samples. All QAQC data passed the laboratories acceptable limits. The laboratory Certificates of Quality Control are presented in Appendix F1, following the corresponding Certificates of Analysis.

All toxicity tests were performed by Maxxam Analytique in Quebec City. Testing was conducted as stipulated in the corresponding Environment Canada Biological Test Methods.

QAQC measures implemented by the lab, including the use of reference toxicants, met the acceptable limits. QAQC data is presented with the toxicity reports in Appendix F1.

Field blanks are laboratory bottles filled with deionized water in the field, and then treated as a normal sample. They are used to identify errors or contamination in sample collection and analysis. Duplicate field water quality samples are collected simultaneously in the field and used to assess sampling variability and sample homogeneity. The following presents the percentage of duplicate and field samples collected from each of the monitoring programs:

- MMER and EEM monitoring programs: 9 duplicate samples and 5 field blanks were collected from a total of 44 samples, representing 31.8%;
- Dewatering monitoring program: 54 duplicate samples and 5 field blanks were collected from a total of 482 samples, representing 12.2%;
- STP monitoring program: 4 duplicate samples were collected from a total of 53 samples, representing 7.5%;
- Surface water monitoring programs: 9 duplicate samples and 2 field blanks were collected from a total of 89 samples, representing 12.4%; and
- Bulk fuel storage facilities monitoring program: 1 duplicate sample and 1 field blank were collected from a total of 6 samples, representing 33.3%.

This represents approximately 13.4% of the samples collected, which is higher than the QAQC program objective of 10%. This is a significant improvement from last year, at just 5.3% of the samples collected.

Analytical precision is a measurement of the variability associated with duplicate analyses of the same sample in the laboratory. Duplicate results were assessed using the relative percent difference (RPD) between measurements. The equation used to calculate a RPD is:

RPD = (A-B)/ ((A+B)/2)*100; where: A = analytical result; B = duplicate result.

RPD values may be either positive or negative, and ideally should provide a mix of the two, clustered around zero. Consistently positive or negative values may indicate a bias. Large variations in RPD values are often observed between duplicate samples when the concentrations of analytes are very low and approaching the detection limit. Consequently, a RPD of 50% for concentrations that exceed 10x the method detection limit (MDL) is considered acceptable.

Results for the QAQC data are presented in Tables 7.21 to 7.25 for the MMER and EEM, Dewatering, STP, Surface Water, and Bulk Fuel Storage Facility monitoring programs, respectively. The following is a brief summary of the QAQC results, per table:

- MMER and EEM: 2 parameters exceeded the data quality objectives;
- Dewatering: no exceedences;
- STP: 1 parameter exceeded the data quality objectives;
- Surface Water: 4 parameters exceeded the data quality objectives; and
- Bulk Fuel Storage Facility: no exceedences.

There did not appear to be any trends with the parameters that exceeded the QAQC data quality objectives, nor were there any indications of sampling errors or variablility. All of the results of the field blank samples were acceptable and all other duplicate sample

parameters met the QAQC data quality objectives. Consequently, the QAQC results indicate that the data quality is sufficient to meet the objectives of the monitoring programs.

For field measurements, the following equipment is used:

- Analite NEP 160 Meter (Turbidity);
- Hoskin Scientific 340l pH Meter (pH);
- Hanna Multi-Parameter Meter (pH, Dissolved Oxygen and Conductivity); and
- YSI Multi-Parameter Meter (Dissolved Oxygen and Conductivity).

The calibration data are presented in Tables 7.26 to 7.33 for Analite Meters 1, 2, 4 and 5, the Hoskin Meter, Hanna Meters 1 and 2, and the YSI Meter, respectively.

QAQC methods and results for specific field programs are discussed separately in their respective reports; these field programs are presented in the Appendices listed below:

- Appendix A3: *Aquatic Effect Monitoring Program – Targeted Study: Dike Construction TSS Effects Assessment Study 2011* – Sections 2.5 and 3.1
- Appendix C1: *All Weather Access Road: 2011 Water Quality Management Report* – Section 5
- Appendix F2: *Aquatic Effects Monitoring Program: Core Receiving Environment Monitoring Program 2011* – Sections 2.7 and 3.1
- Appendix F4: *2011 Groundwater Monitoring Well Installations and Water Quality Results, Meadowbank Mine, Nunavut* – Sections 4.2 and 5.2
- Appendix F5: *Aquatic Effects Monitoring Program (AEMP): 2011 Meadowbank Mine Site Habitat Compensation Monitoring* – Sections 2.1.2 and 3.1.2.

7.14 WATER USAGE

The volume of freshwater pumped from the surrounding lakes and used for the Meadowbank Gold Project is presented in Table 7.34. A total volume of 1,088,254 m^3 of freshwater was used for the project in 2011. This volume exceeds the 2AM-MEA0815 water license limit of 700,000 m^3 per year; an amendment to increase the volume of freshwater allowed for use will be requested in 2012.

The volume of reclaim water used in the mill in 2011 is 2,144,270 m^3. The volume of freshwater that came with the ore to the mill in 2011 is 44,162 m^3.

7.15 CREEL SURVEY RESULTS

As required by DFO Authorization NU-03-0190 (AWPAR) Condition 5.2.4: ***Engage the local Hunter Trapper Organization(s) in the development, implementation and reporting of annual creel surveys within the water bodies affected by the Plan.***

The results of the creel survey are available in Section 3.3 of the report entitled *'2011 All Weather Access Road Fisheries Report'* prepared by AEM, attached as Appendix F3.

SECTION 8 • CLOSURE

8.1 PROGRESSIVE RECLAMATION

8.1.1 Mine Site

As required by Water License 2AM-MEA0815 Schedule B, Item 16: ***A summary of any progressive closure and reclamation work undertaken including photographic records of site conditions before and after completion of operations, and an outline of any work anticipated for the next year, including any changes to implementation and scheduling.***

No restoration work was completed in 2011.

8.1.2 AWPAR

As required by INAC Land Lease 66A/8-71-2, Condition 33: ***The lessee shall file annually a report for the preceding year, outlining ongoing restoration completed in conformity with the approved Abandonment and Restoration Plan, as well as any variations from the said Plan.***

And

As required by KIA Right of Way KVRW06F04, Condition 26: ***File annually a progress report for the preceding year, outlining any ongoing restoration completed, in conformity with the Abandonment and Restoration plan***.

No restoration work was completed in 2011.

8.1.3 Quarries

As required by INAC Land Lease 66A/8-72-2, Condition 33: ***The lessee shall file annually a report for the preceding year, outlining ongoing restoration completed in conformity with C&R Plan, as well as any variations from the said Plan.***

No restoration work was completed in 2011.

8.2 RECLAMATION COSTS

8.2.1 Project Estimate

As required by Water License 2AM-MEA0815 Schedule B, Item 18: ***An updated estimate of the current restoration liability based on project development monitoring, results of restoration research and any changes or modifications to the Appurtenant Undertaking.***

No restoration work was completed in 2011. Estimates of current restoration liability and the amount of security posted for the project are the same as was approved by the NWB in July 2008 (at the time of license issuance).

8.2.2 AWPAR and Quarries

As required by INAC Land Lease 66A/8-71-2, Condition 19: ***The lessee shall submit to the Minister every two years after the commencement date of this lease (January 2007), a report describing any variations from the Abandonment and Restoration Plan and updated cost estimates.***

And

As required by INAC Land Lease 66A/8-72-2, Condition 37: ***The lessee shall submit to the Minister every 2 years after the commencement date of this lease (January 2007), a report describing cumulative variations from the C&R Plan with updated cost estimates.***

And

As required by KIA Right of Way KVRW06F04, Condition 14: ***Submit to KIA every two years on each anniversary of the commencement date (February 2007), a report describing any variations from the Abandonment and Restoration Plan and updated cost estimates.***

No progressive reclamation has been completed on the AWPAR or associated quarries. Closure activities are consistent with the '*AEM Closure and Reclamation Plan, September 2008*', and original cost estimate.

SECTION 9 • PLANS / REPORTS / STUDIES

9.1 SUMMARY OF STUDIES

As required by Water License 2AM-MEA0815 Schedule B, Item 19: ***A summary of any studies requested by the Board that relate to Waste disposal, Water use or Reclamation, and a brief description of any future studies planned.***

No studies were requested by the NWB.

9.2 SUMMARY OF REVISIONS

As required by Water License 2AM-MEA0815 Schedule B, Item 20: ***Where applicable, revisions will be completed as Addendums, with an indication of where changes have been made, for Plans, Reports, and Manuals.***

The following monitoring and management plans were revised in 2011:

- Baker Lake Bulk Fuel Storage Facility: Environmental Performance Monitoring Plan; Version 2; and
- Spill Contingency Plan: Meadowbank Mine Site, All Weather Private Access Road (AWPAR), Baker Lake Facilities; Version 2.

The above listed plans are included in Appendix G1. A brief description of revisions made to each of plans is provided in Appendix G2.

9.3 EXECUTIVE SUMMARY TRANSLATIONS

As required by Water License 2AM-MEA0815 Schedule B, Item 21: ***An executive summary in English, Inuktitut and French of all plans, reports, or studies conducted under this Licence.***

Appendix G2 includes an executive summary in English, French and Inuktitut for the following documents:

1. All monitoring and management plans listed in Section 9.2 above.

2. Reports or studies submitted in 2011:
   - Aquatic Effects Monitoring Program: Core Receiving Environment Monitoring Program 2010
   - All Weather Private Access Road: 2010 Water Quality Management Report
   - 2010 All Weather Private Access Road Fisheries Report
   - 2010 Annual Geotechnical Inspection
   - 2010 Independent Geotechnical Expert Review Panel Report
   - 2010 Causeway and Dike Construction Monitoring Report
   - Aquatic Effects Monitoring Program – Targeted Study: Dike Construction TSS Effect Assessment Study 2010

- 2010 Groundwater Quality Monitoring Program
- Sampling Report Atmospheric Emission Outlet of Incinerator
- 2010 Fish-Out of the Bay-Goose Basin in Third Portage Lake
- Site Wide Water Balance Model Update
- DFO Freshwater Intake Barge Monitoring Study Memo
- Baker Lake Fuel Storage Tank 5 and 6 Construction Summary Report and As-Built

SECTION 10 • MODIFICATIONS / GENERAL / OTHER

10.1 MODIFICATIONS

As required by Water License 2AM-MEA0815 Schedule B, Item 12: ***A summary of modifications and/or major maintenance work carried out on all water and waste related structures and facilities.***

There were no modifications to water or waste related structures or facilities in 2011.

10.2 INSPECTIONS AND COMPLIANCE REPORTS

As required by Water License 2AM-MEA0815 Schedule B, Item 22: ***A summary of actions taken to address concerns or deficiencies listed in the inspection reports and/or compliance reports filed by an Inspector.***

On July 5 and 6, 2011, Aboriginal Affairs and Northern Development Canada (AANDC) conducted inspections at the mine site, AWPAR and Baker Lake marshalling area for the NWB water license. No compliance issues were identified. A copy of the inspection report is attached in Appendix H1.

The Department of Fisheries and Oceans Canada (DFO) conducted a site visit from August 15 to 17, 2011 and reported no *Fisheries Act c*ompliance issues. DFO noted that the peak particle velocity (PPV) exceeded DFO's guideline limits in 2009 and 2010 and that during its 2011 site visit, DFO found the recording device at the East Dyke was located on dry land and not meeting the requirement that it be representative of fish spawning habitat. DFO recommended that the recording device be moved to a location closer to the water and in an area that is considered to be potential spawning habitat. No report was issued.

Environment Canada conducted a site visit from August 16 to 18, 2011. Their inspection focussed primarily on the EEM field protocols. No report was issued.

Four inspections of the GN conversation officer took place in the first half of the year. The first three inspections focussed on wolf and wolverine sightings around the mine site; the fourth inspection focussed on the raven's nest at the Baker Lake bulk fuel storage facility. No reports were issued.

10.3 PUBLIC CONSULTATION

As required by Water License 2AM-MEA0815 Schedule B, Item 23: ***A summary of public consultation and participation with local organizations and the residents of the nearby communities, including a schedule of upcoming community events and information sessions.***

A log of 2011 public consultation activities is included in Appendix H2.