



AGNICO-EAGLE MINES LTD.
Meadowbank Division

March 02, 2009

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Reference: Meadowbank Type A Water License 2AM-MEA0815
Road Alignment Quarry Site Geochemistry Report for the
Meadowbank Gold Mine

This letter is written in response to a letter sent by the Nunavut Water Board (NWB) dated January 08, 2009 acknowledging receipt of a report entitled "*Road Alignment Quarry Site Geochemistry – Meadowbank Gold Project*" and requesting that Agnico-Eagle Mines Limited – Meadowbank Division (AEM) submit an addendum to this report addressing five points raised during technical review of the report by Indian and Northern Affairs Canada (INAC) and the Government of Nunavut Department of Environment (GN-DoE). Please consider this letter as the requested addendum.

The above captioned report was prepared by Cumberland Resources with assistance from Golder Associates in October 2005 and submitted as supporting material for the environmental assessment of the Meadowbank Project, specifically the All-Weather Private Access Road (AWPAR) component of the project. I believe that the same report was submitted to the NWB sometime in early 2007 in support of Cumberland's Water License application for the AWPAP.

As noted in the January 08, 2009 letter from the NWB, the report was distributed by the NWB for technical review with a deadline for review comments of April 20, 2007. Review comments were received from INAC on April 19, 2007 and from GN-DoE on April 12, 2007. These comments were forwarded to AEM on January 08, 2009 with a request for an addendum to address the five review issues raised.

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The five issues are addressed as follows:

NWB Issue 1

An explanation on how the NP/AP ratios were calculated. For example: sample P2-2 has an AP of 1.6 and an NP of 10.9 but and NPR of 7.0, should it not be 6.8? This same issue is present for samples P2-3, 3-3, 4-4, etc.

Response:

NP, AP and NP/AP ratio values are correct as stated in the report. The discrepancy is a result of rounding to within one decimal place. Table 1-1 illustrates the effects of rounding using the example samples listed by NWB, as reported in Golder, 2007a (rounded) and not rounded. All data were similarly manipulated.

Table 1-1: NP, AP and NP/AP Ration Values Reported and Calculated (3 Decimal Places)

Sample ID	Rock Type	As Reported (rounded to 1 decimal place)			Not Rounded		
		AP	NP	NP/AP	AP	NP	NP/AP
P2-2	Granite	1.6	10.9	7.0	1.563	10.900	6.976
P2-3		0.9	8.7	9.3	0.938	8.700	9.280
P3-3	Granite	0.9	5.6	6.0	0.938	5.600	5.973
P4-1	Granodiorite	1.3	15.1	12.1	1.250	15.100	12.080

Source: Golder, 2007a

NWB Issue 2

An explanation on how the Net NP values were calculated. For example: sample P2-1 had an NP of 7.7 but a Net NP of 6.5, should it not be 6.4? This same issue is present for samples P4-1, P7-2 etc.

Response:

As for the NP/AP ratio, the apparent discrepancy is a result of rounding to within one decimal place. Table 2-1 shows the examples listed by NWB, as reported in Golder, 2007a and unrounded, to 3 decimal places.

Table 2-1: Net NP Reported and Calculated (3 Decimal Places)

Sample ID	Rock Type	As Reported (rounded to 1 decimal place)			Not Rounded		
		AP	NP	NET NP	AP	NP	NET NP
P2-1	Granite	1.3	7.7	6.5	1.250	7.700	6.450
P4-1	Granodiorite	1.3	15.1	13.9	1.250	15.100	13.850
P7-2	Granite	1.3	43.7	42.5	1.250	43.700	42.450

Source: Golder, 2007a

NWB Issue 3

An explanation as to why samples with an NP/AP ratio of less than 1, such as sample P8-2, P8-3, P10-2, P10-3 and P27-3, were considered non-PAG. According to Table 2.2, these samples fall under the Likely Acid Generating (PAG) category.

Response:

The INAC Guideline for waste rock (as quoted in Table 2.2 of the report) suggests that any rock sample with an NPR of less than 1 should be considered potentially acid generating. However these guidelines do not always work. They are intended to guide Acid Rock Drainage Assessment for mineralized rock typically found at mine sites. However, the use of the guidelines also needs to take into account common sense and is not appropriate in all cases. For example, a rock sample that contains little to no sulphide sulphur cannot be considered likely acid generating as there is no sulphur present to oxidize to generate sulphuric acid. This is true no matter what the sample's NP/AP ratio. For example if this same rock sample also has a low to no natural buffering capacity then the ratio of Neutralizing Potential to Acid Generating Potential will be close to, or even lower than 1 but cannot be acid generating as there is no sulphur to create a source of acid. So in this case the INAC ratios do not work. This is not unusual in non mine sources of rock such as road or construction quarries sited in non-mineralized rock. For example, non-mineralized granite may contain a Total Sulphur content that is at or below the analytical detection limit of 0.01. In such a case the detection limit of 0.01 wt% S is used to calculate an Acid Generating Potential of 0.3. The same sample may have virtually no natural buffering capacity returning an NP value of say 0.2. In this case the NP/AP ratio is less than 1 but the rock cannot be considered potentially acid generating as it has no Sulphur to create an acid source.

In addition to determination of ARD potential based on NPR (NP/AP ratio), the total content of sulphide minerals is also considered in the determination of the potential of a sample to generate acidic drainage (see Golder 2007a and 2007b). A number of Canadian jurisdictions suggest a cut off sulphide content of 0.3% below which ARD is not likely to occur. Price (1997) suggests that materials having a sulphide sulphur content of less than 0.3 wt.% and a paste pH greater than 5.5 may be classified as non-acid generating except where the rock matrix consists of base poor minerals (*e.g.*, quartz), or where the sulphide minerals contain metals that may leach under weakly acidic to alkaline conditions. Table 3-1 lists the paste pH and sulphide sulphur content for the examples identified by NWB. These samples have near-neutral to alkaline paste pH and very low sulphide sulphur (one order of magnitude less than the suggested cutoff) as to be considered NPAG.

Table 3-1: Paste pH and Sulphide for NWB examples

Sample ID	Rock Type	PASTE	S(S ₂ -)
		pH	(%)
P8-2	Quartzite	7.2	0.03
P8-3		6.3	0.03
P10-2	Granite/ Gneiss/ Quartzite	8.0	0.03
P10-3		6.8	0.03
P27-3	Granite	7.7	0.08

In Golder, 2007a; Figure 3.1 provides a plot of AP versus NP with the NPR criteria superimposed on the graph, and shows samples that plot in the PAG field according to their NPR, however Figure 3.2 shows that all samples contain sufficiently low total sulphur to be considered NPAG. Of note, Figure 3.2 uses a more conservative cut-off of 0.1% total sulphur, rather than the screening criteria value of 0.3% sulphide sulphur as suggested in the BC Guidelines. Consequently in such cases, this quarry rock was considered to be non potentially acid generating despite the INAC Guidelines due to its low sulphide sulphur content. This is consistent with ARD Assessment techniques used all across Canada.

NWB Issue 4

An explanation as to why static tests were done but not kinetic tests. Although static tests are an acceptable momentary indication of ARD and ML potential, they do not cover future potential ARD and ML.

Response:

In our consultant's professional assessment, Golder (2007a) concluded that "ABA results indicate that all samples are non acid generating, based on their neutralization potential ratio (...) or based on their very low sulphide sulphur content."

Static tests are acknowledged as the primary initial tool for assessing whether ARD is likely to occur. Kinetic testing takes many months to complete and costs several orders of magnitude more than static tests for each sample. Consequently, kinetic testing is used as a secondary assessment tool to determine:

- The predicted time to onset of acid generation where a rock sample is predicted to be likely acid generating; and
- The predicted rates or concentrations of metal leaching when metal leaching is predicted to occur such as when acidic drainage is predicted to be present or metals that can be leached under other pH conditions are present.

In this case neither of these conditions were predicted and thus kinetic testing was not considered to be necessary or called for.

It should be noted that the static leaching test provides a generally conservative assessment of the amount of readily soluble elements that would be released upon contact with water under the conditions of the test (non-acidic solution). In a static test, the sample is crushed and ground to provide a particle size that is many orders of magnitude finer than the anticipated particle size of the quarried rock to be used in road construction. Consequently the static test provides a larger surface area for leaching than is seen in actual conditions.

In this case, since rock weathering is not expected to result in ARD, leachate chemical conditions (such as neutral pH) are anticipated to remain similar to those of the static leaching test. There is no anticipated development of ARD conditions and overall drop in solution pH conditions that could increase metal release rates. Consequently, as stated in the report: “Concentrations of these constituents are expected to decrease with time, as soluble salts are flushed from the excavated rock” (Golder, 2007a). In these circumstances, kinetic testing is not anticipated to provide significantly different results over the long term compared to short-term leaching tests. Kinetic tests were therefore deemed unnecessary.

NWB Issue 5

An update to the INAC guidelines for ARD potential as indicated in the GN-DoE’s comments.

It is not clear from the NWB letter of January 08, 2009 specifically what is being referenced here as the GN-DoE comments were not included. We have assumed that the GN-DoE comments referenced here are those contained in GN-DoE written Final Intervention for the Public Hearing: Meadowbank Mining Corp from 2007. These are repeated here for clarity.

GN-DoE Comment

AEM has developed sampling and management plans for potentially acid generating (PAG) materials to mitigate the potential for acid rock drainage (ARD) and metal leaching (ML). The management plans include separation of PAG from non-PAG (NPAG) waste rock, permafrost encapsulation of PAG waste rock, subaqueous disposal of PAG and ML tailings, and flooding of pits. Additionally, AEM developed a Water Quality and Flow Monitoring Plan (Doc. 450) to track changes in drainage chemistry.

In the GN-DOE Feb. 13, 2008 submission, we raised a concern about how changing ARD test methods during re-evaluation of ARD and ML may affect rock characterization and volume calculations of waste rock. Specifically, we were concerned how changing NP (neutralization potential) determination using on-site analysis would affect current information about rock characterization and waste rock volumes. The difference in test results may affect overall plans for management of waste rock. AEM indicated in the AEM Response Doc. (GNDOE-3 issue) that all additional test results collected in the future will be used to verify the current information.

Additionally, in the Feb. 13, 2008 submission, GN DOE identified a concern about insufficient testing for ARD and ML potential of materials along the all-weather road (i.e., quarry sites). AEM responded in the AEM Response Doc. (GNDOE-6 issue) that they will be “surveying rock quality and drainage water chemistry at each quarry site over the summer of 2008 in order to finalize quarry closure plans.”

GN-DoE Recommendation

AEM’s commitment to re-evaluate ARD and ML potential and to confirm that rock characterization and waste rock volume calculations are still valid is recommended to form a term of the water license if issued.

AEM’s commitment to survey rock quality and drainage water chemistry at quarry sites along the all-weather road in order to address ARD and ML concerns, and to finalize quarry closure plans, is recommended to form a term of the water license if issued.

Response:

AEM remains committed to ongoing re-evaluation of the ARD/ML potential of waste rock from the ongoing open pit mining activity. The programs to conduct this ongoing evaluation were laid out in detail the document entitled “*Operational ARD/ML Sampling and Testing Plan* (MMC, 2008)” that was revised and submitted under separate cover to the NWB in August 2008.

As per our commitment, AEM did undertake additional characterization of the ARD potential from all 22 AWPARG quarry sites in the summer of 2008. The evaluation included:

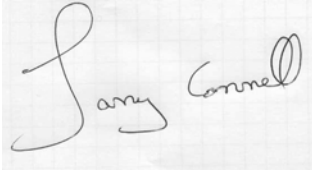
- Geological identification of the exposed rock types in each quarry;
- Additional rock sampling of each rock type;
- Acid Base Accounting static testing of these rock samples;
- Total metal sampling and metal leaching potential testing using Shake Flask Extraction testing procedures for the sampled rock types; and
- Sampling and analysis of accumulated water at each quarry site and at observed seep points from the as built roadway.

The results from this additional characterization work is being combined into a stand alone report to be included as a component of the 2008 Annual Report under Water License 2AM-MEA0815 to be submitted by the end of March 2009. The results of this work typically confirms the predictions made prior to construction - that this rock is non-acid generating and is not resulting in the release of abnormal metal concentrations to the receiving environment.

Should you have any questions, please feel free to contact the Environmental Superintendent of the Meadowbank Division, Mr. Stéphane Robert at stephane.robert@agnico-eagle.com.

Regards,

Agnico-Eagle Mines Limited – Meadowbank Division

A handwritten signature in black ink on a light-colored, textured background. The signature is written in a cursive style, with the first name 'Larry' and the last name 'Connell' clearly legible.

Larry Connell, P.Eng.

Corporate Director of Sustainable Development

REFERENCES

- AEM, 2007. Agnico-Eagle Mines Ltd. – Meadowbank Gold Mine Project – Water License Application. March 31, 2007.
- AEM, 2008. Meadowbank Type A Water License – Response to Pre-hearing Commitments. March 7, 2008.
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- Price, W.A., 1997. Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesite in British Columbia, 1997. Reclamation Section, Energy and Mineral Division, April 1997.