APPENDIX E

OTHER SUPPORTING DOCUMENTS

Appendix E1	Water Licence Modification Request and Approval
Appendix E2	AANDC Site Inspection Reports and Baffinland Responses
Appendix E3	Request for Errata – Water Licence 2BB-MRY1114
Appendix E4	Mary River and Milne Inlet Petroleum Tank Farms - Code Compliance Report
Appendix E5	Interim Mine Rock ML/ARD Report - Mary River Project

APPENDIX E1

WATER LICENCE MODIFICATION REQUEST AND APPROVAL

(Pages E1-1 to E1-4)

P.O. BOX 119
GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYIT
OFFICE DES EAUX DU NUNAVUT

File: 2BB-MRY1114/J1

August 12, 2011

James Millard, M.Sc., P.Geo.
Senior Environmental Superintendent
Baffinland Iron Mines Corporation
Suite 1016, 120 Adelaide Street West
Toronto, ON M5H 1T1

Email: jim.millard@baffinland.com

RE: 2BB-MRY1114 Type "B" – Action Plan for Decommissioning of Milne Inlet Bulk Fuel Storage Facility and the Construction of New Fuel Tank Storage

Dear Mr. Millard:

The Nunavut Water Board (NWB or Board) acknowledges its receipt of a notification submission (Action Plan) provided by Baffinland Iron Mines Corporation (BIMC) on June 21, 2011, in support of a proposed modification contemplated for the Milne Inlet Bulk Fuel Storage Facility.

The documents received consisted of the following:

- Letter re: Action Plan for Decommissioning of Inlet Bulk Fuel Storage Facility and the Construction of New Fuel Tank Storage, dated June, 2011;
- Attachment A, Action Plan for Decommissioning of Milne Inlet Bulk Fuel Storage Facility and the Construction of New Fuel Tank Storage (Hatch document H337697-3110-126-0001;
- Attachment B, Design Basis-Milne Inlet Fuel Storage Facility (Hatch document H337697-3110-50-109-0001);
- Attachment C, Drawings – Milne Inlet Fuel System Upgrade;
- Clarification email from Jim Millard (BIMC) to Sean Joseph (NWB) dated June 28, 2011; and
- Additional information received July 17, 2011 with respect to "Mary River Project 5-Million Litre Tank at Milne Inlet – Foundation Recommendations – Rev 0 –1 July 2011 and Milne Borehole Logs – Tank Area".

The planned construction works and activities associated with the modification involve the construction of a new steel fuel tank storage facility system in Milne Inlet Camp and the associated decommissioning of the existing fuel storage facility. The rationale that has been provided is that the existing facility, consisting of fuel bladders, will reach the limit of its design life within the next year or two and therefore the requirement of the longer term steel tank fuel

facility. This proposed facility is expected to lower the potential risk associated with spills and thereby improve ongoing environmental performance.

During the most recent licence renewal application, dated March 21, 2011, the replacement of the existing fuel storage at Milne Inlet was discussed and BIMC understood the need to implement an action plan to replace the Bladders by 2012 and would submit the required documentation, applications and notifications once finalized.

The proposed decommissioning and construction works that form this notification do not include an expansion to the existing facility and the volume of fuel to be stored at the new fuel storage will not exceed the current capacity of the existing facility.

The review was carried out in consideration of the requirements under Part J, Item 1 of Licence 2BB-MRY1114 which states:

> *The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:*
>
> *i. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;*
> *ii. such Modifications do not place the Licensee in contravention of the Licence or the Act;*
> *iii. such Modifications are consistent with the NIRB Screening Decision;*
> *iv. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and*
> *v. the Board has not rejected the proposed Modifications.*

In carrying out its review of the proponent's submission, the Board took into consideration the potential impact that the proposed modification could have on fresh water resources and scope of activities allowed for under the current Licence. In addition, the Board had requested[1] written confirmation from the Nunavut Impact Review Board (NIRB) on whether the proposed modification was in accordance with the NIRB Screening Decision, dated May 4, 2007. In response, the NIRB issued a letter[2] to the NWB stating that:

> After completing a review of the information pertaining to the notification, the NIRB is of the understanding that the proposed activity does not change the general scope of the original project components, and the exceptions noted in NLCA 12.4.3(a) and (b) do not apply in this case. Therefore, this application is exempt from screening as per Section 12.4.3 of the NLCA and the activities therein remain subject to the terms and conditions recommended in the original May 4, 2007 Screening Decision Report.

In considering its decision, the Board requires the following:

1. Provide to the Board for review, <u>within thirty (30) days</u> of receipt of this letter, the Manufacturer's Specifications and installation requirements for the recommended

[1] Nunavut Water Board (NWB) letter to the Nunavut Impact Review Board (NIRB), dated July 22, 2011.
[2] Letter from the Nunavut Impact Review Board (NIRB) to the Nunavut Water Board (NWB), July 25, 2011.

geotextile/liner (impermeable barrier as defined in the CCME 2003 code) that is referenced in the HATCH document H337697-3110-50-126-0001, Rev.2 and associated drawings (H337697-4020-10-035-0001, 0002 and 0003), confirming the suitability for petroleum product storage and application in an arctic environment.

Also, in order to have the most recent information available for construction, the NWB requests that BIMC provide the results of the geotechnical drilling as specified in sec. 2.1 of the Action Plan and also provide a revised drawing no. H337697-4020-10-035-0001, which indicated that the final design of the tank pad base was on hold pending completion of the geotechnical report.

2. Revision of all management plans that are affected by changes in operation and/or technology, are required to be updated and modified according to Part B, Item 11, including the Spill Contingency Plan (G1), Site Water Management Plan (E2), Comprehensive Environmental Monitoring Plan (I1) and the Abandonment and Restoration Plan (H1). The Board requires that these updated plans (addendums where applicable) be provided to the Board for review within sixty (60) days of receipt of this letter.

3. With respect to Part G, Item 2 requirements, the Licensee is required to submit to the Board for review, within ninety (90) days of completion of construction, a follow-up report on the Milne Inlet Bulk Fuel Storage Facility, which clearly details that the requirements of the CCME guidance document "Above Ground Storage Tank Systems for Petroleum and Allied Petroleum Products (2003)" have been met by the Licensee.

4. With respect to Part J, Item 3, provide a final construction report that includes all respective design drawings and construction details, including as-built drawings, documentation of field decisions that deviate from original design and any data used to support these decisions. This report and drawings shall be stamped and signed by a professional engineer registered in Nunavut.

In addition to the above, the Action Plan provided information on the decommissioning of the current fuel storage facility at Milne Inlet, timing and potential requirements of a Landfarm for the treatment of petroleum contaminated soils found beneath the facility. Should a Landfarm be required, an amendment to the current licence will need to be applied for, at least three (3) months prior to the planned construction/operation of the facility.

The NWB has completed its review and considered the information presented by BIMC and provides this letter of consent as required by Part J, Item 1, through Board Motion No. 2011-11-L15, for the construction/modifications as proposed, provided the requirements as set out in this letter are met.

The Licensee is advised that the activities conducted under the proposed modifications and this letter of consent are limited to the installation of the approximate 5 million Litre aboveground steel tank at the Milne Inlet Bulk Fuel Storage Facility and associated components, as described in the submission dated June 21, 2011. And, upon providing further details on the additional tank to be installed in the proposed containment area, the installation of the remaining fuel tank with a storage capacity of approximately 3.5 million Litres. Any modification in excess of that outlined in the proponent's submissions to the Board, would constitute a separate potential modification/amendment and may require further screening by the Nunavut Impact Review Board and distinct NWB Board review, consideration and approval.

Should you have any questions, please do contact the undersigned at 867-360-6338 ext. 25 or by email at sjoseph@nunavutwaterboard.org.

Regards,

Original signed by:

Sean Joseph
Technical Advisor

Enclosure: NIRB's Decision

Cc: Distribution – Salamonie Shoo

APPENDIX E2

AANDC SITE INSPECTION REPORTS AND BAFFINLAND RESPONSES

Indian and Northern Affairs Canada | Affaires Indiennes et du Nord Canada

WATER USE INSPECTION REPORT

Date: Aug 12, 2011	**Licensee Rep.** (Name/Title)**:** Jim Millard
Licensee: Baffinland Iron Mines Corp. (Baffinland)	**Licence No.: 2BB-MRY1114**

WATER SUPPLY

Source(s): Camp Lake	**Quantity Permitted: 385 m^3**
Owner:/Operator: Baffinland	

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: NI	**Storage Structure:** A	**Treatment Systems:** A	**Chemical Storage:** A
Flow Meas. Device: A	**Conveyance Lines:** NI	**Pumping Stations:** NI	**Screen : NI**

Comments: The pump shack located next to Camp Lake was in poor shape after the spring ice pulled the lines away from the shack causing a fuel spill. The spill (~ 12 m^3) occurred in early July and the shack was moved so the contaminated soil could be removed and replaced with clean fill. Until the pumps and shack is repaired, water is transported by truck to the Mary River Camp. Water is filtered and treated with UV and all water usage is recorded and was available during the inspection.

WASTE DISPOSAL

Sewage: Sewage Treatment System (Prim./Sec/Ter.)**: RBC Unit and polishing ponds**

Natural Water Body:	**Continuous Discharge** (land or water)**:**	
Seasonal Discharge:	**Wetlands Treatment:**	**Trench:**

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: U	**Decant Structure:** A	**Erosion:** A
Discharge Meas. Device: NI	**Dyke Inspection:** NI	**Seepages:** A
Dams, Dykes: A	**Freeboard: A**	**Spills: A**
Construction: A	**O&M Plan:**	**A&R Plan:**
Discharge:	**Effluent Discharge Rate:** Unknown	

Comments: Sewage is transferred to the RBC unit and then to the polishing ponds for further treatment. Due to higher than normal phosphorous concentrations in the sewage effluent, all treated effluent is transferred to the polishing ponds (2 & 3) for further treatment. Sewage sludge is contained in polishing pond #1. When the effluent meets the discharge criteria then it is discharge to the land which eventually runs into Sheardown Lake.

Solid Waste:

Owner/Operator: Baffinland

Landfill: U	**Burn & Landfill:**	**Other:** Incinerator

Comments: General garbage consisting of food wastes, paper and smaller wood products are burned in the incinerator. The incinerator was working at the time of the inspection. All other non-hazardous wastes are stored at the landfill.

- It was noted that oil filters were found in the landfill which is not permitted and should be removed immediately. All staff responsible for bringing materials to the landfill should be aware of this and should not continue to occur.

FUEL STORAGE:

Waste Oil Storage:

Owner/Operator: Baffinland

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: A	**Water within Berms:** U	**Evidence of Leaks:** U
Drainage Pipes: NI	**Pump Station & Catchments Berm:** NI	
Pipeline Condition: NI	**Condition of Tanks:** A	

Comments: Waste oil and fuels are stored in secondary containment structures. Baffinland has between 500,000 to 600,000 Litres of fuel in bladders onsite.

- Contaminated soil for the pump shack fuel spill was placed in the secondary containment berm.
- Opens drums of waste fuels/oils contained in secondary containment. These drums should be covered in order to prevent spills from occurring.
- An oil/water separator and drums crusher is onsite and used when needed.
- There are numerous hydrocarbon spills around site, especially around the waste oil/fuel

storage. A spill had occurred next to the green tank at the airport, possible due to overfilling.
- General cleaning is required around the drillers area.

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected	**Owner /Operator:**	
2	**INAC:**.MRY-11B & MRY-1	
Signs Posted	**SNP:** Yes	**Warning: Yes**
Records & Reporting:		
Geotechnical Inspection:		

Mid-Rail Camp

Mid-rail camp has not been operational since 2008 and no activity is occurring at this site.

- There are 11 drums of Jet A and 1 drum of gasoline in secondary containment.
- All fuel drums used to supply fuel to the camps have been closed off and zip tied to prevent leakages. However, the fuel drum that supplies fuel to the pump shack is leaking and the drip tray is full of water. This water has what looks to be sheen on the surface and should be treated and disposed of appropriately.
- A black double walled tank is used to provide fuel for the incinerator is located in a secondary containment structure. However, the structure contains water that should be treated (if required) and discharged.
- General clean up around the camp is required.
- Walls of the insta-berm for the white double wall tank (generator shack) have collapsed and should be repaired.

Drill SI – MHS – 018 – PS

This drill was operational at the time of the inspection. Fuel was stored approximately 1 meter from the nearest water body, but did have secondary containment and no leaks were noticed during the inspection. Insta-berms for the drill fuels and chemicals should be constructed on flat ground and walls in an upright position.

Steensby Inlet Camp

The Steensby Camp began operations in March and will close sometime in October. There are approximately 35-45 people onsite at all times. Water is pumped using 2 gas powered generators and piping approximately 3 KM from an unnamed lake source. Four to five hundred gallons of water is used per day; water is filtered and UV treated for camp purposes. General garbage, food wastes and paper products are burned daily in the incinerator. Fuel for the camp and helicopter is being stored in secondary containment

- Some drums used to supply fuel to the tents and shacks are leaking around the hoses and bungs. This should be repaired as soon as possible
- General clean up, mainly wood and paper products, is required around the camp.
- Hazardous wastes are being packaged to ship out on the next sealift.

Milne Inlet Camp

The Milne Inlet camp has an oil/water separator (carbon filtered) to treat the water accumulating in the fuel bladder bermed area. There is a 3 or 4 staged process to remove and treat the contaminated water before it is discharged. No discharging was occurring during the inspection. Sewage and grey water is pumped to an RBC unit which removes the solids before the water is discharged. Any water that does not meet the discharge water quality guidelines is transferred to the sewage sump for further treatment. Wastewater that meets the discharge guideline is discharged approximately 200 meters from Milne Inlet. Potable water for the Milne Inlet camp is taken from Camp Lake at Mary River and transported via water trucks.

- All wastes (hazardous and non-hazardous) located down at the laydown area will be shipped out during the summer 2011. All records should be available for the inspector during the next inspection in 2012.
- Fuel drums located behind tents and shacks should be inspected regularly by staff and any leaks repaired immediately.
- The maintenance shop contains waste oil that should be covered stored in secondary containment and all spills cleaned up.

Non-Compliance of Act or Licence:

- All hydrocarbon spills around the site should be cleaned up as soon as possible.
- Opens drums of waste fuels/oils contained in secondary containment. These drums should be covered in order to prevent spills from occurring.
- All other issues and concerns in the Inspectors report should be addressed.

Ian Rumbolt	Sent by E-mail
Inspector's Name	**Inspector's Signature**

March 28, 2012

Andrew Keim
Water Resources Officer
Acting Operations Manager, Field Operations
AANDC
Qikiqtani Region
PO Box 100
Iqaluit. Nu XOA OHO

RE: Mary River Project, Water Use Inspection Report, August 12, 2011. Mary River Project. Water Licence No. 2BB-MRY1114

Mr. Keim:

We received the above referenced report on March 8, 2012, for the field inspection conducted by Ian Rumbolt last summer. This letter details our response and comments to the key items that Mr. Rumbolt observed and reported on during his August 12, 2011, inspection of the Mary River Project. At the debriefing meeting conducted at the conclusion of the inspection, Mr. Rumbolt informed us of the foregoing information and we made him aware of our response and action plans to address any of the concerns that he had. The key comments/concerns and our responses are provided below:

AANDC Comment/Concern 1: Solid Waste – Used oil filters were observed during the inspection of the non-hazardous landfill.

> *Baffinland Response: Baffinland employs weekly inspections of the landfill to ensure that this type of material does not enter in the facility. There is also controlled access to the landfill by means of a locked gate along the landfill access road. Therefore the number of individuals who have access to the landfill is limited. All staff were made aware of the incident and reminded of the established methods adopted for waste segregation and disposal by means of weekly and daily toolbox meetings.*

AANDC Comment/Concern 2: Waste Oil and Fuel Storage - Several open drums of waste fuels/oils in secondary containment were observed. Several small <1 m^2 spill stains were observed, mainly within secondary containment areas. The driller's area was untidy.

> *Baffinland Response: The drums in question were recently placed there and were limited in quantity. Instructions were provided to site services crews. The drums were covered within several hours of the inspection. Crews were instructed to cover all drums as soon as possible at the conclusion of their waste oil/fuel transfer or management activities. This message was reinforced during daily toolbox meetings with site services crews. The several spills observed were mainly within engineered containment and there was no risk to the receiving environment. The contaminated soil material was cleaned up within hours and stored in a designated berm for future treatment, reuse, or shipment off site. During regular environmental awareness sessions and tool box meetings crews were reminded to minimize all spillage by adopting proactive measures and to report all spills whether within or outside the confines of engineered containment. The drillers were reminded about the importance of good housekeeping and organization. The area drillers area was tidied and cleaned up to an acceptable standard within one week.*

AANDC Comment/Concern 3: Mid Rail Camp – There was some minor leakage of hydrocarbons from drums into containment berms. These drums are used to supply fuel to tents. There was contaminated water in some of the small berms servicing the tents and the berm that contained the double walled generator storage tank. Some camp repairs were required due to wear and tear suffered during last winter and spring.

Baffinland Response: Within one week a crew was mobilized to the site. Excess water was collected from berms, berm walls were reinforced, and repairs made to structures where required. Blown materials were collected and disposed of. Hydrocarbon impacted water was shipped back to the Mary River Camp for treatment using the resident oily water treatment system.

AANDC Comment/Concern 4: Drill – The drill inspected did not have all jerry cans in secondary containment. The secondary containment berms were not level.

Baffinland Response: Based on the difficult terrain that the drill was located, it was difficult to establish an ideal location where secondary containment berms could be kept level. Best efforts are always made in this respect. Drillers were reminded to store all hydrocarbons within level secondary containment. This includes jerry cans even when recently used.

AANDC Comment/Concern 5: Steensby Inlet Camp – Some drums used to supply fuel to the tents and shacks show evidence of leakage (into secondary containment). Some wood and paper debris was observed on the ground within the camp perimeter.

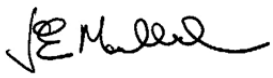
Baffinland Response: The above concerns were communicated to the camp manager and repair/cleanup actions were implemented shortly thereafter.

AANDC Comment/Concern 6: Milne Inlet Camp - There were housekeeping concerns in the maintenance shop at the Milne Inlet Camp. There was waste oil in small open containers and some minor spills.

Baffinland Response: All maintenance shops at the Project Site are protected by lined containment consisting of HDPE liner overlain with a layer of gravel. Therefore any spillage will not migrate to the receiving environment. The maintenance personnel were reminded about the importance of covering waste oil containers and preventing spills. However, the challenges of working in a maintenance shop and preventing all small volume spills should be acknowledged. A major effort is made to prevent spills; however, the lined containment within the facilities are designed to mitigate the occasional small quantity spill.

We trust that the foregoing addresses all of your concerns and we thank AANDC for their constructive observations and comments. Should you have any additional questions or concerns regarding this or any other matter, please contact Jim Millard at 902-403-1337 or by e-mail at jim.millard@baffinland.com.

Regards,



James Millard, M.Sc., P.Geo.
Senior Environmental Superintendent

Cc: Erik Madsen and Dave McCann (Baffinland),
Andrew Keim (AANDC)
Stephen Bathory (QIA),

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Qikiqtani Region
PO Box 100
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X0A 0H0

BaffinLand Iron Mines Corp.,
Suite 1016, 120 Adelaide Street West
Toronto, Ontario. M5H 1T1.

Date: November 7th, 2011.

RE: Field Inspection. Baffinland. Steensby. N2006C0036

On July 11th 2011, I conducted a field inspection at the above location.
A copy of the Inspection Report is attached. After reading the report please sign and return a signed photocopy to my office at the above address.
If you have any comments or suggestions please feel free to attach them to the copy of this report.

Issues Identified during the inspection:

Campsite: This campsite is somewhat "rough" compared to other sites. The soil itself tends to be muddy and drainage of the sumps is a slow process. There are two sumps in-line with each other and during heavy use combined with melting snow and rain it is likely that sump material will overflow the banks.
The side of these berms must be increased in height and if possible, another in-line sump might stop the overflow.

Fuel Storage: The area where there was hundreds of barrels stored before on-loading onto a fuel ship, is noticeably muddy. As well, the bottom layer of each berm quite likely has been damaged and must be repaired before being used this upcoming season.

Waste: Non-combustible material is to be back-hauled while the combustible material must be incinerated. While I was on site, the incinerator was smoking while in use. The proper manner to incinerate materials would leave no smoke.

Water: There is a plentiful supply of water for all uses.

Directions: Ensure that the berm materials used over the past 2 to 3 years either have to be replaced or at the least, repaired.
The barrels used to supply fuel to the tents must be on stands with impermeable material to gather and contain any leaking fuel.
Some of the tents have seen better days, the material has either been ripped by animals or torn by the weather.

*refer to notes in the Environmental Inspection Report dated July 11th 2011.

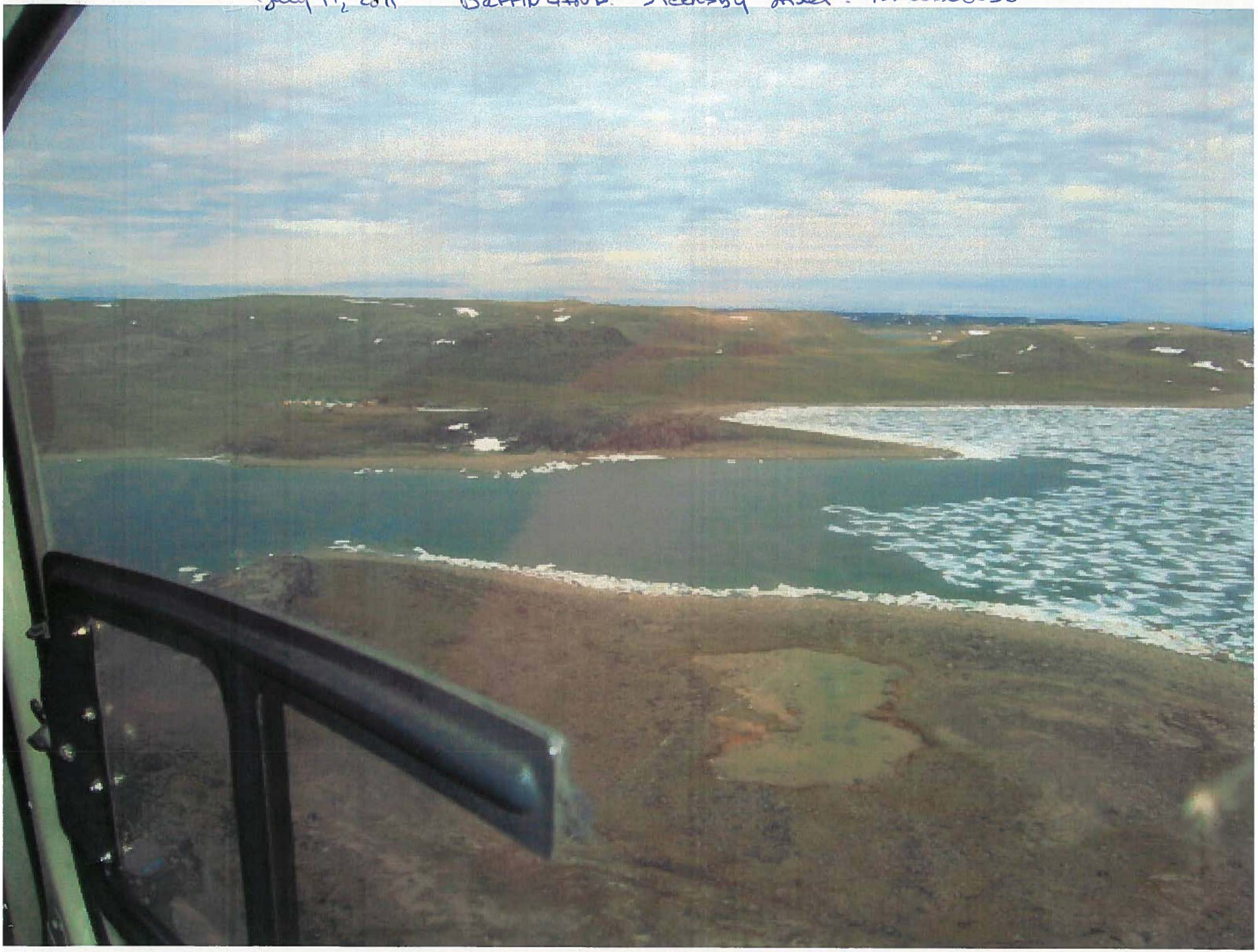
Yours sincerely

K. Robertson

Kevin L Robertson
Resource Management Officer III
Qikiqtani Region
PO Box 100
Iqaluit. Nu
X0A 0H0
Tel: (867)975-4296
Fax: (867)979-6445
Email: Kevin.robertson@inac.gc.ca

cc: Land Administrator, INAC
CIDM #490646

July 11, 2011 Baffin Land. Steensby Inlet. N20066C0036



Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Date: July 11th, 2011

ENVIRONMENTAL INSPECTION REPORT

Permittee: *(complete name and address)* BAFFINLAND Iron Mines Corporation.
Suite 1016, 120 Adelaide ST. West Toronto, Ont. M5H 1T1.

		Permit Expiry Date	Last Previous Inspection
Land Use Permit No.	N2006C0036	April 3, 2012	
Quarrying Permit No.			
Water Lic #	2BB-MRY0710		
Contractor: A.J. TAYLOR		Subcontractor:	

Location(s) Inspected: Landing Strip Lat N 74° 39' 44.6" W // Long 91° 17' 09.3" W.
Helicopter only. Steensby Inlet.

Current Stage of Operation: Renovating campsite. Had been used as staging for removal of +700 45g fuel drums. Some storage (fuel) issues

Program Modifications Approved:

Condition of Operation "A" - Acceptable "U" - Unacceptable "N/A" - Not Applicable

	Operating Condition	Aspect Inspected				
A	Location as Permitted	A				
B	Timing as Permitted	A				
	Equipment as Approved	–	will request up to date inventory.			
D	Methods & Techniques	–				
E	Facilities Sumps.	U	2 sewage sumps not adequate			
F	Erosion	–				
G	Chemicals, Waste	U	seperate chemicals/petroleum products			
H	Wildlife & Fisheries Habitat	N/A				
I	Ecological Resource	N/A				
K	Fuel Storage	U	large berms to be repaired.			
L	Brush Disposal	N/A				
M	Matters Not Inconsistent	N/A				
N	Water Engineering	N/A	more precise recording quantity.			
O	Water Supply	A	Adequate for camp			
P	Restoration					
Q	Quarrying Methods	N/A				
R	Sections 12 to 19 T.L.U.R.	N/A				
S						
T						

Surveillance Network Program

Explanatory Remarks *(attach page 2, if required)* This site is rough in comparison with other camps. Soil not loose enough for good drainage. Two sumps not high enough to prevent overspill. Fuel berms at tents require secondary containment. Page 2 attached ☒ Yes ☐ No

Representative's Signature

Inspector's Signature

RMO Initials

Representative's Title

District Mgr. Initials

Copy 1 - Inspector's File Copy 2 - Field Rep. Copy 3 - Permittee Head O. Copy 4 - District

Indian and Northern Affairs Canada | Affaires Indiennes et du Nord Canada

Date: July 11th 2011

ENVIRONMENTAL INSPECTION REPORT

Permit/License# N2006L0036. STeensby Inlet. July 11, 2011 Inspection.

Some repairs to tents required. Some areas could use grading to assist in soil reparation.

Large fuel storage berm may have been torn over the years. Before repairing the berm, will have to examine bottom layers.

The installation of a wildlife fence will help protect crew members.

This camp is in a good area + with a little work could be much improved especially when presented to Company officials + Government staff etc

* Refer to pages 1 & 2 for additional information

Representative's Signature

Inspector's Signature

RMO Initials

Representative's Title

District Mgr. Initials

March 28, 2012

Kevin L Robertson
AANDC
Resource Management Officer III
Qikiqtani Region
PO Box 100
Iqaluit. Nu XOA OHO

RE: Mary River Project, July 11, 2011, Field Inspection. Steensby Inlet Camp.
Land Use Permit No. N2006C0036

Mr. Robertson:

Thank you for your report dated November 7, 2011. This letter details our response and comments to the items that you observed and reported on during your July 11 inspection of the Steensby Inlet Camp, Mid Rail Camp, and proposed rail alignment. You were made aware of our response and action plan at the conclusion of your inspection visit to our site. Your comments/concerns and our responses are provided below:

AANDC Comment/Concern 1: The sides of the grey water sump berms must be increased in height and if possible, another in-line sump might stop potential overflow.

Baffinland Response: It is Baffinland's opinion that the grey water sump configuration was was adequate. This opinion was based on four years of operational experience at the site and the fact that a sump overflow had never been observed. That being said, the AANDC comment was taken very seriously and the sump capacity was subsequently increased to address the concern. The item was actioned within 3 days of the inspection.

AANDC Comment/Concern 2: Drum containment berm(s) looked damaged and needed to be replaced.

Baffinland Response: It was agreed that the HDPE liners for the drum containment storage areas were displayed limited wear and damage. There was already an action plan in place to repair the suspect liners. The action plan was subsequently implemented and liners were removed and replaced with a new liners which were overlain by gravel for tear protection. The granular material within the fuel berm was reused and the old liners stored for shipment off site to an approved disposal facility in Southern Canada via sealift in August.

AANDC Comment/Concern 3: Smoking incinerator was observed that was thought to be excessive.

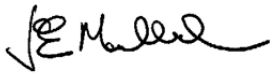
Baffinland Response: Incinerator training was augmented soon after the inspection to ensure that there were no operator competency issues.

AANDC Comment/Concern 4: Several tents exhibited fuel stands and containment configurations that were suspect.

Baffinland Response: Suspect fuel stands were repaired and improved to ensure adequate performance in the event of leaks.

We trust that the foregoing addresses all of your concerns and we thank you for your constructive observations and comments. Should you have any additional questions or concerns regarding this or any other matter, please contact Jim Millard at 902-403-1337 or by e-mail at jim.millard@baffinland.com.

Regards,



James Millard, M.Sc., P.Geo.
Senior Environmental Superintendent

Cc: Erik Madsen and Dave McCann (Baffinland),
Andrew Keim (AANDC)
Stephen Bathory (QIA),

APPENDIX E3

REQUEST FOR ERRATA - WATER LICENCE 2BB-MRY1114

(Pages E3-1 to E3-3)

December 30, 2011

Ms. Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Mr. Kevin Robertson
A/Manager of Field Operations
Water Resources Officer, AANDC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0

RE: Mary River Project, Water Licence 2BB-MRY1114
Request for Errata

Since receiving the renewed water licence in April 2011, Baffinland Iron Mines Corporation (Baffinland) has identified a problem with some wording of the licence that can be resolved easily by means of errata. The main item is the identification of some of the SNP monitoring stations. When the licence was originally issued in April, two new SNP monitoring stations were included that corresponded to locations downstream of the landfill. These new locations included MRY-11a and 11b. The pre-existing SNP locations MRY-11 and MRY-12 were then renamed MRY-12 and MRY-13. This convention as applied to the licence has the potential to cause problems for our historical SNP monitoring station database. The suggestion that we are putting forward is that the new SNP stations currently known as MRY-11a and MRY-11-b are changed to MRY-13a and MRY-13b. All other pre-existing SNP stations would remain the same as in the expired Water Licence 2BB-MRY0710.

With reference to the current Water Licence 2BB-MRY1114, the following errata are put forward for the Board's consideration:

Part D, Item 12

~~All Effluent discharged from the two Bulk Sample open pits, weathered ore stockpiles, lump ore and fine ore stockpiles at Monitoring Stations MRY-8, MRY-9, MRY-10, MRY-12 and MRY-13 shall not exceed the following Effluent quality limits:~~
Suggested change to:
All Effluent discharged from the two Bulk Sample open pits, weathered ore stockpiles, lump ore and fine ore stockpiles at Monitoring Stations MRY-8, MRY-9, MRY-10, MRY-11 and MRY-12 shall not exceed the following Effluent quality limits:

> Rationale for change: MRY-11 and MRY-12 should keep previous designation to maintain the integrity of Baffinland's database. MRY-13a and MRY-13b become new landfill monitoring stations.

Part D, Item 21

~~All Effluent discharged from the Non-Hazardous Waste Landfill at Monitoring Stations MRY-11a and MRY-11b shall not exceed the Effluent quality limits contained in Part D, Item 12.~~
Suggested change to:
All Effluent discharged from the Non-Hazardous Waste Landfill at Monitoring Stations MRY-13a and MRY-13b shall not exceed the Effluent quality limits contained in Part D, Item 12.

Baffinland Iron Mines Corporation
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Tel: +1 (416) 364-8820 ● Fax: +1 (416) 364-0193
www.baffinland.com

Rationale for change: MRY-11a and MRY-11b should be changed to MRY-13a and MRY-13b. This will maintain integrity of Baffinland's database.

Part I, Item 2.

Monitoring Program Station Number	Description	Status
~~MRY-11a~~	~~Non-Hazardous Waste Landfill Downstream, location a~~	~~Active~~
~~MRY-11b~~	~~Non-Hazardous Waste Landfill Downstream, location b~~	~~Active~~
~~MRY-12~~	~~Surface discharge from the lump ore and fine ore stockpile at the processing area~~	~~Active~~
~~MRY-13~~	~~Surface discharge from the lump ore and fine ore stockpile at the Milne Inlet~~	~~Active~~

Suggested change to:

Monitoring Program Station Number	Description	Status
MRY-11	Surface discharge from the lump ore and fine ore stockpile at the processing area	Active
MRY-12	Surface discharge from the lump ore and fine ore stockpile at Milne Inlet	Active
MRY-13a	Non-Hazardous Waste Landfill Downstream, location a	Active
MRY-13b	Non-Hazardous Waste Landfill Downstream, location b	Active

Rationale for change: As per previous rationale.

Part I, Item 3

~~The Licensee shall locate, with the assistance of the Inspector where necessary, Monitoring Station number MRY-11a and MRY-11b, located downstream of the Non-Hazardous Waste Landfill as identified in the Environmental Monitoring Plan referred to in Part I, Item 1.~~

Suggested change to:

The Licensee shall locate, with the assistance of the Inspector where necessary, Monitoring Station number MRY-13a and MRY-13b, located downstream of the Non-Hazardous Waste Landfill as identified in the Environmental Monitoring Plan referred to in Part I, Item 1.

Rationale for change: As per previous rationale.

Part I, Item 6b

~~Monitoring Program Stations MRY-8, MRY-9, MRY-10, MRY-11a and MRY-11b and MRY-12 and MRY-13, monthly and during periods of observed flow as required by Part D, Item 12 and 21.~~

Suggested change to:

Monitoring Program Stations MRY-8, MRY-9, MRY-10, MRY-11, MRY-12, MRY-13a and MRY-13b, monthly and during periods of observed flow as required by Part D, Item 12 and 21.

Rationale for change: As per previous rationale.

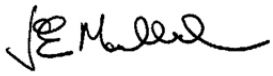
Part I, Item 7

~~The Licensee shall analyze the samples obtained at Monitoring Program Stations MRY-11a and MRY-11b for the following parameters:~~
Suggested change to:
The Licensee shall analyze the samples obtained at Monitoring Program Stations MRY-13a and MRY-13b for the following parameters:

Rationale for change: As per previous rationale.

We hope that the suggested errata will meet with your approval. Should you have any questions regarding the forgoing, please contact Jim Millard at 902-403-1337 or by e-mail at jim.millard@baffinland.com.

Regards,



James Millard, M.Sc., P.Geo.
Senior Environmental Superintendent

Cc: Kevin Robertson (AANDC), Salamonie Shoo (QIA), Erik Madsen (Baffinland)

APPENDIX E4

MARY RIVER AND MILNE INLET PETROLEUM TANK FARMS –
CODE COMPLIANCE REPORT

(Pages E4-1 to E4-159)

Baffinland Iron Corporation
Mary River, Nunavut

GENIVAR

Mary River and Milne Inlet Petroleum tank farms

Code Compliance report

CCME PN 1326 “Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products” (2003).

111-18776-00, June 2011

GENIVAR Inc.
1600 René-Lévesque West, 16th floor
Montreal, Quebec H3H 1P9
Telephone : 514-340-0046
Fax : 514-340-1337
www.genivar.com

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- Appendix B Inspection log
- Appendix C As-built drawings
- Appendix D Environment Canada Technical requirements for Bladders
- Appendix E Bulk Fuel Unloading Procedures
- Appendix F Oil Pollution Emergency Plan

2.0 *Methodology*

In order to conduct the study, a visit to the site was carried out in the presence of Jeff Bush, Site Operations Manager and Robin Cnudde, Operations Manager for SEI Industries, the Bladder manufacturer. SEI installed the handling systems, and has been working to implement a preventative maintenance program.

Following the visit, an interview was held with Mr. Dave McCann, Operations Manager, Baffinland.

3.0 *Analysis and results*

Since the two tank farms are existing facilities and have been under permit for some time, they are both analyzed under section 7 of CCME code.

Section 7 Author's notes are presented in *italic*s.

Section 7.1 Scope	
7.1.1 This part applies to an existing storage tank system	*The two installations are under permit since 2007. Thus the present document is an assessment on existing facilities.*
Section 7.2 General Requirements	
7.2.1 No person shall upgrade, or cause to be upgraded, an existing storage tank system unless approval has been obtained from authority having jurisdiction.	*The intent of the present document is to assess conformity, any recommendations made are on compliance will be part of approval process.*
7.2.2 (1) Where an existing storage tank system is upgraded to be in conformance with this Code, the owner shall provide a revised as-built drawing to the authority having jurisdiction in the manner and time frame as specified by the authority having jurisdiction.	*The present report shall be joined to the previously submitted as-built drawings.*
7.2.2(2) A revised as-built drawing shall be in conformance with Sentence 3.2.7(2) or 4.2.8(2), as applicable.	*No modifications to be made on stated items in 3.2.7(2), 4.2.8(2) not applicable.*
7.2.3	*Not applicable*

Section 7.3 Aboveground Storage Tank	
7.3.1 An existing aboveground storage tank system not in conformance with Section 3.6 shall be withdrawn from service and removed in conformance with Part 9 within two years of effective date of this code.	*Not applicable as the facilities have been under permit under the same CCME code.* *Bladder tanks are not constructed under any of the standards mentioned in Section 3.6; they are approved in Nunavut as acceptable temporary storage equipment. Documentation in appendix A.* *Overfill systems are seldom used in a remote location tank farm. Transfer operation is limited to sealift activities (once a year in Milne Inlet) and to truck load transfer in Mary River (once a day). While transferring there is constant monitoring of the operation by trained operators. This type of monitoring is intrinsic to Bladder tank usage.* Under dispenser sump is not present, it should be considered acceptable. See note7.3.3(1)d
7.3.2 (1) Where underground piping connected to an aboveground storage tank has corrosion protection in conformance with Section 4.5 at the effective date of this Code, the piping may continue in service.	*Not applicable*
7.3.3(1) Except as specified in Sentence (2), an above ground storage tank system shall be upgraded within two years of the effective date of this Code to include, as applicable:	
(a) liquid and vapour-tight connections, caps and adapters for a storage tank with a capacity of 5 000L or more;	*Conform*
(b)overfill protection in conformance with Article	*See note under 7.3.1*

3.6.2 for a storage tank with a capacity of 5,000L or more;	
(c) underground *piping* in conformance with Section 5.4;	*Not applicable*
(d) dispenser sumps in conformance w ith Article 3.6.3, where an underground piping run terminates under a dispenser ;and	*Dispenser not required as fuel is supplied through aboveground piping.*
(e)secondary containment in conformance with Section 3.9 and Sentences 7.3.4(1) and (2).	*3.9 Conform, as-built drawings showing engineered dike basin, visit showed dike done according to plans, membrane of approved type observed, no topographical survey was done to confirm volume.*
7.3.4(1) and (2)	*Not applicable*
7.3.3 (2)	*Not applicable*
7.3.4	*Not applicable*
7.3.5	*Not applicable*

4.0 Operation and maintenance

4.1 Sealift operation

The Milne Inlet tank farm is refueled once a year by sealift. From the ship berthed in Milne Inlet a floating line is deployed and connected at a shore manifold. An aboveground steel pipe marine line transfers the flow from the shore manifold to the tank farm.

The line has a length of approximately 500m, is made of 4-inch schedule 40 black steel. The line is made of 20 foot lengths joined by Victaulic mechanical joints. It is mounted and dismantled before and after sealift.

Before pumping operation the pipeline is air tested.

During sealift operation filling of the bladder is supervised by at least two persons, one from SEI Industries - manufacturer of the bladder and one from Baffinland. The ship operator usually provides 2 persons on shore. A start-up meeting is scheduled before every procedure during which safety measures, contingency and emergency plans are reviewed.

The Bladders are filled to a maximum of 2/3 its capacity, during the filling operation the height of the bladder is measured and monitored. Radio contact is continuous with the pump operator and ship personnel.

During the filling process, the marine pipeline is continuously inspected; pressure is monitored at the shore manifold and at the tank farm. Flow of fuel is acknowledged on a constant basis through an iso-Flow unit.

At the end of the sealift operation the pipeline is drained and pigged in order to push any residual liquid into the tank farm.

The marine line is then dismantled. Pans are used to collect any residual fuel.

4.2 Fuel transfer to Mary River site

Fuel from the Milne Inlet tank farm is transferred by truck to the Mary River tank farm. At the Mary River site, the decision to transfer fuel in one of the 115,000L bladders is made by assessing space availability by measuring the residual height thus evaluating residual volume. Bladders are filled to a maximum of 2/3 of their capacity.

4.3 Routine operation

Visual inspections are performed daily; a log sheet is filled in once a week. See appendix B.

Inventory is done on a regular basis, meters are read, and bladder volumes are estimated based on their measured heights. Any discrepancy (5 to 10% accuracy) between inventory calculation and meter is investigated.

At the time of the visit a preventive maintenance program was being prepared by SEI. This program will assess bladders to be preventively repaired, gaskets to be changed and preventive work to be done on the piping systems.

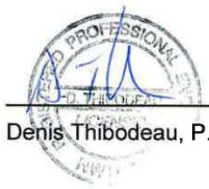
4.4 Oil/Water separator

A water treatment system is used to treat oily storm water from the dike area in Milne Inlet in order to meet the water licence discharge criteria. The treatment consists of an oil-water separator, dissolved air floatation (DAF) and skimming, nano filtration, clay media adsorption, and granular activated carbon.

At the Mary River site the discharge criteria can be met using clay granular media, filtration, and granular activated carbon.

5.0 *Conclusion*

An inspection of the Mary River and Milne Inlet fuel storage systems was undertaken in accordance with the requirements of the newly renewed water licence. Based on the site visits to the facilities, a review of the available documentation, and interviews conducted, it is our opinion that the facilities meet the requirements of the CCME code.



Denis Thibodeau, P. eng.

APPENDICES

Appendix A

Nunavut Water Board License 2007

P.O. Box 119
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Tel: (867) 360-6338
Fax: (867) 360-6369

kNK5 wmoEp5 vtmpq
NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **2BB-MRY0710**

July 27, 2007

Attention: Mr. Rod Cooper, P. Eng.,
Vice President Operations
Baffinland Iron mines corporation
Suite 1016, 120 Adelaide Street West
Toronto, ON M5H 1T1
Email: rod.cooper@baffinland.com

RE: Licence 2BB-MRY0710

Dear Mr. Cooper,

Please find attached Licence No. **2BB-MRY0710** issued to Baffinland Iron Mines Corporation (BIMC) by the Nunavut Water Board pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act.* The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee will be in contravention of the Nunavut Land Claims Agreement. However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of

the amendment, however a minimum of 30 days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received by interested persons on issues identified. Comments were received from the Government of Nunavut Department of Environment, Indian and Northern Affairs Canada and Environment Canada. The NWB notes that the Government of Nunavut and Environment Canada request the installation of an incineration device capable of meeting emission limits established under the Canada-wide Standards (CWS) for Dioxins and Furans and the CWS for Mercury Emissions. All comments are attached for your consideration.

Sincerely,

Dionne Filiatrault
A/Chief Administrative Officer

DF/df/dh

Enclosure: Licence No. 2BB-MRY0710
Comments: GN-DOE, INAC, EC

cc: Distribution List

DECISION

LICENCE AMENDMENT No. 1

Licensee:	**Baffinland Iron Mines Corporation**
License No:	**2BB-MRY010 Type "B"**
Date of License:	**February 20, 2007**
Effective Date of Amendment No.1:	**July 16, 2007**

This is the decision of the Nunavut Water Board (NWB) with respect to an application for an amendment to the water licence issued February 20, 2007 made by:

BAFFINLAND IRON MINES CORPORATION

to allow for the use of water and disposal of waste to for exploration and bulk sampling operations, all-weather road construction, camp operations, domestic waste treatment and/or disposal, fuel containment, and all associated uses at the Mary River exploration and Bulk Sampling Project. This Project is located 160 km south of the community of Pond Inlet in the Qikiqtani Region, Nunavut, with the approximate geographical coordinates:

Mary River Camp located at Latitude 71 18'30" N and Longitude 79 23'30" W;
Milne Inlet Camp located at Latitude 71 53'32" N and Longitude 80 53'41" W; and
Midway Camp located at Latitude 71 26'07" N and Longitude 80 10'37" W.

After having been satisfied that the application was in conformity with the applicable Land Use Plan and exempt from the requirement for screening by the Nunavut Impact Review Board in accordance with Schedule 12.1, Paragraph 5 of the *Nunavut Land Claim Agreement* (NLCA), the NWB decided that the application could proceed through the regulatory process. In accordance with S.55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)* and Article 13 of the *NLCA*, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *NLCA* and of the *NWNSRTA*, decided to waive the requirement to hold a public hearing and furthermore to delegate its authority to approve the application to the Chief Administrative Officer pursuant to S. 13.7.5 of the *NLCA* and S. 49(a) of the *NWNSRTA*, and determined that pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, the Nunavut Water Board hereby grants the following license amendment.

Licence Number 2BE-MRY0708 issued February 20, 2007 shall be amended to Licence Number 2BB-MRY0710 subject to the terms and conditions contained therein. (Motion #: 2007-19)

SIGNED this 16 day of July 2007 at Gjoa Haven, NU.

_____

Dionne Filiatrault
A/Chief Administrative Officer

Licence Number: 2BB-MRY0710

BACKGROUND

Baffinland Iron Mines Corporation (BIMC) submitted an application dated December 4, 2006 to the Nunavut Water Board (NWB) for amendment to water licence 2BE-MRY0708 for the Mary River Project. The original water licence was issued for exploration activities and camp operations by the NWB on June 11, 2004, renewed 2006 and again on February 20, 2007. The current water licence is due to expire on December 31, 2008.

CURRENT APPLICATION

The current application for amendment to include bulk sampling operations was received on December 4, 2006. As a matter of process the application was sent to Nunavut Planning Commission for conformity assessment and subsequently screened by the Nunavut Impact Review Board in accordance with Article 11 and 12 of the NLCA respectively, prior to full consideration by the NWB. The application was distributed for public review on May 8, 2007. Comments were received from the following interested parties: Environment Canada (EC), Indian and Northern Affairs Canada (INAC) and the Government of Nunavut, Department of Environment (GN-DOE). A final response to issues raised by the Parties was received from BIMC on June 14, 2007.

ISSUES

The following section outlines the issues raised by interested parties and provides the background on the terms and conditions imposed within the body of the licence as they relate to the amendment request received December 4, 2006.

General

The Licence number for this water licence is amended to 2BB-MRY0710 in consideration of the amendment request to include Bulk Sampling operations and the proposed time schedule of the project.

Licence Term

The Licence issued on February 20, 2007 was issued with a term of approximately two (2) years, set to expire on December 31, 2008. The application for amendment to include the Bulk Sample Project, indicated a project completion date of February 28, 2010. The NWB has taken into consideration the magnitude of the Project and has decided that extending the Licence term for an additional 14 months would benefit the overall project, timing and ability of the Licensee to incorporate data obtained during the Project into a final Abandonment and Restoration Plan if required at that time. No comments were received from interested parties on the extension of the Term of Licence.

Security

In accordance with the NWNSRTA, S. 76(1) the Board may *require an applicant, a Licensee or a prospective assignee to furnish and maintain security with the Minister in the form, of the nature, subject to such terms and conditions and in an amount prescribed by, or*

determined in accordance with, the Regulations or that is satisfactory with the Minister. The regulations allows the Board to fix the amount of security required to furnished by an applicant, in an amount not exceeding the aggregate of the cost of (a) abandonment of the undertaking (b) restoration of the site of the undertaking; and (c) any ongoing measures that may remain to be taken after the abandonment of the undertaking. As such the NWB has included terms and conditions requiring the licensee to provide a full cost assessment for abandonment and restoration of the undertaking. The assessment should completed using the most recent version of the Reclaim model (INAC) or other established industry standard.

The NWB recommends that the Licensee refer to the NWSRTA and Regulations for additional information.

Water Use

The water use under this Licence has been adjusted to reflect the volume of water required to support the Bulk Sample Project operations with respect to the camps proposed by the Licensee. Total water use for the project has been increase to 535m^3/day. On the issue of water use, regulatory consideration and application of the *Regulations* needed to be considered and is discussed below.

Waste Disposal

General

In order to insure proper function of the earthworks the Board requires that a Geotechnical Engineer inspect the site annually during the summer and provide a report with recommendation to the NWB. The report must also contain a cover letter from Licensee outlining a plan to address the Geotechnical Engineer's recommendations. This requirement is detailed under Part D, Item 20.

Sewage Treatment

The Licensee proposes to use pre-engineered package sewage treatment systems during operations for the Mary River and Milne Inlet camps. In addition, as a contingency measure, the Licensee plans to discharge to lined pond(s) prior to final discharge if there is a concern that regulated discharges may not meet licence requirements. The lined ponds are to be used as an interim storage facility during construction prior to commissioning of the sewage treatment systems. Sewage from the Midway camp will be collected and disposed of in a camp incinerator.

With respect to Sewage Management for the undertaking, BIMC has committed to provide a Waste Water Management Plan prior to discharges to the environment to address concerns raised by INAC and GN-DOE and outline the Operation and Maintenance of the Wastewater Treatment Facilities.

Landfill Facility

On June 13, 2006, Baffinland Iron Mines Corporation committed to submit to the Board a detailed for construction final design for its inert waste landfill proposed in the application. The Board agrees and requires BIMC to submit the necessary information at least sixty (60) days prior to construction.

Bulk Sample Management Plan
The NWB needs to ensure that potential impacts for ARD and ML are assessed, managed and mitigated where necessary and requires submission of a Bulk Sample Management Plan to address the concerns of GN-DOE, INAC, EC and the NIRB screening decision requirements. In addition the Management plan should address the management of all locations.

Spill Contingency Planning
The Spill Contingency Plan shall be revised to reflect the amended scope of the undertaking and shall address comments received by the Parties during the NWB review process.

The renewal licence issued on February 20, 2007 required the Licensee to assess conformity to the CCME code of practice for the storage of petroleum products. On April 13, 2007 BIMC confirmed that the Code did not apply under the scope of exploration. The Board requests that, with the construction of new bulk storage facilities at Milne Inlet and Mary River, BIMC confirm the applicability of the CCME guidance document *"Aboveground Storage Tank Systems for Petroleum and Allied Petroleum Products (2003)"*. Following construction, the licensee is requested to submit as constructed design and as-built drawings.

Site Water Management Plan
The licence issued on February 20, 2006 required, under Part B, Item 3, the submission of a Site Water Management Plan (SWMP). The NWB is currently in receipt of the Plan, received May 20, 2007. The NWB recognizes the need for the SWMP and the monitoring to take place during 2007; however, with the submission of the Bulk Sample Amendment Application, additional monitoring requirements are needed. Therefore, rather than develop a separate management plan for the Bulk Sample Program, the NWB will require the resubmission of the SWMP to incorporate the revised scope of the undertaking as presented in the application for amendment.

The Licensee is to also ensure that the concerns raised through the public review period, brought forward by the GN-DoE, Env. Can. and INAC are taken into consideration within the revised SWMP. The requirement for the revised SWMP is address within Part B, Item 7.

Environmental Monitoring
The NWB has established minimum monitoring requirements as terms and conditions of this licence. BIMC committed to provide an Environmental Monitoring Plan in their response to the concerns expressed by interested Parties. The Board accepts the commitment made by BIMC and requests that the Licensee, in preparation of the document consider the existing terms and conditions of this licence and issues expressed by the Parties in the review of this amendment request.

<u>Other</u>
Regulatory
The NWB acknowledges EC's concern that the application for amendment should have been classified as an Industrial Undertaking in accordance with Schedule II of the *Northwest*

Territories Water Regulation, Licensing Criteria. Understanding that the project is likely to proceed to full scale mine development and given that no public concerns where expressed, the NWB determined to proceed with the application as current classified as a Type "B" Mining and Milling Undertaking.

Other Applicable Legislation

The Licensee is directed to the written submissions received during the public review period for this Application for renewal, specifically to the comments received by the Government of Nunavut-Department of Environment, Environment Canada and Indian and Northern Affairs Canada.

Environment Canada reminds the Applicant that the Fisheries Act, Section 36(3) requires that all wastes discharged to water be demonstrated to be non-toxic. The Board therefore requires that Acute Toxicity testing be performed on the WWTF effluents.

In addition, the NWB recommends that the Licensee confirm with DFO, the regulatory requirements related to stream crossings and in-stream work.

The Licensee is also reminded that compliance with the terms and conditions of this Licence does not absolve the Licensee from the responsibility for compliance with the requirements of all other applicable Federal, Territorial and Municipal legislation.

LICENCE 2BB-MRY0710 (AMENDED)

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

BAFFINLAND IRON MINES CORPORATION
(Licensee)

of

SUITE 1016, 120 ADELAIDE STREET WEST
TORONTO ON M5H 1T1
(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water for a period subject to restrictions and conditions contained within this Licence:

2BB-MRY0710
Licence Number

NUNAVUT 05
Water Management Area

MARY RIVER PROJECT, QIKIQTANI REGION, NUNAVUT
Location

WATER USE AND WASTE DISPOSAL
Purpose

MINING AND MILLING – TYPE "B"
Classification of Undertaking

535 CUBIC METRES PER DAY
Quantity of Water Not to Exceed

FEBRUARY 20, 2007, as Amended July 16, 2007
Date of Licence

FEBRUARY 28, 2010
Expiry Date of Licence

Dated this 16 day of July 2007 at Gjoa Haven, NU.

Dionne Filiatrault
A/Chief Administrative Officer

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of water and the disposal of waste for an undertaking classified as Mining and Milling as per Schedule II of the Regulations. This Licence allows for exploration and bulk sampling operations, all-weather road construction, camp operations, domestic waste treatment and/or disposal, fuel containment, and all associated uses at the Mary River Exploration and Bulk Sampling Project located in the Qikiqtani Region, Nunavut.

i. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Nunavut Waters and Nunavut Surface Rights Tribunal Act, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and;

ii. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

"Act" means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act;*

"Amendment" means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

''Appurtenant Undertaking'' means an undertaking in relation to which a use of water or a deposit of waste is permitted by a licence issued by the Board;

"Board" means the Nunavut Water Board established under the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act;*

"Bulk Sample Project" means the activities, in addition to those of the Licence renewal, as described in the application for amendment received December 4, 2006.

"Engineer" means a professional engineer registered to practice in Nunavut in accordance with the Engineering, Geological and Geophysical Act (Nunavut) S.N.W.T. 1998, c.38, s.5;

"Greywater" means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

"Infrastructure" means all construction necessary for mining, such as watercourse crossings, piping, sewage and water systems, reservoirs, and roads;

"Inspector" means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

"Licensee" means the holder of this Licence;

"**Minewater**" means groundwater or any water used in mining, which is pumped or flows out of any underground workings or open pit;

"Modification" means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

"Nunavut Land Claims Agreement" (NLCA) means the "*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*", including its preamble and schedules, and any amendments to that agreement made pursuant to it;

"Polishing/Waste Stabilization Ponds" (PWSP) means the containment ponds designed as interim and/or contingency containment of sewage at the Mary River and Milne Inlet Camps;

"Regulations" means the *Northwest Territories Water Regulations sor/93-303 8th June, 1993,* omitting Section 5, Water Use or Waste Deposit Without a Licence;

"Sewage" means all toilet wastes and greywater;

"Spill Contingency Plan" means a Plan developed to deal with unforeseen petroleum and chemical events that may occur during the operations conducted under the Licence;

"Sump" means an excavation in impermeable soil for the purpose of catching or storing water or waste;

"**Toilet Wastes**" means all human excreta and associated products, but does not include greywater;

"Waste" means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means.

"Waste Water Treatment Facilities" (WWTF) means the treatment facilities and/or associated contingency infrastructure used for the treatment of sewage at the Mary River Camp(s) and the Milne Inlet Camp.

3. Enforcement

i. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;

ii. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and

iii. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. The water use fee of $30, payable to the Receiver General for Canada, shall be sent to the Board annually in advance of any use in accordance with Section 9 of the *Regulations.*

2. The Licensee shall submit to the Board for approval within ninety (90) days of the effective date of the amended licence, an assessment of current restoration liability using the most recent version of RECLAIM or other equivalent method as approved by the Board.

3. The Licensee shall furnish and maintain security with the Minister as required by the Board in a form and amount acceptable to the Minister.

4. The security deposit shall be maintained until such time as the Minister is satisfied that the Licensee has complied with all provisions of the approved Abandonment

and Restoration Plan. This clause shall survive the expiry of this Licence or renewals thereof.

5. The Licensee shall file an Annual Report on the appurtenant undertaking with the Board no later than March 31st of the year following the calendar year being reported which shall contain the following information:

   i. the monthly and annual quantities in cubic metres of all freshwater obtained from Camp Lake at Monitoring Station MRY-1, Phillips Creek at Monitoring Station MRY-2 and km99 Lake at Monitoring Station MRY-3;

   ii. the monthly and annual quantities in cubic metres of all freshwater obtained for the purposes of drilling and other associated uses;

   iii. the monthly and annual quantities in cubic meters of treated Sewage effluent discharged at Monitoring Station MRY-4, Mary River Camp WWTF and at Monitoring Station MRY-5, Milne Inlet Camp WWTF along with any waters discharged from the respective PWSP's;

   iv. the monthly and annual quantities in cubic metres of Sludge removed from the Waste Water Treatment Facilities at Mary River Camp and Milne Inlet Camp and details on the storage and/or disposal;

   v. A summary, including photographic records before, during and after construction activities; any modifications and/or major maintenance work carried out on the Water Supply and the Wastewater Treatment Facilities, including all associated structures, and an outline of any work anticipated for the next year;

   vi. The geochemical analysis of drill cores as per Part F, Item 3;

   vii. Detailed discussion on the performance, installation, and evaluation, including the use of photographic record, of the primary and secondary containment functions used in fuel storage to safeguard impacts to freshwaters;

   viii. A list of unauthorized discharges and a summary of follow-up actions taken;

   ix. A brief description of follow-up action taken to address concerns presented within inspection and compliance reports prepared by the Inspector;

   x. Updates in the form of an addendum or revisions to the Abandonment and Restoration Plan, Emergency Spill Response Plan, Waste Rock and Ore Storage Plan, QA/QC, Landfill Operations and Maintenance Plan, and Landfarm Plan

xi. A description of all progressive and or final reclamation work undertaken, including drill sites, presented with photographic records of site conditions before, during and after completion of operations;

xii. An updated estimate of the current restoration liability required under Part B, Item 2, based upon the results of restoration research, project development monitoring, and any changes or modifications to the Project;

xiii. Tabular summaries of all data generated under the Monitoring Program, Part I;

xiv. A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;

xv. A summary of any specific studies or reports requested by the Board, and a brief description of any future studies planned or proposed; and

xvi. Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

6. The Licensee shall submit to the Board a Site Water Management Plan, within ninety (90) days following the issuance of the licence, for Board approval, that includes but is not limited to the following:

i. A description of the quantity and direction of surface water flow from the road, over the surrounding landscape, and the overall site, along with topographic maps that effectively delineate the movement of waters on site;

ii. A detailed description of the location and capacity of water retention areas that would allow for the management of surface water runoff from the road and other Infrastructure;

iii. A detailed description of the sampling locations along the access road and the overall site where the water procured would provide the most representative analytical results, as determined by an appropriately qualified Engineer through a clear disclaimer outlining any limitations to judgment made by the Engineer, of surface water quality draining from the road surface and any other Infrastructure; and

iv. Any further information that a qualified Engineer believes to be pertinent to describe the movement and quality of surface water draining from the access road and any other Infrastructure.

7. The Licensee shall submit to the Board for approval, within ninety (90) days of the effective date this license, a revised Site Water Management Plan referred to in Part B, Item 6 to reflect changes in operation and infrastructure as a result of the amendment application for the Bulk Sampling Project. The revised Plan shall consider water management associated with all infrastructure components of the undertaking, including , but not be limited to:

   i. Bulk Sample Open Pit operations;

   ii. Weathered ore/waste storage piles;

   iii. Temporary ore storage at Mary River and Milne Inlet;

   iv. Bulk fuel storage areas;

   v. Ore processing area;

   vi. Access roads;

   vii. All weather road; and

   viii. Associated construction material quarry operations.

8. If the Board does not approve the Plan referred to in Part B, Item 7, the Licensee shall revise the Plan and resubmit to the Board for approval within two (2) months of receiving notification of the Board's decision

9. The Licensee shall implement the Plans specified in this Part as and when approved by the Board.

10. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.

11. The Licensee shall install and maintain flow meters or other such devices, or implement suitable methods required for the measuring of water and waste volumes, to be operated and maintained to the satisfaction of an Inspector.

12. The Licensee shall post signs in the appropriate areas to identify the location of Monitoring Stations designated under Part I. All signs shall be located and maintained to the satisfaction of an Inspector

13. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:

   (i) Manager of Licensing:

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369

(ii) Inspector Contact:

Water Resources Officer, INAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

14. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.

15. The Licensee is responsible to ensure that any documents or correspondence submitted by the Licensee to the Board have been received and acknowledged by the Manager of Licensing.

16. This Licence is not assignable except as provided in Section 44 of the *Act*.

17. The expiry or cancellation of this Licence does not relieve the holder from any obligations imposed by the Licence as per Section 46 of the Act.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all water for domestic purposes from Camp Lake at Monitoring Station MRY-1, Philips Creek at Monitoring Station MRY-2 and Km 99 Lake at Monitoring Station MRY-3. Total water use for domestic purposes shall not exceed sixty (60) cubic metres per day. Water for the purposes of drilling and other associated uses, shall be obtained from sources adjacent to drill targets or as otherwise approved by the Board and is not to exceed four hundred and fifty five (455) cubic metres per day.

2. The Licensee shall maintain the Water Supply Facilities to the satisfaction of the Inspector.

3. Streams cannot be used as a water source unless authorized and approved by the Board.

4. If the Licensee requires water in sufficient volume that the source water body may be drawn down the Licensee shall, at least 30 days prior to commencement of use

of water, submit to the Board for approval the following: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures.

5. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.

6. The Licensee shall not remove any material from below the ordinary high water mark of any water body unless authorized.

7. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.

8. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty (30) metres from the ordinary high water mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise authorized by the Board.

2. Unless otherwise approved by the Board, the Licensee shall not practice open burning or on-site land filling of domestic waste.

3. The Licensee is authorized to dispose of all acceptable food waste, paper waste and untreated wood products in an incinerator.

4. The Licensee shall submit to the Board and the Inspector, thirty (30) days prior to the removal and transfer of waste, a declaration of authorization from the Hamlet of Pond Inlet, which clearly indicates the authorization to allow the deposit of solid waste by the Licensee, in the Hamlet's NWB licensed solid waste facility.

5. The Licensee shall backhaul and dispose of all hazardous wastes generated through the course of the operation in an approved waste disposal site.

6. The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste. These records shall be made available to an Inspector upon request.

7. The Licensee shall notify an Inspector at least ten (10) days prior to any discharge from the facilities in this Part.

8. All Minewater and surface drainage from the weathered ore stockpiles shall be directed to a discharge location that will allow monitoring.

9. All discharge from the two Bulk Sample open pits at Monitoring Stations MRY-5 and MRY-6 shall not exceed the following limits:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Arsenic	0.5	1.00
Total Copper	0.30	0.60
Total Lead	0.20	0.40
Total Nickel	0.50	1.00
Total Zinc	0.50	1.00
Total Suspended Solids	15.0	50.0
Oil and Grease	no visible sheen	
The Waste discharged shall have a pH of between 6.0 and 9.5		

10. All Sewage discharged from the Waste Water Treatment Facility, at Monitoring Station MRY 4 and MRY-4a shall not exceed the following quality standards:

Parameter	Maximum Average Concentration
BOD_5	30 mg/L
Total Suspended Solids	35 mg/L
Faecal Coliform	1,000 CFU/100 mL
Oil and Grease	no visible sheen
pH	between 6.0 and 9.5

11. All Sewage discharged from the Waste Water Treatment Facility, at Monitoring Station MRY 5 and MRY-5a shall not exceed the following quality standards:

Parameter	Maximum Average Concentration
BOD_5	100 mg/L
Total Suspended Solids	120 mg/L
Faecal Coliform	10,000 CFU/100 mL
Oil and Grease	no visible sheen
pH	between 6.0 and 9.5

12. The licensee shall ensure that effluent discharged from monitoring station MRY-4 and MRY-4a, and MRY-5 and MRY-5a, are demonstrated to be non-acutely toxic through testing in accordance with Part I, Item 5.

13. The Licensee shall submit to the Board for approval, within thirty(30) days following the commissioning of the Waste Water Treatment Facilities, a Waste Water Management Plan which includes provision for Operation and Maintenance in accordance with the "*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories, 1996*". The plan shall include options for treatment and disposal of sludge.

14. All PWSP discharges shall be released in such a manner to minimize surface erosion.

15. The Licensee shall ensure that PWSP's are designed and bermed in such a way to ensure there is no seepage. A report on seepage shall be included as part of the Annual Report required under Part B, Item 5.

16. An inspection of the earthworks, geological regime, and the hydrological regime of the Project is to be carried out during the summer of 2008, by a Geotechnical Engineer. The Geotechnical Engineer's report shall be submitted to the Board within sixty (60) days of the inspection, with a covering letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations.

17. All effluent being discharged from the Bulk Fuel Storage Facilities at Monitoring Stations MRY – 6 and MRY – 7, shall meet the following effluent quality standards:

Parameter	Maximum Average Concentration (ug/L)
Benzene	370
Toluene	2
Ethylbenzene	90
Lead	1
Oil & Grease	15,000 and no visible sheen

18. The Licensee shall maintain all constructed facilities, including the fresh water intakes, Waste Water Treatment Facilities, Bulk Fuel Storage Facilities and the Polishing/Waste Stabilization Ponds (PWSP) to the satisfaction of an Inspector.

19. The Licensee shall submit to the Board for approval, at least ninety (90) days prior to construction of a proposed landfill, a final engineered design report, stamped by a professional Engineer registered in Nunavut. The report shall include, but not be

limited to, an Operation and Maintenance Plan for the proposed facility, prepared in accordance with the "*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories, 1996*".

20. The Licensee shall submit to the Board for approval, within ninety (90) days of the issuance of the amendment, a Bulk Sampling Management Plan which addresses Acid Rock Drainage and Metal Leaching potential through the verification of Kinetic testing, Waste Rock Storage and Ore Storage management.

21. The Licensee may incinerate all food waste, paper waste and wood products in an incinerator capable of meeting the emission limits established under the Canada-wide Standards for Dioxins and Furans the Canada-wide Standards for Mercury Emissions. In such case, the Licensee shall insure that the waste is burned in a device that promotes efficient combustion and reduction of emissions, and shall as much as possible reduce the amount of waste to be incinerated. The use of appropriate waste incineration technology shall be combined with a comprehensive waste management strategy, especially waste segregation, that is designed to reduce and control the volumes of wastes produced, transported, and disposed of.

22. The Licensee shall backhaul and dispose of all hazardous wastes, waste oil and non-combustible waste generated through the course of the operation in an approved waste disposal site.

23. The Licensee shall contain all greywater, not directed to the WWTF, in a sump located at a distance of at least thirty (30) metres above the ordinary high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created, unless otherwise approved by the Board.

24. The Licensee shall dispose of all Sewage to the Waste Water Treatment Facilities or as otherwise approved by the Board.

25. The Licensee shall contain all other toilet wastes with disposal by incineration, Latrines for this use shall be located at a distance of at least thirty (30) metres above the ordinary high water mark of any water body.

26. If the Board does not approve the Plan(s) referred to in this Part, the Licensee shall revise this Plan(s) and resubmit it to the Board for approval within two (2) months of receiving notification of the Board's decision.

27. The Licensee shall implement the Plan(s) specified in this Part as and when approved by the Board.

PART E: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURES AND OPERATIONS

1. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes including immediate banks except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage.

2. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.

3. Winter lake and stream crossings, including ice bridges, shall be constructed entirely of water, ice or snow. The Licensee should minimize disturbance by locating ice bridges at an area that requires the minimum approach grading and the shortest crossing route. Stream crossings shall be removed or the ice notched prior to spring break-up.

4. With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed a distance of at least thirty (30) metres from the ordinary high water mark in such a fashion that they do not enter the water. The Licensee shall ensure that any chemicals, fuel or wastes associated with the undertaking do not enter any water body.

5. The Licensee shall not cut any stream bank or remove any material from below the ordinary high water mark of any water body.

6. The Licensee shall not do anything that will cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.

7. Sediment and erosion control measures shall be implemented prior to and maintained during construction and operation to prevent entry of sediment into water.

8. The Licensee shall undertake appropriate corrective measures to mitigate impacts on surface drainage resulting from the Licensee's operations.

9. The Licensee shall limit any in-stream activity to low water periods. In-stream activity is prohibited during fish migration.

10. The Licensee shall locate stream crossings to minimize approach grades. Approaches shall be stabilized during construction and upon completion of the project, to control runoff, erosion and subsequent siltation to any water body.

11. Machinery is not permitted to travel up the stream bed and fording of any water body is to be kept to a minimum and limited to one area and a one-time event.

Equipment used should be well cleaned and free of oil and grease and maintained free of fluid leaks.

12. The Licensee shall ensure that pollutants from machinery fording the crossings do not enter water.

13. The Licensee shall ensure that all fill material used during construction is from an approved source and shall be free of contaminants.

14. To minimize impacts on surface drainage, the Licensee shall prepare all sites in such manner as to prevent rutting of the ground surface.

15. Equipment storage holding areas should be located on gravel, sand or other durable land, a distance of at least thirty (30) metres above the ordinary high water mark of any water body in order to minimize impacts on surface drainage and water quality.

16. The Licensee shall designate an area for the deposition of excavated and stockpiled materials that is at least thirty (30) metres above the ordinary high water mark of any water body.

17. The Licensee shall not utilize any equipment or vehicles in the course of this undertaking unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall cease if rutting occurs.

PART F: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee shall not conduct any land based drilling within thirty (30) metres of the ordinary high water mark of any water body, unless otherwise approved by the Board.

2. The Licensee shall delineate through an appropriately scaled site map, include approximate GPS coordinates, and any mitigation measures in place to protect waters if filing a request to the Board to drill within thirty (30) metres of the ordinary high water mark of any water body.

3. The Licensee shall analyze the geochemical constituents of drill cores as follows:

    i. That reflects actuality and is truly representative of the drilling program for all constituents that may impact waters as determined, and clearly qualified, by a Geochemist registered in Nunavut;

    ii. All assumptions, and any limitation to each assumption, in determining a representative sampling population reflecting actuality and the geochemical testing methods employed;

iii. Includes all raw data and an accompanying summary table of the geochemical analysis;

iv. Define clear conclusions on the results of the geochemical analysis; and

v. Present the geochemical analysis in the Annual Report as required by Part B, Item 2.

4. The Licensee shall ensure that all drill waste, including water, chips, muds and salts ($CaCl_2$) in any quantity or concentration, from land-based drilling, shall be disposed of in a properly constructed sump or an appropriate natural depression located at a distance of at least thirty (30) metres from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created.

5. On-ice drilling has not been authorized within this Licence.

6. If artesian flow is encountered, drill holes shall be immediately sealed and permanently capped to prevent induced contamination of groundwater or salinization of surface waters. All artesian flows, including location (GPS), should be reported in the annual report to the NWB.

7. If the bottom of the permanently frozen ground, or permafrost, is broken through by the drill, the depth of the bottom of permafrost and location should be reported in the annual report to the Board for data management purposes.

PART G: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Licensee shall submit within ninety (90) days of issuance of the Licence, a revised Spill Contingency Plan that is specific to the scope of this Licence and prepared in accordance with the *Spill Contingency Planning and Reporting Regulations* developed under Section 34 of the *Environmental Protection Act*. The Licensee shall update the Plan by referring to, but not be limited by, the comments received by interested parties during the review of the application and include updated emergency contact information and updated material safety data sheets to be included as an Appendix.

2. If the Board does not approve the Plan referred to in this Part, the Licensee shall revise this Plan and resubmit it to the Board for approval within two (2) months of receiving notification of the Board's decision.

3. The Licensee shall implement the Plan specified in this Part as and when approved by the Board

4. The Licensee shall annually review the Plan referred to in this Part and if needed, modify it to reflect changes in operation and/or technology. The Plan and/or any revisions shall be submitted with the Annual Report.

5. The Licensee shall provide a report, to be approved by the Board, within ninety (90) days of issuance of the licence, appropriately qualified by an Engineer registered in Nunavut, which clearly details that the requirements of the CCME guidance document "*Aboveground Storage Tank Systems for Petroleum and Allied Petroleum Products (2003)*" have been met by the Licensee.

6. The Licensee shall ensure that any chemicals, petroleum products or wastes associated with the project do not enter water. All sumps and fuel caches shall be located at a distance of at least thirty (30) metres from the ordinary high water mark of any adjacent water body and inspected on a regular basis.

7. The Licensee shall ensure that any equipment maintenance and servicing be conducted only in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other waste and contain potential spills.

8. If during the term of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:

   i. Employ the Spill Contingency Plan;

   ii. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and

   iii. For each spill occurrence, submit to the Inspector, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.

PART H: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall implement the "*Bulk Sample Program Abandonment and Restoration Plan"* dated June 2007, as and when approved by the Board.

2. If the Plan referred to in Part H, Item 1 is not approved, the Licensee shall make the necessary revisions and resubmit the Plan(s) within thirty (30) days following notification from the Board.

3. The Licensee shall review the Plan(s) referred to in this Part as required by changes in operation and/or technology and modify the Plan(s) accordingly. Revisions to the Plan(s) are to be submitted in the form of an Addendum to be included within the Annual Report unless directed otherwise by an Inspector.

4. The Licensee shall complete all restoration work prior to the expiry of this Licence.

5. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.

6. When possible to do so, the Licensee shall backfill and restore, to the satisfaction of an Inspector, all sumps to the pre-existing natural contours of the land.

7. The Licensee shall remove from the site Infrastructures and site material, including but not limited to, all fuel caches, drums, barrels, buildings and contents, docks, water pumps and lines, all bulky wastes, material and equipment before the expiry of this License.

8. All roads and airstrip, if any, shall be re-graded to match natural contour to reduce erosion.

9. All culverts shall be removed and the drainage opened up to match the natural channel. Measures shall be implemented to minimize erosion and sedimentation.

10. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.

11. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to the satisfaction of an Inspector. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon approval by an Inspector.

12. Drill holes and disturbed areas will be restored to natural conditions immediately upon completion of the drilling. The reclamation of drill holes must include the removal of any drill casing materials and the capping of holes with a permanent seal.

13. The Licensee may store drill core produced by the appurtenant undertaking in an appropriate manner and location at least thirty (30) metres above the ordinary high water mark of any adjacent water body, where any direct flow into a water body is not possible and no additional impacts are created, or as directed by an Inspector.

14. All disturbed areas shall be contoured and stabilized upon completion of work and restored to a pre-disturbed state.

PART I: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall submit to the Board for approval within (90) days of issuance of the licence an Environmental Monitoring Plan which addresses but is not limited to the following:

   i. Establishment of alternative treatment and disposal or discharge parameters for effluent discharged from the Bulk Fuel Storage Facilities(s);

   ii. Monitoring requirements that may be required under the Bulk Sampling Management Plan; and

   iii. Address recommendations of interested parties.

2. The Licensee shall, at a minimum, maintain Monitoring Stations at the following locations:

Monitoring Program Station Number	**Description**	**Status**
MRY – 1	Water supply for the Mary River Camp at Camp Lake	Active-Volume
MRY – 2	Summer water supply for the Milne Inlet Camp at Phillips Creek	Active-Volume
MRY – 3	Winter water supply for the Milne Inlet Camp at the Km 99 lake	Active-Volume
MRY – 4	Mary River Camp sewage discharge at the WWTF	Active
MRY – 4a	Mary River Camp sewage discharge from the PWSP	
MRY – 5	Milne Inlet Camp sewage discharge at the WWTF	Active
MRY – 5a	Milne Inlet Camp sewage discharge from the PWSP	
MRY – 6	Water collected within the Bulk Fuel Storage Facility at Mary River prior to release	
MRY – 7	Water collected within the Bulk Fuel Storage Facility at Milne Inlet prior to release	
MRY – 8	Minewater and surface drainage either pumped or released from the Hematite Open Pit	Active
MRY – 9	Minewater and surface drainage either pumped or released from the Magnetite Open Pit	Active
MRY – 10	Surface discharge from the weathered ore stockpile	
MRY – 12	Surface discharge from the lump ore and fine ore stockpiles at the processing area	
MRY – 13	Surface discharge from the lump ore and fine ore stockpiles at Milne Inlet	

3. The Licensee shall sample at Monitoring Program Stations MRY 4, and MRY 5 every four (4) weeks during discharge and at Monitoring Stations MRY-4a and MRY-5a once prior to discharge and every four (4) weeks thereafter. Samples shall be analyzed for the following parameters:

    Biochemical Oxygen Demand - BOD
    Total Suspended Solids
    pH
    Faecal Coliforms
    Oil and Grease (visual)

4. The Licensee shall conduct toxicity testing on treated sewage effluent at the final discharge points at the Monitoring Station(s) MRY-4 and/or MRY – 4a; and MRY 5 and/or MRY – 5a, once annually during open water season in accordance with the following test procedures:

    i. Acute lethality to Rainbow Trout, Oncorhynchus mykiss (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/13); and

    ii. Acute lethality to Daphnia magna (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14).

5. The Licensee shall sample at Monitoring Program Stations MRY -6 and MRY - 7 monthly during removal of water from the facilities as required by Part D, Item 20.

6. The Monitoring Program and compliance dates specified in the Licence may be modified at the discretion of the Chief Administrative Officer.

7. The Licensee shall measure and record, in cubic metres, the daily quantities of water utilized for camp, drilling and other purposes.

8. An Inspector may impose additional monitoring requirements.

9. The Licensee shall submit a Quality Assurance/Quality Control Plan, prepared in accordance with the INAC document "Quality Assurance (QA) and Quality Control (QC) Guidelines for use by Class "B" Licensees in Collecting Representative Water Samples in the Field, 1996" to an Analyst for approval within ninety (90) days of the issuance of the licence (amendment). The plan shall include analysis of field blanks and certified reference material, and replicate sampling in order to assess accuracy, precision and field contamination.

10. If the Board does not approve the Plan referred to in this Part, the Licensee shall revise this Plan and resubmit it to the Board for approval within two (2) months of receiving notification of the Board's decision.

11. The Licensee shall implement the Plan specified in this Part as and when approved by the Board.

12. The Licensee shall annually review the approved Quality Assurance/Quality Control plan and modify it as necessary. Proposed modifications shall be submitted to an Analyst for approval.

13. The approved Quality Assurance/Quality Control Plan shall be submitted to the Board for review and implemented as approved by an Analyst.

14. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board.

15. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.

16. The Licensee shall measure and record the following:

    i. the quantities, in cubic metres, of domestic waste, sewage, and hazardous waste hauled off-site for disposal;

    ii. the location and name of the disposal facility for each waste type noted above; and

    iii. the date that each was hauled off-site for disposal, for each occasion that these are removed from the site.

17. The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of water are utilized for all purposes. The Licensee shall report these co-ordinates to the Inspector prior to utilizing waters.

18. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations of temporary and permanent storage areas where wastes associated with camp, drilling and Infrastructure operations are deposited. The Licensee shall report these co-ordinates to the Inspector prior to depositing wastes.

19. A Monitoring Program summary report shall be submitted to the Board for review within thirty (30) days following the month being reported. This summary shall include, at a minimum, all the monitoring requirement under this Part.

20. The Licensee shall include in the Annual Report required under Part B, Item 5 all data and information required under this Part.

PART J: CONDITIONS APPLYING TO CONSTRUCTION AND MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this License and the following requirements are met:

    i. The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;

    ii. Such Modifications do not place the Licensee in contravention of the License or the *Act*;

    iii. The Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and

    iv. The Board has not rejected the proposed Modifications.

2. Modifications for which all of the conditions referred to in Part F, Item 1 have not been met can be carried out only with written approval from the Board.

3. The Licensee shall provide as-built plans and drawings of any construction and Modifications referred to in this License within ninety (90) days of completion of the construction or Modification. These plans and drawings shall be signed and sealed by an Engineer.

4. The Licensee shall provide as-built plans and drawings, stamped and sealed by a professional Engineer registered in Nunavut, within ninety (90) days of completion of all construction works, including but not limited to the following:

    i. Road alignment and all stream crossing installations;

    ii. Waste Water Treatment Facilities;

    iii. Bulk Storage of fuel Facilities; and

    iv. Landfill.

Appendix B

Inspection log

Baffinland

Date: _____

Mary River Fuel Farm Daily Inspection Log

Bladder Level (1/4, 1/2, F)	Leaking Valve Train (X = Leak)	Bladder Level (1/4, 1/2, F)	Leaking Valve Train (X = Leak)	Comments
11				
9		10		
7		8		
5		6		
3		4		
1		2		
Jet A-1		Jet A -2		

Other Conditions, Observations or spills:

Inspect fuel farm main line to Filling Station for leaks: _____

	P50	P50 Bulk Meter Reading: _____
	P50	P50 Light Vehicle Meter Reading: _____
	Jet A	Jet A Meter Reading: _____

Note: During the Winter when the farm is filled with snow, inspection of main line & valve assemplies may not possible. Compare bladder daily recorded bladder volumes to determine if a leak exists. **Do not use shovels or other instruments inside the fuel farm - This creates an unacceptably high risk of causing a leak.**

Milne Inlet Fuel Farm

Oily Water Project - Operating Bladder Inventory

as of September 19, 2010

North

Jet 1	Jet 4	Jet 9	Jet 5
E + J	E + J	J	J
Jet 2	Jet 3	Jet 10	Jet 6
E + J	J	J	J
56	39	Jet 11	Jet 7
B 09/04	E + F	J	J
57	40	Jet 12	Jet 8
E + B	E + B	J	J
58	41	24	5
E + B	B 09/19 1/2	B 09/12	B 09/10
59	42	25	6
E + B	E + F	F	B 09/07
60	43	26	7
E + F	E + F	F	F
61	44	27	8
F	F	F	F
62	45	28	9
F	F	E + F	B 09/04
63	46	29	10
F	E + F	E + F	E + F
64	47	30	11
F	E + F	E + F	E + F
65	48	31	12
F	E + F	E + F	E + F
66	49	32	13
F	E + F	E + F	E + F
67	50	33	14
R 8/14	R 8/14	E + F	E + F
68	51	34	15
BL	R 8/14	F	F
69	52	35	16
E + F	R 8/14	F	E + F
70	53	36	17
BL	E + Hole	BL	R 8/14
71	54	37	18
R 8/14	R 8/14	R 8/14	R 8/14
72	55	38	19
E + F	E + F	MR	R 8/14

West

East

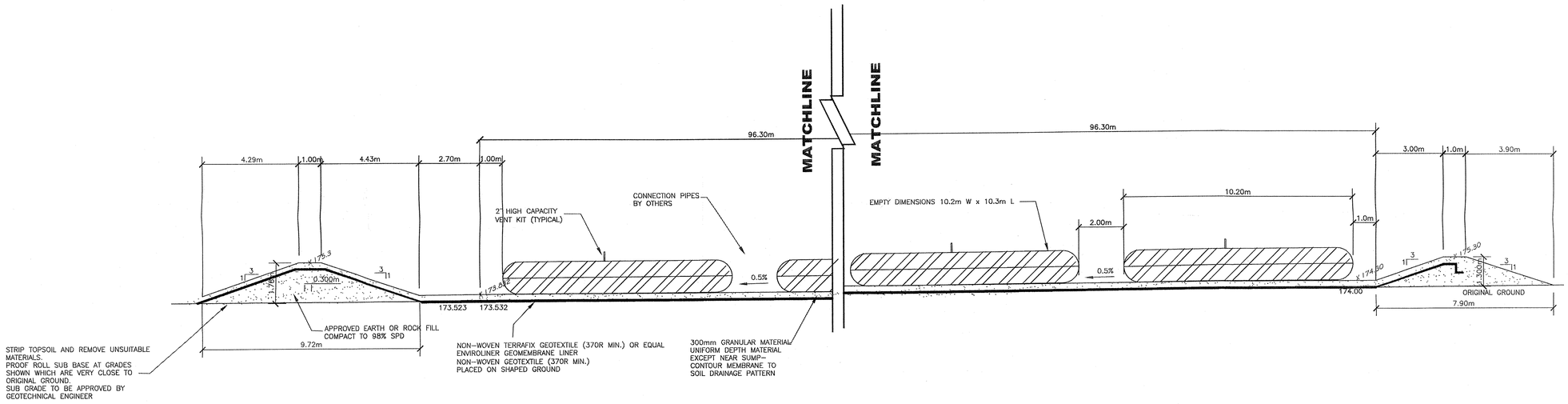
South

E + ?	Empty + Previous Use	R	Water Residual 2010	MR	Mary River Drums
J	Jet-A Fuel	B	Berm Water 2010		
F	Diesel Fuel	BL	Blob Water 2010		

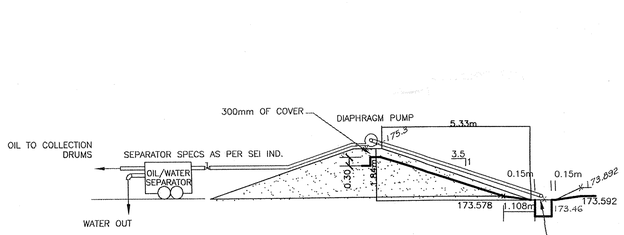
Appendix C

As-built drawings

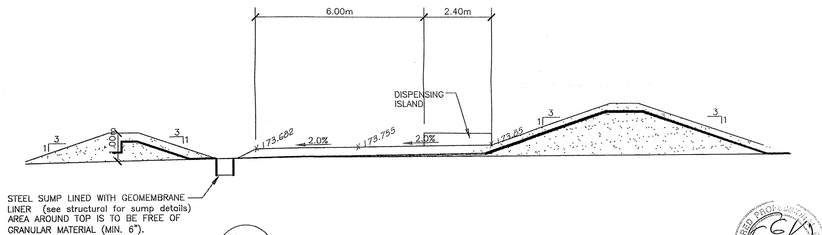
SITE BENCH MARK



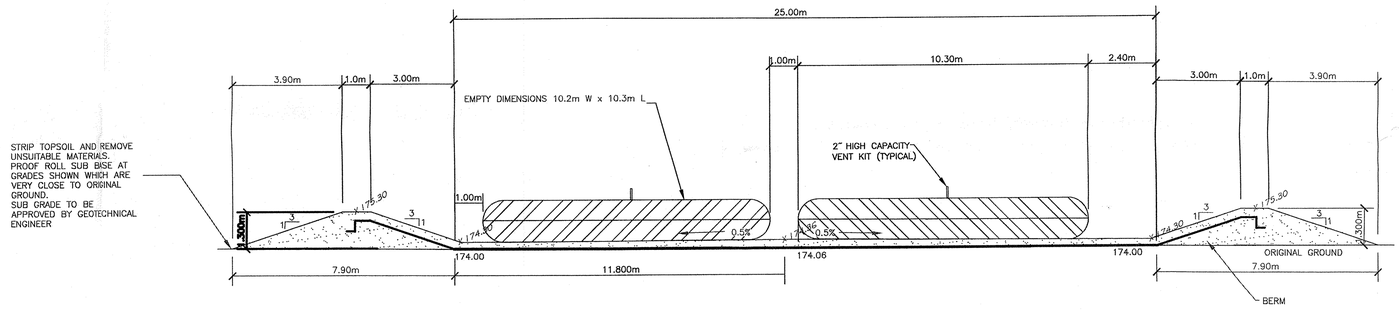
A C105 **CROSS-SECTION**
SCALE 1 TO 100



C C105 **SUMP DETAIL**



D C105 **FUEL LOADING AREA DETAIL**



B C105 **CROSS-SECTION**
SCALE 1 TO 100

SCALE
5.0m 0 5.0m

This Drawing is an instrument of service and shall remain the property of B.H. Martin Consultants Ltd. It may not be reproduced or copied in any form. It shall not be used for the construction, enlargement or alteration of a building other than the said project without the authorization of the ARCHITECT and/or ENGINEER.

Contractors shall verify and be responsible for all dimensions and conditions on the job and report any discrepancies to the Architect and/ or Engineer before proceeding with the work.

Drawings shall not be scaled.

THE POSITION OF POLE LINES , CONDUITS, WATERMAINS, SEWERS, AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THIS DRAWING AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

Description	Date	No.
ISSUED FOR CONSTRUCTION	July 03,2007	1
ISSUED FOR TENDER/REVIEW	Mar. 25,2007	0

Revisions and Issues

APR 17 2009

NORTH Date Printed

B.H. MARTIN CONSULTANTS LTD.
Consulting Engineers and Architect
Timmins Ontario
www.bhmartin.com

ARCHITECT STRUCTURAL/CIVIL

MECHANICAL ELECTRICAL

Project
MARY RIVER PROJECT
BAFFINLAND IRON MINES CORPORATION
BAFFIN ISLAND, NUNAVUT

Drawing
MARY RIVER BULK FUEL STORAGE FACILITY SECTION AND DETAILS

Date	CADD File Number
MARCH 2009	REPORT/FIG3_FARM
Scale 1:100	Job Number 09-058
Drawn SO/CM	
Checked MK	Drawing Number FIGURE 4
Approved	

Baffinland
Iron Mines Corporation

FILE COPY

March 16, 2009

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Email: licensing@nunavutwaterboard.org

Re: Submission of Bulk Fuel Storage Facility As-Built, Mary River Camp
Type B Water License #2BB-MRY0710, Part J, Item 4
Mary River Project

Dear Ms. Beaulieu,

Baffinland Iron Mines Corporation (BIM) is pleased to submit, herewith, the required as-built documentation for the Mary River Bulk Fuel Storage Facility, which is a requirement of the above referenced water licence.

Please contact me should you have any questions concerning this submission at 902-495-0490 or by e-mail at jim.millard@baffinland.com.

Yours sincerely,
Baffinland Iron Mines Corporation

ORIGINAL COPY SIGNED

Jim Millard, M.Sc., P.Geo.
Environmental Superintendent

Cc. David McCann, BIM
Dick Matthews, BIM
Cheryl Wray, BIM

Attachment: As-Built Report for Mary River Bulk Fuel Storage Facility (Genivar)

GENIVAR

834 Mountjoy Street South
P.O. Box 120
Timmins, Ontario P4N 7C5
Tel. (705) 264-9413
Fax. (705) 267-2725

March 15, 2009

Jim Millard, M. Sc., P. Geo.
Environmental Superintendent
Mary River Project
Baffinland Iron Mines Corporation
Suite 1016, 120 Adelaide Street West
Toronto, Ontario M5H 1T1

Dear Jim,

RE:

MARY RIVER PROJECT
BULK FUEL STORAGE FACILITY AT MARY RIVER CAMP
AS-BUILT CONSTRUCTION REPORT
OUR REFERENCE NO. 09-058

Genivar Consultants LP (Genivar) was retained by Baffinland Iron Mines Corporation (BIMC) to design the Bulk Fuel Storage Facility at their Mary River Camp site in Nunavut, provide limited QA/QC services during construction and subsequently to compile the required documentation of as-built conditions of the storage facility.

BACKGROUND

Part J, Part J (3), of the Water Licence (#2BB-MRY0710) for the Mary River Project issued by the Nunavut Water Board (NWB) states that:

> *"The Licensee shall provide as-built plans and drawings, stamped and sealed by a professional Engineer registered in Nunavut, within ninety (90) days of completion of all construction works, including ....iii. Bulk Storage of fuel Facilities."*

During 2007 and 2008, bulk fuel for the Mary River Project has been delivered to the Milne Inlet port. A Bulk Fuel Storage Facility has been built to contain all the required fuel at Milne Inlet camp. The as-built construction report for this facility was submitted to the NWB in December 2007. The plan in 2008 and 2009 is to transfer fuel from the Milne Inlet facility by tanker truck to the Mary River Camp

(approximately 100 km from Milne Inlet along the Milne Inlet Tote Road). Bulk fuel at the Mary River Camp is/will be stored in the Mary River Bulk Fuel Storage Facility which is the subject of the report, herein.

PROPOSED DESIGN OF THE FACILITIES AT MARY RIVER CAMP SITE

Figure 1 shows the site map indicating the Mary River Project sites from Steensby in the south to Mary River Camp in the north and Milne Inlet Camp in the north. Figure 2 shows the site plan arrangements at Mary River Camp Site.

Fuel was shipped via ocean tankers from the port of Montreal to Milne Inlet. All bulk fuel at Milne inlet has been stored in the Milne Inlet Bulk Fuel Storage Facility consisting of 74 fuel bladders within a lined and bermed containment. Bulk fuel is transferred by tanker truck from Milne Inlet to the Mary River bulk fuel storage facility. Figures 3 and 4 included in Appendix 1 show the construction design details of the Bulk Fuel Storage Facility design at the Mary River Camp Site. The Fuel bladders are identified in NIRB's Northern Remote Site Protocols document (Dillon, 1998) and have been used by both private companies and the federal government in Nunavut, Yukon and other arctic regions of the world. The fuel bladders were supplied by Raymac Industries and engineered by SEI Industries. Detailed arrangement of the fuel bladders in the containment as well as piping arrangement is included in Appendix 2.

As shown in the related drawings in Appendix 1, the fuel storage facility was designed with an earthen berm lined with a petroleum-resistant geomembrane liner (Hazgard HZ-500) that meets ULC/ORD-C58.9-1997 specifications for Underground and Aboveground flammable and combustible liquid storage tanks. The liner was to be covered with approximately 300mm of granular material to protect it from damage.

The containment was designed to hold 110% of total aggregate capacity of the fuel facility as per the CCME's "Environmental Code of Practice for Aboveground and Underground Storage Tank Systems containing Petroleum and Allied Petroleum Products" and "National Fire Code of Canada" standards. As well, the containments design consisted of a sump for collection of precipitation. The containments floors were designed to grade towards the sump. The sump was designed to be periodically pumped and contaminated water treated by an appropriate portable treatment unit. The treatment process involves oil water separator, filtration through two types of media, and polishing using activated carbon if required. The clean water from the process (that meets Water Licence Criteria) was designed to be discharged to the receiving environment while the oil and filter media was to be collected in drums and subsequently shipped offsite for recycling.

The Mary River Bulk Fuel Storage Facility was designed to contain 16 bladders, each containing 113,560 litres. Two to four of the bladders were to be used for

the storage of aviation fuel while the remaining bladders were to be used for the storage of diesel fuel.

The fuel facility was designed to be equipped with dispensing stations consisting of electric pumps and shut-off valves in a lined pad backfilled with granular material. The precipitation within this area was to be collected in a sump and treated as required. Any fuel spills was designed to be contained within the lined areas which can then be excavated, tested and treated as necessary at the end of the project.

AS-CONSTRUCTED CONDITIONS OF THE FACILITY

Containment construction

The containment for the Bulk Fuel Storage Facility was constructed in general conformance with the design. For details on the plans and sections of the containment construction, please refer to Figure 5 in Appendix 1 for as-constructed drawing of the Mary River Bulk Fuel Storage Facility.

The material used for the containment berms and base was obtained from nearby borrow sources. The material was free of any deleterious substances and was approved by the liner construction staff. A certificate of acceptance is included in Appendix 2 by Raymac/Layfield who was the supplier and contractor for the containment liner.

The liner was installed and welded as per the design criteria as well as liner manufacturer's recommendations. The liner was a nominal 40-mil impermeable material (commercially known as Hazgard 50). Quality Assurance and Quality Control was provided by Layfield (the liner material supplier) and a QA/QC report is included in Appendix 2.

Mechanical (bladders, pipes, valves…)

All mechanical components of the Bulk Fuel Storage Facility including the bladders (fuel tanks), the piping network within the containment, valves, the sump, oil/water separator, the piping from the shore to the Bulk Fuel Storage Facility, and the contaminated water treatment system were designed by SEI Industries and constructed by Raymac Inc.

Design drawing of the mechanical components of the Bulk Fuel Storage Facility at the Mary River Camp Site is included in Appendix 2.

It is our opinion that the Bulk Fuel Storage Facility containment was designed and built in general conformance with CCME's "Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products" as well as "National Fire Code of Canada".

The following requirements have either been followed or shall be followed by BIMC in order to ensure compliance with CCME and NFC guidelines prior to the operation of the facility:

Tank Registration

Each storage tank (bladder) will be registered with the Fire Marshal in 2009. The registration document will include the name of owner, address of owner, type of facility, location of the tanks, storage capacity of the tank, type of product stored, year of installation, ULC standard of tank (bladder), type of storage material, type of piping material, type of corrosion protection (if any), type of pumps, description of leak detection system, type of secondary containment, name of operator, name of land owner, name of installer, manufacturer of storage tanks as per CCME, item 2.4.2.

Visual Leak Detection

BIMC conducts periodic visual inspections of each fuel bladder in accordance with the fuel management practice and schedule that has been developed for the Project. An inventory reconciliation plan has been developed for facility operations as part of the leak detection system.

Spill Contingency plan

The Bulk Fuel Storage Facility operation shall comply with the guidelines set forth by the Spill Contingency Planning and Reporting Regulations. This spill Contingency Plan has been provided by BIMC to the Nunavut Water Board and a copy is available at each site.

Bladder and Product Identification

Each tank/bladder should be identified in conformance with the Canadian Petroleum Products Institute (CPPI) "using the CPPI Colour-symbol system to mark equipment and vehicles for product identification".

Fire Protection

At least two (2) fire extinguishers, each having a rating of not less than 80-B:C, has been provided at the truck loading pad and at the fuel intake to the Bulk Fuel Storage Facility.

Please note that in all cases, the authority having jurisdiction is as follows:

Fire Marshall
Department of Community Government & Transportation
Government of Nunavut
P.O. Box 1000, Station 700
Iqaluit, Nunavut X0A 0H0
Tel. 879-975-5310
Fax. 867-979-4221

We trust this report is satisfactory and meets your requirements. However, should you have any questions, please do not hesitate to contact the undersigned for further discussion.

Yours truly,

Genivar Consultants LP

F. G. Kord

Marz G. Kord, P. Eng., M.Sc., MBA

APPENDIX 1

DRAWINGS

XREF FILE(S) IMAGE FILE(S) 4 Baffinland logo-big.ocg Baffinland logo_new logo-big.ocg NORTH BAFFINLAND

Baffinland

ᓂᓕᓂᓂ ᐅᓴᖃᐅᔨᓪᓛᑦ MARY RIVER PROJECT

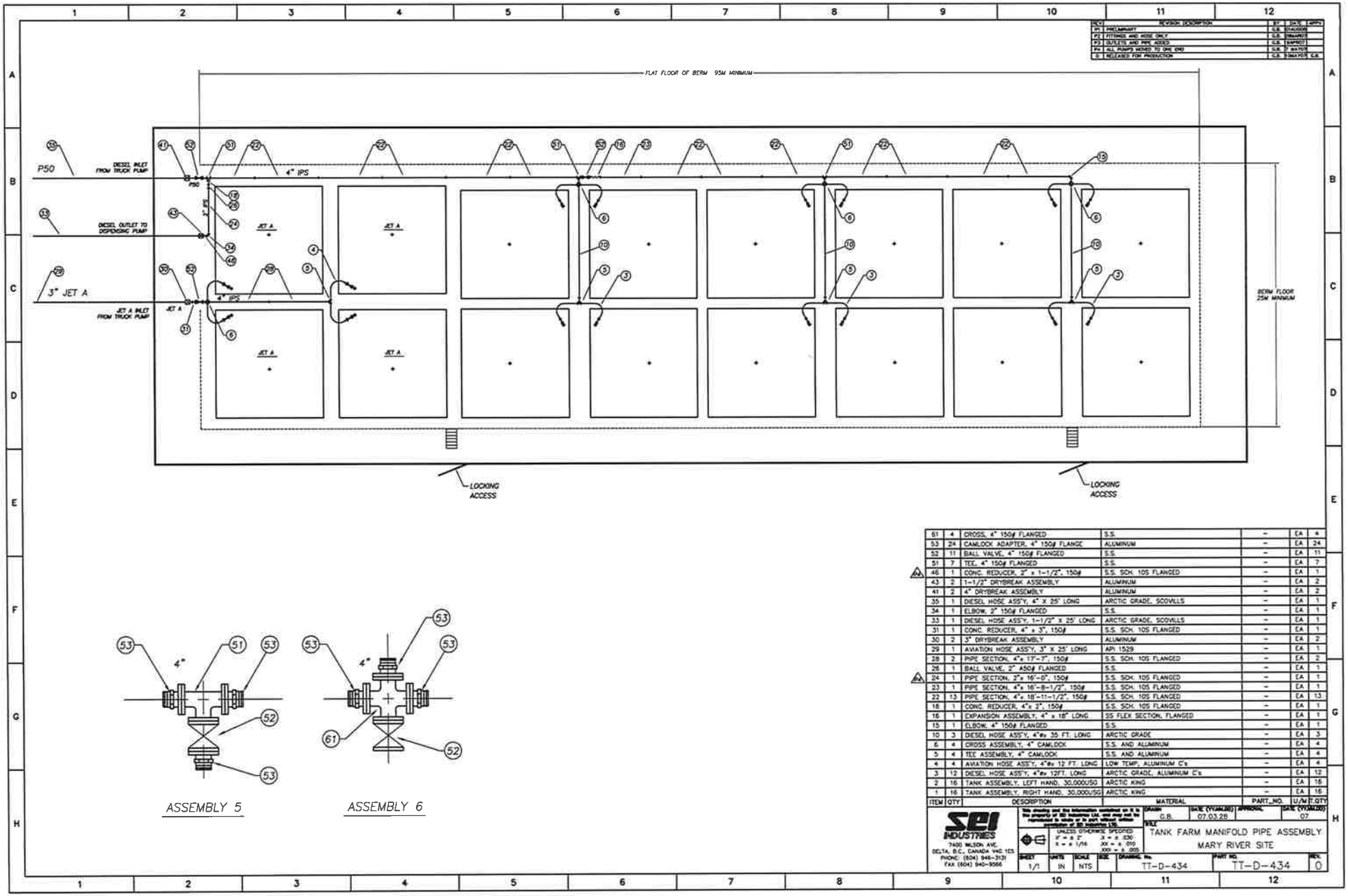
ᐱᓕᕆᐊᑲᓂᖅ ᓂᓚᖓᓕ ᓂᓚᔪᐊᖓ
PROJECT LOCATION MAP

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/15	NB09-00192	0

ᑎᑎᕋᐅᓯᖓᓂᒃ FIGURE 1

NORTH BAY ON ERIED I:\102-00181-15\Assignments\AutoRigid\AD_3\120\2009 2:24:25 PM A_Landscape rpinson



ITEM	QTY	DESCRIPTION	MATERIAL	PART_NO.	U/M	T.QTY
61	4	CROSS, 4" 150# FLANGED	S.S.	-	EA	4
53	24	CAMLOCK ADAPTER, 4" 150# FLANGE	ALUMINUM	-	EA	24
52	11	BALL VALVE, 4" 150# FLANGED	S.S.	-	EA	11
51	7	TEE, 4" 150# FLANGED	S.S.	-	EA	7
46	1	CONC. REDUCER, 2" x 1-1/2", 150#	S.S. SCH. 10S FLANGED	-	EA	1
43	2	1-1/2" DRYBREAK ASSEMBLY	ALUMINUM	-	EA	2
41	2	4" DRYBREAK ASSEMBLY	ALUMINUM	-	EA	2
35	1	DIESEL HOSE ASS'Y, 4" X 25' LONG	ARCTIC GRADE, SCOVILLS	-	EA	1
34	1	ELBOW, 2" 150# FLANGED	S.S.	-	EA	1
33	1	DIESEL HOSE ASS'Y, 1-1/2" X 25' LONG	ARCTIC GRADE, SCOVILLS	-	EA	1
31	1	CONC. REDUCER, 4" x 3", 150#	S.S. SCH. 10S FLANGED	-	EA	1
30	2	3" DRYBREAK ASSEMBLY	ALUMINUM	-	EA	2
29	1	AVIATION HOSE ASS'Y, 3" X 25' LONG	API 1529	-	EA	1
28	2	PIPE SECTION, 4"x 17'-7", 150#	S.S. SCH. 10S FLANGED	-	EA	2
26	1	BALL VALVE, 2" 150# FLANGED	S.S.	-	EA	1
24	1	PIPE SECTION, 3"x 16'-0", 150#	S.S. SCH. 10S FLANGED	-	EA	1
23	1	PIPE SECTION, 4"x 16'-8-1/2", 150#	S.S. SCH. 10S FLANGED	-	EA	1
22	13	PIPE SECTION, 4"x 18'-11-1/2", 150#	S.S. SCH. 10S FLANGED	-	EA	13
18	1	CONC. REDUCER, 4"x 3", 150#	S.S. SCH. 10S FLANGED	-	EA	1
16	1	EXPANSION ASSEMBLY, 4" x 18" LONG	3S FLEX SECTION, FLANGED	-	EA	1
15	1	ELBOW, 4" 150# FLANGED	S.S.	-	EA	1
10	3	DIESEL HOSE ASS'Y, 4"ø x 35 FT. LONG	ARCTIC GRADE	-	EA	3
6	4	CROSS ASSEMBLY, 4" CAMLOCK	S.S. AND ALUMINUM	-	EA	4
5	4	TEE ASSEMBLY, 4" CAMLOCK	S.S. AND ALUMINUM	-	EA	4
4	4	AVIATION HOSE ASS'Y, 4"ø x 12 FT. LONG	LOW TEMP, ALUMINUM C's	-	EA	4
3	12	DIESEL HOSE ASS'Y, 4"ø x 12FT. LONG	ARCTIC GRADE, ALUMINUM C's	-	EA	12
2	16	TANK ASSEMBLY, LEFT HAND, 30,000USG	ARCTIC KING	-	EA	16
1	16	TANK ASSEMBLY, RIGHT HAND, 30,000USG	ARCTIC KING	-	EA	16

ASSEMBLY 5

ASSEMBLY 6

SEI INDUSTRIES
7400 WILSON AVE.
DELTA, B.C. CANADA V4C 1C5
PHONE: (604) 946-3131
FAX: (604) 940-9066

TITLE: TANK FARM MANIFOLD PIPE ASSEMBLY
MARY RIVER SITE

DRAWN: G.B. 07.03.28
APPROVED:
DATE (YY/MM/DD): 07
SHEET: 1/1
UNITS: IN
SCALE: NTS
SIZE:
DRAWING No.: TT-D-434
PART NO.: TT-D-434
REV.: 0

➢ APPENDIX 2

AS-CON STRUCTED REPORTS (QA/QC) PHOTOGRAPHS

MARY RIVER

LAYFIELD

CERTIFICATE OF ACCEPTANCE OF SOIL SUBGRADE SURFACE

PROJECT NAME: Fuel Farm
PROJECT NUMBER: 07C-015
OWNER: Baffinland Iron Mines
LOCATION: Mary River

I, the undersigned, a duly appointed representative of Layfield Environmental Systems Ltd. (LESL), have visually observed the soil subgrade described below, and found it to be an acceptable surface on which to install geomembrane.

This certification is based on observations of the surface of the subgrade only. No subterranean inspections or tests have been performed by Layfield Environmental Systems, and LESL makes no representations or warranties regarding conditions which may exist below the surface of the subgrade. Layfield Environmental Systems accepts no responsibility for conformance of the subgrade to this project's specifications.

The soil subgrade accepted on this date refers to its present condition. Any changes in the subgrade condition that result from the effects of inclement weather and/or other forces beyond the control of Layfield Environmental Systems and remedial work to correct the resulting deficiencies, will be the direct responsibility of the General Contractor.

Area Being Accepted: Areas under panels A1-A4 and panel B1 & B2, uncompacted surface & berms, some rock & snow, generally sand.

LAYFIELD ENVIRONMENTAL SYSTEMS REPRESENTATIVE:

Date: October 18, 2007
Signature:
Name: Allan McKinnon
Title: Project Supervisor

OWNERS REPRESENTATIVE:

Date: Oct 18/2007
Signature:
Name: BOWEN LAWDRY
Title: PROJECT MNGR
Company: BAFFINLAND IRON MINES

LS-10-QF-009

LAYFIELD

CERTIFICATE OF FINAL INSPECTION AND ACCEPTANCE

PROJECT NAME: Fuel Farm
PROJECT NUMBER: 07C-015 **DATE:** Oct. 18, 2007
OWNER: Baffinland Iron Mines
LOCATION: Mary River

Scope of Installation(s): THE WORK
Installed, welded/repaired/tested approx 3,880 sq. metres of Hazgrid 500. Installed approx 8,150 sq. metres of LP-16 textile as an overlay & underlay. Lined 1 sump as per owner. Cleaned up area of garbage upon completion

Part 1 – LAYFIELD ENVIRONMENTAL SYSTEMS LTD.

I, Allan McKinnon, a duly appointed representative of Layfield Environmental Systems Ltd. (LESL), have visually observed the installations (as outlined above), and have found the Work to be complete and free of defects and declare that the Work was completed in accordance with the project specifications, Layfield Environmental Systems' QC program and the terms and conditions of the contract.

Layfield Environmental Systems Representative:

Name: Allan McKinnon
Title: Project Supervisor
Date: Oct. 18, 2007 **Signature:** Allan McKinnon

Part 2 – OWNER (or Representative)

I, ROLAND LANDRY, a duly appointed representative of BAFFINLAND IRON MINES, do hereby take over and accept the installation(s) described above, and confirm that the work has been completed in accordance with the project specifications and the terms of the conditions of the contract.

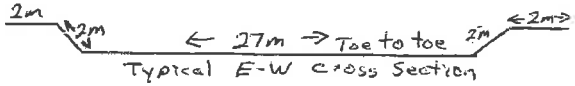
I have evaluated and measured the work together with the Layfield Environmental Systems representative, and agree that the measurements shown are both true and correct, and that the installation has met our approval.

Owners Representative:

Name: ROLAND LANDRY
Title: PROJECT MANAGER
Company: BAFFINLAND IRON MINES
Date: OCT 18/07 **Signature:** Roland Landry

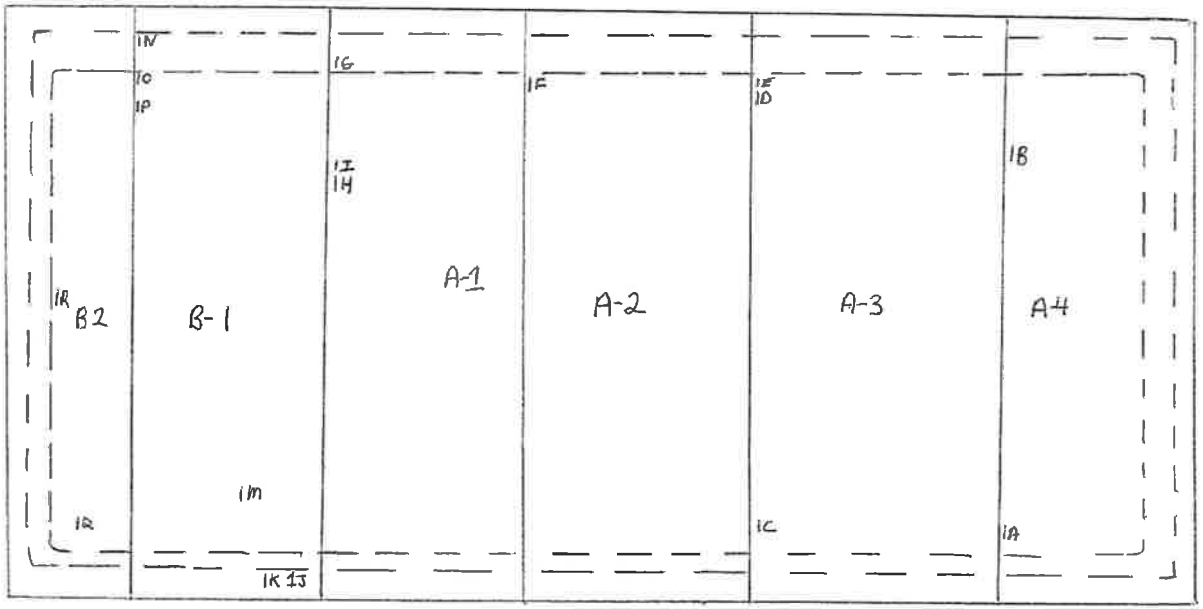
Comments:

LS-10-QF-010



Typical E-W cross Section

N



Checklist

1. North Arrow ? ✓
2. Repair Numbers & Locations ? ✓
3. Site Dimensions ? _____
4. Slope Lengths ? _____
5. Title Blocks Completed ? _____
6. Cert. of Subgrade Acceptance ? _____
7. Cert. of Final Acceptance ? _____

Notes:

1) Seam numbers shown on testing log sheets represent the adjacent panel numbers.

LEGEND

- Change in Grade
- Liner Field Seam
- Anchor Trench
- P3 Panel Number
- ⊗ Pipe Penetration
- R2 Repair Number
- △ Patch
- XXX Extrusion Bead (or Weld)

LAYFIELD PLASTICS

Project Name, Client, Location, Mat'l Type, etc.
Raymac
Baffinland Iron mines
Mary River Fuel Farm
Hazgard 500

SCALE : N.T.S.	PROJECT No. 07C-015
DWG: 1 OF 1	
DWN: AM CHKD:	APPD.
DATE : October 28, 2007	

GEOSYNTHETICS INVENTORY LOG

PROJECT NUMBER: 07C-015 PROJECT TITLE: Fuel Farm
OWNER: Baffinland Iron Mines CONTRACTOR: _____
LOCATION: Mary River SHEET NUMBER: 1 of 1

MATERIAL TYPE: (GEOMEMBRANE) GEONET (GEOTEXTILE) OTHER _____
DATE OF ARRIVAL: _____ DATE OF INVENTORY: Sept. 29, Oct. 16, 2007
UNLOADING METHOD: _____ INVENTORY BY: ASM
PRODUCT TYPE: LP-16 & Hazgard 500 CONDITION IN TRUCK: _____
MATERIAL MANUFACTURER: _____

Panel / Roll Number	Material Dimensions			QC Certificate Available Y / N	Conf. Sample Removed Y / N	Other _____	Remarks
	Length	Width	Thickness or Weight				
A-4	38.5m	19.28m	Haz 500		N		
A-3	38.5 m	19.28m	Haz 500		N		
A-2	38.5 m	19.28m	Haz 500		N		
A-1	38.5m	19.28m	Haz 500		N		
B-1	38.5 m	18.4m	Haz 500		N		
B-2	38.5m	18.4m	Haz 500		N		
	150'	15'	LP-16				45 rolls

SUBMITTED BY: ASM
DATE: October 26, 2007

LAYFIELD

GEOMEMBRANE TRIAL SEAM LOG

PROJECT NUMBER: 07C-015 **PROJECT TITLE:** Fuel Farm

OWNER: Baffinland **CONTRACTOR:**

LOCATION: Mary River **SHEET NUMBER:** 1

✓ **TF - # FUSION** _____ **TX - # = EXTRUSION** _____ **TS - # = SOLVENT**

SAMPLE NUMBER	APPROX. TIME & DATE	WELDING MACHINE NUMBER	WELD TECH.	TEMPERATURES				TEST RESULTS			PASS OR RETEST	CHECKED BY	REMARKS
				AMBIENT AIR TEMP.	PREHEAT OR MACHINE SPEED	EXTRUDER	WEDGE TEMP.	INSIDE PEEL MODE / STRENGTH	OUTSIDE PEEL MODE / STRENGTH	SHEAR MODE / STRENGTH			
TF-1	10-8 1645	Demtech 20610	Am	-3°C	50%		825°	381 1291 141 / 311 / / 136	/ / / / / / / /	1091 / 199	P	Am	Cloudy
TF-2	10-9 1245	Demtech 20610	Am	-5°C	50%		825°	371 1331 139 / 311 / / 134	/ / / / / / / /	1031 / 1106	P	Am	
TF-3	10-14 1235	Demtech 20610	Am	-3°C	50%		825°	391 1311 140 / 421 / / 136	/ / / / / / / /	1111 / 1108	P	Am	Overcast
TF-4	10-15 1330	Demtech 20610	Am	-2°C	50%		825°	431 1321 136 / 311 / / 133	/ / / / / / / /	1101 / 197	P	Am.	
								/ / / / / / / /	/ / / / / / / /	/ /			
								/ / / / / / / /	/ / / / / / / /	/ /			
								/ / / / / / / /	/ / / / / / / /	/ /			
								/ / / / / / / /	/ / / / / / / /	/ /			
								/ / / / / / / /	/ / / / / / / /	/ /			
								/ / / / / / / /	/ / / / / / / /	/ /			
								/ / / / / / / /	/ / / / / / / /	/ /			

SUBMITTED BY: Oct. 26, 2007

DATE: ASAP.

LAYFIELD

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: 07C-015 PROJECT TITLE: Fuel Farm.

OWNER: Baffinland Iron Mine CONTRACTOR:

LOCATION: Mary River

PASSING TRIAL SEAMS

	NO.	TIME	TECH ID
✓ FUSION	TF-1	1645	AM.
EXTRUSION			
SOLVENT			

SHEET NUMBER: 1

DATE: October 8, 2007

SEAM NUMBER	SEAM SECTION * START POINT	SEAM SECTION * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP.	WELD TECH.	PREHEAT OR MACH. SPEED	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	APPROX. LENGTH WELDED	DESTR. NUMBER	CHK'D BY	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CHECKED BY
A4/A3	WEOS	-EEOS	1710	-3°C	AM	50%	825°	-	37 m		AM		10-8	AM.
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
							DAILY TOTAL		37 m					

* *REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR, OR A POINT LOCATION ON THE SEAM.*

SUBMITTED BY: ASM

DATE: October 26, 2007

LAYFIELD

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: 07C-015 **PROJECT TITLE:** Fuel Farm

OWNER: Baffinland Iron Mines **CONTRACTOR:**

LOCATION: Mary River

PASSING TRIAL SEAMS

	NO.	TIME	TECH ID
✓ FUSION	TF-2	1245	A.M
EXTRUSION			
SOLVENT			

SHEET NUMBER: 2

DATE: Oct. 9, 2007

SEAM NUMBER	SEAM SECTION * START POINT	SEAM SECTION * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP.	WELD TECH.	PREHEAT OR MACH. SPEED	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	APPROX. LENGTH WELDED	DESTR. NUMBER	CHK'D BY	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CHECKED BY
A3/A2	WEOS	EEOS	1303	-5	AM	50%	825°	-	36.9 m		AM		10-9	AM
A2/A1	WEOS	EEOS	1359	-5	AM	50%	825°	-	36.7 m		AM		10-9	AM
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						
/	-						-	-						

DAILY TOTAL 73.6m

* *REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR, OR A POINT LOCATION ON THE SEAM.*

SUBMITTED BY: ASM

DATE: October 26, 2007

LAYFIELD

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: 07C-015 **PROJECT TITLE:** Fuel Farm

OWNER: Baffinland Iron Mines **CONTRACTOR:**

LOCATION: Mary River

PASSING TRIAL SEAMS

	NO.	TIME	TECH ID
✓ FUSION	TF3	1235	AM
EXTRUSION			
SOLVENT			

SHEET NUMBER: 3

DATE: October 14, 2007

SEAM NUMBER	SEAM SECTION * START POINT	SEAM SECTION * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP.	WELD TECH.	PREHEAT OR MACH. SPEED	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	APPROX. LENGTH WELDED	DESTR. NUMBER	CHK'D BY	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CHECKED BY
A1B1	WEOS	EEOS	1308	-3°C	Am	50%	825°	-	35.3m		Am		10-14	A m.
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
								DAILY TOTAL	35.3m					

* *REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR, OR A POINT LOCATION ON THE SEAM.*

SUBMITTED BY: ASM

DATE: October 26, 2007

LAYFIELD

GEOMEMBRANE SEAM LOG

PROJECT NUMBER: 07C-015
PROJECT TITLE: Fuel Form
OWNER: Baffinland Iron Mines
CONTRACTOR:
LOCATION: Mary River

PASSING TRIAL SEAMS

	NO.	TIME	TECH ID
✓ FUSION	TF-4	1330	Am
EXTRUSION			
SOLVENT			

SHEET NUMBER: 4
DATE: October 15, 2007

SEAM NUMBER	SEAM SECTION * START POINT	SEAM SECTION * FINISH POINT	APPROX. START TIME	AMB. AIR TEMP.	WELD TECH.	PREHEAT OR MACH. SPEED	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	MACHINE TEMPERATURES DIGITAL SET WEDGE OR BARREL	APPROX. LENGTH WELDED	DESTR. NUMBER	CHK'D BY	REMARKS	NON-DESTRUCTIVE TEST DATE	NON-DESTRUCTIVE CHECKED BY
B21B1	EEOS-WEOS		1410	-2°C	Am	50%	825 -	-	349m		Am		10-15	Am
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
1	-						-	-						
							DAILY TOTAL		34.9m					

* *REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR, OR A POINT LOCATION ON THE SEAM.*

SUBMITTED BY: Asm
DATE: October 26, 2007

LAYFIELD

GEOMEMBRANE VACUUM / AIR LANCE TEST LOG

PROJECT NUMBER: 07C-015 **PROJECT TITLE:** Fuel Farm

OWNER: Baffinland Iron Mines **CONTRACTOR:**

LOCATION: Mary River **DATE:**

VACUUM BOX _____ **AIR LANCE** ✓ **SHEET NUMBER:** 1

SEAMS								REPAIRS					
SEAM NUMBER	SEAM SECTION * FROM TO	TEST DATE	TECH ID	DEFECTS **	SEAM COMPLETE NO	SEAM COMPLETE YES	CHK'D BY	REMARKS **	DEFECT CODE	TEST DATE	TECH ID	DEFECTS **	CHK'D BY	REMARKS **
A3-A4	WEOS - EEOS	10-8	AM			✓	AM		1A	10-8	AM		AM	
A3-A2	WEOS - EEOS	10-9	AM			✓	AM		1B	10-8	AM		AM	
A2-A1	WEOS - EEOS	10-9	AM			✓	AM		1C	10-8	AM		AM	
A1-B1	WEOS - EEOS	10-14	AM			✓	AM		1D	10-8	AM		AM	
B2-B1	WEOS - EEOS	10-15	AM			✓	AM		1E	10-9	AM		AM	
	-								1F	10-9	AM		AM	
	-								1G	10-14	AM		AM	
	-								1H	10-14	AM		AM	
	-								1I	10-14	AM		AM	
	-								1J	10-14	AM		AM	
	-								1K	10-14	AM		AM	
	-								1L	10-14	AM		AM	
	-								1M	10-14	AM		AM	
	-								1N	10-15	AM		AM	
	-								1O	10-15	AM		AM	
	-								1P	10-15	AM		AM	
	-								1Q	10-15	AM		AM	
	-								1R	10-17	AM		AM	
	-													
	-													

* REFERENCE SEAM ENDPOINTS FROM AN END OF SEAM (EOS), A REPAIR NUMBER, OR A POINT LOCATION ON THE SEAM

** RECORD QUANTITY OF LEAKS DETECTED AND REFERENCE NEW DEFECT CODE IN REMARKS

LS FORM 6

LAYFIELD ENVIRONMENTAL SYSTEMS

SUBMITTED BY: ASM
DATE: October 26, 2007

LAYFIELD

GEOMEMBRANE DEFECT / REPAIR LOG

PROJECT NUMBER: 07C-015 **PROJECT TITLE:** Fuel Farm

OWNER: Baffinland **CONTRACTOR:**

LOCATION: Mary River **SHEET NUMBER:** 1

DEFECT CODE	LOG DATE	DEFECT LOCATION		DEFECT TYPE	REPAIR TYPE	WELD TECH.	REPAIR DATE	REMARKS **	TEST DATE	CHECKED BY
		SEAM OR PANEL NO.	DEFECT LOCATION DESCRIPTION							
1A	10-8	Seam A4-A3	11.4m from WEOS	WR	P	AM	10-8		10-8	AM
1B	10-8	Seam A4-A3	28.1m from WEOS	WR	P	AM	10-8		10-8	AM
1C	10-9	Seam A3-A2	9m from WEOS	XS		AM	10-9	welded flap	10-9	AM
1D	10-9	Seam A3-A2	30.1m from WEOS	WR	P	AM	10-9		10-9	AM
1E	10-9	Seam A3-A2	32.3m from WEOS	WR	P	AM	10-9		10-9	AM
1F	10-9	Seam A2-A1	east toe	XS		AM	10-9	welded flap.	10-9	AM
1G	10-14	Seam A1-B1	3.8m from EEOS	WR	P	AM	10-14		10-14	AM
1H	10-14	Seam A1-B1	22.1m from WEOS	WR	P	AM	10-14		10-14	AM
1I	10-14	Seam A1-B1	23.6m from WEOS	WR	P	AM	10-14		10-14	AM
1J	10-14	Panel B1	West crest	SR	P	AM	10-14	2.3m from S A1-B1	10-14	AM
1K	10-14	Panel B1	West crest	SR	P	AM	10-14	3.6m from S A1-B1	10-14	AM
1L	10-14	Panel B1	22.1m from Wedge	SR	P	AM	10-14	4.1m N of SA1-B1	10-14	AM
1M	10-14	Panel B1	8m from W edge	SR	P	AM	10-14	12.2m N of SA1-B1	10-14	AM
1N	10-15	Seam B1-B2	East crest	WR		AM	10-15	welded flap	10-15	AM
1O	10-15	Seam B1-B2	East toe	WR	P	AM	10-15		10-15	AM
1P	10-15	Seam B1-B2	6.2m from EEOS	WR		AM	10-15	welded flap	10-15	AM
1Q	10-15	Panel B2	7m from N edge	SR	P	AM	10-15	4m from W toe	10-15	AM
1R	10-17	Panel B2	.8m from N toe	Sump		AM	10-17	13m from E toe	10-17	AM

DEFECT TYPE: AD - ANIMAL RELATED DAMAGE; B - UNDISPERSED RESIN BEAD; BO - FUSION WELDER BURN; BS - BOOT/SKIRT FROM FML PENETRATION; CO - CHANGE OF OVERLAP; CR - CREASE; D - INSTALLATION DAMAGE; DS# - DESTRUCTIVE TEST NUMBER; EE - EARTHWORK EQUIPMENT DAMAGE; EXT - EXTENSION; FM - FISHMOUTH; FS - FAILED SEAM LENGTH; FTS - FIELD TEST STRIP; HT - HEAT TACK BURN; IO - INSUFFICIENT OVERLAP (UNDER SPEC.); MD - MANUFACTURER DELIVERY DAMAGE; PT - PRESSURE TEST CUT; SI - SOIL SURFACE IRREGULARITY; SL - SLAG ON TEXTURED SHEET; T - THREE PANEL INTERSECTION; VL - VACUUM TEST LEAK; WR - WRINKLE; WS - WELDER RESTART; OTHER: SR - snow removal

REPAIR TYPE: P - PATCH, C - CAP, RS - RECONSTRUCTED SEAM, GRW - GRIND/WELD

PASSING TRIAL SEAMS		
NO.	TIME	TECH ID.

** COLUMNS TO BE USED BY THE PROJECT SUPERVISOR OR LEAD TECHNICIAN ONLY.

SUBMITTED BY: ASM

DATE: Oct. 26, 2007

Photo 1: Mary River aerial view. The Bulk Fuel Storage Facility is seen above.

Photo 2: The slopes of the berms are prepared as per the design.

Photo 3: The base of the containment area is being prepared.

Photo 4: The slopes and the base are ready for the installation of the liner.

Photo 5: The liner material is shown above.

Photo 6: The liner is being installed within the containment and slopes.

Photo 7: Liner is installed over the slopes. The slopes and the base of the liner will then be protected with appropriate thickness of granular material.

Photo 8: Granular material is being placed over the liner.

Photo 9: Appropriate amount of cover is being placed over the liner.

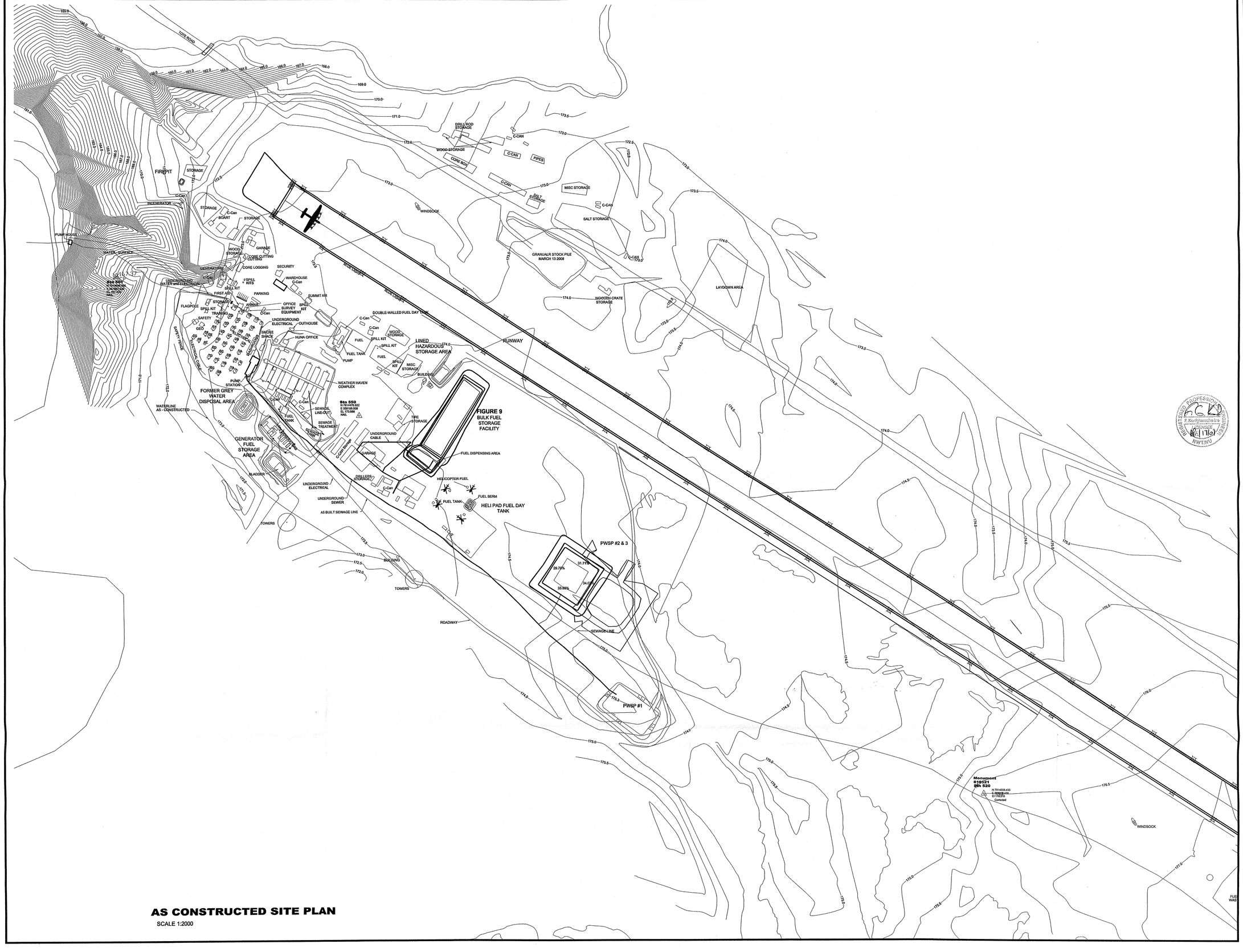
Photo 10: Completed containment is seen above.

Photo 11: Fuel bladders are placed at their appropriate locations as per the design.

Photo 12: Fuel dispensing area is being prepared.

Photo 13: Mechanical crew installing the piping as per the design by SEI.

Photo 14: Bulk Fuel Storage Facility at completion.



AS CONSTRUCTED SITE PLAN

SCALE 1:2000

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Drawings shall not be scaled.

Description	Date	No.
Revisions and Issues		

APR 17 2009

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ARCHITECT — STRUCTURAL/CIVIL

MECHANICAL — ELECTRICAL

Project

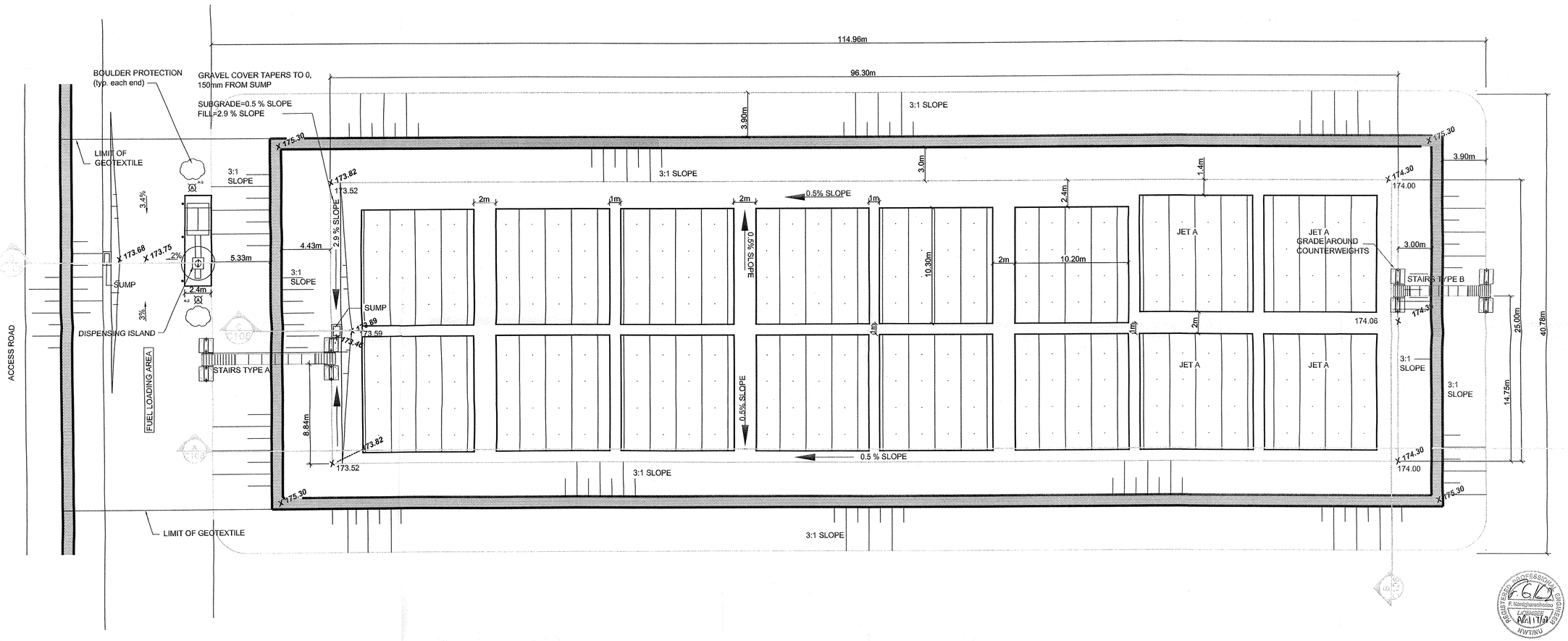
MARY RIVER PROJECT
BAFFINLAND IRON MINES CORPORATION

BAFFIN ISLAND — NUNAVUT

Drawing

AS CONSTRUCTED MARY RIVER SITE PLAN

Date	CADD File Number
MARCH 2009	REPORT/FUEL FARM/
Scale 1:2000	Job Number **09-058**
Drawn SO	
Checked MK	Drawing Number **FIGURE 2**
Approved	



NOTES:
12 DIESEL TANKS 10.2m X 10.3m
4 JET FUEL TANKS 10.2m X 10.3m
CONNECTION PIPES BY OTHERS

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LEGEND

X 174.30 PROPOSED ELEVATION

174.00 EXISTING ELEVATION

Revisions and Issues		
Description	Date	No.
ISSUED FOR CONSTRUCTION	July 03,2007	1
ISSUED FOR TENDER/REVIEW	Mar. 25,2007	0

APR 17 2009

NORTH Date Printed

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Consulting Engineers and Architect
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ARCHITECT STRUCTURAL/CIVIL

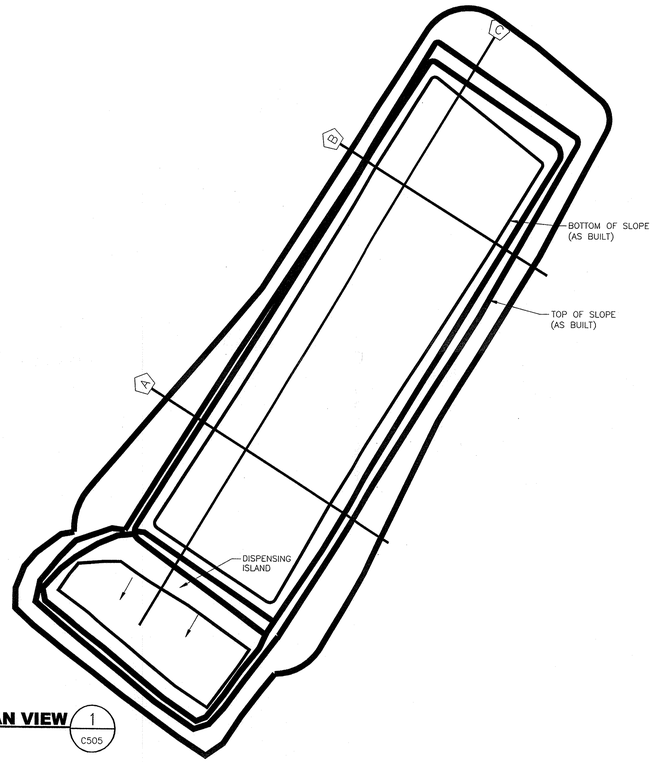
MECHANICAL ELECTRICAL

REGISTERED PROFESSIONAL ENGINEER
F. Kondgharesharoo
LICENSEE
NUNAVUT

Project
MARY RIVER PROJECT
BAFFINLAND IRON MINES CORPORATION
BAFFIN ISLAND, NUNAVUT

Drawing
MARY RIVER BULK FUEL STORAGE FACILITY PLAN

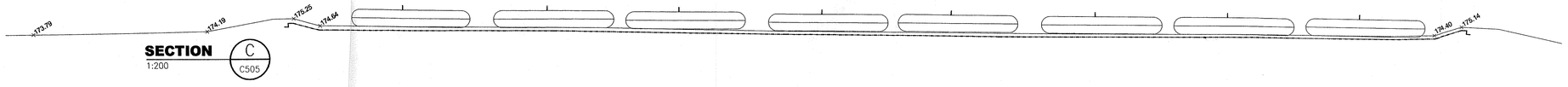
Date	CADD File Number
MARCH 2009	REPORT/FUEL FARM
Scale 1:200	Job Number 09-058
Drawn SO/CM	
Checked MK	Drawing Number FIGURE 3
Approved	



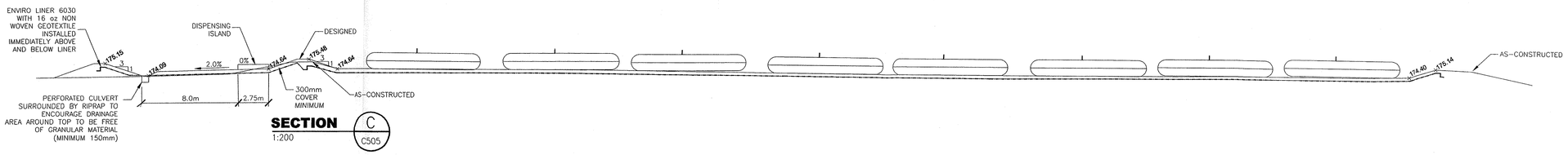
FUEL FARM B PLAN VIEW 1 / C505
1:500

SECTION A / C505
1:100

SECTION B / C505
1:100



SECTION C / C505
1:200



SECTION C / C505
1:200

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Drawings shall not be scaled.

Description	Date	No.
Revisions and Issues		

APR 17 2009

NORTH Date Printed

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ARCHITECT STRUCTURAL/CIVIL

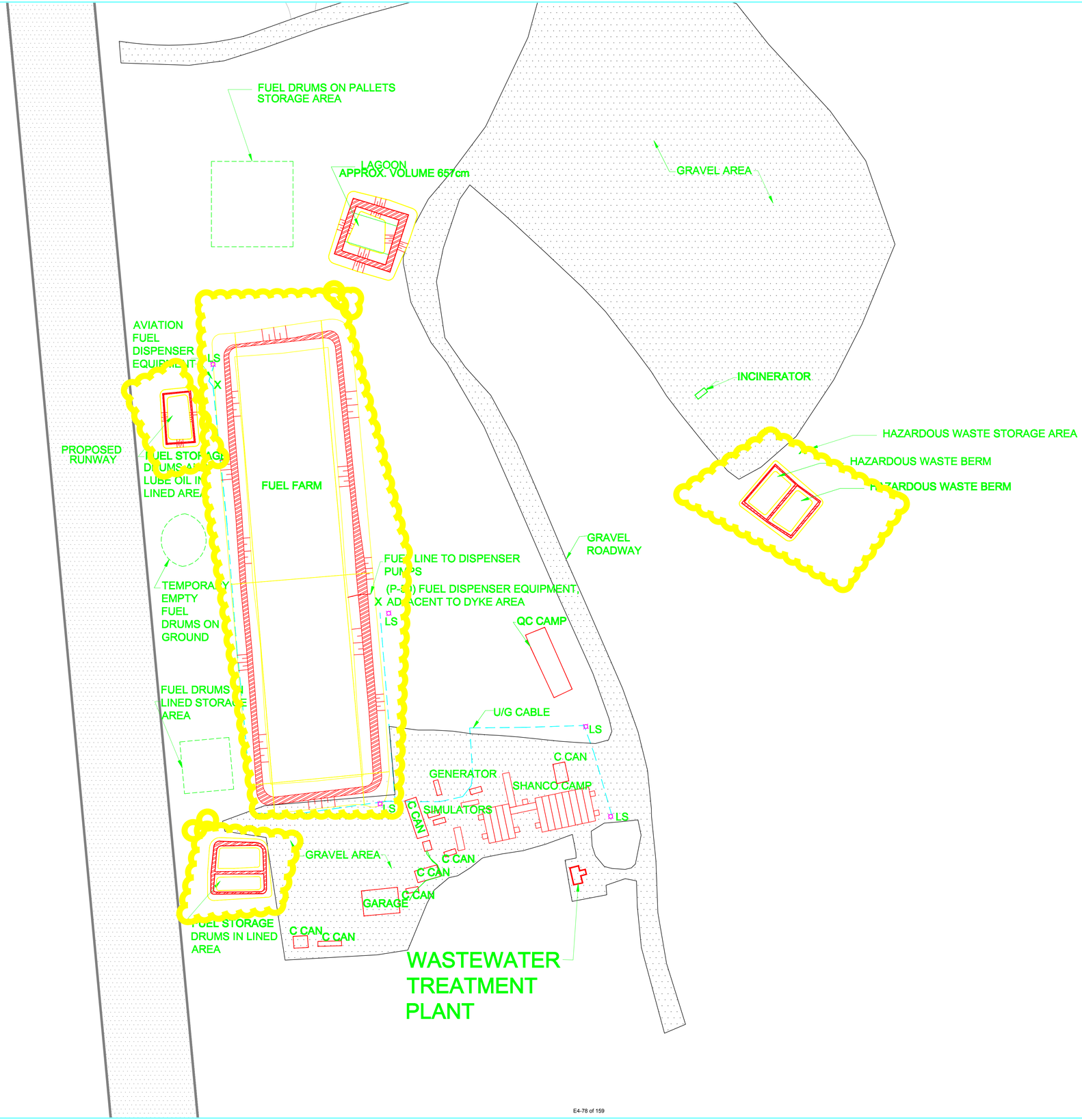
MECHANICAL ELECTRICAL

PROFESSIONAL ENGINEERS ONTARIO — P. Kondgheandadze — LICENSE — 04/17/09 — MUNAVUT

Project
MARY RIVER PROJECT
BAFFIN LAND IRON MINES CORPORATION
BAFFINISLAND NUNAVUT

Drawing
MARY RIVER BULK FUEL STORAGE FACILITY
AS-CONSTRUCTED DRAWING

Date	CADD File Number
MARCH 2009	REPORT/FUEL FARM/
Scale: AS NOTED	Job Number: **09-058**
Drawn: S.S	
Checked: CHECKED	Drawing Number: **FIGURE 5**
Approved: APPROVED	



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Contractors shall verify and be responsible for all dimensions and conditions on the job and report any discrepancies to the Architect and/ or Engineer before proceeding with the work.

Drawings shall not be scaled.

LS LIGHT

Description	Date	No.
Revisions and Issues		

NORTH

Date Printed

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Timmins Ontario
www.bhmartin.com

ARCHITECT STRUCTURAL/CIVIL

MECHANICAL ELECTRICAL

Project

MILNE INLET

BAFFIN ISLAND NUNAVUT

Drawing

AS BUILT
MILNE INLET

Date: JAN 2008	CADD File Number: milne inletfuelfdwg100_01_00
Scale: 1:1000	Job Number: **07-039**
Drawn: AB	
Checked	Drawing Number: **100_01_00**
Approved	

MARY RIVER SITE PLAN
SCALE 1:750

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Contractors shall verify and be responsible for all dimensions and conditions on the job and report any discrepancies to the Architect and/ or Engineer before proceeding with the work.

Drawings shall not be scaled.

Description	Date	No.
Revisions and Issues		

NORTH Date Printed

GENIVAR

GENIVAR
Consulting Engineers and Architect
Timmins Ontario
www.genivar.com

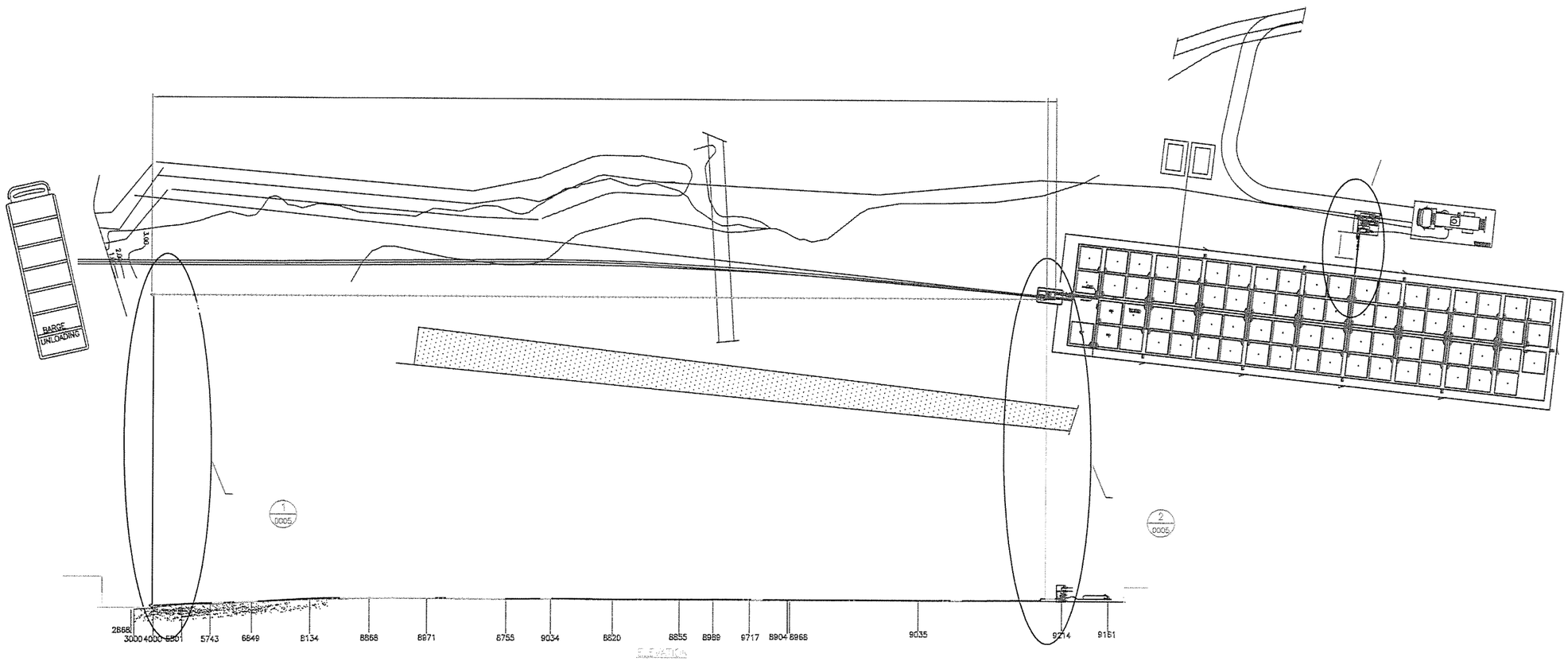
ARCHITECT STRUCTURAL/CIVIL

MECHANICAL ELECTRICAL

Project
MARY RIVER PROJECT
BAFFINLAND IRON MINES CORPORATION
BAFFIN ISLAND NUNAVUT

Drawing
MARY RIVER SITE PLAN

Date: MAY 2008	CADD File Number: ...As Builts/dwg/C501
Scale: 1:1000	Job Number: **07-039**
Drawn: SS	
Checked	Drawing Number: **C501**
Approved	Revision: X



REGISTERED PROFESSIONAL ENGINEER
R.G. SMITH
LICENSEE
NWT/NU
Sept 25/07

DRAWING No.	TITLE	REV	DATE

REFERENCE DRAWINGS

DESCRIPTION	DRN	CHK	APP	REV	DATE
ISSUED FOR CONSTRUCTION - UPDATED TANK FARM LAYOUT	KEL	RWB		1	AUG/21/07
ISSUED FOR CONSTRUCTION	dMs	JW	RWB	0	MAY/16/07
ISSUED FOR CLIENT REVIEW	dMs	JW	RWB	A	MAY/02/07

REVISIONS

VECO CANADA LTD.

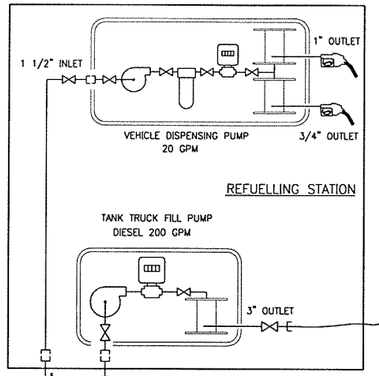
PROJECT NAME: MILNE INLET FUEL STORAGE

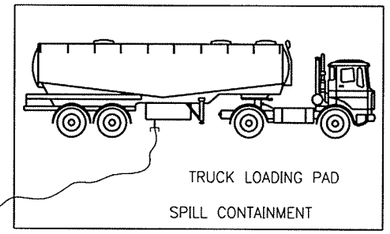
SEI INDUSTRIES
MILNE INLET FUEL STORAGE
PIPING PLAN AND ELEVATION

DRAWN	dMs
DESIGNED	
CHECKED	RWB
APPROVED	RWB
PROJECT NO.	3630-0100
DRAWING NUMBER	36300100-P-M-0004
SCALE	1 : 1000
DATE	APR/04/07
SHEET	1
REV	1

LEGEND

- GATE VALVE
- CHECK VALVE
- REDUCER
- QUICK COUPLER ADAPTOR (KAMLOK)
- HOSE
- PG – PRESSURE GAGE
- PIG SIG PIG INDICATOR

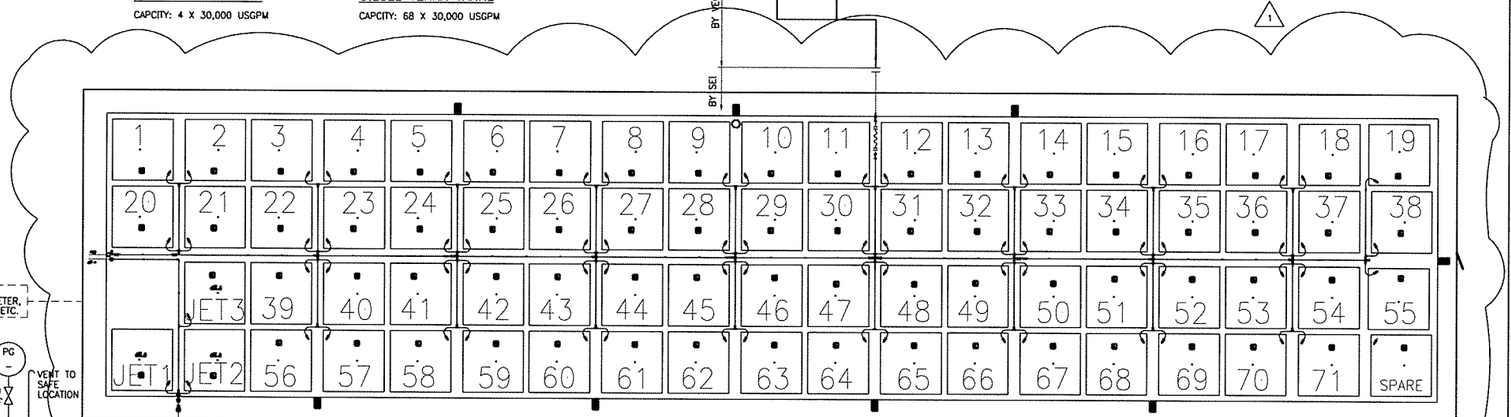


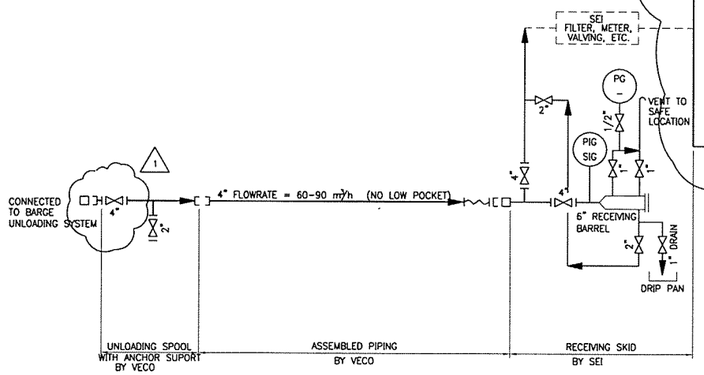


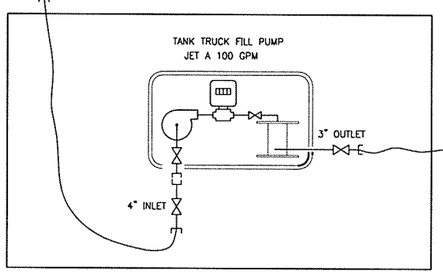
JET A TERRA TANKS
CAPCITY: 4 X 30,000 USGPM

DIESEL TERRA TANKS
CAPCITY: 68 X 30,000 USGPM

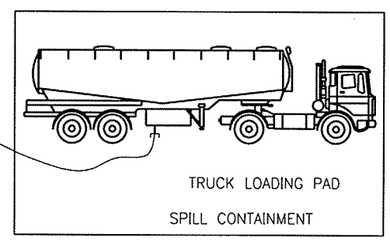
BY VECO







BY SEI



BY SEI

REGISTERED PROFESSIONAL ENGINEER
R.G. SMITH
LICENSEE
NWT/NU
NOV 21/07

DRAWING No.	TITLE
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REVISIONS

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0	2007/05/18	ISSUED FOR CONSTRUCTION	JOW		RB
A	2007/05/04	ISSUED FOR CLIENT REVIEW	JOW		RB

REVISIONS

VECO CANADA LTD.

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DRAWN	JOW
DESIGNED	JOW
CHECKED	RWB
APPROVED	RWB
SCALE	NONE
DATE	APR/09/07
SHEET	1
REV	1
PROJECT NO.	3630-0100
DRAWING NUMBER	36300100-P-B-0003

SEI INDUSTRIES
MILNE INLET FUEL STORAGE
PROCESS FLOW DIAGRAM

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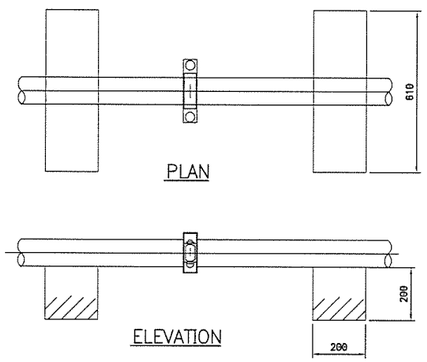
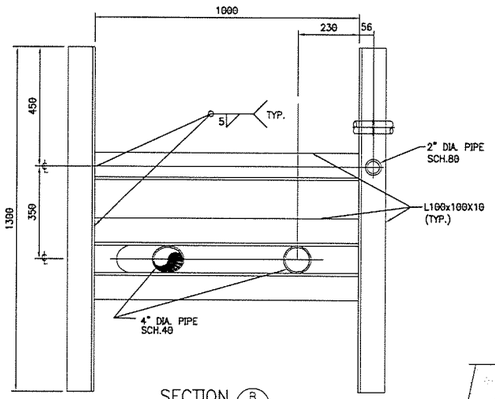
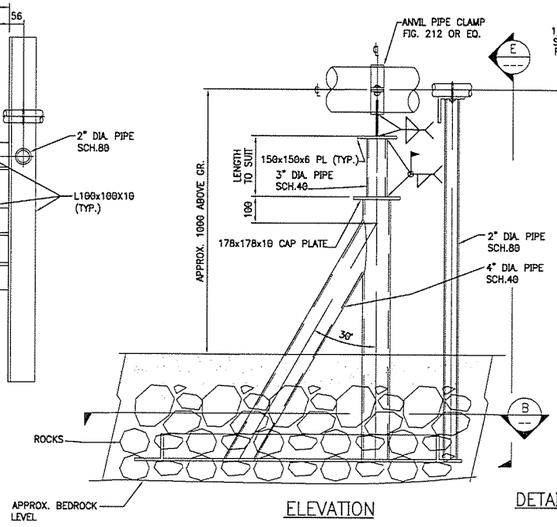


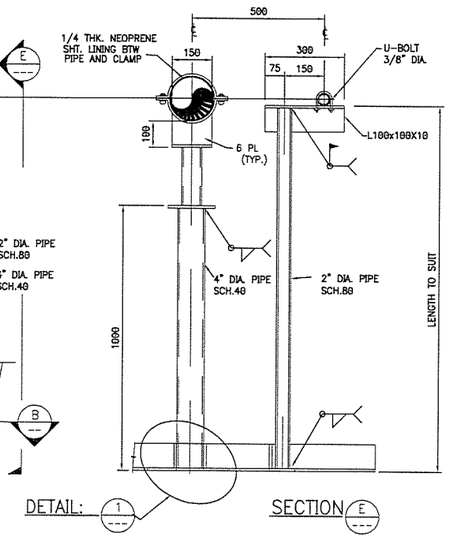
WOODEN BLOCK PIPE SUPPORT
SCALE: 1:10
(REQ.- 152)



SECTION B
SCALE: 1:10

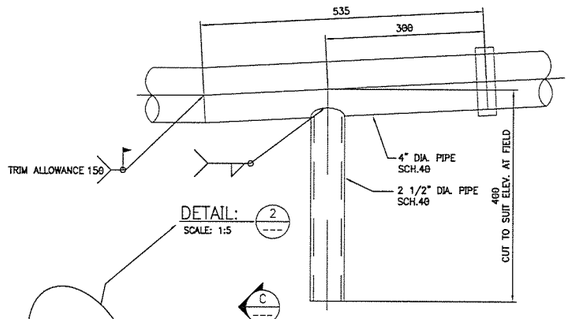


ELEVATION



DETAIL: 1
SECTION E

TRUCK LOADING PIPE SUPPORT- B
SCALE: 1:10
(REQ.- 1)



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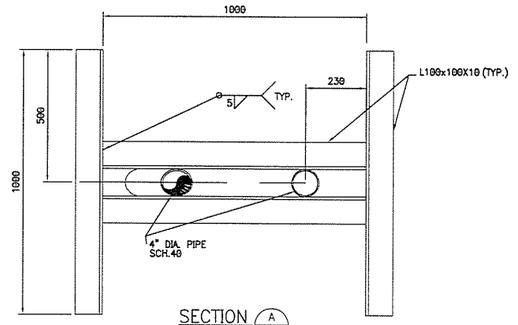
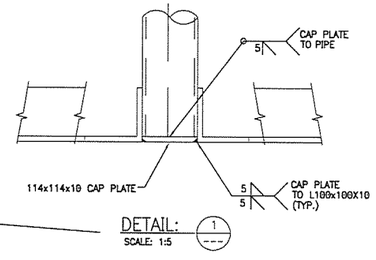
SCALE: 1:5



SECTION A
SCALE: 1:10



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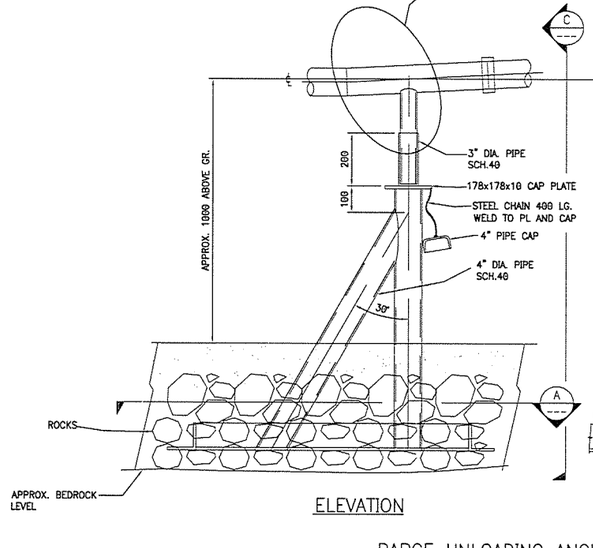
SCALE: 1:5



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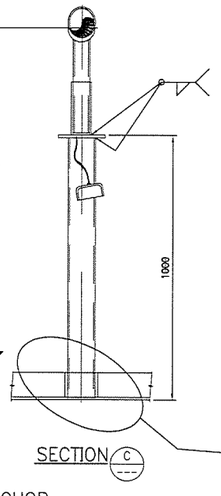
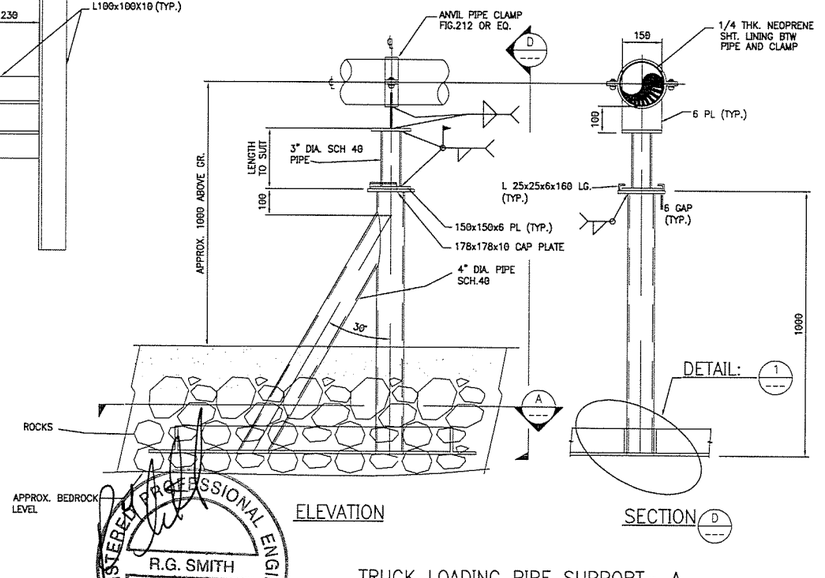


SECTION C

BARGE UNLOADING ANCHOR
SCALE: 1:10
(REQD.- 1)



ELEVATION

SECTION D

TRUCK LOADING PIPE SUPPORT- A
SCALE: 1:10
(REQ.- 2)

REGISTERED PROFESSIONAL ENGINEER
R.G. SMITH
LICENSEE
NWT/NU
Sept 25/07

VECO CANADA LTD.

DRAWING No.	TITLE	REV	DATE	DESCRIPTION	DRN	CHK	APP
REFERENCE DRAWINGS				REVISIONS			

REV	DATE	DESCRIPTION	DRN	CHK	APP
0	MAY/18/07	ISSUED FOR CONSTRUCTION	aMs	AM	RWB
A	MAY/02/07	ISSUED FOR CLIENT REVIEW	aMs	JW	RWB
REVISIONS					

PROJECT NAME	MILNE INLET FUEL STORAGE
DRAWN	aMs
DESIGNED	
CHECKED	RWB
APPROVED	RWB
	SEI INDUSTRIES MILNE INLET FUEL STORAGE PIPE SUPPORT DETAILS
SCALE	AS SHOWN
DATE	APR/30/07
SHEET	1
PROJECT NO.	3630-0100
DRAWING NUMBER	36300100-P-M-0007
REV	0

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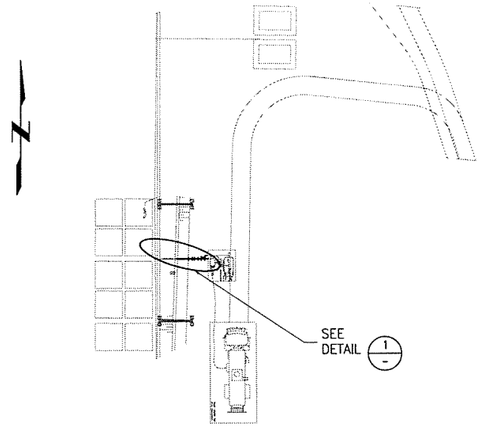
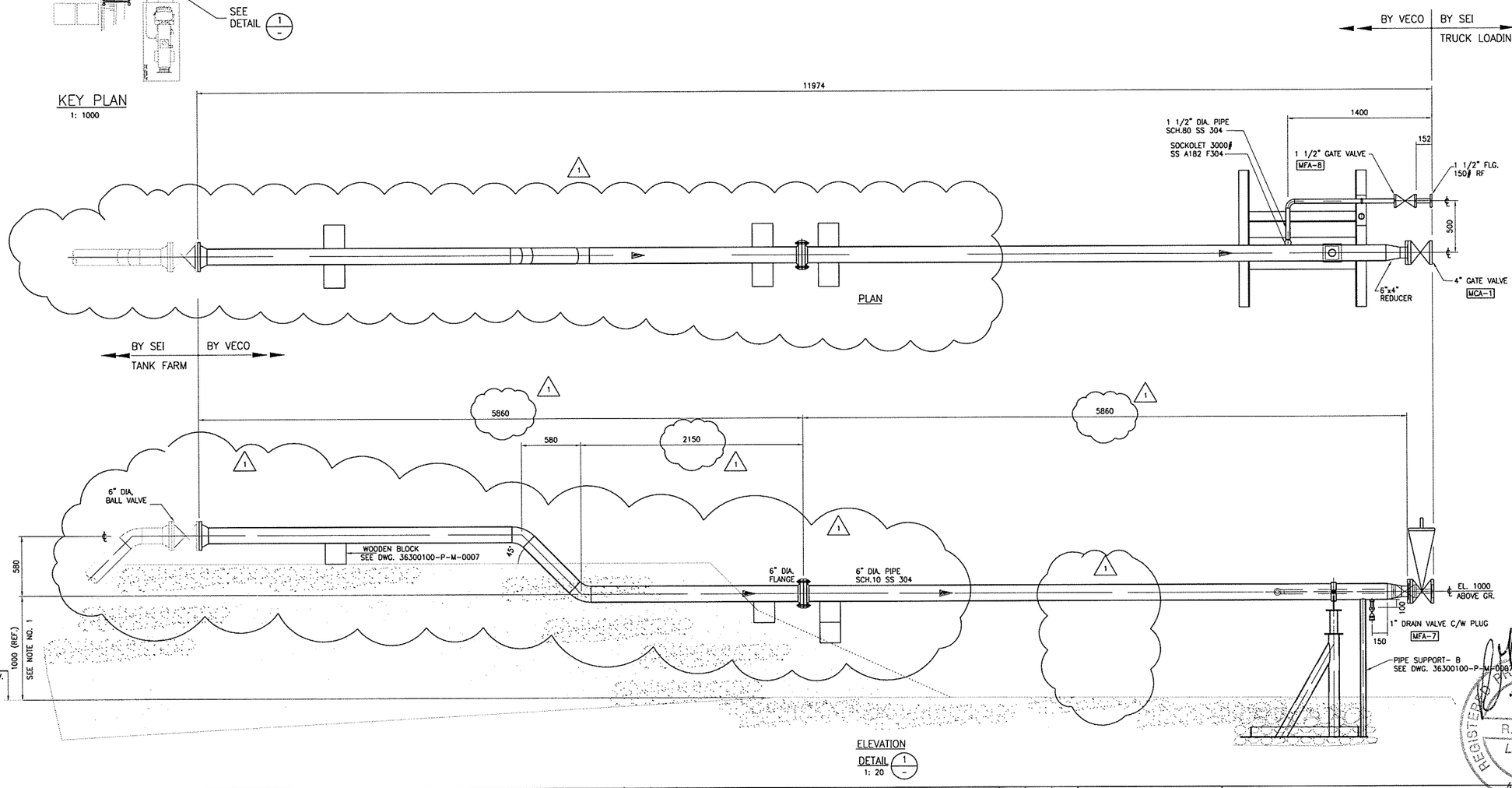


KEY PLAN
1: 1000

NOTE
1.) PIPE LINE ℄ TO BE APPROX. 1 METER ABOVE GRADE.



ELEVATION

DETAIL 1
1: 20

REGISTERED PROFESSIONAL ENGINEER
R.G. SMITH
LICENSEE
NWT/NU
NOV 22/07

DRAWING No.	TITLE	REV	DATE	DESCRIPTION	DRN	CHK	APP
	REFERENCE DRAWINGS	–	–	–	–		

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0	MAY/18/07	ISSUED FOR CONSTRUCTION	oMs	AM	RWB
A	MAY/02/07	ISSUED FOR CLIENT REVIEW	oMs	JW	RWB

REVISIONS

VECO CANADA LTD.

PROJECT NAME	MILNE INLET FUEL STORAGE		
DRAWN: oMs	SEI INDUSTRIES MILNE INLET FUEL STORAGE PIPING DETAILS–TRUCK LOADING		SCALE: 1 : 20
DESIGNED			DATE: APR/19/07
CHECKED: RWB			SHEET: 1
APPROVED: RWB	PROJECT NO.: 3630-0100	DRAWING NUMBER: 36300100-P-M-0006	REV: 1

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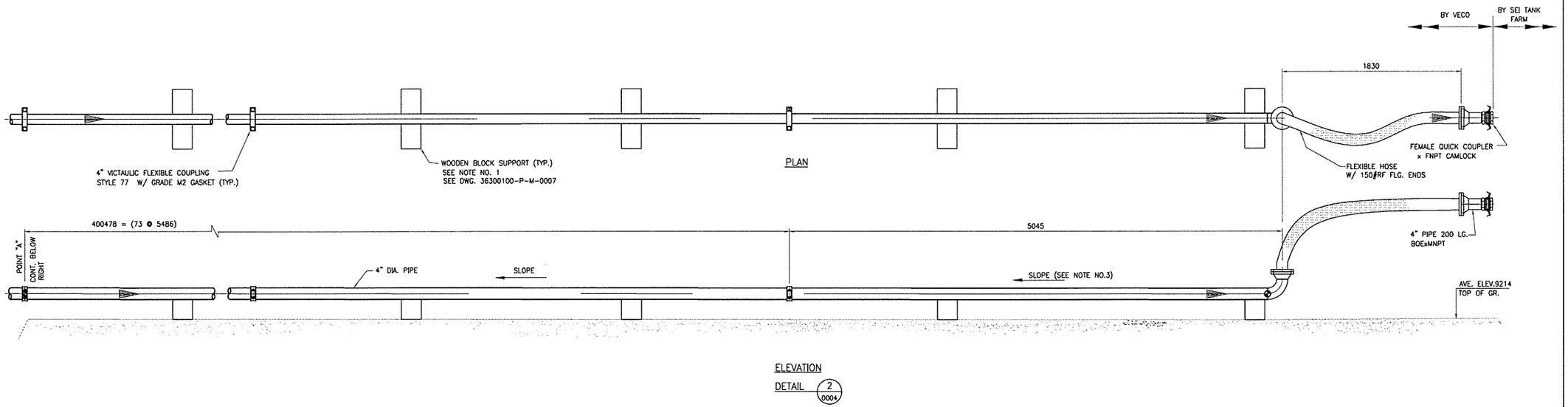
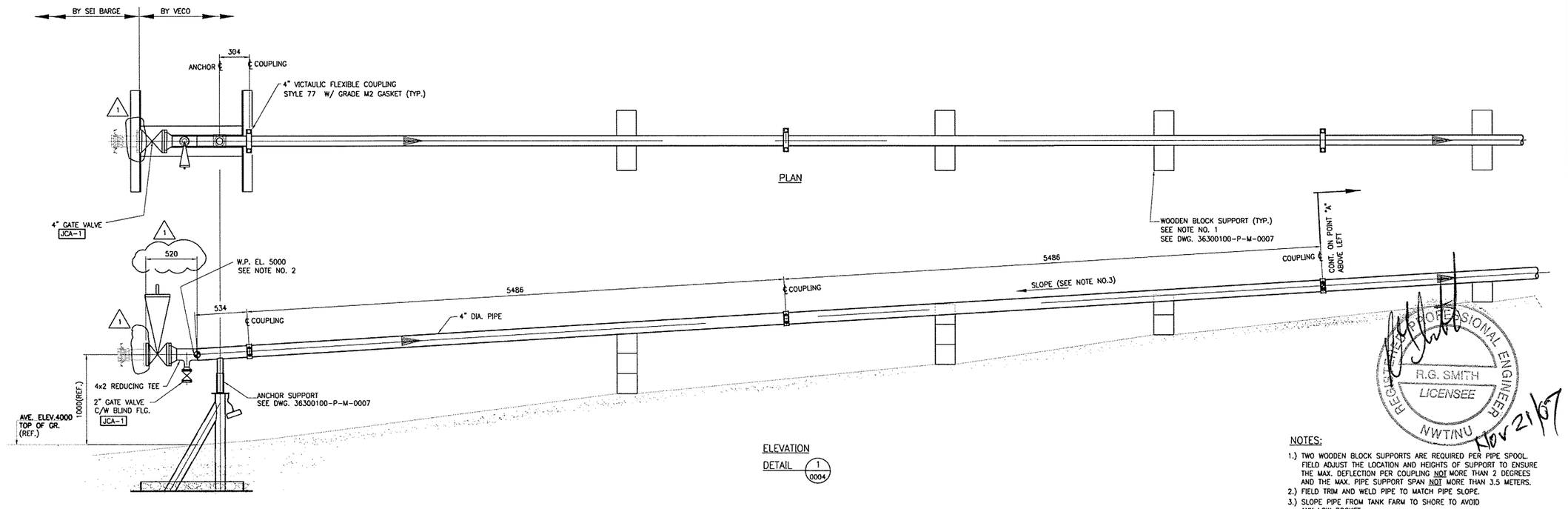




NOTES:

1.) TWO WOODEN BLOCK SUPPORTS ARE REQUIRED PER PIPE SPOOL. FIELD ADJUST THE LOCATION AND HEIGHTS OF SUPPORT TO ENSURE THE MAX. DEFLECTION PER COUPLING NOT MORE THAN 2 DEGREES AND THE MAX. PIPE SUPPORT SPAN NOT MORE THAN 3.5 METERS.
2.) FIELD TRIM AND WELD PIPE TO MATCH PIPE SLOPE.
3.) SLOPE PIPE FROM TANK FARM TO SHORE TO AVOID ANY LOW POCKET.

REGISTERED PROFESSIONAL ENGINEER
R.G. SMITH
LICENSEE
NWT/NU
Nov 21/07

DRAWING No.	TITLE
-	-

REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	DRN	CHK	APP

REVISIONS

REV	DATE	DESCRIPTION	DRN	CHK	APP
1	NOV/19/07	ISSUED FOR FINAL RECORD (AS BUILT INFO ADDED)	aMs	RWB	RWB
0	MAY/18/07	ISSUED FOR CONSTRUCTION	aMs	AM	RWB
A	MAY/02/07	ISSUED FOR CLIENT REVIEW	aMs	JW	RWB

REVISIONS

VECO CANADA LTD.

PROJECT NAME	MILNE INLET FUEL STORAGE
DRAWN	aMs
DESIGNED	
CHECKED	RWB
APPROVED	RWB
	SEI INDUSTRIES MILNE INLET FUEL STORAGE PIPING DETAILS - BARGE UNLOADING
SCALE	1 : 20
DATE	APR/04/07
SHEET	1
PROJECT NO.	3630-0100
DRAWING NUMBER	36300100-P-M-0005
REV	1

REV: 20-NOV-07 17:30 PLOT: 20-NOV-07 17:30 FILE: N:\SEI INDUSTRIES LTD. (003630)\0100_MILNEINLETFUELSTOR\CAD\50PIPING\FAB\36300100-P-M-0005.DWG BY: AS

SEI Industries Ltd.
Engineering Approval Checklist

August 17/07

30,000 USG Tank , Dwg. No. DKFC30000L and DKFC30000R

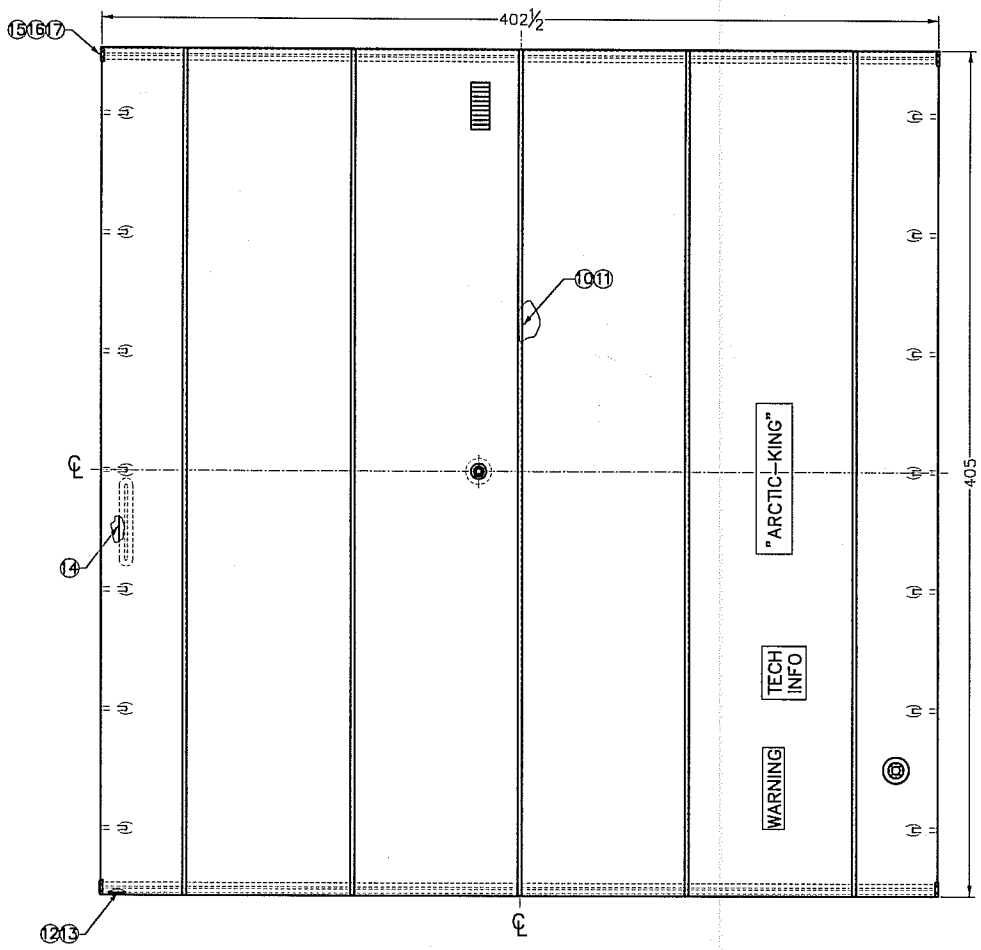
Tank Design

Fabric specified is appropriate for intended use; the liquid being stored and the climate at the installation site.	☑
Compatible fuel for use with tank is identified on tank (silkscreen).	☑
Tank dimensions are correct for the intended volume, with min.5% overcapacity for volume expansion due to temperature change. *Ref. TankDesign.xls and ASTMD1250-80*	☑
Tank capacity and maximum fill height identified on tank (silkscreen).	☑
Static load on fabric is less than one fifth the tensile strength of the fabric. *Ref. Fabric manufacturer's spec sheet, calculations based on dimensions.*	☑
Tank is supplied with vent.	☑

Tank must be installed within a Secondary Containment Berm

Approved By _____

Date Aug. 17, 2007



TECH INFO SILKSCREEN (BLACK):	
CAPACITY:	30000 USG 24980 IMP 113560 L
FULL HEIGHT:	53 INCHES 135 CM

TANK FABRIC MEETS OR EXCEEDS REQUIREMENTS OF MIL–T–52983 REV.E

SUITABLE FOR DIESEL AND JET FUELS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA S. ZHENG

Aug. 17, 2007

TANK ASSEMBLY E4-86 of 159

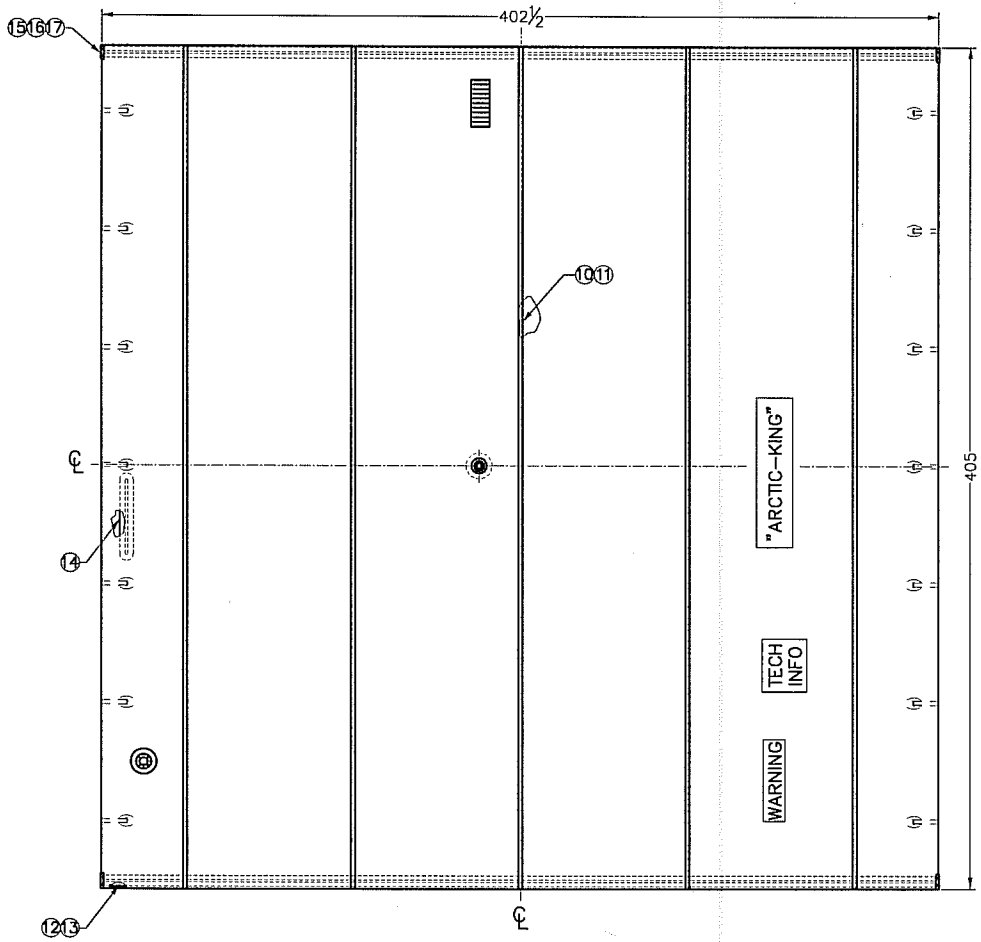
SEI INDUSTRIES
7400 WILSON AVE.
DELTA, B.C. CANADA V4G 1E5
PHONE: (604) 946–3131
FAX: (604) 940–0568

DRAWN V.Y. 06.12.04 | APPROVED G.P. 06.12.04

UNLESS OTHERWISE SPECIFIED
X" = ± .030
XX = ± .010
XXX = ± .005
X = ± 1/16

TITLE: TERRA TANK – ARCTIC KING
30000 USG, RIGHT

SHEET 2/2 | SCALE IN 1:60 | SIZE D | PART NO. DKFC30000R | DRAWING No. DKFC30000R | REV. 0



TECH INFO SILKSCREEN (BLACK):	
CAPACITY:	30000 USG 24980 IMP 113560 L
FULL HEIGHT:	53 INCHES 135 CM

TANK FABRIC MEETS OR EXCEEDS REQUIREMENTS OF MIL-T-52983 REV.E

SUITABLE FOR DIESEL AND JET FUELS

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA S. ZHENG

Aug. 17, 2007

TANK ASSEMBLY

SEI INDUSTRIES
7400 WILSON AVE.
DELTA, B.C., CANADA V4G 1E5
PHONE: (604) 946-3131
FAX (604) 940-6568

UNLESS OTHERWISE SPECIFIED
X° = ± 1°
X = ± 1/16
X = ± .030
.XX = ± .010
.XXX = ± .005

DRAWN	DATE (YY/MM/DD)	APPROVAL	DATE (YY/MM/DD)
V.Y.	06.12.04	G.B.	06.12.04

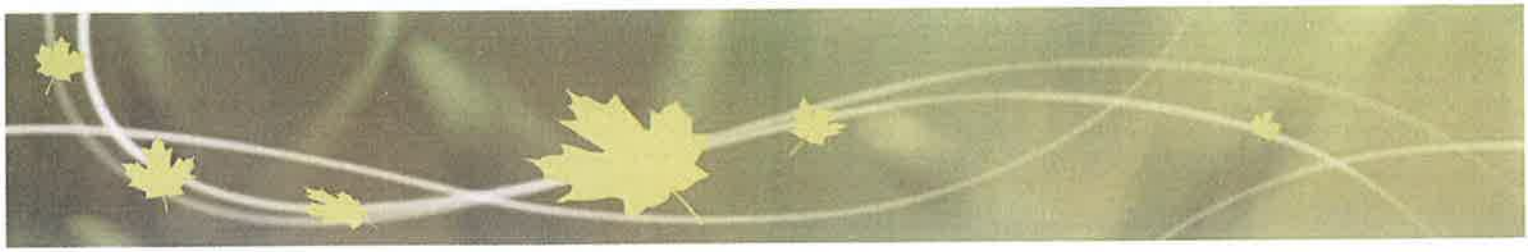
TITLE: TERRA TANK – ARCTIC KING 30000 USG, LEFT

SHEET	SCALE	SIZE	PART NO.	DRAWING No.	REV.
2/2	IN 1:60	D	DKFC30000L	DKFC30000L	0

Appendix D

Environment Canada Technical requirements for Bladders

Environment Canada Environnement Canada



TECHNICAL REQUIREMENTS

FOR

COLLAPSIBLE FABRIC STORAGE TANKS

(BLADDERS)

ENVIRONMENT CANADA

December 17, 2009

Canada

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3.3 Welding
3.4 Seams
3.5 Corners
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3.7 Fill Opening
3.8 Test Strips
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3.10 Shop-Fabricated Secondary Containment Requirements
3.11 Field Repair Kit
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4.2 Permeance
4.3 Compatibility
4.4 Seam Resistance
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Figure 2: 1 kg Instrument drop-weight impact apparatus

Appendix A: Permeance and Permeability Calculations

INTRODUCTION

On June 12, 2008, Environment Canada registered the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*. The Regulations came into force on the date that they were registered. The purpose of the Regulations is to reduce the risk of soil and groundwater contamination due to spills and leaks of petroleum products and allied petroleum products from storage tank systems.

The Regulations set forth requirements for the design and construction of storage tank systems installed on or after the day the Regulations came into force. One requirement is that storage tanks must be designed and built to one of the recognized standards identified in the Regulations.

The Regulations cover storage tank systems that are designed to be installed in a fixed location. Although there is no recognized standard available for the design and construction of collapsible fabric storage tanks, Environment Canada recognizes these storage tanks as a legitimate option for storing petroleum products and allied petroleum products. As such, Environment Canada is publishing these Technical Requirements until a recognized standard is developed to replace them.

These Technical Requirements cover minimum requirements for design and construction of a collapsible fabric storage tank that is used for the aboveground storage of petroleum products and allied petroleum products up to and including a capacity of 125,000 L. Installations that have storage tank systems built around collapsible fabric storage tanks will be required to meet all applicable sections of the Regulations.

TECHNICAL REQUIREMENTS FOR COLLAPSIBLE FABRIC STORAGE TANKS (BLADDERS)

1. SCOPE

1.1 These Technical Requirements provide minimum requirements for collapsible fabric storage tanks ("bladders") intended for the above-ground storage of petroleum products and allied petroleum products with a relative density not greater than 1.

1.2 These Technical Requirements cover the fabrication of bladders for use in a fixed location. Bladders fabricated in accordance with these Technical Requirements are not intended for the transportation of product nor are they intended to be transported while containing product.

1.3 These Technical Requirements cover bladders which are fabricated, inspected and tested for leakage before shipment from the factory.

1.4 These Technical Requirements cover bladders that are shop-fabricated from reinforced coated fabrics or polymer films laminated onto textile substrates.

1.5 These Technical Requirements cover the design and performance of bladders having a capacity not greater than 125 000 L.

2. DEFINITIONS

2.1 "**Above-ground tank**" means a tank that operates at atmospheric pressure and that has all of its volume either above-grade or encased within an unfilled secondary containment.

2.2 "**Permeability**" is the rate of liquid transmission through a unit area and unit thickness of flat material, induced by a pressure difference (static head) between two specific surfaces, under specified temperature and humidity conditions. Expressed as $g/h/m^2/mm$.

2.3 "**Permeance**" is the rate of liquid transmission through a unit area of flat material induced by a pressure difference (static head) between two specific surfaces, under specified temperature and humidity conditions. Expressed as $g/h/m^2$.

2.4 "**Radio frequency welding**" is the method of welding thermoplastics using electromagnetic energy to generate the necessary heat and bond two parts together under pressure.

2.5 "**Secondary containment**" means containment that prevents liquids that leak from a storage tank system from reaching outside the containment area.

2.6 "**Substrate (scrim)**" is a woven, open-mesh, reinforced fabric made from continuous filament yarn.

2.7 "**Thermoplastics (thermoplastic materials)**" are polymeric materials that can be repeatedly heated to their softening point. These materials harden when cooled. This action of heating and cooling can be repeated several times without any significant change in the properties of the material.

Table 1 – Reference Documents

Document Number	Edition	Title of Document
ASTM D814	95(2005)	Standard Test Method for Rubber Property – Vapour Transmission of Volatile Liquids
ASTM D471	06	Standard Test Method for Rubber Property – Effect of Liquid
ASTM D751	06	Standard Test Methods for Coated Fabrics
ASTM D2136	02(2007)	Standard Test Method for Coated Fabrics – Low-Temperature Bend Test
ASTM D2565	99(2008)	Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications
ASTM G154	06	Standard Practice for Operating Fluorescent Light Apparatus for UV Exposure of Non-metallic Materials
ANSI/ASME B1.20.1	1983 (R2006)	Pipe Treads – General Purpose (Inch)

3. CONSTRUCTION

3.1 CAPACITY

3.1.1 A bladder shall have a capacity no greater than 125 000 L.

3.1.2 When a nominal capacity of a bladder manufactured in accordance with these requirements is specified, the actual capacity shall be not less than the nominal capacity but not greater than the nominal capacity plus 2.5%.

3.1.3 As product is withdrawn, a bladder shall collapse so that there is no vapour space.

3.2 MATERIALS

3.2.1 The material property of the bladder shall be designed to provide continued use under the conditions expected to be encountered in the installed environment.

3.2.2 Materials that may be immersed in, or exposed to, petroleum products and allied products, or their vapours, shall have properties that will not be affected by such exposure in a manner that may cause a physical failure of the bladder or a hazardous condition during the life of the bladder.

3.2.3 A bladder shall be manufactured from a polymer fabric that consists of substrate (scrim) and topcoat:

3.2.3.1 The topcoat and substrate must be made of material that is compatible with the petroleum products and allied products being stored.

3.2.3.2 The topcoat and substrate must be able to provide continuous use under the conditions expected to be encountered at the installation site.

3.2.3.3 The topcoat must consist of a double layer of coating applied in two passes on the interior of the bladder.

3.2.4 The polymer fabric shall have a minimum tensile strength of 2000 N (787 N per cm width) when tested in accordance with ASTM D751.

3.3 WELDING

3.3.1 All seams shall be radio-frequency welded by high-frequency dielectric equipment.

3.3.2 All welding shall be done by trained individuals.

3.4 SEAMS

3.4.1 All seams shall provide a permanent bond and shall exhibit characteristics equivalent to the polymer fabric itself.

3.4.2 All seams shall be radio-frequency welded, complete with top and bottom cap strips, and body panels shall be segregated.

3.4.3 Exposed substrate along top and bottom cap strips shall be sealed inside and outside the bladder.

3.5 CORNERS

3.5.1 Corners shall be designed in accordance with good engineering practice to ensure that structural bladder integrity is maintained.

3.5.2 Corners shall be protected from abrasion.

3.6 FITTINGS

3.6.1 All fittings shall be leak-tight stainless steel flanges. If threaded fittings are used, the minimum thread length shall be in accordance with ANSI/ASME B1.20.1, Table 2.

3.6.2 All fittings shall have reinforcement patches, made of the same polymer fabric of the bladder, attached to the tank by high-frequency dielectric welding.

3.6.3 Seaming techniques and methods used to join polymer fabric to the fittings shall be such that bladder integrity is maintained.

3.6.4 All fittings shall have a design pressure of 1035 kPa (gauge) (150 psi).

3.6.5 A minimum of two fittings shall be provided on the top surface of all bladders having a capacity of 2000 L or less:

- 38 mm vent fitting
- 38 mm or 50 mm fill/drain fitting

3.6.6 A minimum of two fittings shall be provided on the top surface of all bladders having a capacity of more than 2000 L:

- 50 mm vent fitting
- 50 mm or 75 mm fill/drain fitting

3.6.7 Only one fitting may be provided below liquid level.

3.6.7.1 If this fitting is provided, it may only be used for draining the bladder when the bladder is being withdrawn from service and removed.

3.6.7.2 This fitting shall be resistant to the product that the bladder is intended to store.

3.6.7.3 This fitting shall be visible for inspection.

3.6.8 All fittings shall be equipped with weather-tight closures at the point of manufacture.

3.6.9 The closures shall be resistant to degradation in the atmosphere.

3.7 FILL OPENING

3.7.1 A wear patch shall be attached to the interior of the bladder directly below the fill opening.

3.8 TEST STRIPS

3.8.1 A minimum of nine 64-mm test strips shall be attached to the exterior top of the bladder.

3.8.2 Each test strip shall contain a 51 mm weld.

3.9 PRODUCTION TESTING

The bladder shall be evaluated for structural integrity in accordance with the following procedure:

3.9.1 Each bladder assembly shall be tested by the manufacturer after all fittings and appurtenances that are appropriate to its use have been fitted.

3.9.2 Each bladder shall be proved tight against leakage at all points including seams, threaded joints and fittings, by applying air pressure of 2 kPa (gauge) measured internally.

3.9.3 While the pressure is maintained, a liquid-soap seam test solution, or equivalent liquid, shall be brushed or poured over all seams, threaded joints and fittings, etc.

3.9.4 A complete inspection of the entire tank surface, including top and bottom, shall be conducted to detect leakage.

3.9.5 Bladders showing evidence of leakage shall be rejected. The pressure shall be removed and the bladder shall be made leak-tight and then retested.

3.9.6 After testing, the plugs in all openings shall be backed off to a hand-tight position.

3.10 SHOP-FABRICATED SECONDARY CONTAINMENT REQUIREMENTS

3.10.1 If a shop-fabricated dyke is provided as a means of secondary containment, the dyke must be capable of supporting the hydrostatic load when full of liquid.

3.10.2 The bladder must be placed entirely within a dyked area

3.11 FIELD REPAIR KIT

3.11.1 Each bladder shall include a field repair kit that contains items necessary to perform on-site repairs of punctures, tears, leaks, etc., and that is readily available in an emergency situation.

3.12 MARKING

3.12.1 Each bladder shall be marked in a permanent manner with the following information, in letters written in a height equal to or greater than that indicated below (all non-bracketed items are to be written exactly as worded; all square-bracketed items indicate the type of information to be marked):

- DANGER, FLAMMABLE OR COMBUSTIBLE LIQUID STORAGE (50 mm)
- SMOKING PROHIBITED WITHIN 6 METRES (50mm)
- KEEP ALL SOURCES OF IGNITION AT LEAST 6 METRES FROM THIS STORAGE TANK (50mm)
- MAXIMUM CAPACITY (50 mm)
- DO NOT OVERFILL – Overfilling may result in permanent damage or failure of the bladder (50 mm)
- Collapsible Fabric Storage Tank (Bladder) (12 mm)
- [Name of manufacturer] (12 mm)
- [Year/month of manufacture] (12 mm)
- Name of certifying agency (12 mm)
- [Fabrication material] (12 mm)

Information must be clearly visible to the owner or operator of the bladder. The markings must be visible when the bladder is empty and resistant to product stored."

4. PERFORMANCE

4.1 GENERAL

4.1.1 Bladder fabric shall meet the performance requirements laid out in this section.

4.1.2 The tank manufacturer shall ensure that performance testing is in conformance with a method certified by a third party testing organization in conformance with this document, using:

4.1.2.1 A document and validated test method; and

4.1.2.2 Technicians that are trained in the maintenance and use of the test equipment

Table 2 – Performance Requirements

Test	Paragraph	Test Reference	Performance
Permeance	4.2	ASTM D814	Less than 10 g/m^2/h over 24 h
Compatibility	4.3	ASTM D471 Rubber Property – Effects of Liquids	Degradation visible under 7X lens
Seam resistance	4.4	Applicable standard test method	Separation = tensile strength
Puncture resistance	4.5.1	ASTM D751 Section 18	No perforation
Bursting strength	4.5.2	ASTM D751 test method with ring clamps	Min 4000 N of bursting strength
Rough handling	4.5.3	ASTM D2136	No visible cracking
Accelerated weathering	4.7.1	ASTM D2565 or ASTM G154	No cracks or deterioration; bladder retains 80% of its tensile strength
Heath aging	4.7.2	Applicable standard test method	90% of tensile strength
Tear strength	4.8	ASTM D751 (tongue tear)	Min. tear strength: as received – 195 N conditioned – 175 N

4.2 PERMEANCE

4.2.1 Bladder fabric shall have a permeance to the liquids listed in Table 3 equal to or less than 10 g/h/m^2 over a 24-hour period.

4.2.1.1 At least three representative samples of bladder fabric shall be exposed to the liquids shown in Table 3 for 28 days at an ambient temperature of 23±2°C and a relative humidity of 50±2%.

Table 3: Exposure Liquids

A	Premium unleaded gasoline
B	ASTM reference fuel F
C	Fuel JP-8
D	Distilled water
E	Sodium chloride (saturated)

4.2.1.2 The tests shall be conducted in accordance with ASTM Test Method D814.

4.2.1.3 Calculations shall be made as per Appendix A.

4.2.2 All samples shall pass.

4.3 COMPATIBILITY

4.3.1 Mass and volume change and loss of tensile strength shall be within the limits designated in clauses 4.3.3, 4.3.4 and 4.3.5 when exposed to the liquids specified in Table 3.

4.3.1.1 At least three representative samples of bladder fabric shall be exposed to the appropriate test liquid in Table 3 for 30 days at an ambient temperature of 23±2°C.

4.3.1.2 Following exposure, the samples shall be wiped clean and dried for 2 hours at a temperature of 21±2°C.

4.3.1.3 Any presence of delamination or other degradation visible with 7X lens shall be noted.

4.3.2 Samples shall be tested in accordance with sections 10, 11 and 15 of ASTM D471.

4.3.3 The samples shall not exhibit a change in mass in excess of 10%.

4.3.4 The samples shall not exhibit a volume change in excess of 15%.

4.3.5 The samples shall retain not less than 50% of their tensile strength.

4.4 SEAM RESISTANCE

4.4.1 Seam strength shall exceed or be equal to the specified tensile strength of the polymer fabric (clause 3.2.4).

4.4.1.1 At least five specimens that are representative of the bladders shall be bonded in accordance with the manufacturer's instructions. A similar set of specimens shall be prepared from the parent fabric.

4.4.1.2 Each specimen for testing shall be cut to the size of 150 by 100 mm; for the seamed samples, the long dimension shall be perpendicular to the seam and the seam shall be equidistant from the ends of the specimen (Figure 1).

4.4.1.3 The specimens shall be conditioned for a minimum of 24 hours at 23°C ± 2°C.

4.4.1.4 Each specimen shall be secured centrally in the clamps of the testing machine, in such a way that the long dimension is parallel to the direction of application of the load. Care must be taken to ensure that the tension in the specimen is uniform across the clamped width.

4.4.1.5 The load shall be applied by the machine at a velocity of 5±0.1 mm/s until separation occurs.

4.4.2 Maximum load at separation of the seamed samples shall be equal to or exceed the specified tensile strength.

4.5 PHYSICAL RESISTANCE

Bladders shall exhibit puncture resistance, bursting strength and rough handling that meet the requirements of clauses 4.5.1 and 4.5.4.

4.5.1 Puncture Resistance

4.5.1.1 Bladders shall resist the impact of a blunt object without perforation.

4.5.1.2 Polymer fabric shall be subjected to the impact of a 1 kg instrument drop-weight impact apparatus, as illustrated by Figure 2, dropped from a height of 1 m at a temperature of 20°C.

4.5.1.3 Not less than three samples of reinforced polymer fabric, each consisting of 1 m^2 of fabric, shall be spread individually on a bed of drained wet brick-layers' sand 150 mm deep, with the impact made at the centre of the fabric sample. After the impact, the samples shall be examined for perforation.

4.5.1.4 None of the fabric samples shall be perforated.

4.5.2 Bursting Strength

4.5.2.1 Bladders shall exhibit bursting strength that meets the requirements of clause 4.5.2.4.

4.5.2.2 Representative samples shall be subjected to slowly increasing pressure until rupture or failure occurs as described in ASTM D751 Section 18.

4.5.2.3 A minimum of 10 specimens shall be prepared, each measuring at least 12.5 mm greater in diameter than the outside diameter of the testing machine.

4.5.2.4 Samples shall exhibit a bursting strength of not less than 4000 N when tested in accordance with ASTM D751 Test Method with ring clamps.

4.5.3 *Rough Handling*

4.5.3.1 Bladders shall exhibit their ability to withstand rough handling by meeting the requirements of clause 4.5.3.1.1.

4.5.3.1.1 Not less than three samples shall withstand, without failure, rough handling at temperatures of 40°C and −46°C when tested in accordance with modified ASTM D2136 as follows:

4.5.3.1.2 Test samples of fabric, each 10 mm wide occurring along 300 mm length, shall be folded over through 180 degrees.

4.5.3.1.3 A 10 kg roller, 150 mm in diameter, shall be passed over the folded sample ten times.

4.5.3.1.4 The test shall be conducted on all samples at ambient temperatures of 40°C and −46°C.

4.5.3.2 The samples shall not show visible cracking under 5X magnification.

4.6 PROOF OF DESIGN TEST

4.6.1 The representative bladder sample shall be tested to demonstrate the strength of design.

4.6.2 The test sample shall represent the bladder having the largest designed capacity in a series.

4.6.3 The tank shall be filled with water to its design capacity ± 5% and allowed to stand for a minimum of 4 hours.

4.6.4 A complete inspection of the entire tank surface shall be conducted to detect leakage.

4.6.5 Bladders showing evidence of leakage shall not have demonstrated proof of design.

4.6.6 After testing, the plugs in all openings shall be backed off to a hand-tight position.

4.6 RESISTANCE TO ACCELERATED WEATHERING AND AGING

Samples (minimum 3) of the polymer fabric, following a 480-hour exposure to ultraviolet light and water, shall not crack or deteriorate, and when tested for tensile strength, shall retain at least 80% of the values obtained in the "as received" condition.

4.7.1 *Resistance to Accelerated Weathering*

4.7.1.1 Representative samples (minimum 3) of bladders shall be subjected to accelerated weathering for 480 hours, using either of the following two options:

Option 1

Perform xenon arc exposure in accordance with ASTM D2565, using apparatus Type B, BH or E. Appropriate filters shall be used to simulate the spectral power distribution of natural daylight. For Type B or BH apparatus, use borosilicate glass, inner and outer. For Type E apparatus, use three Suprax filters. The exposure cycle shall be 102 minutes of light and 18 minutes of light and water spray (using deionized water) at a black panel temperature of 63±3°C and a relative humidity of 30±5%. The spectral irradiance shall be 0.35 W/m^2 at 340 mm.

Option 2

Perform fluorescent UV/condensation exposure in accordance with ASTM G154, using UV340 bulbs. The exposure cycle shall be 8 hours of light and 4 hours of condensation, at a black panel temperature of 63±3°C and a condensation temperature of 50±3°C.

4.7.1.2 Subsequent to the weathering, the following test shall be conducted:

4.7.2.2.1 Tensile strength as described in section 4.3

4.7.2 *Resistance to Heat Aging*

Representative samples (minimum 3) of polymer fabric shall be placed in an air-circulating oven for 60 days at 80±1°C. After a 24-hour recovery period at 21°C, the test for tensile strength shall demonstrate 90% retention of its tear strength properties as described in clause 4.8.

4.8 TEAR STRENGTH

4.8.1 Samples (10) of the polymer fabric, when tested in accordance with ASTM D751 (tongue tear), shall have a tear strength of not less than 195 newtons in the "as received" condition (i.e. without exposure to test liquids) and 175 N after exposure to the test liquids as specified in clause 4.3.

4.8.1.1 The tear strengths shall be determined on "as received" samples and on samples immersed in the test liquids.

4.8.1.2 The tear strength shall be determined on 10 samples: 127 mm (5 samples) in the longitudinal direction and 127 mm (5 samples) in the cross-roll direction. Each specimen for testing shall measure 75 mm by 200 mm and shall be cut in the centre of the shorter edge for 75 mm to form tow "tongues," each of which shall be gripped in the clamps of a recording tensile testing machine and pulled to simulate a tear.

4.8.1.3 After the tearing action is initiated, the pulling action will continue until the moving jaw has travelled for a minimum of 75 mm. The rate of travel shall be approximately 50 mm/min and shall be uniform at all times.

4.8.1.4 The tearing strength of the sample shall be calculated as the average of the tearing strengths obtained for the tested samples. If multiple-ply samples are used, the average obtained shall be divided by the number of plies per specimen.

5. LIFE EXPECTANCY

5.1 SHELF LIFE

5.1.1 Shelf life applies to all bladders. The optimal conditions to store bladders are between 10°C and 43°C with humidity between 50% and 75%. The maximum shelf life of a bladder is 10 years from the date of manufacture.

5.1 SERVICE LIFE

5.2.1 The service life begins when a petroleum product or allied petroleum product is transferred into the bladder.

5.2.2 Service life shall be tested by the manufacturer following section 4.8, using test strips as listed in section 3.8. These tests should be performed as per Table 4, beginning in year 2 and then annually.

5.2.3 The service life cannot be stopped or reversed. Service life is dependent upon climatic conditions and maintenance but shall never exceed 10 years.

Table 4: Frequency of Re-Testing

Frequency	**Number of samples per test**	**Test**
Year 2	1 sample	Tensile strength to retain 80%
Year 3 to 7, tested annually	1 sample	Tensile strength to retain 70%
Year 8 to 10, tested annually	1 sample	Tensile to strength retain 50%

6 INSTALLATION, MINIMUM INSTALLATION DISTANCES, AND MAINTENANCE

6.1 Each bladder shall be accompanied by detailed installation and maintenance requirements from the manufacturer.

6.2 Each bladder shall be accompanied by detailed repair instructions.

6.3 MINIMUM REQUIRED DISTANCES FOR INSTALLATION

6.3.1 Bladders shall be installed and maintained to have a minimum distance between the secondary containment and buildings based on the size of the secondary containment and construction or use of the building.

6.3.1.1 The distance between the secondary containment and buildings of ordinary or combustible construction having extensive window areas or associated combustible yard storage shall be two times the secondary containment diameter (if round) or diagonal (if not).

6.3.1.2 The distance between the secondary containment and buildings containing hazardous materials shall be two times the secondary containment diameter or diagonal.

6.3.1.3 The distance between the secondary containment and buildings of unknown construction or varying or unknown storage and yard storage shall be two times the secondary containment diameter or diagonal.

6.3.1.4 The distance between the secondary containment and buildings of ordinary or combustible construction not having extensive window areas, hazardous materials storage or associated combustible yard storage shall be one times the secondary containment diameter or diagonal.

6.3.1.5 The distance between the secondary containment and buildings of fire-resistive or non-combustible construction not having extensive window areas, hazardous materials storage or associated combustible yard storage shall be 0.5 times the secondary containment diameter or diagonal.

Figure 1

SAMPLE – SEAM STRENGTH

MODIFIED ASTM D 751 GRAB METHOD

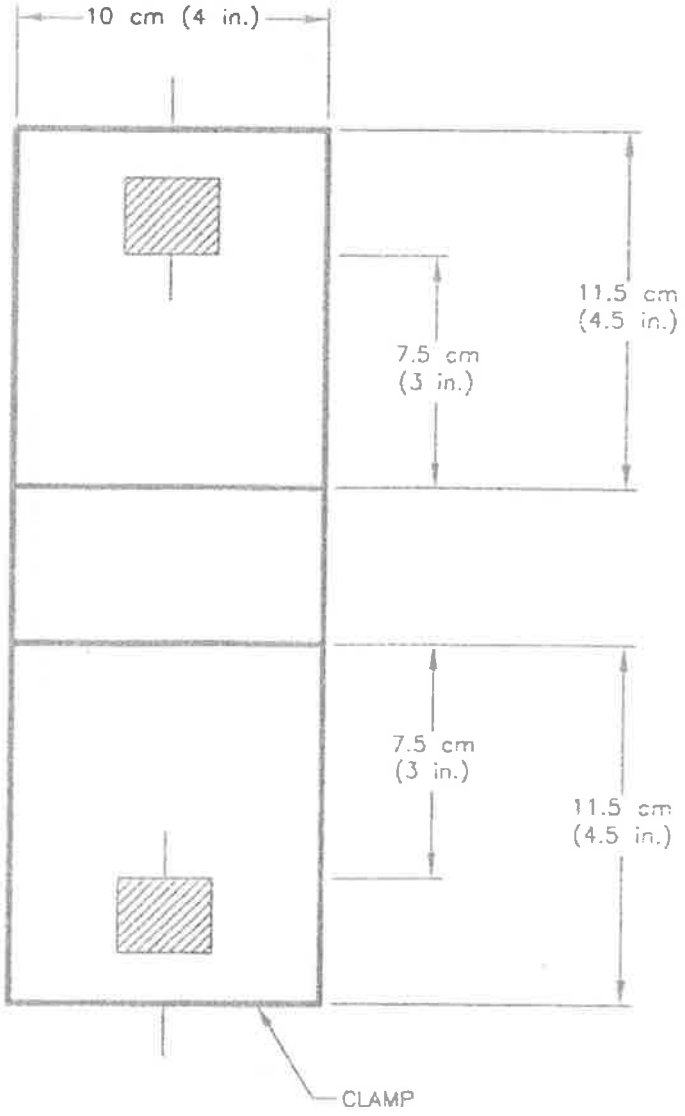
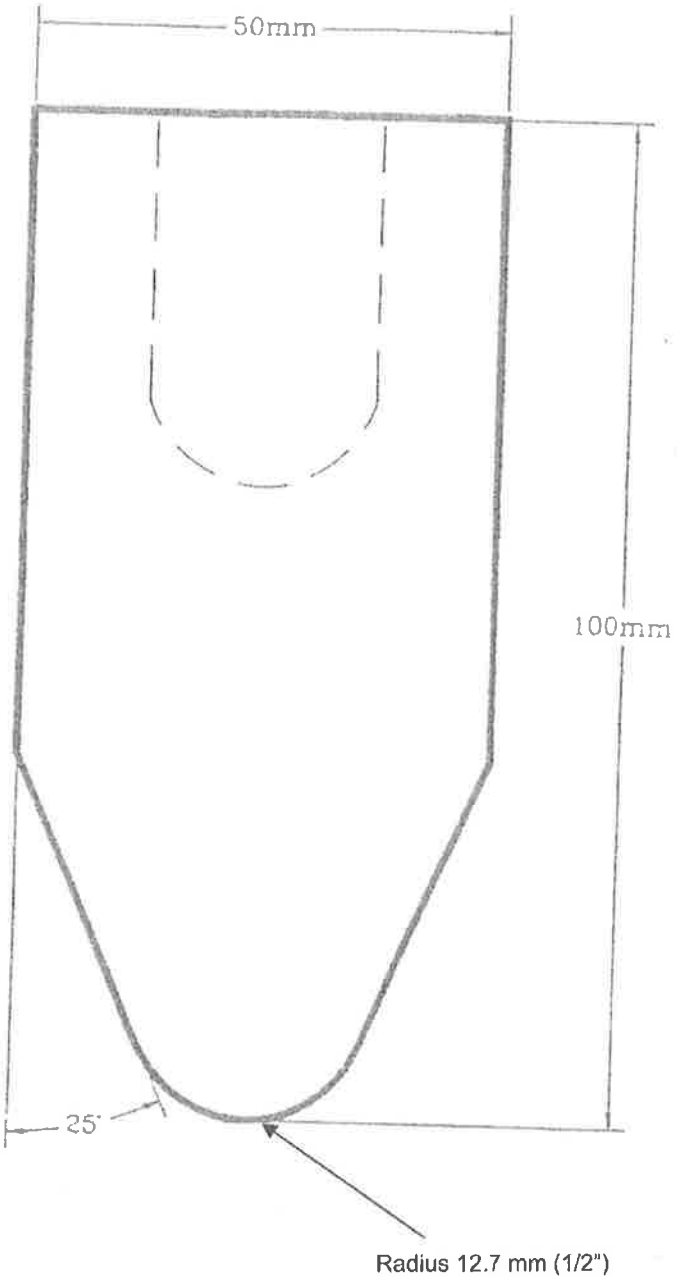


Figure 2

1 kg INSTRUMENT DROP-WEIGHT IMPACT APPARTUS



APPENDIX A

PERMEANCE AND PERMEABILITY CALCULATIONS

Using the method described in subsection 4.2, determine the mass of liquid lost over a 28-day period. From this value, together with the known exposed area of the test specimen, the following calculation can be made:

Mass of liquid lost per hour

$$= \frac{\text{Mass of liquid lost over 28 days}}{28 \times 24}$$

$$= \frac{(W1 - W28)}{672}$$

Permeance (Pc) $= \frac{\text{Mass of liquid lost per h}}{\text{area of test specimen, cm}} \times 10\,000$

$$= \frac{(W1 - W28) \times 10\,000}{672 \times a}$$

or $$= \frac{(W1 - W28) \times 14.881}{a}$$

$$= _____ \text{ g/h/m}^2$$

Where: W1 = original mass of liquid before test (g)

W28 = mass of liquid after 28 days (g)

a = exposed area of test specimen (cm^2)

Permeability (Pb) = permeance x liner thickness in $g/h/m^2/mm$

Appendix E

Bulk Fuel Unloading Procedures

Procedure:	**Bulk Tanker Fuel Transfer to Milne Inlet Fuel Farm**			**Procedure No:**	
Revision: 1		**Effective:**	June 13/08	**Replaces:**	Rev 0 – Aug 30/07

PURPOSE

To establish a standard procedure for the safe transfer of fuel from bulk fuel tanker ships in Milne Inlet to Baffinland's fuel farm at Milne Inlet.

SCOPE

This procedure applies to ship to shore transfer of fuel from bulk tankers in Milne Inlet to Baffinland's fuel bladders contained in the Milne Inlet fuel Farm.

The transfer of fuel involves multiple work groups that follow various regulatory laws, guidelines & organizational standards. This procedure ties together the various standards to be followed and details specific roles & accountabilities to ensure a safe transfer of fuel and to prevent cargo/fuel spillage, and the resulting environmental damage.

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GENERAL SAFETY

Wear approved P.P.E. - Safety glasses; hard hat; safety boots;

Key Safety Requirements:

1. Ignition sources: Fuels are highly flammable. Smoking or open ignition sources are not permitted within 10 meters of ship to shore connections, fuel manifolds or within the fuel farm berm.

2. High pressure piping: The pressurization of fuel transfer lines, manifolds and fuel farm piping can reach pressures of 700 kPa (100 psi). No person is permitted to create a break in a pipe or open any part of the pressurized system without the written consent of the Baffinland fuel transfer Master once the Pre-Transfer Operation (Section 4.0) has been initiated.

3. Environmental spill response: Prompt and correct local response are required in the event of a spill to safeguard life and property; and lessen the environmental impact of the spill.

4. Communication: Good communication between all parties involved in the fuel transfer is essential for a smooth transfer, and are vital in the event of an incident.

Summary of Operation.

The ship to shore transfer operation at Milne Inlet is similar to other cargo discharge operations in the North, however, there are some unique aspects that require specific procedures be followed and understood by all personnel involved in the discharge operation.

The transfer operation involves filling 72-113.5 m3 bladders with two types of fuel (Jet A and P50 (diesel)). It is expected that once cargo operations are underway, the ship will discharge at a rate of 90 m3/hour and that each bladder will take approximately 73 minutes to fill. Accurate reconciliation of discharge & fill volumes through regular communication between ship & shore personnel is required to ensure the safe transfer of fuel & prevent the overfilling & over pressurization of the fuel bladders that could result in a spill.

There are a number of work groups involved in the transfer of fuel. The workgroups and applicable procedures are listed below:

Work Group	Description of Applicable Regulation, Guideline or Procedure	Regulation, Guideline or Procedure
Baffinland Iron Mines/Petro-Nav/SEI	Bulk Tanker Fuel Transfer To Milne Inlet Fuel Farm	This document applies
Baffinland Iron Mines	Mary River Project Bulk Sample Emergency Spill Contingency Plan	
Baffinland Iron Mines	Oil Pollution Emergency Plan	*In draft form – to be added*
Baffinland Iron Mines/SEI	SEI – Milne Set Up & Operating Manual	
Petro-Nav	Cargo Operations at Milne Inlet	
Petro-Nav	Artic, General Port Operation Guidelines	
Baffinland Iron Mines/Petro-Nav	Transport Canada – Artic waters oil transfer guidelines.	
Petro-Nav	Artic shipping pollution prevention regulations (ASPPR), under the Arctic Waters Pollution Prevention Act (AWPPA). This covers ship standards and activities in waters north of the 60th parallel.	
Petro-Nav	Artic Waters Pollution Prevention Regulations (WAPPR) under the AWPPA. This covers the ship owner's liability provisions regarding spillage of waste	

Petro-Nav	Oil Pollution Prevention Regulations (OPPR), under the Canada Shipping Act.	
Petro-Nav	Shipboard oil pollution emergency plan	

RESPONSIBILITY

Role	Accountability	By When	Comments
BIM Operations Manager or Designate	Complete PHA on Draft Procedure	In advance of annual Bulk Fuel Sealift	
BIM Fuel Transfer Master	Implementation of all supplier accountabilities as described in this procedure, all regulatory requirements and organization procedures	As specified	
BIM Shift Inspector	Inspection of shore fuel transfer system piping	Every 2 hours upon start of fuel transfer	
Supplier Oil Transfer Supervisor	Notify Prairie & Northern Region, Maritime in Ottawa, via NORDREG of the plans for oil transfer operations in artic waters	In advance of Bulk Fuel Sealift	
	Implementation of all supplier accountabilities as described in this procedure, all regulatory requirements and organization procedures	As specified	
All personnel involved in Bulk Fuel Transfer	Initiate Stop Transfer or Emergency Stop Transfer upon identification of conditions listed in this procedure	As required immediately	

DEFINITIONS

Supplier: The owner and the operations personnel of the bulk fuel tanker ship engaged under contract to Baffinland Iron Mines to ship & transfer fuel to the Milne Inlet fuel farm shore manifold

Receiver: Baffinland Iron Mines (BIM)

PROCEDURE

1.0 GENERAL

1.1 Do to the general high risk nature of fuel transfer in Canada's high Artic; a Process Hazard Analysis (PHA) will be conducted annually on this procedure by all parties involved in the Bulk Fuel Transfer Procedure in advance of the Bulk Fuel Sealift. The purpose of the PHA is to identify potential hazards not already covered in this procedure or with the methodology and to implement the appropriate controls commensurate with the level of risk associated with the hazard.

1.2 Upon arrival of the bulk tanker at Milne Inlet and prior to commencement of any operation including supplier equipment mobilization, all organizations & work groups involved in the Bulk Tanker Fuel Transfer to the Milne Inlet Fuel Farm will meet to:

- Identify the supplier fuel transfer supervisor and BIM fuel transfer master to all personnel involved in the operations
- Review this procedure.
- Inform each party involved of the dimensions of the other's key facilities, such as manifold/fuelling station location, maximum & minimum draught, shore manifold connections, and jetty/shore characteristics such as tides, bollards, mooring and positioning aids, hidden hazards
- Inform all participating personnel of their duties and responsibilities during the transfer, and ensure they are versed in Oil Pollution Emergency Plan.
- Upon completion of the meeting, the ship Captain and/or 1st mate will come ashore to inspect the installation.

1.3 Communication: Reliable, clear and consistent communication is essential for a smooth transfer operation, and is vital in a crisis situation. The following communication standards are to be followed:

- The language of the workplace at Baffinland is English. All communication is to be in English.
- A dedicated radio frequency will be used by personnel directly involved in the transfer. The supplier will provide radio's on the ship's dedicated frequency to the receiver's shore personnel.
- The radio is only to be used for fuel transfer communication
- All cargo volumes are to communicated in cubes or cubic meters
- The following standard signals should be used in all transfer operations
  - STANDBY TO START TRANSFER
  - START TRANSFER
  - SLOW DOWN TRANSFER
  - STAND BY TO STOP TRANSFER
  - STOP TRANSFER
  - EMERGENCY STOP OF TRANSFER

    If any of the following conditions occur, the transfer should be stopped immediately:

    LOST COMMUNICATIONS
    LOSS OF ABILITY TO MONITOR HOSE TO SHORE
    SIGN OF SPILLAGE, OR DAMAGE TO HOSES AND COUPLINGS
    ANY DETECTION OF ACCUMULATED GASES
    MAJOR INCREASE IN WIND AND/OR SWELLS (SUPPLIER)
    WHEN AN ELECTRICAL STORM IS PRESENT OR PREDICTED
    SEVERE DETERIORATION IN ICE OR VISIBILITY CONDITIONS (SUPPLIER)
    HELICOPTER LANDINGS OR TAKE OFFS WITHIN 500 METERS
    ANY OTHER SITUATION DEEMED DANGEROUS BY THE FUEL TRANSFER SUPERVISOR OR BAFFINLAND FUEL TRANSFER

MASTER.

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2.0 LAND / SHORE - SAFETY AND ENVIRONMENTAL CONTROLS

2.1 The receiver will ensure the following safety controls are in place prior to and during fuel transfer:

- "No smoking/no naked lights or flames" warning signs will be posted at all the shore manifolds and at the entrance to and around the perimeter of the fuel farm berm.
- Fire extinguishers will be prepared for rapid deployment in the area of the shore manifold and the fuel farm before commencing transfer
- The shore hose landing, handling and manifold area is free of obstructions and hazards
- Road access to the beach area will be restricted to prevent vehicles from crossing the hose
- Manifolds, bollards and deadmen are adequate and clearly marked for visibility
- All personnel involved in the fuel transfer using radios will be on the same channel or frequency
- Ensure that all personnel know they have the right to suspend operations at any time, if they decide it is necessary.
- Fuel Transfer Piping Isolation: The pressurization of fuel transfer lines, manifolds and fuel farm piping can reach pressures of 700 kPa (100 psi). No person is permitted to create a break in a pipe or open any part of the pressurized system without the written consent of the Baffinland fuel transfer Master.
  - Each time the fuel transfer system requires a break in the line, flange to be opened, a component to be removed or any other service that requires the opening of a line even downstream of a valve, a non-routine JSA must be conducted by the BIM Fuel Transfer Master and the workgroups doing the work.
  - The work may only proceed upon written confirmation by the BIM Fuel Transfer Master.
- Burning & Welding is not permitted on any component associated with shore manifold, pipeline, or fuel farm equipment without the written consent of the Baffinland fuel transfer Master. A non-routine JSA must be conducted by the Baffinland fuel transfer master and the personnel involved in the hot work.

2.2 The receiver will ensure the following environmental controls will be in place prior to and during fuel transfer:

- Ensure that all personnel know they have the right to suspend operations at any time in the event of a spill or, any loss of control or potential loss of control that may result in a spill
- Fuel transfer will be stopped immediately in the event of any drip, flow, leak or seep in to soil or water during fuel transfer. Fuel transfer operations will cease until leaks to soil or water have been eliminated.
- Emergency spill response kits will be positioned at the shore manifold, along the pipeline and at the fuel berm
- The BIM emergency spill response sea cans will be positioned in close proximity to the shore manifold at the beach area with boom (and towing bridle attached) ready to deploy.
- As an additional contingency, a front end loader, excavator or other appropriate earth moving equipment will be readily available to the BIM transfer master at Milne Inlet during the fuel transfer.
- All personnel directly engaged in the fuel transfer are familiar with the Baffinland Iron emergency spill response protocol.
- Baffinland Iron will initiate & implement all land based spill response plans.
- A drip tray or lined berm will be place under the shore manifold connection.

3.0 SEA / SHIP - SAFETY & ENVIRONMENTAL CONTROLS

3.1 The supplier will implement all safety controls as are required under the applicable regulation, guideline or supplier procedure documented in the "Summary of Operation" above.
3.2 Land / shore – safety & environmental controls (Section 2.0) will be reviewed with the supplier's oil transfer supervisor and shore crew.
3.3 The supplier is accountable for completing the Artic Oil Transfer Guideline Checklist and will provide a copy to Baffinland Iron upon completion of the fuel transfer to Milne Inlet.

4.0 PRE-TRANSFER PREPARATION & OPERATIONS

4.1 Pre-transfer preparation may commence at any time during the day – However, cargo transfer operation may only start during daylight hours.
4.2 Prior to the supplier connecting the hose to the shore manifold, the supplier oil transfer supervisor and BIM fuel transfer master will complete and sign off on the appropriate pre-transfer preparation & operations checklist to confirming all requirements are completed.
4.3 Once the ship hose is connected to the shore manifold the following tasks can be completed:
The supplier will complete and certify a pressurized air test of the transfer hose.
The receiver may request the supplier to conduct an air pressure test on the shore manifold, piping and distribution piping in the berm. **It is critical that all bladder isolation valves be closed prior to pressurizing the line.** The shore lines must hold pressure for 1 minute. If pressure cannot be held, an inspection of the entire line must be made to determine the location of the leak prior to discharging cargo. The receiver will certify that an air pressure test was completed.

5.0 TRANSFER OPERATIONS

5.1 The cargo transfer operation may only start during daylight hours.
5.2 Baffinland fuel transfer master will announce impending fuel transfer on ship to shore communication and to other personnel at Milne inlet
5.3 Baffinland will follow the fuel bladder farm manufacturer's recommended filling procedure as described in the vendor (SEI) Milne Inlet Set Up Manual – Section 5.24, pages 51-59.

Cargo hose/shore line pigging procedures

Great care must be taken to ensure that NO air be allowed to blow unrestricted into the shore cargo tanks. When pigging the cargo hose and clearing it of product, all stations must be coordinated to determine when the pig reaches the shore manifold and when the pig reaches the tank farm.

Drain the air pressure off the cargo hose back into a dry drip pan (it is the preferred method). In order to prevent air being splashed onto personnel a canvas or plywood screen can be set up. Where it is impracticable to drain into a Manifold drip tray or an empty drum, we may then drain the air pressure off the cargo hose back into an empty cargo tank or slop tank onboard ship. Under no circumstances shall air be bled off in any great quantity into the shore tanks as this operation could lead to failure and collapse of the shore tank.

Normal operations would have the Jet A fuel discharged ashore first. The hose can, if required for quality reasons, be blown with a pig until the pig reaches the shore manifold or tank farm. (This point is determined by prior arrangement with the ship and shore personnel). The hose will then be bled off and the hose will then be cleared. The pigs will be retrieved from the hose up in the tank farm, or, where no receiver is available at the tank farm, the pig will be retrieved

at the shore manifold pig-catcher.

This procedure will ensure that the hose/shore line has been cleared of all traces of Jet A. The diesel will then be discharged ashore as the last cargo. The shore line must be left empty with only traces of diesel/jet in the line for reasons of safety. At no time will the shore line be left with gas or gasoline residue inside of it because this will result in a hazardous situation.

Upon completion of discharge of a cargo the pigging of the hose/shore line should be done as follow:

1. Cargo pump stop
2. Cargo manifold close
3. Squeeze the cargo hose about 3ft from the manifold
4. Drain that section of the cargo hose
5. Ensure the hose is well secure
6. Disconnect the hose, insert the pig, reconnect the hose
7. Notified the tank farm that you are ready to launch the pig
8. When the tank farm is ready to received the pig, open the air
9. When the air pressure is at 70psi, release the pig by opening the hose squeezer
10. The air pressure should be maintain at approximately 70psi
11. If the pig get stuck, notified the farm then increase the air pressure by 10psi and wait 2 to 5 minutes
12. If the pig is still stuck repeat the above but do not exceed 100psi
13. Once the pig is at the tank farm shut the air immediately
14. Bled the air from the hose and change the hose of manifold to the next grade
15. If the pig is heavily damage after the operation or if you believe there is still product in the hose/line, bled the air and send a second pig.

- There are two methods of measuring fuel levels/contents in the bladder that may be used in conjunction with this filling procedure:
  Option 1 – Volume measurement from the fuel farm header flow meter
  Option 2 - Visual physical measurement of the height of the bladders

- One of two options may be used for transferring fuel to the bladders:
  Option A – Fill one bladder at a time

Under this option, the valve to one bladder is opened and fuel transfer begins
Once the maximum amount of fuel has been added to the bladder as measured by one of the level measuring options,
The subsequent bladder fill valve is opened and the now filled bladder valve is closed
This procedure is repeated until all but the last bladder is filled.
The supplier will inform the receiver at a point no later than this in the transfer the remaining quantity of fuel to transfer.
The receiver will determine how much more fuel can be added to bladders and will top up as capacity allows
The last bladder will be used to drain the calculated/or measured volume of fuel in the transfer hose, pipeline, and bladder headers

Option B – Fill groups of four bladders at once

Under this option, the valves to a group of four bladders is opened and the fuel transfer begins
Once the maximum amount of fuel has been added to a bladder as measured by physical measurement, the fill valve is closed to that bladder
The fill valves to one or more bladders on the next group of four bladders can now be opened.
This procedure is repeated until all but the last bladder is filled
The supplier will inform the receiver at a point no later than this in the transfer the remaining quantity of fuel to transfer.
The receiver will determine how much more fuel can be added to bladders and will top up as capacity allows
The last bladder will be used to drain the calculated/or measured volume of fuel in the transfer hose, pipeline, and bladder headers

5.4 Fuel transfer rates should initially start off low in the 30-40m3/hr range and then ramp up slowly as the fill methodology advances. The maximum fuel transfer rate allowed the Milne Inlet bladders is 90m3/hr
5.5 Upon commencement of fuel discharge to the fuel farm bladders, the entire length of the Milne Inlet fuel transfer piping system from the shore manifold to the fuel berm will be inspected for leaks, and every hour thereafter so long as the fuel transfer system is charged. The Fuel Transfer Piping System Inspection Log will be submitted to the BIM fuel transfer master at the end of each shift.
5.6 Jet A fuel will be transferred first to prevent contamination with P50
5.7 The fuel transfer hose and shore pipe will be cleared of Jet A with a Pig following the completion of Jet A fuel transfer
5.8 P50 fuel will be transferred to the fuel farm.
5.9 Upon completion of the fuel transfer operations, the ship will push a 4” pig through the hose and pipeline to displace all remaining fuel in to the last bladder and eliminate the potential for a fuel spill when disconnecting the hose from the shore manifold

6.0 POST-TRANSFER OPERATIONS

6.1 The shore manifold open end will be capped to prevent any accidental discharge of fuel.
6.2 Upon completion of the fuel transfer operation, the hard pipe line will be isolated from the fuel farm at a point inside the fuel farm through the installation of a spade or by physically breaking & installing a blank flange or cap on both ends
6.3 The hard piped transfer line will be opened at the shore manifold to drain any remaining fuel that may have accumulated.
6.4 The BIM fuel transfer master will sign off the Milne Inlet Fuel Transfer Checklist indicating that this

procedure has been completed and the Bulk Fuel Transfer To the Milne Inlet Fuel Farm is Complete

6.5 The supplier will provide Baffinland Iron with a copy of the Suppliers statement of facts (record of ship activities) from the fuel transfer process.

7.0 REFERENCES AND RELATED DOCUMENTS

7.1 PHR Forms

Non-Routine JSA

Fuel Transfer Checklists

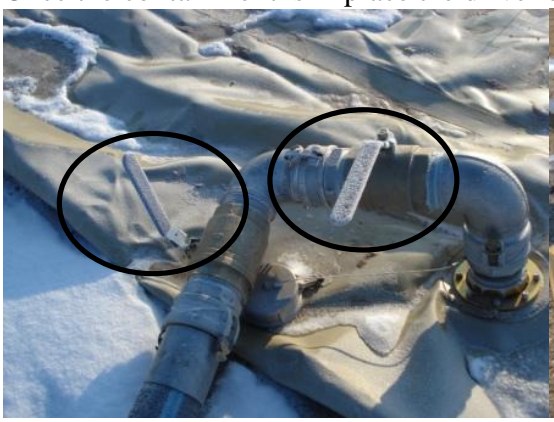
Fuel Farm Bladder Layout

Procedure for unloading fuel tank truck in to bladders.

The driver of the fuel tank truck is responsible for the unloading of the fuel in to bladders.

He has to make the connection of the piping to the truck tank. Before opening the valves he has to install containment under the connection to the truck.

Once the containment is in place the driver can open the 3 ball valves (see photos under).



During the unloading, the driver has to verify that the pipe connections do not leak and make a inspections of the bladder.

When the unloading is done, the driver has to close the 3 ball valves (see photos above). Then, when he makes the disconnection of the pipe, from the truck he has too use a pail to collect excess of fuel between the valve of the truck tank and that of the pipe (approximately less than 10 liters). If the pail used is clean, the surplus of fuel can be returned to the tanker or to 45 gallons drum.

Afterward the extremity of the pipe must be put in the containment, and this has to be inside the fuel farm.

The driver shall monitor the transfer of fuel and measure the bladder height to ensure the bladder capacity is not exceeded. The maximum capacity of a bladder is 53 " in height.

Once the bladder height reaches 53”, the fuel transfer shall be stopped and transfer of the remaining fuel in the tanker can continue in to a bladder below 53” in height.

Procedure of connecting in to a new bladder.

At first, it is necessary to make sure that both ball valves on the photo below are closed completely, that containment is installed under the connection and to have a pail to collect the fuel between both valves when he disconnect the pipe from the bladder.

Moving of the hose from a full bladder to an empty one is the responsibility of the trucks driver but must be done with a helper.

Once the bladder is full, and it is necessary to move the hose from a full bladder, ensure all fuel is caught in a pail on dip containment. See pictures below.

Appendix F

Oil Pollution Emergency Plan

Baffinland
Iron Mines Corporation

OIL POLLUTION EMERGENCY PLAN

MARINE SPILLS

MILNE INLET FUEL STORAGE FACILITY

Prepared by:

NAVENCO MARINE INC.

Version: September 22, 2010

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ANNEX 10:	Transport Canada – TP-9834E – “Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and /or Marine Pollutants”

Register of Updates and Revisions			
Date	**Page/chapter**	**Update/revision**	**Object**

LIST OF ACRYONYMS

Arctic Shipping Pollution Prevention Regulations	(ASPPR)
Arctic Waters Pollution Prevention Act	(AWPPA).
Baffinland Iron Mines	(BIM)
Canada Shipping Act	(CSA)
Canadian Council of Ministers of the Environment	(CCME)
Department of Fisheries and Oceans	(DFO)
Environment Canada	(EC)
Government of Nunavut, Department of Environment	(GN-DOE)
Indian and Northern Affairs Canada	(DIAND)
Job Safety Analysis	(JSA)
Material Safety Data Sheet	(MSDS)
Northwest Territories	(NWT)
Oil Pollution Emergency Plan	(OPEP)
Personal Protective Equipment	(PPE)
Process Hazard Analysis	(PHA)
Potential Hazard Review	(PHR)
Qikiqtani Inuit Association	(QIA)
Regional Environmental Emergencies Team	(REET)
Shipboard Oil Pollution Emergency Plan	(SOPEP)
Standard Operating Guideline	(SOG)
Universal Transverse Mercator	(UTM)
Workplace Hazardous Materials Information System	(WHIMIS)

OIL HANDLING FACILITY DECLARATION

Pursuant to paragraph 168(1)(b) of the *Canada Shipping Act, 2001*, Baffinland Iron Mines Corporation declares that:

(a) to comply with the regulations made under paragraph 182(a) of the Canada Shipping Act, 2001, on the detection of an oil pollution incident that arises out of the loading or unloading of oil to or from a ship, the measures as outlined in the Milne Inlet Fuel Storage Facility, Oil pollution Emergency Plan shall be implemented.

(b) ~~in accordance with paragraph 168(1)(a) of the *Canada Shipping Act, 2001*, I have an arrangement with the certified response organization known as *~~

~~(Name of response organization)~~

~~The arrangement is with respect to _____ tonnes of oil~~
~~(Number of tonnes)~~

~~and in respect of _____~~
~~(Geographic location of the oil handling facility)~~

*** NOTE: In accordance with paragraph 168(2) of the *Canada Shipping Act, 2001*, the requirements under paragraph 168(1)(a) and 168(1)(b)(ii) do not apply.**

(c) ~~the persons listed below are authorized to implement the arrangement described in paragraph (b):**~~

**** NOTE: In accordance with paragraph 168(2) of the *Canada Shipping Act, 2001*, the requirements under paragraph 168(1)(b)(iii) do not apply in respect to the arrangement described in paragraph (b).**

(d) the persons listed below are authorized to implement the oil pollution emergency plan required by paragraph 168(1)(d) of the *Canada Shipping Act, 2001*:

Table 1: Baffinland Emergency Personnel Contact Information

Position	Contact
Cliff Pilgrim or Jeff Bush On-site Co-Coordinator	**Emergency After Hours Tel: 403-450-8844** Email: cliff.pilgrim@baffinland.com Mary River Site Tel: 403-450-7312 Email: jeff.bush@baffinland.com Mary River Site Tel: 403-450-7316 Milne Inlet Site Tel: 647-723-2077 (24 hours)
Dalton Head or David McCann On-site Co-Coordinator (alternates)	**Emergency After Hours Tel: 403-450-8844** Email: dalton.head@baffinland.com Mary River Site Tel: 403-450-8838 Email: david.mccann@baffinland.com Mary River Site Tel: 403-450-8843
Jim Millard or Brian Larson Environmental Health & Safety Superintendant	Mary River Site Tel: 403-450-8843 Email : jim.millard@baffinland.com Off-Site Cell: 902-403-1337 Email : brian.larson@baffinland.com Mary River Site Tel : 403-450-1589
Dave McCann Operations Manager	Mary River Site Tel: 403-450-8843 Cell: 416-616-8860 Email: david.mccann@baffinland.com
Bill Napier Corporate Contact – VP Sustainable Develop.	Office Tel: 416-814-3171 Cell: 844-729-5660 Email: bill.napier@baffinland.com

_____ Date:_____

Baffinland Iron Mines Corporation, Bill Napier, Vice President, Sustainable Development

PREAMBLE

This Oil Handling Facility, Oil Pollution Emergency Plan (OPEP) for the Milne Inlet Port shall be in effect at the commencement of Port operations in 2011

Formal distribution of the Plan has been made to:

Transport Canada
Box 8550,
344 Edmonton Street (RMW),
Winnipeg, Manitoba, R3C 0P6

Additional copies and updates of this Plan may be obtained from:

Baffinland Iron Mines Corporation
Suite 1016,
120 Adelaide Street West
Toronto, ON, Canada M5H 1T1
Tel: (416) 364-8820 Fax: (416) 364-0193

Navenco Marine Inc.
Attn: Todd Mitchell
350 boul. Ford, Suite 130
Chateauguay, QC, J6J 4Z2
Tel : (450) 698-2810
info@navenco.com

Sustainable Development Policy

We are committed to conducting all aspects of our business in accordance with the principles of sustainable development. Based on our values of protecting the environment, operating safely and fiscally responsible and creating authentic relationships, we will:

Governance

- Evaluate and manage risk on a continuing basis, including those that impact the environment, employees, contractors, local communities, customers and shareholders.
- Ensure adequate resources are available and systems are in place to implement risk-based management systems, including defined standards and objectives for continuous improvement.
- Measure and review performance with respect to our environmental, safety, health, socio-economic commitments and set annual targets and objectives.
- Conduct all activities in compliance with applicable legal requirements and internal standards.
- Implement employee performance review processes to ensure accountability at all levels.
- Communicate this EHS Policy to the public and all employees and contractors.
- Undertake an annual review of this Policy.

Health, Safety Workplace and People

- Strive to achieve a safe workplace for our employees and contractors free from occupational injury and illness.
- Respect human rights, and the traditional culture, values and customs of the Inuit people.
- Report, manage and learn from injuries, illnesses and high potential incidents to foster a workplace culture focused on safety and the prevention of incidents.
- Foster and maintain a positive culture of shared responsibility based on participation, behavior and awareness.

Social and Economic

- Contribute to the social, cultural and economic development of sustainable communities adjacent to our operations.
- Engage with governments, employees, local communities and the public to create a shared understanding of relevant social, economic and environmental issues, and take their views into consideration in making decisions.
- Employ our shareholder's capital effectively and efficiently.
- Demonstrate honesty and integrity by applying the highest standards of ethical conduct.

Environment

- Employ a balance of scientific and traditional Inuit knowledge to safeguard the environment.
- Apply the principles of pollution prevention and continuous improvement to minimize ecosystem impacts, and facilitate biodiversity conservation.
- Use energy, raw materials and natural resources efficiently and effectively.
- Ensure closure plans are in place and progressive reclamation is undertaken to reduce potential long-term environmental and community impacts.

Every employee, contractor, and visitor is expected to demonstrate through their actions a personal commitment to this Policy.

R.D. McCloskey
Chairman and Chief Executive Officer
November 2010

Baffinland Iron Mines Corporation

The OPEP presented herewith has been prepared to meet the requirements of the Canada Shipping Act and the associated Oil Handling Facility Regulations in the context of the planned operations for the 2011 shipping season.

The Oil Handling Facility Regulations stipulate that an operator of an Oil Handling Facility must notify the Minister of all substantive changes to its response plan immediately after they are made, and shall at least annually, update its response plan. To this end, the present Oil Handling Facility, Oil Pollution Emergency Plan (OPEP) herewith shall be updated accordingly at the beginning of 2012 to reflect the changes proposed to the bulk fuel storage depot.

As this plan has been produced in anticipation of submission to Transport Canada for regulatory approval as written, reference to the 2011 infrastructures and activities only have been included in this document. The planned bulk fuel transfer for the 2011 season shall be carried out in a similar manner to the operation that was undertaken at Milne Inlet in 2008.

1 General Introduction

The Milne Inlet Fuel Storage Facility, Oil Pollution Emergency Plan (OPEP) was developed to specifically assist in implementing measures to protect the marine environment and minimize impacts from potential spill events. The Plan outlines potential spill scenarios, and provides specific procedures for responding to spills while minimizing potential health and safety hazards, environmental damage, and clean up costs. The OPEP provides instructions to guide all personnel in emergency spill response situations, defines the roles and responsibilities of management and responders and outlines the measures taken to prevent spills, the related exercise and evaluation programme, and the mechanism for regular updates to the plan.

1.1 Legislative Requirement

The *Canada Shipping Act*, 2001*,* stipulates that operators of designated oil handling facilities must have an on-site oil pollution emergency plan.

The Milne Inlet Fuel Storage Facility, Oil Pollution Emergency Plan takes into account the requirements of the Canada Shipping Act, 2001, part 8, subsections 168. (1), 168. (2) and 168. (3). Although the subsection 168 (2) is applicable, as the Milne inlet site is located North of 60', therefore the subsections 168. (1) (a), 168. (1) (b) (ii), 168. (1) (b) (iii) do not apply.

The Canada Shipping Act Response Organizations and Oil Handling Facilities Regulations (SOR/95-405) applies.

The Oil Handling Facilities Standards, TP12402 applies.

1.2 Links to Baffinland Emergency Response Plan

Spills of all types, both marine and land based are addressed in the Baffinland Iron Mines Corporation, Mary River Project, "Emergency Response Plan, SD-ERP-001," which is a separate document. The Emergency Response Plan addresses a wider scope of operations and includes storage areas other than the Milne Inlet Fuel Storage Facility. The plan also addresses other hazardous materials and chemicals such as explosives, drilling muds, waste oils, etc.

The Milne Inlet Fuel Storage Facility OPEP has been designed specifically to compliment the "Emergency Response Plan, SD-ERP-001" document. The plan is not to be construed as to supersede existing emergency response plans, rather it is conceived to address the specifics of the fuel storage facility, the bulk incoming transfer of fuel and spill scenarios directly relating to this operation.

2 Planning Standards

In the preparation of the Milne Inlet OPEP, the standards as outlined in the Oil Handling Facility standards, TP 12402 have been employed.

2.1 Facility Category

Based on the ship to shore maximum pumping rate of less than 90 m^3/hr, the Milne Inlet Facility is classified as a level 1 facility. Spill scenarios have been developed and are outlined in section 6 of this plan. As a scenario addressing a possible 3.5 m^3 spill exists, the minimum size of an oil pollution incident for which a response is described in this OPEP is 3.5 m^3.

2.2 General Planning Guidelines

Beyond the requirements of the CSA and the Oil Handling Facilities Standards, Baffinland Iron Mines recognizes the unique nature of the geographical location and the challenges inherent in mounting a response to a pollution incident.

All spill contingencies for Milne Inlet must take into consideration the diverse elements that might define, simplify or even reduce the possibility of taking action. The harsh climate, the remoteness, transportation difficulties (for personnel and goods), limited availability of manpower in case of oil spills and the lack of infrastructure in case of a fire are all elements that can limit the response to take in this type of situation. Air transportation is the only transportation on a regular basis but weather conditions may not be favorable, rendering a quick response difficult.

In the preparation of this plan, existing documents relating to the site specifications (physical, natural and social conditions) have been utilized. In the preparation of the plan and related Mary River Emergency Response Plan, extensive consultations with local authorities have been undertaken, with the goal of a cooperative response as part of an important incident.

To specifically address the CSA and Oil Handling Facilities Standards, spill scenarios have been developed, taking into consideration among various factors the following:

(a) The nature of the oil product in respect of which the scenario is developed;

(b) The types of ships that are unloaded at the facility;

(c) The tides and currents that prevail at the facility;

(d) The meteorological conditions that prevail at the facility;

(e) The surrounding areas of environmental sensitivities that would likely be affected by an oil spill;

(f) The measures that will be implemented to minimize an oil pollution incident;

(g) The time within which an effective response to an oil pollution incident can be carried out.

Several priorities have also been identified among which include:

(a) The safety of the facility's personnel;

(b) The safety of the facility;

(c) The safety of the communities living adjacent to the facility; (hunting camps)

(d) The prevention of fire and explosion;

(e) The minimization of the oil pollution incident;

(f) The notification and reporting of the oil pollution incident;

(g) The environmental impact of the oil pollution incident;

(h) The requirements for cleaning up the oil pollution incident.

2.2.1 Response Time Standards

The operations and response structure at the Milne Inlet facility have been designed so that a rapid response to a spill incident can be carried out. All equipment and resources are strategically placed near the beach front, directly at the port operation site. Responders, workboats and other support equipment are on standby during all port operations. The deployment of equipment and resources required to contain and control the oil, or where the oil cannot be contained, to control the quantity of oil involved in the incident, up to the minimum spill size of 3.5 m^3 as determined in accordance with section 2 of the Oil Handling Facilities Standards, shall be on site and deployed on scene within 1 hour after the discovery of the oil pollution incident, unless deployment would be unsafe.

The equipment and resources required to recover and clean up the oil involved in the incident, up to the minimum spill size of 3.5 m^3 as determined in accordance with section 2 of the Oil Handling Facilities Standards shall be deployed on scene as soon as practical and effective, within 6 hours of the oil pollution incident.

2.2.2 On-Water Recovery

On water recovery of spilled product shall be initiated immediately upon containment of free floating product. The skimming capacity available at Milne inlet is capable of recovery of several times the required spill volume within the time standards after derating formula are applied.

2.2.3 Dedicated Facility Spill Response Equipment

The Milne Inlet Bulk Fuel Storage Facility has been equipped with appropriate spill response equipment which provides *resident capability* for the response to spills in accordance with the scenarios which have been developed under this Oil Pollution Emergency Plan. Containment and recovery equipment inventories exceed the facility category planning standards and are especially appropriate for the potential spill volumes as outlined in the scenarios contained in the OPEP. Full details relating to specifics of the equipment can be found in Annex 4.

3 Milne Inlet Storage Facility

3.1 General Overview and Site Description

The Milne Inlet Fuel Storage Facility is situated on the north-eastern coast of Baffin Island (71° 52' 57" North, 80° 53' 51" West), approximately 131 km south-west of Pond Inlet. A site overview plan is presented in Annex 1.

3.2 Fuel Storage Facilities and Infrastructure

The fuel storage facility is made up of 39 x 113,560-L fuel bladders containing Ultra Low sulphur Diesel (P50), and 12 x 113,560-L fuel bladders containing Jet A-1 fuel. A detailed description of capacities is provided in Annex 2.

The entire Milne Inlet Bulk Fuel Storage Facility is completely contained within a bermed and lined area. The area within the berm provides total liquid recovery to sump and engineered oil water separation system. The placement and configuration of the fuel bladders is detailed in the drawings provided in Annex 2 of this plan.

The bulk fuel storage facility is connected to a shore receiving manifold by a 4 inch diameter steel pipeline. The pipeline consists of lengths of pipe, with Victaulic flexible coupling joints. The pipeline is supported on appropriate stands and blocking. The pipeline is fully pressure tested and inspected each year prior to annual bulk cargo transfer operations. A complete pipeline inspection procedure is an integral part of the bulk cargo transfer procedures included in Annex 5.

3.3 Milne Inlet Shoreline and Marine Characteristics

3.3.1 Shoreline Characteristics and Sensitive Zones

A 2007 coastal habitat survey was conducted to document coastal and nearshore habitats in the proposed development area. In that oil spills are a potential development issue, the survey extended several hundred kilometers from the proposed port sites so as to encompass habitats in the far field as well as the near field of the possible port sites.

Milne Inlet is a large fjord system off the western portion of Eclipse Sound. The most prominent coastal characteristic is the steep relief that creates dramatic backdrops for the comparatively small and inconspicuous shore zone. Steep rock cliffs plunge into the inlet at many locations. In other areas, talus slopes of approximately one hundred metres in height overlay narrow coarse sediment beaches. Bedrock controls much of the coastal orientation and morphology along the Milne Inlet shores with accretional beach deposits sandwiched between rock headlands. Extensive coastal rebound following deglaciation has created extensive areas of raised beach deposits 100m or more above present sea level. The raised beaches are unvegetated and form prominent coast-parallel lineations throughout the inlet.

The shoreline characteristics in the immediate Milne Port area are composed of varying percentages of rocky cliffs, beach ridge complexes and alluvial fans with a small percentage (1%) alluvial delta complexes present.

Rock cliffs without beaches occur throughout Milne Inlet. Slopes range from steep (>30º) to ramped. Cliff heights may be several hundred metres. Intertidal zone widths are less than 5m. Biological description shows narrow steep intertidal and nearshore tend to be bare of attached macrobiota.

Beach ridges are accretional features and typically contain well-sorted sediment (often pebble-cobble in Milne Inlet). Isostatic rebound results in these deposits being raised above sea level where they form elict beach ridge complexes. Intertidal zone widths are typically less than 30m. They are widely distributed throughout Milne Inlet and range from very localized to extensive. Biological description shows Intertidal

generally bare of attached macrobiota, due to sediment mobility. On boulder ridges or on bedrock outcrops, patchy algal assemblages were seen.

Alluvial fans are areas of till and glacial outwash. Backshore slopes are moderate and usually include a tundra vegetation cover. Associated intertidal areas are usually moderate to narrow coarse sediment beaches of boulder, cobble and pebble sand. Bounder ridging tends to be common. Biological description shows intertidal generally bare of attached macrobiota on mobile sediments. Some lower intertidal rockweed type algae associated with boulder ridges.

Baffinland Mines recognizes several sensitivities in the area and for planning purposes the shoreline at the facility and adjacent areas susceptible to impact from a spill have been divided into zones. In addition to the information described below, a chart showing the geographical zones is presented in Annex 3 of this plan.

Besides the Baffinland Camp, there is no permanently settled community or habitation. Some seasonal hunting camps are located in the bay just east of the Milne Facility.

Zone 1: Phillips Creek

Located just to the west of the boundary of the Milne Inlet camp is the outlet of Phillips Creek. This area is characterized as a small creek delta with shallow entrance and mud flats at low tide. In the event of a spill, diversion booming should be considered to minimize the migration of a spill onto the flats and shallow depth area in this zone.

Zone 2: Milne Facility Beach Zone

The Milne Facility Beach Zone encompasses an area of shoreline approximately 1600 meters in length, extending from the Milne Inlet camp western boundary eastwards. The type of shoreline through this zone is primarily sand to pebble/cobble beach and varies through the intertidal zone. This shoreline would be considered as porous, and where possible protective booming at recovery sites should be considered to limit intertidal zone contamination.

Water depths vary in the immediate area in front of the beach zone, however are considerably shallow close to shore. A 30 foot contour is noted at a distance of approximately 200 feet from shore where the depth of water increases very abruptly.

Zone 3: Milne Eastern Beach

At the eastern end of the Milne Beach, a second smaller bay like area extends eastwards over several hundred meters. This beach is also primarily sand to pebble/cobble beach and varies through the intertidal zone. This shoreline would be considered as porous, and where possible, protective booming at recovery sites should be considered to limit contamination. In addition, there are hunter's cabins present along this section of the beach and therefore present an additional sensitivity. Going eastwards, the beach turns in a northerly direction and the topography becomes steeper, characterized by a higher fiord like coastline with limited or no beaches.

Zone 4: Adjacent Areas

Based on the tanker mooring position, the port operations, and the prevailing winds, zones 1 through 3 present the highest probability of impact from spills. The remaining area and shoreline adjacent to the facility is largely characterized by higher relief fiord shorelines, primarily constituted of rock and are considered to be higher energy areas. Most often, response to spills impacting these shores could focus on monitoring as booming and mechanical recovery may be difficult or impossible. In addition the net environment benefit for attempted restoration of these shores would be detrimental.

There are several areas where limited or narrow beaches are present and should they be in danger of contamination, techniques as in Zones 2 and 3 should be considered.

3.3.2 Bathymetric and Marine Data

Limited bathymetric and marine data is available at the Milne Inlet site. Chart 7212 covers most of the area; however data within the shallow beach areas is limited.

Marine Data, Milne Inlet

Tidal Corrections:	HW -1h07	LW -0h43 on Resolute (Z+4)
Range of Tide:	1.6m to 2.3m	
Harbour Chart no.	7212	
Approach Chart no.(s):	7566	
Tanker Anchorage Position:	71°53.4'N	080°54.5'W
	(East of Philips Creek)	
Nature of the Bottom	Mud	

The marine environment at Milne Inlet is characterized as a sheltered waters environment. As has been noted at the site, the prevailing winds generally provide sea conditions of onshore waves, varying in height from flat calm to less than 1 meter in average winds of less than 30 km/hr. Bulk transfer procedures established by charterer preclude the transfer of bulk product when conditions become excessive, i.e. wave heights greater than approximately 0.7 M. This enhances the possibility of deploying pollution gear should an incident occur.

3.3.3 Meteorological Data

There is currently no Environment Canada meteorological station at Milne Inlet, the closest being Pond Inlet. Extensive data exists for Pond Inlet, and data has been collected over a shorter period of time at the Milne site.

Baffinland established an on-site meteorological station at Mary River Camp on June 13, 2005. The station has been collecting hourly data since being established, except for an interruption in the winter of 2005.

Two additional meteorological stations were installed by Baffinland in June 2006 at Milne Inlet and Steensby Inlet. These stations have the same sensors as the Mary River station.

The North Baffin region is located within the Northern Arctic Ecozone, as delineated in the National Ecological Framework for Canada (Agriculture and Agri-Food Canada, 2000). Northern Baffin Island has a semi-arid climate with relatively little precipitation. The region experiences near 24-hour darkness with less than two hours of twilight from approximately November 12th to January 29th. During winter months (December to April), the treeless topography and fine powdery snow produce blowing snow conditions resulting in restricted visibility. Steam fog may occur in areas of open water, but does not persist more than a few miles downwind. Ice fog is infrequent, due to the lack of moisture in the air, but may occur more frequently if settlements become larger and sufficient moisture is added to the air through fuel combustion.

Frost-free conditions are short and occur from late June to late August. There is continuous sunshine from approximately May 5th to August 7th. The months of July and August bring maritime influences and

are usually the wettest (snow may still occur). Fog increases at this time due to arrival of moist air from southern Canada.

During September to November, temperature and the number of daylight hours start to decrease, and by mid-October the mean daily temperature is well below 0°C. The highest amount of snowfall typically occurs during this period. A condition called "Arctic white out" often occurs during this time, where diffuse white clouds blend into the white snow-covered landscape, reducing visibility and increasing the likeliness of disorientation. This condition can also occur in April and May.

Marine operations are anticipated from early August through mid September and this period of the year is the most favorable for shipping and the type of marine operations that will be carried out on site.
The meteorological factors most affecting spill recovery operations are wind and temperature. The major observations through data collected and baseline data from Pond Inlet show August and September mean monthly temperatures of 6.6 and minus 1.2°C respectively.

Data accumulated indicates that winds from the northeast occur most frequently (nearly 13% of the time), followed by winds from the north-northeast (about 12% of the time). The wind data indicates that "light air" conditions (0.3 to 1.6 m/s) occur most frequently at 23% of the time, followed by "light breeze " conditions (1.6 to 3.4 m/s), which occur 21% of the time. The data indicates that strong breezes (10.8 to 13.9 m/s) occur 6% of the time. Near gale winds (13.9 to 17.2 m/s) occur 2% of the time.

Precipitation is generally not an adverse factor during the operating period although August and September are among the wettest months of the year in this region.

4 Site Activities

4.1 Bulk Oil Transfer, Ship to Shore

The bulk fuel transfer from ship to shore discharge takes place once a year during the month of August or September and there is approximately 8000 m^3 of petroleum product that is transferred to the bladders by means of a single floating hose with an approximate length of approximately 1066 meters deployed between the vessel and the connecting flange on the shore. The products are then transferred by pipeline to the above mentioned bulk storage facility. A steel pipeline of 4" diameter connects between the shore manifold and the tank farm situated at approximately 465 meters from the shoreline. The tides are not a major risk factor for this village. Wind force and direction are the dictating environmental factors during bulk transfer and criteria for acceptable conditions for discharge are outlined in cargo transfer procedures.

The ship to shore transfer operation at Milne Inlet is similar to other cargo discharge operations in the North, however, there are some unique aspects that require specific procedures be followed and understood by all personnel involved in the discharge operation.

The transfer operation involves filling 51 -113.5 m^3 bladders with two types of fuel (Jet A and CP-43 (diesel)). It is expected that once cargo operations are underway, the ship will discharge at a rate of 90 m3/hour and that each bladder will take approximately 73 minutes to fill. Accurate reconciliation of discharge & fill volumes through regular communication between ship & shore personnel is required to ensure the safe transfer of fuel and prevent the overfilling and over pressurization of the fuel bladders that could result in a spill.

The detailed bulk transfer procedures are fully detailed in the standard operating procedure in Annex 5.

4.2 Port Operations

Other than the planned bulk fuel transfer, no other port operations involving fuel transfer are anticipated at Milne Inlet for the 2011 operating season.

Dry cargo sealift operations are anticipated to occur, however these will be separate from the operations of the bulk fuel facility and are not considered in this Oil Pollution Emergency Plan.

5 Spill Response Procedures

5.1 General Spill Procedures

The response to spills begins immediately when the spill has been detected. In all cases immediately upon detection of a spill, all transfer operations are to be shut down and not restarted in any manner that would interfere with the immediate, effective and sustained response to the oil pollution incident.

This plan clearly outlines the notification procedure and the roles and responsibilities of the management and spill response team. All emergency telephone numbers are clearly listed and the persons are contacted as needed and according to the priority of the incident. The contact list is included in section 5.3.1.

The response team, following a spill, must ensure that personnel safety is their first priority. First and foremost evaluate the risks as quickly as possible to guarantee that appropriate measures are taken to prevent or reduce the risk of injury to personnel, to avoid fire or explosion, to protect property and to minimize the damage to the environment. It is important to contain the oil slick or to start cleaning up as quickly as possible to stop the spill from contaminating a greater area.

As outlined in section 3.2 of this plan, two products are received at the facility. Both products, JET A1 and ULTRA LOW SULPHUR DIESEL CP-43 are classified as non-persistent combustible hydrocarbons and will behave in a similar fashion if spilled. The response to a spill of either of these products shall be carried out in the same fashion. Full details of the properties and hazards associated with these products are found on the Material Safety Data Sheets (MSDS) in annex 8 at the end of this plan.

Both products are of relative low viscosity, are clear to yellow in color and will float readily when spilled. It should be anticipated that any spillage will rapidly spread when spilled and a high rate of evaporation will occur. Wind and tidal current will be the most important factor in promoting the spread of the product on the water surface.

When responding to spills, all procedures and safety methods in handling these products must be observed. The following specific measures must be followed with distillate spilled on water or on land:

Take personal protective safety measures. Personal protective equipment must be worn at all times during response operations.
Close all electrical sources.

Take all appropriate measures to ensure personnel safety and the safety of the facility.

Request help to control personnel access, vehicles and close the area. Never enter inside and/or within the radius of the contaminated area. Have a fire extinguisher close by. If a fire starts extinguish the fire only if it is safe for you and that you were trained to do so without exposing yourself to unnecessary risks.

Through the marine spill training initiative, all spill response personnel will be fully briefed on the procedures to be followed to report a spill and initiate spill response. The first person to notice a spill will

take the following steps:

1 Immediately warn other personnel working near the spill area;
2 Evacuate the area if the health and safety of personnel is threatened;
3 Notify the On-Site Coordinator, who will initiate the spill response operations;
In the absence of danger, and before the spill response team arrives at the scene, take any safe and reasonable measure to stop, contain and identify the nature of the spill.

All spill response actions carried out by the spill response team will follow these general procedures:

Cease Transfer Operations - In all cases immediately upon detection of a spill, all transfer operations are to be shut down and not restarted in any manner that would interfere with the immediate, effective and sustained response to the oil pollution incident.

Source Control - Reduce or stop the flow of product without endangering anyone. This may involve very simple actions such as closing shore valves, sealing a puncture hole with almost anything handy (e.g., a rag, a piece of wood, tape, etc.), raising a leaky or discharging hose at a level higher than the product level inside the tank.

Control of Free Product - Prevent or limit the spread of the spilled material. Accumulate/concentrate spilled product in an area to facilitate recovery. Barriers positioned down-gradient of the spill will slow or stop the progression of the spill. Barriers can consist of absorbent booms, dykes, berms, or trenches (dug in the ground). Deployment of floating booms to contain a marine spill should be carried out by the spill response team as soon as safe and practical.

Protection - Evaluate the potential dangers of the spill in order to protect sensitive ecosystems and natural resources. Block or divert the spilled material away from sensitive areas where possible.

Clean up the Spill – Recover and containerize as much free product as possible. Recover contaminated soil, and water. Pressure-wash contaminated bedrock surfaces, shorelines, ice and recover as much as possible oily water for containerization and/or treatment.

Report the Spill - Provide basic information such as date and time of the spill, type and amount of product discharged, location and approximate size of the spill, actions already taken to stop and contain the spill, meteorological conditions and any perceived threat to human health or the environment. Reporting requirements are presented on Section 5.5.

Specific spill response techniques, operations, equipment and materials are part of the comprehensive marine spill training program as outlined in section 7 of this plan.

5.2 Health and Safety

Baffinland Iron Mines Corporation and its senior management are committed to ensuring the health, safety and welfare of its employees, contractors and visitors. As a consequence of this, Baffinland Iron Mines requires all personnel to regard accident prevention and working safely as a collective individual responsibility.

Baffinland Iron Mines Corporation conducts all site activities in accordance with all applicable Federal and Territorial health and safety regulations. The following applicable health and safety regulations apply to the activities described in this Oil Pollution Emergency Plan:

Northwest Territories, Nunavut Worker's Compensation Act - Provides the territorial legislation covering the health and safety of workers in Nunavut

Mine Health and Safety Act and Regulations (Nunavut) - Provides specific health and safety guidelines for mines operating in Nunavut .. Section 2(1) Duties and Responsibilities (the Owner)

Canada Labour Code Part II – Provides Federal regulations for the health and safety of workers involved in shipping and marine port operations

Baffinland Iron Mines requires and provides WHMIS training for all employees and contractors at the Milne Inlet and Mary River sites. Mines Health & Safety Act & Regulations : Part VI Regs. Training 6.03

It is also a requirement for supervisory personnel to hold level 1 or level 2 certification as required by the Mine Health and Safety Act. Mines Health & safety Act & Regulations : Part V Regs. Supervision

Comprehensive general training is provided to spill responders throughout the site in relation to inland spills. In addition, specific training with relation to safety during response to marine spills is provided to all responders through Baffinland's marine spill training program. All responders who are involved in marine operations shall participate in the training as outlined in section 7 of this Oil Pollution Emergency Plan.

5.2.1 Personal Protective Equipment (PPE) – Requirements

For all responders, personal protective equipment requirements shall be as follows:

Milne Inlet Site Support Services: (non-water operations, no contact with spilled product)

Hard Hat
CSA approved work boots
Safety glasses
Leather work gloves
Orange/yellow retro reflective vests

Milne Inlet Site Support Services: (non-water operations, possible contact with spilled product)

Hard Hat
CSA approved work boots
Safety glasses
Orange/yellow retro reflective vests (if not wearing rain wear)
PVC rain suit
Nitrile work gloves

Workboat and shoreline responders: (beach or on-water operations, possible contact with spilled product)

Hard Hat
CSA approved work boots
Safety glasses
PVC rain suit
Nitrile work gloves
Approved personal flotation device

5.3 Roles and Responsibilities

As part of the spill emergency response plan, Baffinland is responsible for implementing, through its project management team, the following procedures:

- Train site personnel in spill response procedures and the proper use of response equipment and materials.
- In the event of a spill, mobilize all available site personnel, equipment and tools, as required.
- Implement all required health and safety procedures at the site of the spill.
- Eliminate all fire hazards and potential ignition sources near the spill area.
- Control the source of the spill (i.e., reduce or stop product discharge).
- Contain the spilled product using the most appropriate methods and equipment
- Evaluate the possibilities of recovering spilled materials.
- Obtain, if required, assistance from government agencies such as Environment Canada, the Canadian Coast Guard and/or Fisheries and Oceans Canada.
- Obtain, if required, additional assistance by hiring local rangers or residents from the nearest communities and/or firms specialized in spill response operations.
- Comply with all applicable guidelines and regulations.
- Conduct a preliminary assessment of environmental impacts to marine, freshwater and terrestrial ecosystems and natural resources.
- Report the spill to the appropriate authorities.

5.3.1 Milne Inlet Response Management Structure

All spill procedures and response functions are to be implemented through the spill management team. The structure of this management team is shown in table 2 and the organizational chart figure 1.

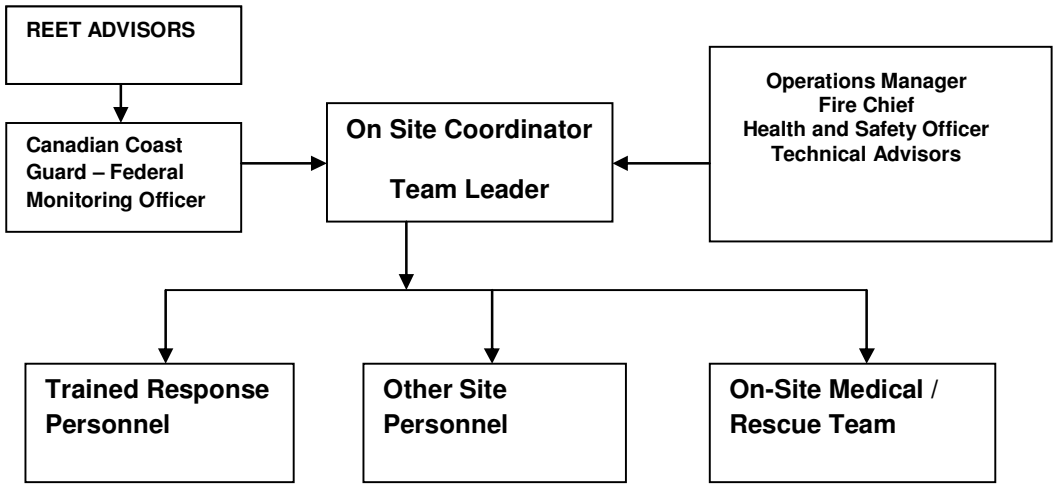
Once a spill event is reported, the On-Site Coordinator establishes a specific strategy for containing and controlling the spill and to initiate the cleanup activities. Other site personnel such as the Fire chief, Health and Safety Officer, and Operations Manager may act as technical advisers prior to and during the response. The trained Spill Response Team will conduct all emergency spill response operations under the leadership of the On-Site Coordinator. During the cleanup phase of the response other site personnel (e.g., heavy equipment operators, laborers, etc.) may be involved.

Table 2: Baffinland Emergency Response Management Personnel

Position	Contact
Cliff Pilgrim or Jeff Bush On-site Co-Coordinator	**Emergency After Hours Tel: 403-450-8844** Email: cliff.pilgrim@baffinland.com Mary River Site Tel: 403-450-7312 Email: jeff.bush@baffinland.com Mary River Site Tel: 403-450-7316 Milne Inlet Site Tel: 647-723-2077 (24 hours)

Dalton Head or David McCann On-site Co-Coordinator (alternates)	**Emergency After Hours Tel: 403-450-8844** Email: dalton.head@baffinland.com Mary River Site Tel: 403-450-8838 Email: david.mccann@baffinland.com Mary River Site Tel: 403-450-8843
Jim Millard or Brian Larson Environmental Health & Safety Superintendant	Mary River Site Tel: 403-450-8843 Email : jim.millard@baffinland.com Off-Site Cell: 902-403-1337 Email : brian.larson@baffinland.com Mary River Site Tel : 403-450-1589
Dave McCann Operations Manager	Mary River Site Tel: 403-450-8843 Cell: 416-616-8860 Email: david.mccann@baffinland.com
Bill Napier Corporate Contact – VP Sustainable Develop.	Office Tel: 416-814-3171 Cell: 844-729-5660 Email: bill.napier@baffinland.com

Figure 1: Spill Response Team Organization Chart



5.3.1.1 On Site Coordinator

As part of the spill response plan, the On-Site Coordinator, acting as on-scene commander, is responsible for implementing the following procedures:

- Assume authority over the spill scene and personnel involved.
- Activate the Spill Response Plan.
- Evaluate the initial situation and assesses the magnitude of the spill.
- Develop an overall plan of action.
- Collect photographic records of the spill event and clean up efforts.
- Prepare a root cause analysis and an incident investigation for major spills.
- Provide information and recommendations to the Operations Manager in regards to resource requirements (additional manpower, equipment, material, etc.) to complete the cleanup effort.
- Mobilize personnel and equipment to implement the cleanup.

The On Site Coordinator shall be accessible via telephone to the Canadian Coast Guard during the entire transfer operation.

5.3.1.2 Operations Manager

The responsibilities of the Operations Manager with support from the Environmental Superintendent include the following:

- Report the spill to the Canadian Coast Guard (Arctic region) at 1-800-265-0237 (24-hour), NWT 24-hour Spill Report Line at (867) 920-8130, to Qikiqtani Inuit Association Lands Administrator at (867) 975-8422, QIA for spill on Inuit owned lands at (867) 975-8419 or (867) 979-5391, and DIAND Manager of Field Operations at (867) 975-4295.
- Provide liaison with Management to keep them informed of cleanup activities.
- Obtain additional required resources not available on-site for spill response and cleanup.
- Act as the spokesperson with government agencies as well as the public and the media as appropriate.
- Document the cause of the spill and effectiveness of the cleanup effort, and implement the appropriate measures to prevent a recurrence of the spill.
- Prepare and submit follow-up documentation required by appropriate regulators.
- Ensure that the spill is cleaned up and all follow-up communication and reports are filed with the DIAND Water Resources, Environment Canada offices and QIA Land Administrator. Ensure that the spill reports submitted to QIA include accident investigation reports, photographic records and an updated map (1:50,000) showing UTM coordinates, date, amount and the nature of spill.

5.3.2 Other Site Personnel - Responders

Responders:

All responders that are to be involved with a marine spill response are to be trained under the program as outlined in section 7 of the Oil Pollution Emergency Plan.

The number of responders and their specific tasks is estimated in accordance with the spill scenarios as outlined in section 6 of the Oil Pollution Emergency Plan.

5.3.3 On Site Medical / Rescue Team

Existing Milne Inlet fire response and medical emergency procedures per *Standard Operating Guideline (SOG), Emergency Response, Code 1 Situations, Milne Inlet – Annex 9*, would be initiated during any response operation.

5.4 Coordination with Canadian Coast Guard and other Governmental agencies

5.4.1 Canadian Coast Guard

The response to spills at the Milne Inlet site shall be managed in coordination with the Canadian Coast Guard whom are the lead response agency north of 60°.

The *Central & Arctic Regional Response Plan (2008)* and the *Baffin Region, Nunavut Area Plan* outline the Canadian Coast Guard's response capability for the Baffin region. This plan is a component of the *Canadian Coast Guard National Response Plan* which is the responsibility of the Director of Safety and Environmental Response Systems, Ottawa. It establishes the framework and the procedures by which Central & Arctic Region will prepare for, assess, respond to and document actions taken in response to pollution incidents in this Region. This capability and the information contained in the Coast Guard plans are considered a valuable resource in the planning and response to spills at the Milne Inlet Bulk Fuel Storage Facility.

5.4.2 Regional Environmental Emergencies Team (REET)

The Environment Canada, Regional Environmental Emergencies Team (REET) is a multi-agency, multi-disciplinary group specializing in environmental emergencies. REET is designed to provide consolidated and coordinated environmental advice, information and assistance in the event of an environmental emergency. REET members represent several federal, provincial, territorial and municipal government departments, aboriginal communities, private sector agencies, and local individuals.

During emergency response situations a REET operates as a flexible and expandable multi-disciplinary and multi-agency team brought together to obtain and provide comprehensive and coordinated environmental advice, information and assistance to On Site Coordinator or Lead Government Agency.

5.4.3 Other Governmental Agencies

At all times, the response to spill incidents shall be coordinated with the various agencies as listed in Figure 1.

5.5 Reporting Requirements

Two individual reporting requirements are applicable in the case of all spills. Procedures for each are outlined herewith:

5.5.1 Canadian Coast Guard Reporting Requirements

All spills of a marine nature will be reported to the Canadian Coast Guard (Central and Arctic region) 1-800-265-0237 (24-hour). The fax number for transmission of the written report is (519) 337-2498.

Reporting of marine spills shall be in accordance with Transport Canada Guideline TP- 9834E, " Guidelines for Reporting Incidents Involving Dangerouis Goods, Harmful Substances and /or Marine

Pollutants". Detailed harmful substances report requirements are outlined in Appendix A-2 of the guideline, a copy of which is included in Annex 10 of this plan.

5.5.2 Government of Nunavut Reporting Requirements

Government of Nunavut also mandates requirements for reporting of spills.

After the initial field emergency response to the spill event, the spill will be reported to the 24 hour Spill Report Line:

24-Hour Spill Report Line Tel. (867) 920-8130

or

Fax (867) 920-8127

Failure to report a spill can lead to fines. The DIAND Water Resources Inspector will also be immediately notified of the spill event at (867) 975-4298.

It is the responsibility of the Operations Manager to prepare the proper reports and transmit them to regulatory authorities. Table 3 presents an additional contact list for spill reporting.

Table 2: Contact List for Spill Reporting Afterwards, the spill event will be reported in writing using the standard Spill Report Form.

Department	Person	E-mail	Telephone
INAC-Waters (Iqaluit)	Kevin Buck	buckk@inac-ainc.gc.ca	(867) 975-4550
INAC-Inspector	Andrew Keim	keima@inac-ainc.gc.ca	(867) 975-4289
INAC-Qikiqtani	David Abernethy	abernethyd@inac-ainc.gc.ca	(867) 975-4555
INAC-Field Operations	Peter Kusugak	kusugakp@inac-ainc.gc.ca	(867) 975-4289
DFO-Iqaluit	Gary Cooper	Gary.cooper@dfo-mpo.gc.ca	(867) 979-8011
EC-Iqaluit	Jim Noble		(867) 975-4639
GN-DOE	Robert Eno	reno@gov.nu.ca	(867) 975-7748
Qikiqtani Inuit Association	Salamonie Shoo	landadmin@qia.ca	(867) 975-1643
Pond Inlet Health Clinic			(867) 899-7500 (867) 899-8431
Pond Inlet RCMP			(867) 899-1111 (867) 899-6055
Qikiqtani General Hospital (Iqaluit)			(867) 979-7300

The written report will include the following information:

- The identity of the Baffinland Iron Mines Oil Handling Facility
- Date and time of the incident;
- Location or map coordinates and direction of spill movement if not at steady-state;
- Party responsible for the spill;
- Type and estimated quantities of spilled contaminant(s);
- Specific cause of the incident;
- Status of the spill indicating if spilled materials are still moving or now at steady-state;
- Approximate surface of contaminated area;
- A photographic record of the spill event and clean up efforts;
- Factors affecting spill or recovery such as temperature, wind, etc.;
- Status on containment actions indicating whether a) naturally, b) booms, dykes or other, c) no containment has been implemented;

- Corrective action taken or proposed, to clean, contain or dispose spilled material;
- Description of any assistance and salvage measures undertaken
- Whether additional assistance is required and in what form;
- Whether the spill poses a hazard to persons or property (i.e., fire, drinking water);
- Comments and recommendations;
- Name, position and employer of the person reporting the spill; and,
- Name, position department of the person to whom the spill is reported.
- Any other information deemed relevant

In addition, QIA requests Baffinland produce a site map(s) listing the location in UTM coordinates, date, amount and nature of the substance spilled. The map(s) should be updated and sent to QIA whenever a spill occurs. The map(s) will also detail major project components and all water bodies.

In the event of a spill involving the marine carrier delivering bulk fuel, Baffinland will ensure that the subcontractor reports any spill event under its responsibility.

5.6 Treatment and Disposal

All debris and other contaminated matter shall be safely transported to temporary storage areas as designated by the On Site Coordinator for treatment and disposal of recovered hydrocarbons. The establishment of temporary storage areas shall be made after consultation with the Technical Advisors, and in the case of a large spill in consultation with REET, Coast Guard and others. Various temporary storage options have been anticipated on site, including drums, portable tanks, temporary engineered lined berms and vacuum trucks.

Oil water separation capability is also available on site. In all cases treatment of waste and disposal of effluent from separation is to be carried out in strict accordance with and to the approval of the appropriate regulatory body.

6 Spill Scenarios and Response Strategies

Baffinland Iron Mines is committed to planning for spills at the Milne Inlet Bulk Fuel Facility using an analysis of possible spill scenarios. The potential incident analysis is based on real projected operations, and potential quantities spilled are based on pumping rates and estimated times to halt pumping operations.

In the development of the scenarios the following constant factors have been applied:

- The type of ship that is employed for the bulk fuel delivery is a conventional double hulled, multi-compartment petroleum tanker, between 120 to 135 meters in length. The tanker is anchored at a safe distance from the Milne Inlet beach head and up to 1100 meters of floating hose is deployed between ship and shore.
- As outlined in section 3.2 of this plan, two products are received at the facility. Both products, JET A1 and ULTRA LOW SULPHUR DIESEL CP-43 are classified as non-persistent combustible hydrocarbons and will behave in a similar fashion if spilled. The response to a spill of either of these products shall be carried out in the same fashion. Full details of the properties and hazards associated with these products are found on the Material Safety Data Sheets (MSDS) in annex 8 at the end of this plan.
- Both products are of relative low viscosity, are clear to yellow in color and will float readily when spilled. It should be anticipated that any spillage will rapidly spread when spilled and a high rate

of evaporation will occur. Wind and tidal current will be the most important factor in promoting the spread of the product on the water surface.

- Where environmental sensitivities are mentioned in the scenarios, these relate to the sensitivity zones as outlined in annex 3 of this plan.
- Local topography plays an important part in wind direction and force, but it is generally noted at the Milne site that the most common wind direction is from the east to north east. Average wind speeds at the Milne site for this period between 15 and 20 km/hr have been observed. Considering this prevailing wind it is most often probable that any spillage will move towards the zone 1 area of Phillips Creek.
- As is indicated in the plan, upon discovery of spillage of any sort pumping operations are ceased. General response time limits should be observed for each action as follows:

    - *Deployment of containment boom*: 0-1 hr following the spillage event.
    - *Deployment of skimming equipment*: 0-6 hours following the spillage event

During ship to shore discharge of the product, the floating hose is inspected on a regular basis by boat. Stoppers and absorbents are available in case they are needed. The ship has a Shipboard Oil Pollution Emergency Plan (SOPEP), appropriate response gear on board and the crew is fully trained in its use.

There is a person on watch at the shore manifold at all times during discharge and in direct radio communication with the vessel. Furthermore, there is a pressure alarm installed on the pipeline during discharge to validate the system. Any leak or malfunction and resulting drop in line pressure would trigger the alarm. In addition a visual gauge is installed at the manifold and regular pressure monitoring is carried out by the manifold watchman. The pipeline is inspected visually and regularly by walking alongside of it. Once a year, the pipeline is tested as part of annual maintenance (Pressure test).

All spills within the tank farm zone would be retained within the bermed area. During the filling of the tanks (unloading of the vessel) continuous monitoring takes place. At all times there is a person on watch during discharge and in contact with the vessel.

In the presentation of the spill scenarios in this section, it is implied that the initial spill response actions outlined in section 5.1 above have first and foremost been addressed. The scenarios are designed moreover for the purpose of identifying the appropriate specific actions and therefore the related resources required for a given incident.

Detailed scenarios are as follows:

6.1 During Ship to Shore Transfer

Source of discharge	Potential loss*	Appropriate actions	Resources required
Coupling or hose break / malfunction at the ship's manifold	20 – 600 litres	1: Deploy containment boom as required to control migration of spill. Consideration of protection booming of beach front, protective booming of hunter's camps to east of manifold, and Phillips Creek west of manifold depending on wind direction, tides and marine conditions present. Typical deployment lengths of 50 meters are anticipated for this task. (Multiple lengths should be used when required)	Boat – Baffinland near shore workboat - 3 responders Boom – 100 meters and accessories, additional booms if necessary to provide shoreline protection Shore crew to deploy from container – 3 responders

		2: Deploy skimmer and recover spill 3: Final recovery of spill using sorbents if necessary 4: Monitor any free floating oil that is unable to be contained 5: Notifications of local authorities	
Coupling leaking or hose rupture along length of hose between ship and shore manifold	20 – 3500 litres	1: Deploy containment boom to control migration of spill. Consideration of protection booming of beach front, protective booming of hunter's camps to east of manifold, and Phillips Creek west of manifold depending on wind direction, tides and marine conditions present. Typical deployment lengths of 50 meters are anticipated for this task. (Multiple lengths should be used when required) 2: Deploy skimmer and recover spill 3: Final recovery of spill using sorbents if necessary 4: Monitor any free floating oil that is unable to be contained 5: Notifications of local authorities	Boat – Baffinland near shore workboat - 3 responders Boom – 100 meters and accessories, additional booms if necessary to provide shoreline protection Shore crew to deploy from container – 3 responders
Leak at shore manifold connection	20 - 600 litres	1: Deploy containment boom to control migration of spill. Typical deployment lengths of 50 meters are anticipated for this task. (Multiple lengths should be used when required) 2: Deploy skimmer and recover spill 3: Final recovery of spill using sorbents if necessary 4: Monitor any free floating oil that is unable to be contained 5: Notifications of local authorities	Same marine response, shore based response deploy berms and sorbents 3 additional shore responders Milne inlet site services group

6.2 Pipeline

Source of discharge	Potential loss*	Appropriate actions	Resources required
Failure of flange or Victaulic couplings Vehicle Accident involving pipeline	20-4000 litres	**Land spill only:** 1: Immediately install portable berms under leaking or damaged line where possible. 2: If portable berms are not feasible, contain and recover oil spill using dykes or trenches 3: Prevent the oil from reaching natural drainage paths leading to the ocean. 4: Collect free-product for temporary storage. Excavate contaminated soil, store and manage appropriately **Marine response if necessary**: 1: Deploy containment boom to control migration of spill. Consideration of protection booming of beach front, protective booming of hunter's camps to east of manifold, and Phillips Creek west of manifold depending on wind direction, tides and marine conditions present. Typical deployment lengths of 50 meters are anticipated for this task. (Multiple lengths should be used when required) 2: Deploy skimmer and recover spill 3: Final recovery of spill using sorbents if necessary 4: Monitor any free floating oil that is unable to be contained 5: Notifications of local authorities	Land spill only: Response by Milne Inlet site services Recover free products with sorbents, pumps within temporary berms Earth moving equipment available for berming, etc. Boat – Baffinland near shore workboat - 3 responders Boom – 100 meters and accessories, additional booms if necessary to provide shoreline protection Shore crew to deploy from container – 3 responders Milne inlet site services group
Failure at receiving skid, component failure, leak in coupling or hose from pipeline to receiving skid or leak in hose on discharge hose after receiving skid	20-600 litres	**Land spill only: (Marine involvement unlikely due to distance and gradient)** 1: Immediately install portable berms under leaking or damaged line where possible 2: If portable berms are not feasible, contain and recover oil spill using dykes or trenches 3: Prevent the oil from reaching natural drainage paths 4: Collect free-product for temporary storage. Excavate contaminated soil, store and	Response by Milne Inlet site services Recover free products with sorbents, pumps within temporary berms Earth moving equipment available for berming, etc.

		manage appropriately	

6.3 Tank Farm

The entire Milne Inlet Bulk Fuel Storage Facility is completely contained within a bermed and lined area, entirely designed and built to CCME standards. The area within the berm provides total liquid recovery to sump and engineered oil water separation system

Source of discharge	Potential loss*	Appropriate actions	Resources required
Leaking Bladder	20-500 litres	Transfer from leaking bladder Patch accordingly	- Use existing piping and infrastructure - Patch kits - Response by Milne Inlet site services - Recover free products with sorbents - Berm designed with fuel recovery to sump and engineered oil water separator
Failure of hose couplings (cam locks)	20-500 litres	Contain product with portable berm Repair accordingly	- Use existing piping and infrastructure - Patch kits - Response by Milne Inlet site services - Recover free products with sorbents - Berm designed with fuel recovery to sump and engineered oil water separator
Leak at hard pipe flange	20-500 litres	Contain product with portable berm Repair accordingly	- Response by Milne Inlet site services - Recover free products with sorbents
Fuel leak from bladder vent	Less than 20 litres	Contain product with portable berm Repair accordingly	- Response by Milne Inlet site services - Recover free products with sorbents
*** Potential loss estimated based on pumping rate and anticipated response time to shut down pumping operations**			

6.4 Response Strategies – Large Spills

For the purposes of this plan, spills less than 3.5 m^3 are to be handled by Milne Inlet response operations. Milne Inlet personnel shall deploy the resident on-site equipment as outlined in the plan.

If the spill is larger than 3.5 m^3 and depending on the specific circumstances, the On-Site Coordinator shall determine if it is necessary to increase the response capability by requesting the assistance of the Canadian Coast Guard.

Where this support is deemed necessary, the On Site Coordinator shall immediately request this assistance while ensuring ongoing mitigation of spill impact to the extent possible while awaiting additional resources and assistance from the Canadian Coast Guard.

7 Preventive Measures

It is Baffinland Iron Mines policy to prevent any accidental spillage and all prior efforts are made to minimize the risk of incidents and impact to the environment. Baffinland constantly updates the facility, has adequate safety equipment at the site and provides comprehensive training to its employees, contractors and visitors with the goal of avoiding spills and to minimize their impact if they should occur. Furthermore, Baffinland Mines has established standard operating procedure in relation to the bulk fuel transfer – (Annex 5), that provides safeguards and immediate alarm in the event of failures during the operation.

7.1 Training - General

Baffinland Iron Mines ensures that personnel involved during a response receive training for their own safety, public safety, and that they have the required skills to minimize the impact of a spill on the environment.

The personnel directly linked to spill response operations will receive training to familiarize themselves with the environmental emergency plan. These personnel will also reexamine the manual of the Environmental Emergency Plan on a yearly basis according to their duties and responsibilities. All training is recorded in the training register and kept up to date in the Oil Pollution Emergency Plan binder.

The personnel directly linked to spill response operations, contract employees and the other responders identified in the environmental emergency plan should take part in the yearly training program.

All workboat operators and crews shall possess a Pleasure Craft Operator Competency Card.

7.1.1 Training Content

Spill training shall be provided on site prior to transfer operations for all personnel to be involved in the management and response to possible spills.

Baffinland Iron Mines On Site Co-ordinator shall possess accredited spill management training to a level commensurate to the duties required of the position.

Responder training is to be of a combined theoretical presentation (classroom) and also of a hands on nature (equipment deployment exercise).

The major components of this training program shall include:

Classroom Training:

- Introduction and overview of marine spill response
- Review of Baffinland general spill response plan and integration of same to marine response
- Review of Marine Oil Pollution Emergency Plan elements
- Short review of oil spill behavior and operational parameters / limitations for marine spill response operations
- Spill assessment
- Basic safety for spill responders to marine oil spills, presentation of video – small craft safety practices

- Basic oil boom deployment, presentation of video and booming techniques / guidelines
- Marine and shoreline recovery operations

Hands on Training and Deployments:

- Hands on review with participants of Baffinland inventory of spill equipment
- Hands on instruction - boom connections, tow bridles, rope handling, basic knots and attachment of deployment accessories
- Simulated deployment of booms and related gear on water using appropriate vessels
- Debriefing and lessons learned

7.1.2 Short Notice Training

In the event of a large spill the personnel requirements may exceed those that have received the specific responder training as outlined in section 7.1.1 above. Due to the remoteness of the site, volunteers are not anticipated. Milne Inlet site services personnel shall be employed as additional responders.

Although all site services personnel possess WHMIS training additional short notice training shall be carried out for these new responders on an as needed basis. Certain modules of the responder training shall be delivered on site to these personnel selected specifically from the training outlined in section 7.1.1 above. The operations manager shall determine which modules are pertinent to each group of additional responders and shall be responsible for assuring adequate training for each group.

7.2 Exercises

Following the annual delivery of the spill training as outlined in section 7.1 a comprehensive spill exercise shall be undertaken. The exercise is structured to test the readiness of management, responders and to practice and validate the logistics of the deployment of spill gear. The exercise content shall be different from year to year so that it can validate the various elements of the plan and the response over a three year period. Some of the factors that shall be evaluated include but are not limited to:

- Activation of the emergency plan
- Management response
- Site safety
- Communications
- Equipment deployment to a specific scenario
- Reporting and co-ordination with outside agencies
- Exercise coordination with Canadian Coast Guard
- Exercise coordination with ship

7.3 Spill Prevention Measures

7.3.1 Bulk Fuel Facility:

Normal operation procedures of Baffinland Iron Mines include many inspections which are performed regularly and kept on records. Any discrepancies noted are documented and investigated. Corrective measures are then applied.

7.3.2 Bulk Fuel Transfer:

Several preventive measures are in place to minimize risk of spills during bulk fuel transfer including:

- The bulk fuel storage facility, pipeline and all related equipment and infrastructures are inspected prior to the bulk cargo transfer and the inspection methods are documented as a standard operating procedure
- Complete bulk cargo transfer procedures have been established, a copy of which is found in Annex 5 of this OPEP
- As required by the applicable legislation the ship has a comprehensive Shipboard Oil Pollution Emergency Plan (SOPEP) and a copy of this plan has been reviewed by Baffinland Mines
- In addition to the legislative requirements, the charterer has implemented a shipboard spill response training program and performs routine exercises in spill response operations
- The ship carries a compliment of spill response equipment as listed in Annex 6 of the OPEP and this equipment is ready at the ship's rail at all times for deployment during cargo operations
- Baffinland Mines oil spill response equipment is on the beach, ready for immediate deployment at all times during cargo operations
- The workboats and trained responders are available at all times during cargo operations for spill equipment deployment
- Standard transfer procedures include hourly inspections by workboat of the floating hose for leaks or defects
- During transfer operations the shore manifold is manned at all times
- A low pressure alarm is installed at the shore manifold which is highly sensitive to differences in pressure during pumping. Any loss in the system will cause a drop in manifold pressure and results in an audible alarm which is immediately reported by the manifold personnel
- The tank farm is monitored at all times by Baffinland personnel during the transfer
- The pipeline is inspected hourly on foot during the transfer operation

7.4 Response Equipment Auditing

As part of the annual exercise program, a scenario based deployment of spill gear is carried out. Prior to the exercise all gear is inspected, its condition is evaluated and any defects or missing equipment is replaced. The equipment audit is documented in the training register in Annex 7.

7.5 Oil Pollution Response Plan Updates

The Oil Pollution Emergency Plan (OPEP) will be scrutinized at least once a year to take into consideration any amendments of the legislation, new characteristics of the site, the equipment on site, new policies of the company, environmental issues and also new staff and particulars of team members. Furthermore following an exercise or an incident, the OPEP will be evaluated and modified accordingly.

Even if there is no change to be brought to the OPEP it will be updated at least once a year. The corrected version of the plan will then be sent to the responsible person on site to ensure that the team at the site always has an updated version of the plan in case their intervention is needed.

7.5.1 Update Registry

The Oil Pollution Emergency Plan (OPEP) shall be updated, reprinted and redistributed when changes are made as noted above. The plan carries the latest version identified by date as indicated in the footer of each page of the plan. If plan amendments result in a reprinting, all old versions of the plan shall be recalled and destroyed accordingly.

7.5.2 Plan distribution

In addition to distribution within Baffinland Iron Mines, all modified versions of the plan shall be submitted to Transport Canada accordingly.

APPENDIX E5

INTERIM MINE ROCK ML/ARD REPORT - MARY RIVER PROJECT

(Pages E5-1 to E5-587)

INTERIM MINE ROCK ML/ARD REPORT
MARY RIVER PROJECT

Submitted to:
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January 2012

TC111523

20 January, 2012

TC111523

Baffinland Iron Mines Corporation
120 Adelaide St. West, Suite 1016
Toronto, Ontario
M5H 1T1

Attention: Mr. Jim Millard, Senior Environmental Superintendent

Re: Interim Mine Rock ML/ARD Report, Mary River Project

Please find attached a final interim report on the metal leaching and acid rock drainage (ML/ARD) characterization of materials from Mary River Deposit No. 1 of Baffinland Iron Mine site.

The report presents the results and current interpretation of geochemical analyses available up to December 2011.

Please do not hesitate to contact the undersigned or Steve Walker (phone # 647 963 6098) should you have any questions.

Yours very truly,

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EXECUTIVE SUMMARY

AMEC was retained by Baffinland Iron Mines Corporation (Baffinland) to conduct environmental studies in support of the Environmental Impact Assessment (EIA) for the Mary River Project. AMEC is currently conducting ongoing metal leaching and acid rock drainage (ML/ARD) studies for the Project. This report provides a summary of data collected during 2011 and provides interpretation of the data required to support water quality modeling for the Final Environmental Impact Statement (EIS).

Materials characterized in this study include rock core samples that represent rock types that will be placed in waste rock stockpiles and potentially exposed on pit walls. The ML/ARD assessment results will provide input for the management of the mine rock and also the management of the seepage and runoff from the mine rock stockpiles and open pit.

Work in 2011 included collection of an additional 377 samples of waste rock material on the basis of a revised waste type model that subdivided the hangingwall (HW) and footwall (FW) zones to incorporate more schist dominated regions (HWS and FWS) occurring generally in close proximity to the iron ore.

Static testing included modified Sobek ABA, NAG testing, total element analyses, and short term leach analyses. This data has been supplemented with the additional ABA results from 2011 sampling and discussed in this report.

Waste rock is characterized by generally low modified Sobek neutralization potentials (NP) and low sulphide contents with resulting low acid potentials (AP). Carbonate NP typically represents < 20% of the modified Sobek NP. Sulphide content in excess of 0.5% is generally predictive of a Neutralization Potential Ratio (NPR) less than 2.

Overall, assuming that an NPR less than 2 is representative of potentially acid generating (PAG) material and based on the number of samples and the current understanding of waste distributions in the pit, an estimated 15% of waste rock is expected to be PAG.

The PAG samples were distributed widely in the open pit and were present in all waste rock types (ranging from 7 to < 25% of samples for the largest waste types by tonnage (HW, HWS, FW, FWS). The relatively small tonnage of deleterious ore (DO) modeled in the footwall of the pit was identified as having close to 60% of samples as PAG material.

Metal loadings from nine operating humidity cells after 21 weeks of data are generally low. On the basis of calculated sulphide and carbonate depletion rates, acidic conditions are expected to occur in all humidity cells currently in operation. However, longer term testing and operation of the NP depleted cells will assess whether carbonate depletion rates alone are a reasonable estimate for assessing the on-set of acid conditions, or whether other neutralization sources will contribute sufficiently to prevent the on-set of acidification.

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1.0 INTRODUCTION

AMEC was retained by Baffinland Iron Mines Corporation (Baffinland) to conduct environmental studies in support of the environmental impact assessment (EIA) for the Mary River Project. AMEC is currently conducting ongoing metal leaching and acid rock drainage (ML/ARD) studies for the Project. This report provides a summary of data collected during 2011 and provides interpretation of the data required to support water quality modeling for the Final EIS. Previous ML/ARD reporting is provided in Appendix A.

Baffinland is planning to mine iron ore at their Mary River site located on the northern half of Baffin Island, approximately 160 km south of Mittimatalik (Pond Inlet), 270 km south-east of Nanisivik, 300 km north of Hall Beach, and 1000 km north-west of Iqaluit, the capital of Nunavut Territory, Canada. This area experiences a mean annual temperature of approximately -12^{o}C and monthly averages below -20^{o}C from December to March. Above freezing temperatures occur only from June to August, with an average high of 4.4^{o}C in July.

There are currently five deposits of potential economic interest identified at the site. The current mine development relates to Deposit No.1, which is the largest and best known of the economic deposits at the site.

The current projected life of mine is about 21 years based on reserves in Deposit No.1. The proposed mine will include the open pit, crushing and screening facilities, and the ore and waste rock storage facilities. The dimension of the ultimate open pit will be approximately 2,000 m in length, 1,200 m in width and range from 195 m on the south side to 465 m on the north side in depth (Aker Kvaerner, 2008).

The economic iron deposits at the Mary River project represent high-grade examples of Algoma-type iron formation. Approximately 365 Mt of ore will be produced at the Mary River Project (Aker Kvaerner, 2008). Deposit No. 1 ores contain magnetite and hematite in different proportions. About 640 Mt of waste rock are anticipated to be produced during the life of the mine.

1.1 Objectives and Scope of Work

The objective of this assessment was to characterize the metal leaching and acid rock drainage (ML/ARD) characteristics of the mine rocks that will be produced from the proposed open pit. This interim report is to support the Final Environmental Impact Statement (EIS) for the Baffinland project. The ML/ARD assessment results will provide input for the management of the mine rock and also the management of the seepage and runoff from the mine rock stockpiles and open pit.

Materials characterized in this study include rock core samples that represent rock types that will be placed in waste rock stockpiles and potentially exposed on pit walls. To further improve the understanding of the potential for acid and metal leaching from the mine rock, the seepage

and run off quality of mine rock stockpiles that have been monitored over the last few years by Baffinland are also provided.

1.2 Geology

Baffinland Iron Mines Corporation (Baffinland) is planning to mine iron ore from Deposit No. 1 at their Mary River project (the Project), located on the northern half of Baffin Island, Nunavut Territory, Canada. The deposit is a high-grade example of Algoma-type iron formation, which is characterized by zones of massive, layered or brecciated hematite (sometimes in the specularite form) and magnetite, variably intermixed with banded oxide to silicate-facies iron formation.

1.2.1 Regional Geology

The northern part of Baffin Island consists of the ca. 3.0-2.5 Ga Committee Fold belt which lies within the Rae domain of the western Churchill Province (Jackson and Berman, 2000). The Committee belt extends north-east for around 2000 km from south-west of Baker Lake, Nunavut Territory to northwestern Greenland. Four major assemblages of Precambrian rocks have been identified within the Committee Belt. The iron ore deposits occur as part of the supra-crustal rocks of the Neoarchean aged (2.76-2.71 Ga) Mary River Group in the region. The Central Borden Fault Zone passes within 1 km to the south-west of the site. This fault separates the highly deformed Precambrian rocks to the north-west from the early Paleozoic relatively flat lying sedimentary rocks to the southwest. The generalized stratigraphic sequence of the Mary River group from top to base according to Young et al. (2004) and Johns and Young (2006) is:

- interbedded ultramafic and intermediate volcanic rocks;
- quartzite;
- Algoma–type oxide and silicate–facies iron formation;
- amphibolite; and
- psammite and sedimentary migmatite.

The thickness of individual units varies considerably across the area. Ultramafic and gabbroic intrusions in the form of small sills and dykes (<10 m in thickness) may occur within the sedimentary rocks, iron formation and amphibolite units (Johns and Young, 2006). Locally these intrusions have been observed to contain thin sulphide veinlets and disseminated sulphides. At the deposit scale, the overall sequence can be complicated by inferred early isoclinal folds and ramp and flat thrust faults (Young *et al*., 2004) which create complex and variable stratigraphic relationships. The contact between the Mary River group and gneiss basement rock are generally not directly exposed, being obscured by younger granitic intrusions.

Iron formation within the Mary River Group occurs as an oxide- and silicate- facies unit. Oxide facies iron formations vary from lean magnetite-chert to iron-ore quality deposits of magnetite and hematite (Johns and Young, 2006). Genesis of high grade iron ores is the result of the Hudsonian age deformation and metamorphism of enriched Archean Banded Iron Formation. The silicate–facies iron formation is generally thin and found in association with the oxide–facies, although it also occurs on its own. It commonly contains coarse garnet, anthophyllite, cummingtonite, and actinolite porphyroblasts.

The surficial geology of the area generally consists of locally abundant Holocene glacio-lacustrine sediments, alluvial sediments (alluvial deposits), marine and glacio-marine deltaic sediments and end moraine till, with occasional outcrops of pre-Quaternary bedrock and sedimentary rock formations. The Holocene glacio-lacustrine sediments are typically in the range of 1 to 10 m thick, consisting of proglacial sand and gravel outwash. The sediments commonly form braided floodplains, terraces and fans. The early Holocene and Wisconsinan tills are mainly veneers and blankets. Till veneers are 0.5 to 2 m thick and discontinuous. Some veneer surfaces are reinforced with boulders, either due to washing by subglacial meltwater or permafrost processes, and restrict outcrop exposures. Till blankets are undulating and in the range of 2 to 10 m thick with drumlins and ribbed moraines in places.

The Mary River Camp is located in a major glaciofluvial outwash deposit in what appears to be a classic “U’ shaped valley. In addition to the glaciofluvial deposits, there are some direct glacial deposits consisting of kames, moraines and eskers in and around the south-eastern portion of Sheardown Lake. The outwash valley is essentially a relatively flat plane with very little local relief, the major exceptions being along water bodies, esker deposits and adjacent to valley edges.

1.2.2 Deposit Geology

Deposit No.1 occurs at the nose of a syncline plunging steeply to the north-east (Aker Kvaerner, 2008). The iron formation occupies the nose and two limbs of this feature with an ~1300 m long northern portion and an ~700 m long southern portion. The footwall to the iron formation mainly consists of gneiss with minor schist, psammitic gneiss (psammite) and amphibolite. The hanging wall is primarily composed of schist and volcanic tuff with lesser amphibolite and metasediment.

The hanging wall primarily encompasses chlorite–actinolite schist and garnetiferous amphibolites. Meta-volcanic tuff is also a significant lithology identified in the hanging wall. The footwall mainly consists of quartz-feldspar-mica gneiss with lesser meta-sediment (greywacke) and quartz-mica schist. Microcline and albite are the predominant feldspars within the gneiss and biotite is generally more abundant than muscovite. Rocks are observed to represent at least amphibolite grade metamorphism.

The iron ore deposits at the Mary River project represent high-grade examples of Algoma-type iron formation and are composed of hematite, magnetite and mixed hematite-magnetite-

specular hematite varieties of ore (Aker Kvaerner, 2008). The iron deposits consist of a number of lensoidal bodies that vary in their proportions of the main iron oxide minerals and impurity content of sulphur and silica in the ore. The massive hematite ore is the highest grade ore and also has the fewest impurities, which may indicate it was derived from relatively pure magnetite or that chert, quartzite and sulphides were leached and oxidized during alteration of the iron formation.

1.3 Environmental Geochemistry

1.3.1 Climate and Hydrology

Northern Baffin Island is one of the coldest regions in Canada. The region experiences a mean annual temperature of approximately -15°C, with mean daily temperatures below -20°C from November through April, and above 0°C during June through August. The long period of sub-zero temperatures results in a very short runoff season, typically occurring from June through September. Runoff may extend to late October in systems with large lake components. The frigid temperatures also result in very low precipitation values for northern Baffin Island, from the combined effect of the low moisture carrying capacity of cold air and the scarcity of liquid water available for evaporation. According to Natural Resources Canada the region is classified as semi-arid with mean annual total precipitation ranging from 200 to 400 mm, although regional climate stations suggest that the true value is near the lower end of this range. The amount of water available for runoff is further reduced by the processes of evaporation, transpiration and sublimation. The frigid climate and subsequent lack of significant vegetative cover combine to minimize the volume of water evaporated and transpired to very low levels. Conversely sublimation frequently occurs during the winter months, largely as a result of blowing snow transport.

The presence of permafrost, coupled with the lack of vegetative cover, also has a profound effect on regional hydrologic systems. Permafrost typically restricts water from infiltrating the ground to any great depth, while the lack of surface vegetation results in little to no impedance or loss of runoff as it flows to the river channels. Therefore, July and August rainfall events tend to produce flashy stream flow conditions.

1.3.2 Summary of Previous Geochemical Studies

A previous geochemical study (2006 to 2008) by Knight Piésold (2008) included analysis of 97 waste rock samples, 21 ore samples and 7 overburden samples. Waste rock and ore samples were collected from rock cores at 34 boreholes drilled in 2004, 2005 and 2006. Waste rock samples were categorized spatially on the basis of hanging wall and footwall materials. All samples underwent acid-base accounting (ABA) analysis, total element analysis by aqua-regia leach, and whole rock analysis by X-ray Fluorescence (XRF). ABA analysis included assessment of acid potential (AP) on the basis of measured total sulphur and calculated sulphide sulphur concentrations. Assessment of neutralization potential (NP) was on the basis

of total neutralization potential determined by the modified Sobek method and carbonate NP (CaNP) by measurement of total inorganic carbon.

Selected samples were additionally analysed using the Net Acid Generation (NAG) test, mineralogy by X-ray diffraction (XRD), and short-term leaching tests using Standard (USEPA 1312) Synthetic Precipitation Leaching Procedure (SPLP) at pH 4.5, a modified SPLP procedure and the Toxic Characteristic Leaching Procedure (USEPA 1311). The modified SPLP procedure used deionized water at pH 5.5 and a liquid to solid ratio of 1:3 rather than 1:20 for the standard SPLP.

A humidity cell testing program was conducted on ten rock samples from the Mary River project in early 2008 (Knight Piésold, 2008). The humidity cell testing consisted of: three humidity cells containing footwall samples; and seven humidity cells containing hanging wall samples. Two samples of footwall rocks and five samples of hanging wall rock that underwent the humidity cell testing had values of NPR less than 2. The humidity cells were operated for 53 weeks. The preliminary results of humidity cell tests that covered 20 weeks of operation were reported by Knight Piésold (2008). The complete results of the humidity cell testing to 53 weeks are presented and discussed in AMEC 2010 (Appendix A).

Another geochemical testing program was conducted in 2008 as a part of the bulk ore sampling program (Knight Piésold, 2009). Twenty-three rock samples were collected from 130,000 tonnes of blasted rock from the west side of Deposit No.1. These samples represented three different ore types and varieties, including weathered ore, representative ore and non-representative high manganese ore. All of these samples were subjected to the same testing as the waste rock samples, namely ABA, total elements by aqua regia, whole rock analyses, and modified SPLP testing.

1.3.3 Summary of Previous Geochemistry Results

Interpretation of the prinicipal results from the initial geochemical investigations (2006 to 2009) for the project includes the following key observations:

Waste Rock

- 74% of both hanging wall and footwall waste rock samples contained <0.1% sulphide sulphur;
- The modified Sobek NP of hanging wall and footwall waste rock samples was low (median values at 15 kg $CaCO_3$/t and 9 kg $CaCO_3$/t respectively);
- Generally only a fraction of this NP was provided by carbonate;
- The overall low sulphide content of the waste rocks combined with the prevailing low NP and particularly the low carbonate NP leads to uncertainty in prediction of future ARD on the basis of static testing alone;

- Ten humidity cells on selected waste rock materials were operated for 53 weeks with none producing strongly acidic drainage in that time, although several cells produced weakly acidic drainage with steady pH in the range of 5.5 to 6.5;
- Steady sulphate release rates from the humidity cells were generally low (range 0.7 to 38 mg/kg/week); and
- Generally low metal release rates were observed from humidity cells.

Ore

- From 2006 to 2008 core sampling program 100% of hematite dominant ore samples and 56% of magnetite dominant ore samples contained <0.1% sulphide sulphur;
- The corresponding median modified Sobek NP of hematite dominant and magnetite dominant ore samples was 1.7 and 6.75 respectively;
- From the 2008 ore bulk sample program the sulphide content of the representative ore was 0.01% or less and the modified Sobek NP of representative ore was observed over a very narrow range of 1.3 to 4.5 kg $CaCO_3$/t; and
- The fraction of NP provided by carbonate in ore material was low with the notable exception that some samples of magnetite dominant ore exhibited greater carbonate NP than modified Sobek NP presumably due to the presence of siderite.

Overburden

- For the seven shallow overburden samples the sulphide content was low (0.01% or less); and
- The median modified Sobek NP was 172 with most NP in overburden samples related to carbonate.

Overall, the previous geochemical study indicated that 21 of 23 (91%) footwall rock samples, 65 of 74 (88%) hanging wall samples, 11 of 16 (69%) ore samples, and all overburden samples had neutralization potential ratio (NPR) >2 for NPR calculated using modified Sobek NP and AP based on sulphide sulphur. Representative ore samples from the subsequent bulk ore sampling program indicated very low sulphide content at or below detection limits with NPR of all samples >2.

Results of short-term leaching tests (SPLP and modified SPLP) indicated that several metal parameters such as aluminum, barium, iron and manganese were susceptible to leaching at concentrations greater than 1 mg/L from footwall and hanging wall samples (Knight Piésold, 2008). However, concentrations of major and trace metals in humidity cell leachate were low to negligible.

1.4 Mine Plan

The proposed Mary River Project will consist of an open pit and adjacent waste rock stockpile, plus supporting buildings and infrastructure. Ore will be mined from the Deposit No. 1 pit and shipped directly offsite for further processing. A waste rock disposal area designed for permanent storage of waste rock will be located northwest of the open pit. Based on the mine plan for Deposit No. 1, an estimated 640 Mt of waste rock will be generated over a period of 21 years.

Intense deformation and lack of outcrop limit the ability to subdivide by lithology on the basis of future mined tonnages. Rather, the waste material has been subdivided on the basis of zonal relationships around the iron ore. Previously this was done on the basis of hanging wall and footwall zones around the ore. A recent update to the waste rock model has been completed by George H Wahl and Associates (GHW&A) and Hatch (Hatch 2011). This has resulted in a refinement of the waste distribution (and nominal changes in tonnage from the previous mine plan) on the basis of a greater number of waste units (Table 1, and Figure 1). This revised waste distribution is the basis for the current work.

Table 1: Summary of Waste Types and Tonnages

Waste Type	In-Pit Tonnage (t)	Waste (%)	Lithologies (in approximate order of abundance)
Hanging wall (HW)	114,506,831	20.0	meta-volcanic (tuff); greywacke; amphibolite; chlorite, mica or amphibole schist; ultramafite; and gneiss
Hanging wall schist (HWS)	103,479,188	18.1	chlorite, mica, or amphibole schist; amphibolite; greywacke; and meta-volcanic (tuff)
Internal waste (IW)	2,982,893	0.5	schist; amphibolite; and meta-volcanic (tuff)
Deleterious ore (DO)	13,672,193	2.4	high grade iron formation (elevated Mn, S or P); and banded iron formation
Footwall schist (FWS)	45,917,213	8.0	chlorite, mica, or amphibole schist; gneiss; greywacke; amphibolite; and meta-volcanic (tuff)
Footwall (FW)	291,226,388	50.9	gneiss; metasediments (e.g., greywacke); chlorite, mica or amphibole schist; and amphibolites
Total	571,784,706	100.0	

2.0 PROGRAM DESIGN

2.1 Program Components

In 2010 based on review of the previous geochemical investigations AMEC developed a followup geochemical characterization program to augment the geochemical database for the project by increasing the representativity of the data. The program has been carried out in the following stages:

2010

- Additional ML/ARD sampling of hanging wall and footwall waste rock material from existing drill core (primarily 2008 and 2009);
- Locating, sampling and analysis of three boreholes in previously unsampled regions of the footwall to the deposit;
- Review of available runoff and drainage data from existing ore stockpiles at the Mary River site and Milne Inlet; and
- Preparation of an interim waste rock characterization report.

2011

- Initiation of 9 additional standard humidity cells and 8 carbonate neutralization depleted humidity cells;
- Direction of a further expanded sampling program of the waste rock materials on the basis of a revised waste rock block model;
- ML/ARD analysis of samples from this expanded program;
- Detailed mineralogical analysis of selected samples; and
- Support of the development of on-going work to further refine the understanding of ML/ARD for the Project.

2.2 Summary of Completed Work and Work in Process

2.2.1 2010 Investigations

A full description of the 2010 investigation methods and results is provided in AMEC (2010) (Appendix A). Key findings of the expanded ML/ARD sampling and characterization program for the 2010 investigation include the following:

- The concentrations of sulphide sulphur in hanging wall samples ranged from <0.01% to 9.8% with mean and median values of 0.20% and 0.02% respectively;

- Concentrations of sulphide sulphur in footwall samples ranged from <0.01% to 5.96% with mean and median values of 0.16% and 0.01% respectively;
- The generally low sulphide concentrations were consistent with the initial sampling program;
- The modified Sobek NP of hanging wall samples was confirmed to be low overall (consistent with the initial sampling program) with mean and median values of 22 and 17 kg $CaCO_3$/t respectively;
- Overall the modified Sobek NP of footwall samples was also confirmed to be low with mean and median values of 12 and 10 kg $CaCO_3$/t respectively;
- As with the previous investigations, generally only a fraction of this NP was provided by carbonate, although a small subset of samples exhibited modified Sobek NP that was less than carbonate NP suggesting the presence of siderite in some samples;
- Sampling of a previously unsampled portion (2010 drilling toward the west pit limit of the footwall zone) confirmed similar ABA results to those of the remainder of the footwall with generally low NP and variable low to moderate sulphide content;
- The NPR of hanging wall rock samples varied from 0.001 to 413 with mean and median values of 3.5 and 34, respectively;
- Approximately 14% of the hanging wall samples (24 of 170 samples) had NPR <2 with 16 samples (9%) having an NPR <1;
- The NPR of footwall rock samples ranged from 0.08 to 100 with mean and median values of 2.6 and 33, respectively;
- Approximately 14% of footwall samples (15 of 107 samples) had an NPR <2, with eight of these 15 samples having an NPR <1;
- Delineation of PAG samples using NAG_{pH} results were generally consistent with the results of ABA analysis;
- Overall, prediction of possible future ML/ARD remained challenging for the project based on:
    - static testing data that confirmed low sulphide and NP contents in waste rock; and
    - no observation of acidic drainage in the 53 weeks of humidity cell data.
- Analysis of drainage from two lysimeters constructed within ore stockpile material (exposed since the 2008 bulk sampling program) indicated the presence of elevated sulphate and some metals (notably Mn and Ni); however, this material contained non-representative ore with a clear potential to negatively influence drainage quality; the relationship of this drainage data to the waste rock lithologies is also uncertain.

2.2.2 2011 Investigations

Work initiated in 2011 included activation of 9 additional standard humidity cells and 8 carbonate neutralization depleted cells (NP depleted cells). Standard humidity cells were begun in May 2011 and 21 weeks of data were available for this report. The NP depletion process for the NP depleted cells was initiated at the same time; however, NP depletion of the cells required time to complete and therefore there was insufficient data available to report at this time. Humidity cell testing for both the standard and NP depleted cells is continuing.

As identified in Section 1.4 an updated waste and ore block model was developed in 2011 that is believed to better reflect the overall geological and geochemical variability across the deposit. This revised model essentially incorporates schist dominated lithological regions on both the hanging wall and footwall sides of the ore zone (Figure 1), subdividing what was the hanging wall zone into hanging wall schist (HWS) and unsubdivided hanging wall (HW) and a similar relationship in the footwall (FW and FWS). Internal waste (IW) and a zone of non-representative (deleterious) ore (DO) were also identified in the revised model.

An expanded sampling program was conducted by Baffinland geologists under the direction of GHW&A and AMEC in October 2011. The sampling program scope was to:

- Conduct sampling at regular intervals within available boreholes to populate a sample distribution of the modeled waste zones to the extent possible within limited drill hole coverage;
- Use site geological experience to select the samples on the basis of representative materials within the target intervals; and
- For each target interval select both a 1 m sample interval consistent with previous AMEC ABA sampling (ABA sample) and a small 10 to 15 cm sub-sample (referred to as MIN samples) for mineralogical characterization.

The sampling program collected a total of 377 ABA and 377 MIN samples. The analytical program that followed from this sampling is in progress. The following work has been completed and is documented in the following methods and results sections and in combination with previous investigation results forms the basis of the overall interim conclusions for the study to date.

- For each ABA sample, ABA analysis, NAG_{pH}, total metals by aqua-regia leach;
- Analysis of NAG leachate on 49 selected samples for sulphate and metals; and
- Detailed mineralogical analysis of 20 selected MIN samples to better characterize the underlying sulphide minerals and potential minerals available for acid neutralization.

Additional work still in process or proposed as part of this program includes the following:

- Analysis of selected ABA samples for short term metal leaching (shake flask extraction);
- Repeat analysis of 10 ABA samples for metals using a four acid (total) digest for comparison to the near-total aqua-regia digestion.
- Analysis of all MIN samples by whole rock analysis and qualitative XRD;
- Analysis of an additional set of MIN samples for detailed mineralogy selected on the basis of whole rock and qualitative XRD results;
- Possible selection of additional kinetic test samples on the basis of the recently obtained and updated ML/ARD database; and
- Possible future detailed mineralogical analysis of selected humidity cell samples (pre- and post- leaching) to improve the understanding of kinetic metal leaching behaviour.

Additional details on the longer term and overall plan for mine rock characterization moving forward in 2012 and toward development are detailed in Baffinland (2012).

3.0 METHODS

3.1 Static Testing

3.1.1 Sample Collection

Samples were collected from the stored rock core for both ABA and mineralogical characterization within regular (~10 m) target intervals identified ahead of time by GHW&A. The boreholes and intervals were selected to populate the updated waste model within the proposed pit. All sampling was conducted by Baffinland geologists with experience at the deposit and with the objective to select the most representative rock material within the target interval. Samples for ABA analysis comprised approximately one meter intervals, while the mineralogy sample was by design smaller and in the order of 10 to 15 cm or so. Samples were described in the field according to standard rock coding for the site.

In total 377 ABA and 377 mineralogy samples were collected. Samples were inventoried, packed and shipped to SGS Laboratories at Lakefield for sample preparation and analysis.

3.1.2 Acid Base Accounting

ABA analyses were performed on each of the ABA sample intervals collected. The ABA testing consisted of total sulphur, sulphate sulphur, sulphide sulphur by difference, total carbon (TC), total inorganic carbon (TIC), modified Sobek neutralization potential (NP), and paste pH.

Total sulphur and total carbon in the samples was determined by Leco furnace. Sulphate sulphur was determined by dilute hydrochloric acid digestion and colorimetry. Sulphide sulphur was determined by difference between the two analyses. Total inorganic carbon was measured by pyrolysis followed by Leco analysis. As for previous investigations, measurement of total carbon was used to determine the CaNP since low organic carbon content is expected in the high metamorphic grade samples and the pyrolysis method used for inorganic carbon was sometimes inconsistent (greater than) total carbon results.

3.1.3 Net Acid Generation Test and Leachate Analysis

The NAG test is a complimentary test to ABA which provides an assessment of the potential of a sample to generate acid (AMIRA, 2000) by oxidizing any sulphide present with hydrogen peroxide. The simplicity of the NAG_{pH} test may make it suitable as a screening tool for field characterization of rock materials, where it is sufficiently calibrated against more comprehensive ABA data. Values for NAG_{pH} greater than 4.5 indicate that a sample has little potential to produce net acidity in the future.

3.1.4 Elemental Analyses

Each ABA sample interval collected was analysed for concentrations of a standard suite of elements (primarily metals) in aqua regia leachate with ICP/MS quantification. Duplicate analyses were conducted on approximately 10% of the samples. Aqua regia digestion is considered a partial dissolution method since some resistant minerals (e.g., silicates) are not decomposed or only partially decomposed by the aqua regia leach. However, concentrations of most environmentally important metals are expected to be adequately determined by this technique.

3.1.5 NAG Leachate Analysis

Samples that exhibited net acid leaching in the NAG_{pH} test were submitted for additional NAG leaching and analysis of the leachate for sulphate and metals (ICP/MS). The NAG leachate analysis provides a water quality based on total oxidation of sulphide in the sample.

3.1.6 Mineralogy

A set of 20 samples were selected for detailed mineralogical characterization and submitted to Rod Johnson & Associates for analysis using optical microscopy, Rietveld XRD and Scanning Electron Microscopy (SEM) with EDS analysis. The samples were selected to cover a range of lithologies and waste types. An additional sample set is to be selected on the basis of whole rock analysis and qualitative XRD analysis presently underway.

3.2 Kinetic Testing

A set of samples were selected for humidity cell analysis based on the 2010 static testing program (AMEC, 2010; Appendix A). The samples for humidity cell testing were selected primarily on the basis of refining the limits of PAG and non-PAG materials and to better understand the effectiveness of silicate NP in limiting ARD as described above. In addition, the specific samples selected were reviewed for their spatial location in the deposit and in relation to previous humidity cell testing completed by Knight Piésold. This review has confirmed that all samples are well distributed spatially across the deposit.

3.2.1 Standard Humidity Cells

The purpose of testing using standard humidity cells (herein referred to as ‘humidity cells’) was to determine the ARD on-set time of PAG samples with different ranges of AP and NP contents. A second objective was to more carefully assess the threshold between PAG and non-PAG materials, which have been defined only on the basis of ABA static testing and assuming all materials with an NPR of <2 are PAG. Humidity cell testing of materials with an NPR between 1 and 2 may provide better information on what the appropriate NPR threshold to segregate acid generating from non-acid generating rock will be and how effective categorization of PAG and non-PAG on the basis of NP is.

A humidity cell program was previously conducted for 53 weeks on ten rock samples from the Mary River project in early 2008 (Knight Piésold, 2008, AMEC 2010). Five of the samples each represented a single lithology, while the others were of mixed lithology or consisted of composites of two or more lithologies. In addition, one of the samples had a sulphide content of 5% which is considered relatively high for mine rock at the project site.

The additional humidity cell testing was focused on the three main lithologies (gneiss, schist and volcanic tuff) and covered a range of sulphide content. An upper sulphide content limit of around 1% was considered to be representative of most of the PAG rocks based on available ABA data. Representative rock samples with NPR less than 2 were selected from the major hanging wall and footwall lithologies. Where a limited number of samples existed with NPR values between 1 and 2, a sample with the NPR slightly higher than 2 was also selected. Static test results for the selected samples are presented in Table 2 below. Nine rock samples representing major lithologies of hanging wall and footwall rock were selected for humidity cell testing based on the waste subdivisions available at the time. Samples have since been categorized according to the updated waste type subdivisions (FW, FWS, HW, HWS, IW).

Table 2: Selected Samples (2010 program) for Standard Humidity Cells

Sample ID	Borehole ID	Waste Rock Code	Lithology	Total Sulphur	Sulphide Sulphur	AP	NP	Ca-NP	NPR	Ca-NPR
				wt.%		kg $CaCO^3$/tonne				
MRARD10-055	MR1-08-159	FW	Gneiss	0.36	0.29	9.1	9.6	0.5	1.1	0.1
5171	ARD-2A-SE	FW	Gneiss	0.40	0.23	7.2	9.0	4.5	1.3	0.6
MRARD10-074	MR1-08-149	FWS	Gneiss	0.66	0.57	17.9	8.0	1.6	0.4	0.1
5178	ARD-2B-NW	FW	Schist	1.46	0.91	28.4	22.6	1.5	0.8	0.1
MRARD10-080	MR1-08-149	HWS	Volcanic Tuff	1.28	1.00	31.3	20.0	1	0.6	0.02
MRARD10-105	MR1-08-141	HWS	Volcanic Tuff	0.87	0.61	19.1	16.0	5	0.8	0.3
MRARD10-120	MR1-08-148	IW	Schist	0.46	0.30	9.3	5.6	1	0.6	0.1
MRARD10-030	MR1-09-170	FW	Gneiss	0.27	0.19	5.9	12.2	1.3	2.1	0.2
MRARD10-092	MR1-08-142	HWS	Schist	0.59	0.30	9.5	23	1	2.5	0.1

AP=acid potential, NP= neutralization potential, Ca= carbonate

3.2.2 Neutralization Potential Depleted Humidity Cells

The results of ABA testing on the Mary River Deposit No.1 samples indicated that the carbonate NP of the samples was generally lower compared to the modified Sobek NP. A significant number of samples (approximately 76%) had carbonate NP that was 20% or less than the Sobek NP (Figure 2). These results suggest silicate minerals as the long-term source of NP when the carbonate minerals are exhausted. Silicate minerals are able to buffer the mine waste pH at near neutral conditions under low acid generation rates (Mattson, 2009; Miller et al., 2010); however, effectiveness in this regard is dependent on the material and particularly the specific minerals present, and sulphide reaction rates.

Therefore, in addition to the standard humidity cells, specialized NP-depleted humidity cells were initiated. These cells are being operated to assess the drainage chemistry of waste rock devoid of carbonate neutralization capacity. Samples were pre-treated with weak acid solution to remove the carbonate NP prior to the humidity cell testing.

Eight samples from the major lithologies (gneiss, schist and volcanic tuff) were selected for the NP-depleted humidity cells (Table 3). Samples were selected to represent the expected mid to upper range of typical sulphide concentrations following exhaustion of their carbonate NP due to weathering.

Table 3: Selected Samples (2010 program) for NP-Depleted Humidity Cells

Sample ID	Borehole ID	Waste Rock Code	Lithology	AP	NP	Ca-NP	Non-Ca NP	% Non-Ca NP	NPR (NP/AP)	Non-Ca NPR
				kg CaCO3/tonne						
5172	ARD-2A-SE	FW	Gneiss	2.4	10.4	5.5	4.9	53	4.3	2.0
5174	ARD-2B-NW	FW	Gneiss	1.5	3.7	1.2	2.5	32	2.5	1.69
MRARD10-057	MR1-08-161	FWS	Gneiss	7.4	10.3	1.2	9.1	11	1.4	1.24
MRARD10-123	MR1-08-155	HWS	Gneiss	10.2	23.2	0.4	22.8	2	2.3	2.24
MRARD10-026	MR1-09-173	HWS	Schist	8.6	20.3	1.8	18.5	9	2.4	2.15
MRARD10-048	MR1-08-163	IW	Schist	3.6	11.4	2.5	8.9	22	3.2	2.49
MRARD10-051	MR1-08-158	HW	Volcanic Tuff	7.3	98.5	80.6	17.9	82	13.5	2.45
MRARD10-082	MR1-08-150	HW	Volcanic Tuff	3.1	42.1	36.4	11.7	87	13.5	1.82

AP=acid potential, NP= neutralization potential, Ca= carbonate

3.2.3 Loading and Depletion Calculations

Sulphate and metal loadings were calculated from the concentrations and volumes of leachates measured from the humidity cells. Loadings of sulphate and metals were normalized to an estimated surface area ($mg/m^2/wk$) of the waste rock in the humidity cells based on surface areas calculated from grain size analysis. Detection limit values were handled using the following protocol (EPA, 1991):

- For elements that reported >50% of their humidity cell leachate concentrations below their respective method detection limit (MDL) (antimony, arsenic, cadmium, chromium, copper, iron, lead, mercury, selenium, silver, thallium and zinc) the <MDL values were set to equal half the applicable detection limit; and
- For the remaining elements, <MDL values were set to equal the applicable MDL value.

Sulphide depletion time was calculated by dividing total sulphide sulphur content by the average sulphur release rate (steady state release rate of sulphate). Depletion time for NP was conservatively estimated by dividing the total carbonate content by the sum of the average steady state release rate of Ca plus Mg on a molar basis.

4.0 GEOCHEMICAL TESTING RESULTS

The following sections discuss the static testing results carried out on the waste rock samples. The overall analysis has been evaluated on the basis of waste rock subdivisions. Sampling by lithology continues to evolve on the basis of observed borehole information and the mineralogical analyses currently underway, with the recognition that significant volumes of material, particularly in the footwall, are presently unsampled.

4.1 Static Testing

Statistics describing the distribution of ABA parameters and metals by waste rock type are provided in Tables 4 & 5. The statistical analyses represent the combined results of 2011 and 2010 sampling, and previous sampling (Knight Piésold 2008). Detailed ABA, NAG_{pH}, metals by aqua-regia leach and NAG leachate results are presented in Appendix B (Tables B-1 through B-4).

4.1.1 Sulphur Speciation

The relationship of total sulphur and sulphide sulphur (Figure 3) confirms that sulphide is the main source of sulphur above 0.4% total sulphur and the relationship is similar overall between each of the waste rock classifications. At lower concentrations, data suggests that sulphate sulphur is a significant component in some samples.

4.1.2 Neutralization Potential

For the majority of samples, carbonate NP was lower compared to the Sobek NP (Figure 4) indicating that silicates may be important in providing neutralization capacity in most samples. The presence of carbonate NP greater than Sobek NP for some samples suggests the likely presence of iron carbonates in these samples that will provide no net neutralizing potential under oxidizing conditions. Only the hanging wall and hanging wall schist samples above a NP of about 50 kg $CaCO^3$/t exhibit a direct relationship between carbonate NP and (modified Sobek) NP indicative of carbonate as the dominant NP source.

4.1.3 Acid Base Accounting

The distribution of AP and NP of the waste rock is illustrated by waste rock type in Figure 5. For the purposes of this report, PAG is currently defined as samples with NPR <2, and non-PAG as NPR >2. The majority of samples had NPR values >2, indicating a low potential for acid generation. However, approximately 18% of the samples had NPR values <2 and are classified as PAG.

A graphical presentation of sulphide sulphur and NPR (Figure 6) values suggests that for these samples, sulphide sulphur in excess of 0.5% appears to be a strong indicator of the potential for a sample to have an NPR <2.

Statistics describing the distribution of ABA parameters by waste rock type are provided in Table 4. From the statistical summary, the following observations can be made:

- In general, the waste rock by type have low median sulphide sulphur concentrations (<0.3%) (ie. HW, FW, FWS, IW);
- The highest median sulphide sulphur concentration was present in the DO waste rock type (0.64%) followed by HWS (0.37%);
- In general, the median carbonate NP values were lower than NP values, except for the DO waste type which suggests the presence of siderite;
- The 10th percentile NPR values for all waste rock types were less than 2, suggesting that each waste rock type has the potential to generate ARD; and
- The median NPR value for all waste rock types was greater than 2; however, the median NPR value for the DO waste rock type was well above 2.

For planning purposes the proportion of PAG waste rock on the basis of the proportion of samples by waste type has been determined (Table 6).

Table 6: PAG Waste Rock Classification in Mary River Deposit No.1

Waste Type	Number of samples	NPR* < 2		Modeled In-Pit Tonnage	Estimated PAG Tonnage
	N	n	%	t	t
HW	142	10	7.0	114,506,831	8,063,861
HWS	207	48	23.2	103,479,188	23,995,174
IW	11	3	27.3	2,982,893	813,516
DO	27	15	55.6	13,672,193	7,595,663
FWS	99	23	23.2	45,917,213	10,667,635
FW	127	14	11.0	291,226,388	32,103,696
Total	613	113	18.4	571,784,706	83,239,546

* NPR = mod. Sobek NP/AP
% PAG normalized to tonnage = 15

Overall, the results suggest the greatest percentage of PAG materials are present in the DO unit (>50%) with significant percentages of PAG (20 to 30% range) in the HWS, IW and FWS units. The HW and FW units that are more distal from the ore zone indicate lower percentages of PAG at 7% and 11% respectively. It is acknowledged that these regions (HW and FW) are also the zones most under represented volumetrically in the current drill core intersections (Figure 1).

4.1.4 Metals Analyses

Metal analysis results are provided in Appendix B (Table B2). Statistics describing the distribution of metal parameters by waste rock type are provided in Table 5.

For several metal parameters such as arsenic, bismuth, cadmium, antimony, selenium, tin, thallium and uranium the MDL for previous results (Knight Piesold, 2008) were sometimes higher than those in the 2010 and 2011 testing programs.

In order to identify potential metals of environmental significance, the total metals from aqua regia leach results were screened against the corresponding average crustal abundance (Price, 1997). For the purpose of the screening assessment, the concentration of an element was considered enriched if concentrations were greater than ten times the average crustal abundance (Table 7). With the exception of Bi and Se which have detection limits greater than 10 times the average crustal abundance, no consistently notable screening level exceedances were observed. It should be noted that the total concentration of an element does not necessarily determine the metal leaching potential of that element.

4.1.5 NAG Leachate Results

NAG leachate results are presented in Appendix B (Table B-4). Concentrations of elements commonly associated with sulphides (e.g. Cd, Co, Cu, Fe, Ni, Pb, and Zn) exhibit high variability but generally indicate that higher metal contents are associated with higher sulphate concentrations. These results will be used to support the interpretation of humidity cell and detailed mineralogical work currently underway.

4.2 Mineralogy

A selection of 20 samples representing a range of waste types and lithologies was submitted for detailed mineralogical characterization (Appendix C).

Additional mineralogical work is planed so interpretation of these results is considered preliminary. Overall, the samples contain mineral assemblages typical of at least amphibolite metamorphic grade. Sixteen of the twenty samples contained sulfides and a variety of sulfides were identified in the rocks studied. The sulphides pyrite (FeS_2), chalcopyrite ($CuFeS_2$), pyrrhotite ($Fe_{(1-x)}S$), and sphalerite (Fe,Zn)S were commonly identified as accessory minerals. Pentlandite ($(Fe, Ni, Co)_9S_8$) was identified in three samples and marcasite (FeS_2) was identified in one sample. Only one sample contained measurable amounts of pyrite (1.8 wt.%, by Rietveld analysis). No sulfides were identified in four of the samples and all other samples contained sulphide in trace amounts. In most cases the sulfides were disseminated and fresh without oxidized shells and often included within silicate minerals.

The major rock forming silicate minerals observed in this study include: quartz, feldspar (plagioclase and alkali feldspar), amphibole (cummingtonite and hornblende), biotite, muscovite,

and chlorite. Plagioclase composition spanned the range from albite to anorthite composition with the latter when present likely to be more prone to more rapid weathering. The other major rock forming mineral was the oxide magnetite, which occured in iron formation.

The rocks observed in this study can be subdivided into five groups based on the relative abundance of the major rock forming minerals: quartz-feldspar-rich, amphibolite (composed dominantly of amphibole and plagioclase), magnetite-rich, mica-rich (biotite and/or muscovite), and chlorite-rich. However, field lithological classifications (which may be based on additional textural information) generally do not coincide with the above subdivision. No carbonate minerals were identified in this study, however, the Leco carbon content of the corresponding ABA sample set (data not available at the time of sample selection) were all less than 0.21%. Carbonates may also be present as fracture fillings or coatings at spacings beyond that assessed in the detailed mineralogy.

Qualitative XRD work on the MIN subset of samples in progress has confirmed the presence of dolomite-ankerite and siderite in some samples (Queen's U, 2012).

4.3 Kinetic Testing

Available humidity cell data for the nine cells are presented in Appendix D with calculated loading rates provided in Table 8. Based on 21 weeks of operation the following observations are made:

- Sulphate release rates have shown a pattern of generally decreasing values since the initiation of testing with rates that ranged from 0.19 to 1.8 mg/m2/week, and mean and median values of 0.7 and 0.5 mg/m2/week respectively;
- The concentrations of metals in leachate for certain metal parameters such as antimony, arsenic, cadmium, chromium, copper, iron, lead, selenium, silver, thallium and zinc near or below their respective detection limits in most cells;
- The release rates of other metal parameters have generally decreased and/or reached stable rates with the exception some metal parameters in two footwall humidity cells (cell Nos. 3 and 5); and
- Cadmium, cobalt and zinc in cell No. 3 (MRARD 10-055) and cobalt, copper, lead, and nickel in cell No.5 (5178) have shown an increasing trend.

Calculated depletion rates for all humidity cells including previous cells (2006 to 2007 sample set) and the current standard humidity cells (2010 sample set) are presented in Table 9. Calculated sulphide depletion times are in the order of 20 to 500 years. Calculated depletion times for carbonate are estimated at 0.6 to 20 years with a single cell projecting approximately 300 years. All cells on the basis of sulphide and carbonate depletion are predicted to be potentially acid generating. Actual field rates are expected to be much slower due to cold site temperatures compared to the laboratory humidity cells.

Field drainage data from existing ore stockpiles and one fracture seepage zone as described in the 2010 report (Appendix A) have been updated and provided in Appendix E. No additional data is presently available from the field lysimeters constructed in 2010.

5.0 SUMMARY AND CONCLUSIONS

Work in 2011 included collection of an additional 377 samples of waste rock material on the basis of a revised waste type model that subdivided the hangingwall (HW) and footwall (FW) zones to incorporate more schist dominated regions (HWS and FWS) occurring generally in close proximity to the iron ore. It has been observed that the sulphide content in these regions while variable is typically higher than that in the more distal hanging wall and footwall rocks. The revised waste model also incorporated an internal waste (IW) subdivision (waste fingering within the ore zone) and a deleterious ore (DO) zone that has been identified as probable waste in the footwall.

Static testing has included modified Sobek ABA, NAG testing, total element analyses, and short term leach analyses. A summary of static testing available to 2010 is provided in AMEC (2010) (Appendix A). This data has been supplemented with the additional ABA results from 2011 sampling and discussed in this report.

Waste rock is characterized by generally low modified Sobek neutralization potentials (NP) and low sulphide contents with resulting low acid potentials (AP). Carbonate NP typically represents < 20% of the modified Sobek NP. Sulphide content in excess of 0.5% is generally predictive of a Neutralization Potential Ratio (NPR) less than 2.

Overall, assuming that an NPR <2 is representative of PAG material and based on the number of samples and the current understanding of waste distributions in the pit, an estimated 15% of waste rock is expected to be PAG.

The PAG samples were distributed widely in the open pit and were present in all waste rock types (ranging from 7 to < 25% of samples for the largest waste types by tonnage (HW, HWS, FW, FWS). The relatively small tonnage of deleterious ore modeled in the footwall of the pit was identified as having over 50% of samples as PAG material.

Twenty one weeks of data are presently available for 9 standard humidity cells and metal loading rates are generally low. On the basis of calculated sulphide and carbonate depletion rates, acidic conditions are expected to occur in all humidity cells currently in operation. However, longer term testing and operation of the NP depleted cells will assess whether carbonate depletion rates alone are a reasonable estimate for assessing the on-set of acid conditions, or whether other neutralization sources will contribute sufficiently to prevent the on-set of acidification.

6.0 CLOSURE

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TABLES

Table 4. Summary of Acid Base Accounting Results of Rock Samples

	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		(wt.%)				(kg $CaCO_3$/tonne)				
All Waste Rock										
No. of sample	613	613	613	613	613	613	613	613	613	613
Minimum	3.8	<0.005	<0.01	<0.01	0.005	0.31	<0.01	0.42	0.0001	0.002
Maximum	10	22	5.5	23	6.7	731	487	558	621	605
Mean	8.8	0.38	0.09	0.30	0.21	9.23	22	17	30	11
Median	8.7	0.08	0.03	0.03	0.02	0.94	15	1.67	19	3
Standard Deviation	0.86	1.36	0.27	1.24	0.69	39	32	58	44	38
10^{th} Percentile	7.9	0.01	0.01	0.01	0.01	0.31	7.80	0.75	0.70	0.11
90^{th} Percentile	9.8	0.73	0.18	0.59	0.40	18	36	34	67	15
Hanging Wall (HW)										
No. of sample	142	142	142	142	142	142	142	142	142	142
Minimum	7.3	<0.005	<0.01	<0.01	0.008	0.31	7.60	0.67	0.046	0.003
Maximum	10	22.2	0.6	23.4	3.8	731	129	320	413	285
Mean	8.9	0.31	0.06	0.26	0.20	8.26	29	17	45	20
Median	8.9	0.05	0.03	0.02	0.03	0.63	20	2.67	33	5.38
Standard Deviation	0.57	1.87	0.08	1.97	0.41	61	23	34	57	43
10^{th} Percentile	8.2	0.01	0.01	0.01	0.01	0.31	11	1.17	3.28	0.40
90^{th} Percentile	9.7	0.44	0.14	0.26	0.65	8	63	54	89	51
Hanging Wall Schist (HWS)										
No. of sample	207	207	207	207	207	207	207	207	207	207
Minimum	6.1	<0.005	<0.01	<0.01	0.005	0.31	<0.01	0.42	0.006	0.005
Maximum	10	17.8	5.5	12.2	6.7	381	487	558	621	605
Mean	8.3	0.49	0.12	0.38	0.17	12	25	15	28	8.70
Median	8.3	0.12	0.05	0.06	0.02	1.97	16	1.67	11	1.33
Standard Deviation	0.57	1.51	0.41	1.15	0.74	36	49	62	52	45
10^{th} Percentile	7.7	0.01	0.01	0.01	0.01	0.31	7.8	0.75	0.54	0.08
90^{th} Percentile	9.0	0.94	0.21	0.73	0.11	23	33	8.8	68	11
Footwall (FW)										
No. of sample	127	127	127	127	127	127	127	127	127	127
Minimum	4.8	<0.005	<0.01	<0.01	0.005	0.31	3.70	0.42	0.1691	0.005
Maximum	10	3.3	0.6	2.7	2.5	82.8	36	208	96	38
Mean	9.4	0.15	0.05	0.10	0.04	3.09	13	3.5	24	4.05
Median	9.6	0.03	0.02	0.01	0.02	0.31	11	1.33	25	2.56
Standard Deviation	0.8	0.38	0.10	0.29	0.22	9.12	5.9	18	19	6.0
10^{th} Percentile	8.8	0.01	0.01	0.01	0.01	0.31	7.5	0.42	1.90	0.19
90^{th} Percentile	10	0.27	0.11	0.19	0.04	5.94	22	3.2	47	7.6

Table 4. Summary of Acid Base Accounting Results of Rock Samples

	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		(wt.%)				(kg $CaCO_3$/tonne)				
Footwall (FWS)										
No. of sample	99	99	99	99	99	99	99	99	99	99
Minimum	3.9	<0.005	<0.01	<0.01	0.005	0.31	<0.01	0.42	0.0001	0.002
Maximum	10.2	6.1	1.5	6.0	3.3	186.3	71	278	114	387
Mean	8.7	0.42	0.09	0.33	0.16	10.29	16	13	24	7.67
Median	9.1	0.06	0.03	0.02	0.02	0.50	13	1.25	19	2.40
Standard Deviation	1.1	0.99	0.20	0.85	0.52	26.59	10	43	23	40
10^{th} Percentile	7.7	0.01	0.01	0.01	0.01	0.31	7.7	0.50	0.57	0.09
90^{th} Percentile	9.8	1.09	0.17	0.87	0.15	27.25	26	12.8	54	6
FW 1300 & 1400										
No. of sample	27	27	27	27	27	27	27	27	27	27
Minimum	3.8	<0.005	<0.01	<0.01	0.010	0.31	<0.01	0.83	0.004	0.015
Maximum	9.7	4.4	1.1	4.1	5.3	127	92	439	42	180
Mean	8.2	0.89	0.21	0.67	1.51	21	29	126	9	22
Median	8.4	0.58	0.11	0.28	0.98	9	21	81	1	5.03
Standard Deviation	1.2	1.09	0.27	1.00	1.71	31	23	143	13	42
10^{th} Percentile	7.0	0.12	0.02	0.05	0.01	1.56	7.6	1.05	0.22	0.13
90^{th} Percentile	9.2	1.85	0.52	1.35	3.98	42	61	332	34	54
Internal Wastes (IW)										
No. of sample	11	11	11	11	11	11	11	11	11	11
Minimum	7.9	0.008	<0.01	<0.01	0.007	0.31	4.70	0.58	0.35	0.037
Maximum	9.5	1.3	0.3	1.3	0.1	39.1	44	8.8	141	8.0
Mean	8.5	0.28	0.06	0.23	0.02	7.16	16	2.1	35	2.9
Median	8.5	0.03	0.02	0.01	0.02	0.31	14	1.4	15	2.67
Standard Deviation	0.56	0.44	0.09	0.40	0.03	13	12	2.3	45	2.6
10^{th} Percentile	8.0	0.01	0.01	0.01	0.01	0.31	5.3	0.67	0.40	0.08
90^{th} Percentile	9.3	0.88	0.16	0.60	0.03	19	26	2.5	83	5.3

Notes:

AP = Acid potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material. AP is determined from calculated sulphide sulphur content: S(T) - $S(SO_4)$.

NP = Neutralization potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material.

Ca-NP = Carbonate NP is calculated from TC originating from carbonates and is expressed in kg $CaCO_3$/tonne.

NPR = Net Potential Ratio = NP/AP; Carb-NPR = Carb-NP/AP

*Where NP or AP values are equal to or less than zero, NPR is calculated assuming detection limit (NP = 0.2 kg $CaCO_3$/tonne, AP = 0.03 kg $CaCO_3$/tonne).

Table 5. Summary of Aqua-regia Extracted Metal Content of Rock Samples

	Hg	Au	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Y	Zn
	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g
All Waste Rock																																	
No. of sample	564	376	376	617	617	617	617	617	617	617	617	617	617	617	617	617	617	617	616	564	617	376	617	617	617	617	617	617	617	617	617	376	617
Minimum	0.10	0.020	0.01	0.001	0.50	0.01	0.020	0.01	0.003	0.02	0.25	0.500	0.10	0.003	0.0001	2.00	0.002	2.300	0.10	0.001	0.10	2.00	0.26	0.10	0.70	0.50	0.22	0.00001	0.02	0.002	1.00	0.47	0.70
Maximum	0.20	1.4	11	13	260	3000	19	34	11	30	140	2400	480	70	7	370	15	35000	450	2.20	2410	6900	2174	25	20	12	410	1	20	100	460	26	3280
Mean	0.10	0.03	0.16	4.3	5.64	204	0.98	1.41	0.7	0.4	25	232	51.6	13	0.96	20	3.48	1512	6	0.05	113	561	13	1.87	1.77	1.64	14	0.14	1.13	8.60	78	4.59	61
Standard Deviation	0.004	0.07	0.59	2.7	20	366	1.26	5.81	1.5	1.4	21	310	57	15	1.14	23	3	3196	26	0.11	182	743	91	4.59	3.58	1.82	28	0.14	3.47	23.03	75	3.52	143
Median	0.10	0.02	0.08	3.9	0.70	81.0	0.64	0.09	0.2	0.1	19	110	30	7	0.48	15	2.60	570	2	0.02	64	320	4.20	0.80	0.70	0.90	6.50	0.10	0.20	1.30	58	3.70	42
10th Percentile	0.10	0.02	0.01	0.69	0.50	1.60	0.09	0.09	0.04	0.02	6	28.6	3.76	2.30	0.01	3	0.76	230	0.40	0.01	7.4	22	1.20	0.80	0.70	0.50	2.00	0.01	0.02	0.04	8.60	1.40	13
90th Percentile	0.10	0.02	0.33	8.0	7.50	498	2.40	1.70	2.2	0.5	51	590	120	38	2.60	39	7.60	3080	10	0.12	264	1350	19	1.94	2.54	4.88	24	0.34	2	8	170	9	100
Hanging Wall (HW)																																	
No. of sample	124	89	89	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	124	142	89	142	142	142	142	142	142	142	142	142	89	142
Minimum	0.10	0.02	0.01	0.06	0.50	0.22	0.02	0.01	0.03	0.02	1.10	10	1.20	0.87	0.004	2.00	0.30	130	0.10	0.01	6.80	23	0.39	0.10	0.70	0.50	1.50	0.002	0.02	0.002	1.00	0.67	3.80
Maximum	0.20	0.03	0.49	11	159	420	5.1	34	10	4.9	110	2400	240	65	4.7	75	14.0	35000	44.0	2.2	2410	2000	68	25	20	6.0	410	0.7	20	100	380	10	490
Mean	0.10	0.02	0.10	4.59	5.74	102	0.70	0.88	1.64	0.28	31	280	83	7.24	0.64	20	3.89	1681	2.20	0.11	148	357	4.51	2.31	1.91	1.56	27	0.16	0.96	10	115	3.6	56
Standard Deviation	0.01	0.002	0.09	2.71	21	107	1.03	4.06	1.93	0.67	19	335	52	7.71	0.67	14	3.35	3145	4.67	0.22	267	329	6.88	5.61	3.26	1.84	50	0.14	2.76	25	89	1.6	52
Median	0.10	0.02	0.07	3.95	0.70	72	0.20	0.09	1.00	0.08	26	170	92	5.40	0.45	17	2.60	940	0.80	0.05	94	280	2.65	0.80	0.70	0.50	11	0.13	0.10	0.12	97	3.7	43
10th Percentile	0.10	0.02	0.03	1.60	0.50	5.05	0.05	0.09	0.10	0.02	13	68	8.77	1.71	0.05	4.10	0.76	282	0.30	0.01	36	176	0.93	0.80	0.70	0.50	3.32	0.03	0.02	0.02	27	1.8	16
90th Percentile	0.10	0.02	0.20	8.40	6.66	284	2.28	2.00	4.10	0.79	55	620	140	14	1.40	37	9.40	3390	4.29	0.22	207	480	8.91	2.00	6.00	6.00	68	0.29	5.00	70	279	5.2	103
Hanging Wall Schist (HWS)																																	
No. of sample	194	136	136	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	194	208	136	208	208	208	208	208	208	208	208	208	136	208
Minimum	0.10	0.02	0.01	0.001	0.50	0.01	0.02	0.04	0.00	0.02	0.25	0.50	0.10	0.003	0.0001	2.00	0.002	2.30	0.10	0.00	0.10	2.0	0.26	0.10	0.70	0.50	0.22	0.00001	0.02	0.003	1.0	0.47	0.70
Maximum	0.10	0.16	1.3	13	170	1300	5.10	34	11	4.00	140	1500	480	66	4.00	370	11	14000	100	0.27	1040	6900	230	25	20	12	100	0.59	20	100	460	17	460
Mean	0.10	0.02	0.14	4.88	7.87	100	1.14	1.18	0.62	0.24	32	292	51	17	0.47	23	4.46	1276	4.31	0.02	163	429	6.07	1.78	1.61	1.52	10.62	0.08	0.82	6.64	88	3.1	55
Standard Deviation	0	0.015	0.19	2.64	20	197	1.12	5.23	1.75	0.65	24	293	57	14	0.73	32	2.59	1667	11	0.03	160	765	17	4.27	3.23	1.71	15	0.10	3.18	21	80	2.4	55
Median	0.10	0.02	0.08	5.00	1.70	14	0.81	0.12	0.12	0.06	27	210	31	13	0.09	16	4.05	680	1.50	0.01	120	190	2.90	0.80	0.70	0.90	5.80	0.04	0.05	0.91	70	2.7	44
10th Percentile	0.10	0.02	0.01	0.60	0.50	1.07	0.13	0.09	0.02	0.02	6.84	21	3.32	5.04	0.01	2.00	1.10	240	0.40	0.01	15	9.0	1.17	0.80	0.70	0.50	1.50	0.01	0.02	0.04	8	0.91	12
90th Percentile	0.10	0.02	0.30	8.03	16	300	2.73	0.74	0.56	0.28	61	720	120	41	1.60	43	8.16	2930	9.21	0.04	373	1050	10	1.90	2.00	3.72	22	0.19	0.53	3.53	173	5.4	100
Footwall (FW)																																	
No. of sample	112	55	55	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	126	112	127	55	127	127	127	127	127	127	127	127	127	55	127
Minimum	0.10	0.02	0.01	0.35	0.50	2.60	0.03	0.06	0.01	0.02	1.20	8.00	0.70	0.72	0.01	2.00	0.36	110	0.10	0.00	2.30	71	0.91	0.80	0.70	0.50	1.60	0.01	0.02	0.11	1.00	2.2	6.40
Maximum	0.10	1.40	11.00	9.30	13	3000	5.10	34	1.60	30	79	2200	330	62	6.00	92	15	18000	53	0.18	870	2400	2174	25	20	11	170	0.63	20	100	210	26	3280
Mean	0.10	0.05	0.36	3.53	1.39	362	0.84	2.56	0.32	0.85	14	182	41	4.80	1.97	24	2.36	629	4.20	0.06	52	694	35	1.90	2.34	2.21	12	0.24	2.08	14	54	9.2	106
Standard Deviation	0	0.19	1.5	2.27	2.12	528	0.92	8.22	0.29	2.88	13	363	57	5.67	1.22	16	2.32	1569	8.35	0.04	133	559	194	4.54	4.89	2.21	21	0.14	4.78	28	48	5.3	298
Median	0.10	0.02	0.10	2.80	0.50	180	0.56	0.12	0.22	0.18	9.30	80	20	4.00	1.90	22	1.50	460	2.00	0.05	9.40	590	10	0.80	0.70	1.30	6.60	0.24	0.64	3.00	38	8.9	61
10th Percentile	0.10	0.02	0.02	1.22	0.50	64	0.17	0.09	0.09	0.02	4.60	35	4.02	1.70	0.44	6.60	0.75	260	0.40	0.02	4.96	158	3.40	0.80	0.70	0.50	3.10	0.05	0.20	1.30	11	3.4	22
90th Percentile	0.10	0.02	0.42	7.30	6.00	700	2.14	3.00	0.63	3.06	26	334	104	7.70	3.64	43	5.24	828	8.55	0.11	104	1320	39	2.00	6.00	6.00	21	0.43	5.00	70	140	16	164
Footwall (FWS)																																	
No. of sample	96	63	63	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	96	101	63	101	101	101	101	101	101	101	101	101	63	101
Minimum	0.10	0.02	0.01	0.14	0.50	0.58	0.14	0.09	0.03	0.02	2.10	12	0.60	1.70	0.00	2.00	0.22	70	0.30	0.00	3.50	23	0.76	0.10	0.70	0.50	1.60	0.004	0.02	0.03	1.00	1.1	5.70
Maximum	0.10	0.22	1.30	12	17	2200	5.20	34.00	1.60	4.00	84	1500	380	69	6.50	140	9.30	23000	360	0.23	450	5400	410	25	20	10	42	0.48	20	100	290	14	140
Mean	0.10	0.03	0.13	4.17	1.72	391	1.08	1.58	0.28	0.23	16	136	30	14	1.40	16	2.72	1323	11	0.04	57	1059	15	1.60	1.47	1.56	7.93	0.15	1.13	6.69	55	5.7	34
Standard Deviation	0	0.03	0.22	2.64	2.90	469	0.86	6.36	0.30	0.67	14	196	53	16	1.34	17	1.95	3276	39	0.03	92	994	42	3.99	3.35	1.52	6.83	0.12	3.41	19	51	2.5	26
Median	0.10	0.02	0.06	3.60	0.50	230	0.83	0.10	0.18	0.11	12	75	13	7.70	1.10	11	2.20	380	2.40	0.03	17	820	6.20	0.80	0.70	1.00	5.90	0.12	0.38	2.00	38	5.4	26
10th Percentile	0.10	0.02	0.01	0.86	0.50	3.10	0.38	0.09	0.07	0.02	5.10	29	2.50	2.90	0.01	2.00	0.85	150	0.80	0.01	7.10	150	2.30	0.80	0.70	0.50	2.60	0.02	0.02	0.49	8.00	3.0	9.40
90th Percentile	0.10	0.02	0.41	7.50	4.50	1000	2.00	0.93	0.67	0.20	31	310	65	46	3.30	32	5.20	2300	16	0.08	150	2460	26	0.80	1.30	3.00	16	0.31	1.60	6.50	130	8.8	68
Deleterious Ore (FW 1300 & 1400)																																	
No. of sample	27	25	25	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	25	27	27	27	27	27	27	27	27	27	25	27
Minimum	0.10	0.02	0.02	0.07	0.50	0.08	0.12	0.09	0.00	0.02	2.20	12	2.40	0.69	0.004	2.00	0.05	200	1.00	0.00	8.70	2.0	1.00	0.80	0.70	0.50	0.55	0.002	0.02	0.05	4.00	0.57	6.20
Maximum	0.10	0.14	1.10	6.90	260	1900	6.40	1.50	1.20	0.38	54	920	250	70	3.90	47	7.60	32000	450	0.07	550	2800	32	0.90	3.50	2.50	11.00	0.44	1.60	5.20	120	7.6	61
Mean	0.10	0.03	0.23	1.65	25	169	0.87	0.29	0.26	0.09	19	86	40	44	0.48	6.22	1.77	7607	28	0.01	56	424	8.01	0.80	1.01	0.92	3.50	0.06	0.20	1.07	25	3.8	22
Standard Deviation	0	0.03	0.25	2.34	58	436	1.27	0.34	0.25	0.09	15	181	49	23	1.11	9.28	1.93	8342	86	0.02	102	676	8.45	0.02	0.68	0.57	2.70	0.11	0.39	1.44	25	1.5	14
Median	0.10	0.02	0.16	0.41	2.40	2.20	0.45	0.12	0.19	0.05	17	42	31	51	0.01	2.00	1.10	4200	3.80	0.01	34	93	6.00	0.80	0.70	0.60	2.50	0.02	0.03	0.42	22	3.4	16
10th Percentile	0.10	0.02	0.04	0.12	0.50	0.58	0.18	0.09	0.05	0.02	4.46	14	7.74	9.44	0.01	2.00	0.18	306	1.20	0	10	8.6	1.20	0.80	0.70	0.50	0.99	0.004	0.02	0.13	5.60	2.4	9.96
90th Percentile	0.10	0.07	0.43	6.32	60	478	1.60	0.84	0.48	0.20	43	83	68	68	1.88	13	3.70	19200	55	0.04	83	1172	21	0.80	1.94	1.92	7.22	0.20	0.70	3.26	55	6.2	43
Internal Waste																																	
No. of sample	11	8	8	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	8	12	12	12	12	12	12	12	12	12	8	12
Minimum	0.10	0.02	0.01	0.12	0.50	0.01	0.04	0.09	0.01	0.02	3.30	32	1.10	3.40	0.01	2.00	0.13	360	0.30	0.01	6.30	2.0	0.87	0.80	0.70	0.50	0.27	0.002	0.02	0.08	1.00	0.57	7.60
Maximum	0.10	0.03	0.21	7.3	6.00	160	19	3.00	0.52	0.50	43	1260	73	63	0.35	47	8.20	1500	4.00	0.02	430	2400	22	25	6.00	6.00	12	0.10	5.00	75	130	6.5	90
Mean	0.10	0.02	0.06	3.3	1.06	17	2.48	0.36	0.17	0.11	19	322	16	28	0.04	10	3.37	853	1.96	0.01	102	677	4.76	2.92	1.21	1.09	4.11	0.03	0.44	7.06	55	2.5	36
Standard Deviation	0	0	0.07	3.1	1.58	45	5.28	0.83	0.19	0.15	14	346	20	21	0.10	14	3.01	351	1.45	0.00	119	930	6.47	6.96	1.52	1.57	3.77	0.03	1.44	21	48	2.0	27
Median	0.10	0.02	0.02	3.3	0.50	2.35	0.84	0.09	0.12	0.03	19	250	10	24	0.01	5.00	4.05	800	1.60	0.01	93	258	2.10	0.80	0.70	0.50	4.05	0.03	0.02	1.20	51	2.0	43
10th Percentile	0.10	0.02	0.01	0.14	0.50	0.76	0.06	0.09	0.01	0.02	3.53	38	1.42	5.69	0.01	2.00	0.16	497	0.33	0.01	6.70	2.7	1.40	0.80	0.70	0.50	0.46	0.002	0.02	0.20	2.10	0.78	7.91
90th Percentile	0.10	0.02	0.13	7.10	1.42	12	2.85	0.31	0.51	0.20	37	569	29	54	0.02	26	7.21	1290	3.97	0.01	159	1980	13	1.88	1.17	1.28	9.34	0.05	0.06	1.78	119	4.7	62

Table 7. Summary of Metals Enrichment

Metal Parameter	units	Continental Crust Average*	Ten Times Continental Crust Average	Number of samples	Samples exceeding 10X average	
		ppm	ppm		Number of samples	%
Hg	ppm	0.085	0.85	564	0	0
Al	%	8.23	82.3	617	0	0
As	ppm	1.8	18	617	31	5.0
Ba	ppm	425	4250	617	0	0
Be	ppm	3	30	617	0	0
Bi**	ppm	0.0085	0.085	617	609	99
Ca	%	4.15	41.5	617	0	0
Cd	ppm	0.15	1.5	617	31	5.0
Co	ppm	25	250	617	0	0
Cr	ppm	102	1020	617	20	3.2
Cu	ppm	60	600	617	0	0
Fe	%	5.63	56.3	617	21	3.4
K	%	2.085	20.85	617	0	0
Li	ppm	20	200	617	1	0.16
Mg	%	2.33	23.3	617	0	0
Mn	ppm	950	9500	617	16	2.6
Mo	ppm	1.2	12	616	47	7.6
Na	%	2.355	23.55	564	0	0
Ni	ppm	84	840	617	5	0.81
Pb	ppm	14	140	617	5	0.81
Sb	ppm	0.2	2	617	45	7.3
Se**	ppm	0.05	0.5	617	617	100
Sn	ppm	2.3	23	617	0	0
Sr	ppm	370	3700	617	0	0
Ti	%	0.565	5.65	617	0	0
Tl	ppm	0.85	8.5	617	18	2.9
U	ppm	2.7	27	617	53	8.6
V	ppm	120	1200	617	0	0
Zn	ppm	70	700	617	2	0.32

Note :

* Price (1997)

** Detection limit of Bi and Se for many samples is above 10x screening criteria

Table 8. Humidity Cell Calculated Loading Rates

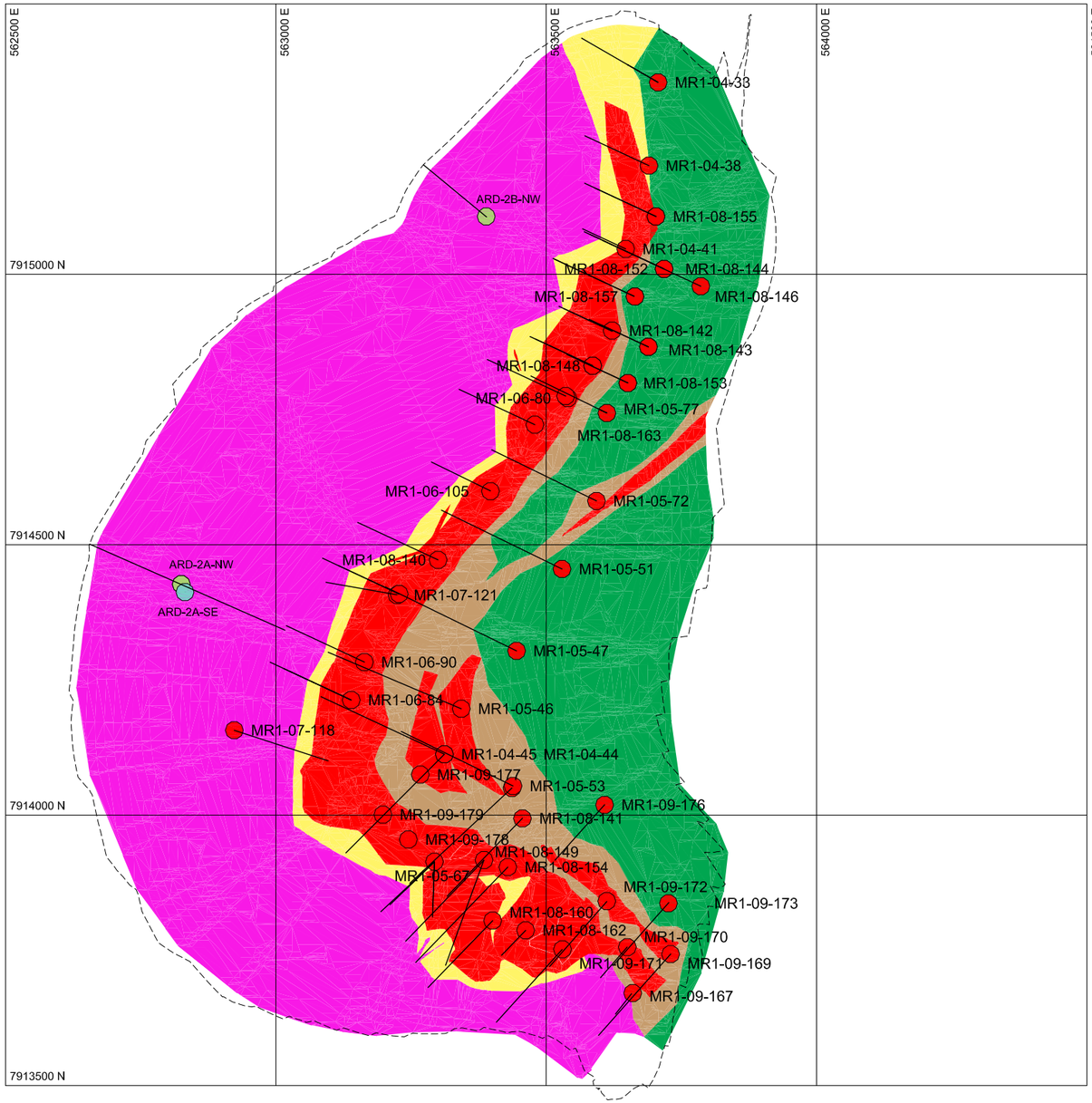
Parameter	HC-1 FW-Gneiss 5171 FW mg/m^2/week	HC-2 FW-Gneiss MRARD 10-030 FW mg/m^2/week	HC-3 FW-Gneiss MRARD 10-055 FW mg/m^2/week	HC-4 FW-Gneiss MRARD 10-074 FWS mg/m^2/week	HC-5 FW-Schist 5178 FW mg/m^2/week	HC-6 HW-Schist MRARD 10-092 HWS mg/m^2/week	HC-7 HW-Volcanic Tuff MRARD 10-105 HWS mg/m^2/week	HC-8 HW-Schist MRARD 10-120 IW mg/m^2/week	HC-9 HW-Volcanic Tuff MRARD 10-080 HWS mg/m^2/week
SO4	0.19	0.28	0.26	1.18	1.61	0.57	0.22	0.51	1.79
Al	3.36E-03	5.45E-04	3.63E-04	4.58E-04	2.06E-03	6.84E-04	1.01E-03	5.54E-04	4.06E-04
Sb	1.59E-05	3.58E-05	1.83E-05	1.65E-05	3.83E-05	3.83E-05	2.53E-05	1.99E-05	1.82E-05
As	2.12E-05	2.02E-05	1.88E-05	7.34E-06	3.84E-05	1.37E-05	1.01E-05	1.11E-05	1.83E-05
Cd	6.55E-07	1.63E-07	6.29E-05	4.76E-07	2.12E-06	1.26E-07	1.22E-07	1.66E-07	1.22E-07
Co	2.97E-06	2.01E-05	3.42E-03	1.51E-04	1.83E-03	1.00E-05	1.16E-06	4.30E-05	1.98E-05
Cr	2.27E-05	2.72E-05	1.47E-05	1.84E-05	5.73E-05	3.42E-05	2.11E-05	2.77E-05	2.03E-05
Cu	2.65E-05	2.72E-05	3.90E-05	6.06E-05	6.68E-04	3.42E-05	2.11E-05	4.43E-05	2.03E-05
Fe	1.06E-04	1.32E-04	2.08E-04	1.65E-04	3.83E-04	2.05E-04	1.77E-04	1.22E-04	3.44E-04
Pb	6.89E-06	3.11E-06	3.45E-06	7.34E-06	3.65E-05	3.26E-06	1.68E-06	2.43E-06	8.11E-07
Mn	9.42E-04	8.40E-04	2.20E-03	1.30E-02	5.93E-03	3.32E-04	1.58E-04	4.38E-02	7.24E-04
Mo	1.11E-04	3.44E-05	2.62E-03	1.38E-04	1.40E-05	7.85E-05	5.05E-05	2.22E-05	8.31E-05
Ni	1.59E-05	2.61E-04	7.37E-03	2.06E-04	5.79E-02	8.22E-06	4.21E-06	1.11E-05	3.45E-05
Se	5.30E-05	5.45E-05	2.94E-05	3.67E-05	5.59E-05	6.84E-05	4.21E-05	5.54E-05	1.62E-04
Zn	1.06E-04	1.09E-04	1.18E-02	7.34E-05	2.24E-04	1.37E-04	8.42E-05	1.11E-04	8.11E-05
Ag	5.30E-07	5.45E-07	2.94E-07	3.67E-07	5.59E-07	6.84E-07	4.20E-07	5.54E-07	4.06E-07
Ba	8.05E-05	1.87E-04	6.58E-05	3.15E-04	6.51E-05	6.28E-06	1.79E-05	2.28E-05	7.51E-06
B	1.84E-04	2.16E-04	7.66E-05	4.29E-04	2.17E-04	6.27E-04	2.78E-04	2.13E-04	8.77E-04
V	2.23E-05	3.74E-06	2.06E-06	1.10E-06	3.51E-06	2.05E-05	1.38E-05	2.66E-06	1.22E-06
Tl	1.06E-06	2.49E-06	1.13E-05	2.02E-06	3.64E-05	2.48E-06	8.42E-07	1.11E-04	2.23E-06
Na	1.38E-02	3.42E-03	1.24E-03	3.12E-03	1.60E-03	3.01E-03	2.98E-02	1.11E-03	3.45E-03
K	1.05E-01	1.10E-01	7.44E-02	1.31E-01	7.36E-02	3.38E-02	2.91E-01	1.82E-02	3.07E-02
Ca	3.28E-01	2.93E-02	5.18E-02	1.94E-01	6.72E-02	1.30E-01	7.00E-02	1.03E-01	2.14E-01
Mg	1.40E-02	7.28E-02	2.16E-02	1.49E-01	3.47E-01	1.71E-01	6.03E-02	6.11E-02	3.77E-01

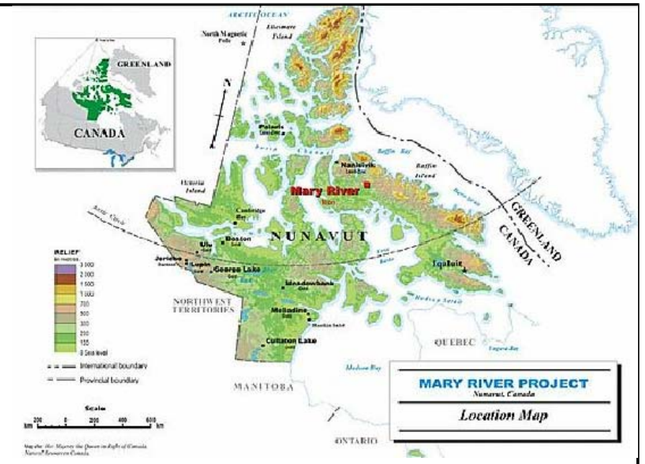
Table 9. Humidity Cell Summary

Sample ID		Borehole ID	Waste Type	Lithology	Sulphide	Modified Sobek NP	Carbonate NP	NPR	Carbonate NPR	Sulphide Depletion	Carbonate NP
					%	kg $CaCO_3$/t	kg $CaCO_3$/t			years	years
2006 to 2007 Sample Set	UCS13	MR1-06-81	FW	Gneiss	0.67	13.9	2.4	0.61	0.11	142	8.2
	UCS11	MR1-06-81	FW	Gneiss/Amphibolite*	0.17	10.1	0.30	3.6	0.09	30	4.9
	UCS49	MR1-06-105	FWS	Gneiss	0.26	7.8	1.0	1.0	0.1	53	9.0
	07ARD10	MR1-05-53	HWS	Amphibolite	4.57	24.8	1.6	0.17	0.01	384	1.4
	07ARD13	MR1-06-84	HWS	Amphibolite/Tuff/Greywacke*	0.10	-14.5	2.3	-4.6	0.7	45	20
	07ARD30	MR1-05-51	HWS	Amhibolite/Schist/Tuff*	0.31	39.1	1.8	4.1	0.19	95	7.6
	ARD 19	MR1-05-47	HW	Schist	1.45	13.8	1.2	0.3	0.0	22	0.6
	07ARD06	MR1-04-39	HWS	Schist	0.69	49.0	1.6	2.3	1.6	539	296
	07ARD41	MR1-06-95	HWS	Tuff/Schist	0.12	6.1	0.18	1.6	0.2	37	3.9
	07ARD12	MR1-05-46	HWS	Amphibolite/Tuff/Greywacke*	0.35	0.70	2.8	0.06	0.25	13	3.4
2010 Sample Set	5171	ARD-2A-SE	FW	Gneiss	0.23	9.0	4.5	1.3	0.6	74	10.5
	5178	ARD-2B-NW	FW	Schist	0.91	22.6	1.5	0.8	0.1	38	2.1
	MRARD10-030	MR1-09-170	FW	Gneiss	0.19	12.2	1.3	2.1	0.2	43	7.0
	MRARD10-055	MR1-08-159	FW	Gneiss	0.29	9.6	0.5	1.1	0.1	41	2.8
	MRARD10-074	MR1-08-149	FWS	Gneiss	0.57	8.0	1.6	0.4	0.1	21	2.1
	MRARD10-080	MR1-08-149	HWS	Volcanic Tuff	1.0	20	1.0	0.6	0.02	26	0.56
	MRARD10-092	MR1-08-142	HWS	Schist	0.30	23	1.0	2.5	0.1	42	1.3
	MRARD10-105	MR1-08-141	HWS	Volcanic Tuff	0.61	16	5.0	0.8	0.3	136	21
	MRARD10-120	MR1-08-148	IW	Schist	0.30	5.6	1.0	0.6	0.1	38	4.5

Note:. Sulphide depletion time was determined from the measured sulphide content divided by average sulphate release rate from humidity cells.
Carbonate NP depletion time was determined from the initial Carbonate NP divided by average calcium and magnesium rates obtained from humidity cells.
Average release rates used in depletion calculations for 2006 to 2007 sample set were based on observed steady rates from final 28 to 43 weeks of 53 weeks available data.
Average release rates used in depletion calculations for 2010 sample set were based on 7 to 15 weeks of 24 weeks of available data.
* - composite sample.

FIGURES





LEGEND:

- HIGH GRADE IRON FORMATION
- FOOT WALL SCHIST
- FOOT WALL WASTE (UNDIFFERENTIATED)
- HANGING WALL SCHIST
- HANGING WALL WASTE (UNDIFFERENTIATED)
- LIFE OF MINE PIT BOUNDARY

0 100 200 500m

1:10 000 SCALE

CLIENT LOGO: Baffinland Iron Mines Corporation	CLIENT: BAFFINLAND IRON MINES CORPORATION	DWN BY: M.M.	PROJECT: BAFFINLAND EIS SUPPORT	DATE: JAN 2012
		CHK'D BY: C.D.		PROJECT NO: TC1115923
	AMEC Environment & Infrastructure, 160 Traders Boulevard East, Mississauga, Ontario, Canada L4Z 3K7	DATUM: NAD 83	TITLE: BOREHOLE LOCATIONS AND WASTE ROCK TYPE	REV. NO.: A
		PROJECTION: UTM Zone 17 m CM		FIGURE No. 1
		SCALE: 1:10,000		

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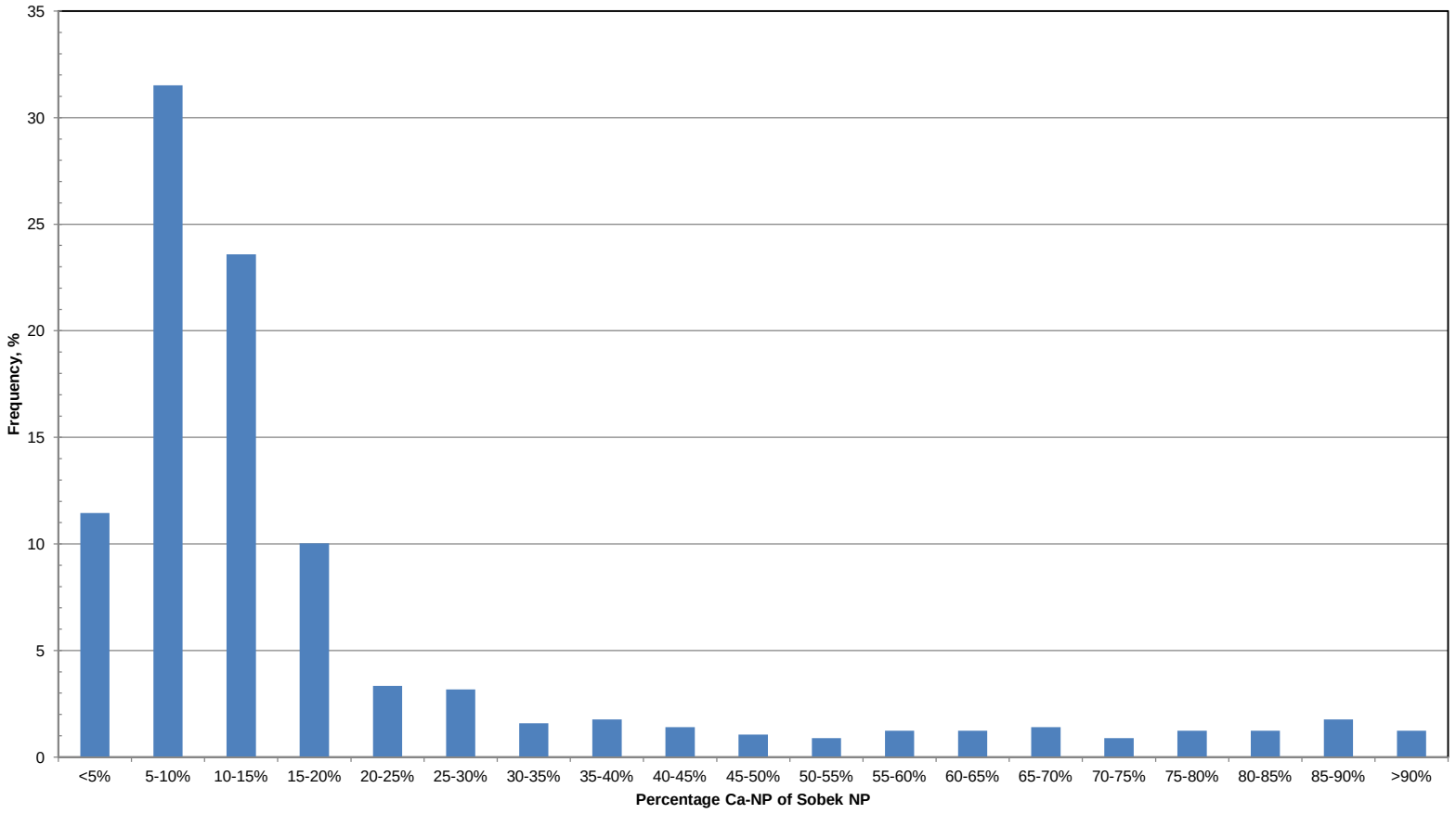

Note: Based on 568 ABA samples.
Excludes 45 ABA samples with Ca- NP > modified Sobek NP

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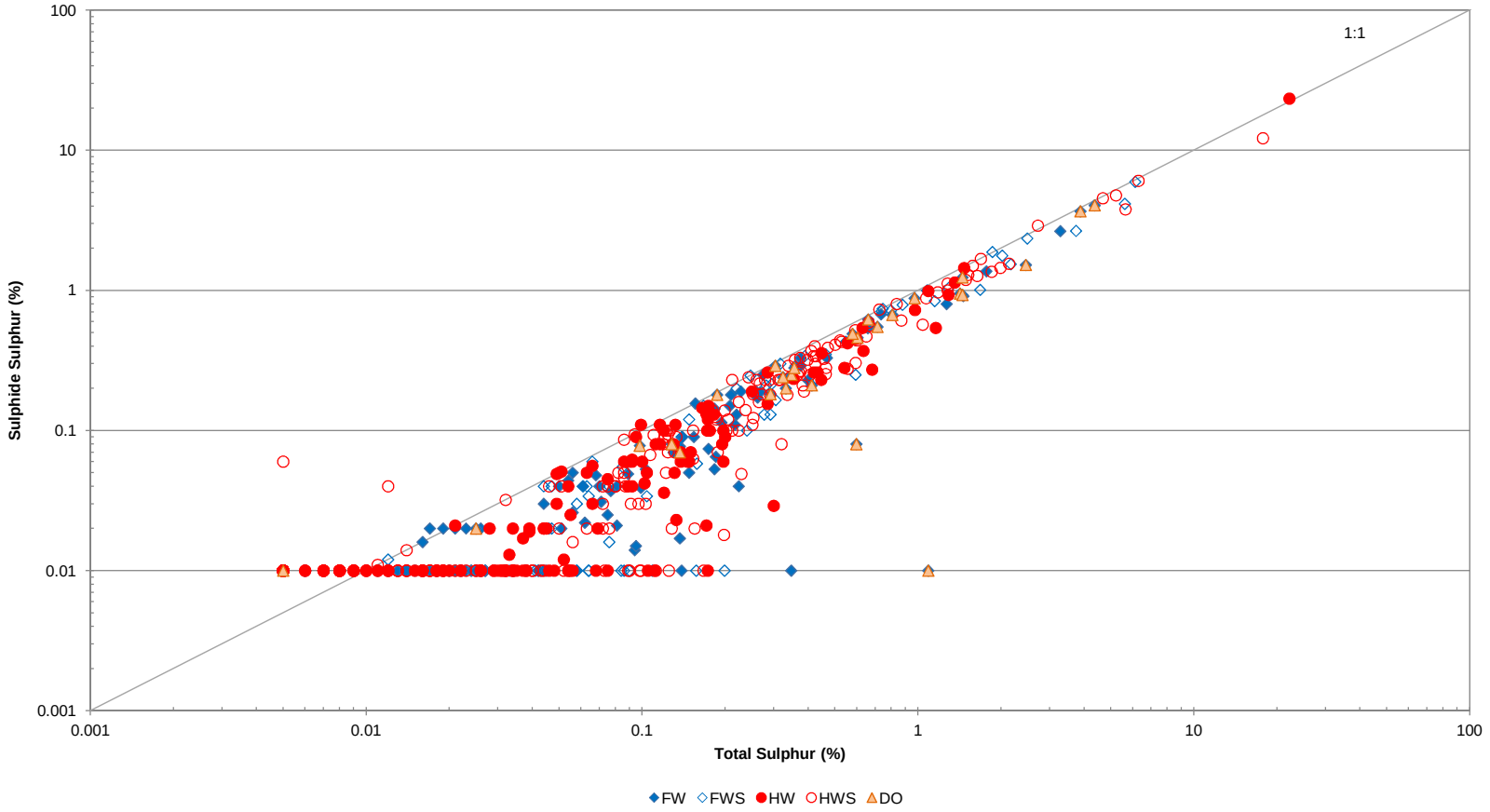
Mary River Project

Distribution of Carbonate Neutralization Potential

Drawn by: CD	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE 2



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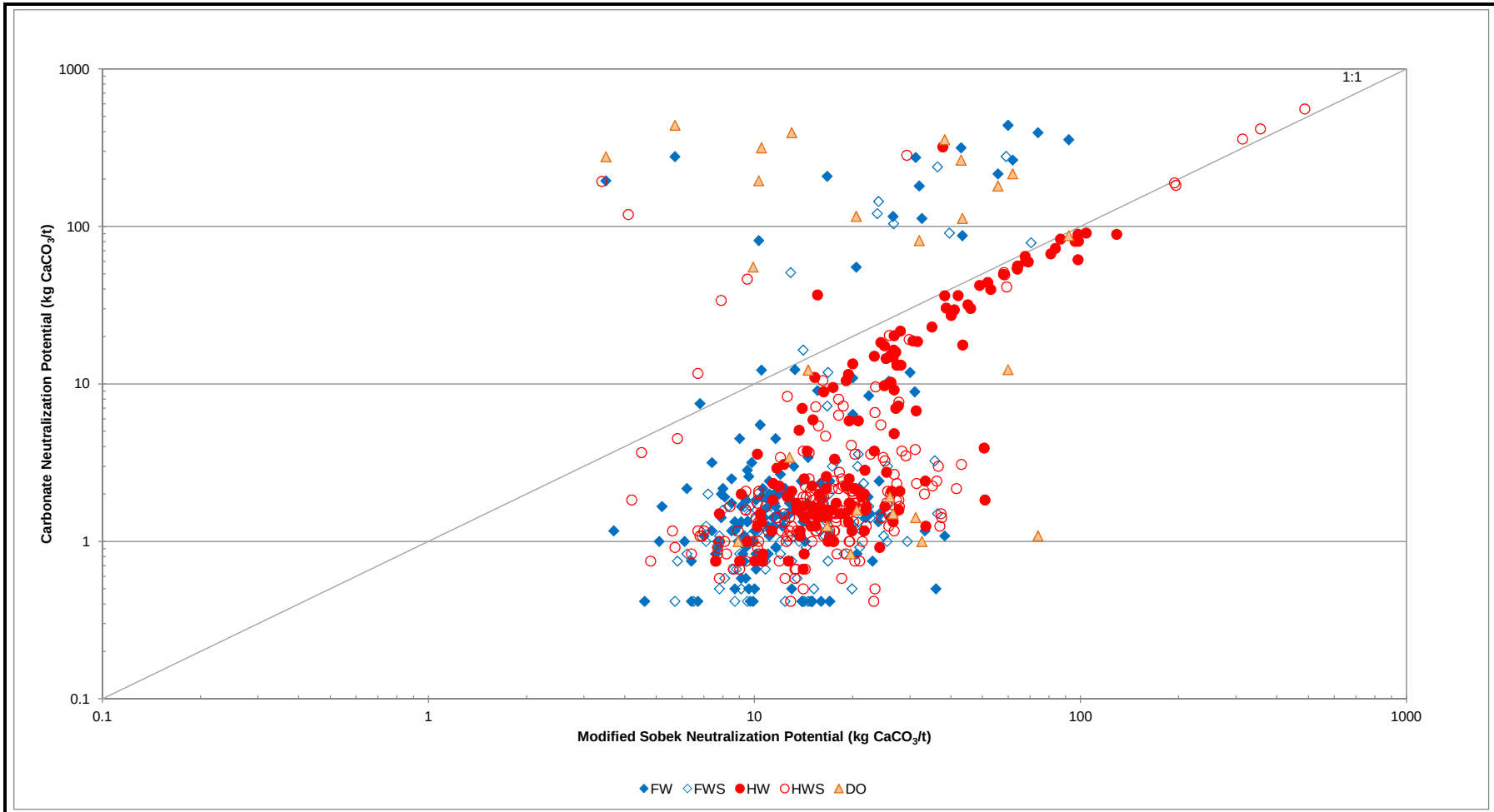
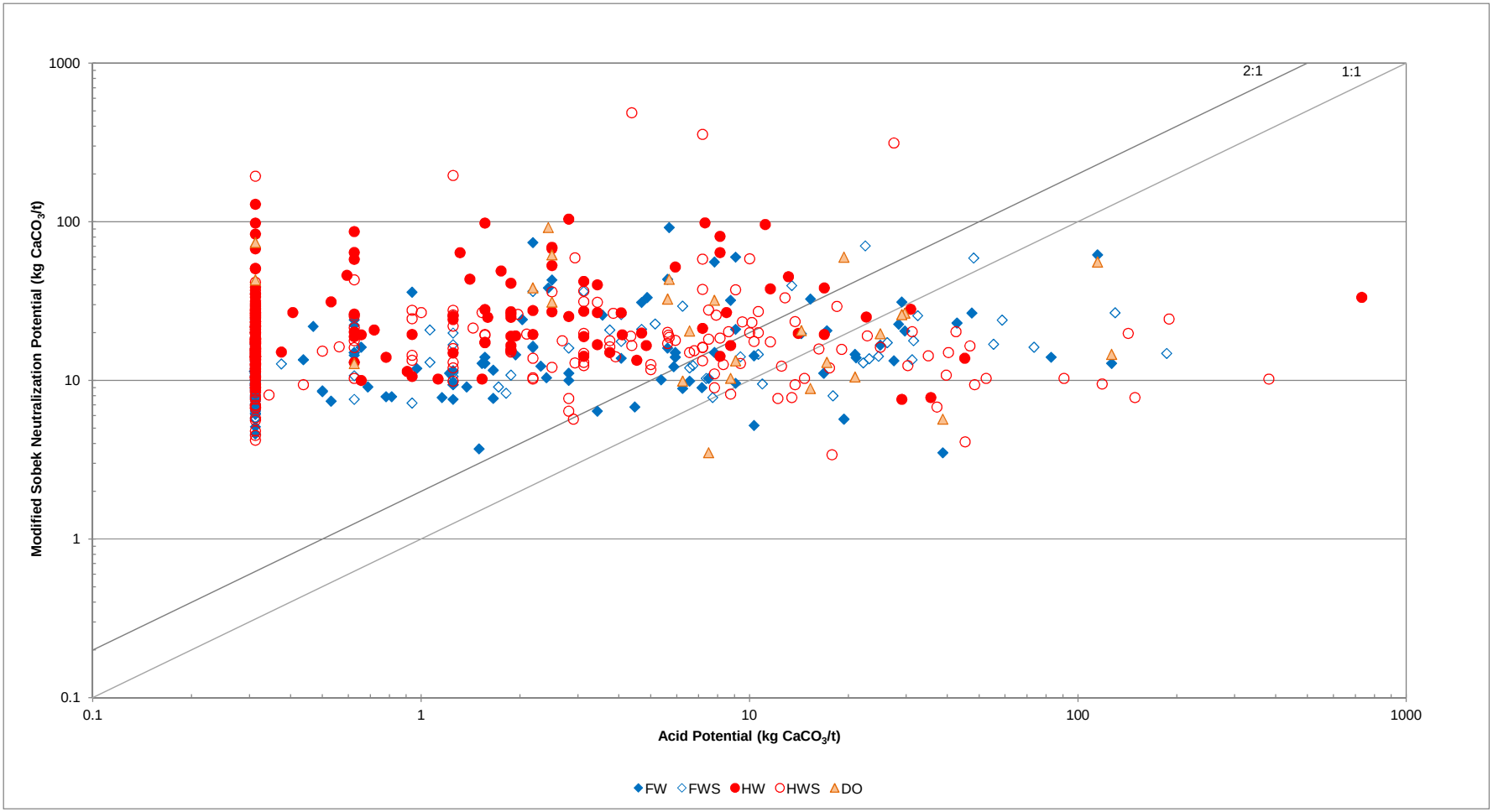
Mary River Project

Waste Rock Samples
Sulphide Sulphur vs. Total Sulphur

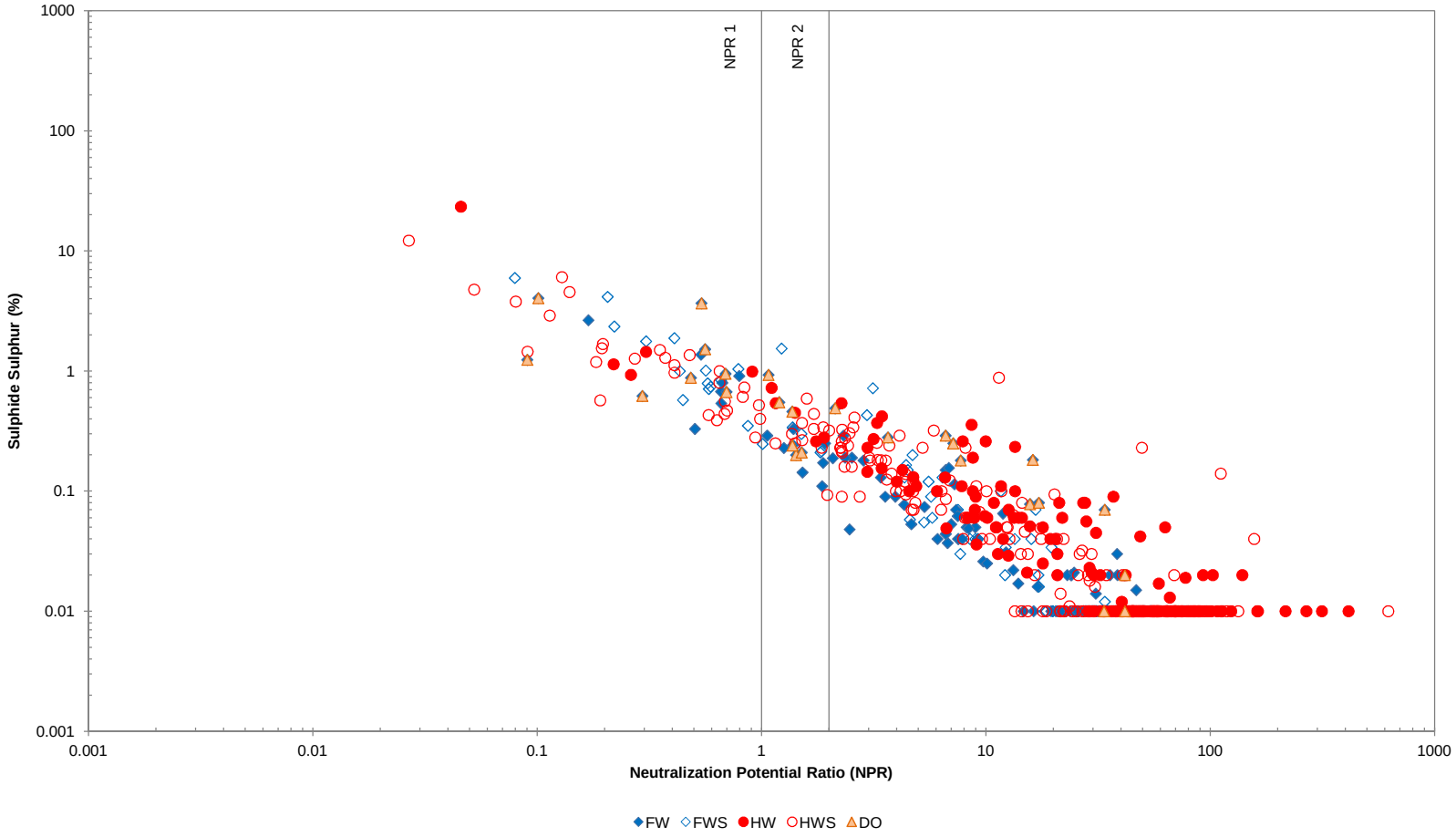
Drawn by: CD	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE 3



Baffinland Iron Mines Corporation / amec		
Mary River Project		
Waste Rock Samples Carbonate Neutralization Potential vs. Neutralization Potential		
Drawn by: CD	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE 4



Baffinland Iron Mines Corporation / amec		
Mary River Project		
Waste Rock Samples Neutralization Potential vs. Acid Potential		
Drawn by: CD	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE 5



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Mary River Project

Waste Rock Samples
Sulphide Sulphur vs. NPR

Drawn by: CD	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE 6

APPENDICES

APPENDIX A

2010 INTERIM ML/ABA REPORT

ERRATA

Indicated As:	**Actual:**
Appendix A, Figures A-1 – A-19, FW – Gneiss	HC1 – FW Gneiss (UCS 13)
Appendix A, Figures A-1 – A-19, FW – Gneiss	HC3 – FW Gneiss (UCS 49)
Appendix A, Figures A-1 – A-19, FW – Gneiss/Amphibolite	HC2 – FW Gneiss/Amphibolite (UCS 11)
Appendix A, Figures A-1 – A-19, FW – Amphibolite	HC4 – HW Amphibolite (07ARD10)
Appendix A, Figures A-1 – A-19, FW – Amphibolite /Tuff/Greywacke	HC10 – HW Amphibolite/Volcanic Tuff/Greywacke (07ARD12)
Appendix A, Figures A-1 – A-19, FW – Amphibolite /Tuff/Greywacke	HC5 – HW Amphibolite/Volcanic Tuff/Greywacke (07ARD13)
Appendix A, Figures A-1 – A-19, FW – Amphibolite /Tuff/Greywacke	HC6 – HW Amphibolite/Schist/Volcanic Tuff (07ARD30)
Appendix A, Figures A-1 – A-19, FW – Schist	HC7 – HW Schist (ARD19)
Appendix A, Figures A-1 – A-19, FW – Schist	HC8 – HW Schist (07ARD06)
Appendix A, Figures A-1 – A-19, FW – Tuff/Schist	HC9 – HW Volcanic Tuff/Schist (07ARD41)
Section 3.2 Kinetic Testing, 3rd bullet reported as "Arsenic and copper concentrations were only detected in one gneiss footwall sample and one hanging wall schist sample, respectively."	Change to: "Copper and arsenic and copper concentrations were only detected in one gneiss footwall sample and one hanging wall schist sample, respectively"
Table A-10. Results of Waste Rock Humidity Cells - HC 9 Hanging wall - Volcanic tuff/Schist (07 ARD 06)	Table A-10. Results of Waste Rock Humidity Cells - HC 9 Hanging wall - Volcanic tuff/Schist (07 ARD 41)

INTERIM REPORT ON ML/ARD CHARACTERIZATION
MARY RIVER PROJECT, DEPOSIT NO.1

Submitted to:
Baffinland Iron Mines Corporation
120 Adelaide St. West, Suite 1016
Toronto, Ontario
M5H 1T1

Submitted by:

AMEC Earth & Environmental,
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December 2010

TC101507

16 December, 2010

TC101507

Baffinland Iron Mines Corporation
120 Adelaide St. West, Suite 1016
Toronto, Ontario
M5H 1T1

Attention: Mr. Dick Matthews
Vice President of Technical Services

Re: Interim Report – ML/ARD Characterization Deposit No.1, Mary River Project Rev.1, Issued in Support of DEIS

Please find attached a final interim report on the metal leaching and acid rock drainage (ML/ARD) characterization of materials from Mary River Deposit No. 1 of Baffinland Iron Mine site.

The report presents the results and interpretation of geochemical analyses of samples and results available to November 2010.

Please do not hesitate to contact the undersigned should you have any questions.

Yours very truly,

AMEC Earth & Environmental
a Division of AMEC Americas Limited

Stephan H. Theben. Dipl.-Ing.
Senior Environmental Consultant

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EXECUTIVE SUMMARY

AMEC was retained by Baffinland Iron Mines Corporation (Baffinland) to conduct environmental studies in support of an environmental impact assessment (EIA) for their proposed iron mine at the Mary River Site. AMEC's work included a metal leaching / acid rock drainage (ML/ARD) characterization study for the project to assist with the management of future ore and waste rock at the site. This report summarizes data collected to date, documents the findings of this work and presents a summary of future and on-going work.

AMEC has evaluated existing geochemical studies and completed additional sampling of rock materials from drill core that are expected to be representative of the waste rock produced during mining. Geochemical characterization of rock materials from this and previous studies has been completed using standardized ML/ARD assessment techniques. In addition, AMEC has evaluated drainage and runoff data from existing stockpiles at the site in order to assess the potential mine drainage quality at the site during mine operations and closure.

A total of 277 drill core waste rock samples (including an additional 180 samples from the current study) were submitted for Acid-base Accounting (ABA) testing. Results of this testing has determined that approximately 86% of the waste rock samples are unlikely to generate acidic drainage in the future. The remainder of the samples were classified as potentially acid generating (PAG) materials.

Based on testing using short term leaching tests, metal leaching from the waste rock materials is expected to be low. Drainage quality expected at the site, based on monitoring of existing ore stockpiles, is expected to be circum-neutral to mildly acidic (pH 5.5 to 6) with generally low metal concentrations. Some elevated metal concentrations observed on site, and particularly manganese, may be related to manganese-bearing siderite that is present in some of the ore stockpiles.

The current mine plan includes encapsulation of the PAG rock within the core of the waste rock stockpile. Based on the proportion of PAG samples and the findings of the ML/ARD characterization study, this proposed approach appears to be a viable method for minimizing any ML/ARD impacts on the environment. Additional geochemical studies including further kinetic testing are continuing to evaluate and refine this option. Additional testing is planned to better understand the kinetics of potential acid leaching behaviour and further refine the expected drainage quality and metal leaching behaviour from materials at the site.

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1.0 INTRODUCTION

AMEC was retained by Baffinland Iron Mines Corporation (Baffinland) to conduct environmental studies in support of an environmental impact assessment (EIA). AMEC conducted this additional geochemical study to expand the geochemistry knowledgebase for the project.

1.1 Site Description

Baffinland is planning to mine iron ore at their Mary River site located on the northern half of Baffin Island, approximately 160 km south of Mittimatalik (Pond Inlet), 270 km south-east of Nanisivik, 300 km north of Hall Beach, and 1000 km north-west of Iqaluit, the capital of Nunavut Territory, Canada. This area experiences a mean annual temperature of approximately -12^{o}C and monthly averages below -20^{o}C from December to March. Above freezing temperatures occur only from June to August, with an average high of 4.4^{o}C in July.

There are currently five deposits of potential economic interest identified at the site. The current mine development relates to Deposit No.1, which is the largest and best known of the economic deposits at the site.

The current projected life of mine is about 21 years based on reserves in Deposit No.1. The proposed mine will include the open pit, crushing and screening facilities, and the ore and waste rock storage facilities. The dimension of the ultimate open pit will be approximately 2,000 m in length, 1,200 m in width and range from 195 m on the south side to 465 m on the north side in depth (Aker Kaeverner, 2008).

The economic iron deposits at the Mary River project represent high-grade examples of Algoma-type iron formation. Approximately 365 Mt of ore will be produced at the Mary River Project (Aker Kaeverner, 2008). Deposit No. 1 ores contain magnetite and hematite in different proportions. About 640 Mt of waste rock are anticipated to be produced during the life of the mine.

1.2 Objectives and Scope of Work

The objective of this assessment was to characterize the metal leaching and acid rock drainage (ML/ARD) characteristics of the mine rocks that will be produced from the proposed open pit. The ML/ARD assessment results will provide the input for the management of the mine rock and also the management of the seepage and runoff from the mine rock stockpiles and open pit.

Materials characterized in this study include rock core samples that represent rock types that will be placed in waste rock stockpiles and potentially exposed on pit walls. To further improve

the understanding of the potential for acid and metal leaching from the mine rock, the seepage and run off quality of mine rock stockpiles that have been monitored over the last few years by Baffinland were also reviewed.

This report summarizes the understanding of the geochemistry of the mine rock from the Mary River Deposit No.1 based on results available up to November 2010.

1.3 Proposed Waste Rock Management Plan

The waste rock to be produced from the mine has been interpreted on the basis of the hanging wall and footwall zones of the deposit. It is estimated that approximately 640 Mt of waste rock will be produced, consisting of 400 Mt (63%) footwall and 240 Mt (37%) of hanging wall material (Wahl, 2010).

Results of the previous geochemical study (Knight Piésold, 2008a) indicated that some waste rock generated from the proposed open pit is potentially acid generating (PAG) material. However, the limited number of samples in the 2008 program restricted the ability to estimate the proportion of PAG waste rock. For the purpose of the waste rock stockpile design, the mine plan assumed that 20% of waste rock generated during the mine life will be PAG materials (AMEC, 2010) on the basis of the Knight Piésold work.

The current waste rock stockpile design calls for placement of PAG material as a cell encapsulated within the non-PAG waste rock stockpile. With containment of the PAG cell in this manner, it is expected that reactivity of the PAG material will be substantially reduced by introducing and maintaining permafrost conditions within the core of the waste rock stockpile.

2.0 GEOLOGY

2.1 Regional Geology

The northern part of Baffin Island consists of the ca. 3.0-2.5 Ga Committee Fold belt which lies within the Rae domain of the western Churchill Province (Jackson and Berman, 2000). The Committee belt extends north-east for around 2000 km from south-west of Baker Lake, Nunavut Territory to northwestern Greenland. Four major assemblages of Precambrian rocks have been identified within the Committee Belt. The iron ore deposits occur as part of the supra-crustal rocks of the Neoarchean aged (2.76-2.71 Ga) Mary River Group in the region. The Central Borden Fault Zone passes within 1 km to the south-west of the site. This fault separates the highly deformed Precambrian rocks to the north-west from the early Paleozoic relatively flat lying sedimentary rocks to the southwest.

The generalized stratigraphic sequence of the Mary River group from base to top according to Young *et al*. (2004) and Johns and Young (2006) is:

- psammite and sedimentary migmatite;
- amphibolite;
- Algoma–type oxide– and silicate–facies iron formation;
- quartzite; and
- interbedded ultramafic and intermediate volcanic rocks.

The thickness of individual units varies considerably across the area. Ultramafic and gabbroic intrusions in the form of small sills and dykes (<10 m in thickness) may occur within the sedimentary rocks, iron formation and amphibolite units (Johns and Young, 2006). Locally these intrusions have been observed to contain thin sulphide veinlets and disseminated sulphides. At the deposit scale, the overall sequence can be complicated by inferred early isoclinal folds and ramp and flat thrust faults (Young *et al*., 2004) which create complex and variable stratigraphic relationships. The contact between the Mary River group and gneiss basement rock are generally not directly exposed, being obscured by younger granitic intrusions.

Iron formation within the Mary River Group occurs as an oxide- and silicate- facies unit. Oxide facies iron formations vary from lean magnetite-chert to iron-ore quality deposits of magnetite and hematite (Johns and Young, 2006). Genesis of high grade iron ores is the result of the Hudsonian age deformation and metamorphism of enriched Archean Banded Iron Formation. The silicate–facies iron formation is generally thin and found in association with the oxide–facies, although it also occurs on its own. It commonly contains coarse garnet, anthophyllite, cummingtonite, and actinolite porphyroblasts.

2.2 Deposit Geology

Deposit No.1 occurs at the nose of a syncline plunging steeply to the north-east (Aker Kvaerner, 2008). The iron formation occupies the nose and two limbs of this feature with an ~1300 m long northern portion and an ~700 m long southern portion. The footwall to the iron formation mainly consists of gneiss with minor schist, psammitic gneiss (psammite) and amphibolite. The hanging wall is primarily composed of schist and volcanic tuff with lesser amphibolite and metasediment.

The hanging wall primarily encompasses chlorite–actinolite schist and garnetiferous amphibolites. Volcanic tuff is also a significant lithology identified in the hanging wall. The footwall mainly consists of quartz-feldspar-mica gneiss with lesser psammitic gneiss and quartz-

mica schist. Microcline and albite are the predominant feldspar within the gneiss and biotite is generally more abundant than muscovite.

The iron ore deposits at the Mary River project represent high-grade examples of Algoma-type iron formation and are composed of hematite, magnetite and mixed hematite-magnetite-specular hematite varieties of ore (Aker Kvaerner, 2008). The iron deposits consist of a number of lensoidal bodies that vary in their proportions of the main iron oxide minerals and impurity content of sulphur and silica in the ore. The massive hematite ore is the highest grade ore and also has the fewest impurities, which may indicate it was derived from relatively pure magnetite or that chert, quartzite and sulphides were leached and oxidized during alteration of the iron formation.

3.0 REVIEW OF PREVIOUS GEOCHEMICAL TESTWORK

3.1 Static Testing

Previous geochemical studies (Knight Piésold, 2008a) included analysis of 97 waste rock samples, 21 ore samples and 7 overburden samples. Waste rock and ore samples were collected from rock cores at 34 boreholes drilled in 2004, 2005 and 2006. All samples underwent Acid Base Accounting (ABA) analysis, total element analysis by aqua-regia leach, and whole rock analysis by X-ray Fluorescence (XRF). ABA analysis included assessment of acid potential (AP) on the basis of measured total sulphur and calculated sulphide sulphur concentrations. Assessment of neutralization potential (NP) was on the basis of total neutralization potential determined by the modified Sobek method and carbonate NP (CaNP) by measurement of total inorganic carbon.

Selected samples were additionally analysed using the Net Acid Generation (NAG) test, mineralogy by XRD, and short-term leaching tests using Standard (USEPA 1312) Synthetic Precipitation Leaching Procedure (SPLP) at pH 4.5, a modified SPLP procedure and the Toxic Characteristic Leaching Procedure (USEPA 1311). The modified SPLP procedure used deionized water at pH 5.5 and a liquid to solid ratio of 1:3 rather than 1:20 for the standard SPLP.

This report indicated that 21 of 23 (91%) footwall rock samples, 65 of 74 (88%) hanging wall samples, 11 of 16 (69%) ore samples, and all overburden samples had NPR >2 for NPR calculated using modified Sobek NP and AP based on sulphide sulphur. This suggests most samples are non-potentially acid generating (non-PAG).

Results of short-term leaching tests (SPLP and modified SPLP) indicated that several metal parameters such as aluminum, barium, iron and manganese were susceptible to leaching at concentrations greater than 1 mg/L from footwall and hanging wall samples (Knight Piésold,

2008a). However, concentrations of major and trace metals in humidity cell leachate were low to negligible.

3.2 Kinetic Testing

A humidity cell testing program was conducted on ten rock samples from the Mary River project in early 2008 (Knight Piésold, 2008a). The humidity cell testing consisted of: three humidity cells containing footwall samples; and seven humidity cells containing hanging wall samples. Two samples of footwall rocks and five samples of hanging wall rock that underwent the humidity cell testing had values of NPR less than 2. The humidity cells were operated for 53 weeks. The preliminary results of humidity cell test that covered 20 week operation were reported by Knight Piésold (2008a). The complete results of the humidity cell testing including previously unreported results are presented in Appendix A.

- The pH of humidity cell leachate from week 20 until the end of the test was generally circum-neutral (Figure A-1). Leachates from four cells (two samples of footwall rocks and two samples of the hanging wall rocks) had pH somewhat lower (5.5 to 6.5) than the majority of samples. One of the samples among the set with slightly lower pH includes a sample with an NPR of 3.1. None of the samples produced strongly acidic drainage over the course of the 53 weeks of testing.
- The sulphate release rate decreased steadily during the first 20 weeks of cell operation. After this point, the rates were generally steady until the end of operation for the majority of the cells (Figure A-2). The sulphate release rates from the footwall samples were low and in a narrow range 2.8 to 3.8 mg/kg/week. The hanging wall rock also had low sulphate release rates, but exhibited greater variation ranging from 0.7 to 38 mg/kg/week. The highest sulphate loading rates were recorded from the amphibolite rock sample.
- Metal concentrations in the humidity cell leachates were relatively low. Concentrations of arsenic, chromium, copper, mercury, and silver were lower than method detection limit in most samples. Arsenic and copper concentrations were only detected in one gneiss footwall sample and one hanging wall schist sample, respectively.
- In general, the metal loading rates decreased or remained relatively stable after 20 weeks of cell operation. In contrast to these general trends, the loading rates of cadmium, cobalt, manganese, nickel and zinc from one footwall gneiss rock sample increased in the last 20 weeks of operation (Figures A-8, A-9, A-14, A-15, and A-19).
- Prediction of the lag time until acid generation begins in the PAG waste rock humidity cells was calculated based on the estimated rates of NP depletion measured from the cells. Acidic conditions were assumed to occur once all the NP in the sample had been depleted. NP depletion was calculated based on average release rate of calcium and magnesium during the last 10 weeks of the cell operation, assuming carbonate is the

only source for NP, and near-steady state conditions had been reached. The initial Sobek NP values from the ABA testing were used to calculate carbonate depletion. Based on these calculations, the NP depletion time varied from 1 to 416 years with median of 41 years (Table A -1).

- Sulphide depletion in the humidity cells was calculated based on the average sulphate release rates measured during the steady release rates operation and the initial sulphide content of the sample from the results of ABA. Based on these calculations, the sulphide depletion time ranged from 16 to 165 years (Table A-1).
- The NP and sulphide depletion results suggest that for 8 of 10 of the samples the estimated NP depletion time was shorter than the estimated sulphide depletion time, indicating that these samples could potentially generate acid in the future. The ARD onset time varied widely, ranging from 1 to 416 years with a median of 29 years.

3.3 2008 Bulk Ore Sample Testing Program

Another geochemical testing program was conducted in 2008 as a part of the bulk ore sampling program (Knight Piésold, 2009). Twenty-three rock samples were collected from 130,000 tonnes of blasted rock from the west side of Deposit No.1. These samples represented three different ore types and varieties, including weathered ore, representative ore and non-representative high manganese ore. All of these samples were subjected to the same testing as the waste rock samples, namely ABA, total elements by aqua regia, whole rock analyses, and modified SPLP testing.

The content of sulphide sulphur in all samples was below the method detection limit (<0.01%) with the exception of one sample. The carbonate NP generally exceeded the Sobek NP. Twenty-two of 23 samples had NPR >2, indicating that the majority of these samples were Non-PAG material. However, the NP of the materials was generally very low ranging from 1 to 4.5 kg $CaCO_3$/t.

Besides iron, manganese was generally the only parameter in the ore samples that was enriched (more than ten times higher) relative to an average basalt composition (Price 1997). Results of the SPLP testing showed that concentrations of arsenic, copper, nickel, lead, and zinc were lower in the leachates than values of the Metal Mine Effluent Regulations (MMER) SOR/2002-222 Schedule 4 and the Water License 2BB-MRY0710.

4.0 2010 TESTING PROGRAM

Based on the review of previous geochemical studies, AMEC developed a geochemical testing program to augment the geochemical database for the project. The program included the collection and analysis of additional samples to increase the representativity of the data.

The approach and methodology for the collection and characterization of mine waste materials was based upon the following documents:

- Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1. (MEND, 2009); and
- Guidelines for ARD Prediction in the North (INAC, 1992).

The documents represent best practice and industry standard approaches and methodologies for ML/ARD sampling and characterization.

4.1 Sample Collection

The objective of the 2010 sampling program for ML/ARD characterization was to obtain samples that accurately represent the geochemical variation of the rock types to be mined. Samples were selected to capture both the spatial and geochemical variability of the proposed open pit. The pit limit, existing borehole locations and geology are provided in Figure 1.

The sampling program conducted by AMEC in July 2010 targeted the most recently recovered drill core from 2008 and 2009 drilling programs. AMEC identified that a limited number of footwall samples were collected during the previous geochemical investigation program, and this limitation was inherent in the ore delineation drilling approach utilized for resource development. Drilling that focused on ore delineation, penetrated only limited sections of footwall material. To partially address the limited number of footwall samples, AMEC also collected additional footwall samples from 2007 core. Further, in August 2010 under AMEC's direction, Baffinland drilled three new boreholes that specifically targeted the footwall region of the proposed pit (Figure 1).

In total, 180 drill core samples were collected during the 2010 sampling program. Sampled intervals were approximately 1 m lengths of core. The collected drill core consisted of 84 samples representing the footwall and 96 samples representing the hanging wall. Lithological information was established from original core logs. A description of each sample confirming lithology and identifying the presence of sulphides and/or visible alteration was made at the time of sampling.

4.2 Sample Analysis

The collected mine rock samples were shipped to SGS Lakefield, Ontario for laboratory testing. The analyses for the samples were comparable to those completed in the previous geochemical investigations and described below.

4.2.1 Acid Base Accounting

Acid Base Accounting (ABA) analyses were performed on all rock samples. The ABA testing consisted of total sulphur, sulphate sulphur, sulphide sulphur by difference, total carbon (TC), total inorganic carbon (TIC), modified Sobek neutralization potential (NP), and paste pH. Selected sample details and results are presented in Table B-1 (Appendix B), laboratory certificates are provided in Appendix C1.

Total sulphur in the samples was determined by Leco furnace. Sulphate sulphur was determined by dilute hydrochloric acid digestion and colorimetry. Sulphide sulphur was determined by difference between the two analyses. Measurement of TIC was used to determine the carbonate NP (CaNP).

4.2.2 Net Acid Generation testing

The single addition Net Acid Generation (NAG) test was conducted on all rock samples. In addition the sequential NAG test was performed on any samples with total sulphur of more than 1%. Laboratory certificates are provided in Appendix C2.

The NAG test is a complimentary test to ABA which provides an assessment of the potential of a sample to generate acid (AMIRA, 2000). The simplicity of the NAG_{pH} test may make it suitable as a screening tool for field characterization of rock materials, where it is sufficiently calibrated against more comprehensive ABA data. Values for NAG_{pH} greater than 4.5 indicate that a sample has little potential to produce net acidity in the future. .

The sequential NAG test was conducted on samples with total sulphur more than 1%, since sulphur at these concentrations may not be completed oxidized when using the single addition test. The sequential NAG test consists of a series of single addition NAG tests. The NAG test cycle was repeated until the NAG_{pH} of the final solution is greater than 4.5. The resulting NAG value was determined by summing the values from each cycle of the single addition NAG test.

4.2.3 Total element analyses

All rock samples were analysed for concentrations of a standard suite of elements (primarily metals) in aqua regia leachate with ICP/MS quantification. Laboratory certificates are provided in Appendix C3. Aqua regia digestion is considered a partial dissolution method since some resistant minerals (e.g., silicates) are not decomposed or only partially decomposed by the aqua regia leach. However, concentrations of most environmentally important metals are expected to be adequately determined by this technique.

4.2.4 Leachable metals

Shake flask extraction (SFE) tests were conducted on selected rock samples to assess the presence of potentially soluble elements and their release during initial stages of weathering. Laboratory certificates are presented in Appendix C4. Testing was conducted using a 3:1 deionised water to solid ratio agitated for 24 hours (MEND, 2009). The modified SPLP test used in the previous study (Knight Piesold, 2008a) is similar to this test method. The resulting leachates were then analysed for pH and for concentrations of dissolved metals by ICP-MS. Nineteen samples representing 10 samples of footwall rocks and nine samples of hanging wall rocks sample were selected to undergo SFE testing after reviewing the results of the total elemental analysis.

4.2.5 Mineralogy (Rietvield XRD)

Based on the results of ABA testing, nine samples were selected for mineralogical analysis by Reitveld XRD. Laboratory certificates are provided in Appendix C5. This technique provides a semi-quantitative to quantitative assessment of the mineral composition of a sample. Sub-samples of the selected samples were crushed to less than 10 µm then analysed as random powder mounts using an x-ray diffractometer equipped with a step-scanning goniometer. The amounts reported represent the relative amounts of crystalline mineral phases in the mounted specimens normalized to 100%. This method is effective at identifying crystalline phases present in abundance greater than a few weight percent. With favourable peak profiles and minimal overlapping peaks, phases may be detected at less than 1 weight percent.

4.3 Additional Humidity Cell Testing

Based on the static testing results on the 180 samples collected in 2010, samples have been selected for kinetic testing using standard humidity cells. The tests will be used to evaluate the acid and metal leaching characteristics of the deposit waste rock materials. The samples were selected to represent the major rock types within the range of critical acid generation potentials. The tests will be operated for a minimum period of 26 weeks or until the observed rates from the cells stabilize.

In addition to the standard humidity cells, specialized NP-depleted humidity cells have also been initiated. These cells are to be operated to assess the drainage chemistry of waste rock devoid of neutralization capacity and to simulate drainage under acidic conditions.

4.4 Stockpile Drainage Sampling

In order to better assess actual site drainage quality, AMEC evaluated site drainage data collected and analysed by Baffinland (Table 8, Appendix D). Monitoring of runoff and seepage from ore stockpiles has been completed by Baffinland since 2008. The monitoring data is limited to the short summer period in a given year due to the short annual melt and runoff period at the site. The existing stockpiles at the site include the following:

- Weathered ore and minor waste rock excavated from the surface of Deposit No. 1 (adjacent to the bulk sample pit);
- Lump and fine ore from bulk sample pit of Deposit No. 1 (site of crusher); and
- Ore grade material stored at Milne Inlet.

Initial data from these stockpiles has been previously reported (Knight Piésold, 2009). This data was for surface seepage and runoff collected directly at surface. However, for some locations it became necessary to measure the drainage by placing sampling locations into the active layer in the shallow subsurface. Thus, since 2009 a number of additional sampling strategies have been employed.

Water was sampled from a corner of the waste rock/weathered ore stockpile in 2009 and 2010. The water samples were inferred to mainly contain surface runoff with a lesser amount of seepage. Test pits were installed to the base of the active layer around the ore stored at the bulk sample crushing facility in 2009. Samples of drainage into these pits were collected in 2009 and 2010. In addition, two field lysimeters were constructed in the vicinity of the crusher stockpile in August 2010 by placing lump and fine ore on a geosynthetic liner. This allowed direct sampling of drainage from each of these materials. Three drive points were installed in 2010 to the base of the active layer around the ore-grade material stored at Milne Inlet.

In addition, a natural seep from the vicinity of the bulk sample pit has also been sampled on a two occasions.

5.0 GEOCHEMICAL TESTING RESULTS

The following sections discuss the static testing results carried out on the waste rock samples. The summary of results includes the geochemical results from the previous testing program (Knight Piésold, 2008a) when applicable. The overall analysis continues to be evaluated on the basis of hanging wall and footwall materials for which estimated tonnages are available. Sampling by lithology continues to evolve on the basis of observed borehole information with the recognition that significant volumes of material, particularly in the footwall, are presently unsampled.

The 170 hanging wall rock samples consisted of approximately 41% schist, 31% volcanic tuff, and 10% amphibolite. The rest of the samples were composed of metasediment (a minor component of core sampling to date) and thin zones of mixed schist, volcanic tuff, and amphibolite.

The 107 samples of footwall rocks consisted of 57% gneiss, 26% schist, and 14% metasediment (psammitic gneiss). The remaining samples included minor footwall lithologies including amphibolite and volcanic tuff.

5.1 Acid Base Accounting (ABA)

A statistical summary of ABA results for waste rock samples are presented in Table 1. The statistical analyses represent the combined ABA results of 2010 sampling and previous sampling (Knight Piésold 2008a). Detailed ABA analytical results are presented in Appendix B (Table B-1). Statistical summaries of single addition NAG and sequential additional NAG test results are presented in Table 2 and the detailed data are presented in Appendix B (Table B-2).

Overall results are discussed first, followed by more detailed descriptions of hanging wall and footwall results.

The relationship of total sulphur and sulphide sulphur (Figure 2) confirms that sulphide is the main source of sulphur above 0.4% total sulphur and the relationship is similar overall between hanging wall and footwall rocks. At lower concentrations, data suggests that sulphate sulphur is a significant component in some samples.

The range in modified Sobek neutralization potential (NP) for the entire sample set is typically between 4 and 100 kg $CaCO_3$/t (Figure 2), with the NP of footwall samples on average lower than the NP of hanging wall samples. There appears to be a small population of hanging wall samples that have very low NP (<1 kg $CaCO_3$/t); however, these samples also exhibit a very wide range in sulphide content (and acid potential) and were reported from amphibolite, schist, and a Knight Piésold composite sample of mixed amphibolite/volcanic tuff/greywacke.

For the majority of samples, carbonate neutralization potential (CaNP) was lower compared to the Sobek NP (Table B-1) indicating that silicates may be important in providing neutralilzation capacity in most samples. The presence of a few samples with carbonate NP greater than Sobek NP suggests the likely presence of iron carbonates in some samples that will provide no net neutralizing potential under oxidizing conditions.

The neutralization potential ratio (NPR) which expresses the ratio of NP/AP ranged from 0.001 to 400 with a mean and median of 32 and 22 respectively. Approximately 14% of the samples

had an NPR of <2 indicating the presence of potentially acid generating (PAG) material (MEND, 2009).

5.1.1 Hanging wall

Paste pH of the hanging wall samples ranged from 5.7 to 10.2 with a median paste pH of 9.5. A single outlier had a paste pH of 4.3. This low pH sample contained anomalous sulphur (12.4%) for this data set.

Concentrations of total sulphur of the hanging wall samples ranged from below the Method Detection Limit (MDL) of 0.005% to 12.4%, with mean and median values of 0.29% and 0.07%, respectively. Approximately 5% of the samples (8 of 170 samples) had a sulphur content below the MDL. Concentrations of sulphate sulphur in the hanging wall rock samples were reported from below MDL (0.01%) to 2.6%. The resulting calculated concentrations of sulphide sulphur ranged from <0.01% to 9.8% with mean and median values of 0.20% and 0.02% respectively.

Neutralization potential of hanging wall rock samples ranged from 0.2 to 129 kg $CaCO_3$/t, with a mean and median of 22 and 17 kg $CaCO_3$/t, respectively. CaNP for the hanging wall rock samples varied from 0.4 to 356 kg $CaCO_3$/t, with a mean value of 9.8 kg $CaCO_3$/t and median value of 1.7 kg $CaCO_3$/t.

The NPR of hanging wall rock samples varied from 0.001 to 413 with mean and median values of 3.5 and 34, respectively. Approximately 14% of the samples (24 of 170 samples) had NPR <2 with 16 samples (9%) having an NPR <1 (Figure 2).

NAG_{pH} less than 4.5 was measured from 18 of 111 (16 %) hanging wall rock samples. The NAG_{pH} of those 18 samples varied from 1.84 to 4.47 and the NAG values ranged from 0.3 to 131 kg H_2SO_4/t. The hanging wall rock samples with NPR <2 consistently reported the NAG_{pH} less than 4.5. NAG_{pH} less than 4.5 was observed in four hanging wall rock samples with NPR >2.

Sequential NAG tests were conducted on the four hanging wall samples that contained total sulphur greater than 1%. The NAG result for the Sequential NAG test was almost double the NAG value of Single Addition NAG test for the sample with total sulphur content of 12.4%. For the other 3 hanging wall samples (total sulphur from 1.2 to 1.3%) the NAG values of the sequential NAG test were similar to the NAG values from the single addition NAG test.

5.1.2 Footwall

Paste pH of the footwall samples ranged from 6.5 to 10.2 with the exception of an outlier at pH 5.5. This low pH sample contained anomalous sulphur (10%) for this data set. The median paste pH was 9.5.

Concentrations of total sulphur in the footwall samples ranged from below MDL (0.005%), to 6.13%, with mean and median values of 0.21% and 0.04% respectively. Approximately 12% of footwall samples had sulphur content below the MDL. Concentrations of sulphate ranged from below MDL (0.01%) to 0.06%. Sulphide sulphur ranged from <0.01% to 5.96% with mean and median values of 0.16% and 0.01% respectively.

Neutralization potential ranged from 3.7 to 64 kg $CaCO_3$/t, with a mean and median of 12 and 10 kg $CaCO_3$/t, respectively. CaNP for the footwall samples ranged from 0.4 to 54.5 kg $CaCO_3$/t, with a mean and median of 2.7 and 1.3 kg $CaCO_3$/t.

The NPR of footwall rock samples ranged from 0.08 to 100 with mean and median values of 2.6 and 33, respectively. Approximately 14% of footwall samples (15 of 107 samples) had an NPR <2, with eight of these 15 samples having an NPR <1 (Figure 2).

From the 89 footwall rock samples that underwent the NAG testing, 12 samples (13%) had NAG_{pH} less than 4.5. The NAG_{pH} and the NAG values of these 12 samples ranged from 2.31 to 4.45 and from 0.3 to 65 kg H_2SO_4/t, respectively. NAG_{pH} results are generally consistent with ABA results. All footwall samples with NPR <2 had NAG_{pH} less than 4.5. A NAG_{pH} of less than 4.5 was observed in two samples with NPR greater than 2.

The Sequential NAG test was conducted on three footwall samples that contained total sulphur greater than 1%. The NAG values of Sequential NAG test was 40% higher compared to the NAG value of Single Addition NAG test for the sample with 6.1% total sulphur. The NAG values from single addition and sequential NAG tests were similar for 2 samples with the total sulphur of 1.1 and 1.5% suggesting the total sulphur was completed oxidized with the single addition test.

5.2 Total Metals

In order to identify potential metals of environmental significance, the total metals from aqua regia leach results were screened against the average elemental abundance (Price, 1997) in a typical basalt for the amphibolite, schist, and volcanic tuff lithologies and the average crustal abundance for the gneiss and metasediment lithologies. For the purpose of the screening assessment, the concentration of an element was considered enriched if concentrations were

greater than ten times the average composition of basalt or crustal abundance as appropriate. It should be noted that the total concentration of an element does not determine the metal leaching potential of that element.

Statistical summaries of total metal contents for all waste rock samples are presented in Table 3 and complete data is presented in Table B-3 (Appendix B). The data includes results for rock samples that were previously reported (Knight Piésold, 2008a). For several metal parameters such as arsenic, bismuth, cadmium, antimony, selenium, tin, thallium and uranium the MDL for previous results (Knight Piesold, 2008a) were sometimes higher than those in the 2010 testing program.

5.2.1 Hanging wall

Some hanging wall samples were enriched in antimony, arsenic, bismuth, cadmium, chromium, lead, lithium, manganese, molybdenum, nickel, and selenium as summarized in Table 4.

Approximately 34% and 12% of hanging wall samples were enriched in bismuth and selenium respectively. The MDL for these parameters were at or above the ten times comparison values. Therefore the screening may underestimate the percentage of samples enriched in bismuth and selenium.

Approximately 10% (17 samples) were enriched in antimony with around half of these samples from volcanic tuff. Approximately 9% (16 samples) and 8% (13 samples) were enriched in molybdenum and arsenic respectively.

A small proportion of the samples were also enriched in cadmium (1 sample), chromium (1 sample), lead (2 samples), lithium (2 samples), manganese (1 sample), and nickel (2 samples).

5.2.2 Footwall

Some footwall samples were enriched in antimony, bismuth, cadmium, chromium, lead, molybdenum, and selenium (Table 5).

Approximately 38% and 20% of footwall samples were enriched in bismuth and selenium respectively. As noted above, the MDL for these parameters were at or above the ten times comparison values. Therefore the screening may underestimate the percentage of samples enriched in bismuth and selenium.

Approximately 7% (8 samples) were enriched in antimony. Molybdenum was enriched at a similar frequency (7%) in footwall samples. Enrichment in comparison to screening criteria was also observed for cadmium (3 samples), chromium (1 sample), and lead (5 samples).

5.3 Leachable Metals

Ten samples representing hanging wall rocks and nine samples representing footwall rock were selected for Shake Flask Extraction (SFE) testing. Samples were selected on the basis of total metal screening results. Samples with typical and enriched concentrations were chosen for analysis among the different rock types.

The SFE testing results are presented in Table 6a along with comparison to regulated effluent discharge values (MMER, 2002). More stringent guideline values are also provided for reference purposes only. Guidelines for the protection of aquatic life and the drinking water guidelines (e.g. CWQG-PAL and CDWG guidelines in Table 6a), which are focused on the preservation of water quality in the receiving waterbody for specific receptors (i.e., aquatic life, drinking water) are conservative since these values represent concentrations at point of use or exposure, not point of discharge. These guidelines are useful to identify parameters of interest when evaluating final discharge to receiving waters.

The modified SPLP leachate results from the previous investigations (Knight Piésold, 2008a) are presented in Table 6b. The modified SPLP testing is a method roughly comparable with the SFE test. The results from the standard SPLP and TCLP testing in previous work cannot be compared with the current results of leachable metals due to the difference in the testing method.

5.3.1 Hanging wall

Results of SFE analyses (Table 6a) for all hanging wall samples except one (see below), had a final pH that was neutral to alkaline with low concentrations of metals and no exceedances of MMER limits. A schist sample (MR-ARD-10-001) that contained a number of enriched metals in aqua regia leach also contained slightly elevated metal concentrations in SFE leachate. However, most were present at very low concentrations. Arsenic is perhaps most notably elevated for this sample, but is still an order of magnitude lower than the MMER limit.

The pH in SFE leachates for a number of these samples exceeded the MMER limit of 9.5. This is not unexpected for freshly exposed rock materials under agitation and at the high solid-solution ratios of the test. The high pH (and corresponding elevated aluminum concentrations) were likely related to the weak alkalinity associated with aluminosilicate mineral dissolution. It is unlikely the elevated pH (and associated aluminum) will be observed under field conditions.

The final pH of one SFE analysis was acidic (pH 4.7). This result was for rock logged as oxidized garnetiferous amphibolite at a gradational contact with high grade hematite iron formation, which reported in one sample a very low NP (0.3 kg $CaCO_3$/t), low NPR (0.6), moderate CaNP (34), total sulphur of 0.4% and trace sulphide. Concentrations of some metals were elevated in comparison to the rest of the pH neutral to alkaline SFE samples. Elevated metals included cadmium, cobalt, copper, iron, lithium, manganese, nickel, thallium, uranium, and zinc. Concentrations of cadmium and thallium were present at very low concentrations <0.001mg/L. The concentration of nickel (0.81 mg/L) slightly exceeded the MMER limit of 0.5 mg/L.

Results of the previous (Knight Piésold, 2008a) modified SPLP results (Table 6b) are very similar to the SFE results presented above. As with the SFE data, a single sample had a similar final leachate pH of 4.5. This sample exhibited very similar elevated metal contents to the low pH sample from the SFE test including a nickel concentration that exceeded the MMER limit. This sample with low final pH, like the similar sample from the SFE testing, is from waste material in the vicinity of the ore zone.

5.3.2 Footwall

Results of SFE analyses for all footwall samples (Table 6a) had leachate pH values that were neutral to alkaline with low concentrations of metals below the MMER limits. SFE leachate metal concentrations were all lower than the few somewhat elevated hanging wall results described above. The relationship described above for pH and aluminum in hanging wall samples was similarly observed for almost all footwall samples. In fact pH exceeds the MMER upper limit of 9.5 for 7 of the 9 samples. This relationship is likely related to the predominance of felsic rocks and associated aluminosilicate minerals observed in the footwall zone.

There is no evidence to suggest that the elevated total concentrations of certain metals will result in short-term leaching of those elements. Molybdenum had perhaps the most notably elevated concentrations in several of these samples; however, leached concentrations were <0.04 ppm.

Modified SPLP results from the previous investigation (Table 6b) are similar to those described above for footwall sample SFE data.

5.4 Mineralogy

Seven samples consisting of four footwall and three hanging wall samples expected to be fairly typical of the lithological units were analyzed by Rietveld XRD (Table 7).

5.4.1 Hanging wall

The three samples from the hanging wall group consisted of a single sample each of schist, volcanic tuff and amphibolite.

Sulphide bearing minerals were absent in the three hanging wall samples. Carbonate was identified only in the volcanic tuff sample with a calcite content around 0.4%. There were a number of silicate minerals with potentially acid consuming properties identified in the hanging wall samples including feldspars, and a number of phyllosilicates including phlogopite and chlorite. The hanging wall samples, particularly amphibolite and schist, also contained iron oxide.

5.4.2 Footwall

The four footwall samples consisted of a single sample each of gneiss, psammite, schist and volcanic tuff.

Sulphides and carbonates were not identified in the footwall samples. Quartz was the major mineral constituent identified in gneiss, psammite, and volcanic tuff samples, ranging between approximately 29 and 39%. The footwall gneiss and the footwall psammite samples shared similar major mineral constituents but in different proportions. Both consisted of a broad range of feldspars and phyllosilicates as well as pyroxenes and amphiboles. Trace magnetite (0.1%) was also identified in both the gneiss and psammite samples. The volcanic tuff sample contained a range of phyllosilicate minerals in addition to the quartz. The fourth footwall sample (schist) was mainly composed of phylosilicates including phlogopite (44%), muscovite (22%) and chlorite (17%).

5.5 Stockpile Drainage

Monitoring of results from several ore and a single mixed ore and waste rock stockpile has been conducted by Baffinland since 2008, following completion of a bulk ore sampling program. Results are provided in Table 8 and Appendix D. In general, results indicate circum-neutral (ca. pH 7) drainage with little evidence of metal leaching adjacent to these stockpiles and no concentrations reported in excess of MMER limits.

Two field lysimeters constructed in 2010, one each for lump and fine ore, offer the most direct assessment of drainage quality (Table 8). Data collected indicated sulphate concentrations of 500 to 1000 mg/L and neutral to mildly acidic pH (pH 5.8 to 6.7). The origin of the sulphate may be in part from gypsum known to be present in some ore; however, high molar sulphur to calcium ratios and the mildly acidic pH is evidence that at least some of the sulphate is likely due to sulphide oxidation. It should be noted that this monitoring includes only two rounds of

sampling conducted in the months following construction of the cells, and may represent at least in part a flushing of the ore material that had been recently disturbed for the purposes of constructing the lysimeters.

Metal concentrations were all below MMER limits. Concentrations of manganese and nickel were noticeably elevated in comparison to samples from other stockpile sampling data. A single high Fe result was noted in an initial unfiltered sampling from the lump ore stockpile. This may indicate the presence of fine particulate iron or colloidal iron that was subsequently attenuated within the stockpile during later sampling events. The elevated manganese may be related to non-representative manganese ore used in bed material for construction of the crusher pad at this location. This non-representative manganese ore contains a high fraction of Mn in siderite (iron carbonate) that is expected to be relatively soluble. The nickel may be similarly related to this non-representative ore (and perhaps even the siderite) or perhaps results from sulphide oxidation that may be occurring in this ore stockpile. Higher concentrations of cadmium (<0.0006 mg/L) than noted elsewhere, were also observed in drainage from both lysimeters.

Samples from an intermittent seep from a rock face near the Bulk Sample pit also had very low metal concentrations (Appendix D, Table D-4).

6.0 DISCUSSION

6.1 Waste Rock

Characterization of the net acid potential of the rock follows the criteria outlined in MEND (2009). The threshold between potentially acid generating (PAG) and non potentially acid generating (Non-PAG) materials is defined by the net potential ratio (NPR), a measure of the ratio of the acid potential (AP) to neutralization potential (NP). Using the guidance of MEND (2009), mine rock materials with NPR >2 are classified as Non-PAG. Mine rock samples with NPR <1 are considered PAG and materials with NPR between 1 and 2 are classified as having an uncertain potential of generating acid.

Approximately 86% of the hanging wall rock samples and a similar percentage of footwall rock samples had NPR >2, suggesting that the majority of samples are Non-PAG. However, 9% of hanging wall samples and 7% of footwall samples had an NPR <1 indicating that some of the waste rock has the potential to generate acid. The PAG rock samples were widely distributed in the proposed open pit.

The major lithologies in the hanging wall samples, schist, volcanic tuff and amphibolite, reported 7 to 18% of the samples as PAG (NPR <2) with the lowest proportion identified from the volcanic tuff lithology. The gneiss and schist lithologies from the footwall had 20 and 12% of their samples classified as PAG, respectively. All psammitic gneiss samples (14 samples) had NPR >2.

NAG_{pH} results using the standard cut-off of pH 4.5, were reasonably predictive of standard ABA results. The technique slightly over predicted the number of samples that were determined to have an NPR <2, suggesting the method may be useful as a screening tool to support the more comprehensive ABA results. In addition, for samples analysed to date, sulphide sulphur in excess of 0.3 to 0.4% appears to be a strong indicator of the potential for a sample to have an NPR <2 (Figure 4).

The 2010 testing program included fresh rock core samples from the 2010 drill holes and also core samples that had been stored onsite for several years. Assessment of the sulphur speciation indicated that the distribution of sulphur and sulphate in fresh and older core was similar, suggesting that significant sulphide oxidation had not occurred in the core samples which had been in storage.

The primary source of neutralization potential for the majority of the samples appeared to be non-carbonate minerals. The CaNP of approximately three-quarters (78%) of the rock samples only contributed up to 30% of the Sobek NP.

A very small subset of hanging wall rocks with very low neutralization potentials are all from locations in close proximity to the ore zone. Additional work is required to confirm the extent of this type of material near the ore zone and the importance in terms of potential for ML/ARD. Two samples of these materials also exhibited low pH and some elevated metals in short term leach tests and are discussed in more detail below.

The majority of the waste rock samples demonstrated little enrichment of elements compared to the average composition of basalt or continental crustal. Assessment of the content of metals identified 12% of the hanging wall and 19% of the footwall samples were enriched in selenium. The SFE results suggest that the selenium was not readily leachable from the rock samples with leachate concentrations of selenium below or near MDL. The small proportion of the hanging wall and footwall rock samples were also enriched in antimony, arsenic, and molybdenum. However, the results of SFE testing on the hanging wall and footwall samples had very low leachate concentrations.

In general metals were not leachable from the nineteen samples that underwent the SFE testing, with the exception of a single amphibolite sample. Leachate from the amphibolite sample was acidic (pH 4.7) and also had more elevated concentrations of copper, iron, nickel

and manganese compared to those metal concentrations in the leachate from the other rock samples. The nickel concentration in the amphibolite leachate was slightly higher than the MMER value. The sample was classified as PAG (NPR = 0.6). Notable the SFE results from another PAG sample (NPR = 0.7) did not produce an acidic leachate or elevated metals.

The preceding result is similar to a result from previous investigations (Knight Piésold 2008a), where a leachate sample from a similar procedure to the SFE previously described above also exhibited a low final pH with elevated metal concentrations. This sample was also from near the ore zone and in particular exhibited nickel at concentrations above the MMER limit.

The current waste rock stockpile design assumes that approximately 20% of the projected waste rock volume will be managed as PAG material. Current results, based on numbers of samples, indicate that approximately 14% of the waste rock may be classified as having NPR <2. Additional kinetic testing will be used to further refine this number.

The current geochemical results indicated that NP in the rock samples is distributed in a relatively narrow range with non-carbonate minerals as the primary NP source. Sulphur speciation results show a strong correlation between the total sulphur and sulphide content particularly at concentrations above approximately 0.3% S. These results suggest that the total sulphur content may be useful as an indicator to classify the acid generation potential of waste rock.

Results of analysis of field cell drainage of selected hanging wall and footwall materials (Knight Piésold, 2008a) are presented in Table 9. The data collected from the Mary River site reports circum-neutral pH and low dissolved metal contents all well below MMER limits. However, since these cells only underwent a single sampling round, reactivation of these tests with additional sampling or construction of new replacement cells would be necessary to better evaluate the long-term drainage quality.

6.2 Pit

Sampling and testing to date has identified PAG materials within the proposed pit volume. These samples are distributed through the currently sampled pit volume with no apparent control on their distribution. Therefore, it is uncertain if PAG waste rock will be exposed on the final pit walls in any significant amount. Under the mine plan, the proposed open pit will be allowed to flood after cessation of mining, with an estimated flooding time of 85 to 147 years Knight Piésold (2008b). It is currently anticipated that the discharge from the open pit will not require treatment. However, due to the pit configuration, the upper level of the south-west side of the open pit will not be flooded and will remain exposed to weathering. It is possible that PAG materials may be exposed on the final pit walls. Depending upon the areal exposure of

these materials there is the potential for ML/ARD to be produced from the walls that could negatively impact the pit lake water quality.

At the present time there is no information on projected water quality from waste rock under acid drainage conditions Additional humidity cell testing is being initiated to further assess the lag time until acid generation in the waste rock and pit walls, and to provide information on the water quality of acid generating PAG materials.

6.3 Drainage Quality

Evaluation and estimation of drainage quality has been completed for site stockpile drainage data collected by Baffinland since 2008 (Section 5.5). In addition, humidity cells were operated for 53 weeks on selected samples of waste rock (Section 3.2). Some initial monitoring of field cells of hanging wall and footwall material has also been completed. In summary, drainage quality from onsite monitoring and laboratory testing suggests the following:

- Results of the single sampling round of the field cells (Knight Piésold, 2008a) that contained selected hanging wall and footwall rocks showed circum-neutral pH and low dissolved metal contents all well below MMER limits. Existing humidity cell data consistently indicates slow onset of acid conditions in waste rock, suggesting that there is likely little concern for the rapid onset of ARD in PAG waste rock. However, it is possible that localized volumes of PAG materials in the waste rock stockpile could generate localized acidity and enhanced metal leaching that are not accounted for in current evaluations.
- Ore stockpile drainage quality is expected to be circum-neutral to mildly acidic (pH 5.5 to 6) with low dissolved metal concentrations below MMER limits. The elevated sulphate content and the slightly depressed pH were measured in lysimeters seepage at the ore stockpile that was exposed to the environment for more than two years. These results suggest the presence of sulphide oxidation in the ore stockpile. For planning purposes, drainage from PAG waste rock stored under the same conditions is assumed to be similar; however, the higher NP of the waste rock and the planned PAG management within a permafrost core is expected to result in better drainage quality than that observed in the ore stockpiles over the longer term.

7.0 CONCLUSIONS

A ML/ARD characterization program has been conducted on a total of 277 samples including 180 rock core samples representing hanging wall and footwall rock samples collected in July and August 2010. Based on the results of the 2010 testing program and the previous

geochemical testing program conducted by Knight Piésold, and the seepage quality data from the waste/ore stockpiles the following conclusions are made.

- Around 49% of rock samples had low sulphide-sulphur concentrations with values of 0.01% or less. The results suggest that about 86% of hanging wall and a similar percentage of footwall rock samples were non-PAG materials. The PAG samples were distributed widely in the open pit and were present in all major rock lithologies (ranging from 7 to 20% of samples) with the only exception being psammitic gneiss from footwall material.
- Metal enrichment was not generally observed in the majority of waste rock samples with the exception of selenium. The selenium concentrations that were greater than 10 times the average concentration of basalt or crustal abundance were also close to method detection limits. A smaller proportion of rock samples were also enriched in antimony, arsenic, and molybdenum.
- Short-term metal leaching tests (SFE) indicate only very low concentrations of leachable metals including the enriched metals identified above. Some waste material in close proximity to the ore zone appears to leach metals at more elevated concentrations. Two samples reported nickel concentrations in leachate that exceeded MMER limits.
- Evaluation of drainage from existing site stockpiles suggests circum-neutral to mildly acidic pH (pH 5.5 to 6) can be expected. Drainage measured from field lysimeters suggests some evidence of localized oxidation of sulphides. Metal concentrations are typically highest at this location; however, all were below MMER limits. Manganese may be locally present in drainage where non-representative manganese-rich ore is present.
- For planning purposes at this stage of the project, waste-rock drainage should be assumed to be similar to that predicted by ore lysimeter testing, since both are expected to be driven by localized oxidation of sulphides.
- The results of humidity cell testing suggest that the ARD onset time ranged from 1 to 416 years with a median of 29 years. Due to climatic conditions, a longer lag time is expected from the waste rock at site conditions.
- The low quantities of PAG material identified in hanging wall and footwall rocks, and the apparently slow sulphide reactivity, supports the planned management of PAG materials by encapsulation within a permafrost core of the constructed stockpile. However, due to uncertainties in the current kinetic database, there remains some risk of enhanced metal leaching and lower pH drainage from the PAG materials prior to the formation of permafrost. This risk can likely be better qualified by additional characterization and managed effectively by modifying deposition methods that would enhance permafrost aggradation into the waste rock stockpile.

8.0 FUTURE WORK

- Operation of additional humidity cells including cells for major waste rock lithologies with potential acid generation risk (NPR <2) and also NP depleted cells are currently being initiated. Results of these humidity cells will improve the understanding of the long-term ML/ARD behaviour of hanging wall and footwall waste rocks. Additional humidity cells may be warranted to assess low grade or uneconomic iron formation rock.
- A program of field test pads and laboratory columns will be initiated to simulate and predict drainage chemistry from the proposed waste rock stockpile. Existing field test pads will be reactivated and additional pads can be constructed subject to availability of suitable material. It is recommended that leachate volumes collected in the field cells be consistently recorded to accompany analyses of samples collected for chemical analysis. Laboratory column experiments can be initiated in parallel to assess drainage chemistry without the restriction of the short summer period.
- Knowledge gained through this investigation program is being applied to the approximately 8,000 samples of the Baffinland ore delineation database that includes both ore and waste material. Application of the detailed ABA and metals interpretation from this geochemical investigation program to the ore delineation database may provide an increased understanding of ML/ARD across this much larger sample set. If necessary, selected additional analyses may be possible from archived sample material.

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TABLES

Table 1. Summary of Acid Base Accounting Results of Rock Samples

	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		(wt.%)				(kg $CaCO_3$/tonne)				
All Waste Rock										
No. of sample	277	277	277	277	277	277	277	277	277	277
Minimum	4.3	<0.005	0.01	0.01	0.01	0.03	0.2	0.4	0.0	0.002
Maximum	10.2	12.4	2.63	9.77	4.27	305	129	356	413	285
Mean		0.26	0.08	0.18	0.08	5.6	18	7.0	32	9
Median	8.8	0.06	0.03	0.01	0.02	0.4	14	1.5	22	2.7
Standard Deviation	0.9	0.93	0.18	0.77	0.31	24	16	26	43	27
10^{th} Percentile	7.9	0.01	0.01	0.01	0.01	0.1	7.4	0.6	1.3	0.2
90^{th} Percentile	9.9	0.46	0.18	0.29	0.13	9.2	31	11	76	13
Hanging Wall										
No. of sample	170	170	170	170	170	170	170	170	170	170
Minimum	4.3	<0.005	0.010	0.01	0.01	0.03	0.2	0.4	0.001	0.01
Maximum	10.2	12.4	2.6	9.8	4.3	305	129	356	413	285
Mean		0.29	0.096	0.20	0.12	6.1	22	9.8	3.5	1.6
Median	8.4	0.07	0.040	0.02	0.02	0.5	17	1.7	34	3.3
Standard Deviation	0.8	1.05	0.223	0.84	0.39	26	19	32	52	34
10^{th} Percentile	7.9	0.01	0.01	0.01	0.01	0.1	8.2	0.7	1.3	0.2
90^{th} Percentile	9.7	0.56	0.231	0.31	0.21	9.7	37	18	83	19
Footwall										
No. of sample	107	107	107	107	107	107	107	107	107	107
Minimum	5.5	<0.005	0.01	0.01	0.01	0.03	3.7	0.4	0.08	0.002
Maximum	10.2	6.13	0.63	5.96	0.65	186	64	54.5	100	60
Mean		0.21	0.06	0.16	0.03	4.8	12	2.69	2.6	0.6
Median	9.5	0.04	0.03	0.01	0.02	0.3	10.4	1.33	33	4.3
Standard Deviation	0.8	0.69	0.09	0.64	0.07	20	7.5	6.0	22	8
10^{th} Percentile	8.3	0.01	0.01	0.01	0.01	0.1	6.8	0.50	1.5	0.14
90^{th} Percentile	10.0	0.35	0.12	0.23	0.05	7.2	22.1	4.50	50	7

Notes:

AP = Acid potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material. AP is determined from calculated sulphide sulphur content: S(T) - $S(SO_4)$.

NP = Neutralization potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material.

Ca-NP = Carbonate NP is calculated from TC originating from carbonates and is expressed in kg $CaCO_3$/tonne.

NPR = Net Potential Ratio = NP/AP; Carb-NPR = Carb-NP/AP

*Where NP or AP values are equal to or less than zero, NPR is calculated assuming detection limit (NP = 0.2 kg $CaCO_3$/tonne, AP = 0.03 kg $CaCO_3$/tonne).

Table 2. Summary of Net Acid Generation Testing Results of Rock Samples

	NAG_{pH}	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7) kg H2SO4/tonne
All Waste Rock			
No. of sample	200	180	180
Minimum	1.8	0	0
Maximum	11	131	165
Mean	6.7	1.8	3.0
Median	7.2	0	0
Standard Deviation	1.7	11	16
10^{th} Percentile	3.4	0	0
90^{th} Percentile	8.0	0.3	3.3
Hanging Wall			
No. of sample	111	96	96
Minimum	1.8	0	0
Maximum	11	131	165
Mean	6.8	2.2	3.2
Median	7.3	0	0
Standard Deviation	1.9	14	17
10^{th} Percentile	3.1	0	0
90^{th} Percentile	8.3	0.2	1.8
Footwall			
No. of sample	89	84	84
Minimum	2.3	0	0
Maximum	11	65	117
Mean	6.7	1.4	2.8
Median	7.1	0	0
Standard Deviation	1.6	7.5	13
10^{th} Percentile	4.3	0	0
90^{th} Percentile	7.7	0.58	4.3

Table 3. Summary of Total Metal Content of Rock Samples

	Hg	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g
All Waste Rock																													
No. of sample	216	277	276	277	276	276	277	276	276	276	276	277	277	276	277	277	275	216	276	276	276	276	276	276	277	276	277	277	276
Minimum	0.10	0.001	0.5	0.01	0.1	0.01	0.003	<0.02	0.3	0.5	0.1	0.003	0.0001	2.0	0.002	1.0	0.1	0.001	0.1	0.4	0.1	0.7	0.3	0.2	0.00001	0.02	0.02	1.0	<0.7
Maximum	0.20	13	154	3000	19	34	10	6.0	110	2200	300	61	6.5	370	15	32000	177	2.20	2410	410	25	20	12	410	0.67	20	100	460	722
Mean	0.10	5.5	5.5	320	1.2	2.9	0.8	0.6	30	274	52	9.6	1.3	26	3.9	1216	6.0	0.06	141	14.2	3.5	3.2	2.6	20	0.19	2.4	20	108	70
Median	0.10	5.9	1.2	130	0.7	0.1	0.2	0.2	24	140	30	7.0	0.9	19	3.4	590	2.0	0.03	76	5.7	0.8	0.7	1.6	7.8	0.13	0.4	2.5	73	52
Standard Deviation	0.01	2.8	15	537	1.6	8.4	1.6	1.1	23	343	57	8.7	1.3	36	2.9	2201	15	0.17	235	36	7.0	5.2	2.3	40	0.17	5.0	33	99	75
10th Percentile	0.10	1.7	0.5	3.7	0.1	0.1	0.05	0.1	6.8	43	2.7	2.6	0.02	3.5	1.0	280	0.3	0.01	7.3	1.7	0.8	0.7	0.5	2.9	0.02	0.03	0.2	16	16
90th Percentile	0.10	9.0	7.3	900	2.7	3.0	2.1	1.5	63	665	140	19	3.3	47	7.7	2576	13	0.08	345	27	13	10	6.0	45	0.46	5.0	75	290	120
Hanging Wall																													
No. of sample	129	170	169	170	169	169	170	169	169	169	169	170	170	169	170	170	169	129	169	169	169	169	169	169	170	169	170	170	169
Minimum	0.10	0.001	0.50	0.01	0.05	0.01	0.003	0.06	0.3	0.5	0.1	0.003	0.0001	2.00	0.002	1.0	0.1	0.001	0.10	0.4	0.1	0.7	0.3	0.2	0.00001	0.02	0.02	1.0	<0.7
Maximum	0.20	13	154	2500	19	34	10	4.9	110	2100	300	61	4.70	370	14	32000	177	2.20	2410	230	25	20	12	410	0.67	20	100	460	490
Mean	0.10	6.1	7.8	187	1.3	2.5	1.1	0.6	40	357	64	12	0.77	30	4.9	1663	6.8	0.06	206	7.9	3.7	3.4	2.6	24	0.16	2.2	20	140	71
Median	0.10	6.7	2.6	47	0.8	0.2	0.2	0.2	37	240	47	9.4	0.38	21	4.6	1000	2.0	0.02	140	4.6	0.8	0.7	1.6	8.7	0.09	0.2	1.8	110	55
Standard Deviation	0.01	2.8	19	375	1.9	7.6	2.0	1.0	23	360	60	9.1	0.98	42	2.8	2704	17.4	0.21	275	19	7.1	5.0	2.3	47	0.18	4.6	34	110	62
10th Percentile	0.1	1.8	0.5	2.2	0.1	0.1	0.03	0.2	13	54	2.7	4.3	0.01	4.0	1.8	329	0.3	0.01	34	1.4	0.4	0.7	0.5	2.5	0.01	0.02	0.08	28	18
90th Percentile	0.1	9.2	13	452	2.8	3.0	3.8	1.3	69	922	140	22	2.2	49.2	8.4	3310	13.2	0.09	422	14	14	10	6	68	0.49	5.0	75	340	122
Footwall																													
No. of sample	87	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	106	87	107	107	107	107	107	107	107	107	107	107	107
Minimum	<0.1	0.6	0.5	2.4	0.07	0.1	0.007	<0.02	2	14	0.7	0.7	0.01	3.0	0.4	100	0.1	0.003	3.5	0.6	0.8	0.7	0.5	1.6	0.01	0.02	0.03	1.0	5.7
Maximum	<0.1	9.2	16	1470	5.1	28	4.0	6.0	73	2200	260	60	6.00	140	8.6	2600	53	0.37	620	120	3.2	1.4	11	49	0.63	1.6	15	170	722
Mean	<0.1	3.7	0.9	263	0.8	0.6	0.4	0.3	14	143	36	5.5	1.72	25	2.4	491	4.5	0.05	40	14	0.9	0.8	1.8	8.2	0.22	0.6	3.3	57	74
Median	<0.1	3.1	0.5	160	0.6	0.1	0.2	0.2	10	79	18	4.1	1.60	22	1.6	430	1.5	0.04	13	7.5	0.8	0.7	1.3	5.7	0.21	0.6	2.6	38	50
Standard Deviation	0	2.3	2.2	268	0.9	3.1	0.6	0.8	11	264	50	6.8	1.14	21	2.0	364	9.5	0.05	82	20	0.4	0.1	1.7	8.3	0.14	0.4	2.7	47	102
10th Percentile	<0.1	1.5	0.5	52.3	0.2	0.1	0.1	0.0	5	44	2.3	2.1	0.36	7.0	0.8	230	0.3	0.02	5.3	2.5	0.8	0.7	0.5	2.9	0.04	0.1	0.8	11	15
90th Percentile	<0.1	7.4	0.8	554	2.1	0.7	0.6	0.4	26	241	104	9.3	3.28	43	5.3	784	9.6	0.08	107	29	0.8	0.9	3.6	14.7	0.40	1.1	7.1	140	117

Table 4. Summary of Metals Enrichment of Hanging Wall Rock Samples

Metal Parameter	Basalt Average*	Ten Times Basalt Average	Continental Crust Average*	Ten Times Continental Crust Average	Number of samples	Samples exceeding 10X basalt average		Number of samples	Samples exceeding 10X continental crust average		Number of samples	Samples exceeding 10X basalt/continental crust average	
	ppm	ppm	ppm	ppm		Number of samples	%		Number of samples	%		Number of samples	%
Arsenic	2	20	1.8	18	166	13	8	3	0	0	169	13	8
Bismuth**	0.007	0.07	0.0085	0.085	166	57	34	3	0	0	169	57	34
Cadmium	0.22	2.22	0.15	1.5	166	1	0.6	3	0	0	169	1	1
Chromium	170	1700	102	1020	166	1	0.6	3	0	0	169	1	1
Lithium	17	170	20	200	166	2	1.2	3	0	0	169	2	1
Manganese	1500	1500	9500	95000	167	1	1	3	0	0	170	1	1
Molybdenum	1.5	15	1.2	12	166	15	9.0	3	1	33	169	16	9
Nickel	130	1300	84	840	166	2	1.2	3	0	0	169	2	1
Lead	6	60	14	140	166	2	1.2	3	0	0	169	2	1
Antimony	0.2	2	0.2	2	166	17	10	3	0	0	169	17	10
Selenium	0.05	0.5	0.05	0.5	166	21	13	3	0	0	169	21	12

Note :

* Price (1997)

** Detection limit of Bi for many samples is above 10x screening criteria

Table 5. Summary of Metals Enrichment of Footwall Rock Samples

Metal Parameter	Basalt Average*	Ten Times Basalt Average	Continental Crust Average*	Ten Times Continental Crust Average	Number of samples	Samples exceeding 10X basalt average		Number of samples	Samples exceeding 10X continental crust average		Number of samples	Samples exceeding 10X continental crust average	
	ppm	ppm	ppm	ppm		Number of samples	%		Number of samples	%		Number of samples	%
Bismuth**	0.007	0.07	0.0085	0.085	39	19	49	68	19	28	107	38	36
Cadmium	0.22	2.22	0.15	1.5	39	2	5.1	68	1	1	107	3	3
Chromium	170	1700	102	1020	39	1	3	68	0	0	107	1	1
Molybdenum	1.5	15	1.2	12	39	4	10	68	4	6	107	8	7
Lead	6	60	14	140	39	1	3	68	4	6	107	5	5
Antimony	0.2	2	0.2	2	39	3	8	68	5	7	107	8	7
Selenium	0.05	0.5	0.05	0.5	39	9	23	68	11	16	107	20	19

Note :

* Price (1997)

** Detection limit of Bi for many samples is above 10x screening criteria

Table 6.A. Shake Flask Extraction Results of Rock Samples

Sample ID	Unit	MMER	CWQG (PAL)	CDWQ	NWB	Hanging wall									
						Amphibolite		Volcanic Tuff			Schist				Gneiss
						MR ARD 10-039	MR ARD 10-091	MR ARD 10-023	MR ARD 10-083	MR ARD 10-098	MR ARD 10-036	MR ARD 10-001	MR ARD 10-097	MR ARD 10-028	MR ARD 10-115
Sample	weight(g)					250	250	250	250	250	250	250	250	250	250
Volume mL	D.I. H2O					750	750	750	750	750	750	750	750	750	750
InitialpH	units					4.31	6.93	8.78	9.02	9.65	7.31	7.06	9.74	7.38	9.23
Final pH	units	6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	**4.70**	7.33	9.34	8.99	**9.70**	7.95	7.63	9.73	8.16	**9.74**
Mercury (Hg)	mg/L	-	0.026	0.001		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aluminum (Al)	mg/L	-	0.005-0.1[a)]	-		1.22	0.02	< 0.01	0.03	0.88	< 0.01	< 0.01	0.55	0.06	2.15
Antimony (Sb)	mg/L	-		0.006		< 0.0002	< 0.0002	0.0008	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002	0.0003	< 0.0002
Arsenic (As)	mg/L	0.5	0.005	0.005		0.0020	< 0.0002	0.0005	0.0006	0.0003	< 0.0002	0.0405	0.0004	0.0005	< 0.0002
Barium (Ba)	mg/L	-	-	1		0.0120	0.00102	0.00539	0.00176	0.00121	0.00321	0.0197	0.00057	0.0184	0.00324
Beryllium (Be)	mg/L	-	-	-		0.00157	0.00004	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00003
Bismuth (Bi)	mg/L	-	-	-		< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium (Ca)	mg/L	-	-	-		42.5	2.62	9.55	13.0	3.56	32.2	24.7	4.14	7.32	0.04
Cadmium (Cd)	mg/L	-	0.000017	0.005		0.000912	< 0.000003	< 0.000003	0.000003	< 0.000003	< 0.000003	0.000047	< 0.000003	< 0.000003	< 0.000003
Cobalt (Co)	mg/L	-	-	-		0.420	0.00177	0.000320	0.000117	0.000071	0.000307	0.00248	0.000068	0.000065	0.000037
Chromium (Cr)	mg/L	-	0.001	0.051		< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper (Cu)	mg/L	0.3	0.002-0.004[b)]	≤1.0		0.0259	< 0.0005	< 0.0005	0.0006	< 0.0005	< 0.0005	0.0005	< 0.0005	< 0.0005	0.0006
Iron (Fe)	mg/L	-	0.3	<0.3		21.5	0.026	< 0.002	0.009	0.035	0.007	0.006	0.048	0.037	0.151
Lead (Pb)	mg/L	0.2	0.001-0.007[b)]	0.01		0.00065	0.00058	0.00024	0.00019	0.00041	0.00015	0.00023	0.00042	0.00029	0.00114
Lithium (Li)	mg/L	-	-	-		0.889	0.038	0.006	0.010	0.018	0.013	0.008	0.004	0.003	0.003
Magnesium (Mg)	mg/L	-	-	-		193	8.49	13.8	9.75	0.513	42.8	118	0.931	7.15	0.139
Manganese (Mn)	mg/L	-	-	≤0.05		39.7	0.179	0.0256	0.0109	0.00371	0.0725	0.739	0.00503	0.0117	0.00164
Molybdenum (Mo)	mg/L	-	0.073	-		0.00024	0.00021	0.00031	0.00687	0.00062	0.00173	0.0540	0.00176	0.00534	0.00101
Nickel (Ni)	mg/L	0.5	0.025-0.15[b)]	-		**0.808**	0.0037	0.0010	0.0004	< 0.0001	0.0006	0.0306	0.0002	0.0003	< 0.0001
Potassium (K)	mg/L	-	-	-		8.75	4.15	1.06	11.2	17.8	3.26	22.4	8.05	9.00	4.96
Selenium (Se)	mg/L	-	0.001	-		0.002	< 0.001	< 0.001	< 0.001	< 0.001	0.003	0.001	< 0.001	0.006	< 0.001
Sodium (Na)	mg/L	-	-	-		93.4	1.71	0.46	5.49	4.27	0.59	13.9	7.74	0.97	9.28
Strontium (Sr)	mg/L	-		-		0.0908	0.0032	0.0520	0.0545	0.0144	0.0174	0.156	0.0168	0.0180	0.0005
Thallium (Tl)	mg/L	-		-		0.00077	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00004	< 0.00002	< 0.00002	< 0.00002
Tin (Sn)	mg/L	-		-		< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Titanium (Ti)	mg/L	-		-		0.0019	0.0006	< 0.0001	0.0004	0.0039	0.0007	0.0005	0.0045	0.0007	0.0099
Uranium (U)	mg/L	-		-		0.00132	0.000075	0.000005	0.000011	0.000002	0.000005	0.000003	0.000006	0.000007	0.000088
Vanadium (V)	mg/L	-		-		0.00012	0.00023	0.00009	0.00460	0.0459	0.00049	0.00019	0.0353	0.00048	0.00668
Zinc (Zn)	mg/L	0.5	0.03	≤5.0		0.132	0.001	0.002	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001

Table 6.A. Shake Flask Extraction Results of Rock Samples (continued)

Sample ID	Unit	MMER	CWQG (PAL)	CDWQ	NWB	Footwall								
						Gneiss			Psammite		Schist		Volcanic tuff	
						5164	5171	MR ARD 10-019	5145	5169	5181	5153	MR ARD 10-077	MR ARD 10-079
Sample	weight(g)					250	250	250	250	250	250	250	250	250
Volume mL	D.I. H2O					750	750	750	750	750	750	750	750	750
InitialpH	units					9.20	9.68	7.80	9.20	9.58	8.91	9.18	8.52	9.74
Final pH	units	6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	**9.87**	**9.57**	8.74	**9.78**	**9.71**	9.47	**9.76**	**9.64**	**9.73**
Mercury (Hg)	mg/L	-	0.026	0.001		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aluminum (Al)	mg/L	-	0.005-0.1[a)]	-		1.50	0.62	0.12	1.24	0.82	0.65	0.43	2.70	0.87
Antimony (Sb)	mg/L	-		0.006		0.0003	0.0004	0.0004	< 0.0002	0.0017	< 0.0002	0.0005	< 0.0002	0.0003
Arsenic (As)	mg/L	0.5	0.005	0.005		0.0012	0.0016	0.0010	< 0.0002	0.0042	0.0004	< 0.0002	0.0003	0.0003
Barium (Ba)	mg/L	-	-	1		0.00231	0.00272	0.00506	0.00111	0.00174	0.00119	0.00265	0.0136	0.00209
Beryllium (Be)	mg/L	-	-	-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00004	< 0.00002
Bismuth (Bi)	mg/L	-	-	-		< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium (Ca)	mg/L	-	-	-		0.73	3.90	18.8	0.16	2.51	1.67	0.77	0.07	6.69
Cadmium (Cd)	mg/L	-	0.000017	0.005		0.000004	< 0.000003	0.000030	0.000003	0.000013	< 0.000003	0.000010	0.000007	< 0.000003
Cobalt (Co)	mg/L	-	-	-		0.000078	0.000073	0.000040	0.000119	0.000126	0.000029	0.000037	0.000187	0.000024
Chromium (Cr)	mg/L	-	0.001	0.051		< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper (Cu)	mg/L	0.3	0.002-0.004[b)]	≤1.0		< 0.0005	0.0006	< 0.0005	0.0007	0.0011	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Iron (Fe)	mg/L	-	0.3	<0.3		0.112	0.076	< 0.002	0.148	0.096	0.069	0.068	0.452	0.010
Lead (Pb)	mg/L	0.2	0.001-0.007[b)]	0.01		0.00025	0.00058	0.00020	0.00128	0.00302	0.00030	0.00041	0.00073	0.00018
Lithium (Li)	mg/L	-	-	-		0.011	0.008	0.001	0.008	0.004	0.016	0.003	0.002	0.005
Magnesium (Mg)	mg/L	-	-	-		0.188	0.464	14.0	0.127	0.353	0.383	0.302	0.226	0.643
Manganese (Mn)	mg/L	-	-	≤0.05		0.00180	0.00221	0.00535	0.00244	0.00220	0.00081	0.00117	0.00218	0.00105
Molybdenum (Mo)	mg/L	-	0.073	-		0.00553	0.00383	0.0361	0.00187	0.00819	0.00409	0.0160	0.0110	0.00052
Nickel (Ni)	mg/L	0.5	0.025-0.15[b)]	-		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001
Potassium (K)	mg/L	-	-	-		16.1	11.2	4.90	9.97	7.80	10.4	19.3	23.3	8.33
Selenium (Se)	mg/L	-	0.001	-		< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Sodium (Na)	mg/L	-	-	-		3.67	7.83	1.52	3.94	8.16	2.78	2.21	1.78	4.38
Strontium (Sr)	mg/L	-		-		0.0025	0.0206	0.137	0.0010	0.0158	0.0161	0.0039	0.0007	0.0133
Thallium (Tl)	mg/L	-		-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Tin (Sn)	mg/L	-		-		< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Titanium (Ti)	mg/L	-		-		0.0096	0.0036	0.0002	0.0139	0.0075	0.0027	0.0068	0.0271	0.0008
Uranium (U)	mg/L	-		-		0.000584	0.0119	0.000126	0.000316	0.0115	0.000246	0.000020	0.000093	0.000007
Vanadium (V)	mg/L	-		-		0.00635	0.00436	0.00023	0.0156	0.00557	0.00183	0.00884	0.0171	0.0278
Zinc (Zn)	mg/L	0.5	0.03	≤5.0		< 0.001	0.002	< 0.001	< 0.001	0.002	< 0.001	< 0.001	0.001	0.001

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
CDWQ = Health Canada - Canadian Drinking Water Quality Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purpose only (see text)
NWB = Nunavut Water Board Wastewater Criterion
a) varies with pH
b) varies with hardness
c) aesthetic objective

Table 6.B. Modified Synthetic Precipitation Leaching Procedure Results of Rock Samples (Knight Piésold, 2008a)

Sample ID	Unit	MMER	CWQG (PAL)	CDWQ	NWB	Hanging wall									
						Amphibolite			Amphibolite/ Schist	Gneiss/ Amphibolite	Amphibolite/ Schist	Schist	Schist	Schist	Schist/ Amphibolite
						07ARD11	07ARD17	07ARD27	07ARD07	07ARD21	07ARD 25	07ARD06	07ARD16	07ARD34	07ARD20
Sample	weight(g)					250	250	250	250	250	250	250	250	250	250
Volume mL	D.I. H2O					750	750	750	750	750	750	750	750	750	750
InitialpH	units														
Final pH	units	6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	7.64	8.34	8.08	8.77	7.19	8.12	8.54	8.85	**4.50**	7.79
Mercury (Hg)	mg/L	-	0.026	0.001		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aluminum (Al)	mg/L	-	0.005-0.1[a)]	-		0.09	0.07	0.36	1.12	0.01	0.04	0.84	1.25	0.02	3.84
Antimony (Sb)	mg/L	-		0.006		0.0006	0.0005	0.0005	0.0029	< 0.0002	0.0007	0.0015	0.0022	< 0.0002	0.0003
Arsenic (As)	mg/L	0.5	0.005	0.005		0.0006	0.0014	0.0019	0.0013	0.0004	0.0759	0.0024	0.0026	0.0009	0.0009
Barium (Ba)	mg/L	-	-	1		0.475	0.676	0.256	0.456	0.0913	0.220	0.400	0.675	0.0977	0.128
Beryllium (Be)	mg/L	-	-	-		< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0004	< 0.0004
Bismuth (Bi)	mg/L	-	-	-		0.00004	0.00003	< 0.00002	0.00008	0.00002	< 0.00002	0.00011	0.00005	< 0.00002	0.00006
Calcium (Ca)	mg/L	-	-	-		9.33	7.27	9.60	2.59	34.5	4.94	8.13	4.35	41.7	5.66
Cadmium (Cd)	mg/L	-	0.000017	0.005		0.00008	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.00011	< 0.00006
Cobalt (Co)	mg/L	-	-	-		0.000316	0.000056	0.000244	0.000564	0.00260	0.000284	0.000801	0.000687	0.556	0.00179
Chromium (Cr)	mg/L	-	0.001	0.051		0.0006	0.0006	0.0007	0.0126	< 0.0003	0.0004	0.0015	0.0145	< 0.0003	0.0045
Copper (Cu)	mg/L	0.3	0.002-0.004[b)]	≤1.0		0.0007	0.0007	0.0019	0.0015	0.0009	0.0006	0.0022	0.0019	0.0008	0.0009
Iron (Fe)	mg/L	-	0.3	<0.3		0.02	0.01	1.19	1.88	< 0.01	0.01	3.19	2.57	0.75	6.17
Lead (Pb)	mg/L	0.2	0.001-0.007[b)]	0.01		0.00107	0.00038	0.00055	0.00059	0.00039	0.00036	0.00068	0.00056	0.00044	0.00071
Lithium (Li)	mg/L	-	-	-		0.0771	0.0049	0.0033	0.0030	0.0600	0.0023	0.0046	0.0035	0.0643	0.0055
Magnesium (Mg)	mg/L	-	-	-		8.77	28.1	22.3	6.10	158	18.3	12.0	7.45	240	48.3
Manganese (Mn)	mg/L	-	-	≤0.05		0.0294	0.00791	0.103	0.0348	0.0878	0.00598	0.0532	0.0339	7.51	0.154
Molybdenum (Mo)	mg/L	-	0.073	-		0.00728	0.0158	0.0136	0.0893	0.00083	0.0295	0.0874	0.0320	0.00273	0.00458
Nickel (Ni)	mg/L	0.5	0.025-0.15[b)]	-		0.0016	< 0.0007	0.0011	0.0039	0.0084	0.0027	0.0021	0.0088	**2.05**	0.0062
Potassium (K)	mg/L	-	-	-		2.91	1.08	1.56	5.73	4.09	1.00	6.13	4.22	1.78	2.44
Selenium (Se)	mg/L	-	0.001	-		0.002	< 0.001	0.018	0.001	0.008	0.002	0.002	< 0.001	0.008	0.004
Sodium (Na)	mg/L	-	-	-		11.6	16.2	14.4	14.0	21.0	8.79	14.5	15.2	14.0	14.7
Strontium (Sr)	mg/L	-		-		0.0841	0.0588	0.0321	0.0220	0.0308	0.0358	0.0348	0.0456	0.0147	0.0356
Thallium (Tl)	mg/L	-		-		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tin (Sn)	mg/L	-		-		0.0004	0.0005	0.0004	0.0005	0.0005	0.0004	0.0011	0.0006	0.0006	0.0004
Titanium (Ti)	mg/L	-		-		0.0008	0.0007	0.0013	0.0054	0.0013	0.0005	0.0065	0.0069	0.0012	0.0547
Uranium (U)	mg/L	-		-		< 0.00002	< 0.00002	< 0.00002	0.00005	< 0.00002	< 0.00002	0.00006	0.00002	0.00091	0.00006
Vanadium (V)	mg/L	-		-		0.00008	0.00008	0.00052	0.00258	< 0.00006	0.00023	0.00195	0.00364	0.00008	0.00381
Zinc (Zn)	mg/L	0.5	0.03	≤5.0		0.0814	0.0793	0.0389	0.152	0.0906	0.0429	0.106	0.134	0.416	0.0495

Table 6.B. Modified Synthetic Precipitation Leaching Procedure Results of Rock Samples (continued) (Knight Piésold, 2008a)

Sample ID	Unit	MMER	CWQG (PAL)	CDWQ	NWB	Hanging wall									
						Volcanic tuff									
						UCS2	UCS15	UCS16	UCS17	UCS18	UCS19	UCS20	UCS21	UCS25	UCS26
Sample	weight(g)					300	300	300	300	300	100	300	100	300	100
Volume mL	D.I. H2O					1	1	1	1	1	1		1		1
InitialpH	units					900	900	900	900	900	300	900	300	900	300
Final pH	units	6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	**5.78**	**9.99**	9.19	**10.2**	**9.74**	9.45	9.4	9.49	**9.55**	9.1
Mercury (Hg)	mg/L	-	0.026	0.001		-	-	-	-	-	-	-	-	-	-
Aluminum (Al)	mg/L	-	0.005-0.1[a)]	-		0.05	0.89	0.56	1.6	4.23	11.1	0.18	4.7	0.43	0.21
Antimony (Sb)	mg/L	-		0.006		< 0.0002	0.0063	< 0.0002	0.0023	0.0072	0.0004	0.0009	0.0004	0.0004	0.0006
Arsenic (As)	mg/L	0.5	0.005	0.005		< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0006	< 0.0002	0.0005	< 0.0002	0.0002
Barium (Ba)	mg/L	-	-	1		0.0044	0.329	0.338	0.355	0.279	0.865	0.529	0.729	0.0111	0.701
Beryllium (Be)	mg/L	-	-	-		< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Bismuth (Bi)	mg/L	-	-	-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Calcium (Ca)	mg/L	-	-	-		281	7.41	1.06	2.79	11.8	11.6	10.4	10.2	2.05	2.57
Cadmium (Cd)	mg/L	-	0.000017	0.005		0.00048	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Cobalt (Co)	mg/L	-	-	-		0.055	0.000239	0.000245	0.000563	0.00208	0.00888	0.000031	0.00278	< 0.000007	0.000165
Chromium (Cr)	mg/L	-	0.001	0.051		< 0.0003	0.0009	0.0012	0.0055	0.0106	0.0317	0.0006	0.0102	0.0004	0.0039
Copper (Cu)	mg/L	0.3	0.002-0.004[b)]	≤1.0		0.0011	0.001	0.0013	0.001	0.0112	0.0164	0.0005	0.0078	0.0003	0.0007
Iron (Fe)	mg/L	-	0.3	<0.3		1.26	0.32	0.35	0.41	3.11	10.4	0.05	4.51	< 0.01	0.33
Lead (Pb)	mg/L	0.2	0.001-0.007[b)]	0.01		< 0.00002	< 0.00002	< 0.00002	0.00004	0.00042	0.00067	< 0.00002	0.00012	0.00002	< 0.00002
Lithium (Li)	mg/L	-	-	-		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium (Mg)	mg/L	-	-	-		153	0.674	1.04	0.446	2.18	4.94	1.83	3.25	0.741	1.44
Manganese (Mn)	mg/L	-	-	≤0.05		24.8	0.0139	0.00238	0.0121	0.104	0.305	0.00316	0.168	0.00037	0.00271
Molybdenum (Mo)	mg/L	-	0.073	-		0.00009	0.00062	0.00028	0.00029	0.00026	0.00139	0.00048	0.00087	0.00029	0.00028
Nickel (Ni)	mg/L	0.5	0.025-0.15[b)]	-		0.454	0.0016	0.0009	0.0019	0.0106	0.0204	< 0.0007	0.008	< 0.0007	0.0014
Potassium (K)	mg/L	-	-	-		1	2.09	4.92	10.8	2.92	3.1	8.3	3.57	15.6	1.35
Selenium (Se)	mg/L	-	0.001	-		0.002	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Sodium (Na)	mg/L	-	-	-		5.57	8.3	8.83	11.8	8.22	9.52	7.55	9.88	1.96	7.21
Strontium (Sr)	mg/L	-		-		0.0453	0.0271	0.0196	0.0192	0.066	0.0336	0.0355	0.0514	0.0079	0.035
Thallium (Tl)	mg/L	-		-		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tin (Sn)	mg/L	-		-		< 0.0003	< 0.0003	0.0003	0.0005	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Titanium (Ti)	mg/L	-		-		0.0051	0.0127	0.0088	0.047	0.0397	0.54	0.002	0.115	0.0011	0.0051
Uranium (U)	mg/L	-		-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00002	< 0.00002	< 0.00002	< 0.00002	0.0001
Vanadium (V)	mg/L	-		-		0.00062	0.0216	0.00285	0.0409	0.0189	0.0555	0.0572	0.0269	0.00159	0.00134
Zinc (Zn)	mg/L	0.5	0.03	≤5.0		0.004	0.0038	0.0136	0.0054	0.0111	0.184	0.0059	0.129	0.0004	0.0928

Table 6.B. Modified Synthetic Precipitation Leaching Procedure Results of Rock Samples (continued) (Knight Piésold, 2008a)

Sample ID	Unit	MMER	CWQG (PAL)	CDWQ	NWB	Hanging wall										
						Volcanic tuff										
						UCS28	UCS29	UCS30	UCS31	UCS32	UCS33	UCS34	UCS35	UCS36	UCS37	UCS38
Sample	weight(g)					100	300	100	100	100	100	100	100	100	100	100
Volume mL	D.I. H2O					1		1	1	1	1	1	1	1	1	1
InitialpH	units					300	900	300	300	300	300	300	300	300	300	300
Final pH	units	6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	9.49	**10.03**	**9.71**	**9.6**	9.43	9.41	**9.66**	9.41	9.45	9.48	**9.51**
Mercury (Hg)	mg/L	-	0.026	0.001		-	-	-	-	-	-	-	-	-	-	-
Aluminum (Al)	mg/L	-	0.005-0.1[a)]	-		9.38	1.12	9.28	5.12	6.02	4.94	7.84	3.3	2.04	3.01	6.14
Antimony (Sb)	mg/L	-		0.006		0.0007	0.0013	0.0006	0.0011	0.0009	0.0004	0.0003	< 0.0002	< 0.0002	0.0003	< 0.0002
Arsenic (As)	mg/L	0.5	0.005	0.005		0.0003	< 0.0002	0.0004	0.0003	0.0003	0.0003	0.0005	< 0.0002	< 0.0002	0.0002	0.0003
Barium (Ba)	mg/L	-	-	1		1.14	0.365	0.954	0.882	0.752	0.818	1.13	0.938	0.837	0.945	1.14
Beryllium (Be)	mg/L	-	-	-		< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Bismuth (Bi)	mg/L	-	-	-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00002	0.00004	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Calcium (Ca)	mg/L	-	-	-		8.79	1.81	8.38	8.76	9.13	4.6	4.89	5.58	5.47	5.81	5.26
Cadmium (Cd)	mg/L	-	0.000017	0.005		< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Cobalt (Co)	mg/L	-	-	-		0.00431	0.000602	0.00719	0.00258	0.00374	0.004	0.00862	0.00186	0.0012	0.00226	0.00608
Chromium (Cr)	mg/L	-	0.001	0.051		0.0304	0.0034	0.0352	0.019	0.0236	0.0241	0.0397	0.0107	0.0072	0.0108	0.0303
Copper (Cu)	mg/L	0.3	0.002-0.004[b)]	≤1.0		0.0085	0.001	0.0077	0.0105	0.007	0.008	0.013	0.0022	0.0023	0.0035	0.0029
Iron (Fe)	mg/L	-	0.3	<0.3		5.63	0.9	6.76	2.66	3.75	2.69	7.34	1.73	1.06	1.72	4.24
Lead (Pb)	mg/L	0.2	0.001-0.007[b)]	0.01		0.00168	0.00009	0.00032	0.00022	0.00018	0.00092	0.00099	0.00012	0.00011	0.0001	0.00042
Lithium (Li)	mg/L	-	-	-		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium (Mg)	mg/L	-	-	-		4.99	0.544	3.83	2.13	2.27	2.31	6.51	2.11	1.45	2.35	3.56
Manganese (Mn)	mg/L	-	-	≤0.05		0.158	0.0185	0.132	0.0703	0.12	0.0548	0.142	0.0648	0.0469	0.0609	0.0901
Molybdenum (Mo)	mg/L	-	0.073	-		0.00098	0.00019	0.0008	0.00105	0.00125	0.00039	0.00032	0.0004	0.00017	0.00043	0.00024
Nickel (Ni)	mg/L	0.5	0.025-0.15[b)]	-		0.0135	0.0023	0.0222	0.0082	0.0121	0.0103	0.021	0.0043	0.0029	0.0049	0.0152
Potassium (K)	mg/L	-	-	-		4.6	5.94	8.68	2.99	2.56	4.58	8.7	4.73	4.58	6.7	7.99
Selenium (Se)	mg/L	-	0.001	-		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Sodium (Na)	mg/L	-	-	-		11.5	11.4	12.4	10.7	10.4	9.28	14.8	9.15	9.86	12.7	13.5
Strontium (Sr)	mg/L	-		-		0.0439	0.0189	0.0346	0.0584	0.0513	0.0451	0.0623	0.0408	0.0405	0.0448	0.0447
Thallium (Tl)	mg/L	-		-		0.0003	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tin (Sn)	mg/L	-		-		< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Titanium (Ti)	mg/L	-		-		0.63	0.0628	0.788	0.207	0.244	0.285	1.07	0.309	0.182	0.205	0.574
Uranium (U)	mg/L	-		-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Vanadium (V)	mg/L	-		-		0.0549	0.0178	0.0578	0.0304	0.0328	0.0294	0.06	0.0206	0.0189	0.0267	0.049
Zinc (Zn)	mg/L	0.5	0.03	≤5.0		0.177	0.0143	0.189	0.155	0.127	0.132	0.215	0.146	0.116	0.166	0.194

Table 6.B. Modified Synthetic Precipitation Leaching Procedure Results of Rock Samples (continued) (Knight Piésold, 2008a)

Sample ID	Unit	MMER	CWQG (PAL)	CDWQ	NWB	Hanging wall							Footwall		
						Volcanic Tuff		Volcanic tuff/Schist			Volcanic tuff / Chert /Schist	Mafic Volc. Dyke	Gneiss	Gneiss	Gneiss
						UCS39	UCS40	07ARD23	07ARD24	07ARD41	07ARD31	07ARD08	UCS10	UCS12	UCS13
Sample	weight(g)					100	100	250	250	250	250	250	300	300	300
Volume mL	D.I. H2O					1	1	1	1	1	1	1	900	900	900
InitialpH	units					300	300	750	750	750	750	750	5.2	7.4	9.6
Final pH	units	6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	9.2	9.27	8.40	8.48	8.43	7.98	8.44	**5.94**	8.33	8.57
Mercury (Hg)	mg/L	-	0.026	0.001		-	-	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001			
Aluminum (Al)	mg/L	-	0.005-0.1[a)]	-		10.7	28.4	0.29	1.60	1.35	0.04	0.02	0.01	0.66	0.1
Antimony (Sb)	mg/L	-		0.006		0.0003	0.0002	0.0010	0.0008	0.0008	0.0011	0.0017	< 0.0002	< 0.0002	0.003
Arsenic (As)	mg/L	0.5	0.005	0.005		0.0002	< 0.0002	0.0004	0.0008	0.0003	0.0045	0.0022	< 0.0002	< 0.0002	< 0.0002
Barium (Ba)	mg/L	-	-	1		1.57	2.32	0.467	0.674	0.939	0.625	0.301	0.0344	0.223	0.108
Beryllium (Be)	mg/L	-	-	-		< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Bismuth (Bi)	mg/L	-	-	-		0.00009	0.00004	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00007	< 0.00002	< 0.00002	< 0.00002
Calcium (Ca)	mg/L	-	-	-		1.37	1.35	3.47	2.55	3.83	19.3	26.5	60.2	2.62	21.3
Cadmium (Cd)	mg/L	-	0.000017	0.005		0.00008	0.00009	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.00057	< 0.00006	< 0.00006
Cobalt (Co)	mg/L	-	-	-		0.0144	0.0373	0.000107	0.000683	0.00102	0.000210	0.000139	0.0269	0.000231	0.000048
Chromium (Cr)	mg/L	-	0.001	0.051		0.0668	0.125	0.0016	0.0137	0.0044	0.0005	0.0006	< 0.0003	0.0008	0.0003
Copper (Cu)	mg/L	0.3	0.002-0.004[b)]	≤1.0		0.0375	0.0512	0.0006	0.0008	0.0028	0.0005	0.0014	0.0013	0.0016	0.0012
Iron (Fe)	mg/L	-	0.3	<0.3		13.1	31.3	0.33	3.17	1.49	0.02	< 0.01	0.23	0.29	< 0.01
Lead (Pb)	mg/L	0.2	0.001-0.007[b)]	0.01		0.00205	0.00114	0.00043	0.00077	0.00055	0.00045	0.00059	< 0.00002	0.00024	< 0.00002
Lithium (Li)	mg/L	-	-	-		< 0.002	< 0.002	0.0028	0.0027	0.0253	0.0118	0.0048	0.003	< 0.002	< 0.002
Magnesium (Mg)	mg/L	-	-	-		6.34	16.9	16.3	11.7	6.29	40.7	31.1	80.4	6.46	14.9
Manganese (Mn)	mg/L	-	-	≤0.05		0.161	0.34	0.00972	0.0555	0.0160	0.158	0.0137	10.4	0.0532	0.0103
Molybdenum (Mo)	mg/L	-	0.073	-		0.00034	0.00019	0.0305	0.0339	0.0435	---	0.105	0.0001	0.00093	0.01927
Nickel (Ni)	mg/L	0.5	0.025-0.15[b)]	-		0.0428	0.0937	< 0.0007	0.0034	0.0038	12.2	< 0.0007	0.0267	< 0.0007	0.0007
Potassium (K)	mg/L	-	-	-		8.07	15.4	2.73	1.58	12.7	4.79	9.51	49.9	9.03	19.6
Selenium (Se)	mg/L	-	0.001	-		< 0.001	< 0.001	0.006	0.001	0.002	0.002	0.008	0.005	0.003	0.003
Sodium (Na)	mg/L	-	-	-		10.6	10.8	14.6	14.5	17.9	0.0325	22.7	2.33	14.5	7.6
Strontium (Sr)	mg/L	-		-		0.0294	0.0341	0.0312	0.0400	0.0447	0.162	0.218	0.0049	0.02	0.0234
Thallium (Tl)	mg/L	-		-		0.0001	0.0003	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tin (Sn)	mg/L	-		-		< 0.0003	0.0004	0.0005	0.0007	0.0009	0.0004	0.0008	< 0.0003	< 0.0003	< 0.0003
Titanium (Ti)	mg/L	-		-		0.652	1.71	0.0027	0.0176	0.0229	0.0009	0.0007	0.0049	0.013	0.0015
Uranium (U)	mg/L	-		-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00003	< 0.00002	0.00016	0.00003	0.0002	0.00113
Vanadium (V)	mg/L	-		-		0.0963	0.198	0.00036	0.00227	0.00521	0.00018	0.00057	0.00056	0.00081	0.00079
Zinc (Zn)	mg/L	0.5	0.03	≤5.0		0.232	0.265	0.111	0.139	0.137	0.0539	0.0457	0.0023	0.0106	0.0023

Table 6.B. Modified Synthetic Precipitation Leaching Procedure Results of Rock Samples (continued) (Knight Piésold, 2008a)

Sample ID	Unit	MMER	CWQG (PAL)	CDWQ	NWB	Footwall					
						Gneiss	Gneiss	Gneiss	Gneiss	Amphibolite	Volcanic tuff / Schist
						UCS23	**UCS24**	**UCS49**	**UCS51**	**UCS9**	**UCS27**
Sample	weight(g)					300	300	300	300	300	300
Volume mL	D.I. H2O					900	900	900	900	900	900
InitialpH	units					9	9.2	9	8.9	7.2	9.6
Final pH	units	6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	9.21	**9.58**	**9.51**	9.31	8.47	8.95
Mercury (Hg)	mg/L	-	0.026	0.001							
Aluminum (Al)	mg/L	-	0.005-0.1[a)]	-		0.75	0.47	1.91	0.89	0.41	0.14
Antimony (Sb)	mg/L	-		0.006		0.0003	0.0005	0.0003	0.0002	< 0.0002	0.0003
Arsenic (As)	mg/L	0.5	0.005	0.005		< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Barium (Ba)	mg/L	-	-	1		0.312	0.0162	0.422	0.336	0.00055	0.00967
Beryllium (Be)	mg/L	-	-	-		< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Bismuth (Bi)	mg/L	-	-	-		< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Calcium (Ca)	mg/L	-	-	-		2.73	23.3	0.73	1.88	1.75	3.29
Cadmium (Cd)	mg/L	-	0.000017	0.005		< 0.00006	0.00076	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Cobalt (Co)	mg/L	-	-	-		0.000158	0.000031	0.000689	0.000225	0.000049	< 0.000007
Chromium (Cr)	mg/L	-	0.001	0.051		0.0008	0.0004	0.0018	0.001	< 0.0003	< 0.0003
Copper (Cu)	mg/L	0.3	0.002-0.004[b)]	≤1.0		0.0014	0.0012	0.0015	0.0013	0.001	0.0005
Iron (Fe)	mg/L	-	0.3	<0.3		0.83	< 0.01	2.22	0.51	0.07	< 0.01
Lead (Pb)	mg/L	0.2	0.001-0.007[b)]	0.01		0.00034	0.00081	0.00136	0.00153	< 0.00002	0.00043
Lithium (Li)	mg/L	-	-	-		< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium (Mg)	mg/L	-	-	-		2.04	7.17	0.776	0.706	7.08	1.07
Manganese (Mn)	mg/L	-	-	≤0.05		0.0076	0.0055	0.0237	0.0101	0.0395	0.00033
Molybdenum (Mo)	mg/L	-	0.073	-		0.00074	0.00057	0.00585	0.00497	0.00293	0.00012
Nickel (Ni)	mg/L	0.5	0.025-0.15[b)]	-		< 0.0007	0.0012	0.001	0.0008	< 0.0007	< 0.0007
Potassium (K)	mg/L	-	-	-		13.9	14.9	5.89	6.77	0.9	6.9
Selenium (Se)	mg/L	-	0.001	-		< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001
Sodium (Na)	mg/L	-	-	-		13.2	2.1	16.3	15.7	0.39	1.62
Strontium (Sr)	mg/L	-		-		0.018	0.0336	0.0127	0.0177	0.0061	0.0235
Thallium (Tl)	mg/L	-		-		< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Tin (Sn)	mg/L	-		-		0.0004	0.0003	< 0.0003	0.0005	< 0.0003	< 0.0003
Titanium (Ti)	mg/L	-		-		0.0422	0.0012	0.0921	0.0122	0.0003	< 0.0002
Uranium (U)	mg/L	-		-		0.0005	0.00526	0.00041	0.00031	< 0.00002	< 0.00002
Vanadium (V)	mg/L	-		-		0.00187	0.00047	0.00456	0.0033	0.00067	0.00167
Zinc (Zn)	mg/L	0.5	0.03	≤5.0		0.0105	0.0004	0.0202	0.0088	0.0013	0.0007

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
CDWQ = Health Canada - Canadian Drinking Water Quality Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purpose only (see text)
NWB = Nunavut Water Board Wastewater Criterion
a) varies with pH
b) varies with hardness
c) aesthetic objective

Table 7. Summary of Mineralogy of Rock Samples

Mineral/Compound		Ideal Formula	Footwall				Hanging wall		
			Gneiss	Psammite	Schist	Volcanic Tuff	Amphibolite	Volcanic Tuff	Schist
			5164 (wt %)	5145 (wt %)	5181 (wt %)	MR ARD 10-077 (wt %)	MR ARD 10-091 (wt %)	MR ARD 10-083 (wt %)	MR ARD 10-036 (wt %)
Calcite		$CaCO_3$	--	--	--	--	--	0.4	--
Quartz		SiO_2	39.7	28.5	3.6	38.5	3.8	15.1	43.9
Orthoclase	Feldspars	$KAlSi_3O_8$	7.9	8.4	2.8	--	--	5.5	--
Microcline	Feldspars	$KAlSi_3O_8$	3.3	2.8	--	--	--	0.8	--
Albite	Feldspars	$NaAlSi_3O_5$	7.2	3.5	2.8	--	--	12.3	--
Anorthite	Feldspars	$CaAl_2Si_20_8$	17.7	24.5	--	--	--	9.4	--
Enstatite (orthopyroxene)		$(Mg, Fe)_2Si_2O_6$	1.1	0.8	--	--	--	--	--
Diopside (clinopyroxene)		$CaMgSi_2O_5$	5.1	5.8	5.0	--	--	14.7	--
Actinolite (amphibole)		$Ca_2(Mg,Fe^{2+})_5Si_8O_{22}(OH)_2$	1.1	1.3	--	--	--	17.0	--
Muscovite	Phyllosilicates	$KAl_3(AlSi_3O_{10})(OH)_2$	1.2	0.3	22.9	5.3	--	--	--
Biotite	Phyllosilicates	$K(Mg,Fe^{2+})_3AlSi_3O_{10}(OH)_2$	0.6	0.6	1.5	0.5	4.5	3.3	--
Phlogopite	Phyllosilicates	$KMg_3(AlSi_3O_{10})(OH)_3$	15.0	23.3	44.1	40.7	--	--	--
Clinochlore	Phyllosilicates	$(Mg, Fe)_5(Si_3Al)0_{10}(0H)_8$	--	--	16.7	7.7	67.7	5.8	44.3
Kaolinite	Phyllosilicates	$Al_2Si_2O_5(OH)_4$	--	--	0.6	--	3.3	--	--
Andalusite		$Al_2(SiO_4)O$	--	--	--	7.4	--	--	--
Epidote		$Ca_2Al_2Fe(SiO_4)(Si_2O_7)(O,OH)_2$	--	--	--	--	--	15.5	--
Spinel		$MgAl_2O_4$	--	--	--	--	--	--	3.1
Magnetite		Fe_3O_4	0.1	0.1	--	--	3.6	0.2	4.3
Hematite		Fe_2O_3	--	--	--	--	17.2	--	3.9
Chromite		$FeCr_2O_4$	--	--	--	--	--	--	0.5
TOTAL			100	100	100	100	100	100	100

Table 8. Ore Stockpile Drainage Data

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	822547	827287	827280	830899	830888	827288	827281	830900	830889	Ore Stock Pile Water Quality Data All Sampling Locations (Appendix D*)	
						2010-08-17	2010-09-07	2010-09-07	2010-09-19	2010-09-19	2010-09-07	2010-09-07	2010-09-19	2010-09-19		
						MRY-11-LS-Lump Ore	MRY-11-LS-Lump Ore	MRY-11-LS-Lump Ore	MRY-11-LS-Lump Ore	MRY-11-LS-Lump Ore	MRY-11-LS-Fine Ore	MRY-11-LS-Fine Ore	MRY-11-LS-Fine Ore	MRY-11-LS-Fine Ore		
						Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Max**	Min
Chloride	mg/L		230	<250		14		14				20		15	272	1
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]			3.42						0.78			3.42	0.24
N-NO3 (Nitrate)	mg/L		13	10		4.97		5				12.1		14.5	15.2	2.13
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	**5.76**		**5.93**				6.68		6.48	8.15	**5.76**
Sulphate	mg/L			<500[c]		500		490				999		799	999	5
Total Suspended Solids	mg/L	15	5		120	11		3				<2		<2	15	3
Hardness as CaCO3 (Dissolved)	mg/L					536	223	534	153	532	308	942	695	698	942	12
Aluminum	mg/L	-	0.005-0.1[a]	-		16.3	0.0063	0.127	<0.015	<0.015	<0.02	<0.02	<0.15	<0.06	16.3	0.0030
Antimony	mg/L	-		0.006		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.005	<0.002	0.00017	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		0.00236	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.005	<0.002	0.00236	<0.0001
Barium	mg/L	-	-	1		0.0497	0.0236	0.0236	0.0215	0.0251	0.0191	0.0213	0.0104	0.0115	0.0556	0.0011
Cadmium	mg/L	-	0.000017	0.005		0.000331	0.000214	0.000203	0.000213	0.000198	<0.0002	<0.0002	<0.0005	0.00057	0.001	0.000011
Chromium	mg/L	-	0.001	0.051		0.0345	<0.0025	<0.0025	<0.0025	<0.0025	<0.01	<0.01	<0.025	<0.01	0.0345	0.00050
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0		0.0613	0.00124	0.00183	<0.0025	<0.0025	<0.002	<0.002	<0.025	<0.01	0.0613	0.00026
Iron	mg/L	-	0.3	<0.3		122	<0.03	0.825	<0.03	0.031	<0.03	0.041	<0.03	0.082	122	0.0003
Lead	mg/L	0.2	0.001-0.007[b]	0.01		0.0125	<0.0003	<0.0003	<0.0003	0.001	<0.001	<0.001	<0.003	<0.001	0.0125	0.0001
Manganese	mg/L	-	-	≤0.05		15.2	18.1	18.4	17.8	21.5	59.7	65.5	104	112	112	0.0007
Molybdenum	mg/L	-	0.073	-		0.00082	<0.00025	<0.00025	0.00034	<0.00025	<0.001	<0.001	<0.0025	0.0012	0.00551	0.00019
Nickel	mg/L	0.5	0.025-0.15[b]	-		0.185	0.0961	0.0977	0.0923	0.107	0.028	0.035	0.101	0.113	0.185	0.0011
Selenium	mg/L	-	0.001	-		<0.005	<0.005	<0.005	<0.005	0.0051	<0.02	<0.02	<0.05	<0.02	0.005	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		0.046	<0.005	<0.005	<0.015	<0.015	<0.02	<0.02	<0.15	<0.06	0.046	0.0019

Note:

Bold value is outside of MMER limits

* See Tables D1 to D3. Concentrations from limited pit seep sampling (Table D4) has copper in excess of MMER limit and elevated Se, but relevance of this seepage to ore stock pile drainage is yet to be determined.

** Max of all data from lysimeters and other stockpile sampling locations (Tables D1 to D3). Underlined values are from lysimeter data.

MMER = Metal Mining Effluent Regulation

CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life

CDWQ = Health Canada - Canadian Drinking Water Guideline

CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).

NWB = Nunavut Water Board Wastewater Criteria

a) varies with pH

b) varies with hardness

c) aesthetic objective

d) varies with pH and temperature

Table 9. Waste Rock Drainage Data
(Knight Piésold, 2008a)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	Field Cell No.1 Footwall		Field Cell No.2 Hanging wall	
						Total	Dissolved	Total	Dissolved
Alkalinity as CaCO3	mg/L								
Chemical Oxygen Demand	mg/L								
Chloride	mg/L		230	<250				230	
Conductivity	uS/cm								
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]						
N-NO3 (Nitrate)	mg/L		13	10					
NO2 + NO3 as N	mg/L								
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5			7.03	
Sulphate	mg/L			<500[c]				78	
Total Dissolved Solids (COND - CAL	mg/L								
Total Kjeldahl Nitrogen	mg/L								
Total Phosphorus	mg/L					0.03	0.02	0.01	0.01
Total Suspended Solids	mg/L	15	5		120				
Turbidity	NTU								
CO3 as CaCO3	mg/L								
Hardness as CaCO3 (Dissolved)	mg/L					291	278	375	361
HCO3 as CaCO3	mg/L								
Calcium	mg/L								
Magnesium	mg/L					34.1	32.0	46.3	44.1
Potassium	mg/L					6.8	6.13	5.44	5.28
Sodium	mg/L					16.7	15.8	27.60	26.30
Aluminum	mg/L	-	0.005-0.1[a]	-		0.14	<0.01	0.16	<0.01
Antimony	mg/L	-		0.006		0.0004	0.0005	0.0014	0.0015
Arsenic	mg/L	0.5	0.005	0.005		0.0008	0.0008	0.0189	0.0188
Barium	mg/L	-	-	1		0.0274	0.0256	0.0121	0.0119
Beryllium	mg/L	-	-	-		<0.00004	<0.00004	<0.00004	<0.00004
Bismuth	mg/L	-	-	-		<0.00002	<0.00002	<0.00002	<0.00002
Boron	mg/L					0.053	0.052	0.097	0.094
Cadmium	mg/L	-	0.000017	0.005		0.00010	0.00009	<0.00006	<0.00006
Chromium	mg/L	-	0.001	0.051		0.0014	0.0028	0.0011	0.0009
Cobalt	mg/L	-	-	-		0.00171	0.00153	0.000602	0.000348
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0		0.0104	0.0088	0.0062	0.0054
Iron	mg/L	-	0.3	<0.3		0.23	<0.01	0.24	<0.01
Lead	mg/L	0.2	0.001-0.007[b]	0.01		0.0005	0.00008	0.00035	<0.00002
Lithium	mg/L	-	-	-		<0.002	<0.002	<0.002	<0.002
Manganese	mg/L	-	-	≤0.05		0.343	0.319	0.173	0.162
Mercury	mg/L	-	0.026	0.001		<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/L	-	0.073	-		0.00224	0.00274	0.0153	0.0109
Nickel	mg/L	0.5	0.025-0.15[b]	-		0.0278	0.0264	0.0044	0.0048
Selenium	mg/L	-	0.001	-		<0.001	<0.001	0.003	0.003
Silicon	mg/L					1.64	1.35	1.72	1.51
Silver	mg/L					<0.00003	<0.00003	0.00004	<0.00003
Strontium	mg/L	-		-					
Thallium	mg/L	-		-		0.130	0.126	0.256	0.251
Tin	mg/L	-		-		<0.0003	<0.0003	<0.0003	<0.0003
Titanium	mg/L	-		-		0.0043	0.0003	0.0036	<0.0002
Uranium	mg/L	-		-		0.0009	0	0.000090	<0.00002
Vanadium	mg/L	-		-		0.00063	0.00229	0.00194	0.00124
Zinc	mg/L	0.5	0.03	≤5.0		0.0188	0.0227	0.0064	0.0043

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
CDWQ = Health Canada - Canadian Drinking Water Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).
NWB = Nunavut Water Board Wastewater Criteria
a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

FIGURES

7,913,500 N
7,914,000 N
7,914,500 N
7,915,000 N
7,915,500 N
563,000 E
563,500 E
564,000 E

LEGEND

BOREHOLES

- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010

BOREHOLES SAMPLED BY KP

BOREHOLES SAMPLED BY AMEC

HIGH GRADE IRON FORMATION

BANDED IRON FORMATION

SCHIST

GNEISS

PROPOSED PIT LIMIT ON SURFACE

ROAD

ARD-2A-NW
ARD-2A-SE
ARD-2B-NW
MR1-07-118
MR1-07-112
MR1-07-138
MR1-07-128
MR1-07-126
MR1-07-110
MR1-05-63
MR1-06-84
MR1-06-90
MR1-06-110
MR1-06-107
MR1-06-104
MR1-06-87
MR1-06-98
MR1-07-129
MR1-05-60
MR1-06-93
MR1-06-96
MR1-09-179
MR1-09-178
MR1-07-123
MR1-07-127
MR1-07-117
MR1-05-66
MR1-05-69
MR1-07-124
MR1-07-121
MR1-08-145
MR1-05-52
MR1-05-71
MR1-05-70
MR1-05-177
MR1-06-109
MR1-07-119
MR1-05-57
MR1-08-140
MR1-08-164
MR1-04-45
MR1-05-50
MR1-05-46
MR1-06-83
MR1-07-115
MR1-05-75
MR1-08-160
MR1-04-39
MR1-04-37
MR1-06-103
MR1-05-55
MR1-06-105
MR1-04-34
MR1-08-149
MR1-05-49
MR1-07-111
MR1-07-139
MR1-05-58
MR1-08-154
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MR1-05-47
MR1-05-54
MR1-06-94
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MR1-08-162
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MR1-05-51
MR1-06-86
MR1-06-91
MR1-09-171
MR1-05-48
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MR1-06-101
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MR1-06-89
MR1-09-172
MR1-09-176
MR1-05-59
MR1-08-151
MR1-08-142
MR1-09-170
MR1-05-78
MR1-04-41
MR1-09-167
MR1-08-156
MR1-08-146
MR1-04-38
MR1-04-43
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MR1-08-157
MR1-04-36
MR1-09-173
MR1-08-150
MR1-08-144
MR1-08-155
MR1-04-33
MR1-09-169
MR1-08-152
MR1-08-159
MR1-09-175
MR1-04-31
MR1-09-174
MR1-04-32
MR1-08-158
MR1-04-40

0 100 200 400m
1:7500 SCALE

CLIENT LOGO

CLIENT:
BAFFINLAND IRON MINES CORPORATION

AMEC Earth & Environmental
160 Traders Boulevard East
Mississauga, Ontario, Canada L4Z 3K7

DWN BY: NR
CHK'D BY: JA
DATUM: UTM NAD 83
PROJECTION: ZONE 17
SCALE: AS SHOWN

PROJECT: BAFFINLAND EIS SUPPORT

TITLE: BOREHOLE LOCATIONS SAMPLED FOR ML / ARD ASSESSMENT

DATE: DECEMBER 2010
PROJECT NO: TC101507
REV. NO.: A
FIGURE No. 1

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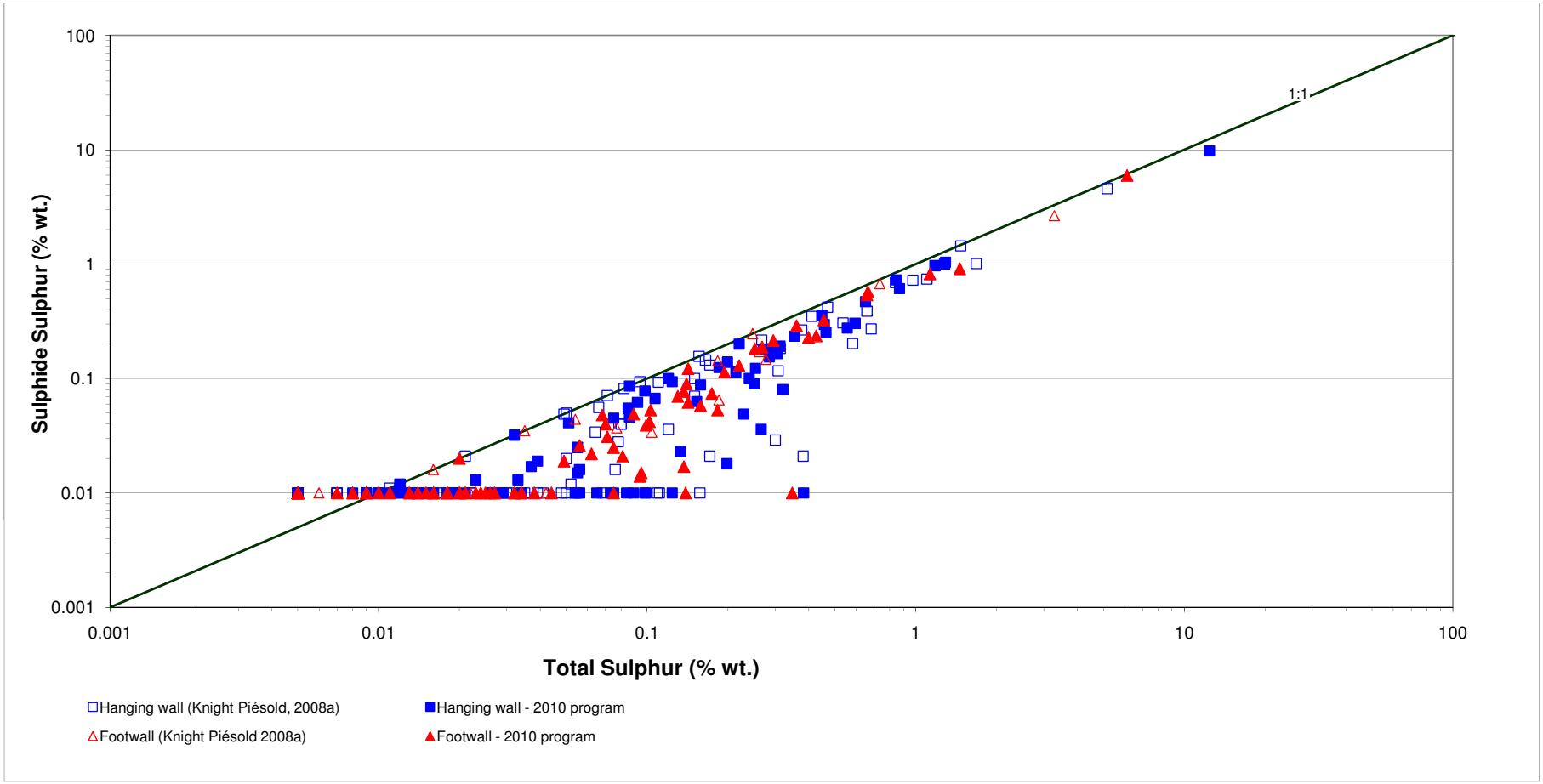

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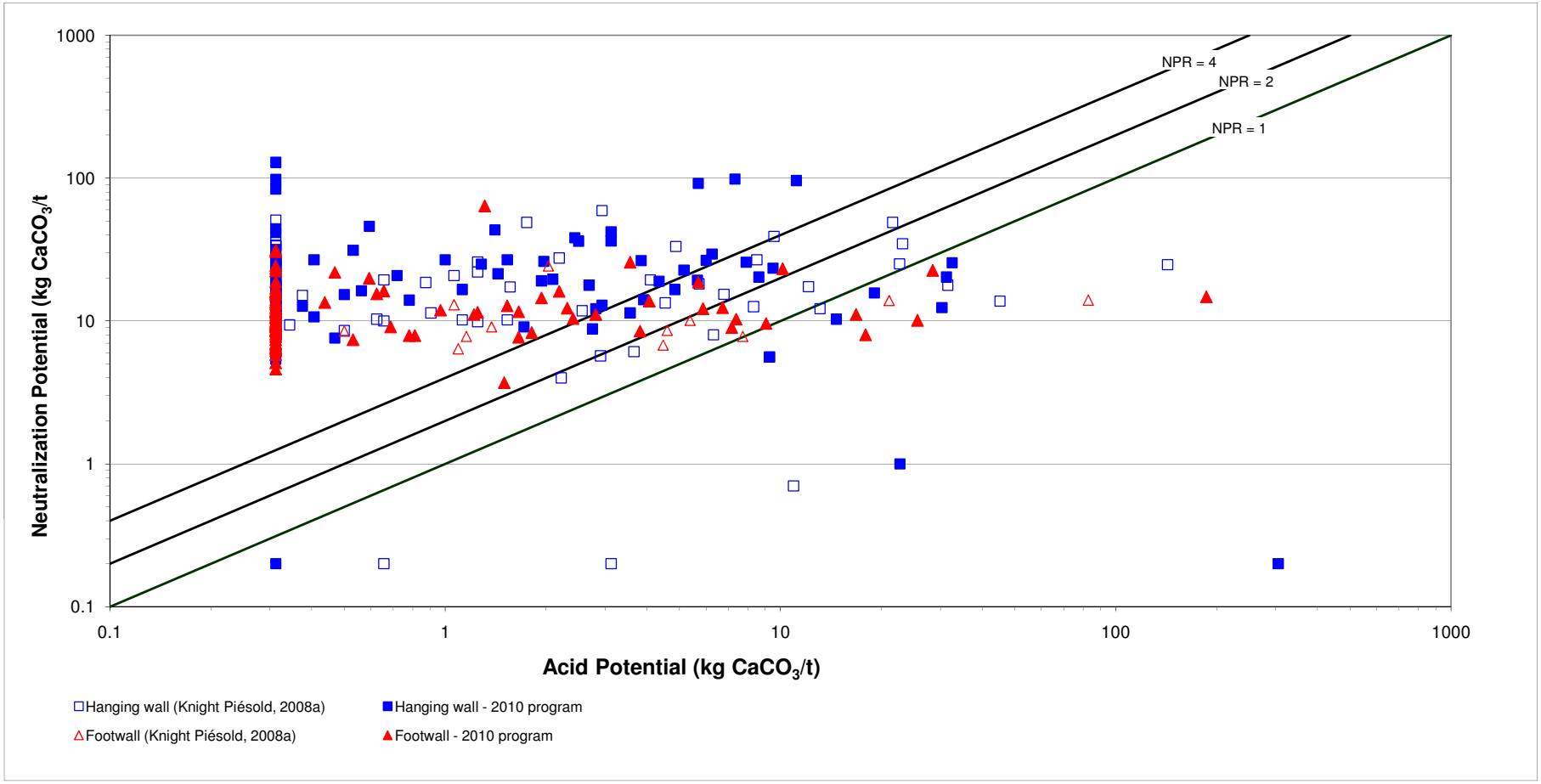
Mary River Project

Waste Rock Samples
Neutralization Potential vs. Acid Potential

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE 2



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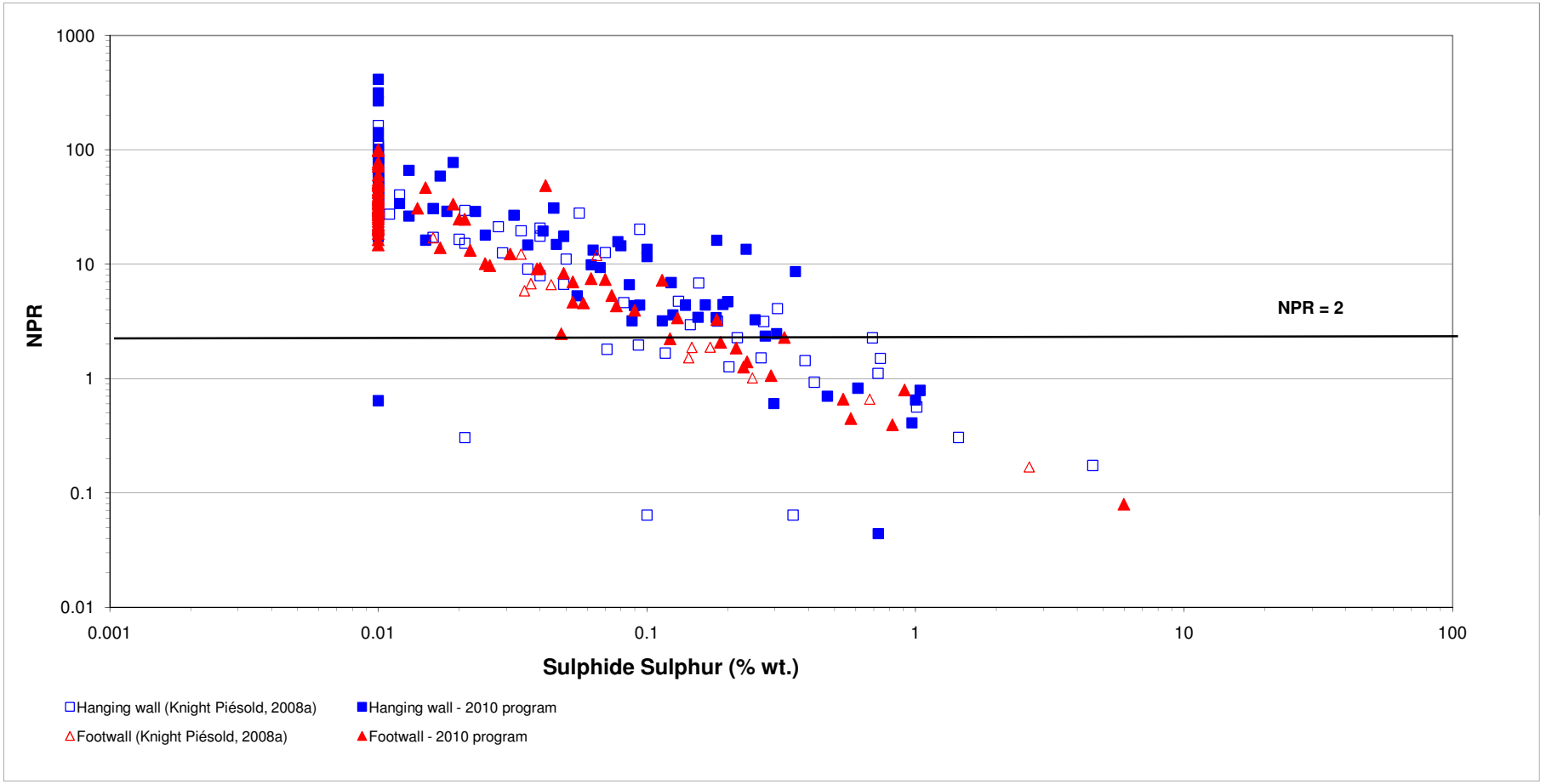
Mary River Project

Waste Rock Samples
Neutralization Potential vs. Acid Potential

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE 3



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Mary River Project

Waste Rock Samples
NPR vs. Sulphide Sulphur

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE 4

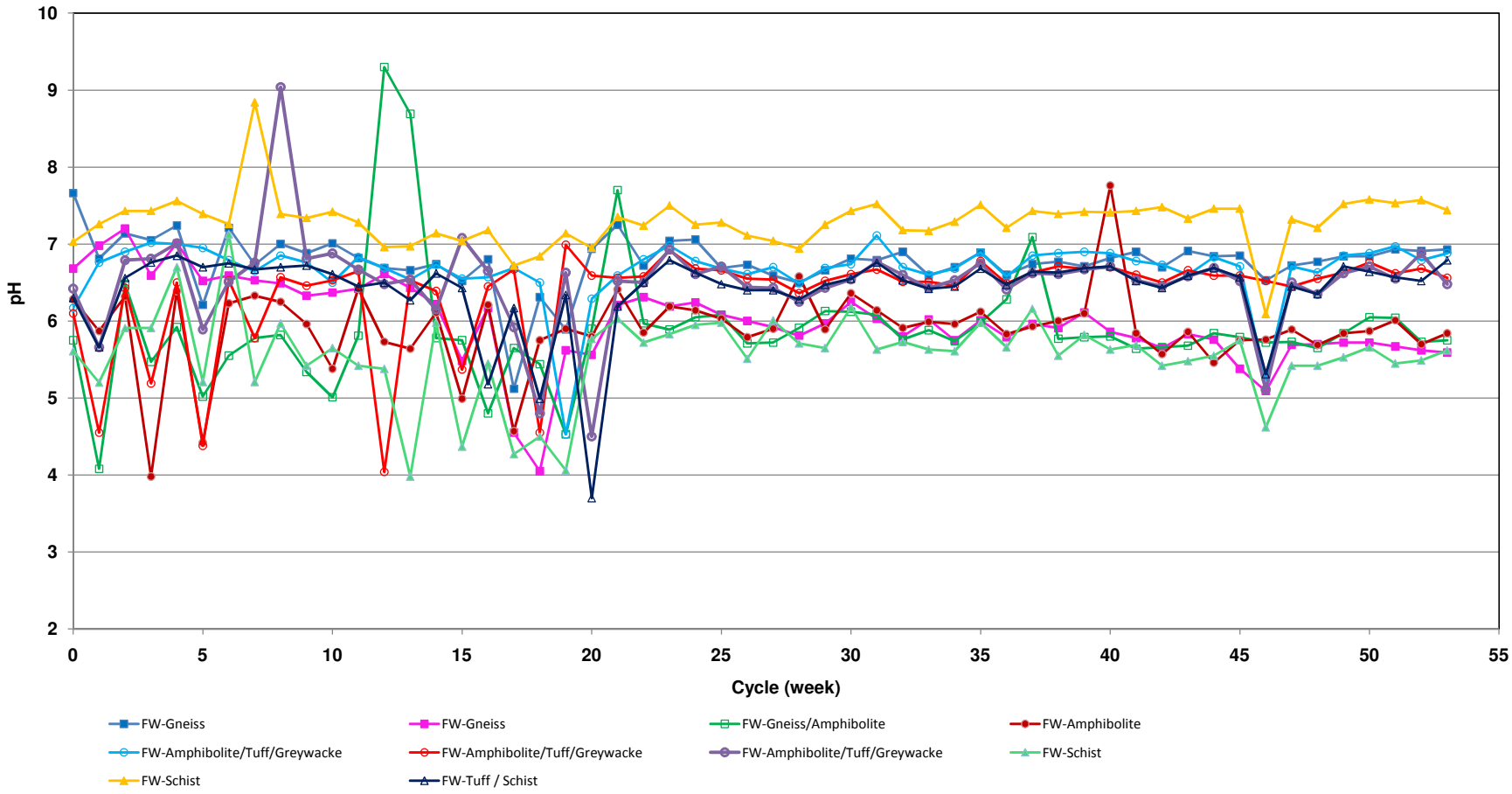
APPENDICES

APPENDIX A

PREVIOUS KINETIC TESTING RESULTS

LIST OF FIGURES

A-1 pH - Waste Rock Humidity Cells
A-2 Sulphate Loads - Waste Rock Humidity Cells
A-3 Calcium Loads - Waste Rock Humidity Cells
A-4 Magnesium Loads - Waste Rock Humidity Cells
A-5 Aluminum Loads - Waste Rock Humidity Cells
A-6 Antimony Loads - Waste Rock Humidity Cells
A-7 Arsenic Loads - Waste Rock Humidity Cells
A-8 Cadmium Loads - Waste Rock Humidity Cells
A-9 Cobalt Loads - Waste Rock Humidity Cells
A-10 Copper Loads - Waste Rock Humidity Cells
A-11 Iron Loads - Waste Rock Humidity Cells
A-12 Lead Loads - Waste Rock Humidity Cells
A-13 Molybdenum Loads - Waste Rock Humidity Cells
A-14 Manganese Loads - Waste Rock Humidity Cells
A-15 Nickel Loads - Waste Rock Humidity Cells
A-16 Selenium Loads - Waste Rock Humidity Cells
A-17 Strontium Loads - Waste Rock Humidity Cells
A-18 Tin Loads - Waste Rock Humidity Cells
A-19 Zinc Loads - Waste Rock Humidity Cells



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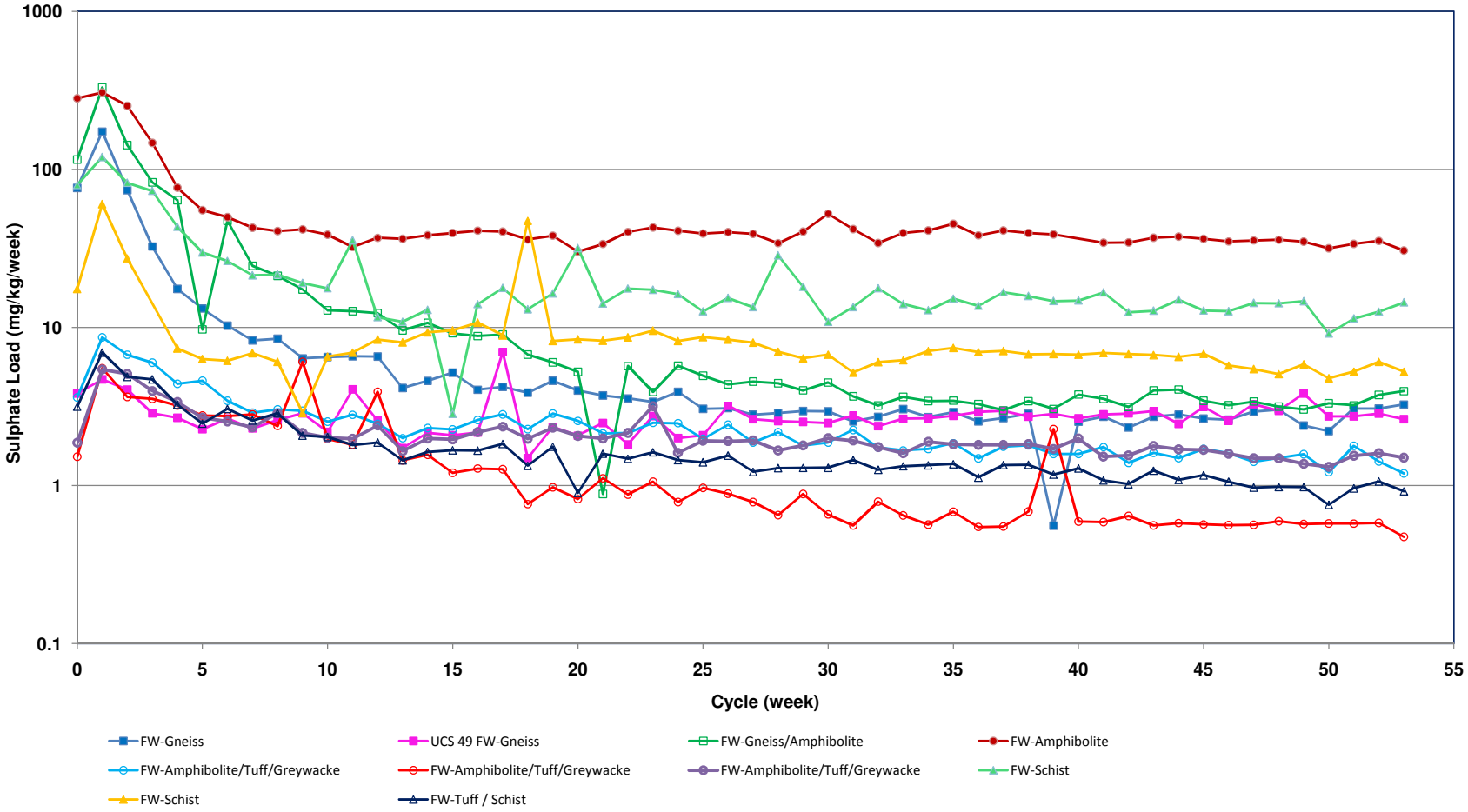
Mary River Project

Humidity Cells - 2008 Testing Program
pH

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-1



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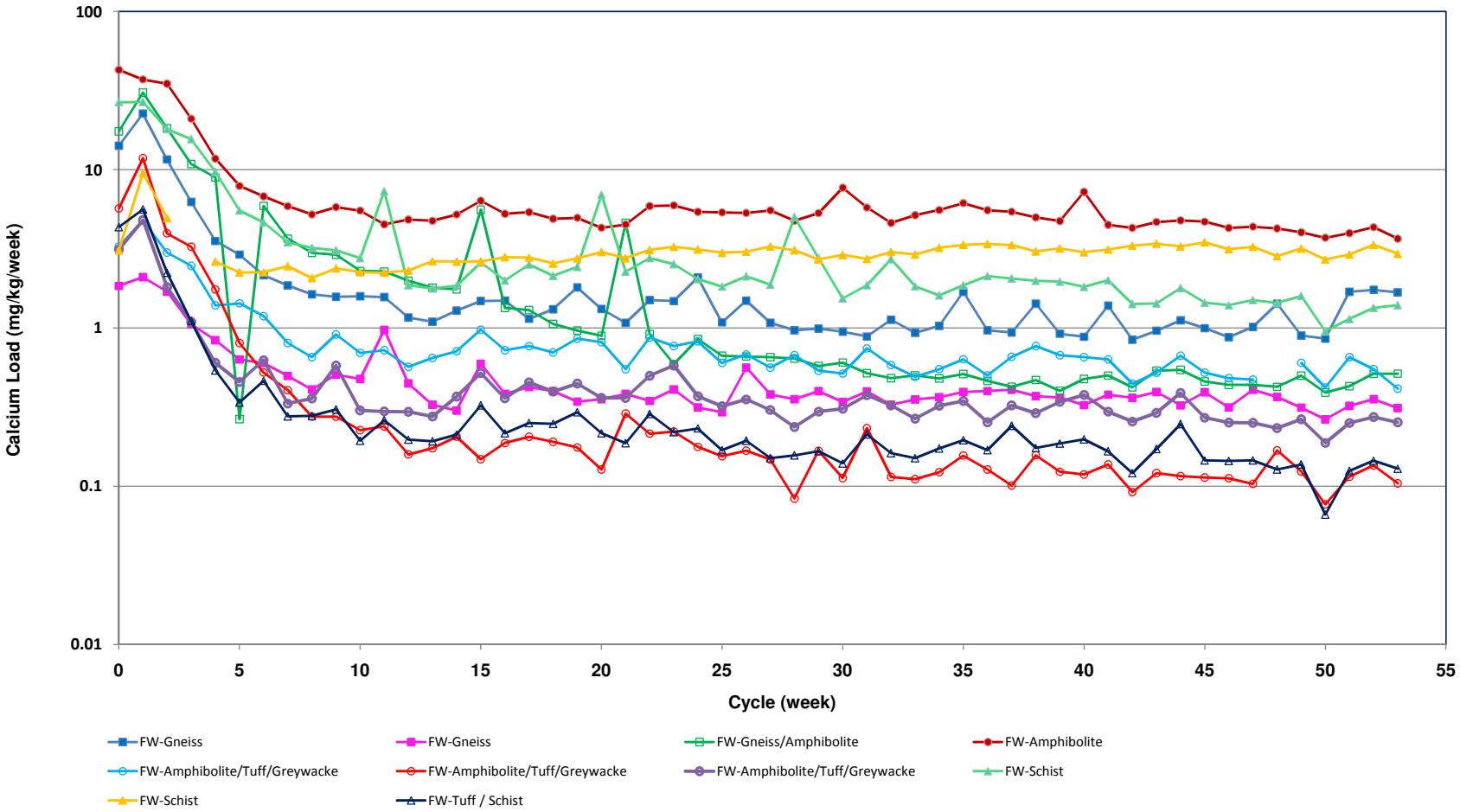
Mary River Project

Humidity Cells - 2008 Testing Program
Sulphate

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-2



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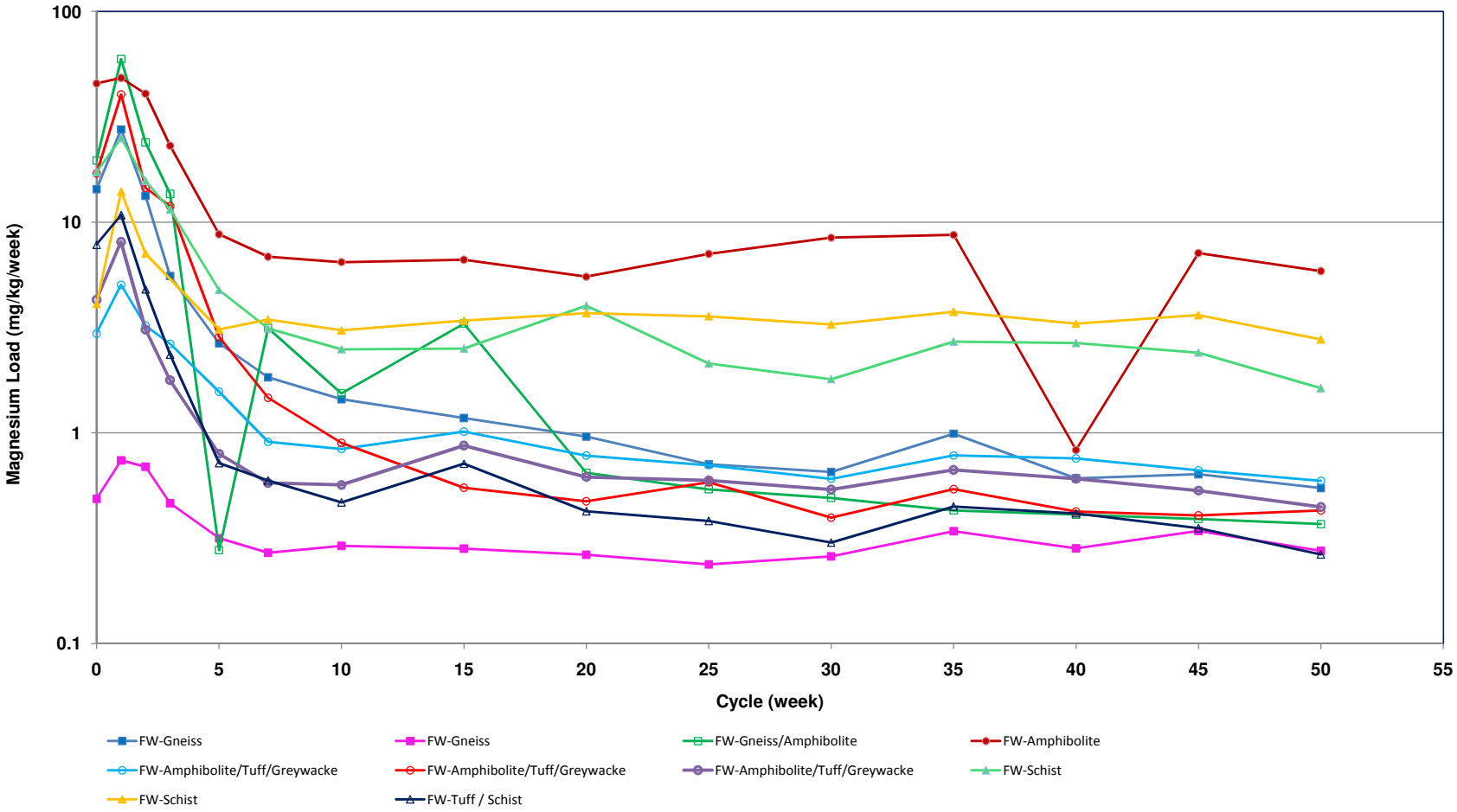
Mary River Project

Humidity Cells - 2008 Testing Program
Calcium

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-3



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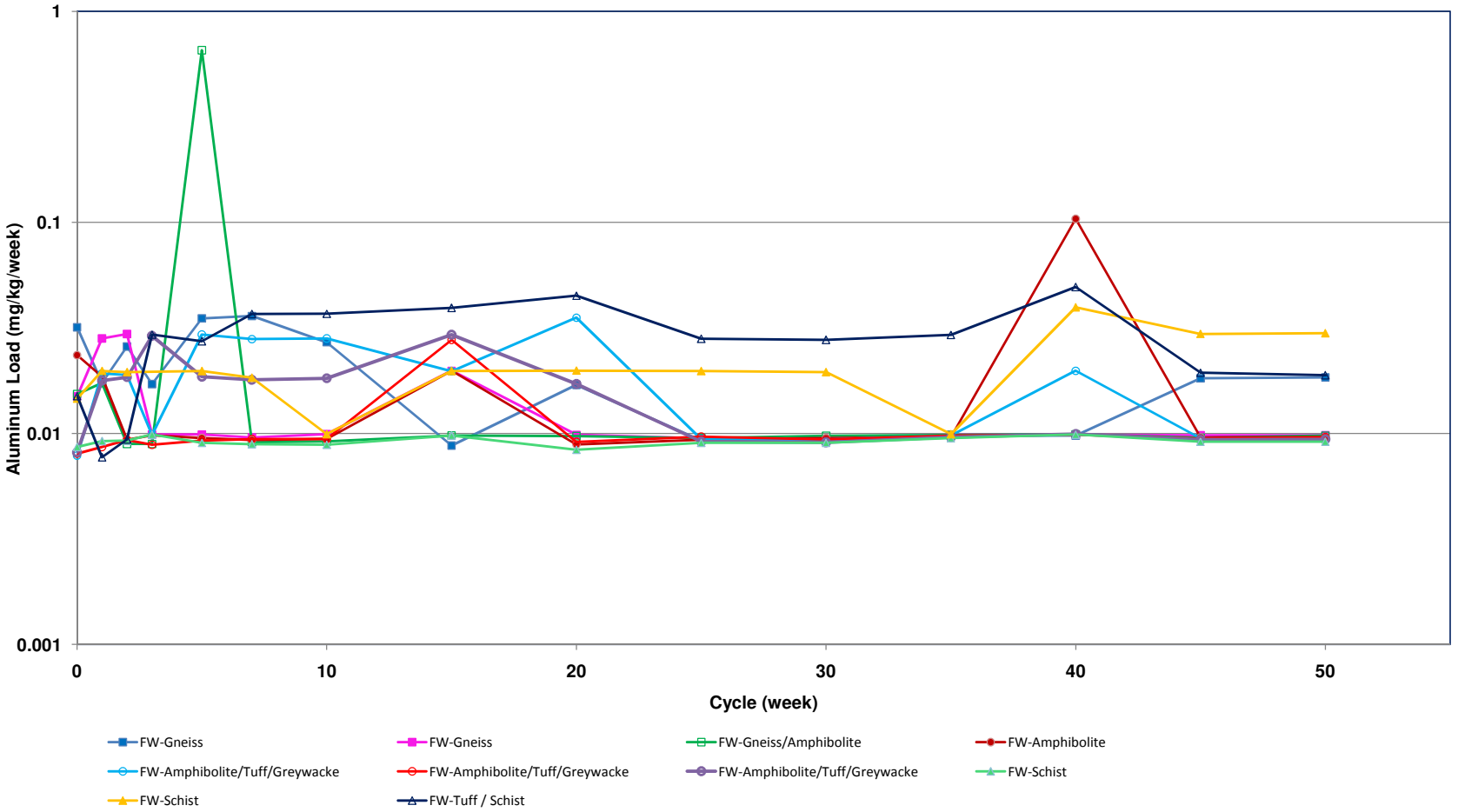
Mary River Project

Humidity Cells - 2008 Testing Program
Magnesium

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-4



Baffinland Iron Mines Corporation

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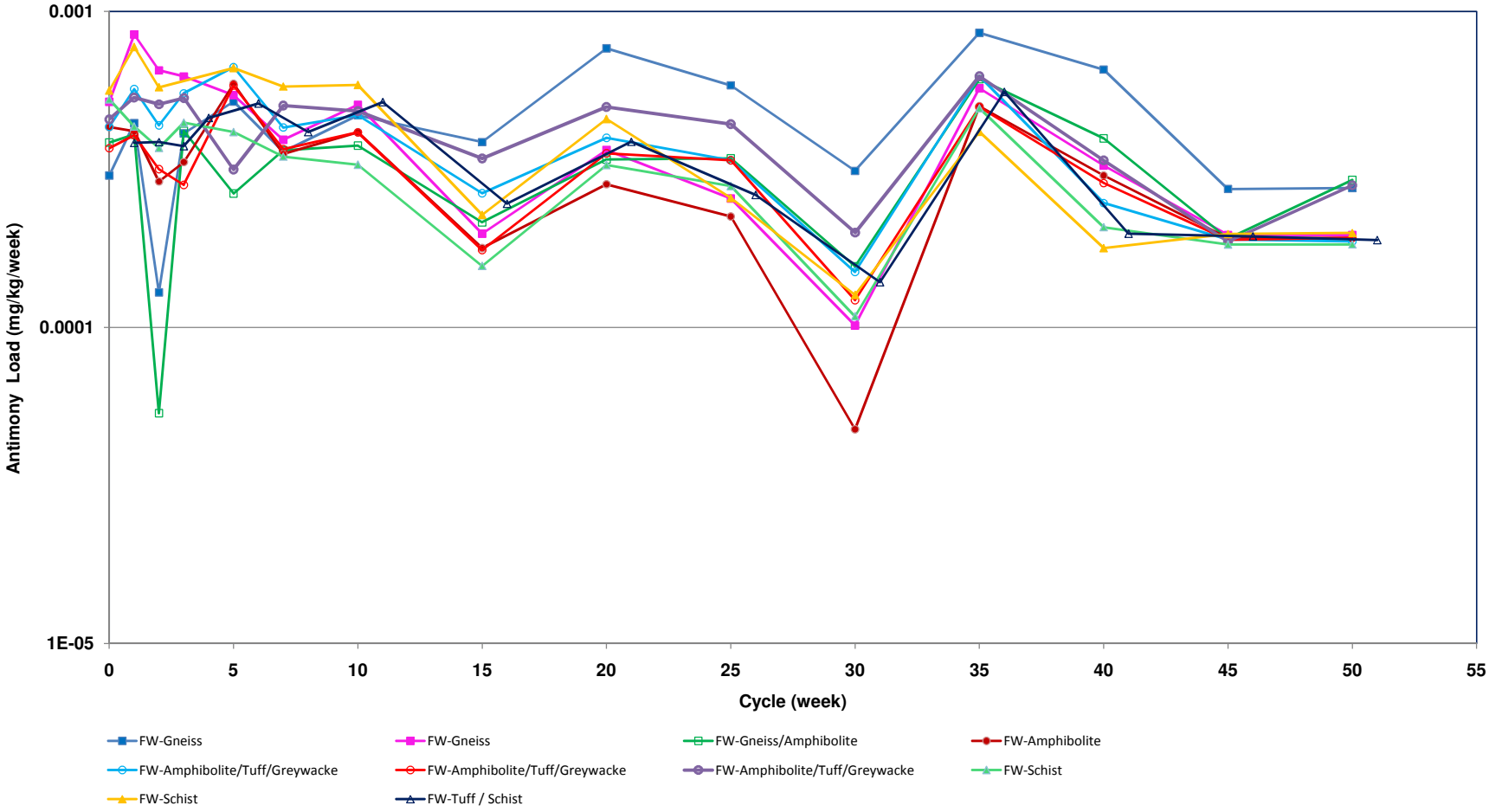
Mary River Project

Humidity Cells - 2008 Testing Program
Aluminum

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-5



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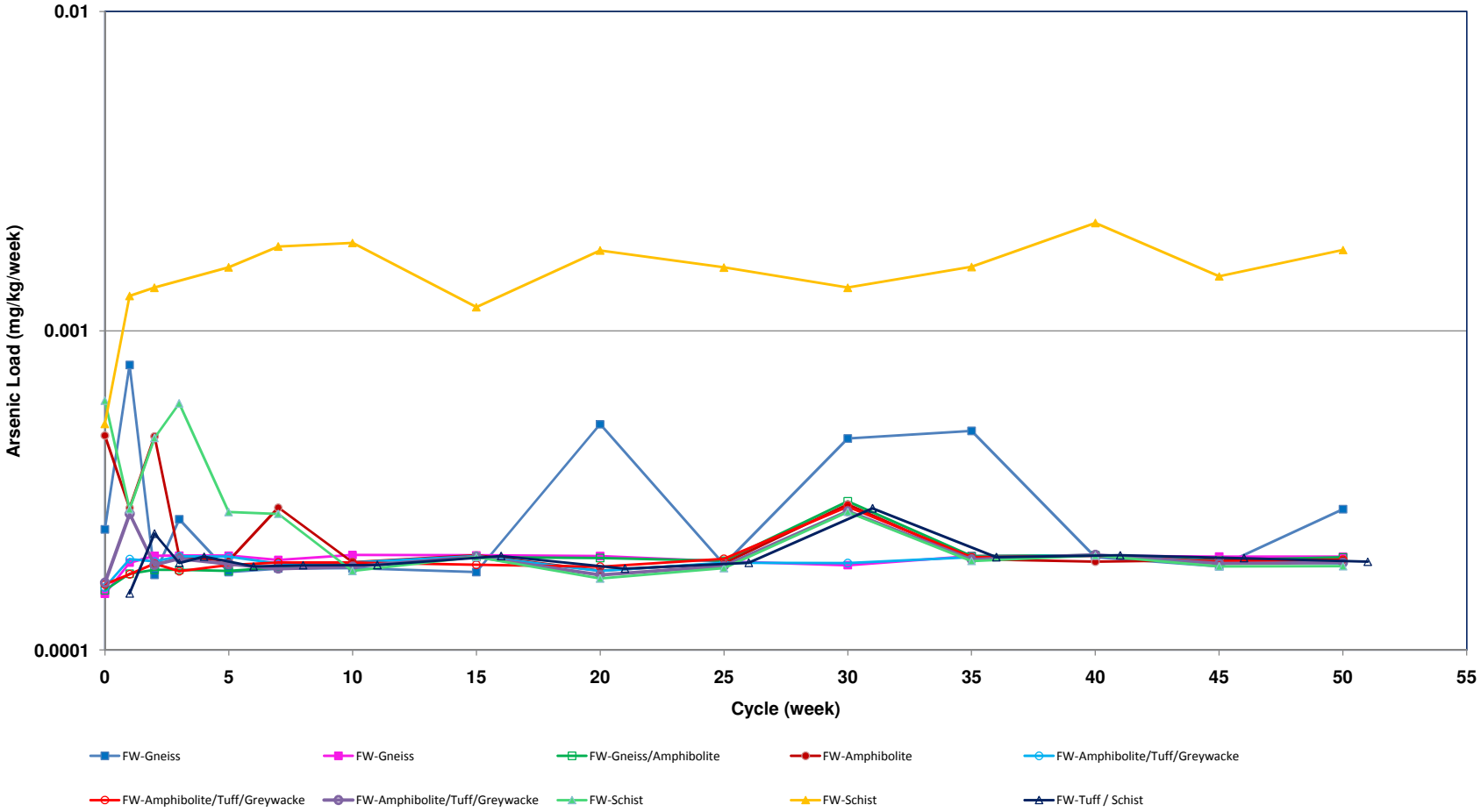
Mary River Project

Humidity Cells - 2008 Testing Program
Antimony

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-6



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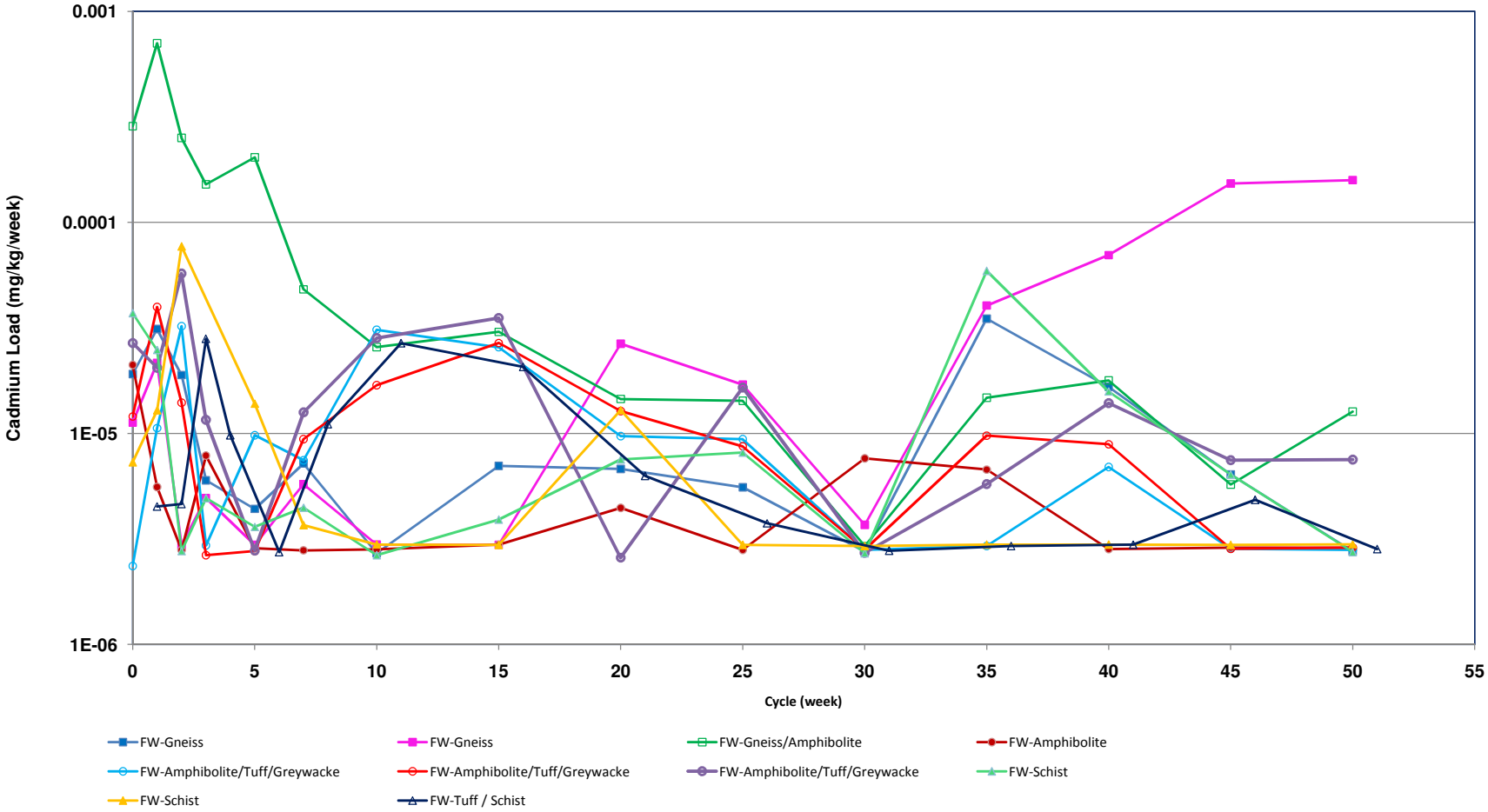
Mary River Project

Humidity Cells - 2008 Testing Program
Arsenic

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-7



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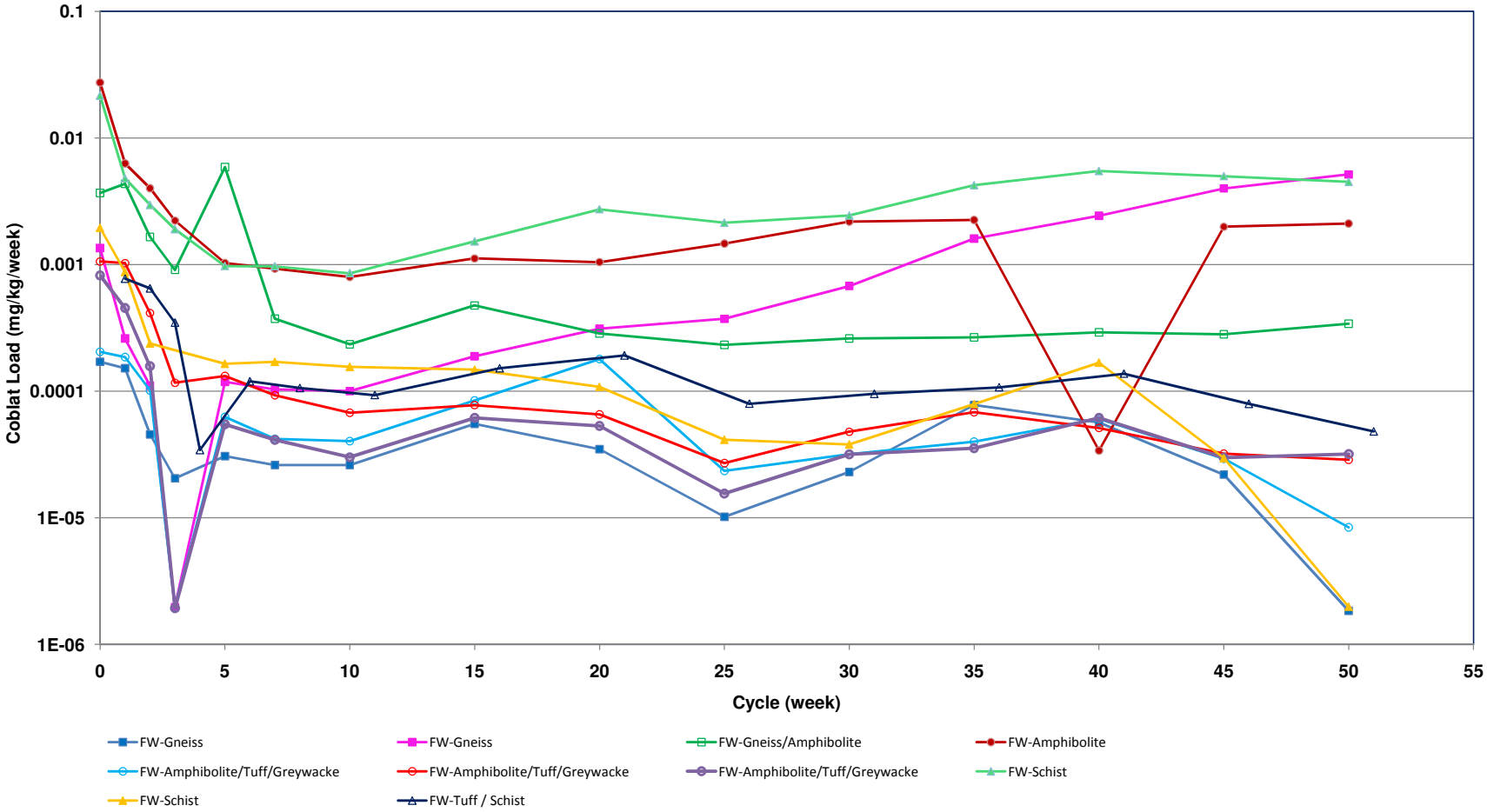
Mary River Project

Humidity Cells - 2008 Testing Program
Cadmium

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-8



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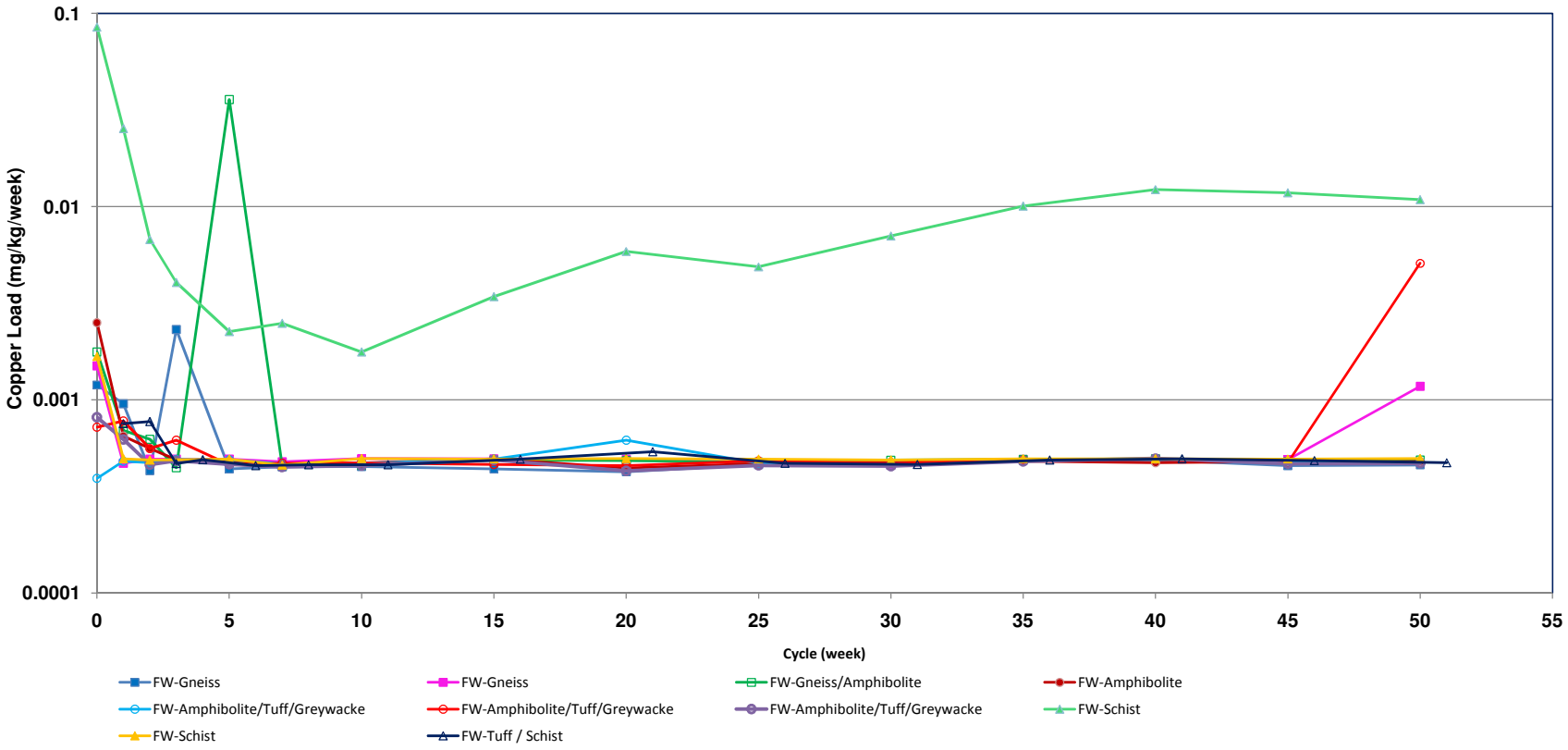
Mary River Project

Humidity Cells - 2008 Testing Program
Cobalt

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-9



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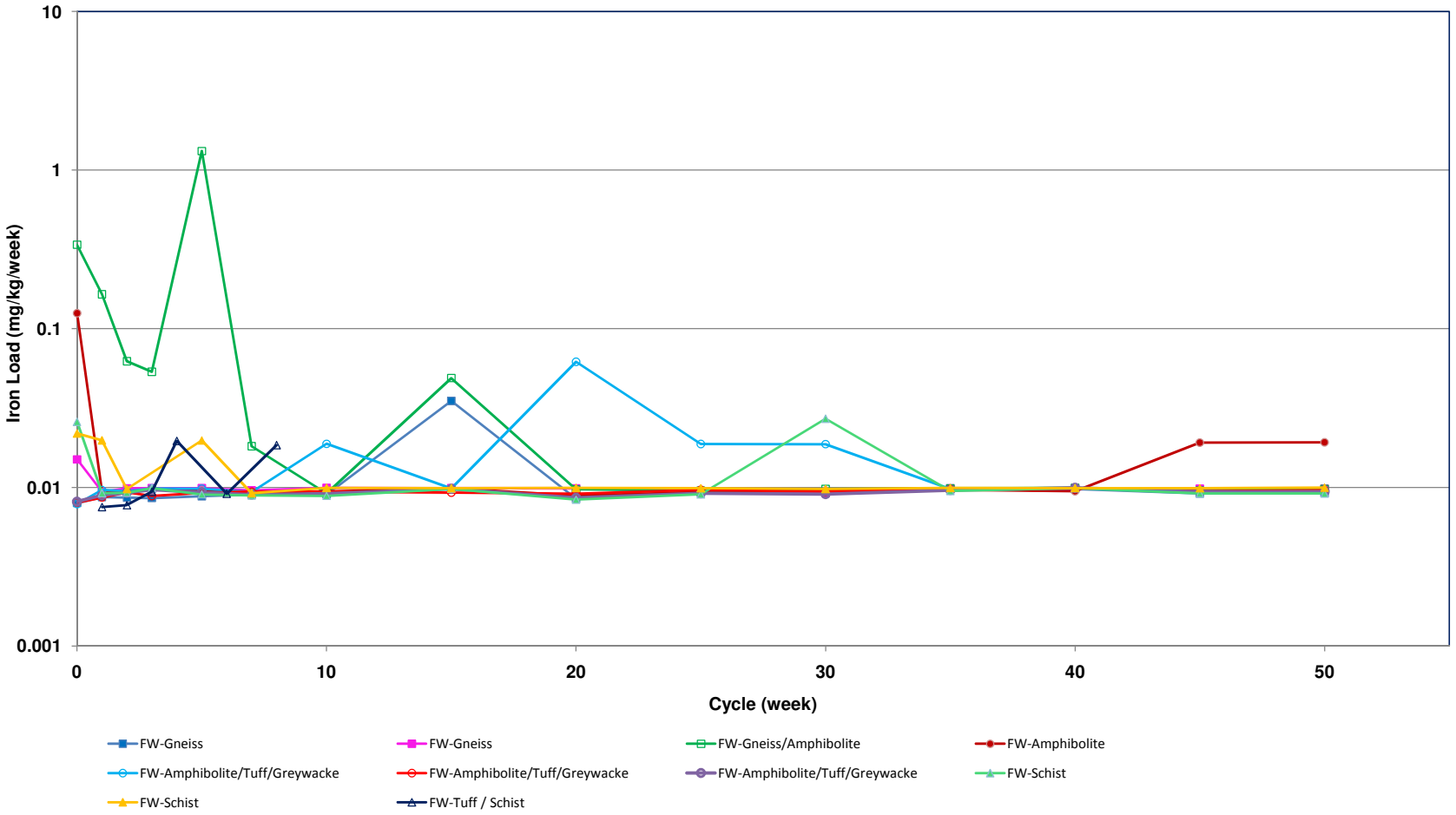
Mary River Project

Humidity Cells - 2008 Testing Program
Copper

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-10



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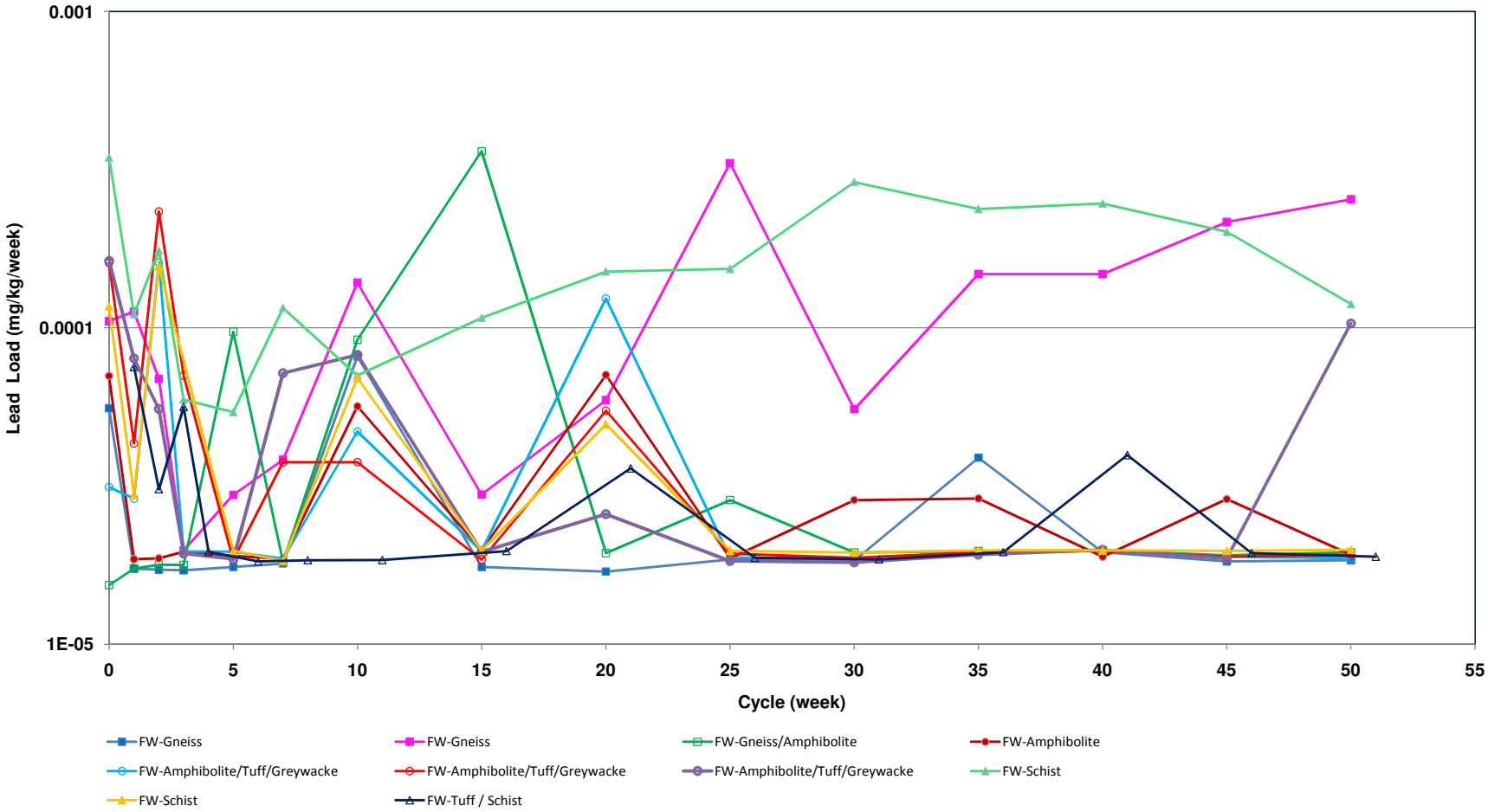
Mary River Project

Humidity Cells - 2008 Testing Program
Iron

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-11



Baffinland Iron Mines Corporation

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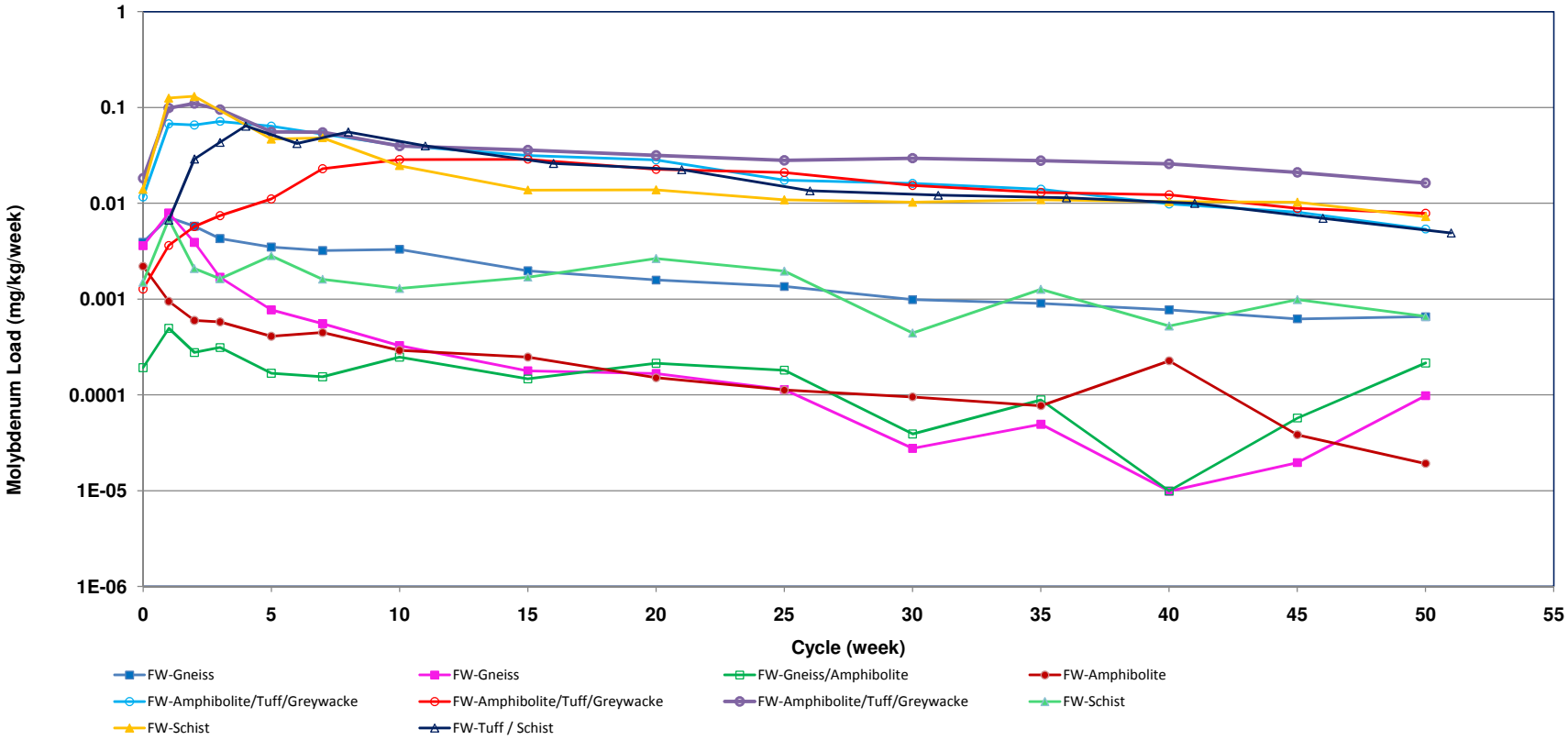
Mary River Project

Humidity Cells - 2008 Testing Program
Lead

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-12



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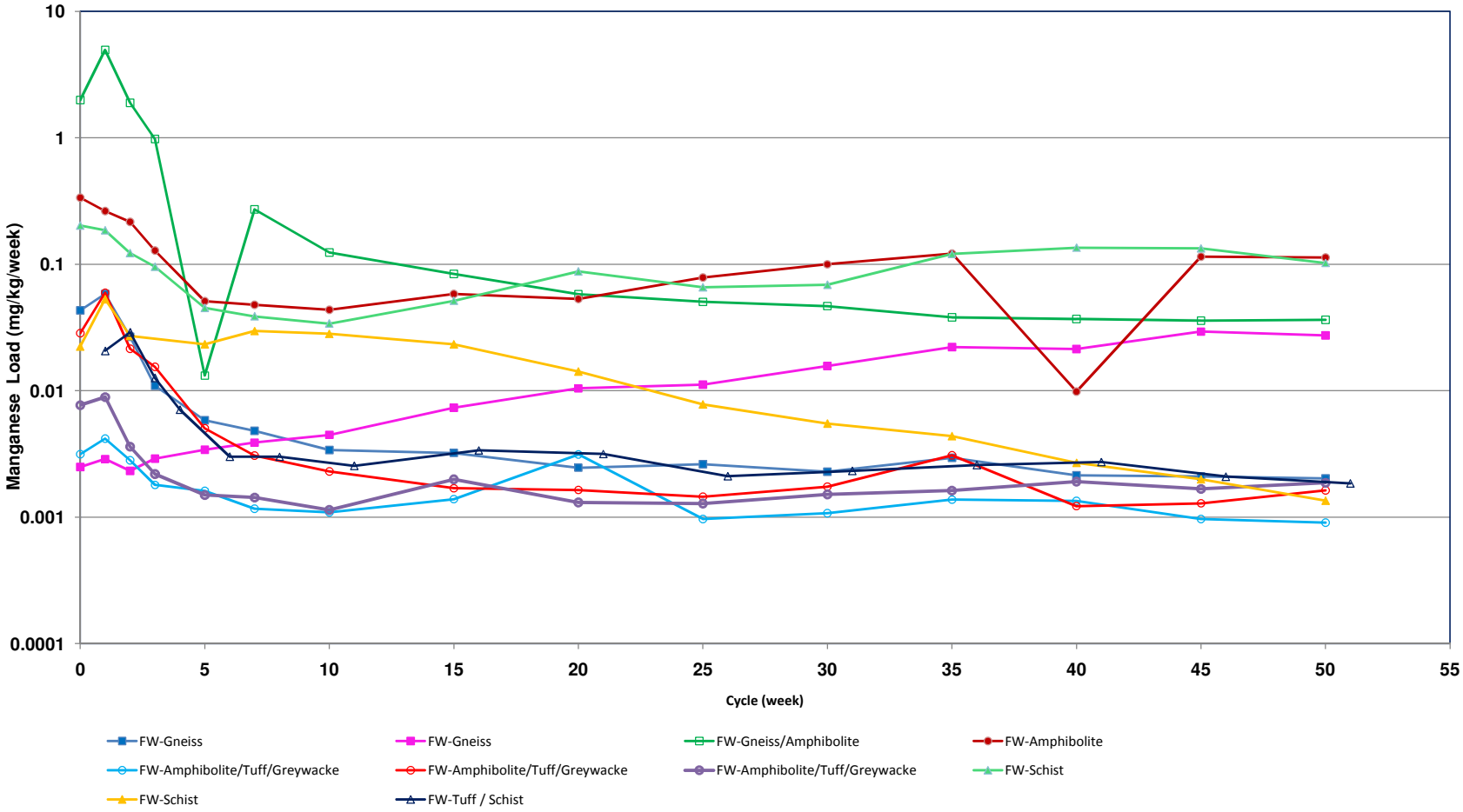
Mary River Project

Humidity Cells - 2008 Testing Program
Molybdenum

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-13



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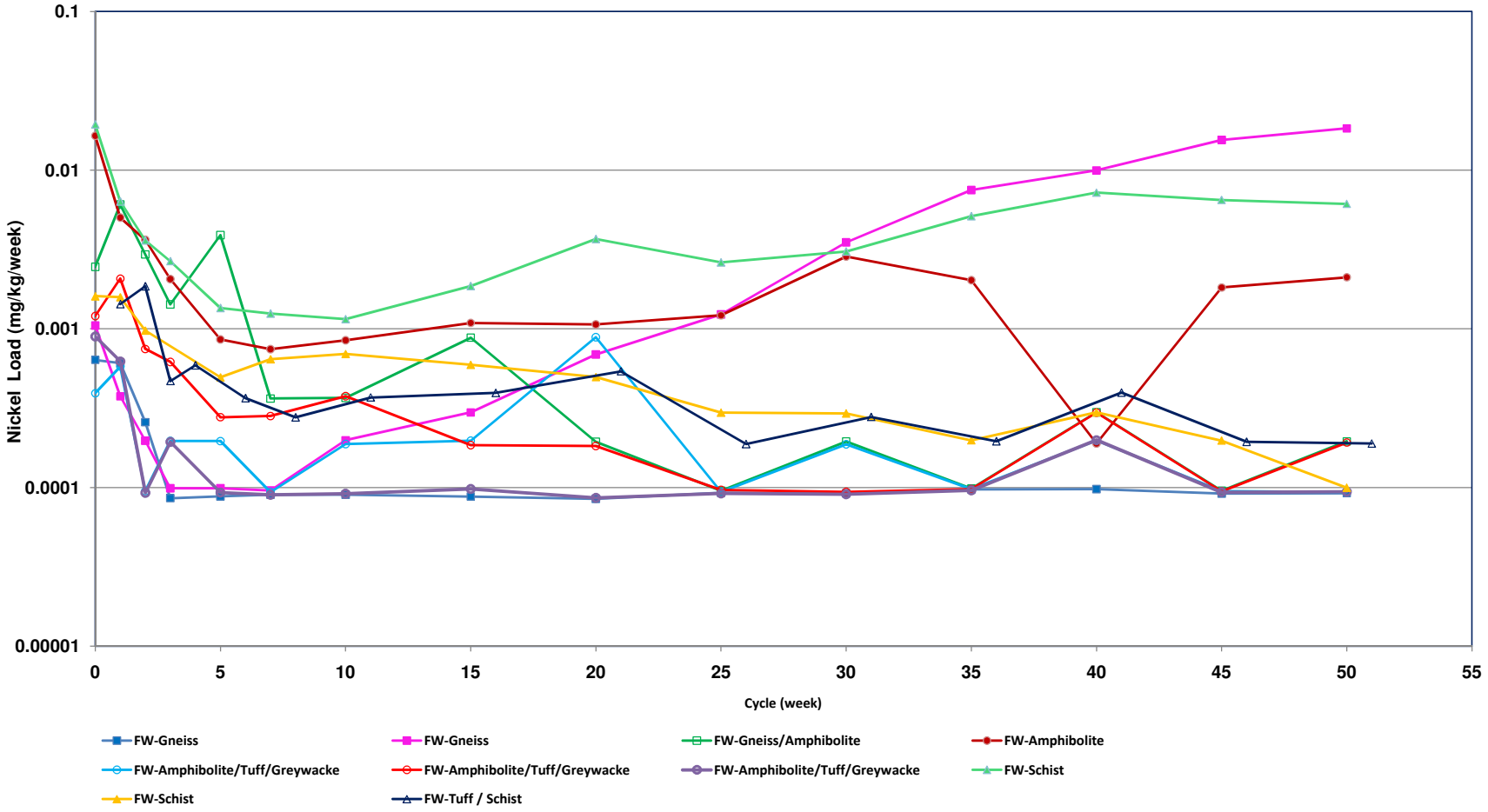
Mary River Project

Humidity Cells - 2008 Testing Program
Manganese

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-14



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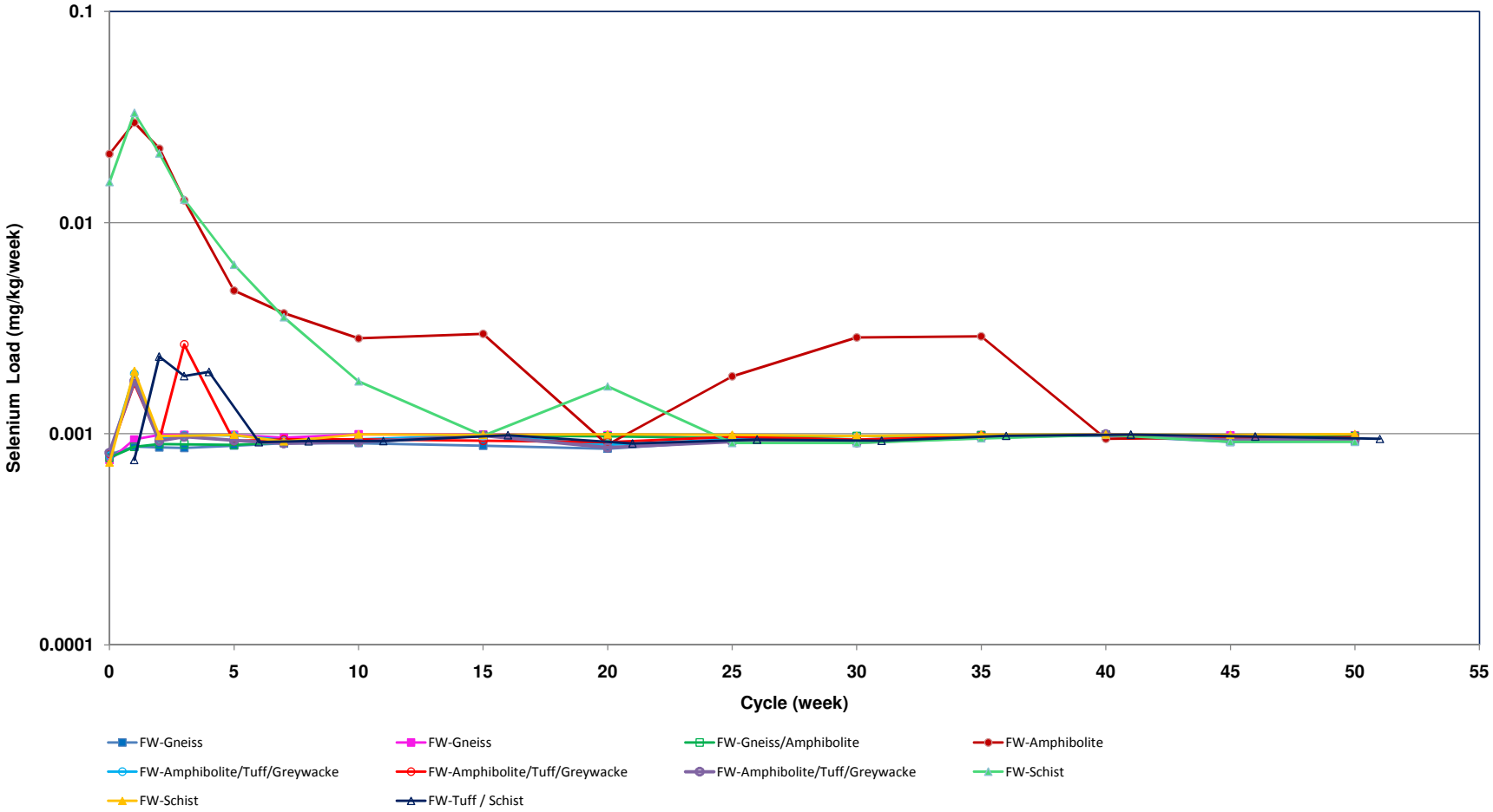
Mary River Project

Humidity Cells - 2008 Testing Program
Nickel

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-15



Baffinland Iron Mines Corporation

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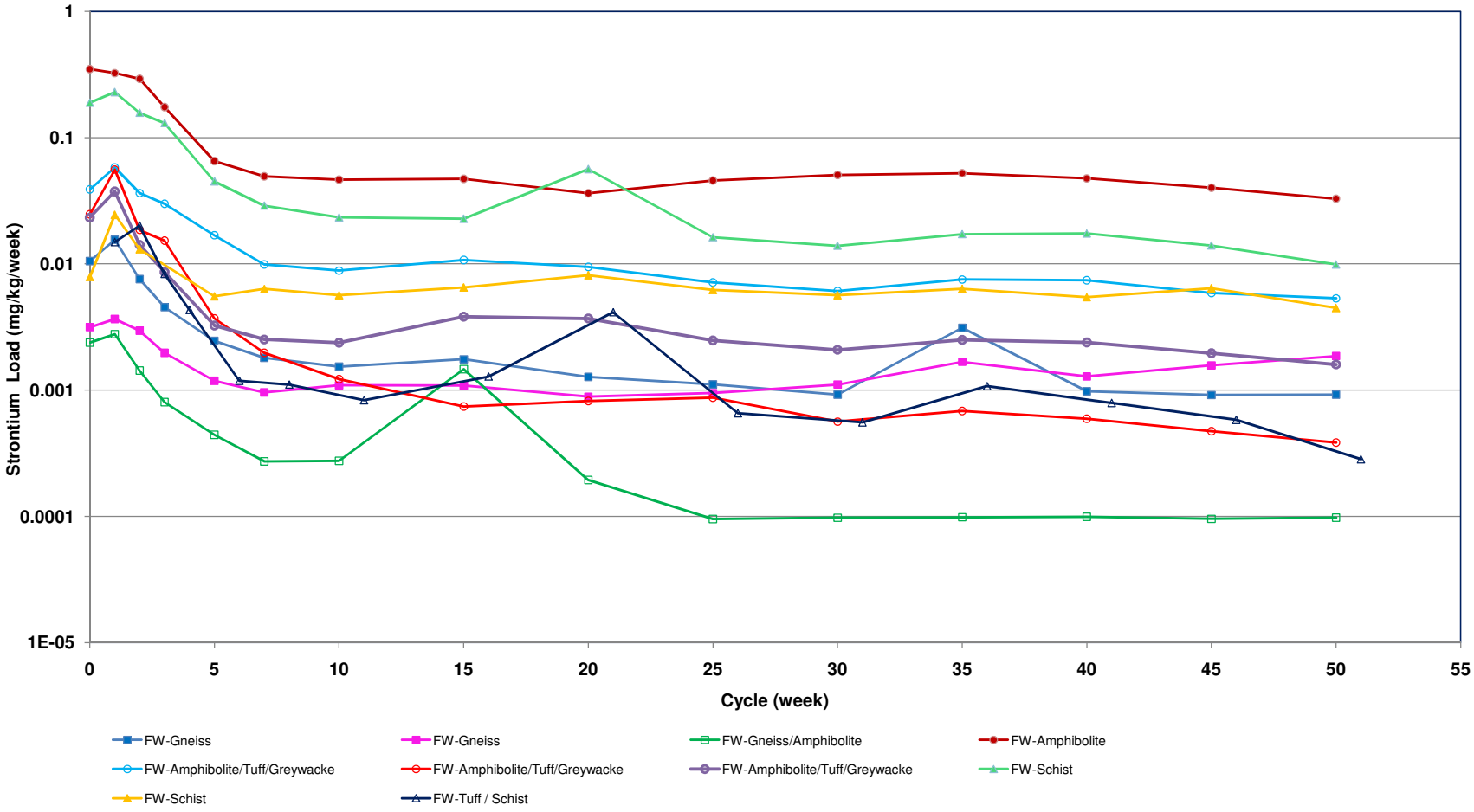
Mary River Project

Humidity Cells - 2008 Testing Program
Selenium

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-16



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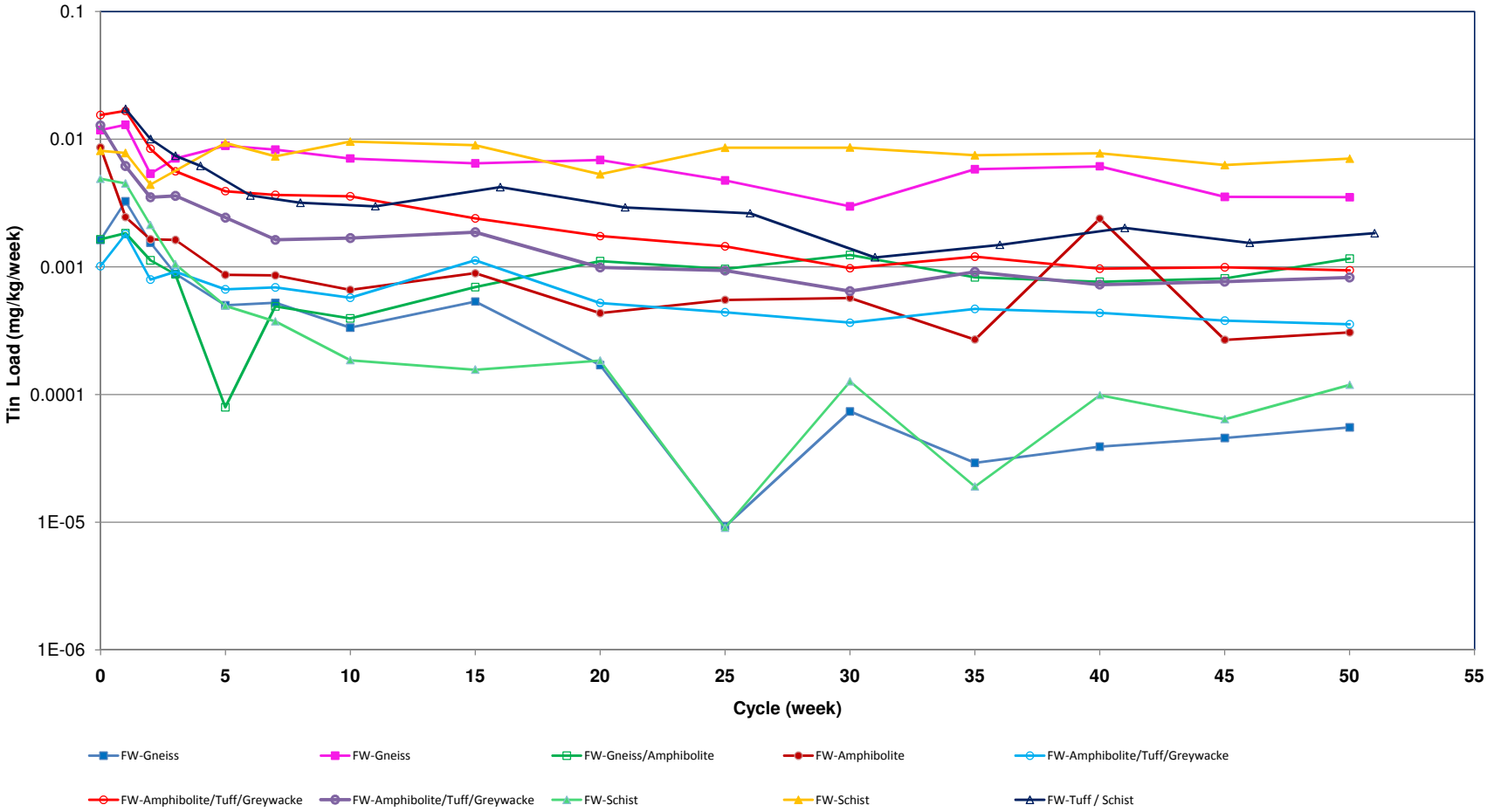
Mary River Project

Humidity Cells - 2008 Testing Program
Strontium

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-17



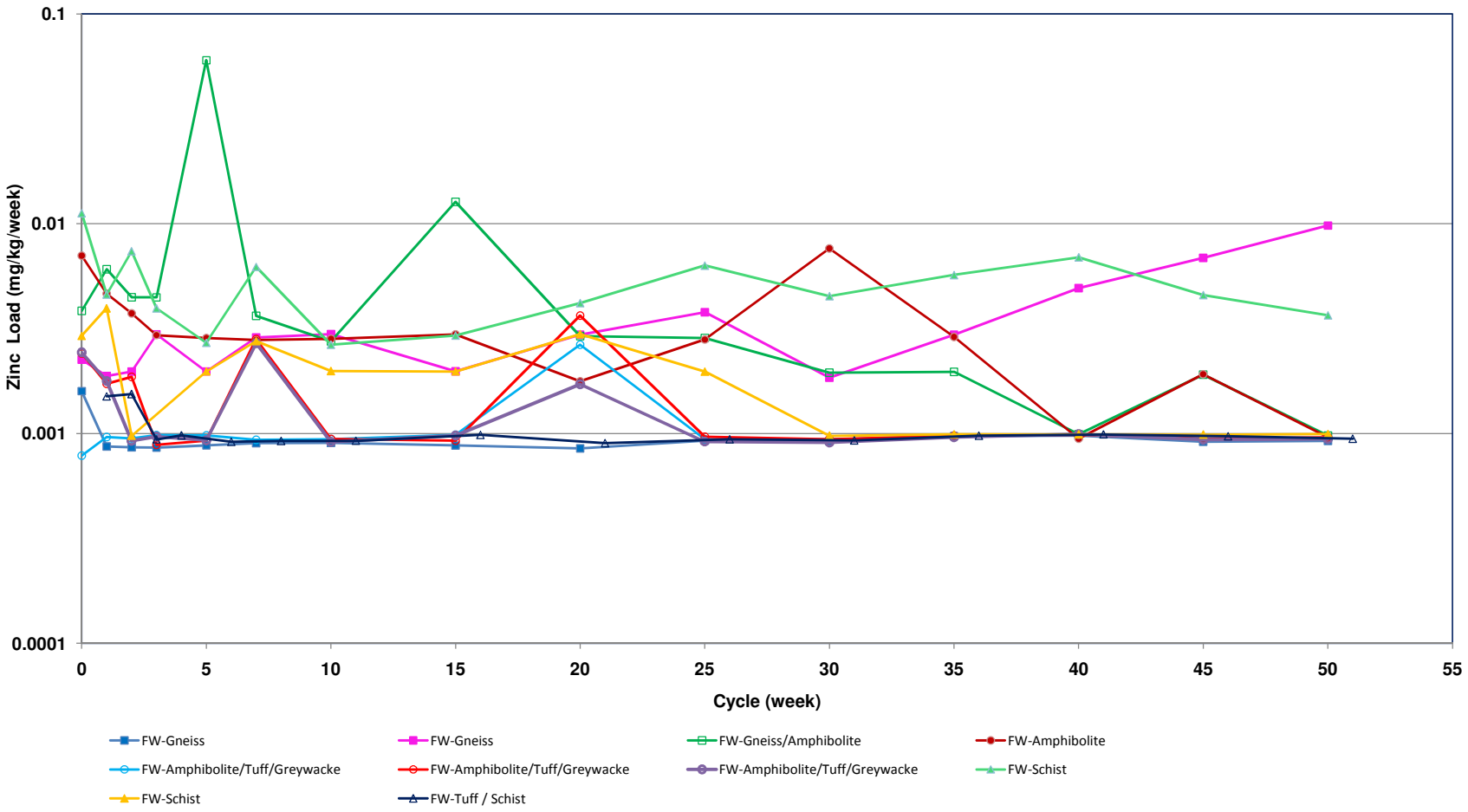
Baffinland Iron Mines Corporation

amec

Mary River Project

Humidity Cells - 2008 Testing Program
Tin

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-18



Baffinland Iron Mines Corporation

amec

Mary River Project

Humidity Cells - 2008 Testing Program
Zinc

Drawn by: JA	Checked by: SW	Date: December 2010
Project: TC101507		FIGURE A-19

LIST OF TABLES

A-1 Depletion Time Calculation
A-2 Results of Waste Rock Humidity Cells HC 1- Footwall Gneiss (UCS13)
A-3 Results of Waste Rock Humidity Cells HC 2- Footwall Gneiss/Amphibolite (UCS11)
A-4 Results of Waste Rock Humidity Cells HC 3- Footwall Gneiss (UCS49)
A-5 Results of Waste Rock Humidity Cells HC 4- Hanging wall Amphibolite (07ARD10)
A-6 Results of Waste Rock Humidity Cells HC 5- Hanging wall Amphibolite/Volcanic tuff/Greywacke (07ARD13)
A-7 Results of Waste Rock Humidity Cells HC 6- Hanging wall Amphibolite/Schist/Volcanic tuff (07ARD30)
A-8 Results of Waste Rock Humidity Cells HC 7- Hanging wall Schist (ARD19)
A-9 Results of Waste Rock Humidity Cells HC 8- Hanging wall Schist (07ARD06)
A-10 Results of Waste Rock Humidity Cells HC 9- Hanging wall Volcanic tuff/Schist (07ARD41)
A-11 Results of Waste Rock Humidity Cells HC 10- Hanging wall Amphibolite/Volcanic tuff/Greywacke (07ARD12)

Table A-1. Depletion Time Calculation

Rock Type	Sample ID	Borehole ID	Lithology	Sulphide	Acid Potential (AP)	Neutralization Potential (NP)	NPR	Sulphide Depletion Time	NP Depletion Time	Rock Classification
				%	$tCaCO_3/1000t$	$tCaCO_3/1000t$		years	years	
Footwall	UCS13	MR1-06-81	Gneiss	0.67	23	13.9	0.61	156.2	47.2	PAG
	UCS11	MR1-06-81	Gneiss/Amphibolite	0.17	2.8	10.1	3.61	39.9	62.1	NAG
	UCS49	MR1-06-105	Gneiss	0.26	7.70	7.8	1.0	50.7	69.8	NAG
Hangingwall	07ARD10	MR1-05-53	Amphib.	4.57	143	24.8	0.17	433.5	21.9	PAG
	07ARD13	MR1-06-84	Amphibolite/Tuff/Greywacke	0.10	3.2	-14.5	-4.6	67.2	0.9	PAG
	07ARD30	MR1-05-51	Amhibolite/Schist/Tuff	0.31	9.6	39.1	4.09	164.1	163.0	PAG
	ARD 19	MR1-05-47	Schist	1.45	45.3	13.8	0.3	22.3	6.8	PAG
	07ARD06	MR1-04-39	Schist	0.69	21.6	49.0	2.3	657.3	416.1	PAG
	07ARD41	MR1-06-95	Tuff/Schist	0.12	3.8	6.1	1.6	95.8	35.5	PAG
	07ARD12	MR1-05-46	Amphibolite/Tuff/Greywacke	0.35	11.0	0.70	0.06	15.5	0.9	PAG

Note :
Sulphide depeletion time was calculated based on average sulphate loadings
NP depletion time was calculated based on average calcium and magnesium loadings

Table A-2. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (UCS13)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	796	7.66	284	7	< 2	96	17.8	< 0.0001	< 0.00001	0.04	0.0003
16-Jan-08	1	1000	868	6.81	437	5	< 2	200	26.1	< 0.0001	< 0.00001	0.02	0.0009
23-Jan-08	2	1000	860	7.14	226	7	< 2	86	13.5	< 0.0001	< 0.00001	0.03	< 0.0002
30-Jan-08	3	1000	856	7.05	105	5	< 2	38	7.32	< 0.0001	< 0.00001	0.02	0.0003
6-Feb-08	4	1000	877	7.24	62	6	< 2	20	4.04	---	---	---	---
13-Feb-08	5	1000	878	6.21	62	< 2	2	15	3.31	< 0.0001	< 0.00001	0.04	< 0.0002
20-Feb-08	6	1000	857	7.21	41	6	< 2	12	2.51	---	---	---	---
27-Feb-08	7	1000	900	6.73	38	3	< 2	9.2	2.06	< 0.0001	< 0.00001	0.04	0.0002
05-Mar-08	8	1000	849	7.00	41	5	< 2	10	1.92	---	---	---	---
12-Mar-08	9	1000	899	6.88	30	4	< 2	7.1	1.75	---	---	---	---
19-Mar-08	10	1000	902	7.01	37	4	< 2	7.2	1.76	< 0.0001	< 0.00001	0.03	< 0.0002
26-Mar-08	11	1000	926	6.82	30	4	< 2	7.1	1.69	---	---	---	---
2-Apr-08	12	1000	923	6.69	22	4	< 2	7.1	1.26	---	---	---	---
9-Apr-08	13	1000	920	6.66	24	3	< 2	4.5	1.19	---	---	---	---
16-Apr-08	14	1000	938	6.74	24	4	< 2	4.9	1.37	---	---	---	---
23-Apr-08	15	1000	877	6.52	28	3	< 2	5.9	1.69	< 0.0001	< 0.00001	< 0.01	< 0.0002
30-Apr-08	16	1000	961	6.80	23	4	< 2	4.2	1.55	---	---	---	---
7-May-08	17	1000	936	5.12	26	< 2	< 2	4.5	1.22	---	---	---	---
14-May-08	18	1000	966	6.31	22	5	< 2	4	1.36	---	---	---	---
21-May-08	19	1000	980	5.89	35	2	5	4.7	1.84	---	---	---	---
28-May-08	20	1000	849	6.94	28	4	< 2	4.7	1.55	< 0.0001	< 0.00001	0.02	0.0006
4-Jun-08	21	1000	928	7.25	29	8	< 2	4	1.16	---	---	---	---
11-Jun-08	22	1000	962	6.72	21	4	< 2	3.7	1.56	---	---	---	---
18-Jun-08	23	1000	966	7.04	21	4	< 2	3.5	1.53	---	---	---	---
25-Jun-08	24	1000	978	7.06	23	6	< 2	4	2.13	---	---	---	---
2-Jul-08	25	1000	926	6.69	17	3	< 2	3.3	1.17	< 0.0001	< 0.00001	0.01	< 0.0002
9-Jul-08	26	1000	965	6.73	21	4	< 2	3.2	1.54	---	---	---	---
16-Jul-08	27	1000	936	6.59	16	3	< 2	3	1.15	---	---	---	---
23-Jul-08	28	1000	928	6.5	16	3	< 2	3.1	1.04	---	---	---	---
30-Jul-08	29	1000	925	6.66	16	3	< 2	3.2	1.07	---	---	---	---
6-Aug-08	30	1000	920	6.81	15	3	< 2	3.2	1.03	< 0.0001	< 0.00001	< 0.01	0.0005
13-Aug-08	31	1000	910	6.79	13	3	< 2	2.8	0.97	---	---	---	---
20-Aug-08	32	1000	879	6.9	104	4	< 2	3.1	1.28	---	---	---	---
27-Aug-08	33	1000	895	6.59	16	3	< 2	3.4	1.04	---	---	---	---
3-Sep-08	34	1000	936	6.7	16	3	<2	2.9	1.1	---	---	---	---
10-Sep-08	35	1000	972	6.89	17	5	<2	3	1.74	< 0.0001	0.00003	< 0.01	0.0005

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Table A-2. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (UCS13)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.0143	0.00002	0.0057	0.00002	0.000024	0.000215	< 0.0005	0.0015	< 0.01	4.90	< 0.002	18.0	0.0542	0.0049
16-Jan-08	1	0.00855	< 0.00002	0.0062	< 0.00001	0.000036	0.000175	< 0.0005	0.0011	< 0.01	3.83	< 0.002	31.7	0.0671	0.0082
23-Jan-08	2	0.00546	< 0.00002	0.008	< 0.00001	0.000022	0.000053	< 0.0005	0.0005	0.01	3.05	< 0.002	15.5	0.03103	0.0067
30-Jan-08	3	0.00352	< 0.00002	0.0064	< 0.00001	0.000007	0.000024	< 0.0005	0.0027	< 0.01	2.22	< 0.002	6.49	0.0128	0.005
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.00279	< 0.00002	0.0051	0.00002	0.000005	0.000035	< 0.0005	< 0.0005	< 0.01	1.53	< 0.002	3.03	0.00665	0.004
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.00229	< 0.00002	0.0048	< 0.00001	0.000008	0.000029	< 0.0005	< 0.0005	0.01	1.01	< 0.002	2.04	0.00536	0.0036
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.00232	< 0.00002	0.0034	< 0.00001	0.000003	0.000029	< 0.0005	< 0.0005	0.01	0.88	< 0.002	1.6	0.00376	0.0037
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.00265	< 0.00002	0.01	< 0.00001	0.000008	0.000063	< 0.0005	< 0.0005	0.04	0.79	0.003	1.34	0.00367	0.0023
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.00234	< 0.00002	0.0019	0.00001	0.000008	0.000041	< 0.0005	< 0.0005	< 0.01	0.69	< 0.002	1.13	0.0029	0.0019
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.00198	< 0.00002	0.0014	< 0.00001	0.000006	0.000011	< 0.0005	< 0.0005	< 0.01	0.58	< 0.002	0.767	0.00283	0.0015
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.00193	< 0.00002	0.0009	0.00007	< 0.000003	0.000025	< 0.0005	< 0.0005	< 0.01	0.54	< 0.002	0.709	0.00249	0.0011
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00246	0.00003	0.0015	0.00001	0.000036	0.00008	< 0.0005	< 0.0005	< 0.01	0.6	< 0.002	1.02	0.00303	0.0009

Table A-2. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (UCS13)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1.23	0.00080	< 0.01	0.00007	0.0004	< 0.001	0.56	0.00204	0.0132	0.0002	0.00003	0.00037	0.00014	0.002
16-Jan-08	1	1.74	0.00070	0.01	< 0.00002	0.001	< 0.001	0.22	0.00376	0.0179	< 0.0001	0.00001	0.00382	0.00012	0.001
23-Jan-08	2	0.92	0.0003	< 0.01	< 0.00002	0.00015	< 0.001	0.25	0.0018	0.0088	< 0.0001	0.000002	0.003538	0.00007	< 0.001
30-Jan-08	3	0.41	< 0.0001	0.02	< 0.00002	0.00048	< 0.001	0.25	0.00103	0.0053	0.0001	< 0.000002	0.00064	0.00007	< 0.001
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.17	< 0.0001	0.02	0.00002	0.00059	< 0.001	0.26	0.00057	0.0028	0.0001	< 0.000002	0.000458	0.00008	< 0.001
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.1	< 0.0001	0.01	0.00002	0.0004	< 0.001	0.17	0.00058	0.002	0.0001	< 0.000002	0.00028	0.00006	0.001
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.07	< 0.0001	< 0.01	0.00009	0.00052	< 0.001	0.2	0.00037	0.0017	0.0002	< 0.000002	0.000219	0.00009	0.001
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.04	0.0001	< 0.01	< 0.00002	0.00044	< 0.001	0.16	0.00061	0.002	0.0001	0.000094	0.000425	0.00012	0.001
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.01	< 0.0001	< 0.01	0.00002	0.0009	< 0.001	0.16	0.0002	0.0015	< 0.0001	< 0.000002	0.000317	0.00006	< 0.001
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.02	< 0.0001	< 0.01	< 0.00002	0.00063	< 0.001	0.16	< 0.00001	0.0012	< 0.0001	0.000003	0.000325	0.00004	< 0.001
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.02	< 0.0001	< 0.01	0.00002	0.00034	< 0.001	0.12	0.00008	0.001	0.0001	< 0.000002	0.000201	0.00005	< 0.001
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.05	< 0.0001	< 0.01	0.00004	0.00088	< 0.001	0.23	0.00003	0.0032	< 0.0001	0.00007	0.000349	0.00004	0.001

Table A-2. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (UCS13)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	879	6.6	15	3	<2	2.9	1.1	---	---	---	---
24-Sep-08	37	1000	892	6.74	15	3	<2	3	1.05	---	---	---	---
1-Oct-08	38	1000	980	6.77	15	20	< 2	2.9	1.45	---	---	---	---
8-Oct-08	39	1000	928	6.71	15	3	<2	0.6	0.99	---	---	---	---
15-Oct-08	40	1000	977	6.82	14	3	< 2	2.6	0.9	< 0.0001	0.00002	< 0.01	< 0.0002
22-Oct-08	41	1000	973	6.9	19	4	< 2	2.8	1.42	---	---	---	---
29-Oct-08	42	1000	897	6.7	17	< 2	< 2	2.6	0.94	---	---	---	---
5-Nov-08	43	1000	881	6.91	22	3	< 2	3.1	1.09	---	---	---	---
12-Nov-08	44	1000	938	6.84	14	3	< 2	3.0	1.19	---	---	---	---
19-Nov-08	45	1000	914	6.85	13	3	< 2	2.9	1.09	< 0.0001	< 0.00001	0.02	< 0.0002
26-Nov-08	46	1000	900	6.53	13	3	< 2	2.9	0.97	---	---	---	---
3-Dec-08	47	1000	890	6.72	16	2	< 2	3.3	1.14	---	---	---	---
10-Dec-08	48	1000	976	6.77	22	4	< 2	3.1	1.46	---	---	---	---
17-Dec-08	49	1000	923	6.84	13	3	< 2	2.6	0.97	---	---	---	---
24-Dec-08	50	1000	921	6.84	13	3	< 2	2.4	0.93	0.0001	< 0.00001	0.02	0.0003
30-Dec-08	51	1000	989	6.93	19	5	< 2	3.1	1.71	---	---	---	---
7-Jan-09	52	1000	990	6.91	19	5	< 2	3.1	1.76	---	---	---	---
14-Jan-09	53	1000	987	6.93	18	4	< 2	3.3	1.70	---	---	---	---

Table A-2. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (UCS13)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00177	0.00002	0.0006	< 0.00001	0.000017	0.000058	< 0.0005	< 0.0005	< 0.01	0.5	< 0.002	0.623	0.00219	0.0008
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.00201	< 0.00002	0.001	< 0.00001	0.000007	0.000024	< 0.0005	< 0.0005	< 0.01	0.56	< 0.002	0.696	0.0023	0.0007
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.00188	< 0.00002	0.0004	< 0.00001	< 0.000003	< 0.000002	< 0.0005	< 0.0005	< 0.01	0.5	< 0.002	0.594	0.0022	0.0007
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-2. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (UCS13)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.01	0.0001	0.01	< 0.00002	0.00067	< 0.001	0.15	0.00004	0.001	0.0001	0.000026	0.000483	< 0.00003	< 0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.02	< 0.0001	< 0.01	< 0.00002	0.0003	< 0.001	0.16	0.00005	0.001	< 0.0001	< 0.000002	0.000186	< 0.00003	< 0.001
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	< 0.01	< 0.0001	< 0.01	< 0.00002	0.0003	< 0.001	0.15	0.00006	0.001	< 0.0001	< 0.000002	0.000233	< 0.00003	< 0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table A-3. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss/Amphibolite (UCS 11)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	769	5.75	379	< 2	6	150	22.7	< 0.0001	< 0.00001	0.02	< 0.0002
16-Jan-08	1	1000	867	4.08	809	< 2	12	380	35.4	< 0.0001	< 0.00001	0.02	< 0.0002
23-Jan-08	2	1000	892	6.48	365	< 2	4	160	20.5	< 0.0001	< 0.00001	< 0.01	< 0.0002
30-Jan-08	3	1000	891	5.47	214	< 2	3	93	12.2	< 0.0001	< 0.00001	0.01	< 0.0002
6-Feb-08	4	1000	901	5.92	162	< 2	3	71	9.92	---	---	---	---
13-Feb-08	5	1000	884	5.02	129	7	4	11	0.3	< 0.0001	< 0.00001	0.74	< 0.0002
20-Feb-08	6	1000	830	5.55	120	< 2	< 2	57	7.11	---	---	---	---
27-Feb-08	7	1000	909	5.78	75	< 2	3	27	4.04	< 0.0001	< 0.00001	0.01	< 0.0002
05-Mar-08	8	1000	884	5.82	68	< 2	3	24	3.37	---	---	---	---
12-Mar-08	9	1000	914	5.34	51	< 2	3	19	3.17	---	---	---	---
19-Mar-08	10	1000	917	5.01	42	< 2	2	14	2.5	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Mar-08	11	1000	906	5.81	42	< 2	3	14	2.51	---	---	---	---
2-Apr-08	12	1000	948	9.3	106	15	< 2	13	2.1	---	---	---	---
9-Apr-08	13	1000	960	8.69	56	3	< 2	10	1.87	---	---	---	---
16-Apr-08	14	1000	974	5.78	34	< 2	3	11	1.8	---	---	---	---
23-Apr-08	15	1000	977	5.75	29	< 2	< 2	9.4	5.72	< 0.0001	< 0.00001	< 0.01	< 0.0002
30-Apr-08	16	1000	970	4.8	35	< 2	3	9.1	1.38	---	---	---	---
7-May-08	17	1000	981	5.65	28	< 2	2	9.2	1.32	---	---	---	---
14-May-08	18	1000	937	5.44	26	< 2	2	7.2	1.13	---	---	---	---
21-May-08	19	1000	925	4.53	42	< 2	< 2	6.5	1.04	---	---	---	---
28-May-08	20	1000	971	5.9	22	< 2	2	5.4	0.92	< 0.0001	< 0.00001	< 0.01	< 0.0002
4-Jun-08	21	1000	884	7.7	58	29	< 2	1	5.22	---	---	---	---
11-Jun-08	22	1000	982	5.97	35	< 2	< 2	5.8	0.93	---	---	---	---
18-Jun-08	23	1000	953	5.89	15	< 2	< 2	4.1	0.62	---	---	---	---
25-Jun-08	24	1000	988	6.05	17	< 2	< 2	5.8	0.86	---	---	---	---
2-Jul-08	25	1000	952	6.08	19	< 2	< 2	5.2	0.7	< 0.0001	< 0.00001	< 0.01	< 0.0002
9-Jul-08	26	1000	971	5.71	16	< 2	< 2	4.5	0.68	---	---	---	---
16-Jul-08	27	1000	948	5.72	17	< 2	3	4.8	0.69	---	---	---	---
23-Jul-08	28	1000	987	5.91	15	< 2	3	4.5	0.65	---	---	---	---
30-Jul-08	29	1000	976	6.13	15	< 2	< 2	4.1	0.59	---	---	---	---
6-Aug-08	30	1000	975	6.12	15	< 2	< 2	4.6	0.62	< 0.0001	< 0.00001	< 0.01	0.0003
13-Aug-08	31	1000	942	6.08	13	3	<2	3.9	0.55	---	---	---	---
20-Aug-08	32	1000	845	5.76	24	< 2	< 2	3.8	0.57	---	---	---	---
27-Aug-08	33	1000	983	5.88	21	3	<2	3.7	0.51	---	---	---	---
3-Sep-08	34	1000	978	5.74	13	< 2	< 2	3.5	0.49	---	---	---	---
10-Sep-08	35	1000	984	5.98	13	2	< 2	3.5	0.52	< 0.0001	0.00001	< 0.01	< 0.0002

Table A-3. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss/Amphibolite (UCS 11)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.0219	0.00006	0.0051	0.00002	0.000372	0.00478	< 0.0005	0.0023	0.44	6.77	< 0.002	25.5	2.59	0.00025
16-Jan-08	1	0.0138	0.00003	0.0111	< 0.00001	0.000815	0.00501	< 0.0005	0.0008	0.19	5.6	0.002	68.6	5.72	0.00057
23-Jan-08	2	0.00672	0.00003	0.0088	< 0.00001	0.000282	0.001857	< 0.0005	0.0007	0.07	4.75	< 0.002	26.8	2.12	0.00031
30-Jan-08	3	0.00441	0.00003	0.0068	< 0.00001	0.00017	0.00102	< 0.0005	< 0.0005	0.06	3.89	< 0.002	15.3	1.1	0.00035
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.00161	0.00006	< 0.0002	< 0.00001	0.00023	0.00667	< 0.0005	0.0405	1.49	0.05	< 0.002	0.314	0.0149	0.00019
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.00263	< 0.00002	0.0043	< 0.00001	0.000053	0.000412	< 0.0005	< 0.0005	0.02	2.28	< 0.002	3.46	0.299	0.00017
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.00216	< 0.00002	0.0026	< 0.00001	0.000028	0.000256	< 0.0005	< 0.0005	0.01	1.7	< 0.002	1.68	0.135	0.00027
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.00176	< 0.00002	0.0051	< 0.00001	0.000031	0.000487	< 0.0005	< 0.0005	0.05	2.76	< 0.002	3.38	0.0859	0.00015
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.00145	< 0.00002	0.0014	< 0.00001	0.000015	0.000295	< 0.0005	< 0.0005	< 0.01	1.18	< 0.002	0.665	0.0598	0.00022
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.0014	< 0.00002	0.0013	< 0.00001	0.000015	0.000244	< 0.0005	< 0.0005	< 0.01	1.06	< 0.002	0.567	0.053	0.0002
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.00121	< 0.00002	0.0009	0.00002	< 0.000003	0.000268	< 0.0005	< 0.0005	< 0.01	0.98	< 0.002	0.504	0.0479	4E-05
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00117	< 0.00002	0.001	< 0.00001	0.000015	0.000271	< 0.0005	< 0.0005	< 0.01	0.87	< 0.002	0.436	0.0387	9E-05

Table A-3. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss/Amphibolite (UCS 11)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.94	0.0032	< 0.01	< 0.00002	0.0005	< 0.001	0.26	0.00214	0.0031	< 0.0001	0.000044	0.000147	0.00007	0.005
16-Jan-08	1	2.06	0.007	< 0.01	< 0.00002	0.00047	< 0.001	0.4	0.00212	0.0032	< 0.0001	0.000015	0.000142	0.00005	0.007
23-Jan-08	2	0.81	0.0033	< 0.01	0.00002	0.00006	< 0.001	0.55	0.00126	0.0016	< 0.0001	0.000006	0.000142	0.00005	0.005
30-Jan-08	3	0.45	0.0016	0.01	< 0.00002	0.00047	< 0.001	0.54	0.00098	0.0009	0.0002	< 0.000002	0.000046	0.00004	0.005
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.03	0.0044	< 0.01	0.00011	0.0003	< 0.001	0.33	0.00009	0.0005	< 0.0001	< 0.000002	0.000136	< 0.00003	0.068
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.11	0.0004	0.01	< 0.00002	0.0004	< 0.001	0.63	0.00054	0.0003	< 0.0001	< 0.000002	0.000046	0.00003	0.004
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.06	0.0004	< 0.01	0.0001	0.00041	< 0.001	0.72	0.00043	0.0003	< 0.0001	< 0.000002	0.000051	0.00007	0.003
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.07	0.0009	0.02	0.00037	0.00022	< 0.001	2.19	0.00071	0.0015	0.0001	0.000126	0.000046	0.00006	0.013
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	< 0.01	0.0002	< 0.01	< 0.00002	0.00035	< 0.001	0.67	0.00114	0.0002	< 0.0001	0.000002	0.00002	0.00007	0.003
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.02	0.0001	< 0.01	0.00003	0.00036	< 0.001	0.62	0.00101	0.0001	< 0.0001	< 0.000002	0.000018	< 0.00003	0.003
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.02	0.0002	< 0.01	< 0.00002	0.00016	< 0.001	0.62	0.00127	0.0001	< 0.0001	< 0.000002	0.000022	< 0.00003	0.002
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	< 0.01	0.0001	< 0.01	< 0.00002	0.00062	< 0.001	0.55	0.00084	< 0.0001	< 0.0001	0.000025	0.000054	< 0.00003	0.002

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Table A-3. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss/Amphibolite (UCS 11)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	964	6.28	14	< 2	< 2	3.4	0.48	---	---	---	---
24-Sep-08	37	1000	965	7.09	59	8	<2	3.1	0.44	---	---	---	---
1-Oct-08	38	1000	977	5.77	11	3	<2	3.5	0.48	---	---	---	---
8-Oct-08	39	1000	954	5.79	11	2	< 2	3.2	0.42	---	---	---	---
15-Oct-08	40	1000	991	5.8	13	< 2	3	3.8	0.48	< 0.0001	< 0.00001	< 0.01	< 0.0002
22-Oct-08	41	1000	981	5.64	14	< 2	3	3.6	0.51	---	---	---	---
29-Oct-08	42	1000	981	5.66	14	< 2	2	3.2	0.43	---	---	---	---
5-Nov-08	43	1000	975	5.68	18	< 2	2	4.1	0.55	---	---	---	---
12-Nov-08	44	1000	988	5.84	12	< 2	14	4.1	0.55	---	---	---	---
19-Nov-08	45	1000	955	5.79	18	< 2	< 2	3.6	0.48	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Nov-08	46	1000	949	5.72	10	< 2	< 2	3.4	0.46	---	---	---	---
3-Dec-08	47	1000	972	5.73	12	< 2	3	3.5	0.45	---	---	---	---
10-Dec-08	48	1000	987	5.65	16	< 2	< 2	3.2	0.43	---	---	---	---
17-Dec-08	49	1000	978	5.84	12	< 2	< 2	3.1	0.51	---	---	---	---
24-Dec-08	50	1000	976	6.05	11	< 2	2	3.4	0.4	< 0.0001	0.00003	< 0.01	< 0.0002
30-Dec-08	51	1000	975	6.04	11	< 2	< 2	3.3	0.44	---	---	---	---
7-Jan-09	52	1000	986	5.73	13	< 2	4	3.8	0.52	---	---	---	---
14-Jan-09	53	1000	989	5.75	12	< 2	< 2	4	0.52	---	---	---	---

Table A-3. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss/Amphibolite (UCS 11)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.0011	0.00002	0.0005	< 0.00001	0.000018	0.000295	< 0.0005	< 0.0005	< 0.01	0.8	< 0.002	0.413	0.0373	< 0.00001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.00115	< 0.00002	0.0008	< 0.00001	0.000006	0.000295	< 0.0005	< 0.0005	< 0.01	0.85	< 0.002	0.409	0.0375	6E-05
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.00132	< 0.00002	0.0005	0.00001	0.000013	0.00035	< 0.0005	< 0.0005	< 0.01	0.79	< 0.002	0.378	0.0373	0.0002
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-3. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss/Amphibolite (UCS 11)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.01	0.0003	0.01	< 0.00002	0.0004	< 0.001	0.51	0.00077	< 0.0001	< 0.0001	0.000012	0.00005	< 0.00003	0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.02	0.0001	< 0.01	< 0.00002	0.0002	< 0.001	0.46	0.00085	< 0.0001	< 0.0001	0.000014	0.000016	< 0.00003	0.002
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	< 0.01	0.0002	< 0.01	< 0.00002	0.0003	< 0.001	0.42	0.00119	< 0.0001	0.0001	< 0.000002	0.000116	< 0.00003	0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table A-4. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (UCS 49)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	750	6.68	68	3	< 2	5.1	2.46	< 0.0001	< 0.00001	0.02	< 0.0002
16-Jan-08	1	1000	939	6.98	56	7	< 2	5	2.23	< 0.0001	< 0.00001	0.03	< 0.0002
23-Jan-08	2	1000	986	7.2	39	7	5	4.1	1.72	< 0.0001	< 0.00001	0.03	< 0.0002
30-Jan-08	3	1000	988	6.59	25	4	< 2	2.9	1.07	< 0.0001	< 0.00001	0.01	< 0.0002
6-Feb-08	4	1000	995	7.01	18	5	< 2	2.7	0.84	---	---	---	---
13-Feb-08	5	1000	988	6.52	16	12	2	2.3	0.64	< 0.0001	< 0.00001	< 0.01	< 0.0002
20-Feb-08	6	1000	983	6.59	14	2	< 2	2.7	0.61	---	---	---	---
27-Feb-08	7	1000	957	6.53	14	2	< 2	2.4	0.52	< 0.0001	< 0.00001	0.01	< 0.0002
05-Mar-08	8	1000	929	6.49	15	2	< 2	2.8	0.44	---	---	---	---
12-Mar-08	9	1000	956	6.33	14	< 2	< 2	3	0.53	---	---	---	---
19-Mar-08	10	1000	992	6.37	13	< 2	< 2	2.2	0.48	< 0.0001	< 0.00001	0.01	< 0.0002
26-Mar-08	11	1000	990	6.42	18	< 2	< 2	4.1	0.98	---	---	---	---
2-Apr-08	12	1000	991	6.61	12	< 2	< 2	2.6	0.45	---	---	---	---
9-Apr-08	13	1000	961	6.43	15	< 2	< 2	1.8	0.34	---	---	---	---
16-Apr-08	14	1000	938	6.22	12	< 2	< 2	2.3	0.32	---	---	---	---
23-Apr-08	15	1000	990	5.48	13	< 2	3	2.1	0.6	< 0.0001	< 0.00001	0.02	< 0.0002
30-Apr-08	16	1000	983	6.17	11	< 2	< 2	2.2	0.39	---	---	---	---
7-May-08	17	1000	984	4.55	27	< 2	5	7.1	0.43	---	---	---	---
14-May-08	18	1000	996	4.05	54	< 2	7	1.5	0.4	---	---	---	---
21-May-08	19	1000	979	5.62	16	< 2	2	2.4	0.35	---	---	---	---
28-May-08	20	1000	985	5.56	14	< 2	2	2.1	0.36	< 0.0001	< 0.00001	< 0.01	< 0.0002
4-Jun-08	21	1000	956	6.21	14	< 2	< 2	2.6	0.4	---	---	---	---
11-Jun-08	22	1000	960	6.31	11	< 2	< 2	1.9	0.36	---	---	---	---
18-Jun-08	23	1000	950	6.19	12	< 2	< 2	2.9	0.43	---	---	---	---
25-Jun-08	24	1000	952	6.24	8	< 2	2	2.1	0.33	---	---	---	---
2-Jul-08	25	1000	947	6.08	9	< 2	< 2	2.2	0.31	< 0.0001	< 0.00001	< 0.01	< 0.0002
9-Jul-08	26	1000	967	6	14	< 2	< 2	3.3	0.58	---	---	---	---
16-Jul-08	27	1000	975	5.92	11	< 2	3	2.7	0.39	---	---	---	---
23-Jul-08	28	1000	984	5.81	8	< 2	3	2.6	0.36	---	---	---	---
30-Jul-08	29	1000	971	5.97	9	< 2	< 2	2.6	0.41	---	---	---	---
6-Aug-08	30	1000	922	6.25	13	< 2	< 2	2.7	0.37	< 0.0001	< 0.00001	< 0.01	< 0.0002
13-Aug-08	31	1000	992	6.03	10	< 2	3	2.8	0.4	---	---	---	---
20-Aug-08	32	1000	992	5.8	15	< 2	< 2	2.4	0.33	---	---	---	---
27-Aug-08	33	1000	981	6.02	11	< 2	2	2.7	0.36	---	---	---	---
3-Sep-08	34	1000	987	5.75	11	<2	3	2.7	0.37	---	---	---	---
10-Sep-08	35	1000	985	6.01	11	<2	2	2.8	0.4	< 0.0001	< 0.00001	< 0.01	< 0.0002

Table A-4. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (UCS 49)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.00153	0.00002	0.001	0.00002	0.000015	0.0018	< 0.0005	0.002	0.02	10	< 0.002	0.649	0.00333	0.0048
16-Jan-08	1	0.00125	< 0.00002	0.0028	< 0.00001	0.000023	0.000278	< 0.0005	0.0005	< 0.01	6.9	< 0.002	0.788	0.00307	0.00841
23-Jan-08	2	0.00102	< 0.00002	0.0022	< 0.00001	< 0.000003	0.000112	< 0.0005	< 0.0005	< 0.01	5.22	< 0.002	0.701	0.00236	0.00397
30-Jan-08	3	0.00086	< 0.00002	0.0016	< 0.00001	0.000005	<	< 0.0005	< 0.0005	< 0.01	3.41	< 0.002	0.469	0.00294	0.00171
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.0007	< 0.00002	0.0009	0.00005	0.000003	0.00012	< 0.0005	< 0.0005	< 0.01	1.98	< 0.002	0.32	0.00346	0.00078
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.00066	< 0.00002	0.0008	< 0.00001	0.000006	0.000108	< 0.0005	< 0.0005	< 0.01	1.59	< 0.002	0.282	0.00406	0.00058
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.00053	< 0.00002	0.0006	< 0.00001	< 0.000003	0.000101	< 0.0005	< 0.0005	< 0.01	1.36	< 0.002	0.293	0.00451	0.00033
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.00055	< 0.00002	0.0026	< 0.00001	< 0.000003	0.000191	< 0.0005	< 0.0005	< 0.01	1.04	< 0.002	0.285	0.00741	0.00018
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.00073	< 0.00002	0.0004	< 0.00001	0.000027	0.000317	< 0.0005	< 0.0005	< 0.01	0.81	< 0.002	0.268	0.0106	0.00017
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.00081	< 0.00002	0.0003	< 0.00001	0.000018	0.00039	< 0.0005	< 0.0005	< 0.01	0.73	< 0.002	0.251	0.0118	0.0001
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.00108	< 0.00002	< 0.0002	< 0.00001	0.000004	0.00074	< 0.0005	< 0.0005	< 0.01	0.71	< 0.002	0.281	0.017	3E-05
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.0019	< 0.00002	0.0004	< 0.00001	0.000041	0.00163	< 0.0005	< 0.0005	< 0.01	0.73	< 0.002	0.347	0.0225	5E-05

Table A-4. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (UCS 49)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1.69	0.0014	0.04	0.00014	0.00069	< 0.001	0.31	0.0157	0.0042	0.0003	0.000027	0.000053	0.00021	0.003
16-Jan-08	1	1.03	0.0004	0.01	0.00012	0.0009	< 0.001	0.44	0.0138	0.0039	< 0.0001	0.000015	0.000585	0.00015	0.002
23-Jan-08	2	0.68	0.0002	< 0.01	0.00007	0.00066	< 0.001	0.52	0.00544	0.003	< 0.0001	0.00001	0.000427	0.00009	0.002
30-Jan-08	3	0.33	0.0001	0.02	< 0.00002	0.00063	< 0.001	0.61	0.00715	0.002	0.0001	< 0.000002	0.000371	0.00013	0.003
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.17	< 0.0001	0.02	0.00003	0.00055	< 0.001	0.59	0.009	0.0012	< 0.0001	0.000002	0.000401	0.00012	0.002
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.11	< 0.0001	0.02	0.00004	0.00041	< 0.001	0.52	0.00866	0.001	< 0.0001	< 0.000002	0.000258	0.00012	0.003
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.11	0.0002	< 0.01	0.00014	0.00051	< 0.001	0.8	0.00712	0.0011	< 0.0001	< 0.000002	0.000192	0.00015	0.003
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.09	0.0003	< 0.01	0.00003	0.0002	< 0.001	0.7	0.00653	0.0011	< 0.0001	0.0001	0.000125	0.00008	0.002
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.02	0.0007	< 0.01	0.00006	0.00037	< 0.001	0.66	0.00698	0.0009	< 0.0001	0.000003	0.000092	0.00004	0.003
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.04	0.0013	< 0.01	0.00035	0.00027	< 0.001	0.61	0.00502	0.001	< 0.0001	< 0.000002	0.0011	0.00003	0.004
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.04	0.0038	< 0.01	0.00006	0.00011	< 0.001	0.51	0.00323	0.0012	< 0.0001	< 0.000002	0.000098	< 0.00003	0.002
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	< 0.01	0.0076	< 0.01	0.00015	0.00058	< 0.001	0.66	0.0059	0.0017	< 0.0001	0.000021	0.000162	< 0.00003	0.003

Table A-4. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (UCS 49)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	974	5.79	11	<2	2	3	0.41	---	---	---	---
24-Sep-08	37	1000	990	5.96	10	< 2	< 2	3	0.41	---	---	---	---
1-Oct-08	38	1000	976	5.91	10	<2	2	2.8	0.38	---	---	---	---
8-Oct-08	39	1000	980	6.11	8	< 2	< 2	2.9	0.37	---	---	---	---
15-Oct-08	40	1000	986	5.86	9	< 2	2	2.7	0.33	< 0.0001	< 0.00001	< 0.01	< 0.0002
22-Oct-08	41	1000	971	5.78	12	< 2	4	2.9	0.39	---	---	---	---
29-Oct-08	42	1000	953	5.65	14	< 2	< 2	3	0.38	---	---	---	---
5-Nov-08	43	1000	985	5.83	16	< 2	3	3	0.4	---	---	---	---
12-Nov-08	44	1000	982	5.76	8	< 2	4	2.5	0.33	---	---	---	---
19-Nov-08	45	1000	981	5.38	43	< 2	< 2	3.2	0.4	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Nov-08	46	1000	952	5.09	8	2	3	2.7	0.33	---	---	---	---
3-Dec-08	47	1000	991	5.69	11	< 2	3	3.3	0.41	---	---	---	---
10-Dec-08	48	1000	989	5.7	16	< 2	3	3	0.37	---	---	---	---
17-Dec-08	49	1000	980	5.72	7	< 2	3	3.9	0.32	---	---	---	---
24-Dec-08	50	1000	980	5.72	9	< 2	2	2.8	0.27	< 0.0001	< 0.00001	< 0.01	0.0002
30-Dec-08	51	1000	946	5.67	11	< 2	4	2.9	0.34	---	---	---	---
7-Jan-09	52	1000	985	5.62	10	< 2	< 2	2.9	0.36	---	---	---	---
14-Jan-09	53	1000	974	5.59	9	< 2	2	2.7	0.32	---	---	---	---

Table A-4. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (UCS 49)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00182	< 0.00002	< 0.0002	< 0.00001	0.000071	0.00247	< 0.0005	< 0.0005	< 0.01	0.64	< 0.002	0.287	0.0217	< 0.00001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.00299	< 0.00002	0.0004	< 0.00001	0.000156	0.00408	< 0.0005	0.0006	0.01	0.71	< 0.002	0.349	0.0299	2E-05
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.00307	< 0.00002	< 0.0002	< 0.00001	0.000162	0.00526	< 0.0005	0.0012	0.01	0.65	< 0.002	0.281	0.0279	0.0001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-4. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (UCS 49)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.02	0.0101	< 0.01	0.00015	0.00033	< 0.001	0.58	0.00622	0.0013	< 0.0001	0.000017	0.000158	< 0.00003	0.005
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.02	0.0158	< 0.01	0.00022	< 0.0002	< 0.001	0.59	0.0036	0.0016	< 0.0001	0.00002	0.000204	< 0.00003	0.007
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	< 0.01	0.0187	< 0.01	0.00026	< 0.0002	< 0.001	0.52	0.00358	0.0019	< 0.0001	< 0.000002	0.000267	< 0.00003	0.01
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-5. Results of Waste Rock Humidity Cells - HC 4
Hanging wall - Amphibolite (07ARD10)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	783	6.28	795	4	5	360	54.5	< 0.0001	0.00001	0.03	0.0006
16-Jan-08	1	1000	929	5.87	673	< 2	8	330	40	< 0.0001	< 0.00001	0.02	0.0003
23-Jan-08	2	1000	934	6.32	574	< 2	8	270	37.4	< 0.0001	< 0.00001	< 0.01	0.0005
30-Jan-08	3	1000	981	3.98	365	< 2	13	150	21.4	< 0.0001	< 0.00001	< 0.01	< 0.0002
6-Feb-08	4	1000	947	6.39	188	< 2	4	81	12.4	---	---	---	---
13-Feb-08	5	1000	952	4.42	161	< 2	7	58	8.29	< 0.0001	< 0.00001	< 0.01	< 0.0002
20-Feb-08	6	1000	979	6.23	112	< 2	< 2	51	6.93	---	---	---	---
27-Feb-08	7	1000	931	6.33	119	< 2	4	46	6.32	< 0.0001	< 0.00001	< 0.01	0.0003
05-Mar-08	8	1000	926	6.25	111	< 2	< 2	44	5.63	---	---	---	---
12-Mar-08	9	1000	971	5.96	102	< 2	4	43	5.97	---	---	---	---
19-Mar-08	10	1000	942	5.38	93	< 2	4	41	5.85	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Mar-08	11	1000	923	6.42	92	2	2	35	4.89	---	---	---	---
2-Apr-08	12	1000	946	5.73	90	< 2	3	39	5.11	---	---	---	---
9-Apr-08	13	1000	956	5.64	101	4	4	38	4.97	---	---	---	---
16-Apr-08	14	1000	958	6.11	104	< 2	2	40	5.44	---	---	---	---
23-Apr-08	15	1000	990	4.99	104	< 2	3	40	6.43	< 0.0001	< 0.00001	0.02	< 0.0002
30-Apr-08	16	1000	953	6.21	106	< 2	< 2	43	5.52	---	---	---	---
7-May-08	17	1000	962	4.57	115	< 2	5	42	5.6	---	---	---	---
14-May-08	18	1000	948	5.75	99	< 2	2	38	5.17	---	---	---	---
21-May-08	19	1000	977	5.9	100	< 2	3	39	5.08	---	---	---	---
28-May-08	20	1000	887	5.8	101	3	< 2	34	4.84	< 0.0001	< 0.00001	< 0.01	< 0.0002
4-Jun-08	21	1000	937	6.41	97	< 2	< 2	36	4.81	---	---	---	---
11-Jun-08	22	1000	980	5.85	109	< 2	3	41	6.02	---	---	---	---
18-Jun-08	23	1000	955	6.19	115	< 2	2	45	6.23	---	---	---	---
25-Jun-08	24	1000	998	6.14	86	< 2	43	41	5.43	---	---	---	---
2-Jul-08	25	1000	935	6.03	106	< 2	2	42	5.75	< 0.0001	< 0.00001	< 0.01	< 0.0002
9-Jul-08	26	1000	977	5.79	108	< 2	< 2	41	5.46	---	---	---	---
16-Jul-08	27	1000	954	5.9	106	< 2	3	41	5.8	---	---	---	---
23-Jul-08	28	1000	923	6.58	101	4	3	37	5.16	---	---	---	---
30-Jul-08	29	1000	941	5.89	103	< 2	3	43	5.65	---	---	---	---
6-Aug-08	30	1000	952	6.36	130	< 2	< 2	55	8.07	< 0.0001	< 0.00001	< 0.01	0.0003
13-Aug-08	31	1000	974	6.14	105	< 2	2	43	5.92				
20-Aug-08	32	1000	900	5.91	135	< 2	2	38	5.12	---	---	---	---
27-Aug-08	33	1000	942	5.99	105	< 2	3	42	5.47	---	---	---	---
3-Sep-08	34	1000	954	5.96	108	< 2	< 2	43	5.83	---	---	---	---
10-Sep-08	35	1000	963	6.12	117	3	< 2	47	6.38	< 0.0001	< 0.00001	< 0.01	< 0.0002

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Table A-5. Results of Waste Rock Humidity Cells - HC 4
Hanging wall - Amphibolite (07ARD10)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.0117	0.00003	0.0144	0.00002	0.000027	0.035	< 0.0005	0.0032	0.16	6.01	< 0.002	58.1	0.43	0.00281
16-Jan-08	1	0.00635	< 0.00002	0.0117	< 0.00001	0.000006	0.00678	< 0.0005	0.0007	0.01	3.8	0.002	52.1	0.284	0.00102
23-Jan-08	2	0.00551	< 0.00002	0.0128	< 0.00001	< 0.000003	0.004292	< 0.0005	0.0006	0.01	3.36	< 0.002	43.6	0.232	0.00064
30-Jan-08	3	0.00393	< 0.00002	0.0122	< 0.00001	0.000008	0.00227	< 0.0005	< 0.0005	< 0.01	2.57	< 0.002	23.5	0.131	0.00059
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.00192	< 0.00002	0.0079	< 0.00001	< 0.000003	0.00108	< 0.0005	< 0.0005	< 0.01	1.41	< 0.002	9.2	0.0537	0.00043
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.00176	< 0.00002	0.0073	< 0.00001	0.000003	0.001	< 0.0005	< 0.0005	< 0.01	1.13	< 0.002	7.36	0.0514	0.00048
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.00153	< 0.00002	0.0045	< 0.00001	< 0.000003	0.000849	< 0.0005	< 0.0005	< 0.01	0.9	< 0.002	6.86	0.0463	0.00031
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.0014	< 0.00002	0.0052	< 0.00001	< 0.000003	0.00113	< 0.0005	< 0.0005	< 0.01	0.66	< 0.002	6.7	0.0589	0.00025
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.00128	< 0.00002	0.0023	< 0.00001	0.000005	0.00118	< 0.0005	< 0.0005	< 0.01	0.52	< 0.002	6.21	0.06	0.00017
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.00139	< 0.00002	0.0024	< 0.00001	< 0.000003	0.00157	< 0.0005	< 0.0005	0.01	0.42	< 0.002	7.56	0.0841	0.0001
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.00172	< 0.00002	0.0026	< 0.00001	0.000008	0.0023	< 0.0005	< 0.0005	0.01	0.38	< 0.002	8.86	0.105	0.0001
13-Aug-08	31														
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00157	< 0.00002	0.0026	< 0.00001	0.000007	0.00234	< 0.0005	< 0.0005	< 0.01	0.28	< 0.002	9.03	0.126	8E-05

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Table A-5. Results of Waste Rock Humidity Cells - HC 4
Hanging wall - Amphibolite (07ARD10)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	12.7	0.021	0.02	0.00009	0.00055	0.027	1.06	0.011	0.445	0.0002	0.00015	0.000065	0.00131	0.009
16-Jan-08	1	8.85	0.0054	< 0.01	< 0.00002	0.00045	0.032	0.86	0.00264	0.349	< 0.0001	0.00006	0.000017	0.00085	0.005
23-Jan-08	2	6.7	0.0039	< 0.01	0.00002	0.00031	0.024	1.03	0.00176	0.313	0.0001	0.000045	0.00002	0.00076	0.004
30-Jan-08	3	3.78	0.0021	< 0.01	0.00002	0.00034	0.013	1.25	0.00166	0.178	0.0001	0.000029	0.000027	0.00076	0.003
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	1.52	0.0009	0.02	< 0.00002	0.00062	0.005	1.2	0.00091	0.0685	0.0003	0.000016	0.00001	0.00074	0.003
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.95	0.0008	0.01	< 0.00002	0.00038	0.004	1.1	0.00092	0.053	< 0.0001	0.000021	0.000013	0.00069	0.003
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.46	0.0009	< 0.01	0.00006	0.00044	0.003	1.18	0.0007	0.0493	0.0001	0.000008	0.000033	0.00052	0.003
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.28	0.0011	< 0.01	0.00002	0.00018	0.003	1.09	0.0009	0.0476	0.0001	0.000108	0.000009	0.00033	0.003
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.08	0.0012	< 0.01	0.00008	0.00032	< 0.001	0.9	0.00049	0.0409	< 0.0001	0.000008	0.000001	0.00027	0.002
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.06	0.0013	< 0.01	< 0.00002	0.00024	0.002	1.14	0.00059	0.049	< 0.0001	0.000006	0.000035	0.00022	0.003
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.14	0.003	< 0.01	0.00003	0.00005	0.003	1.13	0.0006	0.0532	< 0.0001	0.000163	0.000011	0.00015	0.008
13-Aug-08	31														
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.02	0.0021	< 0.01	0.00003	0.00052	0.003	1.39	0.00028	0.0543	0.0002	0.000028	0.000023	0.00009	---

Table A-5. Results of Waste Rock Humidity Cells - HC 4
Hanging wall - Amphibolite (07ARD10)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	933	5.83	110	2	< 2	41	5.95	---	---	---	---
24-Sep-08	37	1000	979	5.93	103	3	< 2	42	5.54	---	---	---	---
1-Oct-08	38	1000	991	6	94	3	< 2	40	5.04	---	---	---	---
8-Oct-08	39	1000	995	6.1	95	3	< 2	39	4.76	---	---	---	---
15-Oct-08	40	1000	945	7.76	51	23	< 2	1.8	7.66	< 0.0001	< 0.00001	0.11	< 0.0002
22-Oct-08	41	1000	982	5.84	89	< 2	4	35	4.56	---	---	---	---
29-Oct-08	42	1000	933	5.57	99	< 2	3	37	4.6	---	---	---	---
5-Nov-08	43	1000	948	5.86	102	< 2	3	39	4.93	---	---	---	---
12-Nov-08	44	1000	990	5.46	89	< 2	< 2	38	4.83	---	---	---	---
19-Nov-08	45	1000	958	5.75	96	< 2	19	38	4.9	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Nov-08	46	1000	946	5.76	87	< 2	3	37	4.53	---	---	---	---
3-Dec-08	47	1000	961	5.89	94	< 2	5	37	4.54	---	---	---	---
10-Dec-08	48	1000	944	5.69	94	< 2	4	38	4.51	---	---	---	---
17-Dec-08	49	1000	970	5.84	87	< 2	2	36	4.14	---	---	---	---
24-Dec-08	50	1000	960	5.87	82	< 2	2	33	3.87	< 0.0001	< 0.00001	< 0.01	< 0.0002
30-Dec-08	51	1000	965	6.01	86	< 2	3	35	4.11	---	---	---	---
7-Jan-09	52	1000	954	5.7	92	< 2	3	37	4.54	---	---	---	---
14-Jan-09	53	1000	929	5.84	81	< 2	< 2	33	3.94	---	---	---	---

Table A-5. Results of Waste Rock Humidity Cells - HC 4
Hanging wall - Amphibolite (07ARD10)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00061	< 0.00002	0.0004	< 0.00001	< 0.000003	0.000036	< 0.0005	< 0.0005	< 0.01	0.41	< 0.002	0.878	0.0104	0.0002
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.00117	< 0.00002	0.0016	< 0.00001	0.000003	0.00208	< 0.0005	< 0.0005	0.02	0.18	< 0.002	7.45	0.12	4E-05
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.001	< 0.00002	0.0013	< 0.00001	< 0.000003	0.002198	< 0.0005	< 0.0005	0.02	0.11	< 0.002	6.1	0.118	2E-05
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-5. Results of Waste Rock Humidity Cells - HC 4
Hanging wall - Amphibolite (07ARD10)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	0.003
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.15	0.0002	0.03	0.00002	0.00032	< 0.001	0.55	0.00253	0.0503	< 0.0001	0.000004	0.000077	0.00316	< 0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.04	0.0019	< 0.01	0.00003	< 0.0002	0.001	1.23	0.00028	0.0418	< 0.0001	0.000006	0.000006	0.00004	0.002
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.03	0.0022	< 0.01	< 0.00002	< 0.0002	0.001	1.2	0.00032	0.0342	0.0002	< 0.000002	0.000015	< 0.00003	0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-6. Results of Waste Rock Humidity Cells - HC 5
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD13)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	802	6.1	278	< 2	3	1.9	7.1	< 0.0001	< 0.00001	< 0.01	< 0.0002
16-Jan-08	1	1000	863	4.55	609	< 2	6	6.4	13.7	< 0.0001	< 0.00001	< 0.01	0.0002
23-Jan-08	2	1000	932	6.43	196	< 2	3	3.9	4.25	< 0.0001	< 0.00001	< 0.01	< 0.0002
30-Jan-08	3	1000	883	5.19	169	< 2	< 2	4	3.69	< 0.0001	< 0.00001	< 0.01	< 0.0002
6-Feb-08	4	1000	866	6.5	91	< 2	< 2	3.7	2.02	---	---	---	---
13-Feb-08	5	1000	924	4.38	62	< 2	7	3	0.87	< 0.0001	< 0.00001	< 0.01	< 0.0002
20-Feb-08	6	1000	886	6.53	33	< 2	< 2	3.1	0.59	---	---	---	---
27-Feb-08	7	1000	940	5.78	32	< 2	< 2	3	0.43	< 0.0001	< 0.00001	< 0.01	< 0.0002
05-Mar-08	8	1000	916	6.57	21	2	< 2	2.6	0.3	---	---	---	---
12-Mar-08	9	1000	947	6.46	16	< 2	< 2	6.4	0.29	---	---	---	---
19-Mar-08	10	1000	941	6.53	15	< 2	< 2	2.1	0.24	< 0.0001	< 0.00001	0.01	< 0.0002
26-Mar-08	11	1000	954	6.65	16	3	< 2	1.9	0.25	---	---	---	---
2-Apr-08	12	1000	934	4.04	50	< 2	7	4.2	0.17	---	---	---	---
9-Apr-08	13	1000	964	6.53	14	3	< 2	1.5	0.18	---	---	---	---
16-Apr-08	14	1000	978	6.39	15	3	< 2	1.6	0.21	---	---	---	---
23-Apr-08	15	1000	925	5.37	13	< 2	67	1.3	0.16	< 0.0001	< 0.00001	0.03	< 0.0002
30-Apr-08	16	1000	986	6.45	11	3	< 2	1.3	0.19	---	---	---	---
7-May-08	17	1000	977	6.67	14	3	< 2	1.3	0.21	---	---	---	---
14-May-08	18	1000	954	4.55	35	< 2	4	0.8	0.2	---	---	---	---
21-May-08	19	1000	976	6.99	14	3	< 2	1	0.18	---	---	---	---
28-May-08	20	1000	912	6.59	13	< 2	< 2	0.9	0.14	< 0.0001	< 0.00001	< 0.01	< 0.0002
4-Jun-08	21	1000	927	6.56	13	< 2	< 2	1.2	0.31	---	---	---	---
11-Jun-08	22	1000	976	6.58	9	3	< 2	0.9	0.22	---	---	---	---
18-Jun-08	23	1000	962	6.92	13	4	< 2	1.1	0.23	---	---	---	---
25-Jun-08	24	1000	984	6.68	8	3	56	0.8	0.18	---	---	---	---
2-Jul-08	25	1000	966	6.66	11	3	< 2	1	0.16	< 0.0001	< 0.00001	< 0.01	< 0.0002
9-Jul-08	26	1000	986	6.55	8	2	< 2	0.9	0.17	---	---	---	---
16-Jul-08	27	1000	983	6.54	8	3	< 2	0.8	0.15	---	---	---	---
23-Jul-08	28	1000	928	6.36	6	2	< 2	0.7	0.09	---	---	---	---
30-Jul-08	29	1000	983	6.52	7	3	< 2	0.9	0.17	---	---	---	---
6-Aug-08	30	1000	938	6.61	6	2	< 2	0.7	0.12	< 0.0001	< 0.00001	< 0.01	0.0003
13-Aug-08	31	1000	931	6.67	6	< 2	< 2	0.6	0.25	---	---	---	---
20-Aug-08	32	1000	879	6.51	10	3	< 2	0.9	0.13	---	---	---	---
27-Aug-08	33	1000	924	6.51	7	2	< 2	0.7	0.12	---	---	---	---
3-Sep-08	34	1000	944	6.46	7	< 2	< 2	0.6	0.13	---	---	---	---
10-Sep-08	35	1000	976	6.78	7	2	<2	0.7	0.16	< 0.0001	< 0.00001	< 0.01	< 0.0002

Table A-6. Results of Waste Rock Humidity Cells - HC 5
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD13)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.00199	< 0.00002	0.0024	0.00001	0.000015	0.00132	< 0.0005	0.0009	< 0.01	1.32	< 0.002	21.2	0.0356	0.00159
16-Jan-08	1	0.00272	< 0.00002	0.0026	< 0.00001	0.000046	0.00119	< 0.0005	0.0009	< 0.01	1.27	< 0.002	46.8	0.0689	0.00421
23-Jan-08	2	0.00111	< 0.00002	0.003	< 0.00001	0.000015	0.000445	< 0.0005	0.0006	< 0.01	1	< 0.002	15.6	0.02302	0.00615
30-Jan-08	3	0.0009	< 0.00002	0.0028	< 0.00001	< 0.000003	0.000132	< 0.0005	0.0007	< 0.01	0.93	< 0.002	13.5	0.0175	0.0084
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.00029	< 0.00002	0.0026	< 0.00001	< 0.000003	0.000143	< 0.0005	< 0.0005	< 0.01	0.54	< 0.002	3.09	0.00545	0.012
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.00017	< 0.00002	0.0024	< 0.00001	0.00001	0.000099	< 0.0005	< 0.0005	< 0.01	0.4	< 0.002	1.56	0.00327	0.0244
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.00012	< 0.00002	0.002	< 0.00001	0.000018	0.000072	< 0.0005	< 0.0005	< 0.01	0.37	< 0.002	0.952	0.00244	0.0304
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.00011	< 0.00002	0.0024	< 0.00001	0.000029	0.000084	< 0.0005	< 0.0005	< 0.01	0.29	< 0.002	0.594	0.00183	0.0312
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.00008	< 0.00002	0.0011	< 0.00001	0.000014	0.000072	< 0.0005	< 0.0005	< 0.01	0.3	< 0.002	0.519	0.0018	0.0248
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.00009	< 0.00002	0.0013	< 0.00001	0.000009	0.000028	< 0.0005	< 0.0005	< 0.01	0.34	< 0.002	0.604	0.0015	0.0217
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.00006	< 0.00002	0.0005	< 0.00001	< 0.000003	0.000051	< 0.0005	< 0.0005	< 0.01	0.29	< 0.002	0.422	0.00186	0.0164
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00011	< 0.00002	0.0012	< 0.00001	0.00001	0.00007	< 0.0005	< 0.0005	< 0.01	0.33	< 0.002	0.554	0.00316	0.0133

Table A-6. Results of Waste Rock Humidity Cells - HC 5
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD13)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	2.24	0.0015	0.03	0.0002	0.00046	< 0.001	0.2	0.0193	0.0308	< 0.0001	0.000054	0.000003	0.00016	0.003
16-Jan-08	1	3.23	0.0024	0.02	0.00005	0.00047	0.002	0.18	0.0193	0.0647	< 0.0001	0.000012	< 0.000001	0.00019	0.002
23-Jan-08	2	1.93	0.0008	< 0.01	0.00025	0.00034	0.001	0.26	0.00904	0.0199	< 0.0001	0.000015	0.000002	0.00021	0.002
30-Jan-08	3	1.69	0.0007	0.01	0.00008	0.00032	0.003	0.23	0.00635	0.0173	< 0.0001	0.000006	0.000001	0.00026	0.001
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.72	0.0003	0.02	< 0.00002	0.00063	0.001	0.27	0.00424	0.004	< 0.0001	< 0.000002	0.000002	0.00036	< 0.001
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.55	0.0003	< 0.01	0.00004	0.00039	< 0.001	0.19	0.00389	0.0021	< 0.0001	< 0.000002	0.000004	0.00045	0.003
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.38	0.0004	< 0.01	0.00004	0.00044	< 0.001	0.3	0.00379	0.0013	< 0.0001	< 0.000002	0.000021	0.00065	< 0.001
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.28	0.0002	0.01	< 0.00002	0.00019	< 0.001	0.19	0.00259	0.0008	< 0.0001	0.000095	< 0.000001	0.00052	< 0.001
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.18	0.0002	< 0.01	0.00006	0.00039	< 0.001	0.21	0.00191	0.0009	< 0.0001	< 0.000002	< 0.000001	0.00073	0.004
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.17	< 0.0001	< 0.01	< 0.00002	0.00035	< 0.001	0.27	0.0015	0.0009	< 0.0001	< 0.000002	0.000078	0.00077	< 0.001
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.13	0.0001	< 0.01	< 0.00002	0.00013	< 0.001	0.19	0.00104	0.0006	< 0.0001	< 0.000002	< 0.000001	0.0008	< 0.001
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.09	< 0.0001	< 0.01	< 0.00002	0.00051	< 0.001	0.27	0.00123	0.0007	< 0.0001	0.000017	0.000009	0.00073	< 0.001

Table A-6. Results of Waste Rock Humidity Cells - HC 5
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD13)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	912	6.49	6	< 2	< 2	0.6	0.14	---	---	---	---
24-Sep-08	37	1000	918	6.63	5	2	<2	0.6	0.11	---	---	---	---
1-Oct-08	38	1000	980	6.71	6	3	<2	0.7	0.16	---	---	---	---
8-Oct-08	39	1000	948	6.68	6	2	<2	2.4	0.13	---	---	---	---
15-Oct-08	40	1000	987	6.7	6	2	< 2	0.6	0.12	< 0.0001	< 0.00001	< 0.01	< 0.0002
22-Oct-08	41	1000	980	6.6	7	2	< 2	0.6	0.14	---	---	---	---
29-Oct-08	42	1000	918	6.5	7	< 2	< 2	0.7	0.1	---	---	---	---
5-Nov-08	43	1000	932	6.66	7	< 2	< 2	0.6	0.13	---	---	---	---
12-Nov-08	44	1000	965	6.59	5	< 2	< 2	0.6	0.12	---	---	---	---
19-Nov-08	45	1000	946	6.59	5	< 2	< 2	0.6	0.12	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Nov-08	46	1000	936	6.52	5	< 2	< 2	0.6	0.12	---	---	---	---
3-Dec-08	47	1000	940	6.45	6	< 2	3	0.6	0.11	---	---	---	---
10-Dec-08	48	1000	991	6.55	13	2	< 2	0.6	0.17	---	---	---	---
17-Dec-08	49	1000	952	6.63	5	< 2	< 2	0.6	0.13	---	---	---	---
24-Dec-08	50	1000	960	6.76	8	2	< 2	0.6	0.08	< 0.0001	< 0.00001	0.01	< 0.0002
30-Dec-08	51	1000	958	6.62	5	< 2	< 2	0.6	0.12	---	---	---	---
7-Jan-09	52	1000	968	6.68	6	2	< 2	0.6	0.14	---	---	---	---
14-Jan-09	53	1000	948	6.56	5	< 2	< 2	0.5	0.11	---	---	---	---

Table A-6. Results of Waste Rock Humidity Cells - HC 5
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD13)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00006	< 0.00002	0.0006	< 0.00001	0.000009	0.000052	< 0.0005	< 0.0005	< 0.01	0.3	< 0.002	0.429	0.00124	0.0124
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.0001	< 0.00002	0.0007	< 0.00001	< 0.000003	0.000034	< 0.0005	< 0.0005	< 0.01	0.29	< 0.002	0.429	0.00136	0.0093
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.00002	< 0.00002	0.0003	< 0.00001	< 0.000003	0.00003	< 0.0005	0.0053	< 0.01	0.27	< 0.002	0.446	0.0017	0.0082
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-6. Results of Waste Rock Humidity Cells - HC 5
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD13)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.08	0.0003	0.01	< 0.00002	0.00029	< 0.001	0.22	0.00098	0.0006	< 0.0001	0.000003	0.000059	0.00077	< 0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.07	< 0.0001	< 0.01	< 0.00002	< 0.0002	< 0.001	0.22	0.00105	0.0005	< 0.0001	< 0.000002	< 0.000001	0.00073	< 0.001
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.05	0.0002	< 0.01	< 0.00002	< 0.0002	< 0.001	0.23	0.00098	0.0004	0.0033	< 0.000002	0.000011	0.00073	< 0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table A-7. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Amphibolite/Schist/Volcanic Tuff (07ARD30)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	813	6.42	105	< 2	< 2	2.3	3.85	< 0.0001	< 0.00001	0.01	0.0002
16-Jan-08	1	1000	890	5.66	157	< 2	5	6.1	5.41	< 0.0001	< 0.00001	0.02	0.0003
23-Jan-08	2	1000	924	6.79	65	4	< 2	5.5	1.96	< 0.0001	< 0.00001	0.02	< 0.0002
30-Jan-08	3	1000	967	6.81	35	4	< 2	4.1	1.13	< 0.0001	< 0.00001	0.03	< 0.0002
6-Feb-08	4	1000	912	7.01	22	4	< 2	3.7	0.66	---	---	---	---
13-Feb-08	5	1000	929	5.89	23	44	8	2.9	0.49	< 0.0001	< 0.00001	0.02	< 0.0002
20-Feb-08	6	1000	978	6.51	18	2	< 2	2.6	0.64	---	---	---	---
27-Feb-08	7	1000	899	6.76	20	3	< 2	2.6	0.37	< 0.0001	< 0.00001	0.02	< 0.0002
05-Mar-08	8	1000	896	9.04	38	7	< 2	3.2	0.4	---	---	---	---
12-Mar-08	9	1000	980	6.81	17	4	< 2	2.2	0.59	---	---	---	---
19-Mar-08	10	1000	913	6.88	16	3	< 2	2.2	0.33	< 0.0001	< 0.00001	0.02	< 0.0002
26-Mar-08	11	1000	900	6.67	14	2	< 2	2.2	0.33	---	---	---	---
2-Apr-08	12	1000	922	6.48	12	< 2	< 2	2.6	0.32	---	---	---	---
9-Apr-08	13	1000	918	6.54	13	2	< 2	1.8	0.3	---	---	---	---
16-Apr-08	14	1000	945	6.15	17	< 2	< 2	2.1	0.39	---	---	---	---
23-Apr-08	15	1000	979	7.08	19	27	< 2	2	0.53	< 0.0001	< 0.00001	0.03	< 0.0002
30-Apr-08	16	1000	947	6.65	13	3	< 2	2.3	0.38	---	---	---	---
7-May-08	17	1000	944	5.92	19	< 2	< 2	2.5	0.48	---	---	---	---
14-May-08	18	1000	942	4.8	27	< 2	4	2.1	0.42	---	---	---	---
21-May-08	19	1000	967	6.63	17	3	< 2	2.4	0.46	---	---	---	---
28-May-08	20	1000	859	4.5	31	< 2	4	2.4	0.42	< 0.0001	< 0.00001	0.02	< 0.0002
4-Jun-08	21	1000	903	6.52	14	< 2	< 2	2.2	0.4	---	---	---	---
11-Jun-08	22	1000	978	6.5	16	3	< 2	2.2	0.51	---	---	---	---
18-Jun-08	23	1000	964	6.93	19	4	< 2	3.3	0.6	---	---	---	---
25-Jun-08	24	1000	948	6.61	11	2	45	1.7	0.39	---	---	---	---
2-Jul-08	25	1000	916	6.71	14	3	< 2	2.1	0.35	< 0.0001	< 0.00001	< 0.01	< 0.0002
9-Jul-08	26	1000	955	6.44	12	2	< 2	2	0.37	---	---	---	---
16-Jul-08	27	1000	918	6.43	11	< 2	< 2	2.1	0.33	---	---	---	---
23-Jul-08	28	1000	877	6.25	8	< 2	< 2	1.9	0.27	---	---	---	---
30-Jul-08	29	1000	897	6.43	8	< 2	< 2	2	0.33	---	---	---	---
6-Aug-08	30	1000	907	6.54	10	< 2	< 2	2.2	0.34	< 0.0001	< 0.00001	< 0.01	0.0003
13-Aug-08	31	1000	963	6.77	11	3	< 2	2	0.39	---	---	---	---
20-Aug-08	32	1000	876	6.6	22	< 2	< 2	2	0.37	---	---	---	---
27-Aug-08	33	1000	889	6.43	11	2	< 2	1.8	0.3	---	---	---	---
3-Sep-08	34	1000	947	6.53	11	2	<2	2	0.34	---	---	---	---
10-Sep-08	35	1000	960	6.75	12	3	<2	1.9	0.36	< 0.0001	< 0.00001	< 0.01	< 0.0002

Table A-7. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Amphibolite/Schist/Volcanic Tuff (07ARD30)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.0006	< 0.00002	0.0064	0.00001	0.000033	0.00101	< 0.0005	0.001	0.01	2.62	< 0.002	5.27	0.00945	0.0225
16-Jan-08	1	0.00064	< 0.00002	0.0075	< 0.00001	0.000023	0.000511	< 0.0005	0.0007	< 0.01	1.97	< 0.002	9.05	0.01	0.111
23-Jan-08	2	0.00028	< 0.00002	0.0089	< 0.00001	0.000062	0.000171	< 0.0005	< 0.0005	< 0.01	1.38	< 0.002	3.34	0.00391	0.119
30-Jan-08	3	0.00018	< 0.00002	0.0091	< 0.00001	0.000012	< 0.000002	< 0.0005	< 0.0005	< 0.01	1.14	< 0.002	1.84	0.00227	0.0984
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.00008	< 0.00002	0.0051	< 0.00001	< 0.000003	0.000059	< 0.0005	< 0.0005	< 0.01	0.76	< 0.002	0.857	0.00161	0.0599
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.0001	< 0.00002	0.0046	< 0.00001	0.000014	0.000046	< 0.0005	< 0.0005	< 0.01	0.61	< 0.002	0.644	0.00159	0.0613
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.00009	< 0.00002	0.0033	< 0.00001	0.000031	0.000033	< 0.0005	< 0.0005	< 0.01	0.57	< 0.002	0.62	0.00125	0.0433
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.00012	< 0.00002	0.0046	< 0.00001	0.000036	0.000063	< 0.0005	< 0.0005	< 0.01	0.64	< 0.002	0.89	0.00203	0.0367
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.0004	< 0.00002	0.0026	< 0.00001	< 0.000003	0.000062	< 0.0005	< 0.0005	< 0.01	0.67	< 0.002	0.719	0.00152	0.0369
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.0001	< 0.00002	0.0024	< 0.00001	0.000018	0.000017	< 0.0005	< 0.0005	< 0.01	0.57	< 0.002	0.649	0.0014	0.0306
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.0001	< 0.00002	0.0017	< 0.00001	0.000003	0.000035	< 0.0005	< 0.0005	< 0.01	0.54	< 0.002	0.593	0.00167	0.0326
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00018	< 0.00002	0.0024	< 0.00001	0.000006	0.000037	< 0.0005	< 0.0005	< 0.01	0.57	< 0.002	0.695	0.00169	0.0291

Table A-7. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Amphibolite/Schist/Volcanic Tuff (07ARD30)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	3.05	0.0011	< 0.01	0.0002	0.00056	< 0.001	0.24	0.0158	0.0286	< 0.0001	0.000056	0.000005	0.00029	0.003
16-Jan-08	1	3.74	0.0007	0.01	0.00009	0.0006	0.002	0.22	0.00693	0.0421	< 0.0001	0.000024	0.000009	0.0003	0.002
23-Jan-08	2	2.09	< 0.0001	0.01	0.00006	0.00055	0.001	0.28	0.0038	0.0153	< 0.0001	0.00002	0.000007	0.0003	0.001
30-Jan-08	3	1.3	0.0002	0.02	< 0.00002	0.00055	< 0.001	0.4	0.00372	0.0089	0.0001	< 0.000002	0.000007	0.00035	< 0.001
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.66	< 0.0001	0.02	< 0.00002	0.00034	< 0.001	0.29	0.00261	0.0035	< 0.0001	< 0.000002	< 0.000001	0.00043	< 0.001
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.46	< 0.0001	0.02	0.00008	0.00056	< 0.001	0.22	0.00181	0.0028	< 0.0001	0.000003	0.000012	0.00049	0.003
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.32	0.0001	< 0.01	0.00009	0.00053	< 0.001	0.26	0.00184	0.0026	0.0002	< 0.000002	0.000017	0.00048	0.001
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.2	0.0001	< 0.01	< 0.00002	0.00035	< 0.001	0.32	0.00191	0.0039	< 0.0001	0.000098	0.000006	0.00043	< 0.001
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.13	0.0001	< 0.01	0.00003	0.00058	< 0.001	0.27	0.00115	0.0043	< 0.0001	0.000004	0.000013	0.00049	0.002
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.09	< 0.0001	< 0.01	< 0.00002	0.00048	< 0.001	0.27	0.00102	0.0027	< 0.0001	< 0.000002	0.000004	0.00053	0.001
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.09	0.0001	< 0.01	< 0.00002	0.00022	< 0.001	0.23	0.00071	0.0023	< 0.0001	< 0.000002	0.000001	0.00052	0.001
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.03	< 0.0001	< 0.01	< 0.00002	0.00065	< 0.001	0.33	0.00095	0.0026	< 0.0001	0.000013	0.000014	0.00046	< 0.001

Table A-7. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Amphibolite/Schist/Volcanic Tuff (07ARD30)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	904	6.41	8	< 2	< 2	2	0.28	---	---	---	---
24-Sep-08	37	1000	952	6.62	10	2	<2	1.9	0.34	---	---	---	---
1-Oct-08	38	1000	964	6.61	9	< 2	< 2	1.9	0.3	---	---	---	---
8-Oct-08	39	1000	948	6.67	11	2	2	1.8	0.36	---	---	---	---
15-Oct-08	40	1000	994	6.71	11	2	< 2	2	0.38	< 0.0001	< 0.00001	0.01	< 0.0002
22-Oct-08	41	1000	954	6.53	11	< 2	5	1.6	0.31	---	---	---	---
29-Oct-08	42	1000	914	6.45	12	< 2	< 2	1.7	0.28	---	---	---	---
5-Nov-08	43	1000	936	6.58	12	< 2	< 2	1.9	0.31	---	---	---	---
12-Nov-08	44	1000	996	6.69	9	< 2	< 2	1.7	0.39	---	---	---	---
19-Nov-08	45	1000	934	6.52	8	< 2	< 2	1.8	0.29	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Nov-08	46	1000	935	5.11	8	< 2	< 2	1.7	0.27	---	---	---	---
3-Dec-08	47	1000	931	6.5	7	< 2	< 2	1.6	0.27	---	---	---	---
10-Dec-08	48	1000	930	6.35	12	< 2	< 2	1.6	0.25	---	---	---	---
17-Dec-08	49	1000	981	6.62	6	< 2	< 2	1.4	0.27	---	---	---	---
24-Dec-08	50	1000	939	6.71	13	< 2	< 2	1.4	0.2	< 0.0001	0.00004	< 0.01	< 0.0002
30-Dec-08	51	1000	965	6.55	8	< 2	< 2	1.6	0.26	---	---	---	---
7-Jan-09	52	1000	942	6.88	11	3	< 2	1.7	0.29	---	---	---	---
14-Jan-09	53	1000	939	6.48	7	< 2	< 2	1.6	0.27	---	---	---	---

Table A-7. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Amphibolite/Schist/Volcanic Tuff (07ARD30)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00009	< 0.00002	0.0015	< 0.00001	0.000014	0.000062	< 0.0005	< 0.0005	< 0.01	0.5	< 0.002	0.609	0.00192	0.026
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.00012	< 0.00002	0.0014	< 0.00001	0.000008	0.000032	< 0.0005	< 0.0005	< 0.01	0.48	< 0.002	0.57	0.00179	0.0225
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.00025	< 0.00002	0.0012	0.00003	0.000008	0.000034	< 0.0005	< 0.0005	< 0.01	0.4	< 0.002	0.474	0.00199	0.0173
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-7. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Amphibolite/Schist/Volcanic Tuff (07ARD30)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.06	0.0002	< 0.01	< 0.00002	0.00034	< 0.001	0.33	0.00073	0.0024	< 0.0001	0.00001	0.00006	0.00046	< 0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.03	< 0.0001	< 0.01	< 0.00002	0.0002	< 0.001	0.28	0.00082	0.0021	< 0.0001	0.000003	0.000007	0.00041	< 0.001
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.02	< 0.0001	< 0.01	0.00011	0.0003	< 0.001	0.25	0.00088	0.0017	0.0001	< 0.000002	0.000114	0.00045	< 0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table A-8. Results of Waste Rock Humidity Cells - HC 7
Hanging wall - Schist (ARD19)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As	Ba
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	864	5.61	395	< 2	4	92	30.9	< 0.0001	0.00001	< 0.01	0.0007	0.0053
16-Jan-08	1	1000	920	5.2	452	< 2	< 2	130	29.1	< 0.0001	< 0.00001	< 0.01	0.0003	0.00323
23-Jan-08	2	1000	924	5.91	286	< 2	4	89	19.5	< 0.0001	< 0.00001	< 0.01	0.0005	0.00217
30-Jan-08	3	1000	988	5.91	195	< 2	2	74	15.8	< 0.0001	< 0.00001	0.01	0.0006	0.00188
6-Feb-08	4	1000	922	6.7	141	3	3	47	10.5	---	---	---	---	---
13-Feb-08	5	1000	902	5.21	104	< 2	2	33	6.12	< 0.0001	< 0.00001	< 0.01	0.0003	0.00077
20-Feb-08	6	1000	975	7.13	86	4	5	27	4.76	---	---	---	---	---
27-Feb-08	7	1000	890	5.21	72	< 2	3	24	3.9	< 0.0001	< 0.00001	< 0.01	0.0003	0.00064
05-Mar-08	8	1000	864	5.97	71	< 2	< 2	25	3.71	---	---	---	---	---
12-Mar-08	9	1000	956	5.42	53	< 2	3	20	3.24	---	---	---	---	---
19-Mar-08	10	1000	884	5.65	50	< 2	2	20	3.13	< 0.0001	< 0.00001	< 0.01	< 0.0002	0.00047
26-Mar-08	11	1000	912	5.42	100	< 2	3	39	8.02	---	---	---	---	---
2-Apr-08	12	1000	894	5.38	36	< 2	2	13	2.08	---	---	---	---	---
9-Apr-08	13	1000	906	3.98	86	< 2	11	12	1.96	---	---	---	---	---
16-Apr-08	14	1000	923	5.98	40	< 2	< 2	14	2	---	---	---	---	---
23-Apr-08	15	1000	978	4.37	72	< 2	5	2.9	2.65	< 0.0001	< 0.00001	< 0.01	< 0.0002	0.00049
30-Apr-08	16	1000	936	5.45	41	< 2	2	15	2.13	---	---	---	---	---
7-May-08	17	1000	936	4.27	69	< 2	5	19	2.69	---	---	---	---	---
14-May-08	18	1000	930	4.5	60	< 2	4	14	2.3	---	---	---	---	---
21-May-08	19	1000	966	4.06	84	< 2	7	17	2.52	---	---	---	---	---
28-May-08	20	1000	837	5.77	104	< 2	< 2	38	8.29	< 0.0001	< 0.00001	< 0.01	< 0.0002	0.0012
4-Jun-08	21	1000	884	6.03	49	< 2	< 2	16	2.57	---	---	---	---	---
11-Jun-08	22	1000	978	5.72	53	< 2	< 2	18	2.83	---	---	---	---	---
18-Jun-08	23	1000	962	5.83	51	< 2	< 2	18	2.63	---	---	---	---	---
25-Jun-08	24	1000	956	5.95	37	< 2	3	17	2.13	---	---	---	---	---
2-Jul-08	25	1000	903	5.98	41	< 2	< 2	14	2.02	< 0.0001	< 0.00001	< 0.01	< 0.0002	0.00043
9-Jul-08	26	1000	960	5.51	47	< 2	3	16	2.21	---	---	---	---	---
16-Jul-08	27	1000	896	6.01	44	< 2	< 2	15	2.1	---	---	---	---	---
23-Jul-08	28	1000	840	5.71	81	< 2	4	34	5.97	---	---	---	---	---
30-Jul-08	29	1000	862	5.65	57	< 2	3	21	3.21	---	---	---	---	---
6-Aug-08	30	1000	903	6.18	34	< 2	< 2	12	1.7	< 0.0001	< 0.00001	< 0.01	0.0003	0.00065
13-Aug-08	31	1000	962	5.63	39	< 2	3	14	1.94	---	---	---	---	---
20-Aug-08	32	1000	842	5.73	81	< 2	< 2	21	3.23	---	---	---	---	---
27-Aug-08	33	1000	880	5.63	43	< 2	< 2	16	2.08	---	---	---	---	---
3-Sep-08	34	1000	918	5.61	39	< 2	< 2	14	1.75	---	---	---	---	---
10-Sep-08	35	1000	950	5.98	43	<2	3	16	1.96	< 0.0001	0.00005	< 0.01	< 0.0002	0.00076

Table A-8. Results of Waste Rock Humidity Cells - HC 7
Hanging wall - Schist (ARD19)

Date	Cycle No.	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.00002	0.0161	< 0.00001	0.000043	0.0251	< 0.0005	0.0985	0.03	3.13	< 0.002	20	0.235	0.00173	3.63	0.0225
16-Jan-08	1	< 0.00002	0.0253	< 0.00001	0.000027	0.00522	0.0198	0.0276	< 0.01	2.44	< 0.002	27.3	0.202	0.0074	4.03	0.0069
23-Jan-08	2	< 0.00002	0.0245	< 0.00001	< 0.000003	0.003202	< 0.0005	0.0073	< 0.01	1.78	< 0.002	17	0.133	0.00225	2.29	0.0039
30-Jan-08	3	< 0.00002	0.0255	< 0.00001	0.000005	0.00193	< 0.0005	0.0041	< 0.01	1.59	< 0.002	11.6	0.0967	0.00165	1.38	0.0027
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	< 0.00002	0.0146	< 0.00001	0.000004	0.00108	< 0.0005	0.0025	< 0.01	0.9	< 0.002	5.28	0.0501	0.00314	0.62	0.0015
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	< 0.00002	0.0142	< 0.00001	0.000005	0.00109	< 0.0005	0.0028	< 0.01	0.66	< 0.002	3.52	0.0435	0.00181	0.35	0.0014
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	< 0.00002	0.0099	< 0.00001	< 0.000003	0.000967	< 0.0005	0.002	< 0.01	0.53	< 0.002	2.82	0.0384	0.00146	0.16	0.0013
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	< 0.00002	0.0091	< 0.00001	0.000004	0.00156	< 0.0005	0.0035	< 0.01	0.44	0.002	2.57	0.0526	0.00173	0.08	0.0019
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	< 0.00002	0.0085	< 0.00001	0.000009	0.00327	< 0.0005	0.007	< 0.01	0.62	< 0.002	4.79	0.105	0.00317	0.04	0.0044
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	< 0.00002	0.0056	< 0.00001	0.000009	0.00237	< 0.0005	0.0054	< 0.01	0.33	< 0.002	2.36	0.0729	0.0022	0.03	0.0029
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	< 0.00002	0.0043	< 0.00001	< 0.000003	0.0027	< 0.0005	0.0078	0.03	0.27	< 0.002	1.99	0.0763	0.0005	0.05	0.0034
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00009	0.005	0.00004	0.000062	0.00446	< 0.0005	0.0106	< 0.01	0.29	< 0.002	2.85	0.127	0.0013	< 0.01	0.0054

Table A-8. Results of Waste Rock Humidity Cells - HC 7
Hanging wall - Schist (ARD19)

Date	Cycle No.	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.01	0.0004	0.00061	0.018	0.29	0.00567	0.219	0.0001	0.000133	0.000083	0.00014	0.013
16-Jan-08	1	0.01	0.00012	0.00047	0.036	0.29	0.00489	0.249	< 0.0001	0.000055	0.000034	0.00003	0.005
23-Jan-08	2	0.01	0.00019	0.0004	0.023	0.32	0.0023	0.17	< 0.0001	0.000036	0.000017	0.00013	0.008
30-Jan-08	3	0.01	0.00006	0.00045	0.013	0.54	0.00106	0.132	0.0001	0.000014	0.000021	0.00012	0.004
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.02	0.00006	0.00046	0.007	0.32	0.00055	0.0499	0.0002	0.000007	0.000028	0.0001	0.003
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.03	0.00013	0.00039	0.004	0.25	0.00042	0.0325	< 0.0001	0.000009	0.000018	0.00008	0.007
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	< 0.01	0.00008	0.00037	0.002	0.27	0.00021	0.0264	< 0.0001	< 0.000002	0.000012	0.00011	0.003
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	< 0.01	0.00011	0.00016	0.001	0.51	0.00016	0.0233	< 0.0001	0.000104	0.000014	0.00006	0.003
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	< 0.01	0.00018	0.00039	0.002	0.35	0.00022	0.0672	< 0.0001	0.00001	0.000032	0.00005	0.005
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	< 0.01	0.00017	0.00031	< 0.001	0.35	< 0.00001	0.018	< 0.0001	0.000019	0.00001	< 0.00003	0.007
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	< 0.01	0.00032	0.00012	0.001	0.31	0.00014	0.0154	0.0001	0.000003	0.00002	< 0.00003	0.005
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	< 0.01	0.00025	0.00052	0.001	0.58	0.00002	0.0181	< 0.0001	0.000094	0.000129	0.00008	0.006

Table A-8. Results of Waste Rock Humidity Cells - HC 7
Hanging wall - Schist (ARD19)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As	Ba
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	913	5.66	44	<2	3	15	2.33	---	---	---	---	---
24-Sep-08	37	1000	983	6.16	44	< 2	< 2	17	2.09	---	---	---	---	---
1-Oct-08	38	1000	988	5.55	43	<2	3	16	2.01	---	---	---	---	---
8-Oct-08	39	1000	980	5.82	42	<2	7	15	2	---	---	---	---	---
15-Oct-08	40	1000	988	5.63	44	< 2	6	15	1.84	< 0.0001	< 0.00001	< 0.01	< 0.0002	0.0005
22-Oct-08	41	1000	980	5.69	48	< 2	5	17	2.04	---	---	---	---	---
29-Oct-08	42	1000	892	5.42	41	< 2	3	14	1.59	---	---	---	---	---
5-Nov-08	43	1000	911	5.48	42	< 2	< 2	14	1.57	---	---	---	---	---
12-Nov-08	44	1000	1000	5.55	38	< 2	2	15	1.79	---	---	---	---	---
19-Nov-08	45	1000	914	5.75	38	< 2	2	14	1.58	< 0.0001	< 0.00001	< 0.01	< 0.0002	0.00042
26-Nov-08	46	1000	904	4.62	31	< 2	2	14	1.54	---	---	---	---	---
3-Dec-08	47	1000	893	5.42	44	< 2	9	16	1.68	---	---	---	---	---
10-Dec-08	48	1000	888	5.42	47	< 2	4	16	1.62	---	---	---	---	---
17-Dec-08	49	1000	977	5.53	40	< 2	2	15	1.63	---	---	---	---	---
24-Dec-08	50	1000	915	5.66	30	< 2	< 2	10	1.04	< 0.0001	< 0.00001	< 0.01	< 0.0002	0.00043
30-Dec-08	51	1000	949	5.45	32	< 2	3	12	1.2	---	---	---	---	---
7-Jan-09	52	1000	899	5.49	38	< 2	2	14	1.49	---	---	---	---	---
14-Jan-09	53	1000	900	5.62	42	< 2	2	16	1.55	---	---	---	---	---

Table A-8. Results of Waste Rock Humidity Cells - HC 7
Hanging wall - Schist (ARD19)

Date	Cycle No.	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00002	0.0037	< 0.00001	0.000016	0.00556	< 0.0005	0.0124	< 0.01	0.24	< 0.002	2.7	0.137	0.0005	0.04	0.0073
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	< 0.00002	0.0028	< 0.00001	0.000007	0.00547	< 0.0005	0.0129	0.01	0.18	< 0.002	2.63	0.146	0.0011	0.02	0.0071
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	< 0.00002	0.0018	< 0.00001	< 0.000003	0.00493	< 0.0005	0.0119	< 0.01	0.11	< 0.002	1.78	0.112	0.0007	< 0.01	0.0067
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-8. Results of Waste Rock Humidity Cells - HC 7
Hanging wall - Schist (ARD19)

Date	Cycle No.	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.02	0.00025	0.00021	< 0.001	0.78	0.0001	0.0176	< 0.0001	0.000032	0.000047	< 0.00003	0.007
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	< 0.01	0.00022	< 0.0002	< 0.001	0.38	0.00007	0.0153	< 0.0001	< 0.000002	0.000068	< 0.00003	0.005
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	< 0.01	0.00013	< 0.0002	0.001	0.34	0.00013	0.0108	0.0001	< 0.000002	0.000078	< 0.00003	0.004
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---

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Table A-9. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (07ARD06)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As	Ba
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	730	7.03	111	8	< 2	24	4.24	< 0.0001	< 0.00001	0.02	0.0007	0.00505
16-Jan-08	1	1000	989	7.26	211	16	< 2	61	9.64	< 0.0001	< 0.00001	0.02	0.0013	0.0107
23-Jan-08	2	1000	975	7.43	115	16	< 2	28	5.09	< 0.0001	< 0.00001	0.02	0.0014	0.00743
30-Jan-08	3	1000	*	7.43	85	33	< 2	15	4.24	< 0.0001	< 0.00001	0.03	0.0018	0.00723
6-Feb-08	4	1000	983	7.56	51	16	< 2	7.5	2.67	---	---	---	---	---
13-Feb-08	5	1000	988	7.39	52	14	< 2	6.4	2.27	< 0.0001	< 0.00001	0.02	0.0016	0.00379
20-Feb-08	6	1000	978	7.26	44	12	< 2	6.3	2.3	---	---	---	---	---
27-Feb-08	7	1000	918	8.84	66	23	< 2	7.5	2.68	< 0.0001	< 0.00001	0.02	0.002	0.00469
05-Mar-08	8	1000	995	7.39	50	15	< 2	6.1	2.08	---	---	---	---	---
12-Mar-08	9	1000	993	7.34	45	15	< 2	2.9	2.4	---	---	---	---	---
19-Mar-08	10	1000	992	7.42	44	15	< 2	6.6	2.27	< 0.0001	< 0.00001	0.01	0.0019	0.00356
26-Mar-08	11	1000	990	7.28	47	13	< 2	7	2.26	---	---	---	---	---
2-Apr-08	12	1000	988	6.96	44	13	< 2	8.5	2.33	---	---	---	---	---
9-Apr-08	13	1000	972	6.97	52	15	< 2	8.3	2.72	---	---	---	---	---
16-Apr-08	14	1000	990	7.14	55	13	< 2	9.4	2.65	---	---	---	---	---
23-Apr-08	15	1000	988	7.04	49	12	< 2	9.7	2.67	< 0.0001	< 0.00001	0.02	0.0012	0.00326
30-Apr-08	16	1000	976	7.18	57	13	< 2	11	2.87	---	---	---	---	---
7-May-08	17	1000	890	6.72	61	10	< 2	10	3.13	---	---	---	---	---
14-May-08	18	1000	983	6.84	50	12	< 2	48	2.6	---	---	---	---	---
21-May-08	19	1000	990	7.14	47	14	< 2	8.3	2.78	---	---	---	---	---
28-May-08	20	1000	992	6.95	64	9	< 2	8.5	3.05	< 0.0001	< 0.00001	0.02	0.0018	0.00327
4-Jun-08	21	1000	996	7.35	52	15	< 2	8.3	2.77	---	---	---	---	---
11-Jun-08	22	1000	973	7.24	56	15	< 2	8.9	3.2	---	---	---	---	---
18-Jun-08	23	1000	956	7.5	60	14	< 2	10	3.41	---	---	---	---	---
25-Jun-08	24	1000	989	7.25	47	14	< 2	8.3	3.17	---	---	---	---	---
2-Jul-08	25	1000	987	7.28	53	14	< 2	8.8	3.03	< 0.0001	< 0.00001	0.02	0.0016	0.00277
9-Jul-08	26	1000	988	7.11	55	15	< 2	8.5	3.07	---	---	---	---	---
16-Jul-08	27	1000	980	7.04	54	15	< 2	8.2	3.34	---	---	---	---	---
23-Jul-08	28	1000	989	6.94	47	16	< 2	7.1	3.13	---	---	---	---	---
30-Jul-08	29	1000	819	7.25	52	17	< 2	7.8	3.31	---	---	---	---	---
6-Aug-08	30	1000	975	7.43	48	15	< 2	6.9	2.97	< 0.0001	< 0.00001	0.02	0.0014	0.00242
13-Aug-08	31	1000	979	7.52	42	14	< 2	5.3	2.79	---	---	---	---	---
20-Aug-08	32	1000	990	7.18	69	15	< 2	6.1	3.05	---	---	---	---	---
27-Aug-08	33	1000	986	7.17	45	16	< 2	6.3	2.95	---	---	---	---	---
3-Sep-08	34	1000	986	7.29	49	16	<2	7.2	3.26	---	---	---	---	---
10-Sep-08	35	1000	991	7.51	52	16	<2	7.5	3.39	< 0.0001	< 0.00001	0.01	0.0016	0.00255

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Table A-9. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (07ARD06)

Date	Cycle No.	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	< 0.00002	0.0083	0.00001	0.00001	0.00268	< 0.0005	0.0023	0.03	4.05	< 0.002	5.6	0.0306	0.0191	1.81	0.0022
16-Jan-08	1	< 0.00002	0.0153	< 0.00001	0.000013	0.000883	< 0.0005	0.0005	0.02	4.81	< 0.002	14.1	0.0536	0.127	2.79	0.0016
23-Jan-08	2	< 0.00002	0.0146	< 0.00001	0.000079	0.000244	< 0.0005	< 0.0005	0.01	3.46	< 0.002	7.28	0.02782	0.134	1.75	0.001
30-Jan-08	3	< 0.00002	0.0135	< 0.00001	< 0.000003	0.000075	< 0.0005	< 0.0005	0.01	3.39	< 0.002	6.06	0.0356	0.108	1.31	0.0011
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	< 0.00002	0.006	< 0.00001	0.000014	0.000167	< 0.0005	< 0.0005	0.02	1.78	< 0.002	3.13	0.0236	0.0474	0.57	0.0005
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	< 0.00002	0.0069	< 0.00001	0.000004	0.000186	< 0.0005	< 0.0005	0.01	1.89	< 0.002	3.76	0.0323	0.0526	0.52	0.0007
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	< 0.00002	0.0044	< 0.00001	< 0.000003	0.000157	< 0.0005	< 0.0005	< 0.01	1.47	< 0.002	3.09	0.0284	0.0249	0.3	0.0007
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	< 0.00002	0.0031	< 0.00001	< 0.000003	0.00015	< 0.0005	< 0.0005	< 0.01	1.48	< 0.002	3.45	0.0236	0.0139	0.21	0.0006
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	< 0.00002	0.0024	< 0.00001	0.000013	0.000109	< 0.0005	< 0.0005	< 0.01	1.43	< 0.002	3.73	0.0143	0.0139	0.14	0.0005
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	< 0.00002	0.002	< 0.00001	< 0.000003	0.000042	< 0.0005	< 0.0005	< 0.01	1.27	< 0.002	3.62	0.00791	0.011	0.12	0.0003
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	< 0.00002	0.0014	< 0.00001	< 0.000003	0.000039	< 0.0005	< 0.0005	< 0.01	1.3	< 0.002	3.35	0.00565	0.0105	0.08	0.0003
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	< 0.00002	0.0017	< 0.00001	< 0.000003	0.00008	< 0.0005	< 0.0005	< 0.01	1.24	< 0.002	3.79	0.00442	0.011	0.04	0.0002

Table A-9. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (07ARD06)

Date	Cycle No.	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.03	0.00016	0.00077	< 0.001	1.13	0.0111	0.0108	0.0002	0.000007	0.000028	0.00191	0.004
16-Jan-08	1	0.02	0.00003	0.00078	0.002	1.87	0.00787	0.0248	0.0001	0.000008	0.000612	0.00308	0.004
23-Jan-08	2	< 0.01	0.00016	0.00059	< 0.001	2.07	0.00453	0.0134	0.0001	0.000008	0.000255	0.00463	0.001
30-Jan-08	3	0.02	< 0.00002	0.00058	< 0.001	2.55	0.0127	0.0113	0.0002	< 0.000002	0.000341	0.00498	0.003
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.02	< 0.00002	0.00067	< 0.001	1.73	0.00947	0.0056	< 0.0001	< 0.000002	0.000143	0.00473	0.002
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.01	0.00002	0.00063	< 0.001	1.72	0.00798	0.0069	< 0.0001	< 0.000002	0.00024	0.00554	0.003
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	< 0.01	0.00007	0.00059	< 0.001	1.83	0.00965	0.0057	0.0002	< 0.000002	0.000135	0.0047	0.002
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	< 0.01	< 0.00002	0.00023	< 0.001	1.52	0.00909	0.0066	0.0001	0.000093	0.000135	0.00373	0.002
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	< 0.01	0.00005	0.00046	< 0.001	1.62	0.00536	0.0082	< 0.0001	< 0.000002	0.000165	0.0047	0.003
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	< 0.01	< 0.00002	0.00026	< 0.001	1.62	0.00869	0.0063	0.0001	< 0.000002	0.000087	0.00405	0.002
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	< 0.01	< 0.00002	0.00013	< 0.001	1.51	0.00882	0.0058	< 0.0001	< 0.000002	0.00011	0.00338	< 0.001
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	< 0.01	< 0.00002	0.00042	< 0.001	1.72	0.00755	0.0064	< 0.0001	0.000008	0.00014	0.00384	0.001

Table A-9. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (07ARD06)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As	Ba
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	984	7.21	52	16	<2	7.1	3.45	---	---	---	---	---
24-Sep-08	37	1000	987	7.43	50	16	<2	7.2	3.38	---	---	---	---	---
1-Oct-08	38	1000	980	7.39	45	15	<2	6.9	3.11	---	---	---	---	---
8-Oct-08	39	1000	985	7.42	46	14	<2	6.9	3.23	---	---	---	---	---
15-Oct-08	40	1000	990	7.41	48	15	< 2	6.8	3.04	< 0.0001	< 0.00001	0.04	0.0022	0.00204
22-Oct-08	41	1000	987	7.43	49	15	< 2	7	3.17	---	---	---	---	---
29-Oct-08	42	1000	983	7.48	56	16	< 2	6.9	3.37	---	---	---	---	---
5-Nov-08	43	1000	985	7.33	54	17	< 2	6.8	3.46	---	---	---	---	---
12-Nov-08	44	1000	989	7.46	45	12	< 2	6.6	3.31	---	---	---	---	---
19-Nov-08	45	1000	987	7.46	50	16	< 2	6.9	3.53	< 0.0001	< 0.00001	0.03	0.0015	0.00198
26-Nov-08	46	1000	991	6.09	27	14	< 2	5.8	3.17	---	---	---	---	---
3-Dec-08	47	1000	994	7.32	46	16	< 2	5.5	3.28	---	---	---	---	---
10-Dec-08	48	1000	994	7.21	45	14	< 2	5.1	2.86	---	---	---	---	---
17-Dec-08	49	1000	993	7.52	46	15	< 2	5.9	3.2	---	---	---	---	---
24-Dec-08	50	1000	995	7.58	46	14	< 2	4.8	2.72	< 0.0001	< 0.00001	0.03	0.0018	0.00157
30-Dec-08	51	1000	992	7.53	43	14	< 2	5.3	2.94	---	---	---	---	---
7-Jan-09	52	1000	994	7.57	47	15	< 2	6.1	3.37	---	---	---	---	---
14-Jan-09	53	1000	991	7.44	41	14	< 2	5.3	2.97	---	---	---	---	---

Table A-9. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (07ARD06)

Date	Cycle No.	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	< 0.00002	0.0009	< 0.00001	< 0.000003	0.00017	< 0.0005	< 0.0005	< 0.01	1.15	< 0.002	3.33	0.00272	0.0105	0.06	0.0003
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	< 0.00002	0.0012	< 0.00001	< 0.000003	0.00003	< 0.0005	< 0.0005	< 0.01	1.18	< 0.002	3.67	0.00202	0.0104	0.06	0.0002
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	< 0.00002	0.0005	< 0.00001	< 0.000003	< 0.000002	< 0.0005	< 0.0005	< 0.01	0.98	< 0.002	2.79	0.00136	0.0073	0.03	0.0001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-9. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (07ARD06)

Date	Cycle No.	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.02	< 0.00002	0.00018	< 0.001	1.65	0.00782	0.0055	< 0.0001	0.000007	0.000194	0.00398	< 0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	< 0.01	< 0.00002	< 0.0002	< 0.001	1.66	0.00637	0.0065	< 0.0001	< 0.000002	0.000144	0.00377	< 0.001
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	< 0.01	< 0.00002	< 0.0002	< 0.001	1.26	0.00707	0.0045	< 0.0001	< 0.000002	0.000112	0.00369	< 0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---

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Table A-10. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff/Schist (07 ARD 06)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	752	6.3	170	< 2	2	4.2	5.76	< 0.0001	< 0.00001	0.02	< 0.0002
16-Jan-08	1	1000	772	5.66	215	< 2	4	9	7.28	< 0.0001	< 0.00001	0.01	0.0003
23-Jan-08	2	1000	937	6.56	81	2	< 2	5.2	2.38	< 0.0001	< 0.00001	< 0.01	< 0.0002
30-Jan-08	3	1000	980	6.76	41	3	< 2	4.8	1.13	< 0.0001	< 0.00001	0.03	0.0002
6-Feb-08	4	1000	929	6.85	24	3	< 2	3.5	0.58	---	---	---	---
13-Feb-08	5	1000	913	6.7	20	2	< 2	2.7	0.37	< 0.0001	< 0.00001	0.03	< 0.0002
20-Feb-08	6	1000	986	6.75	19	3	< 2	3.1	0.47	---	---	---	---
27-Feb-08	7	1000	922	6.67	17	< 2	< 2	2.8	0.3	< 0.0001	< 0.00001	0.04	< 0.0002
05-Mar-08	8	1000	897	6.7	19	3	< 2	3.2	0.31	---	---	---	---
12-Mar-08	9	1000	986	6.72	14	3	< 2	2.1	0.31	---	---	---	---
19-Mar-08	10	1000	923	6.61	14	2	< 2	2.2	0.21	< 0.0001	< 0.00001	0.04	< 0.0002
26-Mar-08	11	1000	902	6.45	13	< 2	< 2	2	0.29	---	---	---	---
2-Apr-08	12	1000	937	6.5	12	3	< 2	2	0.21	---	---	---	---
9-Apr-08	13	1000	963	6.27	13	< 2	2	1.5	0.2	---	---	---	---
16-Apr-08	14	1000	961	6.62	13	3	< 2	1.7	0.22	---	---	---	---
23-Apr-08	15	1000	985	6.43	15	2	< 2	1.7	0.33	< 0.0001	< 0.00001	0.04	< 0.0002
30-Apr-08	16	1000	981	5.18	17	< 2	4	1.7	0.22	---	---	---	---
7-May-08	17	1000	966	6.17	14	< 2	< 2	1.9	0.26	---	---	---	---
14-May-08	18	1000	954	4.99	31	< 2	3	1.4	0.26	---	---	---	---
21-May-08	19	1000	979	6.34	19	2	< 2	1.8	0.3	---	---	---	---
28-May-08	20	1000	899	3.7	96	< 2	13	1	0.24	< 0.0001	< 0.00001	0.05	< 0.0002
4-Jun-08	21	1000	936	6.19	13	< 2	< 2	1.7	0.2	---	---	---	---
11-Jun-08	22	1000	986	6.5	16	3	< 2	1.5	0.29	---	---	---	---
18-Jun-08	23	1000	956	6.79	12	3	< 2	1.7	0.23	---	---	---	---
25-Jun-08	24	1000	966	6.63	11	3	44	1.5	0.24	---	---	---	---
2-Jul-08	25	1000	938	6.48	9	< 2	< 2	1.5	0.18	< 0.0001	< 0.00001	0.03	< 0.0002
9-Jul-08	26	1000	969	6.4	11	2	< 2	1.6	0.2	---	---	---	---
16-Jul-08	27	1000	940	6.4	8	< 2	< 2	1.3	0.16	---	---	---	---
23-Jul-08	28	1000	922	6.28	7	< 2	< 2	1.4	0.17	---	---	---	---
30-Jul-08	29	1000	925	6.47	7	< 2	< 2	1.4	0.18	---	---	---	---
6-Aug-08	30	1000	927	6.55	7	< 2	< 2	1.4	0.15	< 0.0001	< 0.00001	0.03	0.0003
13-Aug-08	31	1000	967	6.76	9	< 2	< 2	1.5	0.22	---	---	---	---
20-Aug-08	32	1000	900	6.53	11	< 2	< 2	1.4	0.18	---	---	---	---
27-Aug-08	33	1000	884	6.42	10	< 2	< 2	1.5	0.17	---	---	---	---
3-Sep-08	34	1000	962	6.45	10	< 2	< 2	1.4	0.18	---	---	---	---
10-Sep-08	35	1000	977	6.68	10	2	<2	1.4	0.2	< 0.0001	< 0.00001	0.03	< 0.0002

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Table A-10. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff/Schist (07 ARD 06)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.00458	< 0.00002	0.0218	< 0.00001	0.000006	0.00103	< 0.0005	0.001	0.01	5.05	< 0.002	10.4	0.0275	0.00887
16-Jan-08	1	0.00645	< 0.00002	0.0192	< 0.00001	0.000006	0.000841	< 0.0005	0.001	0.01	4.68	< 0.002	14	0.0376	0.0376
23-Jan-08	2	0.00216	< 0.00002	0.0182	< 0.00001	0.00003	0.000372	< 0.0005	0.0005	< 0.01	2.57	< 0.002	5.12	0.01348	0.04616
30-Jan-08	3	0.00108	< 0.00002	0.0233	< 0.00001	0.00001	0.000035	< 0.0005	< 0.0005	0.02	2.25	< 0.002	2.4	0.00723	0.0654
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.0004	< 0.00002	0.0138	< 0.00001	< 0.000003	0.000131	< 0.0005	< 0.0005	0.01	1.3	< 0.002	0.787	0.0033	0.0462
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.0003	< 0.00002	0.0161	< 0.00001	0.000012	0.000115	< 0.0005	< 0.0005	0.02	1.15	< 0.002	0.644	0.00326	0.0603
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.00025	< 0.00002	0.0124	< 0.00001	0.000029	0.000101	< 0.0005	< 0.0005	0.03	0.97	< 0.002	0.507	0.00276	0.0431
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.00041	< 0.00002	0.0123	< 0.00001	0.000021	0.000154	< 0.0005	< 0.0005	< 0.01	1.17	< 0.002	0.724	0.00343	0.0265
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.00067	< 0.00002	0.0118	< 0.00001	0.000007	0.000213	< 0.0005	0.0006	0.04	1.01	< 0.002	0.472	0.00352	0.025
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.00023	< 0.00002	0.0094	< 0.00001	0.000004	0.000085	< 0.0005	< 0.0005	0.03	0.94	< 0.002	0.407	0.00225	0.0144
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.00021	< 0.00002	0.0073	< 0.00001	< 0.000003	0.000103	< 0.0005	< 0.0005	0.02	0.84	< 0.002	0.325	0.00251	0.0131
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00043	< 0.00002	0.0104	< 0.00001	< 0.000003	0.00011	< 0.0005	< 0.0005	0.02	0.93	< 0.002	0.457	0.00265	0.0117

Table A-10. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff/Schist (07 ARD 06)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	2.03	0.0019	0.02	0.0001	0.00051	< 0.001	0.3	0.023	0.0198	< 0.0001	0.000034	0.000008	0.00097	0.002
16-Jan-08	1	2.02	0.0024	0.02	0.00004	0.0005	0.003	0.28	0.013	0.026	0.0001	0.00001	0.000015	0.00134	0.002
23-Jan-08	2	1.06	0.0005	< 0.01	0.00006	0.0004	0.002	0.27	0.0079	0.0089	< 0.0001	0.00001	0.000016	0.00221	0.001
30-Jan-08	3	0.84	0.0006	0.02	< 0.00002	0.00047	0.002	0.42	0.0063	0.0044	0.0001	< 0.000002	0.000016	0.00274	< 0.001
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.37	0.0004	0.02	< 0.00002	0.00056	< 0.001	0.31	0.00396	0.0013	< 0.0001	< 0.000002	0.000014	0.00347	< 0.001
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.32	0.0003	0.02	< 0.00002	0.00045	< 0.001	0.25	0.00344	0.0012	0.0001	< 0.000002	0.000018	0.00396	< 0.001
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.22	0.0004	0.01	< 0.00002	0.00056	< 0.001	0.3	0.00323	0.0009	0.0003	< 0.000002	0.000016	0.00364	< 0.001
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.2	0.0004	< 0.01	< 0.00002	0.00025	< 0.001	0.33	0.00427	0.0013	< 0.0001	0.000091	0.000012	0.00276	0.001
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.13	0.0006	< 0.01	0.00004	0.00043	< 0.001	0.28	0.00325	0.0046	0.0003	0.000002	0.00001	0.00449	< 0.001
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.12	0.0002	< 0.01	< 0.00002	0.00028	< 0.001	0.28	0.0028	0.0007	< 0.0001	< 0.000002	< 0.000001	0.00408	< 0.001
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.09	0.0003	< 0.01	< 0.00002	0.00015	< 0.001	0.23	0.00128	0.0006	0.0002	< 0.000002	0.000001	0.00403	< 0.001
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.05	0.0002	< 0.01	< 0.00002	0.00057	< 0.001	0.34	0.00152	0.0011	0.0001	0.000017	0.000019	0.00381	< 0.001

Table A-10. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff/Schist (07 ARD 06)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	939	6.47	8	< 2	< 2	1.2	0.18	---	---	---	---
24-Sep-08	37	1000	964	6.64	9	2	<2	1.4	0.25	---	---	---	---
1-Oct-08	38	1000	968	6.63	7	< 2	< 2	1.4	0.18	---	---	---	---
8-Oct-08	39	1000	978	6.69	8	< 2	< 2	1.2	0.19	---	---	---	---
15-Oct-08	40	1000	990	6.71	8	< 2	< 2	1.3	0.2	< 0.0001	< 0.00001	0.05	< 0.0002
22-Oct-08	41	1000	980	6.52	10	< 2	< 2	1.1	0.17	---	---	---	---
29-Oct-08	42	1000	929	6.43	10	< 2	2	1.1	0.13	---	---	---	---
5-Nov-08	43	1000	956	6.59	22	5	< 2	1.3	0.18	---	---	---	---
12-Nov-08	44	1000	989	6.69	9	3	< 2	1.1	0.25	---	---	---	---
19-Nov-08	45	1000	970	6.57	5	< 2	6	1.2	0.15	< 0.0001	< 0.00001	0.02	< 0.0002
26-Nov-08	46	1000	963	5.31	6	< 2	< 2	1.1	0.15	---	---	---	---
3-Dec-08	47	1000	972	6.45	6	< 2	< 2	1	0.15	---	---	---	---
10-Dec-08	48	1000	981	6.35	10	77	< 2	1	0.13	---	---	---	---
17-Dec-08	49	1000	979	6.71	6	< 2	< 2	1	0.14	---	---	---	---
24-Dec-08	50	1000	945	6.64	7	< 2	< 2	0.8	0.07	< 0.0001	< 0.00001	0.02	< 0.0002
30-Dec-08	51	1000	962	6.57	7	< 2	2	1	0.13	---	---	---	---
7-Jan-09	52	1000	966	6.52	7	< 2	< 2	1.1	0.15	---	---	---	---
14-Jan-09	53	1000	921	6.79	6	< 2	< 2	1	0.14	---	---	---	---

Table A-10. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff/Schist (07 ARD 06)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00028	< 0.00002	0.0085	< 0.00001	< 0.000003	0.000139	< 0.0005	< 0.0005	0.03	0.91	< 0.002	0.419	0.00276	0.0101
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.00027	< 0.00002	0.0071	< 0.00001	0.000005	0.000082	< 0.0005	< 0.0005	0.02	0.84	< 0.002	0.364	0.00216	0.0072
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.00015	< 0.00002	0.0064	< 0.00001	< 0.000003	0.000051	< 0.0005	< 0.0005	0.01	0.72	< 0.002	0.28	0.00196	0.0052
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-10. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff/Schist (07 ARD 06)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.08	0.0004	0.02	0.00004	0.0002	< 0.001	0.35	0.00204	0.0008	0.0002	0.000004	0.000053	0.00376	0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.05	0.0002	< 0.01	< 0.00002	< 0.0002	< 0.001	0.3	0.00159	0.0006	< 0.0001	< 0.000002	0.000012	0.00342	< 0.001
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.03	0.0002	< 0.01	< 0.00002	< 0.0002	< 0.001	0.23	0.00194	0.0003	< 0.0001	< 0.000002	0.000065	0.00328	< 0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-11. Results of Waste Rock Humidity Cells - HC 10
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD 12)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	1000	785	6.17	3	5	87	4.6	4.16	< 0.0001	< 0.00001	0.01	0.0002
16-Jan-08	1	1000	963	6.76	4	< 2	107	9	4.95	< 0.0001	< 0.00001	0.02	< 0.0002
23-Jan-08	2	1000	947	6.9	4	< 2	70	7.1	3.16	< 0.0001	< 0.00001	0.02	< 0.0002
30-Jan-08	3	1000	983	7.02	7	< 2	52	6.1	2.51	< 0.0001	< 0.00001	0.01	< 0.0002
6-Feb-08	4	1000	937	7	4	< 2	31	4.7	1.48	---	---	---	---
13-Feb-08	5	1000	980	6.95	5	< 2	36	4.7	1.46	< 0.0001	< 0.00001	0.03	< 0.0002
20-Feb-08	6	1000	982	6.79	3	< 2	24	3.5	1.21	---	---	---	---
27-Feb-08	7	1000	933	6.65	3	< 2	20	3.1	0.86	< 0.0001	< 0.00001	0.03	< 0.0002
05-Mar-08	8	1000	920	6.85	4	< 2	22	3.3	0.71	---	---	---	---
12-Mar-08	9	1000	990	6.76	4	< 2	20	3	0.92	---	---	---	---
19-Mar-08	10	1000	940	6.5	< 2	< 2	18	2.7	0.74	< 0.0001	< 0.00001	0.03	< 0.0002
26-Mar-08	11	1000	904	6.83	5	< 2	19	3.1	0.8	---	---	---	---
2-Apr-08	12	1000	947	6.69	4	< 2	15	2.6	0.6	---	---	---	---
9-Apr-08	13	1000	950	6.54	3	< 2	17	2.1	0.68	---	---	---	---
16-Apr-08	14	1000	963	6.73	3	< 2	19	2.4	0.74	---	---	---	---
23-Apr-08	15	1000	985	6.55	3	< 2	20	2.3	0.99	< 0.0001	< 0.00001	0.02	< 0.0002
30-Apr-08	16	1000	964	6.57	< 2	< 2	18	2.7	0.75	---	---	---	---
7-May-08	17	1000	971	6.69	10	< 2	18	2.9	0.79	---	---	---	---
14-May-08	18	1000	947	6.5	3	< 2	19	2.4	0.74	---	---	---	---
21-May-08	19	1000	984	4.53	< 2	5	37	2.9	0.87	---	---	---	---
28-May-08	20	1000	884	6.29	< 2	< 2	23	2.9	0.92	< 0.0001	< 0.00001	0.04	< 0.0002
4-Jun-08	21	1000	929	6.59	3	<2	13	2.3	0.59	---	---	---	---
11-Jun-08	22	1000	976	6.8	4	< 2	17	2.2	0.89	---	---	---	---
18-Jun-08	23	1000	959	6.98	4	< 2	18	2.6	0.8	---	---	---	---
25-Jun-08	24	1000	992	6.78	4	47	15	2.5	0.83	---	---	---	---
2-Jul-08	25	1000	939	6.68	3	< 2	14	2.1	0.64	< 0.0001	< 0.00001	0.01	< 0.0002
9-Jul-08	26	1000	971	6.61	3	< 2	16	2.5	0.7	---	---	---	---
16-Jul-08	27	1000	935	6.7	4	< 2	15	2	0.6	---	---	---	---
23-Jul-08	28	1000	990	6.49	3	< 2	14	2.2	0.68	---	---	---	---
30-Jul-08	29	1000	941	6.69	4	< 2	13	1.9	0.57	---	---	---	---
6-Aug-08	30	1000	936	6.74	3	< 2	12	2	0.55	< 0.0001	< 0.00001	0.01	< 0.0002
13-Aug-08	31	1000	977	7.11	4	< 2	15	2.3	0.76	---	---	---	---
20-Aug-08	32	1000	870	6.7	3	< 2	23	2	0.67	---	---	---	---
27-Aug-08	33	1000	927	6.6	3	< 2	12	1.8	0.53	---	---	---	---
3-Sep-08	34	1000	946	6.68	3	<2	13	1.8	0.58	---	---	---	---
10-Sep-08	35	1000	976	6.89	3	<2	14	1.9	0.65	< 0.0001	< 0.00001	0.01	< 0.0002

Table A-11. Results of Waste Rock Humidity Cells - HC 10
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD 12)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	0.00039	< 0.00002	0.0478	< 0.00001	< 0.000003	0.000261	< 0.0005	< 0.0005	< 0.01	1.68	< 0.002	3.77	0.00401	0.0148
16-Jan-08	1	0.00045	< 0.00002	0.0621	< 0.00001	0.000011	0.000193	< 0.0005	< 0.0005	< 0.01	1.32	< 0.002	5.23	0.00434	0.07
23-Jan-08	2	0.00041	< 0.00002	0.0626	< 0.00001	0.000034	0.000107	< 0.0005	< 0.0005	0.01	1.14	< 0.002	3.41	0.00297	0.06928
30-Jan-08	3	0.00029	< 0.00002	0.063	< 0.00001	< 0.000003	< 0.000002	< 0.0005	< 0.0005	< 0.01	1.12	< 0.002	2.69	0.00183	0.0729
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	0.00018	< 0.00002	0.0479	< 0.00001	0.00001	0.000064	< 0.0005	< 0.0005	0.01	0.84	< 0.002	1.6	0.00165	0.0653
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.00012	< 0.00002	0.0381	< 0.00001	0.000008	0.000045	< 0.0005	< 0.0005	0.01	0.62	< 0.002	0.971	0.00125	0.0564
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.0001	< 0.00002	0.0265	< 0.00001	0.000033	0.000043	< 0.0005	< 0.0005	0.02	0.6	< 0.002	0.893	0.00116	0.0425
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.00019	< 0.00002	0.0237	< 0.00001	0.000026	0.000086	< 0.0005	< 0.0005	< 0.01	0.61	< 0.002	1.03	0.00141	0.0321
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.00023	< 0.00002	0.0173	0.00002	0.000011	0.000203	< 0.0005	0.0007	0.07	0.59	< 0.002	0.883	0.00354	0.0321
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.00014	< 0.00002	0.0142	< 0.00001	0.00001	0.000025	< 0.0005	< 0.0005	0.02	0.52	< 0.002	0.748	0.00103	0.0186
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.0001	< 0.00002	0.0113	< 0.00001	< 0.000003	0.000034	< 0.0005	< 0.0005	0.02	0.48	< 0.002	0.647	0.00115	0.0172
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.00015	< 0.00002	0.0147	0.00001	0.000003	0.000041	< 0.0005	< 0.0005	0.01	0.52	< 0.002	0.8	0.00141	0.0144

Table A-11. Results of Waste Rock Humidity Cells - HC 10
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD 12)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9-Jan-08	0	2.93	0.0005	0.02	0.00004	0.00055	< 0.001	0.48	0.00129	0.0495	< 0.0001	0.00001	0.000007	0.00042	< 0.001
16-Jan-08	1	2.83	0.0006	0.02	0.00003	0.00059	0.002	0.5	0.00188	0.0603	< 0.0001	0.000008	0.000145	0.00102	0.001
23-Jan-08	2	2.06	< 0.0001	< 0.01	0.00017	0.00046	< 0.001	0.51	0.00084	0.0384	0.0001	0.000009	0.000101	0.00126	0.001
30-Jan-08	3	1.64	0.0002	0.01	< 0.00002	0.00056	< 0.001	0.67	0.00093	0.0304	0.0002	< 0.000002	0.000148	0.00149	< 0.001
6-Feb-08	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
13-Feb-08	5	1.03	0.0002	0.02	< 0.00002	0.00068	< 0.001	0.62	0.00068	0.0172	< 0.0001	< 0.000002	0.000118	0.00206	0.001
20-Feb-08	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Feb-08	7	0.66	< 0.0001	0.02	< 0.00002	0.00046	< 0.001	0.41	0.00074	0.0106	< 0.0001	< 0.000002	0.000092	0.0024	0.001
05-Mar-08	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Mar-08	9	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Mar-08	10	0.48	0.0002	< 0.01	0.00005	0.0005	< 0.001	0.5	0.00061	0.0094	< 0.0001	< 0.000002	0.000074	0.00244	< 0.001
26-Mar-08	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Apr-08	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9-Apr-08	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Apr-08	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Apr-08	15	0.37	0.0002	< 0.01	< 0.00002	0.00027	< 0.001	0.52	0.00114	0.0109	< 0.0001	0.000093	0.000076	0.00239	0.001
30-Apr-08	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-May-08	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-May-08	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-May-08	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-May-08	20	0.46	0.001	< 0.01	0.00014	0.00045	< 0.001	0.43	0.00059	0.0107	0.0001	< 0.000002	0.000191	0.00313	0.003
4-Jun-08	21	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11-Jun-08	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
18-Jun-08	23	---	---	---	---	---	---	---	---	---	---	---	---	---	---
25-Jun-08	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Jul-08	25	0.16	< 0.0001	< 0.01	< 0.00002	0.00036	< 0.001	0.46	0.00047	0.0076	< 0.0001	< 0.000002	0.000032	0.00315	< 0.001
9-Jul-08	26	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16-Jul-08	27	---	---	---	---	---	---	---	---	---	---	---	---	---	---
23-Jul-08	28	---	---	---	---	---	---	---	---	---	---	---	---	---	---
30-Jul-08	29	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Aug-08	30	0.13	0.0002	< 0.01	< 0.00002	0.00016	< 0.001	0.39	0.00039	0.0065	< 0.0001	< 0.000002	0.000053	0.00333	< 0.001
13-Aug-08	31	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Aug-08	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Aug-08	33	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Sep-08	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Sep-08	35	0.07	< 0.0001	< 0.01	< 0.00002	0.00064	< 0.001	0.56	0.00048	0.0077	< 0.0001	0.000008	0.000087	0.00351	< 0.001

Table A-11. Results of Waste Rock Humidity Cells - HC 10
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD 12)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Alkalinity	Acidity	SO4	Ca	Hg	Ag	Al	As
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	1000	929	6.58	3	<2	12	1.6	0.54	---	---	---	---
24-Sep-08	37	1000	980	6.85	4	<2	13	1.8	0.67	---	---	---	---
1-Oct-08	38	1000	998	6.88	4	<2	14	1.8	0.77	---	---	---	---
8-Oct-08	39	1000	990	6.9	4	<2	13	1.6	0.68	---	---	---	---
15-Oct-08	40	1000	990	6.88	4	< 2	15	1.6	0.66	< 0.0001	< 0.00001	0.02	< 0.0002
22-Oct-08	41	1000	973	6.78	3	< 2	15	1.8	0.65	---	---	---	---
29-Oct-08	42	1000	927	6.73	3	< 2	14	1.5	0.48	---	---	---	---
5-Nov-08	43	1000	948	6.6	2	< 2	25	1.7	0.55	---	---	---	---
12-Nov-08	44	1000	996	6.83	2	4	11	1.5	0.67	---	---	---	---
19-Nov-08	45	1000	948	6.71	3	< 2	11	1.8	0.55	< 0.0001	< 0.00001	< 0.01	< 0.0002
26-Nov-08	46	1000	946	5.24	< 2	2	8	1.7	0.51	---	---	---	---
3-Dec-08	47	1000	945	6.71	3	< 2	11	1.5	0.5	---	---	---	---
10-Dec-08	48	1000	6.63	48	< 2	12	1.4	0.45		---	---	---	---
17-Dec-08	49	1000	987	6.85	3	< 2	12	1.6	0.61	---	---	---	---
24-Dec-08	50	1000	935	6.88	3	< 2	16	1.3	0.45	< 0.0001	< 0.00001	< 0.01	< 0.0002
30-Dec-08	51	1000	990	6.97	4	< 2	13	1.8	0.66	---	---	---	---
7-Jan-09	52	1000	947	6.79	3	< 2	11	1.5	0.58	---	---	---	---
14-Jan-09	53	1000	919	6.88	3	< 2	11	1.3	0.45	---	---	---	---

Table A-11. Results of Waste Rock Humidity Cells - HC 10
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD 12)

Date	Cycle No.	Ba	Be	B	Bi	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.00013	< 0.00002	0.0105	< 0.00001	0.000007	0.000061	< 0.0005	< 0.0005	0.01	0.49	< 0.002	0.764	0.00136	0.01
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.00015	< 0.00002	0.0078	< 0.00001	< 0.000003	0.000031	< 0.0005	< 0.0005	0.01	0.47	< 0.002	0.7	0.00102	0.0085
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.00005	< 0.00002	0.0073	< 0.00001	< 0.000003	0.000009	< 0.0005	< 0.0005	< 0.01	0.41	< 0.002	0.633	0.00097	0.0058
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table A-11. Results of Waste Rock Humidity Cells - HC 10
Hanging wall - Amphibolite/Volcanic tuff/Greywacke (07ARD 12)

Date	Cycle No.	Na	Ni	P	Pb	Sb	Se	Si	Sn	Sr	Ti	Th	U	V	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
17-Sep-08	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Sep-08	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-Oct-08	38	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-Oct-08	39	---	---	---	---	---	---	---	---	---	---	---	---	---	---
15-Oct-08	40	0.08	0.0002	< 0.01	< 0.00002	0.00025	< 0.001	0.6	0.00044	0.0075	< 0.0001	0.000003	0.000055	0.00329	< 0.001
22-Oct-08	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---
29-Oct-08	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Nov-08	43	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Nov-08	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Nov-08	45	0.05	< 0.0001	< 0.01	< 0.00002	< 0.0002	< 0.001	0.49	0.0004	0.0062	< 0.0001	< 0.000002	0.000054	0.00316	< 0.001
26-Nov-08	46	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Dec-08	47	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Dec-08	48	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Dec-08	49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Dec-08	50	0.04	0.0001	< 0.01	< 0.00002	< 0.0002	< 0.001	0.48	0.00038	0.0057	< 0.0001	< 0.000002	0.000066	0.00324	< 0.001
30-Dec-08	51	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Jan-09	52	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Jan-09	53	---	---	---	---	---	---	---	---	---	---	---	---	---	---

APPENDIX B

SUMMARY OF ALL ABA AND METAL ANALYSES

LIST OF TABLES

B-1 Acid Base Accounting Results by Lithology
B-2 Net Acid Generation Test Results by Lithology
B-3 Total Metal Concentrations by Lithology

Table B-1. Acid Base Accounting Results by Lithology

Sample ID	Borehole ID	Lithology	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
					(wt.%)				(kg $CaCO_3$/tonne)				
Hanging wall													
ARD12	MR1-05-47	Amphibolite	Knight Piesold 2006-2007	8.24	0.007	0.057	<0.01	0.016	0.3	27	1	85	4.3
ARD14	MR1-05-59	Amphibolite	Knight Piesold 2006-2007	8.1	0.014	<0.01	0.014	0.019	0.4	9.4	2	21	3.6
ARD15	MR1-05-51	Amphibolite	Knight Piesold 2006-2007	9.48	0.05	0.044	0.010	0.22	0.3	24	18	78	59
ARD16	MR1-05-51	Amphibolite	Knight Piesold 2006-2007	8.65	0.12	0.084	0.036	0.015	1.1	10	1	9.1	1.1
ARD17	MR1-05-51	Amphibolite	Knight Piesold 2006-2007	8.48	0.009	0.039	<0.01	0.014	0.3	18	1	56	3.7
ARD23	MR1-05-76	Amphibolite	Knight Piesold 2006-2007	9.05	0.019	0.049	<0.01	0.014	0.3	16	1	50	3.7
ARD24	MR1-05-76	Amphibolite	Knight Piesold 2006-2007	9	0.014	0.014	<0.01	0.009	0.3	7.6	1	24	2.4
07ARD10	MR1-05-53	Amphibolite	Knight Piesold 2006-2007	7.86	5.16	0.59	4.570	0.019	143	25	2	0.2	0.01
07ARD11	MR1-05-46	Amphibolite	Knight Piesold 2006-2007	7.89	0.071	<0.01	0.071	0.043	2.2	4.0	4	1.8	1.6
07ARD17	MR1-05-57	Amphibolite	Knight Piesold 2006-2007	8.51	0.022	0.02	<0.01	0.007	0.3	15	1	49	1.9
07ARD19	MR1-05-60	Amphibolite	Knight Piesold 2006-2007	8.39	0.031	0.03	<0.01	0.012	0.3	34	1	108	3.2
07ARD27	MR1-05-62	Amphibolite	Knight Piesold 2006-2007	8.31	0.682	0.41	0.272	0.058	8.5	27	5	3.2	0.6
07ARD28	MR1-05-62	Amphibolite	Knight Piesold 2006-2007	8.42	0.068	0.07	<0.01	0.022	0.3	51	2	163	5.9
MRARD10-038	MR1-08-160	Amphibolite	AMEC 2010	8.3	0.124	0.12	<0.01	0.022	0.3	32	2	101	5.9
MRARD10-039	MR1-08-160	Amphibolite	AMEC 2010	5.7	0.382	0.38	<0.01	0.126	0.3	0.20	11	0.6	34
MRARD10-091	MR1-08-143	Amphibolite	AMEC 2010	8.3	0.013	0.01	<0.01	0.006	0.3	8.5	1	27	1.6
MRARD10-108	MR1-08-150	Amphibolite	AMEC 2010	8.4	0.012	0.01	<0.01	0.008	0.3	22	1	70	2.1
MRARD10-131	MR1-08-160	Amphibolite	AMEC 2010	8.0	0.292	0.11	0.182	4.27	5.7	92	356	16	63
ARD21	MR1-05-77	Amphibolite/Gneiss	Knight Piesold 2006-2007	9.77	0.05	0.03	0.020	0.012	0.6	10	1	16	1.6
07ARD38	MR1-05-67	Amphibolite/Gneiss	Knight Piesold 2006-2007	9.75	0.041	0.04	<0.01	0.039	0.3	36	3	114	10
07ARD07	MR1-05-76	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007	8.68	0.082	<0.01	0.082	0.062	2.6	12	5	4.6	2.0
07ARD30	MR1-05-51	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007	8.61	0.536	0.23	0.306	0.022	9.6	39	2	4.1	0.2
ARD10	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007	8.33	0.11	0.017	0.093	0.011	2.9	5.7	1	2.0	0.3
ARD11	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007	8.04	0.072	0.032	0.040	0.01	1.3	9.9	1	7.9	0.8
07ARD13	MR1-06-84	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	8.43	0.150	0.05	0.100	0.027	3.1	0.2	2	0.1	0.7
07ARD12	MR1-05-46	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	8.01	0.410	0.06	0.350	0.033	11	0.7	3	0.1	0.3
07ARD37	MR1-04-36	Amphibolite/Volcanic Tuff /Schist /Gneiss	Knight Piesold 2006-2007	9.33	0.150	0.08	0.070	0.087	2.2	28	7	13	3.3
07ARD25	MR1-05-52	Amphibolte/Schist	Knight Piesold 2006-2007	8.21	0.582	0.38	0.202	0.013	6.3	8.0	1	1.3	0.2
07ARD29	MR1-05-59	Amphibolte/Schist	Knight Piesold 2006-2007	8.40	0.050	0.05	<0.01	0.011	0.3	15	1	47	2.9
MRARD10-010	MR1-09-176	Gneiss	AMEC 2010	8.5	<0.005	<0.01	<0.01	0.016	0.3	11	1	34	4.3
MRARD10-115	MR1-07-121	Gneiss	AMEC 2010	9.3	0.012	<0.01	0.012	0.012	0.4	13	1	34	2.7
MRARD10-040	MR1-08-158	Gneiss/Amphibolite	AMEC 2010	9.4	0.133	0.11	0.023	0.070	0.7	21	6	29	8.1
ARD 13	MR1-05-59	Metasediment	Knight Piesold 2006-2007	8.3	0.035	0.035	<0.01	0.028	0.3	11	2	36	7.5
MRARD10-090	MR1-08-144	Metasediment	AMEC 2010	9.5	0.012	0.01	<0.01	0.009	0.3	13	1	41	2.4
ARD 18	MR1-05-47	Schist	Knight Piesold 2006-2007	8.45	0.3	0.271	0.029	0.022	0.9	11	2	13	2.0
ARD19	MR1-05-47	Schist	Knight Piesold 2006-2007	8.49	1.47	0.024	1.446	0.014	45	14	1	0.3	0.03
UCS14	MR1-04-38	Schist	Knight Piesold 2006-2007	8.7	0.376	0.11	0.266	0.1	8.3	13	8	1.5	1.0
07ARD06	MR1-04-39	Schist	Knight Piesold 2006-2007	8.88	0.841	0.15	0.691	0.418	22	49	35	2.3	1.6
07ARD16	MR1-05-58	Schist	Knight Piesold 2006-2007	8.16	0.313	0.13	0.183	0.009	5.7	18	1	3.2	0.1
07ARD33	MR1-06-105	Schist	Knight Piesold 2006-2007	9.11	0.076	0.06	0.016	0.008	0.5	8.6	1	17	1.3
07ARD34	MR1-06-94	Schist	Knight Piesold 2006-2007	6.75	0.381	0.36	0.021	0.006	0.7	0.2	1	0	0.8
MRARD10-001	MR1-09-171	Schist	AMEC 2010	7.6	0.320	0.24	0.080	0.029	2.5	36	2	14	1.0
MRARD10-002	MR1-09-179	Schist	AMEC 2010	8.4	0.016	0.02	<0.01	0.017	0.3	10	1	32	4.5
MRARD10-003	MR1-09-179	Schist	AMEC 2010	7.7	0.029	0.03	<0.01	0.407	0.3	7.9	34	25	109
MRARD10-006	MR1-09-177	Schist	AMEC 2010	8.3	0.056	0.04	0.016	0.019	0.5	15	2	31	3.2
MRARD10-007	MR1-09-177	Schist	AMEC 2010	8.5	0.198	0.18	0.018	0.023	0.6	16	2	29	3.4
MRARD10-008	MR1-09-176	Schist	AMEC 2010	8.4	0.075	0.08	<0.01	0.017	0.3	14	1	45	4.5
MRARD10-009	MR1-09-176	Schist	AMEC 2010	8.4	0.285	0.13	0.155	0.017	4.8	17	1	3.4	0.3
MRARD10-013	MR1-09-176	Schist	AMEC 2010	8.5	0.098	0.10	<0.01	0.026	0.3	42	2	133	6.9
MRARD10-014	MR1-09-176	Schist	AMEC 2010	8.4	0.029	0.03	<0.01	0.019	0.3	28	2	89	5.1
MRARD10-016	MR1-09-172	Schist	AMEC 2010	8.7	0.271	0.09	0.181	0.026	5.7	19	2	3.4	0.4
MRARD10-017	MR1-09-172	Schist	AMEC 2010	8.6	0.153	0.09	0.063	0.024	2.0	26	2	13	1.0
MRARD10-020	MR1-09-172	Schist	AMEC 2010	8.0	0.463	0.21	0.253	0.015	7.9	26	1	3.3	0.2
MRARD10-022	MR1-09-176	Schist	AMEC 2010	8.1	0.026	0.03	<0.01	0.018	0.3	26	2	83	4.8
MRARD10-024	MR1-09-173	Schist	AMEC 2010	8.5	0.055	0.04	0.015	0.014	0.5	7.6	1	16	2.5
MRARD10-026	MR1-09-173	Schist	AMEC 2010	8.3	0.556	0.28	0.276	0.021	8.6	20	2	2.4	0.2
MRARD10-027	MR1-09-169	Schist	AMEC 2010	8.5	0.034	0.03	<0.01	0.030	0.3	15	3	47	8.0
MRARD10-028	MR1-09-169	Schist	AMEC 2010	8.2	0.650	0.18	0.470	0.010	14.7	10	1	0.7	0.1
MRARD10-032	MR1-09-169	Schist	AMEC 2010	8.3	0.084	0.08	<0.01	0.017	0.3	11	1	36	4.5
MRARD10-036	MR1-08-161	Schist	AMEC 2010	8.2	0.250	0.16	0.090	0.015	2.8	12	1	4.3	0.4
MRARD10-041	MR1-08-158	Schist	AMEC 2010	8.3	0.073	0.07	<0.01	0.041	0.3	25	3	79	10.9
MRARD10-047	MR1-08-163	Schist	AMEC 2010	8.5	<0.005	<0.01	<0.010	0.011	0.3	14	1	46	2.9
MRARD10-048	MR1-08-163	Schist	AMEC 2010	7.9	0.214	0.10	0.114	0.030	3.6	11	3	3.2	0.7
MRARD10-050	MR1-08-152	Schist	AMEC 2010	7.9	0.014	0.01	<0.01	0.029	0.3	18	2	56	7.7
MRARD10-052	MR1-08-158	Schist	AMEC 2010	8.2	0.055	0.03	0.025	0.084	0.8	14	7	18	9
MRARD10-056	MR1-08-152	Schist	AMEC 2010	8.3	0.008	<0.01	<0.01	0.009	0.3	17	1	54	2.4
MRARD10-060	MR1-08-157	Schist	AMEC 2010	8.1	0.185	0.06	0.125	0.006	3.9	14	1	3.6	0.1
MRARD10-061	MR1-08-159	Schist	AMEC 2010	8.6	0.009	<0.01	<0.01	0.019	0.3	26	2	83	5.1
MRARD10-062	MR1-08-155	Schist	AMEC 2010	8.1	0.065	0.06	<0.01	0.069	0.3	24	6	77	18
MRARD10-063	MR1-08-157	Schist	AMEC 2010	8.1	0.305	0.14	0.165	0.017	5.2	23	1	4.4	0.3
MRARD10-064	MR1-08-155	Schist	AMEC 2010	7.2	0.266	0.23	0.036	0.043	1.1	17	4	15	3.2
MRARD10-065	MR1-08-150	Schist	AMEC 2010	8.0	0.023	0.01	0.013	<0.005	0.4	11	0	26	1.0
MRARD10-068	MR1-08-140	Schist	AMEC 2010	7.6	1.18	0.21	0.970	0.007	30.3	12	1	0.4	0.02
MRARD10-070	MR1-08-140	Schist	AMEC 2010	8.1	0.028	0.03	<0.01	<0.005	0.3	13	0	40	1.3
MRARD10-071	MR1-08-160	Schist	AMEC 2010	8.0	0.098	0.02	0.078	0.013	2.4	38	1	16	0.4
MRARD10-072	MR1-08-149	Schist	AMEC 2010	8.0	0.034	0.03	<0.01	0.008	0.3	44	1	141	2.1
MRARD10-073	MR1-08-155	Schist	AMEC 2010	7.7	0.018	0.02	<0.01	0.009	0.3	21	1	67	2.4
MRARD10-075	MR1-08-148	Schist	AMEC 2010	7.7	0.026	0.03	<0.01	<0.005	0.3	11	0	36	1.3
MRARD10-078	MR1-08-153	Schist	AMEC 2010	8.3	0.124	0.03	0.094	<0.005	2.9	13	0	4.4	0.1
MRARD10-086	MR1-08-147	Schist	AMEC 2010	8.4	0.107	0.04	0.067	0.012	2.1	20	1	9.4	0.5
MRARD10-092	MR1-08-142	Schist	AMEC 2010	7.7	0.594	0.29	0.304	0.006	9.5	23	1	2.5	0.1
MRARD10-093	MR1-08-145	Schist	AMEC 2010	7.2	0.015	0.02	<0.01	0.021	0.3	5.4	2	17	5.6
MRARD10-094	MR1-08-147	Schist	AMEC 2010	8.2	0.253	0.13	0.123	0.017	3.8	27	1	6.9	0.4
MRARD10-097	MR1-08-143	Schist	AMEC 2010	9.6	0.019	0.02	<0.01	0.087	0.3	17	7	53	23
MRARD10-101	MR1-08-153	Schist	AMEC 2010	8.2	0.086	0.04	0.046	0.012	1.4	21	1	15	0.7
MRARD10-102	MR1-08-143	Schist	AMEC 2010	8.9	0.013	0.01	<0.01	0.042	0.3	9.8	4	31	11
MRARD10-103	MR1-08-141	Schist	AMEC 2010	8.0	0.089	0.09	<0.01	0.020	0.3	18	2	57	5.3
MRARD10-106	MR1-08-148	Schist	AMEC 2010	8.5	0.158	0.07	0.088	<0.005	2.8	8.8	0	3.2	0.2
MRARD10-109	MR1-08-141	Schist	AMEC 2010	7.6	0.229	0.18	0.049	0.032	1.5	27	3	18	1.7

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	Lithology	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
					(wt.%)				(kg $CaCO_3$/tonne)				
MRARD10-111	MR1-08-144	Schist	AMEC 2010	8.3	0.010	0.01	<0.01	0.009	0.3	12	1	38	2.4
MRARD10-114	MR1-07-121	Schist	AMEC 2010	9.5	0.085	0.03	0.055	0.006	1.7	9.1	1	5.3	0.3
MRARD10-116	MR1-07-121	Schist	AMEC 2010	7.3	1.29	0.25	1.040	0.036	32.5	26	3	0.8	0.1
MRARD10-117	MR1-08-156	Schist	AMEC 2010	8.9	0.086	<0.01	0.086	0.018	2.7	18	2	6.6	0.6
MRARD10-118	MR1-07-121	Schist	AMEC 2010	8.5	0.009	<0.01	<0.01	0.015	0.3	18	1	57	4.0
MRARD10-119	MR1-08-156	Schist	AMEC 2010	8.0	0.021	0.02	<0.01	0.007	0.31	19	1	59	1.9
MRARD10-120	MR1-08-148	Schist	AMEC 2010	8.2	0.457	0.16	0.297	0.013	9.3	5.6	1	0.6	0.1
MRARD10-122	MR1-08-156	Schist	AMEC 2010	8.5	0.312	0.12	0.192	0.012	6.0	27	1	4.4	0.2
MRARD10-124	MR1-08-143	Schist	AMEC 2010	8.5	0.005	<0.01	<0.01	0.009	0.3	8.2	1	26	2.4
MRARD10-126	MR1-08-145	Schist	AMEC 2010	7.4	0.011	<0.01	0.011	0.012	0.3	8.1	1	24	2.9
MRARD10-127	MR1-08-143	Schist	AMEC 2010	8.1	0.005	<0.01	<0.01	0.022	0.3	15	2	49	5.9
MRARD10-128	MR1-08-141	Schist	AMEC 2010	8.4	0.220	0.02	0.200	0.012	6.3	29	1	4.7	0.2
MRARD10-129	MR1-08-154	Schist	AMEC 2010	4.3	12.4	2.63	9.770	1.50	305.3	0.20	125	0.001	0.4
MRARD10-130	MR1-08-153	Schist	AMEC 2010	8.7	0.051	<0.01	0.051	0.117	1.6	25	10	16	6.1
07ARD21	MR1-06-90	Schist /Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007	8.17	1.68	0.67	1.010	0.039	32	18	3	0.6	0.1
07ARD20	MR1-05-60	Schist/Amphibolite	Knight Piesold 2006-2007	8.02	0.47	0.05	0.420	0.207	13.1	12	17	1	1
07ARD15	MR1-05-68	Schist/Volcanic Tuff	Knight Piesold 2006-2007	8.47	0.021	<0.01	0.021	0.009	0.7	10	1	15	1.1
07ARD39	MR1-06-96	Schist/Volcanic Tuff	Knight Piesold 2006-2007	8.53	0.039	0.04	<0.01	0.018	0.3	34	2	108	4.8
07ARD40	MR1-05-54	Schist/Volcanic Tuff /Amphibolite	Knight Piesold 2006-2007	8.44	0.017	0.02	<0.01	0.022	0.3	19	2	61	5.9
07ARD14	MR1-06-84	Schist/Volcanic Tuff/Gneiss	Knight Piesold 2006-2007	8.10	0.064	0.03	0.034	0.043	1.1	21	4	20	3.4
ARD20	MR1-05-59	Volcanic Tuff	Knight Piesold 2006-2007	8.45	0.048	0.048	<0.01	0.023	0.3	13	2	40	6.1
ARD22	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007	9.43	0.03	0.03	<0.01	0.027	0.3	12	2	38	7.2
ARD25	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.48	0.007	0.02	<0.01	0.096	0.3	18	8	58	26
ARD26	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.75	0.066	0.01	0.056	0.507	1.8	49	42	28	24
UCS2	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007	6.26	0.157	0.16	<0.01	0.012	0.3	12	1	38	3.2
UCS15	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007	9.89	0.171	0.04	0.131	0.138	4.1	19	12	5	2.8
UCS16	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.03	0.05	<0.01	0.050	0.026	1.6	17	2	11	1.4
UCS17	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	10.16	0.022	0.02	<0.01	0.039	0.3	25	3	80	10
UCS18	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.64	0.267	0.05	0.217	0.086	6.8	15	7	2	1.1
UCS19	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.69	0.08	0.04	0.040	0.015	1.3	22	1	18	1.0
UCS20	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.14	0.094	<0.01	0.094	0.496	2.9	59	41	20	14
UCS21	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.34	0.08	0.04	0.040	0.244	1.3	26	20	21	16
UCS25	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007	9.66	0.156	<0.01	0.156	0.014	4.9	33	1	7	0.2
UCS26	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007	9.14	0.019	0.03	<0.01	0.012	0.3	6.1	1	20	3.2
UCS28	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.77	0.005	<0.01	<0.01	0.009	0.3	11	1	34	2.4
UCS29	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.72	0.165	0.02	0.145	0.021	4.5	13	2	3	0.4
UCS30	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007	9.76	<0.005	<0.01	<0.01	0.025	0.3	26	2	84	6.7
UCS31	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.98	0.007	<0.01	<0.01	0.132	0.3	15	11	49	35
UCS32	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.64	0.049	<0.01	0.049	0.043	1.5	10	4	7	2.3
UCS33	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	10.03	0.01	<0.01	0.010	0.02	0.3	15	2	48	5.3
UCS34	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.81	<0.005	<0.01	<0.01	0.014	0.3	22	1	69	3.7
UCS35	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.65	<0.005	<0.01	<0.01	0.037	0.3	12	3	39	9.9
UCS36	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.51	<0.005	0.02	<0.01	0.161	0.3	20	13	65	43
UCS37	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.58	<0.005	<0.01	<0.01	0.213	0.3	26	18	83	57
UCS38	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.79	<0.005	<0.01	<0.01	0.03	0.3	8.6	3	28	8.0
UCS39	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	9.81	0.011	<0.01	0.011	0.034	0.3	9.4	3	27	8.2
UCS40	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007	10.01	0.007	<0.01	<0.01	0.008	0.3	9.5	1	30	2.1
07ARD08	MR1-05-53	Volcanic Tuff	Knight Piesold 2006-2007	8.26	1.10	0.36	0.740	0.041	23.1	35	3	2	0.1
07ARD36	MR1-06-95	Volcanic Tuff	Knight Piesold 2006-2007	9.26	0.078	0.05	0.028	0.015	0.9	19	1	21	1.4
MRARD10-012	MR1-09-173	Volcanic Tuff	AMEC 2010	9.1	0.055	0.06	<0.01	1.07	0.3	129	89	413	285
MRARD10-021	MR1-09-173	Volcanic Tuff	AMEC 2010	9.0	0.099	0.09	<0.01	0.012	0.3	13	1	40	3.2
MRARD10-023	MR1-09-173	Volcanic Tuff	AMEC 2010	9.0	0.054	0.05	<0.01	0.738	0.3	98	62	314	197
MRARD10-025	MR1-09-173	Volcanic Tuff	AMEC 2010	8.1	0.056	0.06	<0.01	0.021	0.3	18	2	57	5.6
MRARD10-042	MR1-08-158	Volcanic Tuff	AMEC 2010	9.2	0.039	0.02	0.019	0.362	0.6	46	30	77	51
MRARD10-051	MR1-08-158	Volcanic Tuff	AMEC 2010	8.1	0.354	0.12	0.234	0.967	7.3	99	81	13	11
MRARD10-053	MR1-08-152	Volcanic Tuff	AMEC 2010	9.5	0.092	0.03	0.062	0.126	1.9	19	11	10	5.4
MRARD10-054	MR1-08-158	Volcanic Tuff	AMEC 2010	9.0	0.009	<0.01	<0.01	0.177	0.3	27	15	85	47
MRARD10-059	MR1-08-152	Volcanic Tuff	AMEC 2010	9.4	0.008	<0.01	<0.01	0.013	0.3	14	1	44	3.5
MRARD10-066	MR1-08-150	Volcanic Tuff	AMEC 2010	8.3	0.199	0.06	0.139	0.016	4.3	19	1	4.4	0.3
MRARD10-067	MR1-08-150	Volcanic Tuff	AMEC 2010	8.6	0.019	0.02	<0.01	0.008	0.3	14	1	45	2.1
MRARD10-069	MR1-08-141	Volcanic Tuff	AMEC 2010	6.1	0.847	0.12	0.727	1.14	22.7	1.0	95	0.04	4.2
MRARD10-076	MR1-08-157	Volcanic Tuff	AMEC 2010	8.2	0.037	0.02	0.017	0.081	0.5	31	7	59	13
MRARD10-080	MR1-08-149	Volcanic Tuff	AMEC 2010	7.9	1.28	0.28	1.000	0.009	31.3	20	1	0.6	0.02
MRARD10-082	MR1-08-150	Volcanic Tuff	AMEC 2010	8.8	0.120	0.02	0.100	0.437	3.1	42	36	13	12
MRARD10-083	MR1-08-145	Volcanic Tuff	AMEC 2010	8.9	0.016	0.02	<0.01	0.045	0.3	14	4	45	12
MRARD10-084	MR1-08-147	Volcanic Tuff	AMEC 2010	8.7	0.016	0.02	<0.01	0.040	0.3	18	3	56	11
MRARD10-087	MR1-08-147	Volcanic Tuff	AMEC 2010	8.8	0.447	0.09	0.357	0.966	11.2	96	81	8.6	7.2
MRARD10-088	MR1-08-147	Volcanic Tuff	AMEC 2010	8.5	0.033	0.02	0.013	0.110	0.4	27	9	66	23
MRARD10-089	MR1-08-147	Volcanic Tuff	AMEC 2010	8.7	0.075	0.03	0.045	0.212	1.4	44	18	31	13
MRARD10-098	MR1-08-153	Volcanic Tuff	AMEC 2010	9.5	0.009	<0.01	<0.01	0.045	0.3	15	4	46	12
MRARD10-105	MR1-08-141	Volcanic Tuff	AMEC 2010	8.2	0.870	0.26	0.610	0.065	19.1	16	5	0.8	0.3
MRARD10-112	MR1-08-156	Volcanic Tuff	AMEC 2010	9.0	0.009	<0.01	<0.01	0.871	0.3	84	73	268	232
MRARD10-113	MR1-08-144	Volcanic Tuff	AMEC 2010	8.6	0.032	<0.01	0.032	0.014	1.0	27	1	27	1.2
FC No. 2		Volcanic Tuff /Amphibolite/Schist	Knight Piesold 2006-2007	8.28	0.658	0.27	0.388	0.024	12.1	17	2	1	0.2
07ARD31	MR1-05-54	Volcanic Tuff /Chert /Schist	Knight Piesold 2006-2007	8.06	0.975	0.25	0.725	0.020	22.7	25	2	1.1	0.1
MRARD10-029	MR1-09-170	Volcanic Tuff /Schist	AMEC 2010	8.1	0.240	0.14	0.100	0.018	3.1	36	2	12	0.5
07ARD23	MR1-06-103	Volcanic Tuff /Schist	Knight Piesold 2006-2007	8.21	0.171	0.15	0.021	0.016	0.7	19	1	30	2.0
07ARD24	MR1-05-55	Volcanic Tuff /Schist	Knight Piesold 2006-2007	8.53	0.111	0.11	<0.01	0.015	0.31	34	1	107	4.0
07ARD26	MR1-06-93	Volcanic Tuff /Schist	Knight Piesold 2006-2007	7.83	0.109	0.11	<0.01	0.163	0.3	30	14	95	43
07ARD35	MR!-06-101	Volcanic Tuff /Schist	Knight Piesold 2006-2007	9.78	0.052	0.04	0.012	0.071	0.4	15	6	40	16
07ARD41	MR1-06-95	Volcanic Tuff /Schist	Knight Piesold 2006-2007	8.19	0.307	0.19	0.117	0.008	3.7	6.1	1	2	0.2
Footwall													
UCS9	MR1-06-81	Amphibolite	Knight Piesold 2006-2007	7.14	0.022	0.02	<0.01	0.019	0.3	13.2	2	42	5.1
MRARD10-107	MR1-08-154	Amphibolite	AMEC 2010	8.3	0.049	0.03	0.019	0.007	0.6	19.9	0.6	34	1.0
ARD1	MR1-05-72	Gneiss	Knight Piesold 2006-2007	9.78	0.006	0.016	<0.01	0.012	0.3	9.6	1	31	3.2
ARD2	MR1-05-72	Gneiss	Knight Piesold 2006-2007	10.03	<0.005	<0.01	<0.01	0.011	0.3	9.4	1	30	2.9
ARD3	MR1-05-72	Gneiss	Knight Piesold 2006-2007	10.15	0.042	0.042	<0.01	0.01	0.3	9	1	29	2.7
ARD4	MR1-05-73	Gneiss	Knight Piesold 2006-2007	9.93	<0.005	<0.01	<0.01	0.016	0.3	9.5	1	30	4.3
ARD5	MR1-05-73	Gneiss	Knight Piesold 2006-2007	9.75	0.008	<0.01	<0.01	0.01	0.3	9.2	1	29	2.7
ARD6	MR1-05-73	Gneiss	Knight Piesold 2006-2007	9.58	<0.005	<0.01	<0.01	0.015	0.3	8.9	1	28	4.0

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	Lithology	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
					(wt.%)				(kg $CaCO_3$/tonne)				
ARD7	MR1-05-74	Gneiss	Knight Piesold 2006-2007	9.67	<0.005	<0.01	<0.01	0.01	0.3	6.3	1	20	2.7
ARD8	MR1-05-74	Gneiss	Knight Piesold 2006-2007	10.07	0.035	<0.01	0.035	0.01	1.1	6.4	1	5.9	0.8
ARD9	MR1-05-74	Gneiss	Knight Piesold 2006-2007	9.98	<0.005	<0.01	<0.01	0.013	0.3	6.8	1	22	3.5
UCS10	MR1-06-81	Gneiss	Knight Piesold 2006-2007	6.48	3.28	0.63	2.650	0.005	82.8	14	0	0.2	0.0
UCS12	MR1-06-81	Gneiss	Knight Piesold 2006-2007	9.51	0.02	0.02	<0.01	0.026	0.3	6.2	2	20	6.9
UCS13	MR1-06-81	Gneiss	Knight Piesold 2006-2007	9.55	0.735	0.06	0.675	0.029	21.1	13.9	2	0.7	0.1
UCS22	MR1-06-81	Gneiss	Knight Piesold 2006-2007	9.28	0.077	0.04	0.037	0.012	1.2	7.8	1	6.7	0.9
UCS23	MR1-06-81	Gneiss	Knight Piesold 2006-2007	10.05	0.054	0.01	0.044	0.007	1.4	9.1	1	6.6	0.4
UCS24	MR1-06-81	Gneiss	Knight Piesold 2006-2007	9.69	0.183	0.04	0.143	0.09	4.5	6.8	8	1.5	1.7
UCS49	MR1-06-105	Gneiss	Knight Piesold 2006-2007	9.91	0.247	<0.01	0.247	0.012	7.7	7.8	1	1.0	0.1
UCS51	MR1-06-105	Gneiss	Knight Piesold 2006-2007	9.57	0.016	<0.01	0.016	0.03	0.5	8.5	3	17	5.0
07ARD22	MR1-06-90	Gneiss	Knight Piesold 2006-2007	7.61	0.104	0.07	0.034	0.009	1.1	13.0	1	12	0.7
07ARD32	MR1-06-81	Gneiss	Knight Piesold 2006-2007	9.26	0.185	0.12	0.065	0.018	2.0	24.2	2	12	0.7
MRARD10-004	MR1-09-179	Gneiss	AMEC 2010	9.5	0.016	0.02	<0.01	0.013	0.3	9.7	1.1	31	3.5
MRARD10-005	MR1-09-179	Gneiss	AMEC 2010	9.4	0.015	0.02	<0.01	0.009	0.3	5.8	0.8	19	2.4
MRARD10-011	MR1-09-178	Gneiss	AMEC 2010	8.1	0.026	0.03	<0.01	0.014	0.3	15.9	1.2	51	3.7
MRARD10-015	MR1-09-178	Gneiss	AMEC 2010	8.9	0.016	0.02	<0.01	0.013	0.3	7.8	1.1	25	3.5
MRARD10-018	MR1-09-172	Gneiss	AMEC 2010	8.7	0.142	0.02	0.122	0.284	3.8	8.5	24	2.2	6.2
MRARD10-019	MR1-09-172	Gneiss	AMEC 2010	8.5	0.075	0.08	<0.01	0.048	0.3	31.4	4.0	100	13
MRARD10-030	MR1-09-170	Gneiss	AMEC 2010	8.6	0.268	0.08	0.188	0.015	5.9	12.2	1.3	2.1	0.2
MRARD10-031	MR1-09-170	Gneiss	AMEC 2010	9.2	0.009	<0.01	<0.01	<0.005	0.3	4.6	0.4	15	1.3
MRARD10-033	MR1-08-162	Gneiss	AMEC 2010	9.4	0.016	0.02	<0.01	<0.005	0.3	6.5	0.4	21	1.3
MRARD10-034	MR1-08-162	Gneiss	AMEC 2010	9.0	0.183	0.13	0.053	0.012	1.7	7.7	1.0	4.6	0.6
MRARD10-043	MR1-09-167	Gneiss	AMEC 2010	9.5	0.020	0.02	<0.01	0.006	0.3	10.0	0.5	32	1.6
MRARD10-044	MR1-09-167	Gneiss	AMEC 2010	8.5	1.130	0.31	0.820	0.012	26	10.1	1.0	0.4	0.04
MRARD10-045	MR1-09-167	Gneiss	AMEC 2010	9.6	0.025	0.02	<0.01	<0.005	0.3	6.4	0.4	20	1.3
MRARD10-046	MR1-09-167	Gneiss	AMEC 2010	9.1	<0.005	<0.01	<0.01	<0.005	0.3	6.7	0.4	21	1.3
MRARD10-055	MR1-08-159	Gneiss	AMEC 2010	9.2	0.360	0.07	0.290	0.006	9.1	9.6	0.5	1.1	0.1
MRARD10-057	MR1-08-161	Gneiss	AMEC 2010	9.5	0.426	0.19	0.236	0.014	7.4	10.3	1.2	1.4	0.2
MRARD10-074	MR1-08-149	Gneiss	AMEC 2010	7.3	0.664	0.09	0.574	0.019	17.9	8.0	1.6	0.4	0.1
MRARD10-104	MR1-08-140	Gneiss	AMEC 2010	8.4	0.009	<0.01	<0.01	<0.005	0.3	8.7	0.4	28	1.3
MRARD10-110	MR1-08-154	Gneiss	AMEC 2010	9.0	<0.005	<0.01	<0.01	0.010	0.3	6.9	0.8	22	2.7
MRARD10-123	MR1-08-155	Gneiss	AMEC 2010	9.2	0.455	0.13	0.325	<0.005	10.2	23.2	0.4	2.3	0.0
MRARD10-125	MR1-08-144	Gneiss	AMEC 2010	9.3	<0.005	<0.01	<0.01	0.010	0.3	6.2	0.8	20	2.7
5141	ARD-2A-NW	Gneiss	AMEC 2010	9.0	0.142	0.08	0.062	0.021	1.9	14.5	1.8	7.5	0.9
5142	ARD-2A-NW	Gneiss	AMEC 2010	9.9	0.140	0.05	0.090	0.024	2.8	11.1	2.0	3.9	0.7
5157	ARD-2A-SE	Gneiss	AMEC 2010	9.9	0.103	0.05	0.053	0.020	1.7	11.6	1.7	7.0	1.0
5158	ARD-2A-SE	Gneiss	AMEC 2010	10.0	0.174	0.10	0.074	0.017	2.3	12.3	1.4	5.3	0.6
5159	ARD-2A-SE	Gneiss	AMEC 2010	9.5	0.220	0.09	0.130	0.018	4.1	13.8	1.5	3.4	0.4
5160	ARD-2A-SE	Gneiss	AMEC 2010	9.7	0.013	0.01	<0.01	0.054	0.3	11.6	4.5	37	14.4
5164	ARD-2A-SE	Gneiss	AMEC 2010	10.1	0.056	0.03	0.026	0.017	0.8	7.9	1.4	10	1.7
5165	ARD-2A-SE	Gneiss	AMEC 2010	9.8	0.014	0.01	<0.01	0.109	0.3	15.6	9.1	50	29.1
5166	ARD-2A-SE	Gneiss	AMEC 2010	9.9	0.034	0.03	<0.01	0.019	0.3	10.7	1.6	34	5.1
5171	ARD-2A-SE	Gneiss	AMEC 2010	5.5	0.399	0.17	0.229	0.054	7.2	9.0	4.5	1.3	0.6
5172	ARD-2A-SE	Gneiss	AMEC 2010	9.2	0.137	0.06	0.077	0.066	2.4	10.4	5.5	4.3	2.3
5174	ARD-2B-NW	Gneiss	AMEC 2010	9.2	0.068	0.02	0.048	0.014	1.5	3.7	1.2	2.5	0.8
5175	ARD-2B-NW	Gneiss	AMEC 2010	9.0	0.010	0.01	<0.01	0.012	0.3	5.1	1.0	16	3.2
UCS11	MR1-06-81	Gneiss/Amphibolite	Knight Piesold 2006-2007	7.36	0.262	0.09	0.172	0.01	5.4	10.1	1	1.9	0.2
5182	ARD-2B-NW	Gneiss/Schist	AMEC 2010	9.5	0.658	0.12	0.538	0.013	16.8	11.1	1.1	0.7	0.1
5183	ARD-2B-NW	Gneiss/Schist	AMEC 2010	9.8	0.032	0.03	<0.01	0.014	0.3	7.4	1.2	24	3.7
5184	ARD-2B-NW	Gneiss/Schist	AMEC 2010	9.8	0.021	0.02	<0.01	0.026	0.31	12.4	2.2	40	6.9
5186	ARD-2B-NW	Gneiss/Schist	AMEC 2010	9.5	0.094	0.08	0.014	0.020	0.4	13.5	1.7	31	3.8
5187	ARD-2B-NW	Gneiss/Schist	AMEC 2010	9.3	0.023	0.02	0.003	0.015	0.1	11.4	1.3	122	13.3
5188	ARD-2B-NW	Gneiss/Schist	AMEC 2010	9.8	0.018	0.02	<0.01	0.023	0.3	10.5	1.9	34	6.1
5189	ARD-2B-NW	Gneiss/Schist	AMEC 2010	9.3	0.020	0.02	<0.01	0.013	0.3	13.6	1.1	44	3.5
FC No. 1		Gneiss/Schist	Knight Piesold 2006-2007	8.61	0.277	0.13	0.147	0.036	4.6	8.6	3	1.9	0.7
MRARD10-081	MR1-08-142	Metasediment	AMEC 2010	9.3	<0.005	<0.01	<0.01	0.007	0.3	8.1	0.6	26	1.9
MRARD10-095	MR1-08-146	Metasediment	AMEC 2010	9.3	0.252	0.07	0.182	0.087	5.7	18.7	7.3	3.3	1.3
MRARD10-100	MR1-08-146	Metasediment	AMEC 2010	9.4	0.018	0.02	<0.01	0.225	0.3	30.6	19	98	60
5143	ARD-2A-NW	Metasediment	AMEC 2010	9.9	0.027	0.03	<0.01	0.016	0.3	9.5	1.3	30	4.3
5144	ARD-2A-NW	Metasediment	AMEC 2010	9.9	0.347	0.35	<0.01	0.020	0.3	9.1	1.7	29	5.3
5145	ARD-2A-NW	Metasediment	AMEC 2010	9.9	0.008	<0.01	<0.01	0.015	0.3	11.0	1.3	35	4.0
5147	ARD-2A-NW	Metasediment	AMEC 2010	10.0	0.075	0.05	0.025	0.024	0.8	7.9	2.0	10	2.6
5148	ARD-2A-NW	Metasediment	AMEC 2010	10.0	0.013	0.01	<0.01	0.025	0.3	11.7	2.1	37	6.7
5149	ARD-2A-NW	Metasediment	AMEC 2010	10.0	0.099	0.06	0.039	0.029	1.2	11.1	2.4	9.1	2.0
5161	ARD-2A-SE	Metasediment	AMEC 2010	10.1	0.011	0.01	<0.01	0.013	0.31	9.3	1.1	30	3.5
5162	ARD-2A-SE	Metasediment	AMEC 2010	10.1	<0.005	<0.01	<0.010	0.016	0.3	8.7	1.3	28	4.3
5163	ARD-2A-SE	Metasediment	AMEC 2010	10.1	0.008	<0.01	<0.01	0.014	0.3	8.5	1.2	27	3.7
5167	ARD-2A-SE	Metasediment	AMEC 2010	10.0	0.071	0.04	0.031	0.024	1.0	11.9	2.0	12	2.1
5168	ARD-2A-SE	Metasediment	AMEC 2010	10.1	0.021	0.02	<0.01	0.032	0.31	12.0	2.7	38	8.5
5169	ARD-2A-SE	Metasediment	AMEC 2010	10.2	0.137	0.12	0.017	0.038	0.5	7.4	3.2	14	6.0
5176	ARD-2B-NW	Schist	AMEC 2010	8.8	0.095	0.08	0.015	0.017	0.5	21.9	1.4	47	3.0
5177	ARD-2B-NW	Schist	AMEC 2010	9.0	0.139	0.14	<0.010	0.018	0.3	24.4	1.5	78	4.8
5178	ARD-2B-NW	Schist	AMEC 2010	8.5	1.460	0.55	0.910	0.018	28.4	22.6	1.5	0.8	0.1
MRARD10-035	MR1-08-163	Schist	AMEC 2010	7.9	0.007	<0.01	<0.01	0.020	0.3	9.7	1.7	31	5.3
MRARD10-037	MR1-08-160	Schist	AMEC 2010	8.9	0.158	0.10	0.058	0.020	1.8	8.3	1.7	4.6	0.9
MRARD10-049	MR1-08-163	Schist	AMEC 2010	8.2	0.014	0.01	<0.01	0.021	0.3	16.3	1.8	52	5.6
MRARD10-058	MR1-08-159	Schist	AMEC 2010	9.9	0.295	0.08	0.215	<0.005	6.7	12.4	0.4	1.8	0.1
MRARD10-085	MR1-08-144	Schist	AMEC 2010	7.8	6.130	0.17	5.960	0.005	186.3	14.8	0.4	0.1	0.0
MRARD10-096	MR1-08-146	Schist	AMEC 2010	8.9	0.009	<0.01	<0.01	0.079	0.3	23.4	6.6	75	21
MRARD10-099	MR1-08-144	Schist	AMEC 2010	9.0	<0.005	<0.01	<0.01	0.010	0.3	18.8	0.8	60	2.7
MRARD10-121	MR1-08-155	Schist	AMEC 2010	9.7	0.020	<0.01	0.010	0.007	0.3	15.5	0.6	50	1.9
5146	ARD-2A-NW	Schist	AMEC 2010	9.6	0.044	0.04	<0.01	0.029	0.3	17.0	2.4	54	7.7
5150	ARD-2A-NW	Schist	AMEC 2010	9.4	0.024	0.02	<0.01	0.028	0.3	15.9	2.3	51	7.5
5151	ARD-2A-NW	Schist	AMEC 2010	9.8	0.130	0.06	0.070	0.019	2.2	16.1	1.6	7.4	0.7
5152	ARD-2A-NW	Schist	AMEC 2010	10.0	0.062	0.04	0.022	0.016	0.7	9.1	1.3	13	1.9
5153	ARD-2A-NW	Schist	AMEC 2010	9.0	0.081	0.06	0.021	0.022	0.7	16.2	1.8	25	2.8
5154	ARD-2A-NW	Schist	AMEC 2010	10.1	0.032	0.03	<0.01	0.021	0.3	8.5	1.8	27	5.6
5170	ARD-2A-SE	Schist	AMEC 2010	9.9	0.194	0.08	0.114	0.125	3.6	25.8	10	7.2	2.9
5173	ARD-2A-SE	Schist	AMEC 2010	8.3	0.018	0.02	<0.01	0.101	0.3	22.4	8.4	72	26.9

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	Lithology	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
					(wt.%)				(kg $CaCO_3$/tonne)				
5179	ARD-2B-NW	Schist	AMEC 2010	8.8	0.038	0.04	<0.01	0.023	0.3	9.3	1.9	29.8	6.1
5180	ARD-2B-NW	Schist	AMEC 2010	8.9	0.034	0.03	<0.01	0.020	0.3	13.2	1.7	42.2	5.3
5181	ARD-2B-NW	Schist	AMEC 2010	8.8	0.027	0.03	<0.01	0.016	0.3	14.1	1.3	45.1	4.3
5185	ARD-2B-NW	Schist	AMEC 2010	9.6	0.089	0.04	0.049	0.018	1.5	12.8	1.5	8.4	1.0
5155	ARD-2A-NW	Schist/Gneiss	AMEC 2010	9.3	<0.005	<0.01	<0.01	0.013	0.3	7.0	1.1	22	3.5
5156	ARD-2A-NW	Schist/Gneiss	AMEC 2010	9.8	0.070	0.03	0.040	0.015	1.3	11.5	1.3	9.2	1.0
UCS27	MR1-06-81	Volcanic Tuff /Schist	Knight Piesold 2006-2007	9.11	0.02	0.02	<0.01	0.016	0.3	24	1	77	4.3
MRARD10-077	MR1-08-146	Volcanic tuff	AMEC 2010	9.8	<0.005	<0.01	<0.01	0.006	0.3	15.2	0.5	49	1.6
MRARD10-079	MR1-08-146	Volcanic tuff	AMEC 2010	9.3	0.102	0.06	0.042	0.654	1.3	63.9	55	49	42

Notes:

AP = Acid potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material. AP is determined from calculated sulphide sulphur content: S(T) - $S(SO_4)$.

NP = Neutralization potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material.

Carbonate NP is calculated from TC originating from carbonates and is expressed in kg $CaCO_3$/tonne.

NPR = Net Potential Ratio = NP/AP; Carb-NPR = Carb-NP/AP

*Where NP or AP values are equal to or less than zero, NPR is calculated assuming detection limit (NP = 0.2 kg $CaCO_3$/tonne, AP = 0.03 kg $CaCO_3$/tonne).

Table B-2. Net Acid Generation Test Results by Lithology

Sample ID	Borehole ID	Lithology	Sampling Program	Single Addition NAG			Sequential Additon NAG	
				NAG_{pH}	NAG (pH 4.5)	NAG (pH 7)	NAG (pH 4.5)	NAG (pH 7)
					kg H2SO4/tonne		kg H2SO4/tonne	
Hanging wall								
ARD12	MR1-05-47	Amphibolite	Knight Piesold 2006-2007					
ARD14	MR1-05-59	Amphibolite	Knight Piesold 2006-2007					
ARD15	MR1-05-51	Amphibolite	Knight Piesold 2006-2007					
ARD16	MR1-05-51	Amphibolite	Knight Piesold 2006-2007					
ARD17	MR1-05-51	Amphibolite	Knight Piesold 2006-2007					
ARD23	MR1-05-76	Amphibolite	Knight Piesold 2006-2007					
ARD24	MR1-05-76	Amphibolite	Knight Piesold 2006-2007					
07ARD10	MR1-05-53	Amphibolite	Knight Piesold 2006-2007	2.9				
07ARD11	MR1-05-46	Amphibolite	Knight Piesold 2006-2007					
07ARD17	MR1-05-57	Amphibolite	Knight Piesold 2006-2007					
07ARD19	MR1-05-60	Amphibolite	Knight Piesold 2006-2007					
07ARD27	MR1-05-62	Amphibolite	Knight Piesold 2006-2007	3.9				
07ARD28	MR1-05-62	Amphibolite	Knight Piesold 2006-2007					
MRARD10-038	MR1-08-160	Amphibolite	AMEC 2010	7.6	0	0.0		
MRARD10-039	MR1-08-160	Amphibolite	AMEC 2010	5.3	0	1.3		
MRARD10-091	MR1-08-143	Amphibolite	AMEC 2010	7.3	0	0		
MRARD10-108	MR1-08-150	Amphibolite	AMEC 2010	7.7	0	0		
MRARD10-131	MR1-08-160	Amphibolite	AMEC 2010	8.1	0	0		
ARD21	MR1-05-77	Amphibolite/Gneiss	Knight Piesold 2006-2007					
07ARD38	MR1-05-67	Amphibolite/Gneiss	Knight Piesold 2006-2007					
07ARD07	MR1-05-76	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007					
07ARD30	MR1-05-51	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007	4.0				
ARD10	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007					
ARD11	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007					
07ARD13	MR1-06-84	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	5.5				
07ARD12	MR1-05-46	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	5.0				
07ARD37	MR1-04-36	Amphibolite/Volcanic Tuff /Schist /Gneiss	Knight Piesold 2006-2007					
07ARD25	MR1-05-52	Amphibolte/Schist	Knight Piesold 2006-2007	3.3				
07ARD29	MR1-05-59	Amphibolte/Schist	Knight Piesold 2006-2007					
MRARD10-010	MR1-09-176	Gneiss	AMEC 2010	7.6	0	0		
MRARD10-115	MR1-07-121	Gneiss	AMEC 2010	7.4	0	0		
MRARD10-040	MR1-08-158	Gneiss/Amphibolite	AMEC 2010	8.0	0	0		
ARD 13	MR1-05-59	Metasediment	Knight Piesold 2006-2007					
MRARD10-090	MR1-08-144	Metasediment	AMEC 2010	7.1	0	0		
ARD 18	MR1-05-47	Schist	Knight Piesold 2006-2007					
ARD19	MR1-05-47	Schist	Knight Piesold 2006-2007	3.0				
UCS14	MR1-04-38	Schist	Knight Piesold 2006-2007					
07ARD06	MR1-04-39	Schist	Knight Piesold 2006-2007	6.1				
07ARD16	MR1-05-58	Schist	Knight Piesold 2006-2007	5.6				
07ARD33	MR1-06-105	Schist	Knight Piesold 2006-2007					
07ARD34	MR1-06-94	Schist	Knight Piesold 2006-2007					
MRARD10-001	MR1-09-171	Schist	AMEC 2010	7.2	0	0		
MRARD10-002	MR1-09-179	Schist	AMEC 2010	7.7	0	0		
MRARD10-003	MR1-09-179	Schist	AMEC 2010	7.4	0	0		
MRARD10-006	MR1-09-177	Schist	AMEC 2010	7.7	0	0		
MRARD10-007	MR1-09-177	Schist	AMEC 2010	6.9	0	0.3		
MRARD10-008	MR1-09-176	Schist	AMEC 2010	7.9	0	0		
MRARD10-009	MR1-09-176	Schist	AMEC 2010	6.7	0	0.3		
MRARD10-013	MR1-09-176	Schist	AMEC 2010	7.6	0	0		
MRARD10-014	MR1-09-176	Schist	AMEC 2010	8.0	0	0		
MRARD10-016	MR1-09-172	Schist	AMEC 2010	6.8	0	0.3		
MRARD10-017	MR1-09-172	Schist	AMEC 2010	7.4	0	0		
MRARD10-020	MR1-09-172	Schist	AMEC 2010	5.8	0	1.0		
MRARD10-022	MR1-09-176	Schist	AMEC 2010	8.0	0	0		
MRARD10-024	MR1-09-173	Schist	AMEC 2010	7.3	0	0		
MRARD10-026	MR1-09-173	Schist	AMEC 2010	4.5	0.3	2.2		
MRARD10-027	MR1-09-169	Schist	AMEC 2010	7.2	0.0	0		
MRARD10-028	MR1-09-169	Schist	AMEC 2010	3.1	5.7	11		
MRARD10-032	MR1-09-169	Schist	AMEC 2010	7.6	0	0		
MRARD10-036	MR1-08-161	Schist	AMEC 2010	6.8	0	0.3		
MRARD10-041	MR1-08-158	Schist	AMEC 2010	7.8	0	0		
MRARD10-047	MR1-08-163	Schist	AMEC 2010	7.6	0	0		
MRARD10-048	MR1-08-163	Schist	AMEC 2010	6.5	0	0.3		
MRARD10-050	MR1-08-152	Schist	AMEC 2010	8.0	0	0		
MRARD10-052	MR1-08-158	Schist	AMEC 2010	8.0	0	0		

Table B-2. Net Acid Generation Test Results by Lithology (continued)

Sample ID	Borehole ID	Lithology	Sampling Program	Single Addition NAG			Sequential Additon NAG	
				NAG_{pH}	NAG (pH 4.5)	NAG (pH 7)	NAG (pH 4.5)	NAG (pH 7)
					kg H2SO4/tonne		kg H2SO4/tonne	
MRARD10-056	MR1-08-152	Schist	AMEC 2010	7.4	0	0		
MRARD10-060	MR1-08-157	Schist	AMEC 2010	6.4	0	1.3		
MRARD10-061	MR1-08-159	Schist	AMEC 2010	7.3	0	0		
MRARD10-062	MR1-08-155	Schist	AMEC 2010	7.3	0	0		
MRARD10-063	MR1-08-157	Schist	AMEC 2010	7.0	0	0		
MRARD10-064	MR1-08-155	Schist	AMEC 2010	7.1	0	0		
MRARD10-065	MR1-08-150	Schist	AMEC 2010	7.2	0	0		
MRARD10-068	MR1-08-140	Schist	AMEC 2010	2.8	15	24	14.0	23.0
MRARD10-070	MR1-08-140	Schist	AMEC 2010	7.3	0	0		
MRARD10-071	MR1-08-160	Schist	AMEC 2010	7.2	0	0		
MRARD10-072	MR1-08-149	Schist	AMEC 2010	7.5	0	0		
MRARD10-073	MR1-08-155	Schist	AMEC 2010	6.9	0	0.7		
MRARD10-075	MR1-08-148	Schist	AMEC 2010	7.2	0	0		
MRARD10-078	MR1-08-153	Schist	AMEC 2010	6.9	0	0.3		
MRARD10-086	MR1-08-147	Schist	AMEC 2010	7.2	0	0		
MRARD10-092	MR1-08-142	Schist	AMEC 2010	4.3	0.3	3.3		
MRARD10-093	MR1-08-145	Schist	AMEC 2010	7.4	0	0		
MRARD10-094	MR1-08-147	Schist	AMEC 2010	6.9	0	0.3		
MRARD10-097	MR1-08-143	Schist	AMEC 2010	8.1	0	0		
MRARD10-101	MR1-08-153	Schist	AMEC 2010	7.2	0	0		
MRARD10-102	MR1-08-143	Schist	AMEC 2010	7.6	0	0		
MRARD10-103	MR1-08-141	Schist	AMEC 2010	7.1	0	0		
MRARD10-106	MR1-08-148	Schist	AMEC 2010	6.7	0	0.3		
MRARD10-109	MR1-08-141	Schist	AMEC 2010	7.0	0	0.3		
MRARD10-111	MR1-08-144	Schist	AMEC 2010	7.1	0	0		
MRARD10-114	MR1-07-121	Schist	AMEC 2010	6.0	0	0.3		
MRARD10-116	MR1-07-121	Schist	AMEC 2010	2.8	16	25	16.4	26.4
MRARD10-117	MR1-08-156	Schist	AMEC 2010	7.0	0.0	0.3		
MRARD10-118	MR1-07-121	Schist	AMEC 2010	7.5	0	0		
MRARD10-119	MR1-08-156	Schist	AMEC 2010	8.3	0	0		
MRARD10-120	MR1-08-148	Schist	AMEC 2010	3.0	7.0	11		
MRARD10-122	MR1-08-156	Schist	AMEC 2010	6.6	0	1.3		
MRARD10-124	MR1-08-143	Schist	AMEC 2010	7.3	0	0		
MRARD10-126	MR1-08-145	Schist	AMEC 2010	7.5	0	0		
MRARD10-127	MR1-08-143	Schist	AMEC 2010	7.4	0	0		
MRARD10-128	MR1-08-141	Schist	AMEC 2010	6.9	0	0.3		
MRARD10-129	MR1-08-154	Schist	AMEC 2010	1.8	131	165	226.6	276.8
MRARD10-130	MR1-08-153	Schist	AMEC 2010	9.0	0	0		
07ARD21	MR1-06-90	Schist /Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007	2.8				
07ARD20	MR1-05-60	Schist/Amphibolite	Knight Piesold 2006-2007					
07ARD15	MR1-05-68	Schist/Volcanic Tuff	Knight Piesold 2006-2007					
07ARD39	MR1-06-96	Schist/Volcanic Tuff	Knight Piesold 2006-2007					
07ARD40	MR1-05-54	Schist/Volcanic Tuff /Amphibolite	Knight Piesold 2006-2007					
07ARD14	MR1-06-84	Schist/Volcanic Tuff/Gneiss	Knight Piesold 2006-2007					
ARD20	MR1-05-59	Volcanic Tuff	Knight Piesold 2006-2007					
ARD22	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007					
ARD25	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
ARD26	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS2	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007					
UCS15	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007	7.6				
UCS16	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS17	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS18	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS19	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS20	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS21	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS25	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007					
UCS26	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007					
UCS28	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS29	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS30	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007					
UCS31	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS32	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS33	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS34	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS35	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					

Table B-2. Net Acid Generation Test Results by Lithology (continued)

Sample ID	Borehole ID	Lithology	Sampling Program	Single Addition NAG			Sequential Additon NAG	
				NAG_{pH}	NAG (pH 4.5)	NAG (pH 7)	NAG (pH 4.5)	NAG (pH 7)
					kg H2SO4/tonne		kg H2SO4/tonne	
UCS36	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS37	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS38	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS39	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
UCS40	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007					
07ARD08	MR1-05-53	Volcanic Tuff	Knight Piesold 2006-2007	4.6				
07ARD36	MR1-06-95	Volcanic Tuff	Knight Piesold 2006-2007					
MRARD10-012	MR1-09-173	Volcanic Tuff	AMEC 2010	9.4	0	0		
MRARD10-021	MR1-09-173	Volcanic Tuff	AMEC 2010	7.0	0	0		
MRARD10-023	MR1-09-173	Volcanic Tuff	AMEC 2010	9.1	0	0		
MRARD10-025	MR1-09-173	Volcanic Tuff	AMEC 2010	8.0	0	0		
MRARD10-042	MR1-08-158	Volcanic Tuff	AMEC 2010	9.7	0	0		
MRARD10-051	MR1-08-158	Volcanic Tuff	AMEC 2010	10.8	0	0		
MRARD10-053	MR1-08-152	Volcanic Tuff	AMEC 2010	8.1	0	0		
MRARD10-054	MR1-08-158	Volcanic Tuff	AMEC 2010	9.3	0	0		
MRARD10-059	MR1-08-152	Volcanic Tuff	AMEC 2010	7.4	0	0		
MRARD10-066	MR1-08-150	Volcanic Tuff	AMEC 2010	7.2	0	0		
MRARD10-067	MR1-08-150	Volcanic Tuff	AMEC 2010	7.7	0	0		
MRARD10-069	MR1-08-141	Volcanic Tuff	AMEC 2010	2.5	21	26		
MRARD10-076	MR1-08-157	Volcanic Tuff	AMEC 2010	7.7	0	0		
MRARD10-080	MR1-08-149	Volcanic Tuff	AMEC 2010	2.9	11	18	8.4	13.6
MRARD10-082	MR1-08-150	Volcanic Tuff	AMEC 2010	9.5	0	0		
MRARD10-083	MR1-08-145	Volcanic Tuff	AMEC 2010	7.5	0	0		
MRARD10-084	MR1-08-147	Volcanic Tuff	AMEC 2010	8.0	0	0		
MRARD10-087	MR1-08-147	Volcanic Tuff	AMEC 2010	10.6	0	0		
MRARD10-088	MR1-08-147	Volcanic Tuff	AMEC 2010	9.5	0	0		
MRARD10-089	MR1-08-147	Volcanic Tuff	AMEC 2010	9.5	0	0		
MRARD10-098	MR1-08-153	Volcanic Tuff	AMEC 2010	7.7	0	0		
MRARD10-105	MR1-08-141	Volcanic Tuff	AMEC 2010	3.4	2.9	8.3		
MRARD10-112	MR1-08-156	Volcanic Tuff	AMEC 2010	9.8	0	0		
MRARD10-113	MR1-08-144	Volcanic Tuff	AMEC 2010	7.6	0	0		
FC No. 2		Volcanic Tuff /Amphibolite/Schist	Knight Piesold 2006-2007					
07ARD31	MR1-05-54	Volcanic Tuff /Chert /Schist	Knight Piesold 2006-2007	2.8				
07ARD23	MR1-06-103	Volcanic Tuff /Schist	Knight Piesold 2006-2007					
07ARD24	MR1-05-55	Volcanic Tuff /Schist	Knight Piesold 2006-2007	5.9				
07ARD26	MR1-06-93	Volcanic Tuff /Schist	Knight Piesold 2006-2007					
07ARD35	MR!-06-101	Volcanic Tuff /Schist	Knight Piesold 2006-2007					
07ARD41	MR1-06-95	Volcanic Tuff /Schist	Knight Piesold 2006-2007	3.1				
MRARD10-029	MR1-09-170	Volcanic Tuff /Schist	AMEC 2010	7.3	0	0		
Footwall								
UCS9	MR1-06-81	Amphibolite	Knight Piesold 2006-2007					
MRARD10-107	MR1-08-154	Amphibolite	AMEC 2010	7.5	0	0		
ARD1	MR1-05-72	Gneiss	Knight Piesold 2006-2007	7.6				
ARD2	MR1-05-72	Gneiss	Knight Piesold 2006-2007					
ARD3	MR1-05-72	Gneiss	Knight Piesold 2006-2007					
ARD4	MR1-05-73	Gneiss	Knight Piesold 2006-2007					
ARD5	MR1-05-73	Gneiss	Knight Piesold 2006-2007					
ARD6	MR1-05-73	Gneiss	Knight Piesold 2006-2007					
ARD7	MR1-05-74	Gneiss	Knight Piesold 2006-2007					
ARD8	MR1-05-74	Gneiss	Knight Piesold 2006-2007					
ARD9	MR1-05-74	Gneiss	Knight Piesold 2006-2007					
UCS10	MR1-06-81	Gneiss	Knight Piesold 2006-2007					
UCS12	MR1-06-81	Gneiss	Knight Piesold 2006-2007					
UCS13	MR1-06-81	Gneiss	Knight Piesold 2006-2007	3.5				
UCS22	MR1-06-81	Gneiss	Knight Piesold 2006-2007					
UCS23	MR1-06-81	Gneiss	Knight Piesold 2006-2007					
UCS24	MR1-06-81	Gneiss	Knight Piesold 2006-2007					
UCS49	MR1-06-105	Gneiss	Knight Piesold 2006-2007	5.3				
UCS51	MR1-06-105	Gneiss	Knight Piesold 2006-2007					
07ARD22	MR1-06-90	Gneiss	Knight Piesold 2006-2007	6.9				
07ARD32	MR1-06-81	Gneiss	Knight Piesold 2006-2007					
MRARD10-004	MR1-09-179	Gneiss	AMEC 2010	7.7	0	0		
MRARD10-005	MR1-09-179	Gneiss	AMEC 2010	7.3	0	0		
MRARD10-011	MR1-09-178	Gneiss	AMEC 2010	7.6	0	0		
MRARD10-015	MR1-09-178	Gneiss	AMEC 2010	7.5	0	0		
MRARD10-018	MR1-09-172	Gneiss	AMEC 2010	5.0	0	1.0		

Table B-2. Net Acid Generation Test Results by Lithology (continued)

Sample ID	Borehole ID	Lithology	Sampling Program	Single Addition NAG			Sequential Additon NAG	
				NAG_{pH}	NAG (pH 4.5)	NAG (pH 7)	NAG (pH 4.5)	NAG (pH 7)
					kg H2SO4/tonne		kg H2SO4/tonne	
MRARD10-019	MR1-09-172	Gneiss	AMEC 2010	7.9	0	0		
MRARD10-030	MR1-09-170	Gneiss	AMEC 2010	4.5	0.3	1.3		
MRARD10-031	MR1-09-170	Gneiss	AMEC 2010	7.0	0	0.3		
MRARD10-033	MR1-08-162	Gneiss	AMEC 2010	7.1	0	0		
MRARD10-034	MR1-08-162	Gneiss	AMEC 2010	5.5	0	0.3		
MRARD10-043	MR1-09-167	Gneiss	AMEC 2010	7.5	0	0		
MRARD10-044	MR1-09-167	Gneiss	AMEC 2010	2.8	14	22	14.2	21.4
MRARD10-045	MR1-09-167	Gneiss	AMEC 2010	6.8	0.0	0.3		
MRARD10-046	MR1-09-167	Gneiss	AMEC 2010	7.2	0	0		
MRARD10-055	MR1-08-159	Gneiss	AMEC 2010	4.4	0.3	3.6		
MRARD10-057	MR1-08-161	Gneiss	AMEC 2010	3.5	2.3	5.2		
MRARD10-074	MR1-08-149	Gneiss	AMEC 2010	3.1	6.5	12		
MRARD10-104	MR1-08-140	Gneiss	AMEC 2010	7.4	0	0		
MRARD10-110	MR1-08-154	Gneiss	AMEC 2010	7.1	0	0		
MRARD10-123	MR1-08-155	Gneiss	AMEC 2010	4.2	1.0	6.6		
MRARD10-125	MR1-08-144	Gneiss	AMEC 2010	6.9	0	0.7		
5141	ARD-2A-NW	Gneiss	AMEC 2010	6.8	0	0.3		
5142	ARD-2A-NW	Gneiss	AMEC 2010	5.6	0	0.7		
5157	ARD-2A-SE	Gneiss	AMEC 2010	6.4	0	0.6		
5158	ARD-2A-SE	Gneiss	AMEC 2010	5.8	0	0.3		
5159	ARD-2A-SE	Gneiss	AMEC 2010	4.9	0	1.0		
5160	ARD-2A-SE	Gneiss	AMEC 2010	7.4	0	0		
5164	ARD-2A-SE	Gneiss	AMEC 2010	6.4	0	0.7		
5165	ARD-2A-SE	Gneiss	AMEC 2010	7.9	0	0		
5166	ARD-2A-SE	Gneiss	AMEC 2010	7.2	0	0		
5171	ARD-2A-SE	Gneiss	AMEC 2010	3.1	4.8	6.8		
5172	ARD-2A-SE	Gneiss	AMEC 2010	7.1	0	0		
5174	ARD-2B-NW	Gneiss	AMEC 2010	5.3	0	1.3		
5175	ARD-2B-NW	Gneiss	AMEC 2010	7.1	0	0		
UCS11	MR1-06-81	Gneiss/Amphibolite	Knight Piesold 2006-2007	6.0				
FC No. 1		Gneiss/Schist	Knight Piesold 2006-2007					
5182	ARD-2B-NW	Gneiss/Schist	AMEC 2010	3.0	8.2	14		
5183	ARD-2B-NW	Gneiss/Schist	AMEC 2010	7.3	0	0		
5184	ARD-2B-NW	Gneiss/Schist	AMEC 2010	7.5	0	0		
5186	ARD-2B-NW	Gneiss/Schist	AMEC 2010	7.0	0	0		
5187	ARD-2B-NW	Gneiss/Schist	AMEC 2010	7.5	0	0		
5188	ARD-2B-NW	Gneiss/Schist	AMEC 2010	7.4	0	0		
5189	ARD-2B-NW	Gneiss/Schist	AMEC 2010	7.5	0	0		
MRARD10-081	MR1-08-142	Metasediment	AMEC 2010	7.3	0	0		
MRARD10-095	MR1-08-146	Metasediment	AMEC 2010	6.9	0	0.3		
MRARD10-100	MR1-08-146	Metasediment	AMEC 2010	9.9	0	0		
5143	ARD-2A-NW	Metasediment	AMEC 2010	7.1	0	0		
5144	ARD-2A-NW	Metasediment	AMEC 2010	7.2	0	0		
5145	ARD-2A-NW	Metasediment	AMEC 2010	7.2	0	0		
5147	ARD-2A-NW	Metasediment	AMEC 2010	6.6	0	0.7		
5148	ARD-2A-NW	Metasediment	AMEC 2010	7.2	0	0		
5149	ARD-2A-NW	Metasediment	AMEC 2010	6.6	0	0.7		
5161	ARD-2A-SE	Metasediment	AMEC 2010	7.0	0	0		
5162	ARD-2A-SE	Metasediment	AMEC 2010	7.1	0	0		
5163	ARD-2A-SE	Metasediment	AMEC 2010	7.1	0	0		
5167	ARD-2A-SE	Metasediment	AMEC 2010	6.8	0	1.3		
5168	ARD-2A-SE	Metasediment	AMEC 2010	7.3	0	0		
5169	ARD-2A-SE	Metasediment	AMEC 2010	5.2	0	1.0		
5176	ARD-2B-NW	Schist	AMEC 2010	7.3	0	0		
5177	ARD-2B-NW	Schist	AMEC 2010	7.6	0	0		
5178	ARD-2B-NW	Schist	AMEC 2010	2.7	18	27	15.2	24.2
MRARD10-035	MR1-08-163	Schist	AMEC 2010	7.6	0	0		
MRARD10-037	MR1-08-160	Schist	AMEC 2010	6.6	0	0.3		
MRARD10-049	MR1-08-163	Schist	AMEC 2010	7.6	0	0		
MRARD10-058	MR1-08-159	Schist	AMEC 2010	4.3	0.7	4.6		
MRARD10-085	MR1-08-144	Schist	AMEC 2010	2.3	65	117	88.6	133.0
MRARD10-096	MR1-08-146	Schist	AMEC 2010	9.1	0	0		
MRARD10-099	MR1-08-144	Schist	AMEC 2010	8.0	0	0		
MRARD10-121	MR1-08-155	Schist	AMEC 2010	6.4	0	1.0		
5146	ARD-2A-NW	Schist	AMEC 2010	7.4	0	0		
5150	ARD-2A-NW	Schist	AMEC 2010	7.4	0	0		

Table B-2. Net Acid Generation Test Results by Lithology (continued)

Sample ID	Borehole ID	Lithology	Sampling Program	Single Addition NAG			Sequential Additon NAG	
				NAG_{pH}	NAG (pH 4.5)	NAG (pH 7)	NAG (pH 4.5)	NAG (pH 7)
					kg H2SO4/tonne		kg H2SO4/tonne	
5151	ARD-2A-NW	Schist	AMEC 2010	6.7	0	0.6		
5152	ARD-2A-NW	Schist	AMEC 2010	6.7	0	0.3		
5153	ARD-2A-NW	Schist	AMEC 2010	7.0	0	0.3		
5154	ARD-2A-NW	Schist	AMEC 2010	7.0	0	0.3		
5170	ARD-2A-SE	Schist	AMEC 2010	9.1	0	0		
5173	ARD-2A-SE	Schist	AMEC 2010	8.3	0	0		
5179	ARD-2B-NW	Schist	AMEC 2010	7.5	0	0		
5180	ARD-2B-NW	Schist	AMEC 2010	7.5	0	0		
5181	ARD-2B-NW	Schist	AMEC 2010	7.7	0	0		
5185	ARD-2B-NW	Schist	AMEC 2010	6.9	0	0.9		
5155	ARD-2A-NW	Schist/Gneiss	AMEC 2010	7.0	0	0.0		
5156	ARD-2A-NW	Schist/Gneiss	AMEC 2010	6.6	0	0.3		
MRARD10-077	MR1-08-146	Volcanic tuff	AMEC 2010	7.6	0	0		
MRARD10-079	MR1-08-146	Volcanic tuff	AMEC 2010	10.7	0	0		
UCS27	MR1-06-81	Volcanic Tuff /Schist	Knight Piesold 2006-2007					

Table B.3 Total Metal Concentrations by Lithology

Sample ID	Borehole ID	Rock Type	Sampling Program	Hg	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
				µg/g	%	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g
Average Concentration (Basalt)*				0.09	7.8	2	330	1	0.007	7.6	0.22	48	170	87	8.6	0.83	17	4.6	1500	1.5
Ten Times Average Concentration (Basalt)				0.9	78	20	3300	10	0.07	76	2.2	480	1700	870	86	8.3	170	46	15000	15
Average Concentration (Continental Crustal)*				0.085	8.23	1.8	425	3	0.0085	4.15	0.15	25	102	60	5.63	2.085	20	2.33	950	1.2
Ten Times Average Concentration (Crustal)				0.85	82.3	18	4250	30	0.085	41.5	1.5	250	1020	600	56.3	20.85	200	23.3	9500	12
Hanging Wall																				
ARD12	MR1-05-47	Amphibolite	Knight Piesold 2006-2007		9.2	<6	200	5.1	<3	0.13	1	51	370	41	11	0.49	30	12	3,400	<2
ARD14	MR1-05-59	Amphibolite	Knight Piesold 2006-2007		6.3	**78**	250	1.3	<3	0.12	2	49	950	180	5	1.60	12	3.5	1,100	29
ARD15	MR1-05-51	Amphibolite	Knight Piesold 2006-2007		8.3	**30**	170	0.12	<3	6.50	4.9	59	260	96	5	0.70	<3	1.8	2,200	<2
ARD16	MR1-05-51	Amphibolite	Knight Piesold 2006-2007		7.6	<6	31	0.099	<3	0.79	1.4	49	170	130	13	0.27	7	3.6	6,400	7
ARD17	MR1-05-51	Amphibolite	Knight Piesold 2006-2007		13.0	<6	30	2.1	<3	0.15	1	85	350	120	10	0.79	33	11	2,300	3
ARD23	MR1-05-76	Amphibolite	Knight Piesold 2006-2007		7.2	<6	590	2.6	<3	0.08	0.5	4.4	13	4.1	5	2.10	13	4.8	860	2
ARD24	MR1-05-76	Amphibolite	Knight Piesold 2006-2007		7.2	<6	300	1.3	<3	0.06	0.4	8.2	8	1.6	6	2.50	8	1.7	420	9
07ARD10	MR1-05-53	Amphibolite	Knight Piesold 2006-2007	<0.1	4.2	**32**	5	0.9	1.7	0.23	0.13	42	100	27	32	0.01	34	8.3	450	7.9
07ARD11	MR1-05-46	Amphibolite	Knight Piesold 2006-2007	<0.1	4.0	2	10	2.2	0.08	0.03	0.25	29	660	38	43	0.06	70	1.8	360	5.0
07ARD17	MR1-05-57	Amphibolite	Knight Piesold 2006-2007	<0.1	4.3	<2	14	1.6	0.04	0.28	0.10	22	230	22	38	0.03	33	5.8	1,100	1.9
07ARD19	MR1-05-60	Amphibolite	Knight Piesold 2006-2007	<0.1	8.4	2	14	1.3	0.25	0.20	0.24	42	590	6.0	17	0.11	16	8.4	1,600	3.4
07ARD27	MR1-05-62	Amphibolite	Knight Piesold 2006-2007	<0.1	6.2	**25**	52	0.7	0.20	0.50	0.29	26	79	120	22	0.13	16	5.6	5,100	4.3
07ARD28	MR1-05-62	Amphibolite	Knight Piesold 2006-2007	<0.1	8.3	2	350	4.0	0.06	0.23	0.13	61	370	82	10	0.80	36	11	2,900	2.8
MRARD10-038	MR1-08-160	Amphibolite	AMEC 2010	<0.1	5.5	0.8	2.2	1.7	<0.09	0.14	<0.2	29	930	2.9	15	0.017	39	5.9	1000	1.1
MRARD10-039	MR1-08-160	Amphibolite	AMEC 2010	<0.1	8.9	12	5.8	3.4	<0.09	0.021	<0.2	53	48	46	13	0.08	330	4	620	74
MRARD10-091	MR1-08-143	Amphibolite	AMEC 2010	<0.1	3.8	<0.5	5.7	3.2	<0.09	0.021	<0.2	22	61	0.9	7.1	0.15	18	3.4	320	0.5
MRARD10-108	MR1-08-150	Amphibolite	AMEC 2010	<0.1	5.9	<0.5	0.90	2.2	0.19	0.49	<0.2	24	390	6.4	15	0.018	29	5.9	490	0.3
MRARD10-131	MR1-08-160	Amphibolite	AMEC 2010	<0.1	0.71	**27**	1.6	0.44	<0.09	0.18	<0.2	10.0	40	31	0.69	0.019	5	2	32000	56
ARD21	MR1-05-77	Amphibolite/Gneiss	Knight Piesold 2006-2007		6.8	<6	200	0.34	<3	0.18	0.7	56	200	90	7	1.60	17	2.7	1,100	3
07ARD38	MR1-05-67	Amphibolite/Gneiss	Knight Piesold 2006-2007	<0.1	8.5	<2	1800	1.1	0.30	0.71	0.18	32	330	43	9	3.30	32	5.5	1,100	22
07ARD07	MR1-05-76	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007	<0.1	6.2	5	130	2.8	0.04	0.09	0.13	31	540	24	14	1.20	36	7.5	1,700	14
07ARD30	MR1-05-51	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007	<0.1	7.9	4	280	1.6	0.24	0.19	0.40	32	210	73	14	0.83	25	7.3	2,400	11
ARD10	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007		8.0	<6	30	0.77	<3	0.03	1.1	56	360	62	12	0.61	130	4.2	680	<2
ARD11	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007		7.3	<6	12	19	<3	0.03	0.5	43	250	16	6	0.35	27	7.4	680	4
07ARD13	MR1-06-84	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	<0.1	7.4	11	14	0.8	0.63	0.16	0.73	40	450	43	20	0.05	18	6.6	900	8.2
07ARD12	MR1-05-46	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	<0.1	7.2	4	72	2.7	0.33	0.09	0.35	25	310	83	16	0.61	24	7.6	2,000	8.4
07ARD37	MR1-04-36	Amphibolite/Volcanic Tuff /Schist /Gneiss	Knight Piesold 2006-2007	<0.1	7.4	<2	130	0.9	3.1	4.30	0.15	48	240	78	9	1.30	17	4.9	1,800	18
07ARD25	MR1-05-52	Amphibolte/Schist	Knight Piesold 2006-2007	<0.1	10.0	**45**	67	0.8	0.36	0.05	0.67	65	1000	52	23	0.01	5	7.2	2,900	7.4
07ARD29	MR1-05-59	Amphibolte/Schist	Knight Piesold 2006-2007	<0.1	7.4	7	50	1.8	0.10	0.19	0.31	43	420	41	13	0.55	17	7.2	2,500	4.6
MRARD10-010	MR1-09-176	Gneiss	AMEC 2010	<0.1	5.9	1.7	150	0.73	<0.09	0.11	<0.2	31	310	47	8.2	0.95	8	3.2	2000	0.6
MRARD10-115	MR1-07-121	Gneiss	AMEC 2010	<0.1	4.8	<0.5	470	1.9	<0.09	0.2	<0.2	7.8	75	2.8	4.2	2.3	24	3.1	300	1.1
MRARD10-040	MR1-08-158	Gneiss/Amphibolite	AMEC 2010	0.2	4.5	<0.5	300	0.37	<0.09	1.8	<0.2	23	220	57	4.1	1.8	20	2.6	680	1.1
ARD 13	MR1-05-59	Greywacke	Knight Piesold 2006-2007	-	5.9	7	340	1.6	<3	0.08	0.8	21	54	12	7	1.40	<3	3.7	2,000	2
MRARD10-090	MR1-08-144	Psammite	AMEC 2010	<0.1	3.5	<0.5	190	1.00	<0.09	0.39	<0.2	5.7	53	1.2	3.6	2.2	13	1.9	310	44
ARD 18	MR1-05-47	Schist	Knight Piesold 2006-2007		9.0	<6	15	3.9	<3	0.13	1	37	1300	8.7	12	0.14	<3	14	8,500	<2
ARD19	MR1-05-47	Schist	Knight Piesold 2006-2007		11.0	11	340	3.1	<3	0.15	1.1	45	1700	130	12	1.50	6	9.6	6,700	2
UCS14	MR1-04-38	Schist	Knight Piesold 2006-2007		10.0	<6	7	0.061	<34	0.08	<4	57	330	220	19	0.02	<3	9.5	2,000	<2
07ARD06	MR1-04-39	Schist	Knight Piesold 2006-2007	<0.1	3.3	17	60	1.0	0.50	0.24	0.10	24	130	40	25	0.77	21	5.5	1,900	9.7
07ARD16	MR1-05-58	Schist	Knight Piesold 2006-2007	<0.1	5.2	3	130	2.3	0.19	0.27	0.14	52	740	60	17	0.58	36	7.6	1,900	3.0
07ARD33	MR1-06-105	Schist	Knight Piesold 2006-2007	<0.1	10.0	4	1300	1.9	0.14	0.21	0.35	84	83	37	13	4.70	23	3.3	720	64
07ARD34	MR1-06-94	Schist	Knight Piesold 2006-2007	<0.1	8.7	2	49	2.4	0.15	0.07	0.39	61	1000	66	26	0.14	7	6.7	2,200	34
MRARD10-001	MR1-09-171	Schist	AMEC 2010	<0.1	5.6	**63**	9.4	2.9	0.37	0.069	<0.2	82	1450	99	17	0.09	30	5.4	1300	5.4
MRARD10-002	MR1-09-179	Schist	AMEC 2010	<0.1	3.2	4.2	15	0.73	0.13	0.13	<0.2	22	310	11	10	0.018	12	2.3	140	2.1
MRARD10-003	MR1-09-179	Schist	AMEC 2010	<0.1	5.5	5.4	6.8	0.58	0.14	0.08	<0.2	30	44	47	17	0.0083	13	4.9	1200	2.3
MRARD10-006	MR1-09-177	Schist	AMEC 2010	<0.1	3.9	2.4	9.7	1.1	0.46	0.074	<0.2	30	300	23	9.1	0.06	160	3.7	320	0.6
MRARD10-007	MR1-09-177	Schist	AMEC 2010	<0.1	8.4	6.8	17	2.7	0.34	0.17	<0.2	29	21	44	16	0.2	35	8.4	1000	1.5
MRARD10-008	MR1-09-176	Schist	AMEC 2010	<0.1	8.1	8.0	15	0.83	<0.09	0.14	<0.2	68	770	44	10	0.044	16	7.2	3300	0.3
MRARD10-009	MR1-09-176	Schist	AMEC 2010	<0.1	5.6	2.1	88	0.41	<0.09	0.1	<0.2	48	320	130	9.3	0.12	14	6	2400	0.4
MRARD10-013	MR1-09-176	Schist	AMEC 2010	<0.1	7.2	0.6	12	5.0	<0.09	0.4	<0.2	27	380	129	13	0.044	40	6.7	1800	<0.1
MRARD10-014	MR1-09-176	Schist	AMEC 2010	<0.1	7.7	0.6	39	2.8	<0.09	0.17	<0.2	14	91	15	13	0.48	38	7	1800	8.0
MRARD10-016	MR1-09-172	Schist	AMEC 2010	<0.1	1.6	2.9	2.4	0.52	<0.09	0.082	<0.2	6.9	17	1.5	9.3	0.047	14	2.9	460	1.2
MRARD10-017	MR1-09-172	Schist	AMEC 2010	<0.1	4.6	0.6	20	2.1	<0.09	0.31	<0.2	17	280	24	7	0.08	38	4.1	480	0.9
MRARD10-020	MR1-09-172	Schist	AMEC 2010	<0.1	6.6	8.4	5.2	0.64	0.59	0.27	<0.2	9.7	58	21	25	0.02	14	6.3	1900	1.4
MRARD10-022	MR1-09-176	Schist	AMEC 2010	<0.1	8.5	<0.5	830	4.4	<0.09	0.059	<0.2	15	80	1.2	19	0.73	30	6.5	1300	4.5
MRARD10-024	MR1-09-173	Schist	AMEC 2010	<0.1	1.6	<0.5	22	0.53	<0.09	0.026	<0.2	1.7	150	5.1	3.1	0.043	9	0.81	260	3.3
MRARD10-026	MR1-09-173	Schist	AMEC 2010	<0.1	6.1	11	28	0.69	<0.09	0.27	<0.2	29	350	33	13	0.035	9	4.7	580	2.0
MRARD10-027	MR1-09-169	Schist	AMEC 2010	<0.1	3.6	3.6	860	1.4	<0.09	0.11	<0.2	17	220	44	6.7	0.4	12	2.6	770	1.2
MRARD10-028	MR1-09-169	Schist	AMEC 2010	<0.1	2.6	16	450	0.86	<0.09	0.16	<0.2	17	170	24	7	0.46	6	1.4	320	1.3
MRARD10-032	MR1-09-169	Schist	AMEC 2010	<0.1	5	0.7	140	1.1	<0.09	0.11	<0.2	27	180	47	6.1	1.7	21	2.7	830	0.8

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
				%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g
Average Concentration (Basalt)*				1.8	130	6	0.2	0.05	1.5	465	1.38	2.1	1	250	105
Ten Times Average Concentration (Basalt)				18	1300	60	2	0.5	15	4650	13.8	21	10	2500	1050
Average Concentration (Continental Crustal)*				2.355	84	14	0.2	0.05	2.3	370	0.565	0.85	2.7	120	70
Ten Times Average Concentration (Crustal)				23.55	840	140	2	0.5	23	3700	5.65	8.5	27	1200	700
Hanging Wall															
ARD12	MR1-05-47	Amphibolite	Knight Piesold 2006-2007		210	11	<25	<6	<6	4.5	0.13	<5	<75	330	95
ARD14	MR1-05-59	Amphibolite	Knight Piesold 2006-2007		370	230	<25	<6	<6	5.2	0.24	<5	<75	69	260
ARD15	MR1-05-51	Amphibolite	Knight Piesold 2006-2007		180	68	<25	<6	<6	140	0.53	<5	<75	270	490
ARD16	MR1-05-51	Amphibolite	Knight Piesold 2006-2007		130	9	<25	<6	<6	10	0.45	<5	<75	320	120
ARD17	MR1-05-51	Amphibolite	Knight Piesold 2006-2007		240	12	<25	<6	<6	5.8	0.13	<5	<75	460	100
ARD23	MR1-05-76	Amphibolite	Knight Piesold 2006-2007		13	25	<25	<6	<6	35	0.09	<5	<75	15	39
ARD24	MR1-05-76	Amphibolite	Knight Piesold 2006-2007		12	17	<25	<6	<6	28	0.09	<5	<75	13	15
07ARD10	MR1-05-53	Amphibolite	Knight Piesold 2006-2007	0.014	140	15	3.2	**2**	1.7	18	0.028	0.2	1.8	54	39
07ARD11	MR1-05-46	Amphibolite	Knight Piesold 2006-2007	0.0085	170	4.0	0.4	<1	0.3	4.6	0.3	<0.02	3.4	120	46
07ARD17	MR1-05-57	Amphibolite	Knight Piesold 2006-2007	0.0072	120	2.9	0.3	**2**	1.4	15	0.053	0.1	4.0	45	39
07ARD19	MR1-05-60	Amphibolite	Knight Piesold 2006-2007	0.016	330	6.2	0.2	<1	2.0	23	0.071	0.2	2.7	130	78
07ARD27	MR1-05-62	Amphibolite	Knight Piesold 2006-2007	0.011	94	4.4	<0.1	<1	3.7	9.3	0.06	0.2	2.6	59	63
07ARD28	MR1-05-62	Amphibolite	Knight Piesold 2006-2007	0.051	380	5.1	3.4	**2**	3.2	15	0.16	0.3	2.5	200	71
MRARD10-038	MR1-08-160	Amphibolite	AMEC 2010	0.014	540	1.1	<0.8	<0.7	0.7	4.9	0.012	<0.02	0.94	51	31
MRARD10-039	MR1-08-160	Amphibolite	AMEC 2010	0.042	180	2.6	<0.8	<0.7	1.8	1.7	0.088	0.23	1.8	110	106
MRARD10-091	MR1-08-143	Amphibolite	AMEC 2010	0.018	40	1.3	<0.8	<0.7	<0.5	0.69	0.099	0.05	4.3	65	25
MRARD10-108	MR1-08-150	Amphibolite	AMEC 2010	0.0097	140	4.0	1.4	<0.7	2.9	6.4	0.065	0.05	3.4	78	36
MRARD10-131	MR1-08-160	Amphibolite	AMEC 2010	0.0069	25	1.2	<0.8	<0.7	1.2	1.9	0.019	0.03	0.39	24	13
ARD21	MR1-05-77	Amphibolite/Gneiss	Knight Piesold 2006-2007		210	8	<25	<6	<6	16	0.42	<5	<75	370	41
07ARD38	MR1-05-67	Amphibolite/Gneiss	Knight Piesold 2006-2007	0.23	150	5.3	<0.1	<1	1.6	42	0.3	1.0	2.3	100	73
07ARD07	MR1-05-76	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007	0.028	260	5.5	<0.1	<1	1.0	10.0	0.094	0.3	0.79	54	39
07ARD30	MR1-05-51	Amphibolite/Schist/Volcanic Tuff	Knight Piesold 2006-2007	0.026	140	5.7	2.3	2	4.8	9.6	0.15	0.4	1.4	130	110
ARD10	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007		290	18	<25	<6	<6	5.2	0.078	<5	<75	200	109
ARD11	MR1-05-77	Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007		130	14	<25	<6	<6	1.7	0.1	<5	<75	83	90
07ARD13	MR1-06-84	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	0.0056	330	6.9	1.2	2	1.7	13	0.053	0.2	2.5	100	210
07ARD12	MR1-05-46	Amphibolite/Volcanic Tuff /Greywacke	Knight Piesold 2006-2007	0.025	140	7.3	1.9	<1	2.6	42	0.16	0.3	4.7	89	52
07ARD37	MR1-04-36	Amphibolite/Volcanic Tuff /Schist /Gneiss	Knight Piesold 2006-2007	1	160	5.3	0.3	<1	1.1	61	0.28	0.4	0.91	200	71
07ARD25	MR1-05-52	Amphibolte/Schist	Knight Piesold 2006-2007	0.0086	390	5.9	<0.1	2	1.3	5.0	0.08	0.2	3.5	130	340
07ARD29	MR1-05-59	Amphibolte/Schist	Knight Piesold 2006-2007	0.012	260	2.7	2.4	3	2.2	4.7	0.17	0.3	1.7	150	93
MRARD10-010	MR1-09-176	Gneiss	AMEC 2010	0.027	170	2.7	<0.8	<0.7	1.9	6.1	0.13	0.28	0.86	120	46
MRARD10-115	MR1-07-121	Gneiss	AMEC 2010	0.063	7.3	4.7	<0.8	<0.7	1.7	6.8	0.18	0.68	1.5	38	41
MRARD10-040	MR1-08-158	Gneiss/Amphibolite	AMEC 2010	0.048	110	3.7	<0.8	<0.7	1.0	12	0.22	0.28	0.90	110	46
ARD 13	MR1-05-59	Greywacke	Knight Piesold 2006-2007		48	29	<25	<6	<6	12	0.2	<5	<75	57	60
MRARD10-090	MR1-08-144	Psammite	AMEC 2010	0.058	7.3	14	<0.8	<0.7	1.2	5.5	0.095	0.97	5.8	7	32
ARD 18	MR1-05-47	Schist	Knight Piesold 2006-2007		140	16	<25	<6	<6	4.5	0.2	<5	<75	150	180
ARD19	MR1-05-47	Schist	Knight Piesold 2006-2007		180	25	<25	<6	<6	9.9	0.23	<5	<75	190	190
UCS14	MR1-04-38	Schist	Knight Piesold 2006-2007		240	15	9	<20	<6	1.5	0.18	<20	<100	310	100
07ARD06	MR1-04-39	Schist	Knight Piesold 2006-2007	0.028	71	8.0	0.6	<1	1.7	45	0.092	0.2	2.1	47	41
07ARD16	MR1-05-58	Schist	Knight Piesold 2006-2007	0.056	660	5.6	0.3	<1	1.3	24	0.15	0.3	1.3	94	52
07ARD33	MR1-06-105	Schist	Knight Piesold 2006-2007	0.093	240	27	1.1	2	4.7	14	0.37	1.7	8.6	170	34
07ARD34	MR1-06-94	Schist	Knight Piesold 2006-2007	0.0042	360	14	0.8	2	1.0	4.1	0.23	0.2	5.0	180	98
MRARD10-001	MR1-09-171	Schist	AMEC 2010	0.022	490	2.9	<0.8	<0.7	<0.5	4.2	0.0091	0.08	0.55	52	21
MRARD10-002	MR1-09-179	Schist	AMEC 2010	0.0078	160	2.9	<0.8	<0.7	1.9	4.2	0.033	0.04	1.9	82	34
MRARD10-003	MR1-09-179	Schist	AMEC 2010	0.0075	120	2.5	<0.8	<0.7	2.9	9.2	0.044	<0.02	1.5	15	44
MRARD10-006	MR1-09-177	Schist	AMEC 2010	0.015	82	2.0	<0.8	<0.7	1.3	3.9	0.021	<0.02	0.84	47	18
MRARD10-007	MR1-09-177	Schist	AMEC 2010	0.011	140	3.4	<0.8	<0.7	1.1	4.7	0.091	0.05	1.0	43	57
MRARD10-008	MR1-09-176	Schist	AMEC 2010	0.01	470	1.6	<0.8	<0.7	2.1	2.0	0.043	<0.02	0.24	140	71
MRARD10-009	MR1-09-176	Schist	AMEC 2010	0.0093	230	5.5	<0.8	0.8	0.8	3.2	0.0033	<0.02	0.41	120	103
MRARD10-013	MR1-09-176	Schist	AMEC 2010	0.013	200	5.0	<0.8	<0.7	12	30	0.011	<0.02	2.1	87	26
MRARD10-014	MR1-09-176	Schist	AMEC 2010	0.016	55	4.6	<0.8	<0.7	4.6	6.8	0.042	0.12	1.3	53	53
MRARD10-016	MR1-09-172	Schist	AMEC 2010	0.016	22	1.7	<0.8	<0.7	0.5	3.4	0.0085	<0.02	0.80	3	12
MRARD10-017	MR1-09-172	Schist	AMEC 2010	0.021	110	5.1	<0.8	<0.7	<0.5	21	0.018	0.03	1.9	65	21
MRARD10-020	MR1-09-172	Schist	AMEC 2010	0.0099	25	5.6	<0.8	<0.7	1.6	9.5	0.014	0.02	1.3	70	43
MRARD10-022	MR1-09-176	Schist	AMEC 2010	0.016	56	11	<0.8	<0.7	1.2	4.3	0.083	0.54	2.6	75	81
MRARD10-024	MR1-09-173	Schist	AMEC 2010	0.018	18	3.3	<0.8	<0.7	2.2	2.4	0.019	0.02	2.8	2	9.6
MRARD10-026	MR1-09-173	Schist	AMEC 2010	0.0093	110	3.7	<0.8	<0.7	1.2	7.8	0.024	0.03	0.50	170	51
MRARD10-027	MR1-09-169	Schist	AMEC 2010	0.024	63	4.3	<0.8	<0.7	0.9	3.4	0.078	0.16	0.47	170	23
MRARD10-028	MR1-09-169	Schist	AMEC 2010	0.022	69	8.9	<0.8	<0.7	<0.5	7.2	0.065	0.19	0.71	71	18
MRARD10-032	MR1-09-169	Schist	AMEC 2010	0.044	92	8.3	<0.8	<0.7	1.5	2.9	0.19	0.41	0.48	110	55

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Hg	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
				µg/g	%	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g
Average Concentration (Basalt)*				0.09	7.8	2	330	1	0.007	7.6	0.22	48	170	87	8.6	0.83	17	4.6	1500	1.5
Ten Times Average Concentration (Basalt)				0.9	78	20	3300	10	0.07	76	2.2	480	1700	870	86	8.3	170	46	15000	15
Average Concentration (Continental Crustal)*				0.085	8.23	1.8	425	3	0.0085	4.15	0.15	25	102	60	5.63	2.085	20	2.33	950	1.2
Ten Times Average Concentration (Crustal)				0.85	82.3	18	4250	30	0.085	41.5	1.5	250	1020	600	56.3	20.85	200	23.3	9500	12
MRARD10-036	MR1-08-161	Schist	AMEC 2010	<0.1	4.6	0.7	0.71	1.3	<0.09	0.1	<0.2	32	470	30	7.4	0.022	9	4.1	490	1.1
MRARD10-041	MR1-08-158	Schist	AMEC 2010	<0.1	6.1	<0.5	3.1	0.27	<0.09	0.29	<0.2	37	520	123	5.9	0.0097	5	5.5	390	0.3
MRARD10-047	MR1-08-163	Schist	AMEC 2010	<0.1	5.6	<0.5	3.9	0.49	<0.09	0.21	<0.2	25	500	2.1	6.4	0.016	2	4.4	540	0.6
MRARD10-048	MR1-08-163	Schist	AMEC 2010	<0.1	7.4	<0.5	1.3	1.6	<0.09	0.011	<0.2	41	240	48	17	0.015	3	5.4	700	0.7
MRARD10-050	MR1-08-152	Schist	AMEC 2010	<0.1	3.4	1.5	8.6	0.33	0.38	0.34	<0.2	19	170	6.9	32.8	0.031	9	2.1	460	2.4
MRARD10-052	MR1-08-158	Schist	AMEC 2010	<0.1	1.8	<0.5	25	0.06	0.12	1	<0.2	27	110	92	3.1	0.16	13	0.88	960	0.9
MRARD10-056	MR1-08-152	Schist	AMEC 2010	<0.1	10	<0.5	5.6	0.68	0.18	0.18	<0.2	33	180	0.6	14	0.023	7	6.2	730	9.2
MRARD10-060	MR1-08-157	Schist	AMEC 2010	<0.1	6.2	1.5	410	0.76	0.14	0.064	<0.2	91	950	131	8.7	0.29	26	4	590	0.5
MRARD10-061	MR1-08-159	Schist	AMEC 2010	<0.1	7.1	<0.5	6.6	0.87	<0.09	0.52	<0.2	25	580	2.9	9.1	0.013	6	5.5	560	0.3
MRARD10-062	MR1-08-155	Schist	AMEC 2010	<0.1	8.7	0.7	2.9	0.69	0.11	0.65	<0.2	25	530	4.8	13.5	0.0047	6	5.8	570	0.3
MRARD10-063	MR1-08-157	Schist	AMEC 2010	<0.1	8.5	2.2	0.58	0.82	3.3	0.12	<0.2	27	110	2.1	14.8	0.0063	24	9.3	190	7.0
MRARD10-064	MR1-08-155	Schist	AMEC 2010	<0.1	7.8	<0.5	5.8	1.2	0.24	0.15	<0.2	31	170	7.4	15	0.049	39	6.3	310	3.8
MRARD10-065	MR1-08-150	Schist	AMEC 2010	<0.1	1.4	1.4	8.0	1.8	<0.09	0.18	<0.2	29	33	0.5	50.3	0.09	18	1.3	590	0.3
MRARD10-068	MR1-08-140	Schist	AMEC 2010	<0.1	9.2	7.5	1.8	0.60	0.33	0.0046	<0.2	19	49	30	19	0.0069	<2	6	860	6.1
MRARD10-070	MR1-08-140	Schist	AMEC 2010	<0.1	2.2	1.9	3.5	1.2	<0.09	0.12	<0.2	12	48	2.1	34	0.011	18	2	490	1.2
MRARD10-071	MR1-08-160	Schist	AMEC 2010	<0.1	6.8	1.3	0.08	3.1	<0.09	0.16	<0.2	39	920	37	16	0.011	47	7.6	1900	1.5
MRARD10-072	MR1-08-149	Schist	AMEC 2010	<0.1	7.1	<0.5	<0.01	2.4	<0.09	0.14	<0.2	37	1260	15	17	0.0082	47	8.2	1500	1.0
MRARD10-073	MR1-08-155	Schist	AMEC 2010	<0.1	7.1	<0.5	3.7	1.8	<0.09	0.45	<0.2	30	280	1.5	16	0.027	67	5.4	550	0.5
MRARD10-075	MR1-08-148	Schist	AMEC 2010	<0.1	4	<0.5	19	10	<0.09	0.026	<0.2	16	52	0.8	7.4	0.16	26	3.6	510	0.3
MRARD10-078	MR1-08-153	Schist	AMEC 2010	<0.1	6.4	<0.5	530	0.31	<0.09	0.11	<0.2	45	240	97	7.8	1.6	49	3.8	340	0.4
MRARD10-086	MR1-08-147	Schist	AMEC 2010	<0.1	6.5	<0.5	330	1.2	<0.09	0.09	<0.2	65	650	26	7.1	0.82	38	5.1	290	1.2
MRARD10-092	MR1-08-142	Schist	AMEC 2010	<0.1	6.4	<0.5	<0.01	1.7	0.29	0.4	<0.2	37	130	2.3	15	0.0077	19	5.8	460	4.8
MRARD10-093	MR1-08-145	Schist	AMEC 2010	<0.1	3.8	3.2	25	3.0	<0.09	0.046	<0.2	73	350	9.6	20	0.021	150	2.3	4000	2.3
MRARD10-094	MR1-08-147	Schist	AMEC 2010	<0.1	6.9	<0.5	0.30	0.57	0.17	0.34	<0.2	48	1090	1.8	8.2	0.0057	3	6.2	430	1.0
MRARD10-097	MR1-08-143	Schist	AMEC 2010	<0.1	1.8	<0.5	16	0.15	<0.09	1.1	<0.2	17	110	98	1.7	0.24	24	1	360	0.4
MRARD10-101	MR1-08-153	Schist	AMEC 2010	<0.1	6.2	<0.5	4.1	0.78	<0.09	0.31	<0.2	27	320	54	7.1	0.045	15	5.2	710	0.3
MRARD10-102	MR1-08-143	Schist	AMEC 2010	<0.1	4	<0.5	130	0.49	0.43	0.026	<0.2	17	79	48	6.8	0.88	38	2.7	1000	3.8
MRARD10-103	MR1-08-141	Schist	AMEC 2010	<0.1	10	0.7	15	5.0	<0.09	0.19	<0.2	15	68	1.9	13	0.12	13	8.9	5900	2.5
MRARD10-106	MR1-08-148	Schist	AMEC 2010	<0.1	3.4	0.7	2.9	0.93	0.68	0.017	<0.2	16	71	6.5	13	0.041	47	2.7	1200	5.7
MRARD10-109	MR1-08-141	Schist	AMEC 2010	<0.1	6.7	8.1	0.43	0.87	0.32	0.29	<0.2	20	430	78	20	0.0082	36	7.4	1000	0.8
MRARD10-111	MR1-08-144	Schist	AMEC 2010	<0.1	8.2	<0.5	1300	1.1	<0.09	0.021	<0.2	42	170	75	8.8	1.5	21	5.1	510	0.2
MRARD10-114	MR1-07-121	Schist	AMEC 2010	<0.1	1.7	<0.5	96	0.47	<0.09	0.22	<0.2	7.6	130	51	2.6	0.74	8	0.8	180	12
MRARD10-116	MR1-07-121	Schist	AMEC 2010	<0.1	7.3	<0.5	510	1.1	0.19	1.2	<0.2	55	74	33	15.5	3.1	17	1.9	140	18
MRARD10-117	MR1-08-156	Schist	AMEC 2010	<0.1	4.5	<0.5	100	0.12	<0.09	0.12	<0.2	40	230	141	5.6	1.5	35	2.5	220	0.6
MRARD10-118	MR1-07-121	Schist	AMEC 2010	<0.1	8.1	<0.5	4.2	1.1	<0.09	0.015	<0.2	43	730	8.0	13.2	0.0073	<2	7	940	0.2
MRARD10-119	MR1-08-156	Schist	AMEC 2010	<0.1	6.6	<0.5	690	0.40	<0.09	0.41	<0.2	48	250	145	7.7	1.9	64	3.7	370	0.2
MRARD10-120	MR1-08-148	Schist	AMEC 2010	<0.1	0.74	1.8	7.3	0.33	0.16	0.033	<0.2	14	38	4.5	60.7	0.014	6	0.87	460	3.6
MRARD10-122	MR1-08-156	Schist	AMEC 2010	<0.1	5	0.6	0.64	0.57	0.57	0.5	<0.2	25	200	80	6.8	0.0065	5	4.9	540	4.5
MRARD10-124	MR1-08-143	Schist	AMEC 2010	<0.1	3.8	<0.5	18	2.4	<0.09	0.026	<0.2	7.8	150	0.9	7.4	0.33	52	2.8	420	0.1
MRARD10-126	MR1-08-145	Schist	AMEC 2010	<0.1	8.4	6.9	31	3.5	0.17	0.081	<0.2	44	130	29	21.6	0.06	370	4.6	630	0.8
MRARD10-127	MR1-08-143	Schist	AMEC 2010	<0.1	11.6	<0.5	560	1.3	<0.09	0.25	<0.2	67	580	94	14.5	1	32	11	850	0.8
MRARD10-128	MR1-08-141	Schist	AMEC 2010	<0.1	4.1	3.5	5.9	1.7	0.10	0.13	<0.2	26	600	29	9.8	0.024	32	3.5	600	1.2
MRARD10-129	MR1-08-154	Schist	AMEC 2010	<0.1	2.9	**154**	2.1	0.86	1.0	0.035	<0.2	72	170	207	22.5	0.01	70	0.28	570	177
MRARD10-130	MR1-08-153	Schist	AMEC 2010	<0.1	2.5	1.2	56	0.12	<0.09	0.74	<0.2	21	120	165	3.3	0.5	39	2.4	590	1.7
07ARD21	MR1-06-90	Schist /Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007	<0.1	6.5	<2	9	1.6	0.47	0.04	0.13	63	120	21	29	0.28	50	6.7	570	62
07ARD20	MR1-05-60	Schist/Amphibolite	Knight Piesold 2006-2007	<0.1	7.4	6	130	2.6	0.45	0.04	0.22	30	140	8.8	18	0.84	17	6.9	3,200	7.1
07ARD15	MR1-05-68	Schist/Volcanic Tuff	Knight Piesold 2006-2007	<0.1	7.6	5	140	0.5	0.01	0.04	0.22	54	170	120	12	0.52	45	4.9	1,100	6.8
07ARD39	MR1-06-96	Schist/Volcanic Tuff	Knight Piesold 2006-2007	<0.1	9.4	19	32	2.3	1.1	0.14	0.76	110	630	51	18	0.28	18	8.3	2,100	9.7
07ARD40	MR1-05-54	Schist/Volcanic Tuff /Amphibolite	Knight Piesold 2006-2007	<0.1	6.8	2	150	1.5	0.26	0.12	0.19	39	420	74	14	0.74	17	6.2	3,400	16
07ARD14	MR1-06-84	Schist/Volcanic Tuff/Gneiss	Knight Piesold 2006-2007	<0.1	5.6	4	300	1.7	0.17	0.10	0.26	19	290	43	8	1.43	27	2.6	890	16
ARD20	MR1-05-59	Volcanic Tuff	Knight Piesold 2006-2007		8.7	<6	5	0.5	3	0.19	2.1	48	440	170	20	0.02	6	8.2	3,000	<2
ARD22	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007		8.7	<6	90	0.1	<3	3.70	1.1	55	230	120	9	0.78	18	6.1	2,000	3
ARD25	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		7.4	<6	120	0.087	<2	4.70	1.5	59	190	110	10	2.20	38	5	3,800	<2
ARD26	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		6.2	<6	130	0.11	<2	10.00	1.3	51	210	140	8	0.73	<3	3.5	3,900	<2
UCS2	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007		9.6	<6	15	0.85	<34	0.73	<4	72	1500	8.9	19	0.02	<3	8.9	1,500	<2
UCS15	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007		8.2	<6	85	0.059	<34	9.70	<4	53	270	110	10	0.80	4	3.3	3,700	<2
UCS16	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		8.7	<6	180	0.081	<34	0.48	<4	64	300	300	12	1.10	58	4.9	2,000	<2
UCS17	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		9.9	<6	270	0.14	<34	5.50	<4	46	410	140	4	2.80	7	3.6	2,300	<2
UCS18	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		9.8	<6	180	0.16	<34	9.10	<4	46	460	140	9	0.95	4	4	3,900	<2
UCS19	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		8.4	<6	98	0.13	<2	6.90	1.3	65	270	140	9	0.84	3	3.8	3,400	2

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
				%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g
Average Concentration (Basalt)*				1.8	130	6	0.2	0.05	1.5	465	1.38	2.1	1	250	105
Ten Times Average Concentration (Basalt)				18	1300	60	2	0.5	15	4650	13.8	21	10	2500	1050
Average Concentration (Continental Crustal)*				2.355	84	14	0.2	0.05	2.3	370	0.565	0.85	2.7	120	70
Ten Times Average Concentration (Crustal)				23.55	840	140	2	0.5	23	3700	5.65	8.5	27	1200	700
MRARD10-036	MR1-08-161	Schist	AMEC 2010	0.0086	160	1.4	<0.8	<0.7	<0.5	6.1	0.028	<0.02	1.2	66	48
MRARD10-041	MR1-08-158	Schist	AMEC 2010	0.0082	220	1.7	<0.8	<0.7	<0.5	2.4	0.03	<0.02	0.72	130	50
MRARD10-047	MR1-08-163	Schist	AMEC 2010	0.0064	190	1.9	<0.8	<0.7	0.9	3.3	0.023	<0.02	1.2	91	61
MRARD10-048	MR1-08-163	Schist	AMEC 2010	0.0063	130	2.3	<0.8	<0.7	<0.5	1.2	0.024	<0.02	2.5	190	42
MRARD10-050	MR1-08-152	Schist	AMEC 2010	0.014	410	1.4	1.4	<0.7	2.2	7.5	0.012	0.52	3.2	97	38
MRARD10-052	MR1-08-158	Schist	AMEC 2010	0.129	88	3.3	<0.8	<0.7	1.0	11	0.087	0.27	0.29	79	80
MRARD10-056	MR1-08-152	Schist	AMEC 2010	0.0071	88	0.76	<0.8	<0.7	0.6	3.4	0.013	0.08	0.46	190	63
MRARD10-060	MR1-08-157	Schist	AMEC 2010	0.017	1040	1.9	<0.8	<0.7	0.9	1.3	0.025	0.11	0.24	100	47
MRARD10-061	MR1-08-159	Schist	AMEC 2010	0.0095	150	1.7	<0.8	<0.7	<0.5	12	0.027	0.03	1.2	120	45
MRARD10-062	MR1-08-155	Schist	AMEC 2010	0.0071	93	2.4	<0.8	<0.7	<0.5	15	0.02	0.08	1.2	140	37
MRARD10-063	MR1-08-157	Schist	AMEC 2010	0.01	210	9.0	<0.8	<0.7	0.6	4.4	0.0037	0.04	0.79	99	44
MRARD10-064	MR1-08-155	Schist	AMEC 2010	0.0087	130	2.1	<0.8	<0.7	1.4	15	0.0076	1.5	1.00	62	99
MRARD10-065	MR1-08-150	Schist	AMEC 2010	0.014	35	1.8	<0.8	<0.7	<0.5	6.4	0.018	0.04	8.2	16	18
MRARD10-068	MR1-08-140	Schist	AMEC 2010	0.0078	53	3.9	<0.8	<0.7	<0.5	0.59	0.03	0.03	3.4	45	81
MRARD10-070	MR1-08-140	Schist	AMEC 2010	0.0084	47	1.5	<0.8	<0.7	<0.5	3.4	0.027	0.03	0.52	28	15
MRARD10-071	MR1-08-160	Schist	AMEC 2010	0.013	550	1.7	<0.8	<0.7	1.0	4.7	0.0068	<0.02	0.85	62	45
MRARD10-072	MR1-08-149	Schist	AMEC 2010	0.015	430	1.4	<0.8	<0.7	1.3	4.7	0.0068	<0.02	1.8	64	50
MRARD10-073	MR1-08-155	Schist	AMEC 2010	0.03	120	2.6	<0.8	<0.7	1.8	11	0.049	0.02	1.6	92	58
MRARD10-075	MR1-08-148	Schist	AMEC 2010	0.013	27	1.4	<0.8	<0.7	<0.5	4.3	0.078	0.04	3.9	51	19
MRARD10-078	MR1-08-153	Schist	AMEC 2010	0.028	120	1.8	<0.8	<0.7	0.8	6.3	0.086	0.23	0.028	190	52
MRARD10-086	MR1-08-147	Schist	AMEC 2010	0.027	530	5.1	<0.8	<0.7	1.0	5.3	0.045	0.10	0.026	130	30
MRARD10-092	MR1-08-142	Schist	AMEC 2010	0.011	45	2.1	<0.8	<0.7	0.5	9.2	0.031	0.04	1.4	94	30
MRARD10-093	MR1-08-145	Schist	AMEC 2010	0.013	160	2.3	<0.8	<0.7	1.1	3.4	0.029	0.12	2.2	66	48
MRARD10-094	MR1-08-147	Schist	AMEC 2010	0.0094	240	2.2	<0.8	<0.7	0.9	3.9	0.016	0.02	0.88	120	50
MRARD10-097	MR1-08-143	Schist	AMEC 2010	0.14	48	5.8	<0.8	<0.7	1.3	15	0.14	0.05	0.10	75	29
MRARD10-101	MR1-08-153	Schist	AMEC 2010	0.012	94	2.7	<0.8	<0.7	1.2	3.5	0.011	<0.02	1.8	98	53
MRARD10-102	MR1-08-143	Schist	AMEC 2010	0.05	38	3.0	<0.8	<0.7	2.3	4.7	0.17	0.25	2.5	48	77
MRARD10-103	MR1-08-141	Schist	AMEC 2010	0.011	49	1.7	<0.8	<0.7	2.5	3.4	0.14	0.04	1.5	77	72
MRARD10-106	MR1-08-148	Schist	AMEC 2010	0.014	39	1.4	14	1.0	4.8	2.5	0.053	0.54	2.1	44	111
MRARD10-109	MR1-08-141	Schist	AMEC 2010	0.016	170	2.3	<0.8	<0.7	1.0	5.1	0.007	0.06	1.2	73	57
MRARD10-111	MR1-08-144	Schist	AMEC 2010	0.034	170	7.2	<0.8	<0.7	1.2	1.9	0.11	0.35	0.058	180	60
MRARD10-114	MR1-07-121	Schist	AMEC 2010	0.024	16	3.7	<0.8	<0.7	0.6	4.7	0.041	0.27	2.1	7	18
MRARD10-116	MR1-07-121	Schist	AMEC 2010	0.055	70	15	<0.8	<0.7	1.9	35	0.17	1.6	2.6	28	26
MRARD10-117	MR1-08-156	Schist	AMEC 2010	0.039	120	0.91	<0.8	<0.7	0.7	11	0.12	0.20	0.047	210	23
MRARD10-118	MR1-07-121	Schist	AMEC 2010	0.0089	290	2.2	<0.8	<0.7	<0.5	1.8	0.023	0.05	2.4	110	96
MRARD10-119	MR1-08-156	Schist	AMEC 2010	0.038	140	1.7	<0.8	<0.7	2.1	14	0.098	0.25	0.022	180	60
MRARD10-120	MR1-08-148	Schist	AMEC 2010	0.0071	20	1.5	<0.8	2.6	<0.5	1.1	0.019	<0.02	0.59	28	9.9
MRARD10-122	MR1-08-156	Schist	AMEC 2010	0.007	55	2.5	14	1.4	4.6	12	0.027	0.50	2.2	58	44
MRARD10-124	MR1-08-143	Schist	AMEC 2010	0.029	26	2.5	<0.8	<0.7	<0.5	5.6	0.069	0.07	5.6	48	13
MRARD10-126	MR1-08-145	Schist	AMEC 2010	0.017	200	5.7	<0.8	<0.7	1.5	7.9	0.075	0.04	3.9	55	143
MRARD10-127	MR1-08-143	Schist	AMEC 2010	0.035	310	3.6	<0.8	<0.7	1.0	3.6	0.1	0.19	0.89	150	73
MRARD10-128	MR1-08-141	Schist	AMEC 2010	0.017	320	3.6	<0.8	<0.7	0.9	11	0.015	<0.02	1.2	64	20
MRARD10-129	MR1-08-154	Schist	AMEC 2010	0.025	170	29	1.0	8.9	1.9	3.5	0.031	0.67	1.4	120	8.8
MRARD10-130	MR1-08-153	Schist	AMEC 2010	0.025	59	1.0	<0.8	<0.7	2.0	12	0.12	0.09	0.031	140	16
07ARD21	MR1-06-90	Schist /Amphibolite/Volcanic Tuff	Knight Piesold 2006-2007	0.015	180	12	0.3	1	2.0	1.9	0.047	0.2	2.4	85	94
07ARD20	MR1-05-60	Schist/Amphibolite	Knight Piesold 2006-2007	0.024	100	8.5	<0.1	1	2.2	11	0.17	0.3	3.4	84	78
07ARD15	MR1-05-68	Schist/Volcanic Tuff	Knight Piesold 2006-2007	0.019	130	5.7	0.6	<1	1.2	5.6	0.26	0.4	0.18	340	130
07ARD39	MR1-06-96	Schist/Volcanic Tuff	Knight Piesold 2006-2007	0.041	430	5.4	0.2	<1	3.0	4.1	0.14	0.3	3.6	140	250
07ARD40	MR1-05-54	Schist/Volcanic Tuff /Amphibolite	Knight Piesold 2006-2007	0.099	210	4.6	<0.1	<1	2.1	18	0.13	0.3	1.7	120	81
07ARD14	MR1-06-84	Schist/Volcanic Tuff/Gneiss	Knight Piesold 2006-2007	0.05	58	7.8	1.0	2	2.4	9.1	0.14	0.6	6.5	47	80
ARD20	MR1-05-59	Volcanic Tuff	Knight Piesold 2006-2007		170	12	<25	<6	<6	8.6	0.052	<5	<75	250	180
ARD22	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007		140	10	<25	<6	<6	74	0.32	<5	<75	300	150
ARD25	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		130	5	<2	<10	<6	66	0.49	<5	<75	330	100
ARD26	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		120	5	<2	<10	<6	80	0.5	<5	<75	290	93
UCS2	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007		450	14	21	<20	<6	20	0.16	<20	<100	290	110
UCS15	MR1-05-77	Volcanic Tuff	Knight Piesold 2006-2007		170	8	6	<20	<6	72	0.57	<20	<100	340	130
UCS16	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		180	9	8	<20	<6	20	0.29	<20	<100	360	99
UCS17	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		170	6	5	<20	<6	92	0.59	<20	<100	340	75
UCS18	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		190	10	10	<20	<6	100	0.45	<20	<100	350	250
UCS19	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		150	6	<2	<10	<6	60	0.49	<5	<70	350	120

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Hg	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
				µg/g	%	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g
Average Concentration (Basalt)*				0.09	7.8	2	330	1	0.007	7.6	0.22	48	170	87	8.6	0.83	17	4.6	1500	1.5
Ten Times Average Concentration (Basalt)				0.9	78	20	3300	10	0.07	76	2.2	480	1700	870	86	8.3	170	46	15000	15
Average Concentration (Continental Crustal)*				0.085	8.23	1.8	425	3	0.0085	4.15	0.15	25	102	60	5.63	2.085	20	2.33	950	1.2
Ten Times Average Concentration (Crustal)				0.85	82.3	18	4250	30	0.085	41.5	1.5	250	1020	600	56.3	20.85	200	23.3	9500	12
UCS20	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		7.7	<6	180	0.2	<34	4.40	<4	43	240	170	8	2.70	64	5.4	3,200	<2
UCS21	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		7.9	<6	150	0.11	<2	7.00	1.6	61	230	91	11	1.80	41	4.6	4,400	<2
UCS25	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007		6.2	<6	150	1.4	<34	0.62	<4	45	940	84	9	0.93	6	7.9	840	<2
UCS26	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007		8.4	<6	17	0.95	<2	0.64	1.8	72	2100	6.4	9	0.06	7	13	910	<2
UCS28	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		8.2	<6	160	0.24	<2	4.70	0.9	53	260	86	6	2.20	32	3.6	2,900	<2
UCS29	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		8.7	<6	220	0.1	<34	7.20	<4	53	280	180	12	1.30	14	4.8	3,800	<2
UCS30	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		8.4	<6	400	0.26	<2	4.90	0.8	56	230	88	6	1.80	12	3	2,100	<2
UCS31	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		9.1	<6	160	0.4	<2	6.50	0.7	53	320	190	5	1.90	10	3.1	1,700	<2
UCS32	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		9.8	<6	320	0.18	<2	5.70	0.9	73	340	150	6	2.40	23	2.6	2,100	<2
UCS33	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		9.5	<6	170	0.13	<2	5.20	0.6	58	290	150	5	1.70	13	3	1,500	<2
UCS34	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		8.8	<6	410	0.2	<2	3.00	0.8	65	240	170	6	4.70	37	3.7	1,600	<2
UCS35	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		8.3	<6	390	0.2	<2	3.00	0.6	49	210	67	5	3.00	24	3.7	2,400	<2
UCS36	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		9.6	<6	750	0.18	<2	2.30	0.7	61	240	100	5	4.10	43	4.4	2,500	<2
UCS37	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		9.2	<6	840	0.29	<2	3.40	0.7	64	290	140	5	3.20	37	4.8	3,000	<2
UCS38	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		9.7	<6	2500	0.33	<2	2.10	0.7	65	300	25	5	3.60	22	3.6	1,600	<2
UCS39	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		8.1	<6	2000	1.9	<2	0.16	1.1	62	340	250	6	1.80	28	3.4	1,900	<2
UCS40	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		9.2	<6	2200	1.4	<2	0.16	1.4	81	260	200	8	2.50	37	4.2	4,100	<2
07ARD08	MR1-05-53	Volcanic Tuff	Knight Piesold 2006-2007	<0.1	6.9	**30**	94	3.6	0.57	0.17	0.13	44	86	8.1	20	0.93	28	9.5	1,500	17
07ARD36	MR1-06-95	Volcanic Tuff	Knight Piesold 2006-2007	<0.1	0.0		2			0.00					0	0.00		0.0045	1	
MRARD10-012	MR1-09-173	Volcanic Tuff	AMEC 2010	<0.1	0.54	2.9	5.5	0.10	<0.09	1.6	<0.2	100	530	6.0	5.4	0.013	<2	13	1300	0.4
MRARD10-021	MR1-09-173	Volcanic Tuff	AMEC 2010	<0.1	5.9	0.7	330	0.74	<0.09	0.19	<0.2	8.9	55	12	6.7	2.1	35	2.6	360	13
MRARD10-023	MR1-09-173	Volcanic Tuff	AMEC 2010	<0.1	0.06	2.6	4.3	0.05	<0.09	1.1	<0.2	110	330	11	5.7	0.0039	<2	14	960	0.5
MRARD10-025	MR1-09-173	Volcanic Tuff	AMEC 2010	<0.1	8.8	0.7	31	2.4	<0.09	0.18	<0.2	85	1220	40	7.9	0.13	22	8.6	1800	0.5
MRARD10-042	MR1-08-158	Volcanic Tuff	AMEC 2010	<0.1	4.4	<0.5	420	0.13	<0.09	2.2	<0.2	33	260	55	5.8	1.6	23	2.1	1230	0.5
MRARD10-051	MR1-08-158	Volcanic Tuff	AMEC 2010	<0.1	3.1	1.0	12	0.16	0.46	3.4	<0.2	23	75	98	5.1	0.1	75	3.8	950	1.8
MRARD10-053	MR1-08-152	Volcanic Tuff	AMEC 2010	<0.1	1.6	<0.5	9.6	0.07	<0.09	1.4	<0.2	13	73	115	1.7	0.18	14	0.73	440	0.1
MRARD10-054	MR1-08-158	Volcanic Tuff	AMEC 2010	<0.1	2.6	<0.5	5.6	0.06	<0.09	1.1	<0.2	18	150	130	2.2	0.13	43	2.3	630	0.2
MRARD10-059	MR1-08-152	Volcanic Tuff	AMEC 2010	<0.1	2.4	<0.5	65	0.09	<0.09	0.5	<0.2	23	130	106	2.2	0.55	21	2.2	270	0.2
MRARD10-066	MR1-08-150	Volcanic Tuff	AMEC 2010	<0.1	7.1	<0.5	200	0.62	<0.09	0.085	<0.2	85	1500	37	12.1	0.48	25	5.5	380	0.5
MRARD10-067	MR1-08-150	Volcanic Tuff	AMEC 2010	<0.1	6.1	<0.5	160	0.83	<0.09	0.08	<0.2	53	1070	111	6.1	1.3	31	4.5	330	0.6
MRARD10-069	MR1-08-141	Volcanic Tuff	AMEC 2010	<0.1	0.43	**49**	1.4	0.27	0.33	0.027	<0.2	20	66	5.2	41.7	0.009	10	0.16	2560	30
MRARD10-076	MR1-08-157	Volcanic Tuff	AMEC 2010	<0.1	5.6	<0.5	73	1.1	<0.09	0.78	<0.2	31	190	70	8.5	0.89	54	5.1	800	0.6
MRARD10-080	MR1-08-149	Volcanic Tuff	AMEC 2010	<0.1	1.3	**59**	2.8	0.48	0.49	0.34	<0.2	12	19	8.8	21	0.041	6	2.4	170	39
MRARD10-082	MR1-08-150	Volcanic Tuff	AMEC 2010	<0.1	0.1	<0.5	0.22	0.16	<0.09	1.5	<0.2	1.1	93	7.7	9.6	0.011	<2	0.45	1190	0.5
MRARD10-083	MR1-08-145	Volcanic Tuff	AMEC 2010	<0.1	1.4	<0.5	16	0.15	<0.09	0.86	<0.2	18	89	77	2.1	0.24	14	1.2	680	0.3
MRARD10-084	MR1-08-147	Volcanic Tuff	AMEC 2010	<0.1	4.7	<0.5	74	0.19	<0.09	0.18	<0.2	38	440	65	5.6	0.72	34	3.8	410	0.4
MRARD10-087	MR1-08-147	Volcanic Tuff	AMEC 2010	<0.1	2.5	<0.5	41	0.15	0.18	3.1	<0.2	20	160	69	4.3	0.44	41	2.5	1360	1.5
MRARD10-088	MR1-08-147	Volcanic Tuff	AMEC 2010	<0.1	4.8	<0.5	45	0.25	<0.09	0.7	<0.2	28	150	76	7.5	0.46	75	4.6	1020	4.2
MRARD10-089	MR1-08-147	Volcanic Tuff	AMEC 2010	<0.1	5.3	<0.5	74	0.27	<0.09	0.62	<0.2	57	290	58	6.6	1	47	6.7	880	0.6
MRARD10-098	MR1-08-153	Volcanic Tuff	AMEC 2010	<0.1	3.3	<0.5	120	0.13	<0.09	1.6	<0.2	24	120	90	2.1	0.85	31	1.2	590	0.2
MRARD10-105	MR1-08-141	Volcanic Tuff	AMEC 2010	<0.1	1.2	9.5	3.6	0.87	0.33	0.26	<0.2	5.7	25	9.4	20	0.43	7	2.3	1100	0.9
MRARD10-112	MR1-08-156	Volcanic Tuff	AMEC 2010	<0.1	2	0.7	27	0.06	<0.09	3.6	<0.2	13	54	111	2	0.3	37	1.6	940	0.2
MRARD10-113	MR1-08-144	Volcanic Tuff	AMEC 2010	<0.1	0.001	1.7	0.51	0.08	0.13	0.0025	<0.2	0.25	<0.5	0.1	0.0033	0.0001	<2	0.0019	2.3	0.5
FC No. 2		Volcanic Tuff /Amphibolite/Schist	Knight Piesold 2006-2007	<0.1	8.2	18	190	1.3	0.05	1.30	0.30	56	210	140	11	1.70	47	5.9	1,900	10
07ARD31	MR1-05-54	Volcanic Tuff /Chert /Schist	Knight Piesold 2006-2007	<0.1	3.0	**140**	18	0.6	0.05	0.07	0.06	25	720	9.4	26	0.12	6	3	940	8.1
07ARD23	MR1-06-103	Volcanic Tuff /Schist	Knight Piesold 2006-2007	<0.1	7.4	4	110	3.1	0.22	0.08	0.25	25	430	8.4	14	0.63	24	10	2,600	6.0
07ARD24	MR1-05-55	Volcanic Tuff /Schist	Knight Piesold 2006-2007	<0.1	6.9	4	120	2.5	0.14	0.12	0.25	26	580	8.0	14	0.57	21	9.6	2,400	5.8
07ARD26	MR1-06-93	Volcanic Tuff /Schist	Knight Piesold 2006-2007	<0.1	8.6	**24**	180	1.0	0.47	0.22	1.1	81	1100	77	26	0.04	16	4.8	2,700	13
07ARD35	MR!-06-101	Volcanic Tuff /Schist	Knight Piesold 2006-2007	<0.1	9.0	<2	210	0.3	0.01	5.20	0.28	61	220	240	7	0.90	18	3.3	1,400	12
07ARD41	MR1-06-95	Volcanic Tuff /Schist	Knight Piesold 2006-2007	<0.1	7.4	<2	520	0.9	0.04	0.11	0.10	86	720	79	16	2.50	52	3.7	1,400	10
MRARD10-029	MR1-09-170	Volcanic Tuff /Schist	AMEC 2010	<0.1	3.3	1.2	4.9	1.3	<0.09	0.14	<0.2	45	610	38	8.2	0.08	36	4	830	0.9
Footwall																				
UCS9	MR1-06-81	Amphibolite	Knight Piesold 2006-2007		9	<6	7	0.56	<34	0.26	<4	20	260	3.6	19	0.012	<3	4.3	1800	<2
MRARD10-107	MR1-08-154	Amphibolite	AMEC 2010	<0.1	5.3	1.2	31	0.70	<0.09	0.14	<0.2	7.2	92	8.0	8.5	0.13	11	3.8	510	1.7
ARD1	MR1-05-72	Gneiss	Knight Piesold 2006-2007		12	<6	2200	5.2	<3	0.17	0.3	7.1	12	22	8.9	6.5	5	1.4	440	5
ARD2	MR1-05-72	Gneiss	Knight Piesold 2006-2007		8.5	<6	490	1	<3	1.5	0.3	12	8	6.3	4.4	2.5	10	1.2	780	4
ARD3	MR1-05-72	Gneiss	Knight Piesold 2006-2007		5.8	<6	1700	4.9	<3	0.14	0.2	6.4	12	37	3.4	3.1	<3	1	260	8
ARD4	MR1-05-73	Gneiss	Knight Piesold 2006-2007		7.6	<6	1700	0.48	<3	0.26	0.2	8.3	12	5.5	4.2	4.5	11	1.4	550	<2
ARD5	MR1-05-73	Gneiss	Knight Piesold 2006-2007		7.4	<6	1500	0.56	<3	0.19	0.2	9.6	12	14	4.8	3.6	5	1.4	610	2
ARD6	MR1-05-73	Gneiss	Knight Piesold 2006-2007		5	<6	1200	0.52	<3	0.13	0.2	8.8	12	10	4.3	3.3	4	1.2	370	3

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
				%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g
Average Concentration (Basalt)*				1.8	130	6	0.2	0.05	1.5	465	1.38	2.1	1	250	105
Ten Times Average Concentration (Basalt)				18	1300	60	2	0.5	15	4650	13.8	21	10	2500	1050
Average Concentration (Continental Crustal)*				2.355	84	14	0.2	0.05	2.3	370	0.565	0.85	2.7	120	70
Ten Times Average Concentration (Crustal)				23.55	840	140	2	0.5	23	3700	5.65	8.5	27	1200	700
UCS20	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		130	6	5	<20	<6	58	0.32	<20	<100	320	70
UCS21	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		150	6	<2	<10	<6	94	0.46	<5	<70	340	120
UCS25	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007		420	28	11	<20	<6	11	0.35	<20	<100	180	160
UCS26	MR1-06-81	Volcanic Tuff	Knight Piesold 2006-2007		870	9	<2	<10	<6	13	0.2	<5	<70	200	140
UCS28	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		140	4	<2	<10	<6	99	0.51	<5	<70	320	83
UCS29	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		160	13	5	<20	<6	66	0.49	<20	<100	360	160
UCS30	MR1-06-86	Volcanic Tuff	Knight Piesold 2006-2007		160	4	<2	<10	<6	77	0.66	<5	<70	320	81
UCS31	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		140	5	<2	<10	<6	180	0.56	<5	<70	340	70
UCS32	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		230	5	<2	<10	<6	220	0.64	<5	<70	380	70
UCS33	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		140	6	3	<10	<6	240	0.59	<5	<70	360	82
UCS34	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		150	6	<2	<10	<6	410	0.57	<5	<70	350	110
UCS35	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		110	4	<2	<10	<6	68	0.51	<5	<70	280	97
UCS36	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		140	4	<2	<10	<6	84	0.67	<5	<70	350	89
UCS37	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		140	4	<2	<10	<6	68	0.5	<5	<70	330	91
UCS38	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		160	6	<2	<10	<6	92	0.53	<5	<70	350	91
UCS39	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		160	7	<2	<10	<6	10	0.53	<5	<70	370	64
UCS40	MR1-06-91	Volcanic Tuff	Knight Piesold 2006-2007		180	6	<2	<10	<6	16	0.67	<5	<70	410	97
07ARD08	MR1-05-53	Volcanic Tuff	Knight Piesold 2006-2007	0.018	180	8.6	4.2	**3**	3.3	12	0.18	0.3	2.7	81	73
07ARD36	MR1-06-95	Volcanic Tuff	Knight Piesold 2006-2007	0.0015							0.0004		0	2	
MRARD10-012	MR1-09-173	Volcanic Tuff	AMEC 2010	0.0074	1950	4.4	<0.8	<0.7	<0.5	10	0.0089	<0.02	1.3	15	25
MRARD10-021	MR1-09-173	Volcanic Tuff	AMEC 2010	0.082	22	30	<0.8	<0.7	4.2	8.7	0.14	0.67	0.62	83	47
MRARD10-023	MR1-09-173	Volcanic Tuff	AMEC 2010	0.0079	2410	7.6	<0.8	<0.7	<0.5	22	0.0074	<0.02	0.23	8	59
MRARD10-025	MR1-09-173	Volcanic Tuff	AMEC 2010	0.013	760	2.6	<0.8	<0.7	1.5	6.6	0.062	0.12	0.20	100	47
MRARD10-042	MR1-08-158	Volcanic Tuff	AMEC 2010	0.137	130	0.85	<0.8	<0.7	1.3	12	0.29	0.26	0.077	180	45
MRARD10-051	MR1-08-158	Volcanic Tuff	AMEC 2010	0.038	48	18	1.7	1.1	2.1	14	0.12	0.63	0.59	130	38
MRARD10-053	MR1-08-152	Volcanic Tuff	AMEC 2010	0.091	36	1.6	<0.8	<0.7	<0.5	13	0.073	0.06	0.066	43	20
MRARD10-054	MR1-08-158	Volcanic Tuff	AMEC 2010	0.143	53	14	<0.8	<0.7	0.6	13	0.043	0.03	0.066	120	39
MRARD10-059	MR1-08-152	Volcanic Tuff	AMEC 2010	0.126	66	0.42	<0.8	<0.7	<0.5	9.3	0.13	0.10	0.046	120	23
MRARD10-066	MR1-08-150	Volcanic Tuff	AMEC 2010	0.022	750	4.1	<0.8	<0.7	2.4	6.5	0.038	0.06	0.078	120	31
MRARD10-067	MR1-08-150	Volcanic Tuff	AMEC 2010	0.027	610	3.0	<0.8	<0.7	0.6	4.5	0.079	0.14	0.020	110	19
MRARD10-069	MR1-08-141	Volcanic Tuff	AMEC 2010	0.013	30	3.9	<0.8	<0.7	1.0	1.8	0.011	0.04	0.39	9	4.3
MRARD10-076	MR1-08-157	Volcanic Tuff	AMEC 2010	0.042	110	5.2	<0.8	<0.7	<0.5	7.2	0.15	0.13	0.099	150	88
MRARD10-080	MR1-08-149	Volcanic Tuff	AMEC 2010	0.016	46	3.3	0.9	<0.7	1.1	8.4	0.0053	0.15	0.63	13	12
MRARD10-082	MR1-08-150	Volcanic Tuff	AMEC 2010	0.016	6.8	1.5	<0.8	<0.7	0.7	4.4	0.0059	<0.02	0.085	25	3.8
MRARD10-083	MR1-08-145	Volcanic Tuff	AMEC 2010	0.087	61	0.63	<0.8	<0.7	<0.5	8.5	0.12	0.04	0.36	59	19
MRARD10-084	MR1-08-147	Volcanic Tuff	AMEC 2010	0.027	230	0.45	<0.8	<0.7	0.7	3.5	0.087	0.08	0.016	150	41
MRARD10-087	MR1-08-147	Volcanic Tuff	AMEC 2010	0.037	62	4.7	<0.8	<0.7	<0.5	10	0.061	0.10	0.070	110	70
MRARD10-088	MR1-08-147	Volcanic Tuff	AMEC 2010	0.038	75	2.2	<0.8	<0.7	0.9	5.1	0.1	0.08	0.23	120	41
MRARD10-089	MR1-08-147	Volcanic Tuff	AMEC 2010	0.021	360	1.1	<0.8	<0.7	0.5	8.8	0.089	0.16	0.074	150	41
MRARD10-098	MR1-08-153	Volcanic Tuff	AMEC 2010	0.214	66	1.8	<0.8	<0.7	<0.5	36	0.18	0.19	0.027	140	26
MRARD10-105	MR1-08-141	Volcanic Tuff	AMEC 2010	0.012	6.9	3.0	<0.8	<0.7	0.7	14	0.01	0.04	0.58	14	9.4
MRARD10-112	MR1-08-156	Volcanic Tuff	AMEC 2010	0.051	35	0.52	<0.8	<0.7	<0.5	16	0.082	0.06	0.034	56	20
MRARD10-113	MR1-08-144	Volcanic Tuff	AMEC 2010	0.0009	<0.1	0.40	<0.8	<0.7	<0.5	0.22	0.00001	0.27	0.22	1	<0.7
FC No. 2		Volcanic Tuff /Amphibolite/Schist	Knight Piesold 2006-2007	0.24	210	6.8	0.1	**2**	1.2	28	0.3	0.7	0.33	240	120
07ARD31	MR1-05-54	Volcanic Tuff /Chert /Schist	Knight Piesold 2006-2007	0.032	150	3.3	1.3	**4**	0.9	5.5	0.06	0.2	0.53	39	42
07ARD23	MR1-06-103	Volcanic Tuff /Schist	Knight Piesold 2006-2007	0.0094	140	5.2	<0.1	<1	3.2	2.8	0.18	0.4	3.3	72	86
07ARD24	MR1-05-55	Volcanic Tuff /Schist	Knight Piesold 2006-2007	0.018	120	3.5	<0.1	<1	2.5	5.2	0.13	0.5	2.8	91	65
07ARD26	MR1-06-93	Volcanic Tuff /Schist	Knight Piesold 2006-2007	0.0066	380	5.5	<0.1	<1	1.9	7.8	0.12	0.2	3.1	100	200
07ARD35	MR!-06-101	Volcanic Tuff /Schist	Knight Piesold 2006-2007	2.2	170	4.8	0.4	<1	0.8	140	0.48	0.4	0.06	290	110
07ARD41	MR1-06-95	Volcanic Tuff /Schist	Knight Piesold 2006-2007	0.083	340	16	<0.1	<1	1.4	11	0.27	0.8	1.4	260	56
MRARD10-029	MR1-09-170	Volcanic Tuff /Schist	AMEC 2010	0.022	440	4.0	<0.8	<0.7	1.0	5.7	0.013	0.08	0.54	36	14
Footwall															
UCS9	MR1-06-81	Amphibolite	Knight Piesold 2006-2007		84	410	9	<20	10	3.5	0.13	<20	<100	140	140
MRARD10-107	MR1-08-154	Amphibolite	AMEC 2010	0.01	15	3.1	3.1	<0.7	2.3	6.0	0.04	0.18	2.7	26	48
ARD1	MR1-05-72	Gneiss	Knight Piesold 2006-2007		7	34	<25	<6	<6	13	0.27	<5	<75	47	16
ARD2	MR1-05-72	Gneiss	Knight Piesold 2006-2007		22	25	<25	<6	<6	170	0.31	<5	<75	76	53
ARD3	MR1-05-72	Gneiss	Knight Piesold 2006-2007		9	26	<25	<6	<6	15	0.28	<5	<75	31	14
ARD4	MR1-05-73	Gneiss	Knight Piesold 2006-2007		9	22	<25	<6	<6	31	0.32	<5	<75	57	61
ARD5	MR1-05-73	Gneiss	Knight Piesold 2006-2007		15	17	<25	<6	<6	21	0.21	<5	<75	54	66
ARD6	MR1-05-73	Gneiss	Knight Piesold 2006-2007		11	14	<25	<6	<6	13	0.19	<5	<75	50	29

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Hg	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
				µg/g	%	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g
Average Concentration (Basalt)*				0.09	7.8	2	330	1	0.007	7.6	0.22	48	170	87	8.6	0.83	17	4.6	1500	1.5
Ten Times Average Concentration (Basalt)				0.9	78	20	3300	10	0.07	76	2.2	480	1700	870	86	8.3	170	46	15000	15
Average Concentration (Continental Crustal)*				0.085	8.23	1.8	425	3	0.0085	4.15	0.15	25	102	60	5.63	2.085	20	2.33	950	1.2
Ten Times Average Concentration (Crustal)				0.85	82.3	18	4250	30	0.085	41.5	1.5	250	1020	600	56.3	20.85	200	23.3	9500	12
ARD7	MR1-05-74	Gneiss	Knight Piesold 2006-2007		5.7	<6	1400	1.1	<3	0.072	0.2	5.5	8	2.8	3.5	3.2	<3	0.84	350	4
ARD8	MR1-05-74	Gneiss	Knight Piesold 2006-2007		7.1	<6	2000	0.9	<3	0.093	0.3	6	10	15	2.9	3.5	<3	1	420	4
ARD9	MR1-05-74	Gneiss	Knight Piesold 2006-2007		7.2	<6	2100	1	<3	0.086	0.3	5	9	21	3.1	3.4	<3	1.2	560	43
UCS10	MR1-06-81	Gneiss	Knight Piesold 2006-2007		7.3	<6	750	1.1	<34	0.54	<4	29	72	150	16	3.8	14	3.4	570	4
UCS12	MR1-06-81	Gneiss	Knight Piesold 2006-2007		6	<6	1800	1.6	<34	0.076	<4	<8	140	3.9	2.7	3	<3	0.74	300	<2
UCS13	MR1-06-81	Gneiss	Knight Piesold 2006-2007		7	7	2400	2.1	<34	0.31	<4	14	120	72	6.1	3.4	<3	1.7	590	4
UCS22	MR1-06-81	Gneiss	Knight Piesold 2006-2007		7.3	<6	2900	1.9	<2	0.22	0.7	17	130	7.5	5.1	3.8	<3	1.2	720	<2
UCS23	MR1-06-81	Gneiss	Knight Piesold 2006-2007		5.2	<6	1400	0.2	<34	0.12	<4	<8	140	15	5.5	3.1	5	1.7	550	<2
UCS24	MR1-06-81	Gneiss	Knight Piesold 2006-2007		6.1	<6	3000	1.3	<34	0.12	<4	<8	110	19	1.2	4.5	<3	0.39	140	<2
UCS49	MR1-06-105	Gneiss	Knight Piesold 2006-2007		7	<6	1000	1	<34	0.14	<4	13	130	78	5.2	3.4	4	1.5	500	<2
UCS51	MR1-06-105	Gneiss	Knight Piesold 2006-2007		8.1	<6	1400	1.6	<34	0.16	<4	12	120	4.2	4.7	3.6	7	1.9	430	<2
07ARD22	MR1-06-90	Gneiss	Knight Piesold 2006-2007	<0.1	6.8	3	520	2.3	0.19	0.066	0.42	14	180	25	11	1.8	27	3.8	250	9.9
07ARD32	MR1-06-81	Gneiss	Knight Piesold 2006-2007	<0.1	7.4	7	1500	1.3	0.06	0.24	0.38	12	140	25	7.4	4	9	2.4	440	10
MRARD10-004	MR1-09-179	Gneiss	AMEC 2010	<0.1	3.4	0.6	520	0.32	<0.09	0.17	<0.2	7.7	100	9.3	5.3	1.8	8	1.7	130	4.4
MRARD10-005	MR1-09-179	Gneiss	AMEC 2010	<0.1	1.7	0.7	99	0.62	<0.09	0.048	<0.2	5.3	120	79	2.3	0.86	7	0.83	100	2.4
MRARD10-011	MR1-09-178	Gneiss	AMEC 2010	<0.1	8.3	0.6	230	2.5	<0.09	0.18	<0.2	18	28	1.8	13	1	36	8.2	310	15
MRARD10-015	MR1-09-178	Gneiss	AMEC 2010	<0.1	2.5	<0.5	160	0.71	<0.09	0.17	<0.2	6.7	91	2.8	3.4	0.65	10	1.6	330	0.5
MRARD10-018	MR1-09-172	Gneiss	AMEC 2010	<0.1	0.79	16	3.0	0.58	<0.09	0.16	<0.2	6.8	19	3.9	60	0.013	3	0.8	2600	1.7
MRARD10-019	MR1-09-172	Gneiss	AMEC 2010	<0.1	8.9	0.7	2.4	1.3	<0.09	1.6	<0.2	20	210	1.7	13	0.016	3	7.3	1000	3.1
MRARD10-030	MR1-09-170	Gneiss	AMEC 2010	<0.1	3.8	0.6	380	0.69	<0.09	0.081	<0.2	13	95	5.8	6.4	1.8	12	1.6	260	3.4
MRARD10-031	MR1-09-170	Gneiss	AMEC 2010	<0.1	1	<0.5	69	0.24	<0.09	0.016	<0.2	4.6	87	6.8	1	0.64	6	0.6	150	2.7
MRARD10-033	MR1-08-162	Gneiss	AMEC 2010	<0.1	1.6	<0.5	140	0.17	<0.09	0.076	<0.2	6.3	67	5.1	2.2	0.88	8	0.85	380	1.1
MRARD10-034	MR1-08-162	Gneiss	AMEC 2010	<0.1	2	0.7	120	0.24	<0.09	0.088	<0.2	6.5	92	19	3.2	0.45	7	1.2	670	1.1
MRARD10-043	MR1-09-167	Gneiss	AMEC 2010	<0.1	5.9	<0.5	450	0.71	<0.09	0.1	<0.2	8.6	55	11	7.7	3.4	17	2.5	320	4.4
MRARD10-044	MR1-09-167	Gneiss	AMEC 2010	<0.1	1.4	<0.5	31	0.18	0.24	0.51	<0.2	31	670	52	4.2	0.29	11	0.86	340	0.6
MRARD10-045	MR1-09-167	Gneiss	AMEC 2010	<0.1	2.1	<0.5	160	0.20	<0.09	0.094	<0.2	7.6	73	11	3	1.4	7	0.8	120	15
MRARD10-046	MR1-09-167	Gneiss	AMEC 2010	<0.1	1.7	<0.5	320	0.29	0.14	0.095	<0.2	6.1	100	11	2.2	1	12	0.75	420	10
MRARD10-055	MR1-08-159	Gneiss	AMEC 2010	<0.1	2.3	1.2	180	0.66	<0.09	0.15	<0.2	28	75	30	2.8	1.2	10	1.2	280	16
MRARD10-057	MR1-08-161	Gneiss	AMEC 2010	<0.1	4.4	<0.5	690	0.61	<0.09	0.15	<0.2	12	77	29	6.2	2.7	11	1.8	310	2.2
MRARD10-074	MR1-08-149	Gneiss	AMEC 2010	<0.1	3.1	2.9	420	1.1	0.58	0.15	<0.2	14	130	22	9.9	1.1	13	1.5	400	25
MRARD10-104	MR1-08-140	Gneiss	AMEC 2010	<0.1	3.3	<0.5	130	0.89	<0.09	0.14	<0.2	10	76	6.2	4.5	1.1	19	1.9	470	1.0
MRARD10-110	MR1-08-154	Gneiss	AMEC 2010	<0.1	2.1	<0.5	110	0.72	<0.09	0.1	<0.2	5.5	95	5.1	2.8	0.73	8	1.2	280	2.1
MRARD10-123	MR1-08-155	Gneiss	AMEC 2010	<0.1	8.8	0.5	510	1.5	0.20	0.37	<0.2	17	17	31	13.4	4	18	4.4	380	1.7
MRARD10-125	MR1-08-144	Gneiss	AMEC 2010	<0.1	2.1	<0.5	260	1.1	<0.09	0.092	<0.2	7.8	85	2.3	2.1	1.2	15	1.1	150	0.7
5141	ARD-2A-NW	Gneiss	AMEC 2010	<0.1	4.3	<0.5	250	0.95	0.14	0.31	0.06	26	130	79	6.7	1.8	52	3.4	820	1.9
5142	ARD-2A-NW	Gneiss	AMEC 2010	<0.1	2.9	<0.5	150	0.18	0.12	0.29	0.30	10	60	35	4.8	2.3	32	1.3	500	4.5
5157	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	2.1	<0.5	450	0.21	0.12	0.38	0.13	9.3	83	28	3.6	1.6	25	1.2	770	2.0
5158	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	2.9	<0.5	390	0.24	0.22	0.49	0.10	8.4	58	26	4.9	2.3	27	1.4	790	8.7
5159	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	3.5	<0.5	680	0.19	0.18	0.34	0.40	9.1	58	48	5.8	2.7	30	1.7	800	1.7
5160	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	1.7	<0.5	130	0.95	1.3	0.82	0.08	6.1	87	12	2.6	1.3	28	1.0	510	1.4
5164	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	2.0	<0.5	130	0.16	<0.09	0.13	0.07	7.2	80	6.8	2.9	1.6	30	1.0	430	1.5
5165	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	0.6	0.7	41	0.62	0.23	0.67	0.06	2.1	78	7.1	0.7	0.3	9	0.5	370	0.4
5166	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	3.0	<0.5	170	0.27	<0.09	0.47	0.22	9.2	65	21	4.7	2.3	35	1.6	760	1.5
5171	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	0.9	0.6	67	0.34	0.49	0.21	0.15	5.1	67	92	2.0	0.8	20	0.7	360	0.2
5172	ARD-2A-SE	Gneiss	AMEC 2010	<0.1	0.8	0.7	78	0.84	0.76	0.32	0.22	3.5	120	43	1.6	0.5	17	0.5	330	0.7
5174	ARD-2B-NW	Gneiss	AMEC 2010	<0.1	0.7	0.6	38	0.45	<0.09	0.01	0.28	2.7	140	17	0.8	0.3	6	0.4	110	1.9
5175	ARD-2B-NW	Gneiss	AMEC 2010	<0.1	2.0	<0.5	79	2.3	<0.09	0.02	0.20	4.3	110	7.7	1.6	0.9	16	1.6	320	0.4
UCS11	MR1-06-81	Gneiss/Amphibolite	Knight Piesold 2006-2007		7.7	<6	2000	1.7	<2	0.32	0.9	22	130	25	5.7	4.3	<3	1.8	410	<2
FC No. 1		Gneiss/Schist	Knight Piesold 2006-2007	<0.1	9.4	<2	1800	2	0.5	0.52	0	21	87	39	6.7	4.4	19	2.6	610	15
5182	ARD-2B-NW	Gneiss/Schist	AMEC 2010	<0.1	3.3	0.5	220	0.90	0.24	0.29	0.39	22	82	200	4.9	2.1	23	1.9	290	0.3
5183	ARD-2B-NW	Gneiss/Schist	AMEC 2010	<0.1	3.3	<0.5	260	0.72	<0.09	0.11	0.10	21	64	29	3.7	2.2	26	2.1	340	0.3
5184	ARD-2B-NW	Gneiss/Schist	AMEC 2010	<0.1	5.9	<0.5	560	1.0	<0.09	0.35	<0.02	20	69	1.5	5.7	3.8	28	3.8	530	2.1
5186	ARD-2B-NW	Gneiss/Schist	AMEC 2010	<0.1	3.7	<0.5	270	1.0	0.16	1.60	0.04	16	67	29	4.5	1.5	22	1.7	410	0.2
5187	ARD-2B-NW	Gneiss/Schist	AMEC 2010	<0.1	4.7	<0.5	280	1.5	<0.09	0.17	<0.02	22	27	2.4	5.3	2.5	25	3.0	320	0.1
5188	ARD-2B-NW	Gneiss/Schist	AMEC 2010	<0.1	2.8	<0.5	150	0.52	<0.09	0.27	0.10	15	74	26	3.3	1.6	15	1.8	270	0.6
5189	ARD-2B-NW	Gneiss/Schist	AMEC 2010	<0.1	7.0	<0.5	700	0.89	0.12	0.33	<0.02	24	47	22	6.9	4.5	33	4.4	570	1.3
MRARD10-081	MR1-08-142	Metasediment	AMEC 2010	<0.1	2.8	<0.5	160	1.2	<0.09	0.064	<0.2	9.9	74	1.6	3.5	1.1	11	1.5	320	2.0
MRARD10-095	MR1-08-146	Metasediment	AMEC 2010	<0.1	3.3	<0.5	180	0.12	<0.09	1.7	<0.2	26	120	134	3.3	1	15	1.5	630	0.3
MRARD10-100	MR1-08-146	Metasediment	AMEC 2010	<0.1	4.4	<0.5	89	0.10	<0.09	2.6	<0.2	30	220	117	2.1	0.79	19	1.3	510	0.2
5143	ARD-2A-NW	Metasediment	AMEC 2010	<0.1	2.5	<0.5	140	0.20	<0.09	0.20	0.07	11	57	19	3.6	2.0	31	1.3	360	1.9

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
				%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g
Average Concentration (Basalt)*				1.8	130	6	0.2	0.05	1.5	465	1.38	2.1	1	250	105
Ten Times Average Concentration (Basalt)				18	1300	60	2	0.5	15	4650	13.8	21	10	2500	1050
Average Concentration (Continental Crustal)*				2.355	84	14	0.2	0.05	2.3	370	0.565	0.85	2.7	120	70
Ten Times Average Concentration (Crustal)				23.55	840	140	2	0.5	23	3700	5.65	8.5	27	1200	700
ARD7	MR1-05-74	Gneiss	Knight Piesold 2006-2007		6	15	<25	<6	<6	15	0.13	<5	<75	28	38
ARD8	MR1-05-74	Gneiss	Knight Piesold 2006-2007		7	16	<25	<6	<6	23	0.25	<5	<75	26	37
ARD9	MR1-05-74	Gneiss	Knight Piesold 2006-2007		7	20	<25	<6	<6	16	0.22	<5	<75	27	41
UCS10	MR1-06-81	Gneiss	Knight Piesold 2006-2007		15	43	5	<20	<6	16	0.56	<20	<100	78	37
UCS12	MR1-06-81	Gneiss	Knight Piesold 2006-2007		12	30	2	<20	<6	21	0.16	<20	<100	23	43
UCS13	MR1-06-81	Gneiss	Knight Piesold 2006-2007		19	48	3	<20	<6	28	0.32	<20	<100	46	80
UCS22	MR1-06-81	Gneiss	Knight Piesold 2006-2007		5	16	<2	<10	<6	22	0.44	<5	<70	35	47
UCS23	MR1-06-81	Gneiss	Knight Piesold 2006-2007		14	23	3	<20	<6	11	0.31	<20	<100	37	16
UCS24	MR1-06-81	Gneiss	Knight Piesold 2006-2007		18	250	<2	<20	<6	160	0.10	<20	<100	4.8	87
UCS49	MR1-06-105	Gneiss	Knight Piesold 2006-2007		12	36	3	<20	<6	17	0.34	<20	<100	45	65
UCS51	MR1-06-105	Gneiss	Knight Piesold 2006-2007		30	13	<2	<20	<6	22	0.25	<20	<100	76	54
07ARD22	MR1-06-90	Gneiss	Knight Piesold 2006-2007	0.084	35	7.7	<0.1	<1	2.5	22	0.17	0.4	4.4	46	48
07ARD32	MR1-06-81	Gneiss	Knight Piesold 2006-2007	0.067	22	26	1.1	<1	3.3	16	0.40	1.0	5.5	50	42
MRARD10-004	MR1-09-179	Gneiss	AMEC 2010	0.043	14	3.7	<0.8	<0.7	3.7	7.5	0.20	0.60	1.5	32	5.7
MRARD10-005	MR1-09-179	Gneiss	AMEC 2010	0.024	8.4	4.9	<0.8	<0.7	0.6	3.2	0.04	0.36	7.3	5	7.5
MRARD10-011	MR1-09-178	Gneiss	AMEC 2010	0.028	85	2.3	<0.8	<0.7	3.3	6.3	0.11	0.21	1.8	46	22
MRARD10-015	MR1-09-178	Gneiss	AMEC 2010	0.025	7.5	2.4	<0.8	<0.7	0.7	3.2	0.07	0.24	1.2	19	24
MRARD10-018	MR1-09-172	Gneiss	AMEC 2010	0.012	18	1.9	<0.8	<0.7	0.7	3.0	0.02	<0.02	0.35	11	7.0
MRARD10-019	MR1-09-172	Gneiss	AMEC 2010	0.0087	110	21	<0.8	<0.7	<0.5	44	0.02	<0.02	7.1	120	59
MRARD10-030	MR1-09-170	Gneiss	AMEC 2010	0.042	46	15	<0.8	<0.7	0.9	4.6	0.14	0.63	1.1	17	14
MRARD10-031	MR1-09-170	Gneiss	AMEC 2010	0.016	13	2.7	<0.8	<0.7	0.7	3.1	0.01	0.20	3.2	1	16
MRARD10-033	MR1-08-162	Gneiss	AMEC 2010	0.019	7.9	3.0	<0.8	<0.7	0.7	2.9	0.07	0.32	2.0	6	46
MRARD10-034	MR1-08-162	Gneiss	AMEC 2010	0.016	7.8	2.6	<0.8	<0.7	<0.5	2.9	0.04	0.11	1.4	8	39
MRARD10-043	MR1-09-167	Gneiss	AMEC 2010	0.086	18	16	<0.8	<0.7	1.1	2.9	0.21	1.6	2.5	21	15
MRARD10-044	MR1-09-167	Gneiss	AMEC 2010	0.022	350	46	<0.8	<0.7	0.8	4.8	0.06	0.14	0.44	28	17
MRARD10-045	MR1-09-167	Gneiss	AMEC 2010	0.037	9.4	4.2	<0.8	<0.7	1.3	3.6	0.13	0.41	1.3	14	21
MRARD10-046	MR1-09-167	Gneiss	AMEC 2010	0.031	8.5	5.6	<0.8	<0.7	1.0	9.8	0.11	0.47	1.3	7	40
MRARD10-055	MR1-08-159	Gneiss	AMEC 2010	0.029	50	16	<0.8	<0.7	0.7	3.2	0.14	1.3	5.2	31	722
MRARD10-057	MR1-08-161	Gneiss	AMEC 2010	0.061	15	15	<0.8	<0.7	1.5	4.4	0.22	0.71	2.9	38	24
MRARD10-074	MR1-08-149	Gneiss	AMEC 2010	0.031	37	5.7	<0.8	<0.7	1.4	7.3	0.11	0.41	2.5	28	32
MRARD10-104	MR1-08-140	Gneiss	AMEC 2010	0.025	23	2.2	<0.8	<0.7	0.6	2.9	0.08	0.25	2.0	32	17
MRARD10-110	MR1-08-154	Gneiss	AMEC 2010	0.025	8.6	2.3	1.3	<0.7	0.9	8.1	0.06	0.21	2.0	11	16
MRARD10-123	MR1-08-155	Gneiss	AMEC 2010	0.084	6.0	29	3.2	<0.7	5.0	5.7	0.35	1.5	3.3	160	21
MRARD10-125	MR1-08-144	Gneiss	AMEC 2010	0.035	8.8	6.5	<0.8	<0.7	0.6	6.0	0.09	0.48	3.6	10	27
5141	ARD-2A-NW	Gneiss	AMEC 2010	0.041	64	6.8	<0.8	<0.7	2.2	4.1	0.44	0.48	3.0	140	93
5142	ARD-2A-NW	Gneiss	AMEC 2010	0.042	5.7	19	<0.8	<0.7	3.5	4.4	0.47	0.69	7.1	24	100
5157	ARD-2A-SE	Gneiss	AMEC 2010	0.068	7.0	5.2	<0.8	0.9	1.0	8.5	0.29	0.54	1.6	26	67
5158	ARD-2A-SE	Gneiss	AMEC 2010	0.074	4.7	8.0	<0.8	<0.7	1.5	11	0.47	0.61	4.8	20	78
5159	ARD-2A-SE	Gneiss	AMEC 2010	0.054	7.8	13	<0.8	<0.7	4.3	8.2	0.47	0.82	5.6	35	110
5160	ARD-2A-SE	Gneiss	AMEC 2010	0.043	8.1	4.7	<0.8	0.7	2.4	15	0.20	0.48	1.5	23	56
5164	ARD-2A-SE	Gneiss	AMEC 2010	0.045	7.1	3.7	<0.8	<0.7	0.5	3.3	0.27	0.55	0.64	24	49
5165	ARD-2A-SE	Gneiss	AMEC 2010	0.029	4.0	18	<0.8	0.9	<0.5	13	0.07	0.16	0.78	4	18
5166	ARD-2A-SE	Gneiss	AMEC 2010	0.051	9.4	7.4	<0.8	<0.7	1.2	9.9	0.43	0.64	3.1	29	74
5171	ARD-2A-SE	Gneiss	AMEC 2010	0.035	4.0	20	<0.8	0.9	1.0	13	0.09	0.40	8.1	11	26
5172	ARD-2A-SE	Gneiss	AMEC 2010	0.065	5.1	24	<0.8	1.2	1.7	18	0.08	0.20	8.4	6	17
5174	ARD-2B-NW	Gneiss	AMEC 2010	0.008	5.7	55	<0.8	1.0	<0.5	1.6	0.01	0.08	8.3	23	30
5175	ARD-2B-NW	Gneiss	AMEC 2010	0.014	6.6	11	<0.8	1.1	<0.5	2.2	0.02	0.30	12	27	30
UCS11	MR1-06-81	Gneiss/Amphibolite	Knight Piesold 2006-2007		6	35	<2	<10	<6	26	0.53	<5	<70	67	35
FC No. 1		Gneiss/Schist	Knight Piesold 2006-2007	0.800	67	37	<0.1	1	3	82	0.37	1	5.8	59	78
5182	ARD-2B-NW	Gneiss/Schist	AMEC 2010	0.030	16	18	<0.8	1.4	0.6	3.6	0.24	0.73	2.7	62	62
5183	ARD-2B-NW	Gneiss/Schist	AMEC 2010	0.039	35	15	<0.8	1.0	0.7	3.3	0.28	0.77	3.7	120	63
5184	ARD-2B-NW	Gneiss/Schist	AMEC 2010	0.073	38	11	<0.8	<0.7	1.8	7.2	0.41	1.1	4.7	150	75
5186	ARD-2B-NW	Gneiss/Schist	AMEC 2010	0.045	13	9.7	<0.8	1.3	1.0	15	0.28	0.56	2.7	64	53
5187	ARD-2B-NW	Gneiss/Schist	AMEC 2010	0.043	33	5.1	<0.8	0.7	1.0	3.4	0.27	0.72	2.7	170	74
5188	ARD-2B-NW	Gneiss/Schist	AMEC 2010	0.033	17	12	<0.8	1.3	<0.5	2.6	0.22	0.53	1.9	38	48
5189	ARD-2B-NW	Gneiss/Schist	AMEC 2010	0.089	30	10	<0.8	0.8	1.5	5.3	0.47	1.3	3.5	140	80
MRARD10-081	MR1-08-142	Metasediment	AMEC 2010	0.03	14	2.8	<0.8	<0.7	0.8	3.7	0.07	0.42	1.7	21	22
MRARD10-095	MR1-08-146	Metasediment	AMEC 2010	0.108	57	2.2	<0.8	<0.7	<0.5	14	0.24	0.24	0.14	160	42
MRARD10-100	MR1-08-146	Metasediment	AMEC 2010	0.373	120	0.60	<0.8	<0.7	<0.5	25	0.19	0.09	0.032	120	23
5143	ARD-2A-NW	Metasediment	AMEC 2010	0.043	8.9	5.4	<0.8	<0.7	1.6	4.9	0.37	0.59	2.2	66	61

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Hg	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo
				µg/g	%	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g
Average Concentration (Basalt)*				0.09	7.8	2	330	1	0.007	7.6	0.22	48	170	87	8.6	0.83	17	4.6	1500	1.5
Ten Times Average Concentration (Basalt)				0.9	78	20	3300	10	0.07	76	2.2	480	1700	870	86	8.3	170	46	15000	15
Average Concentration (Continental Crustal)*				0.085	8.23	1.8	425	3	0.0085	4.15	0.15	25	102	60	5.63	2.085	20	2.33	950	1.2
Ten Times Average Concentration (Crustal)				0.85	82.3	18	4250	30	0.085	41.5	1.5	250	1020	600	56.3	20.85	200	23.3	9500	12
5144	ARD-2A-NW	Metasediment	AMEC 2010	<0.1	2.8	<0.5	150	0.24	<0.09	0.20	0.03	11	72	6.2	4.0	2.1	33	1.5	490	0.3
5145	ARD-2A-NW	Metasediment	AMEC 2010	<0.1	3.1	<0.5	130	0.23	<0.09	0.23	0.06	11	67	13	4.2	2.4	35	2.1	570	2.6
5147	ARD-2A-NW	Metasediment	AMEC 2010	<0.1	1.8	<0.5	110	0.27	<0.09	0.14	0.18	6.8	77	25	2.3	1.4	20	1.0	530	3.9
5148	ARD-2A-NW	Metasediment	AMEC 2010	<0.1	2.3	<0.5	140	0.23	0.13	0.21	0.20	8.8	88	36	2.8	1.7	24	1.5	520	0.7
5149	ARD-2A-NW	Metasediment	AMEC 2010	<0.1	1.6	<0.5	170	0.17	3.9	0.15	6.0	6.9	89	100	2.6	1.3	19	1.1	650	1.3
5161	ARD-2A-SE	Metasediment	AMEC 2010	<0.1	2.6	<0.5	95	0.12	<0.09	0.21	0.06	11	70	9.0	3.6	2.2	30	1.5	570	0.4
5162	ARD-2A-SE	Metasediment	AMEC 2010	<0.1	1.9	<0.5	120	0.14	<0.09	0.17	0.09	7.1	63	3.3	2.6	1.6	26	1.0	460	0.4
5163	ARD-2A-SE	Metasediment	AMEC 2010	<0.1	2.5	<0.5	120	0.16	<0.09	0.15	0.04	8.8	60	2.9	3.5	2.1	35	1.4	520	0.5
5167	ARD-2A-SE	Metasediment	AMEC 2010	<0.1	2.1	<0.5	190	0.23	<0.09	0.37	0.05	7.6	67	24	3.0	1.6	24	1.4	590	0.4
5168	ARD-2A-SE	Metasediment	AMEC 2010	<0.1	2.5	<0.5	170	0.49	0.09	0.34	0.05	9.2	69	14	3.6	2.1	32	1.7	690	6.6
5169	ARD-2A-SE	Metasediment	AMEC 2010	<0.1	0.9	<0.5	52	0.21	0.12	0.12	2.9	4.6	96	41	1.3	0.7	9	0.6	200	0.7
5176	ARD-2B-NW	Schist	AMEC 2010	<0.1	9.2	0.8	95	2.4	0.09	0.34	0.25	34	700	13	9.4	3.7	35	8.6	860	0.7
5177	ARD-2B-NW	Schist	AMEC 2010	<0.1	8.0	13	67	3.6	<0.09	0.40	2.6	36	780	8.0	9.1	2.5	26	8.6	280	53
5178	ARD-2B-NW	Schist	AMEC 2010	<0.1	7.1	0.9	2.6	0.63	0.09	0.59	0.26	73	2200	67	7.7	0.0	7	7.4	430	0.9
MRARD10-035	MR1-08-163	Schist	AMEC 2010	<0.1	8.1	<0.5	1470	3.3	<0.09	0.16	<0.2	9.1	14	5.8	7.5	3.4	140	3.7	480	0.4
MRARD10-037	MR1-08-160	Schist	AMEC 2010	<0.1	3.6	1.5	220	0.49	0.28	0.025	<0.2	5.1	110	40	5.4	1.4	7	1.7	250	2.3
MRARD10-049	MR1-08-163	Schist	AMEC 2010	<0.1	9.1	<0.5	3.9	0.88	<0.09	0.22	<0.2	25	31	2.3	13	0.012	10	5.2	2300	1.2
MRARD10-058	MR1-08-159	Schist	AMEC 2010	<0.1	4.7	<0.5	960	0.35	0.11	0.19	<0.2	18	59	70	6.3	2.9	5	2.1	170	1.0
MRARD10-085	MR1-08-144	Schist	AMEC 2010	<0.1	6	1.1	160	2.5	28	0.17	<0.2	48	150	169	16	1.1	36	3.3	530	1.9
MRARD10-096	MR1-08-146	Schist	AMEC 2010	<0.1	4.3	<0.5	75	0.19	<0.09	0.36	<0.2	26	250	32	4.1	0.42	42	5.4	560	0.2
MRARD10-099	MR1-08-144	Schist	AMEC 2010	<0.1	7.2	<0.5	410	0.80	<0.09	0.18	<0.2	10	42	1.7	9.9	1.2	11	4.1	230	1.1
MRARD10-121	MR1-08-155	Schist	AMEC 2010	<0.1	4.6	<0.5	1000	0.44	<0.09	0.21	<0.2	11	83	4.8	6.5	2.6	8	2.3	280	0.5
5146	ARD-2A-NW	Schist	AMEC 2010	<0.1	7.5	<0.5	540	0.37	<0.09	0.22	0.03	28	180	11	8.9	6.0	49	5.7	810	31
5150	ARD-2A-NW	Schist	AMEC 2010	<0.1	3.3	<0.5	350	0.60	3.1	0.36	0.17	24	260	66	4.1	2.1	49	3.4	550	2.9
5151	ARD-2A-NW	Schist	AMEC 2010	<0.1	4.0	<0.5	650	0.43	0.73	0.49	1.1	23	310	150	4.9	3.0	43	3.3	550	0.8
5152	ARD-2A-NW	Schist	AMEC 2010	<0.1	2.9	<0.5	450	0.30	0.34	0.14	2.1	11	74	260	4.1	2.2	32	1.6	490	2.1
5153	ARD-2A-NW	Schist	AMEC 2010	<0.1	4.9	<0.5	370	0.96	4.2	0.37	0.56	24	100	170	6.5	2.3	69	4.2	880	6.3
5154	ARD-2A-NW	Schist	AMEC 2010	<0.1	2.0	<0.5	250	0.12	0.70	0.23	0.14	7.0	75	20	3.1	1.5	22	0.9	460	37
5170	ARD-2A-SE	Schist	AMEC 2010	<0.1	1.8	0.7	93	0.54	0.34	1.10	0.45	21	390	110	2.6	1.5	27	1.7	290	1.1
5173	ARD-2A-SE	Schist	AMEC 2010	<0.1	1.5	0.5	70	0.31	<0.09	1.00	0.10	15	370	34	2.3	1.3	34	1.4	260	1.3
5179	ARD-2B-NW	Schist	AMEC 2010	<0.1	5.5	<0.5	160	5.1	0.10	0.09	0.03	10	100	1.9	3.8	2.1	52	4.5	490	2.1
5180	ARD-2B-NW	Schist	AMEC 2010	<0.1	7.3	<0.5	270	3.3	<0.09	0.18	<0.02	6.4	17	0.7	3.1	3.5	92	5.7	440	0.8
5181	ARD-2B-NW	Schist	AMEC 2010	<0.1	8.4	<0.5	490	3.2	<0.09	0.31	0.02	14	34	7.6	5.5	4.3	81	5.6	420	0.6
5185	ARD-2B-NW	Schist	AMEC 2010	<0.1	3.7	<0.5	220	0.57	0.14	0.54	0.03	21	49	36	5.0	2.0	24	2.3	410	0.2
5155	ARD-2A-NW	Schist/Gneiss	AMEC 2010	<0.1	1.6	<0.5	83	0.56	0.71	0.11	0.26	4.3	110	12	2.1	1.0	31	1.0	400	6.2
5156	ARD-2A-NW	Schist/Gneiss	AMEC 2010	<0.1	2.3	<0.5	250	0.25	0.17	0.32	0.27	8.3	72	15	4.1	1.8	24	1.2	560	47
UCS27	MR1-06-81	Volcanic Tuff /Schist	Knight Piesold 2006-2007		9.3	<6	38	1.1	<34	0.6	<4	56	1400	12	10	0.19	12	14.7	1300	
MRARD10-077	MR1-08-146	Volcanic tuff	AMEC 2010	<0.1	4.9	<0.5	1200	0.95	<0.09	0.22	<0.2	18	60	2.5	6.1	2.8	15	2.5	230	3.0
MRARD10-079	MR1-08-146	Volcanic tuff	AMEC 2010	<0.1	3.8	<0.5	53	0.07	<0.09	4	<0.2	16	88	105	1.1	0.22	8	0.52	510	0.1

Table B-3. Total Metal Concentrations by Lithology (continued)

Sample ID	Borehole ID	Rock Type	Sampling Program	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
				%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g
Average Concentration (Basalt)*				1.8	130	6	0.2	0.05	1.5	465	1.38	2.1	1	250	105
Ten Times Average Concentration (Basalt)				18	1300	60	2	0.5	15	4650	13.8	21	10	2500	1050
Average Concentration (Continental Crustal)*				2.355	84	14	0.2	0.05	2.3	370	0.565	0.85	2.7	120	70
Ten Times Average Concentration (Crustal)				23.55	840	140	2	0.5	23	3700	5.65	8.5	27	1200	700
5144	ARD-2A-NW	Metasediment	AMEC 2010	0.043	9.3	3.5	<0.8	<0.7	2.6	4.1	0.37	0.60	1.8	69	69
5145	ARD-2A-NW	Metasediment	AMEC 2010	0.059	18	3.4	<0.8	<0.7	1.9	5.4	0.38	0.78	1.4	73	68
5147	ARD-2A-NW	Metasediment	AMEC 2010	0.057	6.7	6.9	<0.8	<0.7	1.8	7.8	0.20	0.54	4.2	26	65
5148	ARD-2A-NW	Metasediment	AMEC 2010	0.045	8.2	9.4	<0.8	<0.7	7.2	6.5	0.20	0.51	6.7	43	97
5149	ARD-2A-NW	Metasediment	AMEC 2010	0.056	7.1	39	<0.8	<0.7	3.9	8.0	0.20	0.70	4.8	21	350
5161	ARD-2A-SE	Metasediment	AMEC 2010	0.043	17	5.8	<0.8	<0.7	1.6	4.7	0.39	0.70	1.8	73	68
5162	ARD-2A-SE	Metasediment	AMEC 2010	0.039	7.4	6.9	<0.8	0.8	1.4	3.7	0.29	0.52	2.6	56	50
5163	ARD-2A-SE	Metasediment	AMEC 2010	0.037	8.3	6.1	<0.8	<0.7	2.0	3.9	0.33	0.72	3.1	53	60
5167	ARD-2A-SE	Metasediment	AMEC 2010	0.066	7.9	9.3	<0.8	<0.7	0.9	13	0.27	0.60	1.9	62	69
5168	ARD-2A-SE	Metasediment	AMEC 2010	0.057	7.7	8.0	<0.8	<0.7	1.7	9.3	0.33	0.74	2.7	63	61
5169	ARD-2A-SE	Metasediment	AMEC 2010	0.079	4.8	52	<0.8	0.8	1.2	14	0.11	0.26	7.6	13	67
5176	ARD-2B-NW	Schist	AMEC 2010	0.057	150	13	<0.8	<0.7	1.6	3.9	0.31	1.4	3.2	83	170
5177	ARD-2B-NW	Schist	AMEC 2010	0.054	180	12	<0.8	<0.7	1.3	5.2	0.37	0.94	1.9	140	450
5178	ARD-2B-NW	Schist	AMEC 2010	0.003	620	27	<0.8	0.8	<0.5	3.9	0.04	0.21	1.8	91	100
MRARD10-035	MR1-08-163	Schist	AMEC 2010	0.08	3.5	12	<0.8	<0.7	3.3	10	0.17	0.59	7.0	21	52
MRARD10-037	MR1-08-160	Schist	AMEC 2010	0.039	12	6.2	<0.8	<0.7	1.0	2.5	0.11	0.36	1.2	16	9.9
MRARD10-049	MR1-08-163	Schist	AMEC 2010	0.0083	35	1.5	<0.8	<0.7	<0.5	3.3	0.02	<0.02	3.9	59	68
MRARD10-058	MR1-08-159	Schist	AMEC 2010	0.075	17	32	<0.8	<0.7	3.0	8.4	0.26	0.71	1.4	140	9.3
MRARD10-085	MR1-08-144	Schist	AMEC 2010	0.027	92	113	1.2	0.7	1.2	2.8	0.09	0.89	0.88	130	26
MRARD10-096	MR1-08-146	Schist	AMEC 2010	0.022	110	4.2	<0.8	<0.7	<0.5	5.4	0.13	0.11	0.044	110	26
MRARD10-099	MR1-08-144	Schist	AMEC 2010	0.021	9.5	5.0	<0.8	<0.7	1.4	4.6	0.12	0.67	3.8	70	48
MRARD10-121	MR1-08-155	Schist	AMEC 2010	0.063	8.0	13	<0.8	<0.7	4.6	6.3	0.25	0.58	2.6	140	7.7
5146	ARD-2A-NW	Schist	AMEC 2010	0.065	70	4.7	<0.8	<0.7	1.2	4.0	0.63	1.6	0.47	170	170
5150	ARD-2A-NW	Schist	AMEC 2010	0.043	110	3.7	<0.8	<0.7	2.7	7.1	0.33	1.0	2.3	98	120
5151	ARD-2A-NW	Schist	AMEC 2010	0.064	110	7.6	<0.8	<0.7	5.1	12	0.38	1.3	2.7	73	230
5152	ARD-2A-NW	Schist	AMEC 2010	0.059	7.4	21	<0.8	<0.7	11	5.6	0.26	0.86	7.1	34	270
5153	ARD-2A-NW	Schist	AMEC 2010	0.034	40	120	<0.8	<0.7	6.0	6.0	0.48	0.74	2.6	100	270
5154	ARD-2A-NW	Schist	AMEC 2010	0.073	4.9	4.2	<0.8	<0.7	2.5	6.2	0.28	0.47	2.1	33	71
5170	ARD-2A-SE	Schist	AMEC 2010	0.034	100	55	<0.8	0.8	0.7	36	0.25	0.94	3.9	58	36
5173	ARD-2A-SE	Schist	AMEC 2010	0.043	65	7.0	<0.8	0.8	<0.5	26	0.25	0.76	2.1	63	29
5179	ARD-2B-NW	Schist	AMEC 2010	0.039	26	14	<0.8	0.7	1.3	4.3	0.08	0.61	15	27	42
5180	ARD-2B-NW	Schist	AMEC 2010	0.063	4.9	12	<0.8	<0.7	1.5	15	0.04	0.73	8.2	31	46
5181	ARD-2B-NW	Schist	AMEC 2010	0.076	23	26	<0.8	<0.7	1.8	14	0.25	0.90	2.9	79	58
5185	ARD-2B-NW	Schist	AMEC 2010	0.037	8.8	5.9	<0.8	<0.7	0.8	6.1	0.36	0.73	3.5	48	66
5155	ARD-2A-NW	Schist/Gneiss	AMEC 2010	0.049	5.6	28	<0.8	<0.7	1.6	4.3	0.14	0.33	2.2	19	100
5156	ARD-2A-NW	Schist/Gneiss	AMEC 2010	0.062	5.0	3.4	<0.8	<0.7	2.6	6.7	0.37	0.62	2.4	38	95
UCS27	MR1-06-81	Volcanic Tuff /Schist	Knight Piesold 2006-2007		370	200	17	<20	<6	13	0.17	<20	<100	190	140
MRARD10-077	MR1-08-146	Volcanic tuff	AMEC 2010	0.062	10	12	0.8	<0.7	2.5	6.7	0.26	1.1	1.8	150	44
MRARD10-079	MR1-08-146	Volcanic tuff	AMEC 2010	0.323	76	1.6	<0.8	<0.7	1.0	49	0.10	0.07	0.069	43	10

Note :
*Price (1997)
Bold value indicates an elevated concentration relatived to the compared values

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS

LIST OF LABORATORY CERTIFICATES OF ANALYSIS

C-1 Acid Base Accounting
C-2 Net Acid Generation Test
C-3 Metals by Aqua-regia Extraction
C-4 Shake Flask Extraction Results
C-5 Mineralogy by Rietveld XRD

APPENDIX C-1

ACID BASE ACCOUNTING

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Modified ABA (Price 1997)

Baffinland Iron Mines Corp
Attn : Michael Zurowski

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:pdf

Wednesday, October 20, 2010

Date Rec. : 31 August 2010
LR Report: **CA11531-AUG10**

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Sample ID	Paste pH units	Fizz Rate ---	Sample weight(g)	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10
4: Analysis Approval Time	10:40	10:40	10:40	10:40	10:40	10:40	10:40	10:40
5: MR ARD-10-002	8.37	1	1.95	25.00	0.10	0.10	21.08	1.64
6: MR ARD-10-004	9.50	1	2.02	20.00	0.10	0.10	16.08	1.96
7: MR ARD-10-005	9.40	1	2.05	20.00	0.10	0.10	17.64	1.49
8: MR ARD-10-011	8.08	1	1.97	35.10	0.10	0.10	28.82	1.64
9: MR ARD-10-014	8.44	1	1.97	60.30	0.10	0.10	49.39	1.72
10: MR ARD-10-015	8.86	1	1.95	20.00	0.10	0.10	16.95	1.44
11: MR ARD-10-018	8.69	1	1.98	20.00	0.10	0.10	16.63	1.39
12: MR ARD-10-021	8.99	1	1.95	27.50	0.10	0.10	22.63	1.99
13: MR ARD-10-022	8.08	1	1.96	56.80	0.10	0.10	46.69	1.81
14: MR ARD-10-024	8.49	1	2.05	20.00	0.10	0.10	16.87	1.88
15: MR ARD-10-003	7.74	1	1.99	20.00	0.10	0.10	16.86	1.60
16: MR ARD-10-007	8.50	1	1.98	35.70	0.10	0.10	29.26	1.61
17: MR ARD-10-008	8.35	1	2.01	27.00	0.10	0.10	21.28	1.63
18: MR ARD-10-009	8.40	1	1.98	35.50	0.10	0.10	28.91	1.61
19: MR ARD-10-010	8.53	1	2.02	26.50	0.10	0.10	22.26	1.64
20: MR ARD-10-012	9.12	1	1.97	69.70	0.10	0.10	18.87	1.81
21: MR ARD-10-023	9.02	1	1.96	59.80	0.10	0.10	21.32	1.61
22: MR ARD-10-025	8.09	1	2.00	26.60	0.10	0.10	19.49	1.99
23: MR ARD-10-001	7.56	1	2.00	68.00	0.10	0.10	53.50	1.84

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Sample ID	Paste pH units	Fizz Rate ---	Sample weight(g)	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
24: MR ARD-10-006	8.32	1	1.99	26.40	0.10	0.10	20.33	1.90
25: MR ARD-10-016	8.66	1	1.98	26.20	0.10	0.10	18.56	1.67
26: MR ARD-10-017	8.58	1	1.99	49.00	0.10	0.10	38.62	1.64
27: MR ARD-10-019	8.45	1	2.01	44.40	0.10	0.10	31.77	1.61
28: MR ARD-10-020	7.96	1	2.02	53.30	0.10	0.10	42.87	1.67
29: MR ARD-10-029	8.12	1	1.98	62.50	0.10	0.10	48.09	1.76
30: MR ARD-10-030	8.60	1	1.97	33.10	0.10	0.10	28.31	1.60
31: MR ARD-10-013	8.47	1	2.04	66.60	0.10	0.10	49.64	1.72
32: MR ARD-10-036	8.17	1	1.98	20.00	0.10	0.10	15.15	1.86
33: MR ARD-10-037	8.88	1	2.00	26.60	0.10	0.10	23.27	1.53
34: MR ARD-10-038	8.30	1	1.95	56.50	0.10	0.10	44.14	1.66
35: MR ARD-10-039	5.66	1	2.02	32.90	0.10	0.10	33.35	1.61
36: MR ARD-10-040	9.41	1	2.05	26.50	0.10	0.10	17.99	1.70
37: MR ARD-10-041	8.25	1	1.99	34.10	0.10	0.10	24.22	1.63
38: MR ARD-10-057	9.49	1	1.97	20.00	0.10	0.10	15.93	1.96
39: MR ARD-10-026	8.33	1	1.99	37.10	0.10	0.10	29.02	1.66
40: MR ARD-10-032	8.26	1	2.01	26.30	0.10	0.10	21.76	1.90
41: MR ARD-10-034	9.00	1	1.98	20.00	0.10	0.10	16.95	1.48
42: MR ARD-10-035	7.89	1	1.98	27.10	0.10	0.10	23.27	1.63
43: MR ARD-10-046	9.05	1	1.99	20.00	0.10	0.10	17.34	1.37
44: MR ARD-10-047	8.50	1	1.97	20.00	0.10	0.10	14.31	1.85
45: MR ARD-10-048	7.94	1	2.01	25.80	0.10	0.10	21.23	1.89
46: MR ARD-10-049	8.15	1	2.02	36.00	0.10	0.10	29.40	1.60
47: MR ARD-10-027	8.46	1	2.03	37.60	0.10	0.10	31.61	1.58
48: MR ARD-10-028	8.18	1	1.98	20.00	0.10	0.10	15.90	1.95
49: MR ARD-10-031	9.23	1	1.96	20.00	0.10	0.10	18.20	1.22
50: MR ARD-10-033	9.36	1	2.00	20.00	0.10	0.10	17.40	1.36
51: MR ARD-10-043	9.53	1	2.05	26.20	0.10	0.10	22.10	1.63
52: MR ARD-10-045	9.61	1	2.03	20.00	0.10	0.10	17.40	1.46
53: MR ARD-10-103	7.97	1	1.96	27.60	0.10	0.10	20.60	1.71
54: MR ARD-10-044	8.48	1	1.99	20.00	0.10	0.10	16.00	1.68
55: MR ARD-10-100	9.42	2	1.96	35.30	0.10	0.10	23.30	1.65
56: MR ARD-10-102	8.91	1	1.99	26.20	0.10	0.10	22.30	1.61
57: MR ARD-10-104	8.41	1	1.96	20.00	0.10	0.10	16.60	1.63
58: MR ARD-10-105	8.20	1	2.04	28.00	0.10	0.10	21.60	1.78

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Sample ID	Paste pH units	Fizz Rate ---	Sample weight(g)	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
59: MR ARD-10-106	8.52	1	2.00	20.00	0.10	0.10	16.50	1.89
60: MR ARD-10-107	8.27	1	1.98	37.20	0.10	0.10	29.30	1.71
61: MR ARD-10-108	8.35	1	1.96	27.40	0.10	0.10	18.80	1.81
62: MR ARD-10-109	7.64	1	1.98	42.50	0.10	0.10	31.90	2.00
63: MR ARD-10-092	7.67	1	1.97	39.20	0.10	0.10	30.00	1.55
64: MR ARD-10-093	7.15	1	2.04	20.00	0.10	0.10	17.80	1.72
65: MR ARD-10-094	8.17	1	1.98	37.10	0.10	0.10	26.60	1.62
66: MR ARD-10-095	9.27	1	1.98	27.20	0.10	0.10	19.80	1.68
67: MR ARD-10-096	8.88	1	1.99	27.50	0.10	0.10	18.20	1.71
68: MR ARD-10-098	9.53	1	2.00	27.70	0.10	0.10	21.90	1.61
69: MR ARD-10-099	8.99	1	2.00	40.60	0.10	0.10	33.10	1.76
70: MR ARD-10-101	8.16	1	1.96	33.30	0.10	0.10	24.90	1.65
71: MR ARD-10-080	7.94	1	2.04	26.50	0.10	0.10	18.20	1.86
72: MR ARD-10-085	7.80	1	2.03	38.40	0.10	0.10	32.40	1.71
73: MR ARD-10-087	8.83	3	1.96	74.90	0.10	0.10	37.20	1.65
74: MR ARD-10-088	8.52	1	2.00	37.40	0.10	0.10	26.70	1.77
75: MR ARD-10-089	8.72	1	2.01	45.80	0.10	0.10	28.30	1.80
76: MR ARD-10-090	9.54	1	1.97	20.00	0.10	0.10	15.00	1.66
77: MR ARD-10-091	8.26	1	2.00	20.00	0.10	0.10	16.60	1.69
78: MR ARD-10-097	9.63	1	1.95	20.00	0.10	0.10	13.50	1.70
79: MR ARD-10-077	9.81	1	2.00	27.70	0.10	0.10	21.60	1.92
80: MR ARD-10-078	8.33	1	1.97	27.90	0.10	0.10	22.80	1.79
81: MR ARD-10-079	9.28	3	2.01	51.20	0.10	0.10	25.50	1.69
82: MR ARD-10-081	9.34	1	1.98	20.00	0.10	0.10	16.80	1.72
83: MR ARD-10-083	8.90	1	1.98	20.00	0.10	0.10	14.40	1.59
84: MR ARD-10-084	8.69	1	1.96	26.60	0.10	0.10	19.70	1.72
85: MR ARD-10-086	8.43	1	2.02	38.90	0.10	0.10	31.00	1.69
86: MR ARD-10-067	8.63	1	1.98	28.50	0.10	0.10	22.90	1.67
87: MR ARD-10-068	7.58	1	1.98	28.70	0.10	0.10	23.80	2.00
88: MR ARD-10-070	8.07	1	2.02	20.00	0.10	0.10	14.90	1.72
89: MR ARD-10-071	8.00	1	2.05	65.50	0.10	0.10	49.80	1.78
90: MR ARD-10-072	7.99	1	1.96	67.70	0.10	0.10	50.40	1.85
91: MR ARD-10-074	7.31	1	2.05	25.00	0.10	0.10	21.70	1.60
92: MR ARD-10-075	7.72	1	1.97	20.00	0.10	0.10	15.50	1.87
93: MR ARD-10-076	8.19	1	1.98	47.80	0.10	0.10	35.40	1.65

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Sample ID	Paste pH units	Fizz Rate ---	Sample weight(g)	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
94: MR ARD-10-082	8.77	1	1.96	27.20	0.10	0.10	10.70	1.74
95: MR ARD-10-060	8.07	1	1.99	29.80	0.10	0.10	24.20	1.91
96: MR ARD-10-062	8.07	1	1.97	36.00	0.10	0.10	26.50	1.66
97: MR ARD-10-063	8.14	1	1.96	37.20	0.10	0.10	28.30	1.69
98: MR ARD-10-064	7.20	1	1.99	38.80	0.10	0.10	32.20	1.71
99: MR ARD-10-065	8.01	1	1.97	20.00	0.10	0.10	15.80	1.73
100: MR ARD-10-066	8.31	1	1.95	36.80	0.10	0.10	29.40	1.65
101: MR ARD-10-069	6.14	1	2.05	20.00	0.10	0.10	19.60	1.22
102: MR ARD-10-073	7.72	1	2.00	33.60	0.10	0.10	25.20	1.64
103: MR ARD-10-042	9.22	2	2.00	53.90	0.10	0.10	35.50	1.62
104: MR ARD-10-050	7.88	1	2.00	27.90	0.10	0.10	20.90	1.93
105: MR ARD-10-052	8.15	1	1.96	20.00	0.10	0.10	14.50	1.71
106: MR ARD-10-055	9.21	1	1.97	20.00	0.10	0.10	16.20	1.83
107: MR ARD-10-056	8.30	1	2.00	37.90	0.10	0.10	31.20	1.61
108: MR ARD-10-058	9.87	1	1.98	26.00	0.10	0.10	21.10	1.64
109: MR ARD-10-059	9.40	1	1.99	20.00	0.10	0.10	14.50	1.87
110: MR ARD-10-61	8.55	1	2.02	36.30	0.10	0.10	25.80	1.67
111: MR ARD-10-053	9.50	2	1.99	20.00	0.10	0.10	12.40	1.72
112: MR ARD-10-054	9.04	2	1.99	27.20	0.10	0.10	16.60	1.78
113: MR ARD-10-119	8.04	1	1.97	37.10	0.10	0.10	29.80	1.61
114: MR ARD-10-120	8.24	1	1.97	20.00	0.10	0.10	17.80	1.27
115: MR ARD-10-121	9.67	1	2.00	27.00	0.10	0.10	20.80	1.91
116: MR ARD-10-122	8.46	1	2.01	28.10	0.10	0.10	17.40	1.90
117: MR ARD-10-123	9.23	1	1.98	46.10	0.10	0.10	36.90	1.66
118: MR ARD-10-110	9.02	1	1.97	20.00	0.10	0.10	17.30	1.40
119: MR ARD-10-111	8.30	1	2.02	27.30	0.10	0.10	22.50	2.01
120: MR ARD-10-112	9.02	3	1.99	60.10	0.10	0.10	26.80	1.61
121: MR ARD-10-116	7.33	1	1.97	48.80	0.10	0.10	38.70	1.70
122: MR ARD-10-051	8.09	3	2.05	75.20	0.10	0.10	34.80	1.65
123: MR ARD-10-113	8.61	1	1.96	37.30	0.10	0.10	26.80	1.70
124: MR ARD-10-114	9.53	1	2.03	20.00	0.10	0.10	16.30	1.59
125: MR ARD-10-115	9.29	1	2.04	20.00	0.10	0.10	14.80	1.99
126: MR ARD-10-117	8.86	1	1.97	38.50	0.10	0.10	31.50	1.60
127: MR ARD-10-118	8.46	1	2.02	25.20	0.10	0.10	18.00	1.69
128: MR ARD-10-124	8.47	1	2.00	20.00	0.10	0.10	16.70	1.96

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Modified ABA (Price 1997)

LR Report : **CA11531-AUG10**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight(g)	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
129: MR ARD-10-125	9.26	1	2.00	20.00	0.10	0.10	17.50	1.37
130: MR ARD-10-126	7.44	1	1.98	26.40	0.10	0.10	23.20	1.66
131: MR ARD-10-127	8.10	1	2.04	25.60	0.10	0.10	19.40	1.65
132: MR ARD-10-128	8.40	1	1.99	52.30	0.10	0.10	40.60	1.76
133: MR ARD-10-129	4.26	1	2.01	20.00	0.10	0.10	22.60	1.56
134: MR ARD-10-130	8.74	1	2.00	32.60	0.10	0.10	22.60	1.65
135: MR ARD-10-131	8.02	1	1.99	90.60	0.10	0.10	54.00	1.70

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Modified ABA (Price 1997)

Wednesday, October 20, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:pdf

Date Rec. : 31 August 2010
LR Report: **CA11531-AUG10**

Copy: #2

CERTIFICATE OF ANALYSIS

Final Report - Revised

Sample ID	NP t CaCO3/1000t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Total Sulphur %	Acid Leachable SO4-S %	Sulphide-S %	Total Carbon %	Carbonate (CO3) %
3: Analysis Approval Date	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10	29-Sep-10	27-Sep-10	30-Sep-10	21-Sep-10
4: Analysis Approval Time	10:40	10:51	10:51	10:51	10:47	10:47	16:20	09:39	13:07
5: MR ARD-10-002	10.1	0.31	9.79	32.6	0.016	0.02	< 0.01	0.017	0.037
6: MR ARD-10-004	9.7	0.31	9.39	31.3	0.016	0.02	< 0.01	0.013	0.026
7: MR ARD-10-005	5.8	0.31	5.49	18.7	0.015	0.02	< 0.01	0.009	0.011
8: MR ARD-10-011	15.9	0.31	15.6	51.3	0.026	0.03	< 0.01	0.014	< 0.005
9: MR ARD-10-014	27.7	0.31	27.4	89.4	0.029	0.03	< 0.01	0.019	0.022
10: MR ARD-10-015	7.8	0.31	7.49	25.2	0.016	0.02	< 0.01	0.013	0.033
11: MR ARD-10-018	8.5	3.68	4.82	2.31	0.142	0.02	0.12	0.284	1.19
12: MR ARD-10-021	12.5	0.42	12.1	29.4	0.099	0.09	0.01	0.012	0.035
13: MR ARD-10-022	25.8	0.31	25.5	83.2	0.026	0.03	< 0.01	0.018	0.030
14: MR ARD-10-024	7.6	0.31	7.29	24.5	0.055	0.04	0.01	0.014	0.035
15: MR ARD-10-003	7.9	0.31	7.59	25.5	0.029	0.03	< 0.01	0.407	1.57
16: MR ARD-10-007	16.3	0.62	15.7	26.3	0.198	0.18	0.02	0.023	0.053
17: MR ARD-10-008	14.2	0.31	13.9	45.8	0.075	0.08	< 0.01	0.017	0.026
18: MR ARD-10-009	16.6	4.77	11.8	3.48	0.285	0.13	0.15	0.017	0.027
19: MR ARD-10-010	10.5	0.31	10.2	33.9	< 0.005	< 0.01	< 0.01	0.016	0.116
20: MR ARD-10-012	129	0.31	129	416	0.055	0.06	< 0.01	1.07	4.54
21: MR ARD-10-023	98.2	0.31	97.9	317	0.054	0.05	< 0.01	0.738	2.97
22: MR ARD-10-025	17.8	0.31	17.5	57.4	0.056	0.06	< 0.01	0.021	0.148
23: MR ARD-10-001	36.2	2.40	33.8	15.1	0.320	0.24	0.08	0.029	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA11531-AUG10**

Sample ID	NP t CaCO3/1000t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Total Sulphur %	Acid Leachable SO4-S %	Sulphide-S %	Total Carbon %	Carbonate (CO3) %
24: MR ARD-10-006	15.3	0.62	14.7	24.7	0.056	0.04	0.02	0.019	0.007
25: MR ARD-10-016	19.3	5.65	13.6	3.41	0.271	0.09	0.18	0.026	0.047
26: MR ARD-10-017	26.1	2.18	23.9	12.0	0.153	0.09	0.07	0.024	0.030
27: MR ARD-10-019	31.4	0.31	31.1	101	0.075	0.08	< 0.01	0.048	0.015
28: MR ARD-10-020	25.8	7.88	17.9	3.27	0.463	0.21	0.25	0.015	0.015
29: MR ARD-10-029	36.4	3.28	33.1	11.1	0.240	0.14	0.10	0.018	< 0.005
30: MR ARD-10-030	12.2	5.80	6.40	2.10	0.268	0.08	0.19	0.015	0.050
31: MR ARD-10-013	41.6	0.31	41.3	134	0.098	0.10	< 0.01	0.026	0.011
32: MR ARD-10-036	12.2	2.81	9.39	4.34	0.250	0.16	0.09	0.015	0.051
33: MR ARD-10-037	8.3	1.56	6.74	5.32	0.158	0.10	0.05	0.020	0.057
34: MR ARD-10-038	31.7	0.31	31.4	102	0.124	0.12	< 0.01	0.022	< 0.005
35: MR ARD-10-039	-1.10	0.31	-1.41	-3.55	0.382	0.38	< 0.01	0.126	0.538
36: MR ARD-10-040	20.8	0.62	20.2	33.5	0.133	0.11	0.02	0.070	0.176
37: MR ARD-10-041	24.8	0.31	24.5	80.0	0.073	0.07	< 0.01	0.041	0.045
38: MR ARD-10-057	10.3	7.41	2.89	1.39	0.426	0.19	0.24	0.014	0.042
39: MR ARD-10-026	20.3	8.58	11.7	2.36	0.556	0.28	0.27	0.021	0.019
40: MR ARD-10-032	11.3	0.31	11.0	36.5	0.084	0.08	< 0.01	0.017	< 0.005
41: MR ARD-10-034	7.7	1.56	6.14	4.94	0.183	0.13	0.05	0.012	0.009
42: MR ARD-10-035	9.7	0.31	9.39	31.3	0.007	< 0.01	< 0.01	0.020	0.207
43: MR ARD-10-046	6.7	0.31	6.39	21.6	< 0.005	< 0.01	< 0.01	< 0.005	0.045
44: MR ARD-10-047	14.4	0.31	14.1	46.5	< 0.005	< 0.01	< 0.01	0.011	< 0.005
45: MR ARD-10-048	11.4	3.43	7.97	3.32	0.214	0.10	0.11	0.030	< 0.005
46: MR ARD-10-049	16.3	0.31	16.0	52.6	0.014	0.01	< 0.01	0.021	< 0.005
47: MR ARD-10-027	14.7	0.31	14.4	47.4	0.034	0.03	< 0.01	0.030	0.065
48: MR ARD-10-028	10.3	14.6	-4.28	0.71	0.650	0.18	0.47	0.010	0.013
49: MR ARD-10-031	4.6	0.31	4.29	14.8	0.009	< 0.01	< 0.01	< 0.005	< 0.005
50: MR ARD-10-033	6.5	0.31	6.19	21.0	0.016	0.02	< 0.01	< 0.005	< 0.005
51: MR ARD-10-043	10.0	0.31	9.69	32.3	0.020	0.02	< 0.01	0.006	< 0.005
52: MR ARD-10-045	6.4	0.31	6.09	20.6	0.025	0.01	0.01	< 0.005	< 0.005
53: MR ARD-10-103	17.9	0.31	17.6	57.7	0.089	0.09	< 0.01	0.020	0.062
54: MR ARD-10-044	10.1	25.6	-15.5	0.39	1.13	0.31	0.82	0.012	< 0.005
55: MR ARD-10-100	30.6	0.31	30.3	98.7	0.018	0.02	< 0.01	0.225	0.921
56: MR ARD-10-102	9.8	0.31	9.49	31.6	0.013	0.01	< 0.01	0.042	0.094
57: MR ARD-10-104	8.7	0.31	8.39	28.1	0.009	< 0.01	< 0.01	< 0.005	< 0.005
58: MR ARD-10-105	15.7	18.9	-3.23	0.83	0.870	0.26	0.61	0.065	0.079

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Modified ABA (Price 1997)

LR Report : **CA11531-AUG10**

Sample ID	NP t CaCO3/1000t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Total Sulphur %	Acid Leachable SO4-S %	Sulphide-S %	Total Carbon %	Carbonate (CO3) %
59: MR ARD-10-106	8.8	2.83	5.97	3.11	0.158	0.07	0.09	< 0.005	0.026
60: MR ARD-10-107	19.9	0.62	19.3	32.1	0.049	0.03	0.02	0.007	< 0.005
61: MR ARD-10-108	21.9	0.31	21.6	70.6	0.012	0.01	< 0.01	0.008	0.026
62: MR ARD-10-109	26.8	1.25	25.6	21.4	0.229	0.18	0.04	0.032	< 0.005
63: MR ARD-10-092	23.4	9.54	13.9	2.45	0.594	0.29	0.31	0.006	< 0.005
64: MR ARD-10-093	5.4	0.31	5.09	17.4	0.015	0.02	< 0.01	0.021	0.059
65: MR ARD-10-094	26.5	3.93	22.6	6.75	0.253	0.13	0.13	0.017	0.012
66: MR ARD-10-095	18.7	5.74	13.0	3.26	0.252	0.07	0.18	0.087	0.257
67: MR ARD-10-096	23.4	0.31	23.1	75.5	0.009	< 0.01	< 0.01	0.079	0.200
68: MR ARD-10-098	14.5	0.31	14.2	46.8	0.009	< 0.01	< 0.01	0.045	0.086
69: MR ARD-10-099	18.8	0.31	18.5	60.6	< 0.005	<0.01	< 0.01	0.010	< 0.005
70: MR ARD-10-101	21.4	1.25	20.2	17.1	0.086	0.04	0.04	0.012	< 0.005
71: MR ARD-10-080	20.3	31.2	-10.9	0.65	1.28	0.28	1.00	0.009	0.008
72: MR ARD-10-085	14.8	186	-172	0.08	6.13	0.17	5.96	0.005	< 0.005
73: MR ARD-10-087	96.2	11.1	85.1	8.67	0.447	0.09	0.36	0.966	4.31
74: MR ARD-10-088	26.8	0.62	26.2	43.2	0.033	0.02	0.02	0.110	0.315
75: MR ARD-10-089	43.5	1.56	41.9	27.9	0.075	0.03	0.05	0.212	0.780
76: MR ARD-10-090	12.7	0.31	12.4	41.0	0.012	0.01	< 0.01	0.009	< 0.005
77: MR ARD-10-091	8.5	0.31	8.19	27.4	0.013	0.01	< 0.01	0.006	< 0.005
78: MR ARD-10-097	16.7	0.31	16.4	53.9	0.019	0.02	< 0.01	0.087	0.268
79: MR ARD-10-077	15.2	0.31	14.9	49.0	< 0.005	< 0.01	< 0.01	0.006	0.015
80: MR ARD-10-078	12.9	2.92	9.98	4.41	0.124	0.03	0.09	< 0.005	< 0.005
81: MR ARD-10-079	63.9	1.25	62.6	51.1	0.102	0.06	0.04	0.654	2.82
82: MR ARD-10-081	8.1	0.31	7.79	26.1	< 0.005	< 0.01	< 0.01	0.007	0.013
83: MR ARD-10-083	14.1	0.31	13.8	45.5	0.016	0.02	< 0.01	0.045	0.069
84: MR ARD-10-084	17.6	0.31	17.3	56.8	0.016	0.02	< 0.01	0.040	0.067
85: MR ARD-10-086	19.6	2.19	17.4	8.95	0.107	0.04	0.07	0.012	< 0.005
86: MR ARD-10-067	14.1	0.31	13.8	45.5	0.019	0.02	< 0.01	0.008	0.181
87: MR ARD-10-068	12.4	30.3	-17.94	0.41	1.18	0.21	0.97	0.007	0.144
88: MR ARD-10-070	12.6	0.31	12.3	40.6	0.028	0.03	< 0.01	< 0.005	0.033
89: MR ARD-10-071	38.3	2.50	35.8	15.3	0.098	0.02	0.08	0.013	< 0.005
90: MR ARD-10-072	44.1	0.31	43.8	142	0.034	0.03	< 0.01	0.008	< 0.005
91: MR ARD-10-074	8.0	18.0	-10.0	0.44	0.664	0.09	0.58	0.019	0.288
92: MR ARD-10-075	11.4	0.31	11.1	36.8	0.026	0.03	< 0.01	< 0.005	< 0.005
93: MR ARD-10-076	31.3	0.31	31.0	101.0	0.037	0.02	0.01	0.081	0.164

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Modified ABA (Price 1997)

LR Report : **CA11531-AUG10**

Sample ID	NP t CaCO3/1000t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Total Sulphur %	Acid Leachable SO4-S %	Sulphide-S %	Total Carbon %	Carbonate (CO3) %
94: MR ARD-10-082	42.1	3.12	39.0	13.5	0.120	0.02	0.10	0.437	1.55
95: MR ARD-10-060	14.1	3.88	10.2	3.63	0.185	0.06	0.12	0.006	< 0.005
96: MR ARD-10-062	24.1	0.31	23.8	77.7	0.065	0.06	< 0.01	0.069	< 0.005
97: MR ARD-10-063	22.7	5.13	17.6	4.42	0.305	0.14	0.16	0.017	< 0.005
98: MR ARD-10-064	16.6	0.94	15.7	17.7	0.266	0.23	0.03	0.043	0.026
99: MR ARD-10-065	10.7	0.31	10.4	34.5	0.023	0.01	0.01	< 0.005	0.100
100: MR ARD-10-066	19.0	4.33	14.7	4.39	0.199	0.06	0.14	0.016	0.026
101: MR ARD-10-069	1.0	22.6	-21.6	0.04	0.847	0.12	0.72	1.14	5.24
102: MR ARD-10-073	21.0	0.31	20.7	67.7	0.018	0.02	< 0.01	0.009	0.005
103: MR ARD-10-042	46.0	0.62	45.4	74.2	0.039	0.02	0.02	0.362	1.34
104: MR ARD-10-050	17.5	0.31	17.2	56.5	0.014	0.01	< 0.01	0.029	< 0.005
105: MR ARD-10-052	14.0	0.62	13.4	22.6	0.055	0.03	0.02	0.084	0.195
106: MR ARD-10-055	9.6	9.16	0.44	1.05	0.360	0.07	0.29	0.006	< 0.005
107: MR ARD-10-056	16.8	0.31	16.5	54.2	0.008	< 0.01	< 0.01	0.009	0.010
108: MR ARD-10-058	12.4	6.60	5.80	1.88	0.295	0.08	0.21	< 0.005	0.019
109: MR ARD-10-059	13.8	0.31	13.5	44.5	0.008	< 0.01	< 0.01	0.013	0.263
110: MR ARD-10-61	26.0	0.31	25.7	83.9	0.009	< 0.01	< 0.01	0.019	< 0.005
111: MR ARD-10-053	19.1	1.87	17.2	10.2	0.092	0.03	0.06	0.126	0.616
112: MR ARD-10-054	26.6	0.31	26.3	85.8	0.009	< 0.01	< 0.01	0.177	0.632
113: MR ARD-10-119	18.5	0.31	18.2	59.7	0.021	0.02	< 0.01	0.007	< 0.005
114: MR ARD-10-120	5.6	9.22	-3.62	0.61	0.457	0.16	0.30	0.013	0.178
115: MR ARD-10-121	15.5	0.31	15.2	50.0	0.020	< 0.01	0.01	0.007	0.119
116: MR ARD-10-122	26.6	5.88	20.7	4.53	0.312	0.12	0.19	0.012	< 0.005
117: MR ARD-10-123	23.2	10.2	13.0	2.27	0.455	0.13	0.33	< 0.005	< 0.005
118: MR ARD-10-110	6.9	0.31	6.59	22.3	< 0.005	< 0.01	< 0.01	0.010	< 0.005
119: MR ARD-10-111	11.9	0.31	11.6	38.4	0.010	0.01	< 0.01	0.009	< 0.005
120: MR ARD-10-112	83.7	0.31	83.4	270	0.009	< 0.01	< 0.01	0.871	4.03
121: MR ARD-10-116	25.6	32.7	-7.14	0.78	1.29	0.25	1.05	0.036	0.120
122: MR ARD-10-051	98.5	7.42	91.1	13.3	0.354	0.12	0.24	0.967	3.79
123: MR ARD-10-113	26.8	1.25	25.6	21.4	0.032	< 0.01	0.04	0.014	< 0.005
124: MR ARD-10-114	9.1	1.87	7.23	4.87	0.085	0.03	0.06	0.006	< 0.005
125: MR ARD-10-115	12.7	0.31	12.4	41.0	0.012	< 0.01	0.01	0.012	< 0.005
126: MR ARD-10-117	17.8	3.12	14.7	5.71	0.086	< 0.01	0.10	0.018	0.033
127: MR ARD-10-118	17.8	0.31	17.5	57.4	0.009	<0.01	< 0.01	0.015	0.008
128: MR ARD-10-124	8.2	0.31	7.89	26.5	0.005	<0.01	< 0.01	0.009	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA11531-AUG10**

Sample ID	NP t CaCO3/1000t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Total Sulphur %	Acid Leachable SO4-S %	Sulphide-S %	Total Carbon %	Carbonate (CO3) %
129: MR ARD-10-125	6.2	0.31	5.89	20.0	< 0.005	< 0.01	< 0.01	0.010	0.011
130: MR ARD-10-126	8.1	0.42	7.68	19.2	0.011	< 0.01	0.01	0.012	< 0.005
131: MR ARD-10-127	15.2	0.33	14.9	46.3	0.005	< 0.01	0.01	0.022	< 0.005
132: MR ARD-10-128	29.4	6.29	23.1	4.67	0.220	0.02	0.20	0.012	0.026
133: MR ARD-10-129	-6.50	305	-312	-0.02	12.4	2.63	9.77	1.50	6.67
134: MR ARD-10-130	25.0	1.59	23.4	15.7	0.051	< 0.01	0.05	0.117	0.381
135: MR ARD-10-131	92.0	5.76	86.2	16.0	0.292	0.11	0.18	4.27	7.90

*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Modified ABA (Price 1997)

Baffinland Iron Mines Corp
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Tuesday, October 05, 2010

Date Rec. : 16 September 2010
LR Report: **CA11049-SEP10**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 5141	6: 5142	7: 5143	8: 5144	9: 5145	10: 5146	11: 5147	12: 5148	13: 5149	14: 5150	15: 5151
Sample Date & Time			Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Paste pH [units]	29-Sep-10	13:45	9.01	9.93	9.92	9.86	9.88	9.58	10.03	10.03	9.98	9.43	9.78
Fizz Rate [---]	29-Sep-10	13:45	1	1	1	1	1	1	1	1	1	1	1
Sample [weight(g)]	29-Sep-10	13:45	2.03	1.98	1.99	1.97	1.95	2.03	1.95	2.01	1.99	1.98	1.96
HCl added [mL]	29-Sep-10	13:45	25.70	20.00	20.00	20.00	20.00	26.40	20.00	20.00	20.00	20.00	20.00
HCl [Normality]	29-Sep-10	13:45	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	29-Sep-10	13:45	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH to [pH=8.3 mL]	29-Sep-10	13:45	19.80	15.60	16.20	16.40	15.70	19.50	16.90	15.30	15.60	13.70	13.70
Final pH [units]	29-Sep-10	13:45	1.63	1.68	1.48	1.47	1.56	1.64	1.34	1.57	1.46	1.82	1.94
NP [t CaCO3/1000t]	29-Sep-10	13:45	14.5	11.1	9.5	9.1	11.0	17.0	7.9	11.7	11.1	15.9	16.1
AP [t CaCO3/1000 t]	30-Sep-10	14:14	1.87	2.81	0.31	0.31	0.31	0.31	0.62	0.31	1.25	0.31	2.19
Net NP [t CaCO3/1000 t]	30-Sep-10	14:14	12.6	8.29	9.19	8.79	10.7	16.7	7.28	11.4	9.85	15.6	13.9
NP/AP [ratio]	30-Sep-10	14:14	7.75	3.95	30.6	29.4	35.5	54.8	12.7	37.7	8.88	51.3	7.35
Total Sulphur [%]	30-Sep-10	09:39	0.142	0.140	0.027	0.347	0.008	0.044	0.075	0.013	0.099	0.024	0.130
Acid Leachable SO4-S [%]	30-Sep-10	14:12	0.08	0.05	0.03	0.35	< 0.01	0.04	0.05	0.01	0.06	0.02	0.06
Sulphide-S [%]	30-Sep-10	14:13	0.06	0.09	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.04	< 0.01	0.07
Total Carbon [%]	30-Sep-10	09:40	0.021	0.024	0.016	0.020	0.015	0.029	0.024	0.025	0.029	0.028	0.019
Carbonate (CO3) [%]	28-Sep-10	14:41	< 0.005	< 0.005	0.008	< 0.005	< 0.005	0.051	0.021	0.025	< 0.005	0.020	0.012

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	16: 5152	17: 5153	18: 5154	19: 5155	20: 5156	21: 5157	22: 5158	23: 5159	24: 5160	25: 5161	26: 5162	27: 5163	28: 5164
Sample Date & Time	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Paste pH [units]	9.99	8.99	10.07	9.27	9.82	9.89	10.03	9.48	9.70	10.06	10.09	10.10	10.08
Fizz Rate [---]	1	1	1	1	1	1	1	1	1	1	1	1	1
Sample [weight(g)]	1.98	1.97	2.01	1.99	1.96	1.99	1.99	1.96	1.99	2.05	2.02	1.95	1.95
HCl added [mL]	20.00	25.80	20.00	20.00	20.00	20.00	20.00	25.00	20.00	20.00	20.00	20.00	20.00
HCl [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH to [pH=8.3 mL]	16.40	19.40	16.60	17.20	15.50	15.40	15.10	19.60	15.40	16.20	16.50	16.70	16.90
Final pH [units]	1.55	1.60	1.35	1.27	1.57	1.62	1.88	1.65	1.42	1.38	1.34	1.37	1.35
NP [t CaCO3/1000t]	9.1	16.2	8.5	7.0	11.5	11.6	12.3	13.8	11.6	9.3	8.7	8.5	7.9
AP [t CaCO3/1000 t]	0.62	0.62	0.31	0.31	1.25	1.56	2.50	4.06	0.31	0.31	0.31	0.31	0.62
Net NP [t CaCO3/1000 t]	8.48	15.6	8.19	6.69	10.2	10.0	9.80	9.74	11.3	8.99	8.39	8.19	7.28
NP/AP [ratio]	14.7	26.1	27.4	22.6	9.20	7.45	4.92	3.40	37.4	30.0	28.1	27.4	12.7
Total Sulphur [%]	0.062	0.081	0.032	< 0.005	0.070	0.103	0.174	0.220	0.013	0.011	< 0.005	0.008	0.056
Acid Leachable SO4-S [%]	0.04	0.06	0.03	< 0.01	0.03	0.05	0.10	0.09	0.01	0.01	< 0.01	< 0.01	0.03
Sulphide-S [%]	0.02	0.02	< 0.01	< 0.01	0.04	0.05	0.08	0.13	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Total Carbon [%]	0.016	0.022	0.021	0.013	0.015	0.020	0.017	0.018	0.054	0.013	0.016	0.014	0.017
Carbonate (CO3) [%]	0.007	0.010	0.010	0.012	0.020	0.033	0.012	0.011	0.177	0.017	0.048	0.021	0.031

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SGS Canada Inc.
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Modified ABA (Price 1997)

LR Report : **CA11049-SEP10**

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Modified ABA (Price 1997)

Baffinland Iron Mines Corp
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Canada, M5H 1T1
Phone: 416-364-8820, Fax:pdf

Tuesday, October 05, 2010

Date Rec. : 16 September 2010
LR Report: **CA11049-SEP10**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	**29: 5165**	**30: 5166**	**31: 5167**	**32: 5168**	**33: 5169**	**34: 5170**	**35: 5171**	**36: 5172**	**37: 5173**	**38: 5174**	**39: 5175**	**40: 5176**
Sample Date & Time	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Paste pH [units]	9.80	9.94	10.03	10.05	10.18	9.87	5.53	9.24	8.27	9.24	9.04	8.81
Fizz Rate [---]	2	1	1	1	1	2	1	1	1	1	1	1
Sample [weight(g)]	1.96	2.01	2.01	2.05	1.96	1.96	2.01	2.02	1.99	2.04	2.04	1.96
HCl added [mL]	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	27.50
HCl [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH to [pH=8.3 mL]	13.90	15.70	15.20	15.10	17.10	9.90	16.40	15.80	11.10	18.50	17.90	18.90
Final pH [units]	1.31	1.70	1.58	1.52	1.17	1.88	1.20	1.34	1.77	1.16	1.24	1.76
NP [t CaCO3/1000t]	15.6	10.7	11.9	12.0	7.4	25.8	9.0	10.4	22.4	3.7	5.1	21.9
AP [t CaCO3/1000 t]	0.31	0.31	0.94	0.31	0.62	3.75	7.18	2.57	0.31	1.56	0.31	0.62
Net NP [t CaCO3/1000 t]	15.3	10.4	11.0	11.7	6.78	22.0	1.82	7.83	22.1	2.14	4.79	21.3
NP/AP [ratio]	50.3	34.5	12.7	38.7	11.9	6.88	1.25	4.05	72.3	2.37	16.5	35.3
Total Sulphur [%]	0.014	0.034	0.071	0.021	0.137	0.194	0.399	0.137	0.018	0.068	0.010	0.095
Acid Leachable SO4-S [%]	0.01	0.03	0.04	0.02	0.12	0.08	0.17	0.06	0.02	0.02	0.01	0.08
Sulphide-S [%]	< 0.01	< 0.01	0.03	< 0.01	0.02	0.12	0.23	0.08	< 0.01	0.05	< 0.01	0.02
Total Carbon [%]	0.109	0.019	0.024	0.032	0.038	0.125	0.054	0.066	0.101	0.014	0.012	0.017
Carbonate (CO3) [%]	0.396	0.022	0.027	0.083	0.062	0.434	0.168	0.178	0.289	< 0.005	0.017	0.041

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Modified ABA (Price 1997)

LR Report : **CA11049-SEP10**

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Modified ABA (Price 1997)

Baffinland Iron Mines Corp
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Tuesday, October 05, 2010

Date Rec. : 16 September 2010
LR Report: **CA11049-SEP10**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	41: 5177	42: 5178	43: 5179	44: 5180	45: 5181	46: 5182	47: 5183	48: 5184	49: 5185	50: 5186	51: 5187	52: 5188	53: 5189
Sample Date & Time	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Paste pH [units]	9.02	8.45	8.79	8.88	8.81	9.53	9.81	9.76	9.62	9.49	9.27	9.78	9.32
Fizz Rate [---]	1	1	1	1	1	1	1	1	1	1	1	1	1
Sample [weight(g)]	1.95	1.97	1.98	2.04	1.99	1.99	2.02	2.01	1.99	1.97	2.01	2.05	1.98
HCl added [mL]	27.20	27.10	20.00	20.00	25.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
HCl [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH [Normality]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
NaOH to [pH=8.3 mL]	17.70	18.20	16.30	14.60	19.40	15.60	17.00	15.00	14.90	14.70	15.40	15.70	14.60
Final pH [units]	1.79	1.67	1.45	1.81	1.64	1.79	1.44	1.80	1.81	1.91	1.72	1.49	1.84
NP [t CaCO3/1000t]	24.4	22.6	9.3	13.2	14.1	11.1	7.4	12.4	12.8	13.5	11.4	10.5	13.6
AP [t CaCO3/1000 t]	0.31	28.4	0.31	0.31	0.31	16.8	0.31	0.31	1.56	0.62	0.31	0.31	0.31
Net NP [t CaCO3/1000 t]	24.1	-5.77	8.99	12.9	13.8	-5.66	7.09	12.1	11.2	12.9	11.1	10.2	13.3
NP/AP [ratio]	78.7	0.80	30.0	42.6	45.5	0.66	23.9	40.0	8.21	21.8	36.8	33.9	43.9
Total Sulphur [%]	0.139	1.46	0.038	0.034	0.027	0.658	0.032	0.021	0.089	0.094	0.023	0.018	0.020
Acid Leachable SO4-S [%]	0.14	0.55	0.04	0.03	0.03	0.12	0.03	0.02	0.04	0.08	0.02	0.02	0.02
Sulphide-S [%]	< 0.01	0.91	< 0.01	< 0.01	< 0.01	0.54	< 0.01	< 0.01	0.05	0.02	< 0.01	< 0.01	< 0.01
Total Carbon [%]	0.018	0.018	0.023	0.020	0.016	0.013	0.014	0.026	0.018	0.020	0.015	0.023	0.013
Carbonate (CO3) [%]	< 0.005	0.152	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.021	0.078	< 0.005	< 0.005	0.040	< 0.005

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*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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APPENDIX C-2

NET ACID GENERATION TEST

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Wednesday, September 29, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:pdf

Date Rec. : 31 August 2010
LR Report: **CA11532-AUG10**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date	24-Sep-10	24-Sep-10	24-Sep-10	24-Sep-10	24-Sep-10	24-Sep-10	24-Sep-10	24-Sep-10
4: Analysis Approval Time	08:56	08:56	08:56	08:56	08:56	08:56	08:56	08:56
5: MR ARD-10-002	1.48	150	7.67	0.10	0.00	0.00	0.0	0.0
6: MR ARD-10-004	1.52	150	7.72	0.10	0.00	0.00	0.0	0.0
7: MR ARD-10-005	1.54	150	7.30	0.10	0.00	0.00	0.0	0.0
8: MR ARD-10-011	1.46	150	7.64	0.10	0.00	0.00	0.0	0.0
9: MR ARD-10-014	1.48	150	7.98	0.10	0.00	0.00	0.0	0.0
10: MR ARD-10-015	1.50	150	7.47	0.10	0.00	0.00	0.0	0.0
11: MR ARD-10-018	1.46	150	4.96	0.10	0.00	0.30	0.0	1.0
12: MR ARD-10-021	1.54	150	7.00	0.10	0.00	0.00	0.0	0.0
13: MR ARD-10-022	1.51	150	7.97	0.10	0.00	0.00	0.0	0.0
14: MR ARD-10-024	1.49	150	7.33	0.10	0.00	0.00	0.0	0.0
15: MR ARD-10-003	1.47	150	7.40	0.10	0.00	0.00	0.0	0.0
16: MR ARD-10-007	1.52	150	6.90	0.10	0.00	0.10	0.0	0.3
17: MR ARD-10-008	1.46	150	7.88	0.10	0.00	0.00	0.0	0.0
18: MR ARD-10-009	1.47	150	6.74	0.10	0.00	0.10	0.0	0.3
19: MR ARD-10-010	1.53	150	7.63	0.10	0.00	0.00	0.0	0.0
20: MR ARD-10-012	1.46	150	9.37	0.10	0.00	0.00	0.0	0.0
21: MR ARD-10-023	1.50	150	9.09	0.10	0.00	0.00	0.0	0.0
22: MR ARD-10-025	1.46	150	8.02	0.10	0.00	0.00	0.0	0.0
23: MR ARD-10-001	1.49	150	7.17	0.10	0.00	0.00	0.0	0.0
24: MR ARD-10-006	1.51	150	7.73	0.10	0.00	0.00	0.0	0.0

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NAG Test

LR Report : **CA11532-AUG10**

Sample ID	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
25: MR ARD-10-016	1.49	150	6.77	0.10	0.00	0.10	0.0	0.3
26: MR ARD-10-017	1.50	150	7.43	0.10	0.00	0.00	0.0	0.0
27: MR ARD-10-019	1.50	150	7.85	0.10	0.00	0.00	0.0	0.0
28: MR ARD-10-020	1.51	150	5.80	0.10	0.00	0.30	0.0	1.0
29: MR ARD-10-029	1.48	150	7.26	0.10	0.00	0.00	0.0	0.0
30: MR ARD-10-030	1.50	150	4.45	0.10	0.10	0.40	0.3	1.3
31: MR ARD-10-013	1.50	150	7.63	0.10	0.00	0.00	0.0	0.0
32: MR ARD-10-036	1.49	150	6.81	0.10	0.00	0.10	0.0	0.3
33: MR ARD-10-037	1.50	150	6.57	0.10	0.00	0.10	0.0	0.3
34: MR ARD-10-038	1.53	150	7.64	0.10	0.00	0.00	0.0	0.0
35: MR ARD-10-039	1.54	150	5.29	0.10	0.00	0.40	0.0	1.3
36: MR ARD-10-040	1.47	150	8.02	0.10	0.00	0.00	0.0	0.0
37: MR ARD-10-041	1.53	150	7.84	0.10	0.00	0.00	0.0	0.0
38: MR ARD-10-057	1.52	150	3.46	0.10	0.70	1.60	2.3	5.2
39: MR ARD-10-026	1.53	150	4.47	0.10	0.10	0.70	0.3	2.2
40: MR ARD-10-032	1.53	150	7.57	0.10	0.00	0.00	0.0	0.0
41: MR ARD-10-034	1.54	150	5.50	0.10	0.00	0.10	0.0	0.3
42: MR ARD-10-035	1.55	150	7.64	0.10	0.00	0.00	0.0	0.0
43: MR ARD-10-046	1.54	150	7.24	0.10	0.00	0.00	0.0	0.0
44: MR ARD-10-047	1.47	150	7.56	0.10	0.00	0.00	0.0	0.0
45: MR ARD-10-048	1.52	150	6.49	0.10	0.00	0.10	0.0	0.3
46: MR ARD-10-049	1.55	150	7.55	0.10	0.00	0.00	0.0	0.0
47: MR ARD-10-027	1.46	150	7.23	0.10	0.00	0.00	0.0	0.0
48: MR ARD-10-028	1.47	150	3.12	0.10	1.70	3.20	5.7	11
49: MR ARD-10-031	1.47	150	6.99	0.10	0.00	0.10	0.0	0.3
50: MR ARD-10-033	1.50	150	7.07	0.10	0.00	0.00	0.0	0.0
51: MR ARD-10-043	1.49	150	7.48	0.10	0.00	0.00	0.0	0.0
52: MR ARD-10-045	1.52	150	6.76	0.10	0.00	0.10	0.0	0.3
53: MR ARD-10-103	1.51	150	7.11	0.10	0.00	0.00	0.0	0.0
54: MR ARD-10-044	1.50	150	2.76	0.10	4.40	6.70	14	22
55: MR ARD-10-100	1.51	150	9.91	0.10	0.00	0.00	0.0	0.0
56: MR ARD-10-102	1.52	150	7.58	0.10	0.00	0.00	0.0	0.0
57: MR ARD-10-104	1.54	150	7.35	0.10	0.00	0.00	0.0	0.0
58: MR ARD-10-105	1.54	150	3.44	0.10	0.90	2.60	2.9	8.3
59: MR ARD-10-106	1.51	150	6.70	0.10	0.00	0.10	0.0	0.3
60: MR ARD-10-107	1.49	150	7.48	0.10	0.00	0.00	0.0	0.0

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NAG Test

LR Report : **CA11532-AUG10**

Sample ID	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
61: MR ARD-10-108	1.50	150	7.73	0.10	0.00	0.00	0.0	0.0
62: MR ARD-10-109	1.50	150	6.95	0.10	0.00	0.10	0.0	0.3
63: MR ARD-10-092	1.48	150	4.27	0.10	0.10	1.00	0.3	3.3
64: MR ARD-10-093	1.48	150	7.41	0.10	0.00	0.00	0.0	0.0
65: MR ARD-10-094	1.55	150	6.92	0.10	0.00	0.10	0.0	0.3
66: MR ARD-10-095	1.49	150	6.85	0.10	0.00	0.10	0.0	0.3
67: MR ARD-10-096	1.48	150	9.07	0.10	0.00	0.00	0.0	0.0
68: MR ARD-10-098	1.46	150	7.70	0.10	0.00	0.00	0.0	0.0
69: MR ARD-10-099	1.50	150	8.01	0.10	0.00	0.00	0.0	0.0
70: MR ARD-10-101	1.50	150	7.18	0.10	0.00	0.00	0.0	0.0
71: MR ARD-10-080	1.48	150	2.91	0.10	3.30	5.60	11	18
72: MR ARD-10-085	1.47	150	2.31	0.10	19.50	35.00	65	117
73: MR ARD-10-087	1.50	150	10.56	0.10	0.00	0.00	0.0	0.0
74: MR ARD-10-088	1.48	150	9.54	0.10	0.00	0.00	0.0	0.0
75: MR ARD-10-089	1.49	150	9.48	0.10	0.00	0.00	0.0	0.0
76: MR ARD-10-090	1.48	150	7.11	0.10	0.00	0.00	0.0	0.0
77: MR ARD-10-091	1.53	150	7.26	0.10	0.00	0.00	0.0	0.0
78: MR ARD-10-097	1.48	150	8.07	0.10	0.00	0.00	0.0	0.0
79: MR ARD-10-077	1.49	150	7.59	0.10	0.00	0.00	0.0	0.0
80: MR ARD-10-078	1.49	150	6.86	0.10	0.00	0.10	0.0	0.3
81: MR ARD-10-079	1.50	150	10.68	0.10	0.00	0.00	0.0	0.0
82: MR ARD-10-081	1.46	150	7.34	0.10	0.00	0.00	0.0	0.0
83: MR ARD-10-083	1.49	150	7.53	0.10	0.00	0.00	0.0	0.0
84: MR ARD-10-084	1.49	150	8.00	0.10	0.00	0.00	0.0	0.0
85: MR ARD-10-086	1.51	150	7.24	0.10	0.00	0.00	0.0	0.0
86: MR ARD-10-067	1.46	150	7.71	0.10	0.00	0.00	0.0	0.0
87: MR ARD-10-068	1.50	150	2.80	0.10	4.50	7.30	15	24
88: MR ARD-10-070	1.47	150	7.28	0.10	0.00	0.00	0.0	0.0
89: MR ARD-10-071	1.51	150	7.23	0.10	0.00	0.00	0.0	0.0
90: MR ARD-10-072	1.51	150	7.54	0.10	0.00	0.00	0.0	0.0
91: MR ARD-10-074	1.50	150	3.14	0.10	2.00	3.60	6.5	12
92: MR ARD-10-075	1.47	150	7.19	0.10	0.00	0.00	0.0	0.0
93: MR ARD-10-076	1.50	150	7.74	0.10	0.00	0.00	0.0	0.0
94: MR ARD-10-082	1.51	150	9.50	0.10	0.00	0.00	0.0	0.0
95: MR ARD-10-060	1.51	150	6.37	0.10	0.00	0.40	0.0	1.3
96: MR ARD-10-062	1.55	150	7.29	0.10	0.00	0.00	0.0	0.0

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA11532-AUG10**

Sample ID	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
97: MR ARD-10-063	1.49	150	7.04	0.10	0.00	0.00	0.0	0.0
98: MR ARD-10-064	1.54	150	7.05	0.10	0.00	0.00	0.0	0.0
99: MR ARD-10-065	1.51	150	7.20	0.10	0.00	0.00	0.0	0.0
100: MR ARD-10-066	1.50	150	7.22	0.10	0.00	0.00	0.0	0.0
101: MR ARD-10-069	1.53	150	2.51	0.10	6.50	8.00	21	26
102: MR ARD-10-073	1.49	150	6.89	0.10	0.00	0.20	0.0	0.7
103: MR ARD-10-042	1.51	150	9.71	0.10	0.00	0.00	0.0	0.0
104: MR ARD-10-050	1.53	150	8.02	0.10	0.00	0.00	0.0	0.0
105: MR ARD-10-052	1.55	150	8.04	0.10	0.00	0.00	0.0	0.0
106: MR ARD-10-055	1.49	150	4.39	0.10	0.10	1.10	0.3	3.6
107: MR ARD-10-056	1.46	150	7.38	0.10	0.00	0.00	0.0	0.0
108: MR ARD-10-058	1.49	150	4.31	0.10	0.20	1.40	0.7	4.6
109: MR ARD-10-059	1.49	150	7.36	0.10	0.00	0.00	0.0	0.0
110: MR ARD-10-61	1.49	150	7.25	0.10	0.00	0.00	0.0	0.0
111: MR ARD-10-053	1.49	150	8.13	0.10	0.00	0.00	0.0	0.0
112: MR ARD-10-054	1.55	150	9.33	0.10	0.00	0.00	0.0	0.0
113: MR ARD-10-119	1.50	150	8.33	0.10	0.00	0.00	0.0	0.0
114: MR ARD-10-120	1.48	150	3.00	0.10	2.10	3.20	7.0	11
115: MR ARD-10-121	1.51	150	6.37	0.10	0.00	0.30	0.0	1.0
116: MR ARD-10-122	1.54	150	6.64	0.10	0.00	0.40	0.0	1.3
117: MR ARD-10-123	1.49	150	4.21	0.10	0.30	2.00	1.0	6.6
118: MR ARD-10-110	1.50	150	7.06	0.10	0.00	0.00	0.0	0.0
119: MR ARD-10-111	1.54	150	7.06	0.10	0.00	0.00	0.0	0.0
120: MR ARD-10-112	1.54	150	9.80	0.10	0.00	0.00	0.0	0.0
121: MR ARD-10-116	1.47	150	2.80	0.10	4.70	7.50	16	25
122: MR ARD-10-051	1.46	150	10.84	0.10	0.00	0.00	0.0	0.0
123: MR ARD-10-113	1.54	150	7.61	0.10	0.00	0.00	0.0	0.0
124: MR ARD-10-114	1.51	150	6.03	0.10	0.00	0.10	0.0	0.3
125: MR ARD-10-115	1.53	150	7.35	0.10	0.00	0.00	0.0	0.0
126: MR ARD-10-117	1.55	150	6.96	0.10	0.00	0.10	0.0	0.3
127: MR ARD-10-118	1.47	150	7.52	0.10	0.00	0.00	0.0	0.0
128: MR ARD-10-124	1.47	150	7.27	0.10	0.00	0.00	0.0	0.0
129: MR ARD-10-125	1.46	150	6.86	0.10	0.00	0.20	0.0	0.7
130: MR ARD-10-126	1.54	150	7.50	0.10	0.00	0.00	0.0	0.0
131: MR ARD-10-127	1.55	150	7.36	0.10	0.00	0.00	0.0	0.0
132: MR ARD-10-128	1.51	150	6.90	0.10	0.00	0.10	0.0	0.3

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NAG Test

LR Report : **CA11532-AUG10**

Sample ID	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
133: MR ARD-10-129	1.53	150	1.84	0.50	8.20	10.30	131	165
134: MR ARD-10-130	1.47	150	9.04	0.10	0.00	0.00	0.0	0.0
135: MR ARD-10-131	1.50	150	8.14	0.10	0.00	0.00	0.0	0.0

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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SGS Canada Inc.
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Tuesday, October 05, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

1016-120 Adelaide Street West, Toronto, ON
Canada, M5H 1T1
Phone: 416-364-8820, Fax:pdf

Date Rec. : 16 September 2010
LR Report: **CA11050-SEP10**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date		30-Sep-10	30-Sep-10	30-Sep-10	30-Sep-10	30-Sep-10	30-Sep-10	30-Sep-10	30-Sep-10
4: Analysis Approval Time		13:45	13:45	13:45	13:45	13:45	13:45	13:45	13:45
5: 5141	Date:N/A	1.45	150	6.81	0.10	0.00	0.10	0.0	0.3
6: 5142	Date:N/A	1.45	150	5.60	0.10	0.00	0.20	0.0	0.7
7: 5143	Date:N/A	1.45	150	7.08	0.10	0.00	0.00	0.0	0.0
8: 5144	Date:N/A	1.46	150	7.16	0.10	0.00	0.00	0.0	0.0
9: 5145	Date:N/A	1.47	150	7.18	0.10	0.00	0.00	0.0	0.0
10: 5146	Date:N/A	1.55	150	7.43	0.10	0.00	0.00	0.0	0.0
11: 5147	Date:N/A	1.48	150	6.63	0.10	0.00	0.20	0.0	0.7
12: 5148	Date:N/A	1.47	150	7.18	0.10	0.00	0.00	0.0	0.0
13: 5149	Date:N/A	1.50	150	6.59	0.10	0.00	0.20	0.0	0.7
14: 5150	Date:N/A	1.48	150	7.42	0.10	0.00	0.00	0.0	0.0
15: 5151	Date:N/A	1.51	150	6.68	0.10	0.00	0.20	0.0	0.6
16: 5152	Date:N/A	1.48	150	6.68	0.10	0.00	0.10	0.0	0.3
17: 5153	Date:N/A	1.48	150	6.99	0.10	0.00	0.10	0.0	0.3
18: 5154	Date:N/A	1.48	150	6.95	0.10	0.00	0.10	0.0	0.3
19: 5155	Date:N/A	1.52	150	7.02	0.10	0.00	0.00	0.0	0.0
20: 5156	Date:N/A	1.53	150	6.60	0.10	0.00	0.10	0.0	0.3
21: 5157	Date:N/A	1.54	150	6.44	0.10	0.00	0.20	0.0	0.6
22: 5158	Date:N/A	1.48	150	5.80	0.10	0.00	0.10	0.0	0.3
23: 5159	Date:N/A	1.48	150	4.86	0.10	0.00	0.30	0.0	1.0

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA11050-SEP10**

Sample ID	Sample Date & Time	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
24: 5160	Date:N/A	1.48	150	7.42	0.10	0.00	0.00	0.0	0.0
25: 5161	Date:N/A	1.52	150	7.03	0.10	0.00	0.00	0.0	0.0
26: 5162	Date:N/A	1.55	150	7.08	0.10	0.00	0.00	0.0	0.0
27: 5163	Date:N/A	1.49	150	7.08	0.10	0.00	0.00	0.0	0.0
28: 5164	Date:N/A	1.48	150	6.42	0.10	0.00	0.20	0.0	0.7
29: 5165	Date:N/A	1.50	150	7.90	0.10	0.00	0.00	0.0	0.0
30: 5166	Date:N/A	1.48	150	7.18	0.10	0.00	0.00	0.0	0.0
31: 5167	Date:N/A	1.53	150	6.84	0.10	0.00	0.40	0.0	1.3
32: 5168	Date:N/A	1.48	150	7.32	0.10	0.00	0.00	0.0	0.0
33: 5169	Date:N/A	1.49	150	5.16	0.10	0.00	0.30	0.0	1.0
34: 5170	Date:N/A	1.50	150	9.05	0.10	0.00	0.00	0.0	0.0
35: 5171	Date:N/A	1.52	150	3.12	0.10	1.50	2.10	4.8	6.8
36: 5172	Date:N/A	1.48	150	7.08	0.10	0.00	0.00	0.0	0.0
37: 5173	Date:N/A	1.46	150	8.33	0.10	0.00	0.00	0.0	0.0
38: 5174	Date:N/A	1.48	150	5.28	0.10	0.00	0.40	0.0	1.3
39: 5175	Date:N/A	1.49	150	7.06	0.10	0.00	0.00	0.0	0.0
40: 5176	Date:N/A	1.49	150	7.28	0.10	0.00	0.00	0.0	0.0
41: 5177	Date:N/A	1.51	150	7.60	0.10	0.00	0.00	0.0	0.0
42: 5178	Date:N/A	1.50	150	2.74	0.10	5.60	8.20	18	27
43: 5179	Date:N/A	1.47	150	7.48	0.10	0.00	0.00	0.0	0.0
44: 5180	Date:N/A	1.51	150	7.50	0.10	0.00	0.00	0.0	0.0
45: 5181	Date:N/A	1.54	150	7.73	0.10	0.00	0.00	0.0	0.0
46: 5182	Date:N/A	1.49	150	2.95	0.10	2.50	4.20	8.2	14
47: 5183	Date:N/A	1.55	150	7.29	0.10	0.00	0.00	0.0	0.0
48: 5184	Date:N/A	1.50	150	7.48	0.10	0.00	0.00	0.0	0.0
49: 5185	Date:N/A	1.55	150	6.86	0.10	0.00	0.30	0.0	0.9
50: 5186	Date:N/A	1.51	150	7.02	0.10	0.00	0.00	0.0	0.0
51: 5187	Date:N/A	1.51	150	7.52	0.10	0.00	0.00	0.0	0.0
52: 5188	Date:N/A	1.50	150	7.37	0.10	0.00	0.00	0.0	0.0
53: 5189	Date:N/A	1.49	150	7.48	0.10	0.00	0.00	0.0	0.0

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

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NAG Test

LR Report : **CA11050-SEP10**

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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SGS Canada Inc.
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Sunday, October 31, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:pdf

Date Rec. : 07 October 2010
LR Report: **CA10202-OCT10**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample weight(g)	vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH7.0) kg H2SO4/tonne
3: Analysis Approval Date	29-Oct-10	29-Oct-10	29-Oct-10	29-Oct-10	29-Oct-10	29-Oct-10	29-Oct-10	29-Oct-10
4: Analysis Approval Time	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00
5: MR ARD-10-044	2.48	250	2.68	0.10	7.20	10.10	14	20
11-DUP: MR ARD-10-044	2.48	250	4.34	0.10	0.10	0.40	0.2	0.8
17-DUP: MR ARD-10-044	2.48	250	5.20	0.10	0.00	0.10	0.0	0.2
23-DUP: MR ARD-10-044	2.48	250	5.54	0.10	0.00	0.20	0.0	0.4
6: MR ARD-10-080	2.46	250	2.89	0.10	4.10	5.80	8.2	12
12-DUP: MR ARD-10-080	2.46	250	4.27	0.10	0.10	0.40	0.2	0.8
18-DUP: MR ARD-10-080	2.46	250	4.99	0.10	0.00	0.20	0.0	0.4
24-DUP: MR ARD-10-080	2.46	250	5.73	0.10	0.00	0.20	0.0	0.4
7: MR ARD-10-085	2.48	250	2.27	0.10	29.70	46.30	59	92
13-DUP: MR ARD-10-085	2.48	250	2.45	0.10	14.50	19.70	29	39
19-DUP: MR ARD-10-085	2.48	250	3.89	0.10	0.30	0.60	0.6	1.2
25-DUP: MR ARD-10-085	2.48	250	4.50	0.10	0.00	0.20	0.0	0.4
31-DUP: MR ARD-10-085	2.48	250	4.74	0.10	0.00	0.20	0.0	0.4
8: MR ARD-10-068	2.49	250	2.82	0.10	6.40	9.90	13	20
14-DUP: MR ARD-10-068	2.49	250	3.96	0.10	0.40	0.60	0.8	1.2
20-DUP: MR ARD-10-068	2.49	250	4.45	0.10	0.10	0.30	0.2	0.6
26-DUP: MR ARD-10-068	2.49	250	4.89	0.10	0.00	0.20	0.0	0.4
32-DUP: MR ARD-10-068	2.49	250	4.98	0.10	0.00	0.40	0.0	0.8
9: MR ARD-10-116	2.48	250	2.69	0.10	8.30	12.50	16	25
15-DUP: MR ARD-10-116	2.48	250	4.36	0.10	0.20	0.30	0.4	0.6
21-DUP: MR ARD-10-116	2.48	250	5.19	0.10	0.00	0.20	0.0	0.4
27-DUP: MR ARD-10-116	2.48	250	5.72	0.10	0.00	0.20	0.0	0.4
10: MR ARD-10-129	2.47	250	1.91	0.50	12.20	15.10	121	150
16-DUP: MR ARD-10-129	2.47	250	1.96	0.50	8.60	9.90	85	98
22-DUP: MR ARD-10-129	2.47	250	2.33	0.10	9.80	11.40	19	23
28-DUP: MR ARD-10-129	2.47	250	3.57	0.10	0.50	1.00	1.0	2.0
34-DUP: MR ARD-10-129	2.47	250	4.07	0.10	0.20	0.50	0.4	1.0
40-DUP: MR ARD-10-129	2.47	250	4.44	0.10	0.10	0.50	0.2	1.0
46-DUP: MR ARD-10-129	2.47	250	4.75	0.10	0.00	0.30	0.0	0.6
52-DUP: MR ARD-10-129	2.47	250	4.80	0.10	0.00	0.60	0.0	1.2

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LR Report : **CA10202-OCT10**

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
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Environmental Services, Analytical

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APPENDIX C-3

METALS BY AQUA-REGIA EXTRACTION

SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Thursday, September 30, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

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Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:pdf

Date Rec. : 31 August 2010
LR Report: **CA11533-AUG10**

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Final Report

Analysis	39: MR ARD-10-026	40: MR ARD-10-032	41: MR ARD-10-034	42: MR ARD-10-035	43: MR ARD-10-046	44: MR ARD-10-047	45: MR ARD-10-048	46: MR ARD-10-049	47: MR ARD-10-027	48: MR ARD-10-028	49: MR ARD-10-031	50: MR ARD-10-033
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	61000	50000	20000	81000	17000	56000	74000	91000	36000	26000	10000	16000
Arsenic [µg/g]	11	0.7	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.6	16	< 0.5	< 0.5
Barium [µg/g]	28	140	120	1470	320	3.9	1.3	3.9	860	450	69	140
Beryllium [µg/g]	0.69	1.1	0.24	3.3	0.29	0.49	1.6	0.88	1.4	0.86	0.24	0.17
Bismuth [µg/g]	< 0.09	< 0.09	< 0.09	< 0.09	0.14	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Calcium [µg/g]	2700	1100	880	1600	950	2100	110	2200	1100	1600	160	760
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	29	27	6.5	9.1	6.1	25	41	25	17	17	4.6	6.3
Chromium [µg/g]	350	180	92	14	100	500	240	31	220	170	87	67
Copper [µg/g]	33	47	19	5.8	11	2.1	48	2.3	44	24	6.8	5.1
Iron [µg/g]	130000	61000	32000	75000	22000	64000	170000	130000	67000	70000	10000	22000
Potassium [µg/g]	350	17000	4500	34000	10000	160	150	120	4000	4600	6400	8800
Lithium [µg/g]	9	21	7	140	12	2	3	10	12	6	6	8
Magnesium [µg/g]	47000	27000	12000	37000	7500	44000	54000	52000	26000	14000	6000	8500
Manganese [µg/g]	580	830	670	480	420	540	700	2300	770	320	150	380
Molybdenum [µg/g]	2.0	0.8	1.1	0.4	10	0.6	0.7	1.2	1.2	1.3	2.7	1.1
Sodium [µg/g]	93	440	160	800	310	64	63	83	240	220	160	190
Nickel [µg/g]	110	92	7.8	3.5	8.5	190	130	35	63	69	13	7.9

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Lead [µg/g]	3.7	8.3	2.6	12	5.6	1.9	2.3	1.5	4.3	8.9	2.7	3.0
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	1.2	1.5	< 0.5	3.3	1.0	0.9	< 0.5	< 0.5	0.9	< 0.5	0.7	0.7
Strontium [µg/g]	7.8	2.9	2.9	10	9.8	3.3	1.2	3.3	3.4	7.2	3.1	2.9
Titanium [µg/g]	240	1900	350	1700	1100	230	240	180	780	650	110	690
Thallium [µg/g]	0.03	0.41	0.11	0.59	0.47	< 0.02	< 0.02	< 0.02	0.16	0.19	0.20	0.32
Uranium [µg/g]	0.50	0.48	1.4	7.0	1.3	1.2	2.5	3.9	0.47	0.71	3.2	2.0
Vanadium [µg/g]	170	110	8	21	7	91	190	59	170	71	1	6
Zinc [µg/g]	51	55	39	52	40	61	42	68	23	18	16	46

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Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	55000	84000	81000	56000	59000	5400	600	88000	56000	39000	16000	46000
Arsenic [µg/g]	5.4	6.8	8.0	2.1	1.7	2.9	2.6	0.7	63	2.4	2.9	0.6
Barium [µg/g]	6.8	17	15	88	150	5.5	4.3	31	9.4	9.7	2.4	20
Beryllium [µg/g]	0.58	2.7	0.83	0.41	0.73	0.10	0.05	2.4	2.9	1.1	0.52	2.1
Bismuth [µg/g]	0.14	0.34	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.37	0.46	< 0.09	< 0.09
Calcium [µg/g]	800	1700	1400	1000	1100	16000	11000	1800	690	740	820	3100
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	30	29	68	48	31	100	110	85	82	30	6.9	17
Chromium [µg/g]	44	21	770	320	310	530	330	1220	1450	300	17	280
Copper [µg/g]	47	44	44	130	47	6.0	11	40	99	23	1.5	24
Iron [µg/g]	170000	160000	100000	93000	82000	54000	57000	79000	170000	91000	93000	70000
Potassium [µg/g]	83	2000	440	1200	9500	130	39	1300	900	600	470	800
Lithium [µg/g]	13	35	16	14	8	< 2	< 2	22	30	160	14	38
Magnesium [µg/g]	49000	84000	72000	60000	32000	130000	140000	86000	54000	37000	29000	41000
Manganese [µg/g]	1200	1000	3300	2400	2000	1300	960	1800	1300	320	460	480
Molybdenum [µg/g]	2.3	1.5	0.3	0.4	0.6	0.4	0.5	0.5	5.4	0.6	1.2	0.9
Sodium [µg/g]	75	110	100	93	270	74	79	130	220	150	160	210
Nickel [µg/g]	120	140	470	230	170	1950	2410	760	490	82	22	110

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Lead [µg/g]	2.5	3.4	1.6	5.5	2.7	4.4	7.6	2.6	2.9	2.0	1.7	5.1
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	0.8	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	2.9	1.1	2.1	0.8	1.9	< 0.5	< 0.5	1.5	< 0.5	1.3	0.5	< 0.5
Strontium [µg/g]	9.2	4.7	2.0	3.2	6.1	10	22	6.6	4.2	3.9	3.4	21
Titanium [µg/g]	440	910	430	33	1300	89	74	620	91	210	85	180
Thallium [µg/g]	< 0.02	0.05	< 0.02	< 0.02	0.28	< 0.02	< 0.02	0.12	0.08	< 0.02	< 0.02	0.03
Uranium [µg/g]	1.5	1.0	0.24	0.41	0.86	1.3	0.23	0.20	0.55	0.84	0.80	1.9
Vanadium [µg/g]	15	43	140	120	120	15	8	100	52	47	3	65
Zinc [µg/g]	44	57	71	103	46	25	59	47	21	18	12	21

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Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: MR ARD-10-002	6: MR ARD-10-004	7: MR ARD-10-005	8: MR ARD-10-011	9: MR ARD-10-014	10: MR ARD-10-015	11: MR ARD-10-018	12: MR ARD-10-021	13: MR ARD-10-022	14: MR ARD-10-024
Sample Date & Time			Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	29-Sep-10	11:48	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	26-Sep-10	19:46	32000	34000	17000	83000	77000	25000	7900	59000	85000	16000
Arsenic [µg/g]	27-Sep-10	11:17	4.2	0.6	0.7	0.6	0.6	< 0.5	16	0.7	< 0.5	< 0.5
Barium [µg/g]	26-Sep-10	19:13	15	520	99	230	39	160	3.0	330	830	22
Beryllium [µg/g]	26-Sep-10	19:13	0.73	0.32	0.62	2.5	2.8	0.71	0.58	0.74	4.4	0.53
Bismuth [µg/g]	26-Sep-10	19:13	0.13	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Calcium [µg/g]	26-Sep-10	19:49	1300	1700	480	1800	1700	1700	1600	1900	590	260
Cadmium [µg/g]	26-Sep-10	19:13	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	26-Sep-10	19:13	22	7.7	5.3	18	14	6.7	6.8	8.9	15	1.7
Chromium [µg/g]	26-Sep-10	19:13	310	100	120	28	91	91	19	55	80	150
Copper [µg/g]	26-Sep-10	19:13	11	9.3	79	1.8	15	2.8	3.9	12	1.2	5.1
Iron [µg/g]	28-Sep-10	07:54	100000	53000	23000	130000	130000	34000	600000	67000	190000	31000
Potassium [µg/g]	26-Sep-10	19:53	180	18000	8600	10000	4800	6500	130	21000	7300	430
Lithium [µg/g]	26-Sep-10	19:13	12	8	7	36	38	10	3	35	30	9
Magnesium [µg/g]	26-Sep-10	19:55	23000	17000	8300	82000	70000	16000	8000	26000	65000	8100
Manganese [µg/g]	26-Sep-10	19:13	140	130	100	310	1800	330	2600	360	1300	260
Molybdenum [µg/g]	26-Sep-10	19:13	2.1	4.4	2.4	15	8.0	0.5	1.7	13	4.5	3.3
Sodium [µg/g]	27-Sep-10	11:15	78	430	240	280	160	250	120	820	160	180
Nickel [µg/g]	26-Sep-10	19:13	160	14	8.4	85	55	7.5	18	22	56	18

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Lead [µg/g]	26-Sep-10	19:13	2.9	3.7	4.9	2.3	4.6	2.4	1.9	30	11	3.3
Antimony [µg/g]	26-Sep-10	19:13	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	26-Sep-10	19:13	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	26-Sep-10	19:13	1.9	3.7	0.6	3.3	4.6	0.7	0.7	4.2	1.2	2.2
Strontium [µg/g]	26-Sep-10	19:13	4.2	7.5	3.2	6.3	6.8	3.2	3.0	8.7	4.3	2.4
Titanium [µg/g]	26-Sep-10	19:13	330	2000	440	1100	420	690	180	1400	830	190
Thallium [µg/g]	26-Sep-10	19:13	0.04	0.60	0.36	0.21	0.12	0.24	< 0.02	0.67	0.54	0.02
Uranium [µg/g]	26-Sep-10	19:13	1.9	1.5	7.3	1.8	1.3	1.2	0.35	0.62	2.6	2.8
Vanadium [µg/g]	26-Sep-10	19:13	82	32	5	46	53	19	11	83	75	2
Zinc [µg/g]	26-Sep-10	19:13	34	5.7	7.5	22	53	24	7.0	47	81	9.6

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Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Aluminum [µg/g]	89000	66000	33000	38000	72000	46000	36000	55000	89000	45000	61000	44000
Arsenic [µg/g]	0.7	8.4	1.2	0.6	0.6	0.7	1.5	0.8	12	< 0.5	< 0.5	< 0.5
Barium [µg/g]	2.4	5.2	4.9	380	12	0.71	220	2.2	5.8	300	3.1	690
Beryllium [µg/g]	1.3	0.64	1.3	0.69	5.0	1.3	0.49	1.7	3.4	0.37	0.27	0.61
Bismuth [µg/g]	< 0.09	0.59	< 0.09	< 0.09	< 0.09	< 0.09	0.28	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Calcium [µg/g]	16000	2700	1400	810	4000	1000	250	1400	210	18000	2900	1500
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	20	9.7	45	13	27	32	5.1	29	53	23	37	12
Chromium [µg/g]	210	58	610	95	380	470	110	930	48	220	520	77
Copper [µg/g]	1.7	21	38	5.8	129	30	40	2.9	46	57	123	29
Iron [µg/g]	130000	250000	82000	64000	130000	74000	54000	150000	130000	41000	59000	62000
Potassium [µg/g]	160	200	800	18000	440	220	14000	170	800	18000	97	27000
Lithium [µg/g]	3	14	36	12	40	9	7	39	330	20	5	11
Magnesium [µg/g]	73000	63000	40000	16000	67000	41000	17000	59000	40000	26000	55000	18000
Manganese [µg/g]	1000	1900	830	260	1800	490	250	1000	620	680	390	310
Molybdenum [µg/g]	3.1	1.4	0.9	3.4	< 0.1	1.1	2.3	1.1	74	1.1	0.3	2.2
Sodium [µg/g]	87	99	220	420	130	86	390	140	420	480	82	610
Nickel [µg/g]	110	25	440	46	200	160	12	540	180	110	220	15

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LR Report : **CA11533-AUG10**

Analysis	27: MR ARD-10-019	28: MR ARD-10-020	29: MR ARD-10-029	30: MR ARD-10-030	31: MR ARD-10-013	32: MR ARD-10-036	33: MR ARD-10-037	34: MR ARD-10-038	35: MR ARD-10-039	36: MR ARD-10-040	37: MR ARD-10-041	38: MR ARD-10-057
Lead [µg/g]	21	5.6	4.0	15	5.0	1.4	6.2	1.1	2.6	3.7	1.7	15
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	< 0.5	1.6	1.0	0.9	12	< 0.5	1.0	0.7	1.8	1.0	< 0.5	1.5
Strontium [µg/g]	44	9.5	5.7	4.6	30	6.1	2.5	4.9	1.7	12	2.4	4.4
Titanium [µg/g]	190	140	130	1400	110	280	1100	120	880	2200	300	2200
Thallium [µg/g]	< 0.02	0.02	0.08	0.63	< 0.02	< 0.02	0.36	< 0.02	0.23	0.28	< 0.02	0.71
Uranium [µg/g]	7.1	1.3	0.54	1.1	2.1	1.2	1.2	0.94	1.8	0.90	0.72	2.9
Vanadium [µg/g]	120	70	36	17	87	66	16	51	110	110	130	38
Zinc [µg/g]	59	43	14	14	26	48	9.9	31	106	46	50	24

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Thursday, September 30, 2010

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	51: MR ARD-10-043	52: MR ARD-10-045	53: MR ARD-10-103	54: MR ARD-10-044	55: MR ARD-10-100	56: MR ARD-10-102	57: MR ARD-10-104	58: MR ARD-10-105	59: MR ARD-10-106	60: MR ARD-10-107	61: MR ARD-10-108	62: MR ARD-10-109
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	59000	21000	100000	14000	44000	40000	33000	12000	34000	53000	59000	67000
Arsenic [µg/g]	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	9.5	0.7	1.2	< 0.5	8.1
Barium [µg/g]	450	160	15	31	89	130	130	3.6	2.9	31	0.90	0.43
Beryllium [µg/g]	0.71	0.20	5.0	0.18	0.10	0.49	0.89	0.87	0.93	0.70	2.2	0.87
Bismuth [µg/g]	< 0.09	< 0.09	< 0.09	0.24	< 0.09	0.43	< 0.09	0.33	0.68	< 0.09	0.19	0.32
Calcium [µg/g]	1000	940	1900	5100	26000	260	1400	2600	170	1400	4900	2900
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	8.6	7.6	15	31	30	17	10	5.7	16	7.2	24	20
Chromium [µg/g]	55	73	68	670	220	79	76	25	71	92	390	430
Copper [µg/g]	11	11	1.9	52	117	48	6.2	9.4	6.5	8.0	6.4	78
Iron [µg/g]	77000	30000	130000	42000	21000	68000	45000	200000	130000	85000	150000	200000
Potassium [µg/g]	34000	14000	1200	2900	7900	8800	11000	4300	410	1300	180	82
Lithium [µg/g]	17	7	13	11	19	38	19	7	47	11	29	36
Magnesium [µg/g]	25000	8000	89000	8600	13000	27000	19000	23000	27000	38000	59000	74000
Manganese [µg/g]	320	120	5900	340	510	1000	470	1100	1200	510	490	1000
Molybdenum [µg/g]	4.4	15	2.5	0.6	0.2	3.8	1.0	0.9	5.7	1.7	0.3	0.8
Sodium [µg/g]	860	370	110	220	3730	500	250	120	140	100	97	160
Nickel [µg/g]	18	9.4	49	350	120	38	23	6.9	39	15	140	170

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LR Report : **CA11533-AUG10**

Analysis	51: MR ARD-10-043	52: MR ARD-10-045	53: MR ARD-10-103	54: MR ARD-10-044	55: MR ARD-10-100	56: MR ARD-10-102	57: MR ARD-10-104	58: MR ARD-10-105	59: MR ARD-10-106	60: MR ARD-10-107	61: MR ARD-10-108	62: MR ARD-10-109
Lead [µg/g]	16	4.2	1.7	46	0.60	3.0	2.2	3.0	1.4	3.1	4.0	2.3
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	14	3.1	1.4	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	1.0	< 0.7	< 0.7	< 0.7
Tin [µg/g]	1.1	1.3	2.5	0.8	< 0.5	2.3	0.6	0.7	4.8	2.3	2.9	1.0
Strontium [µg/g]	2.9	3.6	3.4	4.8	25	4.7	2.9	14	2.5	6.0	6.4	5.1
Titanium [µg/g]	2100	1300	1400	560	1900	1700	810	100	530	370	650	70
Thallium [µg/g]	1.6	0.41	0.04	0.14	0.09	0.25	0.25	0.04	0.54	0.18	0.05	0.06
Uranium [µg/g]	2.5	1.3	1.5	0.44	0.032	2.5	2.0	0.58	2.1	2.7	3.4	1.2
Vanadium [µg/g]	21	14	77	28	120	48	32	14	44	26	78	73
Zinc [µg/g]	15	21	72	17	23	77	17	9.4	111	48	36	57

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	63: MR ARD-10-092	64: MR ARD-10-093	65: MR ARD-10-094	66: MR ARD-10-095	67: MR ARD-10-096	68: MR ARD-10-098	69: MR ARD-10-099	70: MR ARD-10-101	71: MR ARD-10-080	72: MR ARD-10-085	73: MR ARD-10-087	74: MR ARD-10-088
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	64000	38000	69000	33000	43000	33000	72000	62000	13000	60000	25000	48000
Arsenic [µg/g]	< 0.5	3.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	1.1	< 0.5	< 0.5
Barium [µg/g]	< 0.01	25	0.30	180	75	120	410	4.1	2.8	160	41	45
Beryllium [µg/g]	1.7	3.0	0.57	0.12	0.19	0.13	0.80	0.78	0.48	2.5	0.15	0.25
Bismuth [µg/g]	0.29	< 0.09	0.17	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.49	28	0.18	< 0.09
Calcium [µg/g]	4000	460	3400	17000	3600	16000	1800	3100	3400	1700	31000	7000
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	< 0.2
Cobalt [µg/g]	37	73	48	26	26	24	10	27	12	48	20	28
Chromium [µg/g]	130	350	1090	120	250	120	42	320	19	150	160	150
Copper [µg/g]	2.3	9.6	1.8	134	32	90	1.7	54	8.8	169	69	76
Iron [µg/g]	150000	200000	82000	33000	41000	21000	99000	71000	210000	160000	43000	75000
Potassium [µg/g]	77	210	57	10000	4200	8500	12000	450	410	11000	4400	4600
Lithium [µg/g]	19	150	3	15	42	31	11	15	6	36	41	75
Magnesium [µg/g]	58000	23000	62000	15000	54000	12000	41000	52000	24000	33000	25000	46000
Manganese [µg/g]	460	4000	430	630	560	590	230	710	170	530	1360	1020
Molybdenum [µg/g]	4.8	2.3	1.0	0.3	0.2	0.2	1.1	0.3	39	1.9	1.5	4.2
Sodium [µg/g]	110	130	94	1080	220	2140	210	120	160	270	370	380
Nickel [µg/g]	45	160	240	57	110	66	9.5	94	46	92	62	75

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LR Report : **CA11533-AUG10**

Analysis	63: MR ARD-10-092	64: MR ARD-10-093	65: MR ARD-10-094	66: MR ARD-10-095	67: MR ARD-10-096	68: MR ARD-10-098	69: MR ARD-10-099	70: MR ARD-10-101	71: MR ARD-10-080	72: MR ARD-10-085	73: MR ARD-10-087	74: MR ARD-10-088
Lead [µg/g]	2.1	2.3	2.2	2.2	4.2	1.8	5.0	2.7	3.3	113	4.7	2.2
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	0.9	1.2	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	0.7	< 0.7	< 0.7
Tin [µg/g]	0.5	1.1	0.9	< 0.5	< 0.5	< 0.5	1.4	1.2	1.1	1.2	< 0.5	0.9
Strontium [µg/g]	9.2	3.4	3.9	14	5.4	36	4.6	3.5	8.4	2.8	10	5.1
Titanium [µg/g]	310	290	160	2400	1300	1800	1200	110	53	930	610	1000
Thallium [µg/g]	0.04	0.12	0.02	0.24	0.11	0.19	0.67	< 0.02	0.15	0.89	0.10	0.08
Uranium [µg/g]	1.4	2.2	0.88	0.14	0.044	0.027	3.8	1.8	0.63	0.88	0.070	0.23
Vanadium [µg/g]	94	66	120	160	110	140	70	98	13	130	110	120
Zinc [µg/g]	30	48	50	42	26	26	48	53	12	26	70	41

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	86: MR ARD-10-067	87: MR ARD-10-068	88: MR ARD-10-070	89: MR ARD-10-071	90: MR ARD-10-072	91: MR ARD-10-074	92: MR ARD-10-075	93: MR ARD-10-076	94: MR ARD-10-082	95: MR ARD-10-060	96: MR ARD-10-062	97: MR ARD-10-063
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	61000	92000	22000	68000	71000	31000	40000	56000	1000	62000	87000	85000
Arsenic [µg/g]	< 0.5	7.5	1.9	1.3	< 0.5	2.9	< 0.5	< 0.5	< 0.5	1.5	0.7	2.2
Barium [µg/g]	160	1.8	3.5	0.08	< 0.01	420	19	73	0.22	410	2.9	0.58
Beryllium [µg/g]	0.83	0.60	1.2	3.1	2.4	1.1	10	1.1	0.16	0.76	0.69	0.82
Bismuth [µg/g]	< 0.09	0.33	< 0.09	< 0.09	< 0.09	0.58	< 0.09	< 0.09	< 0.09	0.14	0.11	3.3
Calcium [µg/g]	800	46	1200	1600	1400	1500	260	7800	15000	640	6500	1200
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.6	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	53	19	12	39	37	14	16	31	1.1	91	25	27
Chromium [µg/g]	1070	49	48	920	1260	130	52	190	93	950	530	110
Copper [µg/g]	111	30	2.1	37	15	22	0.8	70	7.7	131	4.8	2.1
Iron [µg/g]	61000	190000	340000	160000	170000	99000	74000	85000	96000	87000	135000	148000
Potassium [µg/g]	13000	69	110	110	82	11000	1600	8900	110	2900	47	63
Lithium [µg/g]	31	< 2	18	47	47	13	26	54	< 2	26	6	24
Magnesium [µg/g]	45000	60000	20000	76000	82000	15000	36000	51000	4500	40000	58000	93000
Manganese [µg/g]	330	860	490	1900	1500	400	510	800	1190	590	570	190
Molybdenum [µg/g]	0.6	6.1	1.2	1.5	1.0	25	0.3	0.6	0.5	0.5	0.3	7.0
Sodium [µg/g]	270	78	84	130	150	310	130	420	160	170	71	100
Nickel [µg/g]	610	53	47	550	430	37	27	110	6.8	1040	93	210

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LR Report : **CA11533-AUG10**

Analysis	86: MR ARD-10-067	87: MR ARD-10-068	88: MR ARD-10-070	89: MR ARD-10-071	90: MR ARD-10-072	91: MR ARD-10-074	92: MR ARD-10-075	93: MR ARD-10-076	94: MR ARD-10-082	95: MR ARD-10-060	96: MR ARD-10-062	97: MR ARD-10-063
Lead [µg/g]	3.0	3.9	1.5	1.7	1.4	5.7	1.4	5.2	1.5	1.9	2.4	9.0
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	0.6	< 0.5	< 0.5	1.0	1.3	1.4	< 0.5	< 0.5	0.7	0.9	< 0.5	0.6
Strontium [µg/g]	4.5	0.59	3.4	4.7	4.7	7.3	4.3	7.2	4.4	1.3	15	4.4
Titanium [µg/g]	790	300	270	68	68	1100	780	1500	59	250	200	37
Thallium [µg/g]	0.14	0.03	0.03	< 0.02	< 0.02	0.41	0.04	0.13	< 0.02	0.11	0.08	0.04
Uranium [µg/g]	0.020	3.4	0.52	0.85	1.8	2.5	3.9	0.099	0.085	0.24	1.2	0.79
Vanadium [µg/g]	110	45	28	62	64	28	51	150	25	100	140	99
Zinc [µg/g]	19	81	15	45	50	32	19	88	3.8	47	37	44

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	109: MR ARD-10-059	110: MR ARD-10-61	111: MR ARD-10-053	112: MR ARD-10-054	113: MR ARD-10-119	114: MR ARD-10-120	115: MR ARD-10-121	116: MR ARD-10-122	117: MR ARD-10-123
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	24000	71000	16000	26000	66000	7400	46000	50000	88000
Arsenic [µg/g]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.8	< 0.5	0.6	0.5
Barium [µg/g]	65	6.6	9.6	5.6	690	7.3	1000	0.64	510
Beryllium [µg/g]	0.09	0.87	0.07	0.06	0.40	0.33	0.44	0.57	1.5
Bismuth [µg/g]	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.16	< 0.09	0.57	0.20
Calcium [µg/g]	5000	5200	14000	11000	4100	330	2100	5000	3700
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.4
Cobalt [µg/g]	23	25	13	18	48	14	11	25	17
Chromium [µg/g]	130	580	73	150	250	38	83	200	17
Copper [µg/g]	106	2.9	115	130	145	4.5	4.8	80	31
Iron [µg/g]	22000	91000	17000	22000	77000	607000	65000	68000	134000
Potassium [µg/g]	5500	130	1800	1300	19000	140	26000	65	40000
Lithium [µg/g]	21	6	14	43	64	6	8	5	18
Magnesium [µg/g]	22000	55000	7300	23000	37000	8700	23000	49000	44000
Manganese [µg/g]	270	560	440	630	370	460	280	540	380
Molybdenum [µg/g]	0.2	0.3	0.1	0.2	0.2	3.6	0.5	4.5	1.7
Sodium [µg/g]	1260	95	910	1430	380	71	630	70	840
Nickel [µg/g]	66	150	36	53	140	20	8.0	55	6.0

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LR Report : **CA11533-AUG10**

Analysis	109: MR ARD-10-059	110: MR ARD-10-61	111: MR ARD-10-053	112: MR ARD-10-054	113: MR ARD-10-119	114: MR ARD-10-120	115: MR ARD-10-121	116: MR ARD-10-122	117: MR ARD-10-123
Lead [µg/g]	0.42	1.7	1.6	14	1.7	1.5	13	2.5	29
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	14	3.2
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	2.6	< 0.7	1.4	< 0.7
Tin [µg/g]	< 0.5	< 0.5	< 0.5	0.6	2.1	< 0.5	4.6	4.6	5.0
Strontium [µg/g]	9.3	12	13	13	14	1.1	6.3	12	5.7
Titanium [µg/g]	1300	270	730	430	980	190	2500	270	3500
Thallium [µg/g]	0.10	0.03	0.06	0.03	0.25	< 0.02	0.58	0.50	1.5
Uranium [µg/g]	0.046	1.2	0.066	0.066	0.022	0.59	2.6	2.2	3.3
Vanadium [µg/g]	120	120	43	120	180	28	140	58	160
Zinc [µg/g]	23	45	20	39	60	9.9	7.7	44	21

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Thursday, September 30, 2010

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	75: MR ARD-10-089	76: MR ARD-10-090	77: MR ARD-10-091	78: MR ARD-10-097	79: MR ARD-10-077	80: MR ARD-10-078	81: MR ARD-10-079	82: MR ARD-10-081	83: MR ARD-10-083	84: MR ARD-10-084	85: MR ARD-10-086
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	53000	35000	38000	18000	49000	64000	38000	28000	14000	47000	65000
Arsenic [µg/g]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Barium [µg/g]	74	190	5.7	16	1200	530	53	160	16	74	330
Beryllium [µg/g]	0.27	1.00	3.2	0.15	0.95	0.31	0.07	1.2	0.15	0.19	1.2
Bismuth [µg/g]	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Calcium [µg/g]	6200	3900	210	11000	2200	1100	40000	640	8600	1800	900
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	57	5.7	22	17	18	45	16	9.9	18	38	65
Chromium [µg/g]	290	53	61	110	60	240	88	74	89	440	650
Copper [µg/g]	58	1.2	0.9	98	2.5	97	105	1.6	77	65	26
Iron [µg/g]	66000	36000	71000	17000	61000	78000	11000	35000	21000	56000	71000
Potassium [µg/g]	10000	22000	1500	2400	28000	16000	2200	11000	2400	7200	8200
Lithium [µg/g]	47	13	18	24	15	49	8	11	14	34	38
Magnesium [µg/g]	67000	19000	34000	10000	25000	38000	5200	15000	12000	38000	51000
Manganese [µg/g]	880	310	320	360	230	340	510	320	680	410	290
Molybdenum [µg/g]	0.6	44	0.5	0.4	3.0	0.4	0.1	2.0	0.3	0.4	1.2
Sodium [µg/g]	210	580	180	1400	620	280	3230	300	870	270	270
Nickel [µg/g]	360	7.3	40	48	10	120	76	14	61	230	530

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LR Report : **CA11533-AUG10**

Analysis	75: MR ARD-10-089	76: MR ARD-10-090	77: MR ARD-10-091	78: MR ARD-10-097	79: MR ARD-10-077	80: MR ARD-10-078	81: MR ARD-10-079	82: MR ARD-10-081	83: MR ARD-10-083	84: MR ARD-10-084	85: MR ARD-10-086
Lead [µg/g]	1.1	14	1.3	5.8	12	1.8	1.6	2.8	0.63	0.45	5.1
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	0.5	1.2	< 0.5	1.3	2.5	0.8	1.0	0.8	< 0.5	0.7	1.0
Strontium [µg/g]	8.8	5.5	0.69	15	6.7	6.3	49	3.7	8.5	3.5	5.3
Titanium [µg/g]	890	950	990	1400	2600	860	990	700	1200	870	450
Thallium [µg/g]	0.16	0.97	0.05	0.05	1.1	0.23	0.07	0.42	0.04	0.08	0.10
Uranium [µg/g]	0.074	5.8	4.3	0.10	1.8	0.028	0.069	1.7	0.36	0.016	0.026
Vanadium [µg/g]	150	7	65	75	150	190	43	21	59	150	130
Zinc [µg/g]	41	32	25	29	44	52	10	22	19	41	30

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Thursday, September 30, 2010

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	98: MR ARD-10-064	99: MR ARD-10-065	100: MR ARD-10-066	101: MR ARD-10-069	102: MR ARD-10-073	103: MR ARD-10-042	104: MR ARD-10-050	105: MR ARD-10-052	106: MR ARD-10-055	107: MR ARD-10-056	108: MR ARD-10-058
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	78000	14000	71000	4300	71000	44000	34000	18000	23000	100000	47000
Arsenic [µg/g]	< 0.5	1.4	< 0.5	49	< 0.5	< 0.5	1.5	< 0.5	1.2	< 0.5	< 0.5
Barium [µg/g]	5.8	8.0	200	1.4	3.7	420	8.6	25	180	5.6	960
Beryllium [µg/g]	1.2	1.8	0.62	0.27	1.8	0.13	0.33	0.06	0.66	0.68	0.35
Bismuth [µg/g]	0.24	< 0.09	< 0.09	0.33	< 0.09	< 0.09	0.38	0.12	< 0.09	0.18	0.11
Calcium [µg/g]	1500	1800	850	270	4500	22000	3400	10000	1500	1800	1900
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	2.2	0.4	3.0	< 0.2	< 0.2
Cobalt [µg/g]	31	29	85	20	30	33	19	27	28	33	18
Chromium [µg/g]	170	33	1500	66	280	260	170	110	75	180	59
Copper [µg/g]	7.4	0.5	37	5.2	1.5	55	6.9	92	30	0.6	70
Iron [µg/g]	150000	503000	121000	417000	160000	58000	328000	31000	28000	140000	63000
Potassium [µg/g]	490	900	4800	90	270	16000	310	1600	12000	230	29000
Lithium [µg/g]	39	18	25	10	67	23	9	13	10	7	5
Magnesium [µg/g]	63000	13000	55000	1600	54000	21000	21000	8800	12000	62000	21000
Manganese [µg/g]	310	590	380	2560	550	1230	460	960	280	730	170
Molybdenum [µg/g]	3.8	0.3	0.5	30	0.5	0.5	2.4	0.9	16	9.2	1.0
Sodium [µg/g]	87	140	220	130	300	1370	140	1290	290	71	750
Nickel [µg/g]	130	35	750	30	120	130	410	88	50	88	17

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LR Report : **CA11533-AUG10**

Analysis	98: MR ARD-10-064	99: MR ARD-10-065	100: MR ARD-10-066	101: MR ARD-10-069	102: MR ARD-10-073	103: MR ARD-10-042	104: MR ARD-10-050	105: MR ARD-10-052	106: MR ARD-10-055	107: MR ARD-10-056	108: MR ARD-10-058
Lead [µg/g]	2.1	1.8	4.1	3.9	2.6	0.85	1.4	3.3	16	0.76	32
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	1.4	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	1.4	< 0.5	2.4	1.0	1.8	1.3	2.2	1.0	0.7	0.6	3.0
Strontium [µg/g]	15	6.4	6.5	1.8	11	12	7.5	11	3.2	3.4	8.4
Titanium [µg/g]	76	180	380	110	490	2900	120	870	1400	130	2600
Thallium [µg/g]	1.5	0.04	0.06	0.04	0.02	0.26	0.52	0.27	1.3	0.08	0.71
Uranium [µg/g]	1.00	8.2	0.078	0.39	1.6	0.077	3.2	0.29	5.2	0.46	1.4
Vanadium [µg/g]	62	16	120	9	92	180	97	79	31	190	140
Zinc [µg/g]	99	18	31	4.3	58	45	38	80	722	63	9.3

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Thursday, September 30, 2010

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	118: MR ARD-10-110	119: MR ARD-10-111	120: MR ARD-10-112	121: MR ARD-10-116	122: MR ARD-10-051	123: MR ARD-10-113	124: MR ARD-10-114	125: MR ARD-10-115	126: MR ARD-10-117
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	21000	82000	20000	73000	31000	10	17000	48000	45000
Arsenic [µg/g]	< 0.5	< 0.5	0.7	< 0.5	1.0	1.7	< 0.5	< 0.5	< 0.5
Barium [µg/g]	110	1300	27	510	12	0.51	96	470	100
Beryllium [µg/g]	0.72	1.1	0.06	1.1	0.16	0.08	0.47	1.9	0.12
Bismuth [µg/g]	< 0.09	< 0.09	< 0.09	0.19	0.46	0.13	< 0.09	< 0.09	< 0.09
Calcium [µg/g]	1000	210	36000	12000	34000	25	2200	2000	1200
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	0.5	0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	5.5	42	13	55	23	0.25	7.6	7.8	40
Chromium [µg/g]	95	170	54	74	75	< 0.5	130	75	230
Copper [µg/g]	5.1	75	111	33	98	0.1	51	2.8	141
Iron [µg/g]	28000	88000	20000	155000	51000	33	26000	42000	56000
Potassium [µg/g]	7300	15000	3000	31000	1000	< 1	7400	23000	15000
Lithium [µg/g]	8	21	37	17	75	< 2	8	24	35
Magnesium [µg/g]	12000	51000	16000	19000	38000	19	8000	31000	25000
Manganese [µg/g]	280	510	940	140	950	2.3	180	300	220
Molybdenum [µg/g]	2.1	0.2	0.2	18	1.8	0.5	12	1.1	0.6
Sodium [µg/g]	250	340	510	550	380	9	240	630	390
Nickel [µg/g]	8.6	170	35	70	48	< 0.1	16	7.3	120

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LR Report : **CA11533-AUG10**

Analysis	118: MR ARD-10-110	119: MR ARD-10-111	120: MR ARD-10-112	121: MR ARD-10-116	122: MR ARD-10-051	123: MR ARD-10-113	124: MR ARD-10-114	125: MR ARD-10-115	126: MR ARD-10-117
Lead [µg/g]	2.3	7.2	0.52	15	18	0.40	3.7	4.7	0.91
Antimony [µg/g]	1.3	< 0.8	< 0.8	< 0.8	1.7	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	1.1	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	0.9	1.2	< 0.5	1.9	2.1	< 0.5	0.6	1.7	0.7
Strontium [µg/g]	8.1	1.9	16	35	14	0.22	4.7	6.8	11
Titanium [µg/g]	640	1100	820	1700	1200	< 0.1	410	1800	1200
Thallium [µg/g]	0.21	0.35	0.06	1.6	0.63	0.27	0.27	0.68	0.20
Uranium [µg/g]	2.0	0.058	0.034	2.6	0.59	0.22	2.1	1.5	0.047
Vanadium [µg/g]	11	180	56	28	130	1	7	38	210
Zinc [µg/g]	16	60	20	26	38	< 0.7	18	41	23

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	127: MR ARD-10-118	128: MR ARD-10-124	129: MR ARD-10-125	130: MR ARD-10-126	131: MR ARD-10-127	132: MR ARD-10-128	133: MR ARD-10-129	134: MR ARD-10-130	135: MR ARD-10-131
Sample Date & Time	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA	Date:NA
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	81000	38000	21000	84000	116000	41000	29000	25000	7100
Arsenic [µg/g]	< 0.5	< 0.5	< 0.5	6.9	< 0.5	3.5	154	1.2	27
Barium [µg/g]	4.2	18	260	31	560	5.9	2.1	56	1.6
Beryllium [µg/g]	1.1	2.4	1.1	3.5	1.3	1.7	0.86	0.12	0.44
Bismuth [µg/g]	< 0.09	< 0.09	< 0.09	0.17	< 0.09	0.10	1.0	< 0.09	< 0.09
Calcium [µg/g]	150	260	920	810	2500	1300	350	7400	1800
Cadmium [µg/g]	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cobalt [µg/g]	43	7.8	7.8	44	67	26	72	21	10.0
Chromium [µg/g]	730	150	85	130	580	600	170	120	40
Copper [µg/g]	8.0	0.9	2.3	29	94	29	207	165	31
Iron [µg/g]	132000	74000	21000	216000	145000	98000	225000	33000	6900
Potassium [µg/g]	73	3300	12000	600	10000	240	100	5000	190
Lithium [µg/g]	< 2	52	15	370	32	32	70	39	5
Magnesium [µg/g]	70000	28000	11000	46000	110000	35000	2800	24000	20000
Manganese [µg/g]	940	420	150	630	850	600	570	590	32000
Molybdenum [µg/g]	0.2	0.1	0.7	0.8	0.8	1.2	177	1.7	56
Sodium [µg/g]	89	290	350	170	350	170	250	250	69
Nickel [µg/g]	290	26	8.8	200	310	320	170	59	25

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11533-AUG10**

Analysis	127: MR ARD-10-118	128: MR ARD-10-124	129: MR ARD-10-125	130: MR ARD-10-126	131: MR ARD-10-127	132: MR ARD-10-128	133: MR ARD-10-129	134: MR ARD-10-130	135: MR ARD-10-131
Lead [µg/g]	2.2	2.5	6.5	5.7	3.6	3.6	29	1.0	1.2
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	1.0	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	8.9	< 0.7	< 0.7
Tin [µg/g]	< 0.5	< 0.5	0.6	1.5	1.0	0.9	1.9	2.0	1.2
Strontium [µg/g]	1.8	5.6	6.0	7.9	3.6	11	3.5	12	1.9
Titanium [µg/g]	230	690	850	750	1000	150	310	1200	190
Thallium [µg/g]	0.05	0.07	0.48	0.04	0.19	< 0.02	0.67	0.09	0.03
Uranium [µg/g]	2.4	5.6	3.6	3.9	0.89	1.2	1.4	0.031	0.39
Vanadium [µg/g]	110	48	10	55	150	64	120	140	24
Zinc [µg/g]	96	13	27	143	73	20	8.8	16	13

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Project Specialist
Environmental Services, Analytical

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Friday, October 08, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

1016-120 Adelaide Street West, Toronto, ON
Canada, M5H 1T1
Phone: 416-364-8820, Fax:pdf

Date Rec. : 16 September 2010
LR Report: **CA11051-SEP10**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 5141	6: 5142	7: 5143	8: 5144	9: 5145	10: 5146	11: 5147	12: 5148	13: 5149	14: 5150
Sample Date & Time			Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Mercury [µg/g]	06-Oct-10	08:00	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	06-Oct-10	13:05	43000	29000	25000	28000	31000	75000	18000	23000	16000	33000
Arsenic [µg/g]	06-Oct-10	09:57	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Barium [µg/g]	06-Oct-10	09:57	250	150	140	150	130	540	110	140	170	350
Beryllium [µg/g]	06-Oct-10	09:57	0.95	0.18	0.20	0.24	0.23	0.37	0.27	0.23	0.17	0.60
Bismuth [µg/g]	06-Oct-10	09:57	0.14	0.12	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.13	3.9	3.1
Calcium [µg/g]	06-Oct-10	13:06	3100	2900	2000	2000	2300	2200	1400	2100	1500	3600
Cadmium [µg/g]	06-Oct-10	09:57	0.06	0.30	0.07	0.03	0.06	0.03	0.18	0.20	6.0	0.17
Cobalt [µg/g]	06-Oct-10	09:57	26	10	11	11	11	28	6.8	8.8	6.9	24
Chromium [µg/g]	06-Oct-10	09:57	130	60	57	72	67	180	77	88	89	260
Copper [µg/g]	06-Oct-10	09:57	79	35	19	6.2	13	11	25	36	100	66
Iron [µg/g]	06-Oct-10	13:07	67000	48000	36000	40000	42000	89000	23000	28000	26000	41000
Potassium [µg/g]	06-Oct-10	13:08	18000	23000	20000	21000	24000	60000	14000	17000	13000	21000
Lithium [µg/g]	06-Oct-10	09:57	52	32	31	33	35	49	20	24	19	49
Magnesium [µg/g]	06-Oct-10	13:09	34000	13000	13000	15000	21000	57000	10000	15000	11000	34000
Manganese [µg/g]	06-Oct-10	09:57	820	500	360	490	570	810	530	520	650	550
Molybdenum [µg/g]	06-Oct-10	09:57	1.9	4.5	1.9	0.3	2.6	31	3.9	0.7	1.3	2.9
Sodium [µg/g]	07-Oct-10	12:29	410	420	430	430	590	650	570	450	560	430
Nickel [µg/g]	06-Oct-10	09:57	64	5.7	8.9	9.3	18	70	6.7	8.2	7.1	110

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LR Report : **CA11051-SEP10**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 5141	6: 5142	7: 5143	8: 5144	9: 5145	10: 5146	11: 5147	12: 5148	13: 5149	14: 5150
Lead [µg/g]	06-Oct-10	09:57	6.8	19	5.4	3.5	3.4	4.7	6.9	9.4	39	3.7
Antimony [µg/g]	06-Oct-10	09:57	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	06-Oct-10	09:57	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Tin [µg/g]	06-Oct-10	09:57	2.2	3.5	1.6	2.6	1.9	1.2	1.8	7.2	3.9	2.7
Strontium [µg/g]	06-Oct-10	09:57	4.1	4.4	4.9	4.1	5.4	4.0	7.8	6.5	8.0	7.1
Titanium [µg/g]	06-Oct-10	13:11	4400	4700	3700	3700	3800	6300	2000	2000	2000	3300
Thallium [µg/g]	06-Oct-10	09:57	0.48	0.69	0.59	0.60	0.78	1.6	0.54	0.51	0.70	1.0
Uranium [µg/g]	06-Oct-10	09:57	3.0	7.1	2.2	1.8	1.4	0.47	4.2	6.7	4.8	2.3
Vanadium [µg/g]	06-Oct-10	09:57	140	24	66	69	73	170	26	43	21	98
Zinc [µg/g]	06-Oct-10	09:57	93	100	61	69	68	170	65	97	350	120

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	**15: 5151**	**16: 5152**	**17: 5153**	**18: 5154**	**19: 5155**	**20: 5156**	**21: 5157**	**22: 5158**	**23: 5159**	**24: 5160**	**25: 5161**	**26: 5162**	**27: 5163**
Sample Date & Time	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	40000	29000	49000	20000	16000	23000	21000	29000	35000	17000	26000	19000	25000
Arsenic [µg/g]	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Barium [µg/g]	650	450	370	250	83	250	450	390	680	130	95	120	120
Beryllium [µg/g]	0.43	0.30	0.96	0.12	0.56	0.25	0.21	0.24	0.19	0.95	0.12	0.14	0.16
Bismuth [µg/g]	0.73	0.34	4.2	0.70	0.71	0.17	0.12	0.22	0.18	1.3	< 0.09	< 0.09	< 0.09
Calcium [µg/g]	4900	1400	3700	2300	1100	3200	3800	4900	3400	8200	2100	1700	1500
Cadmium [µg/g]	1.1	2.1	0.56	0.14	0.26	0.27	0.13	0.10	0.40	0.08	0.06	0.09	0.04
Cobalt [µg/g]	23	11	24	7.0	4.3	8.3	9.3	8.4	9.1	6.1	11	7.1	8.8
Chromium [µg/g]	310	74	100	75	110	72	83	58	58	87	70	63	60
Copper [µg/g]	150	260	170	20	12	15	28	26	48	12	9.0	3.3	2.9
Iron [µg/g]	49000	41000	65000	31000	21000	41000	36000	49000	58000	26000	36000	26000	35000
Potassium [µg/g]	30000	22000	23000	15000	10000	18000	16000	23000	27000	13000	22000	16000	21000
Lithium [µg/g]	43	32	69	22	31	24	25	27	30	28	30	26	35
Magnesium [µg/g]	33000	16000	42000	9300	10000	12000	12000	14000	17000	10000	15000	10000	14000
Manganese [µg/g]	550	490	880	460	400	560	770	790	800	510	570	460	520
Molybdenum [µg/g]	0.8	2.1	6.3	37	6.2	47	2.0	8.7	1.7	1.4	0.4	0.4	0.5
Sodium [µg/g]	640	590	340	730	490	620	680	740	540	430	430	390	370
Nickel [µg/g]	110	7.4	40	4.9	5.6	5.0	7.0	4.7	7.8	8.1	17	7.4	8.3

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LR Report : **CA11051-SEP10**

Analysis	15: 5151	16: 5152	17: 5153	18: 5154	19: 5155	20: 5156	21: 5157	22: 5158	23: 5159	24: 5160	25: 5161	26: 5162	27: 5163
Lead [µg/g]	7.6	21	120	4.2	28	3.4	5.2	8.0	13	4.7	5.8	6.9	6.1
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	0.9	< 0.7	< 0.7	0.7	< 0.7	0.8	< 0.7
Tin [µg/g]	5.1	11	6.0	2.5	1.6	2.6	1.0	1.5	4.3	2.4	1.6	1.4	2.0
Strontium [µg/g]	12	5.6	6.0	6.2	4.3	6.7	8.5	11	8.2	15	4.7	3.7	3.9
Titanium [µg/g]	3800	2600	4800	2800	1400	3700	2900	4700	4700	2000	3900	2900	3300
Thallium [µg/g]	1.3	0.86	0.74	0.47	0.33	0.62	0.54	0.61	0.82	0.48	0.70	0.52	0.72
Uranium [µg/g]	2.7	7.1	2.6	2.1	2.2	2.4	1.6	4.8	5.6	1.5	1.8	2.6	3.1
Vanadium [µg/g]	73	34	100	33	19	38	26	20	35	23	73	56	53
Zinc [µg/g]	230	270	270	71	100	95	67	78	110	56	68	50	60

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	28: 5164	29: 5165	30: 5166	31: 5167	32: 5168	33: 5169	34: 5170	35: 5171	36: 5172	37: 5173	38: 5174	39: 5175	40: 5176
Sample Date & Time	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aluminum [µg/g]	20000	6200	30000	21000	25000	8900	18000	9300	7500	15000	6700	20000	92000
Arsenic [µg/g]	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	0.7	0.6	0.7	0.5	0.6	< 0.5	0.8
Barium [µg/g]	130	41	170	190	170	52	93	67	78	70	38	79	95
Beryllium [µg/g]	0.16	0.62	0.27	0.23	0.49	0.21	0.54	0.34	0.84	0.31	0.45	2.3	2.4
Bismuth [µg/g]	< 0.09	0.23	< 0.09	< 0.09	0.09	0.12	0.34	0.49	0.76	< 0.09	< 0.09	< 0.09	0.09
Calcium [µg/g]	1300	6700	4700	3700	3400	1200	11000	2100	3200	10000	71	230	3400
Cadmium [µg/g]	0.07	0.06	0.22	0.05	0.05	2.9	0.45	0.15	0.22	0.10	0.28	0.20	0.25
Cobalt [µg/g]	7.2	2.1	9.2	7.6	9.2	4.6	21	5.1	3.5	15	2.7	4.3	34
Chromium [µg/g]	80	78	65	67	69	96	390	67	120	370	140	110	700
Copper [µg/g]	6.8	7.1	21	24	14	41	110	92	43	34	17	7.7	13
Iron [µg/g]	29000	7200	47000	30000	36000	13000	26000	20000	16000	23000	8200	16000	94000
Potassium [µg/g]	16000	3300	23000	16000	21000	6600	15000	7700	5000	13000	3200	9000	37000
Lithium [µg/g]	30	9	35	24	32	9	27	20	17	34	6	16	35
Magnesium [µg/g]	10000	4900	16000	14000	17000	6100	17000	6500	4500	14000	3600	16000	86000
Manganese [µg/g]	430	370	760	590	690	200	290	360	330	260	110	320	860
Molybdenum [µg/g]	1.5	0.4	1.5	0.4	6.6	0.7	1.1	0.2	0.7	1.3	1.9	0.4	0.7
Sodium [µg/g]	450	290	510	660	570	790	340	350	650	430	80	140	570
Nickel [µg/g]	7.1	4.0	9.4	7.9	7.7	4.8	100	4.0	5.1	65	5.7	6.6	150

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LR Report : **CA11051-SEP10**

Analysis	28: 5164	29: 5165	30: 5166	31: 5167	32: 5168	33: 5169	34: 5170	35: 5171	36: 5172	37: 5173	38: 5174	39: 5175	40: 5176
Lead [µg/g]	3.7	18	7.4	9.3	8.0	52	55	20	24	7.0	55	11	13
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	0.9	< 0.7	< 0.7	< 0.7	0.8	0.8	0.9	1.2	0.8	1.0	1.1	< 0.7
Tin [µg/g]	0.5	< 0.5	1.2	0.9	1.7	1.2	0.7	1.0	1.7	< 0.5	< 0.5	< 0.5	1.6
Strontium [µg/g]	3.3	13	9.9	13	9.3	14	36	13	18	26	1.6	2.2	3.9
Titanium [µg/g]	2700	670	4300	2700	3300	1100	2500	930	830	2500	65	220	3100
Thallium [µg/g]	0.55	0.16	0.64	0.60	0.74	0.26	0.94	0.40	0.20	0.76	0.08	0.30	1.4
Uranium [µg/g]	0.64	0.78	3.1	1.9	2.7	7.6	3.9	8.1	8.4	2.1	8.3	12	3.2
Vanadium [µg/g]	24	4	29	62	63	13	58	11	6	63	23	27	83
Zinc [µg/g]	49	18	74	69	61	67	36	26	17	29	30	30	170

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Final Report

Analysis	41: 5177	42: 5178	43: 5179	44: 5180	45: 5181	46: 5182	47: 5183	48: 5184	49: 5185	50: 5186	51: 5187	52: 5188	53: 5189
Sample Date & Time	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A	Date:N/A
Mercury [µg/g]	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Aluminum [µg/g]	80000	71000	55000	73000	84000	33000	33000	59000	37000	37000	47000	28000	70000
Arsenic [µg/g]	13	0.9	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Barium [µg/g]	67	2.6	160	270	490	220	260	560	220	270	280	150	700
Beryllium [µg/g]	3.6	0.63	5.1	3.3	3.2	0.90	0.72	1.0	0.57	1.0	1.5	0.52	0.89
Bismuth [µg/g]	< 0.09	0.09	0.10	< 0.09	< 0.09	0.24	< 0.09	< 0.09	0.14	0.16	< 0.09	< 0.09	0.12
Calcium [µg/g]	4000	5900	880	1800	3100	2900	1100	3500	5400	16000	1700	2700	3300
Cadmium [µg/g]	2.6	0.26	0.03	< 0.02	0.02	0.39	0.10	< 0.02	0.03	0.04	< 0.02	0.10	< 0.02
Cobalt [µg/g]	36	73	10	6.4	14	22	21	20	21	16	22	15	24
Chromium [µg/g]	780	2200	100	17	34	82	64	69	49	67	27	74	47
Copper [µg/g]	8.0	67	1.9	0.7	7.6	200	29	1.5	36	29	2.4	26	22
Iron [µg/g]	91000	77000	38000	31000	55000	49000	37000	57000	50000	45000	53000	33000	69000
Potassium [µg/g]	25000	440	21000	35000	43000	21000	22000	38000	20000	15000	25000	16000	45000
Lithium [µg/g]	26	7	52	92	81	23	26	28	24	22	25	15	33
Magnesium [µg/g]	86000	74000	45000	57000	56000	19000	21000	38000	23000	17000	30000	18000	44000
Manganese [µg/g]	280	430	490	440	420	290	340	530	410	410	320	270	570
Molybdenum [µg/g]	53	0.9	2.1	0.8	0.6	0.3	0.3	2.1	0.2	0.2	0.1	0.6	1.3
Sodium [µg/g]	540	30	390	630	760	300	390	730	370	450	430	330	890
Nickel [µg/g]	180	620	26	4.9	23	16	35	38	8.8	13	33	17	30

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LR Report : **CA11051-SEP10**

Analysis	41: 5177	42: 5178	43: 5179	44: 5180	45: 5181	46: 5182	47: 5183	48: 5184	49: 5185	50: 5186	51: 5187	52: 5188	53: 5189
Lead [µg/g]	12	27	14	12	26	18	15	11	5.9	9.7	5.1	12	10
Antimony [µg/g]	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Selenium [µg/g]	< 0.7	0.8	0.7	< 0.7	< 0.7	1.4	1.0	< 0.7	< 0.7	1.3	0.7	1.3	0.8
Tin [µg/g]	1.3	< 0.5	1.3	1.5	1.8	0.6	0.7	1.8	0.8	1.0	1.0	< 0.5	1.5
Strontium [µg/g]	5.2	3.9	4.3	15	14	3.6	3.3	7.2	6.1	15	3.4	2.6	5.3
Titanium [µg/g]	3700	380	840	440	2500	2400	2800	4100	3600	2800	2700	2200	4700
Thallium [µg/g]	0.94	0.21	0.61	0.73	0.90	0.73	0.77	1.1	0.73	0.56	0.72	0.53	1.3
Uranium [µg/g]	1.9	1.8	15	8.2	2.9	2.7	3.7	4.7	3.5	2.7	2.7	1.9	3.5
Vanadium [µg/g]	140	91	27	31	79	62	120	150	48	64	170	38	140
Zinc [µg/g]	450	100	42	46	58	62	63	75	66	53	74	48	80

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APPENDIX C-4

SHAKE FLASK EXTRACTION RESULTS

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Wednesday, November 17, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

Date Rec. : 26 October 2010
LR Report: **CA11386-OCT10**

Copy: #1

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:pdf

CERTIFICATE OF ANALYSIS

Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 5164	6: 5171	7: MR ARD 10-019	8: 5145	9: 5169	10: 5181	11: 5153	12: MR ARD 10-077	13: MR ARD 10-079
Sample Date & Time			Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A
Sample [weight(g)]	12-Nov-10	09:39	250	250	250	250	250	250	250	250	250
Volume mL [D.I. H2O]	12-Nov-10	09:39	750	750	750	750	750	750	750	750	750
InitialpH [units]	12-Nov-10	09:39	9.20	9.68	7.80	9.20	9.58	8.91	9.18	8.52	9.74
Final pH [units]	12-Nov-10	09:39	9.87	9.57	8.74	9.78	9.71	9.47	9.76	9.64	9.73
Mercury [mg/L]	16-Nov-10	15:31	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aluminum [mg/L]	16-Nov-10	15:32	1.50	0.62	0.12	1.24	0.82	0.65	0.43	2.70	0.87
Arsenic [mg/L]	17-Nov-10	13:05	0.0012	0.0016	0.0010	< 0.0002	0.0042	0.0004	< 0.0002	0.0003	0.0003
Barium [mg/L]	17-Nov-10	13:05	0.00231	0.00272	0.00506	0.00111	0.00174	0.00119	0.00265	0.0136	0.00209
Beryllium [mg/L]	17-Nov-10	13:05	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00004	< 0.00002
Bismuth [mg/L]	17-Nov-10	13:05	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	16-Nov-10	15:32	0.73	3.90	18.8	0.16	2.51	1.67	0.77	0.07	6.69
Cadmium [mg/L]	17-Nov-10	13:05	0.000004	< 0.000003	0.000030	0.000003	0.000013	< 0.000003	0.000010	0.000007	< 0.000003
Cobalt [mg/L]	17-Nov-10	13:05	0.000078	0.000073	0.000040	0.000119	0.000126	0.000029	0.000037	0.000187	0.000024
Chromium [mg/L]	17-Nov-10	13:05	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper [mg/L]	17-Nov-10	13:05	< 0.0005	0.0006	< 0.0005	0.0007	0.0011	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Iron [mg/L]	16-Nov-10	15:32	0.112	0.076	< 0.002	0.148	0.096	0.069	0.068	0.452	0.010
Potassium [mg/L]	16-Nov-10	15:32	16.1	11.2	4.90	9.97	7.80	10.4	19.3	23.3	8.33
Lithium [mg/L]	17-Nov-10	13:05	0.011	0.008	0.001	0.008	0.004	0.016	0.003	0.002	0.005
Magnesium [mg/L]	17-Nov-10	13:15	0.188	0.464	14.0	0.127	0.353	0.383	0.302	0.226	0.643

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SFE (3:1 DI Leach 24h 0.45)

LR Report : **CA11386-OCT10**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 5164	6: 5171	7: MR ARD 10-019	8: 5145	9: 5169	10: 5181	11: 5153	12: MR ARD 10-077	13: MR ARD 10-079
Manganese [mg/L]	17-Nov-10	13:15	0.00180	0.00221	0.00535	0.00244	0.00220	0.00081	0.00117	0.00218	0.00105
Molybdenum [mg/L]	17-Nov-10	13:05	0.00553	0.00383	0.0361	0.00187	0.00819	0.00409	0.0160	0.0110	0.00052
Sodium [mg/L]	16-Nov-10	15:31	3.67	7.83	1.52	3.94	8.16	2.78	2.21	1.78	4.38
Nickel [mg/L]	17-Nov-10	13:05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001
Lead [mg/L]	17-Nov-10	13:05	0.00025	0.00058	0.00020	0.00128	0.00302	0.00030	0.00041	0.00073	0.00018
Antimony [mg/L]	17-Nov-10	13:05	0.0003	0.0004	0.0004	< 0.0002	0.0017	< 0.0002	0.0005	< 0.0002	0.0003
Selenium [mg/L]	17-Nov-10	13:05	< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Tin [mg/L]	17-Nov-10	13:05	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Strontium [mg/L]	16-Nov-10	15:31	0.0025	0.0206	0.137	0.0010	0.0158	0.0161	0.0039	0.0007	0.0133
Titanium [mg/L]	17-Nov-10	13:05	0.0096	0.0036	0.0002	0.0139	0.0075	0.0027	0.0068	0.0271	0.0008
Thallium [mg/L]	17-Nov-10	13:05	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Uranium [mg/L]	17-Nov-10	13:05	0.000584	0.0119	0.000126	0.000316	0.0115	0.000246	0.000020	0.000093	0.000007
Vanadium [mg/L]	17-Nov-10	13:05	0.00635	0.00436	0.00023	0.0156	0.00557	0.00183	0.00884	0.0171	0.0278
Zinc [mg/L]	17-Nov-10	13:05	< 0.001	0.002	< 0.001	< 0.001	0.002	< 0.001	< 0.001	0.001	0.001

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SFE (3:1 DI Leach 24h 0.45)

Wednesday, November 17, 2010

Baffinland Iron Mines Corp
Attn : Michael Zurowski

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:pdf

Date Rec. : 26 October 2010
LR Report: **CA11386-OCT10**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	14: MR ARD 10-039	15: MR ARD 10-091	16: MR ARD 10-023	17: MR ARD 10-083	18: MR ARD 10-098	19: MR ARD 10-036	20: MR ARD 10-001	21: MR ARD 10-097	22: MR ARD 10-028	23: MR ARD 10-115
Sample Date & Time	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A	Date: N/A
Sample [weight(g)]	250	250	250	250	250	250	250	250	250	250
Volume mL [D.I. H2O]	750	750	750	750	750	750	750	750	750	750
InitialpH [units]	4.31	6.93	8.78	9.02	9.65	7.31	7.06	9.74	7.38	9.23
Final pH [units]	4.70	7.33	9.34	8.99	9.70	7.95	7.63	9.73	8.16	9.74
Mercury [mg/L]	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aluminum [mg/L]	1.22	0.02	< 0.01	0.03	0.88	< 0.01	< 0.01	0.55	0.06	2.15
Arsenic [mg/L]	0.0020	< 0.0002	0.0005	0.0006	0.0003	< 0.0002	0.0405	0.0004	0.0005	< 0.0002
Barium [mg/L]	0.0120	0.00102	0.00539	0.00176	0.00121	0.00321	0.0197	0.00057	0.0184	0.00324
Beryllium [mg/L]	0.00157	0.00004	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00003
Bismuth [mg/L]	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	42.5	2.62	9.55	13.0	3.56	32.2	24.7	4.14	7.32	0.04
Cadmium [mg/L]	0.000912	< 0.000003	< 0.000003	0.000003	< 0.000003	< 0.000003	0.000047	< 0.000003	< 0.000003	< 0.000003
Cobalt [mg/L]	0.420	0.00177	0.000320	0.000117	0.000071	0.000307	0.00248	0.000068	0.000065	0.000037
Chromium [mg/L]	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper [mg/L]	0.0259	< 0.0005	< 0.0005	0.0006	< 0.0005	< 0.0005	0.0005	< 0.0005	< 0.0005	0.0006
Iron [mg/L]	21.5	0.026	< 0.002	0.009	0.035	0.007	0.006	0.048	0.037	0.151
Potassium [mg/L]	8.75	4.15	1.06	11.2	17.8	3.26	22.4	8.05	9.00	4.96
Lithium [mg/L]	0.889	0.038	0.006	0.010	0.018	0.013	0.008	0.004	0.003	0.003
Magnesium [mg/L]	193	8.49	13.8	9.75	0.513	42.8	118	0.931	7.15	0.139

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SFE (3:1 DI Leach 24h 0.45)

LR Report : **CA11386-OCT10**

Analysis	14: MR ARD 10-039	15: MR ARD 10-091	16: MR ARD 10-023	17: MR ARD 10-083	18: MR ARD 10-098	19: MR ARD 10-036	20: MR ARD 10-001	21: MR ARD 10-097	22: MR ARD 10-028	23: MR ARD 10-115
Manganese [mg/L]	39.7	0.179	0.0256	0.0109	0.00371	0.0725	0.739	0.00503	0.0117	0.00164
Molybdenum [mg/L]	0.00024	0.00021	0.00031	0.00687	0.00062	0.00173	0.0540	0.00176	0.00534	0.00101
Sodium [mg/L]	93.4	1.71	0.46	5.49	4.27	0.59	13.9	7.74	0.97	9.28
Nickel [mg/L]	0.808	0.0037	0.0010	0.0004	< 0.0001	0.0006	0.0306	0.0002	0.0003	< 0.0001
Lead [mg/L]	0.00065	0.00058	0.00024	0.00019	0.00041	0.00015	0.00023	0.00042	0.00029	0.00114
Antimony [mg/L]	< 0.0002	< 0.0002	0.0008	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002	0.0003	< 0.0002
Selenium [mg/L]	0.002	< 0.001	< 0.001	< 0.001	< 0.001	0.003	0.001	< 0.001	0.006	< 0.001
Tin [mg/L]	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Strontium [mg/L]	0.0908	0.0032	0.0520	0.0545	0.0144	0.0174	0.156	0.0168	0.0180	0.0005
Titanium [mg/L]	0.0019	0.0006	< 0.0001	0.0004	0.0039	0.0007	0.0005	0.0045	0.0007	0.0099
Thallium [mg/L]	0.00077	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00004	< 0.00002	< 0.00002	< 0.00002
Uranium [mg/L]	0.00132	0.000075	0.000005	0.000011	0.000002	0.000005	0.000003	0.000006	0.000007	0.000088
Vanadium [mg/L]	0.00012	0.00023	0.00009	0.00460	0.0459	0.00049	0.00019	0.0353	0.00048	0.00668
Zinc [mg/L]	0.132	0.001	0.002	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001

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APPENDIX C-5

MINERALOGY BY RIETVELD XRD

Quantitative X-Ray Diffraction by Reitveld Refinement

Report Prepared for:	*Enviromental - Analytical*
Project Number/ LIMS No.	*Custom XRD/MI4512-OCT10*
Reporting Date:	*November 8, 2010*

Instrument:	BRUKER AXS D8 Advance Diffractometer
Test Conditions:	Co radiation, 40 kV, 35 mA Regular Scanning: Step: 0.02°, Step time: 1s, 2θ range: 3-80°
Interpretations :	PDF2/PDF4 powder diffraction databases issued by the International Center for Diffraction Data (ICDD). DiffracPlus Eva and Topas software.
Detection Limit :	0.5-2%. Strongly dependent on crystallinity.

Contents:

1) Method Summary
2) Summary of Mineral Asemblages
3) Semi-Quantitative XRD Results
4) Chemical Balance(s)
5) XRD Pattern(s)

Anita Coppaway
Mineralogical Technologist

Huyun Zhou, Ph.D.
Senior Mineralogist

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Member of the SGS Group (SGS SA)

Method Summary

Mineral Identification and Interpretation:

Mineral identification and interpretation involve matching the diffraction pattern of an unknown material to patterns of single-phase reference materials. The reference patterns are compiled by the Joint Committee on Powder Diffraction Standards - International Center for Diffraction Data (JCPDS-ICDD) database and released on software as Powder Diffraction Files (PDF).

Interpretations do not reflect the presence of non-crystalline and/or amorphous compounds, except when internal standards added by request. Mineral proportions may be strongly influenced by crystallinity, crystal structure and preferred orientations. Minerals or compounds identification and quantitative analysis results should be accompanied by supporting chemical assay data or other tests.

Rietveld Method Quantitative Analysis:

Whole-pattern Rietveld Method Quantitative Analysis is performed by using Topas 4.1 (Bruker AXS), a graphics based profile analysis program built around a general non-linear least squares fitting system, to determine the amount of different phases in a multicomponents sample. Whole pattern analyses are predicated by the fact that the X-ray diffraction pattern is a total sum of both instrumental factors and specimen. Instead other peak intensity-based methods, the Rietveld method uses a least square approach to refine a theoretical line profile until it matches the obtained experimental patterns.

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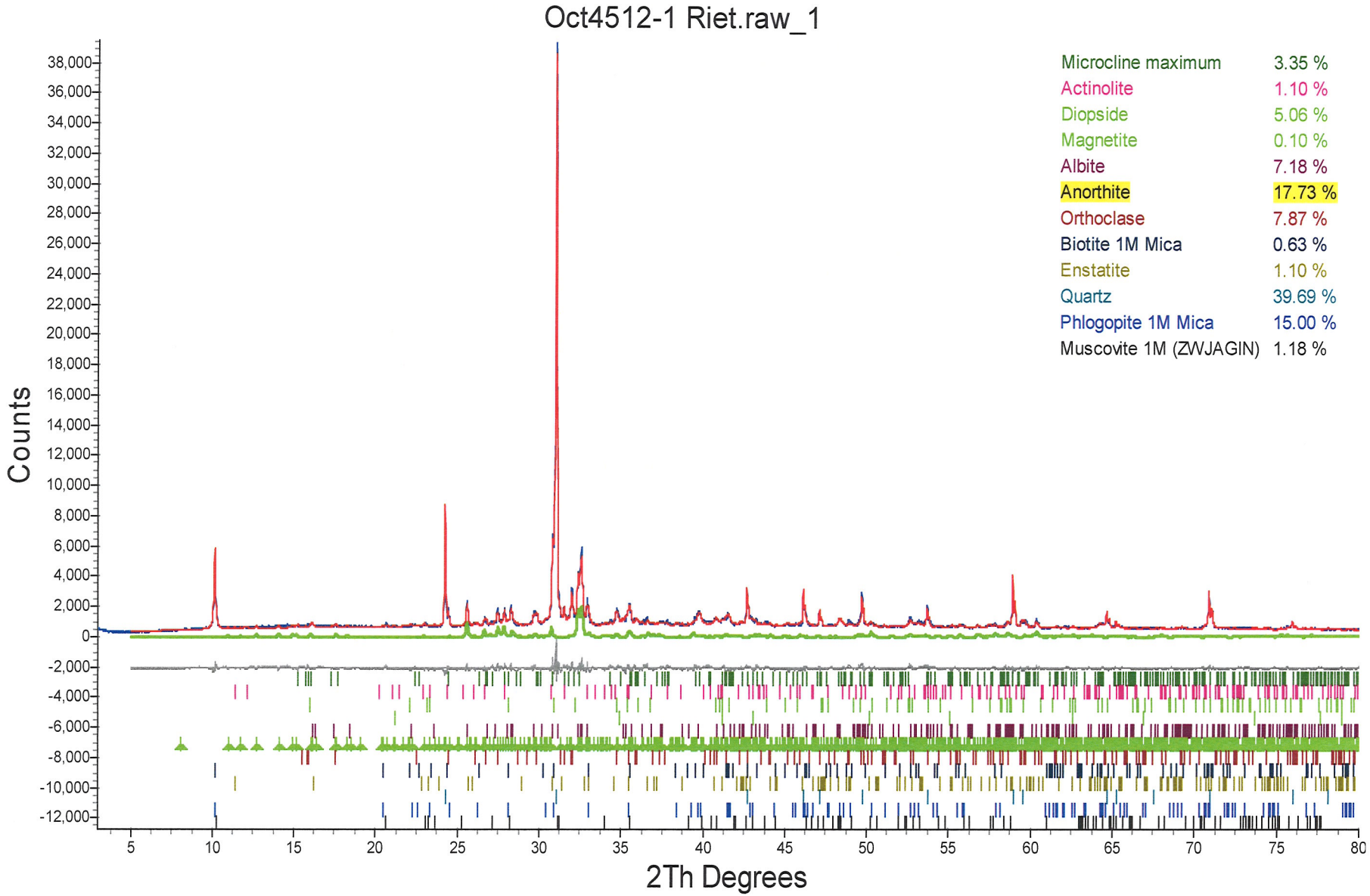
Summary of Rietveld Quantitative Analysis X-ray Diffraction Results

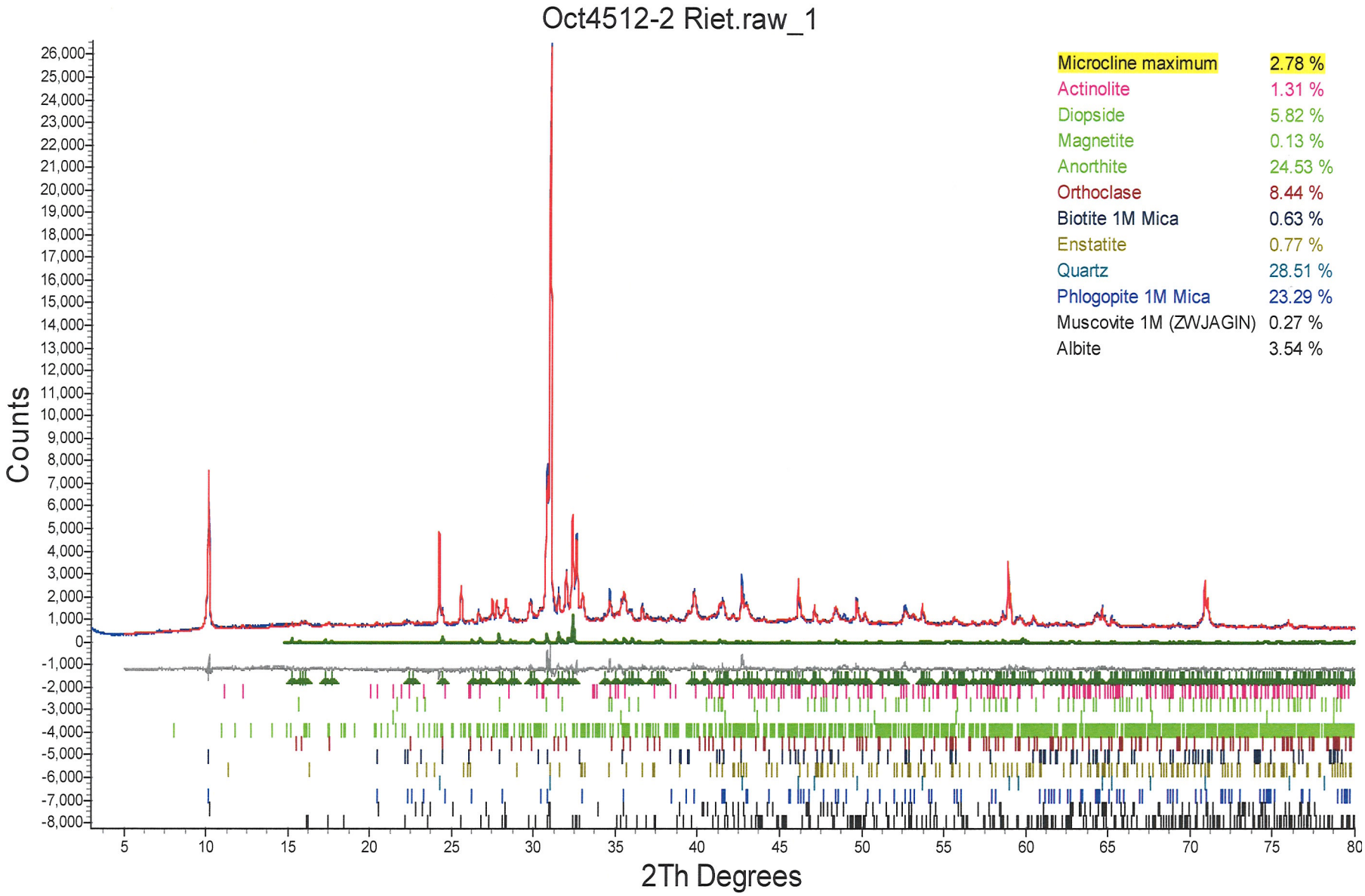
Quantitative X-ray Diffraction Results

Mineral/Compound	5164 (wt %)	5145 (wt %)	6181 (wt %)	MR ARD 10-077 (wt %)	MR ARD 10-091 (wt %)	MR ARD 10-083 (wt %)	MR ARD 10-036 (wt %)
Actinolite	1.1	1.3	--	--	--	17.0	--
Enstatite	1.1	0.8	--	--	--	--	--
Diopside	5.1	5.8	5.0	--	--	14.7	--
Albite	7.2	3.5	2.8	--	--	12.3	--
Anorthite	17.7	24.5	--	--	--	9.4	--
Orthoclase	7.9	8.4	2.8	--	--	5.5	--
Microcline	3.3	2.8	--	--	--	0.8	--
Quartz	39.7	28.5	3.6	38.5	3.8	15.1	43.9
Biotite	0.6	0.6	1.5	0.5	4.5	3.3	--
Phlogopite	15.0	23.3	44.1	40.7	--	--	--
Muscovite	1.2	0.3	22.9	5.3	--	--	--
Kaolinite	--	--	0.6	--	3.3	--	--
Clinochlore	--	--	16.7	7.7	67.7	5.8	44.3
Andalusite	--	--	--	7.4	--	--	--
Epidote	--	--	--	--	--	15.5	--
Magnetite	0.1	0.1	--	--	3.6	0.2	4.3
Hematite	--	--	--	--	17.2	--	3.9
Spinel	--	--	--	--	--	--	3.1
Chromite	--	--	--	--	--	--	0.5
Calcite	--	--	--	--	--	0.4	--
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Mineral/Compound	Formula
Actinolite	$Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$
Albite	$NaAlSi_3O_8$
Andalusite	$Al_2(SiO_4)O$
Anorthite	$CaAl_2Si_2O_8$
Biotite	$K(Mg,Fe)_3(AlSi_3O_{10})(OH)_2$
Calcite	$CaCO_3$
Chromite	$FeCr_2O_4$
Clinochlore	$(Mg, Fe)_5 (Si_3Al)O_{10}(OH)_8$
Diopside	$CaMgSi_2O_6$
Enstatite	$(Mg, Fe)_2Si_2O_6$
Epidote	$Ca_2Al_2Fe(SiO_4)(Si_2O_7)(O,OH)_2$
Hematite	Fe_2O_3
Kaolinite	$Al_2Si_2O_5(OH)_4$
Magnetite	Fe_3O_4
Microcline	$KAlSi_3O_8$
Muscovite	$KAl_3(AlSi_3O_{10})(OH)_2$
Orthoclase	$KAlSi_3O_8$
Phlogopite	$KMg_3(AlSi_3O_{10})(OH)_3$
Quartz	SiO_2
Spinel	$MgAl_2O_4$



The Qualitative XRD method (METH # 8-8-1) used by SGS Minerals Services, P.O. Box 4300, 185 Concession Street, Lakefield, Ontario, Canada K0L 2H0.
Tel: (705) 652-2000 Fax: (705) 652-6365 Mini-method available upon request.



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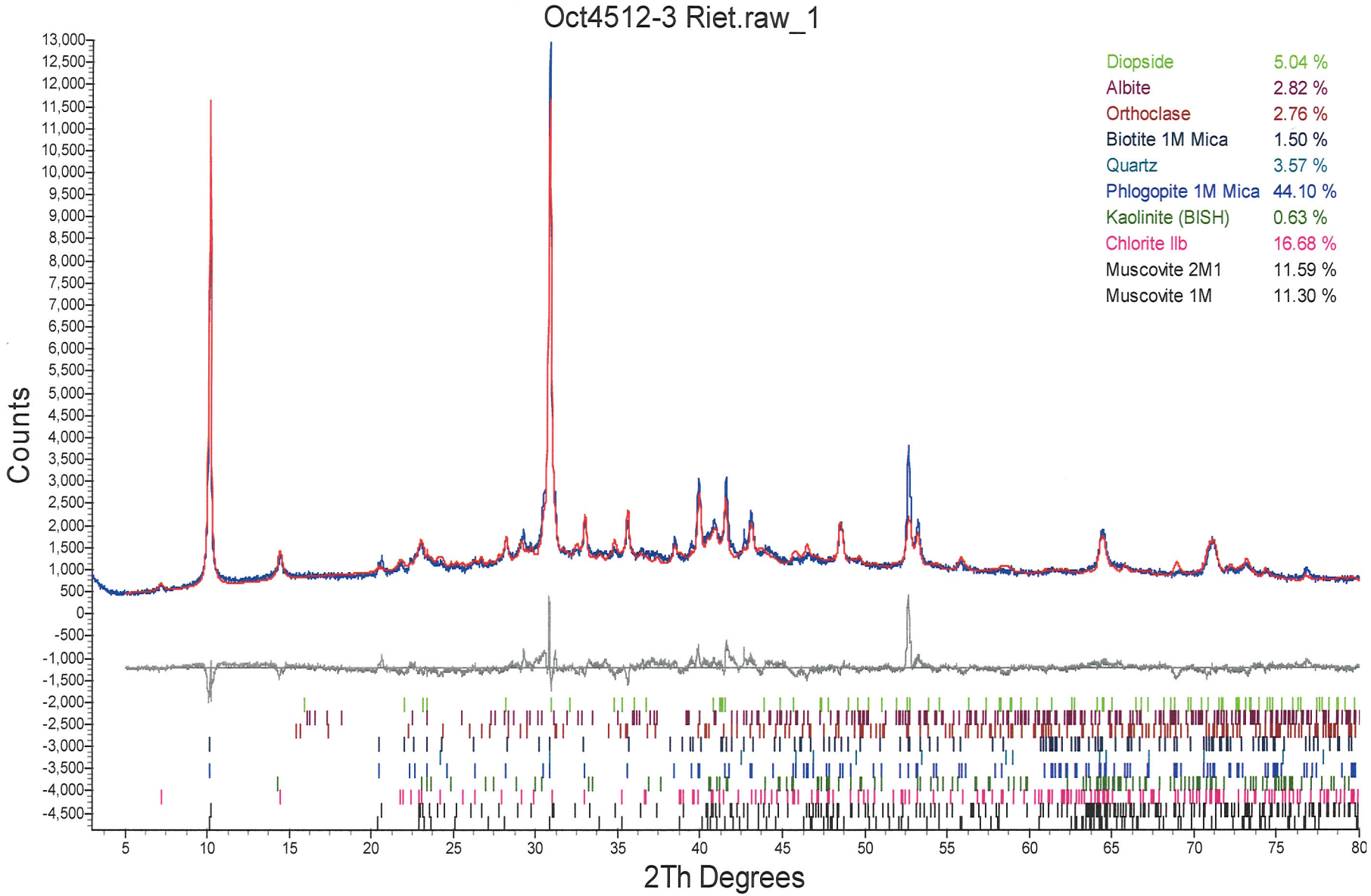

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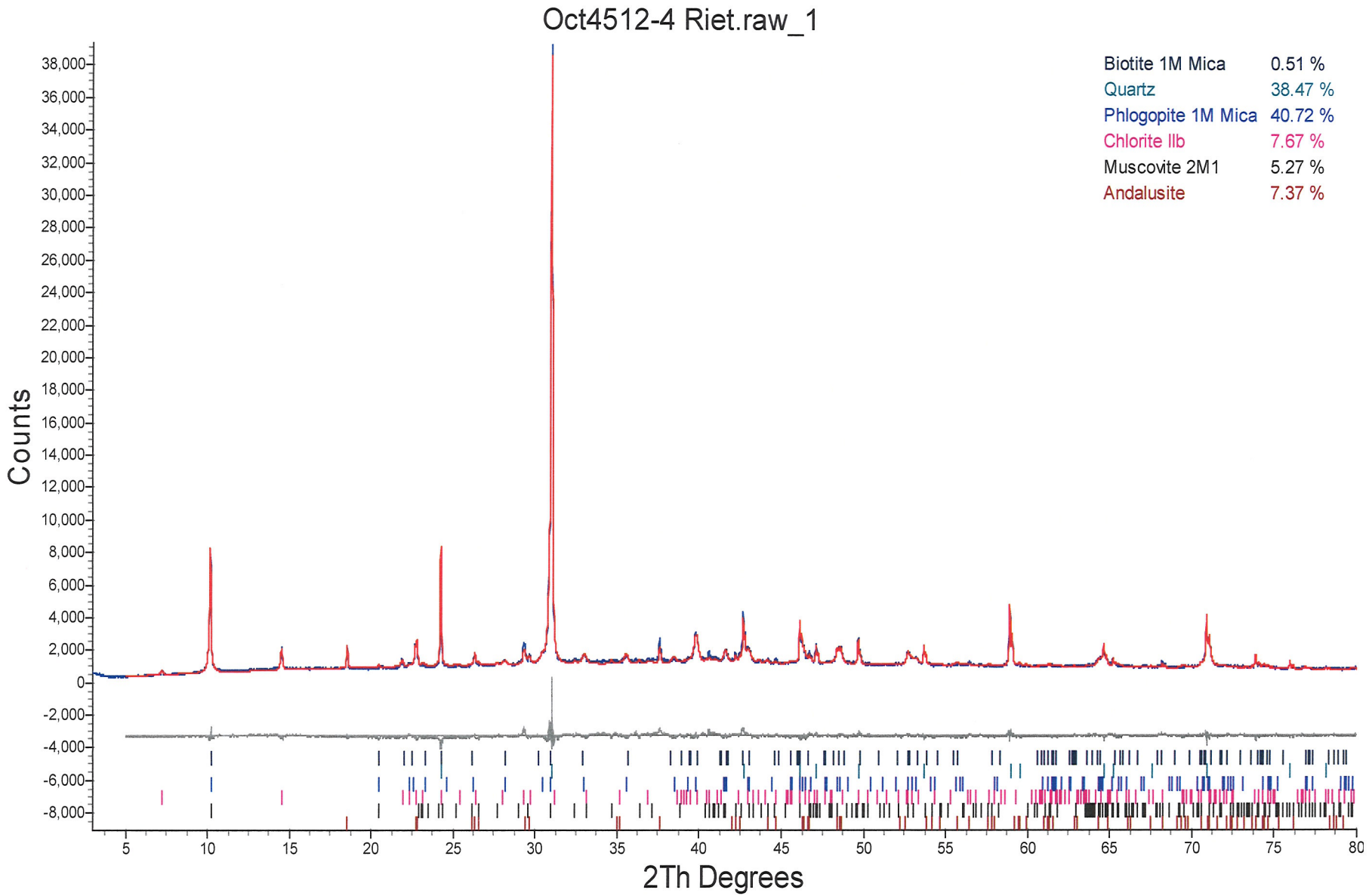
Tel: (705) 652-2000 Fax: (705) 652-6365 Mini-method available upon request.



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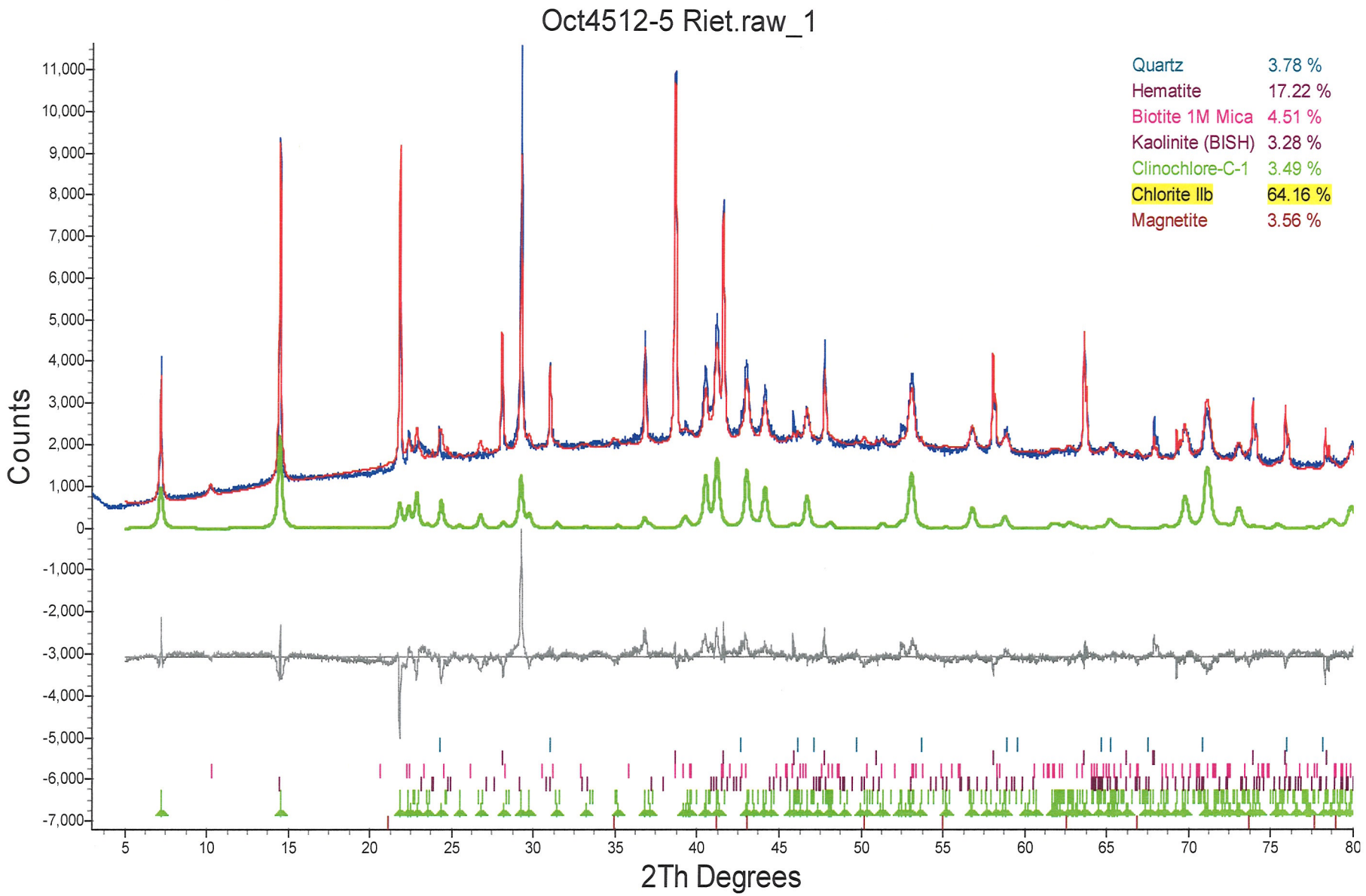

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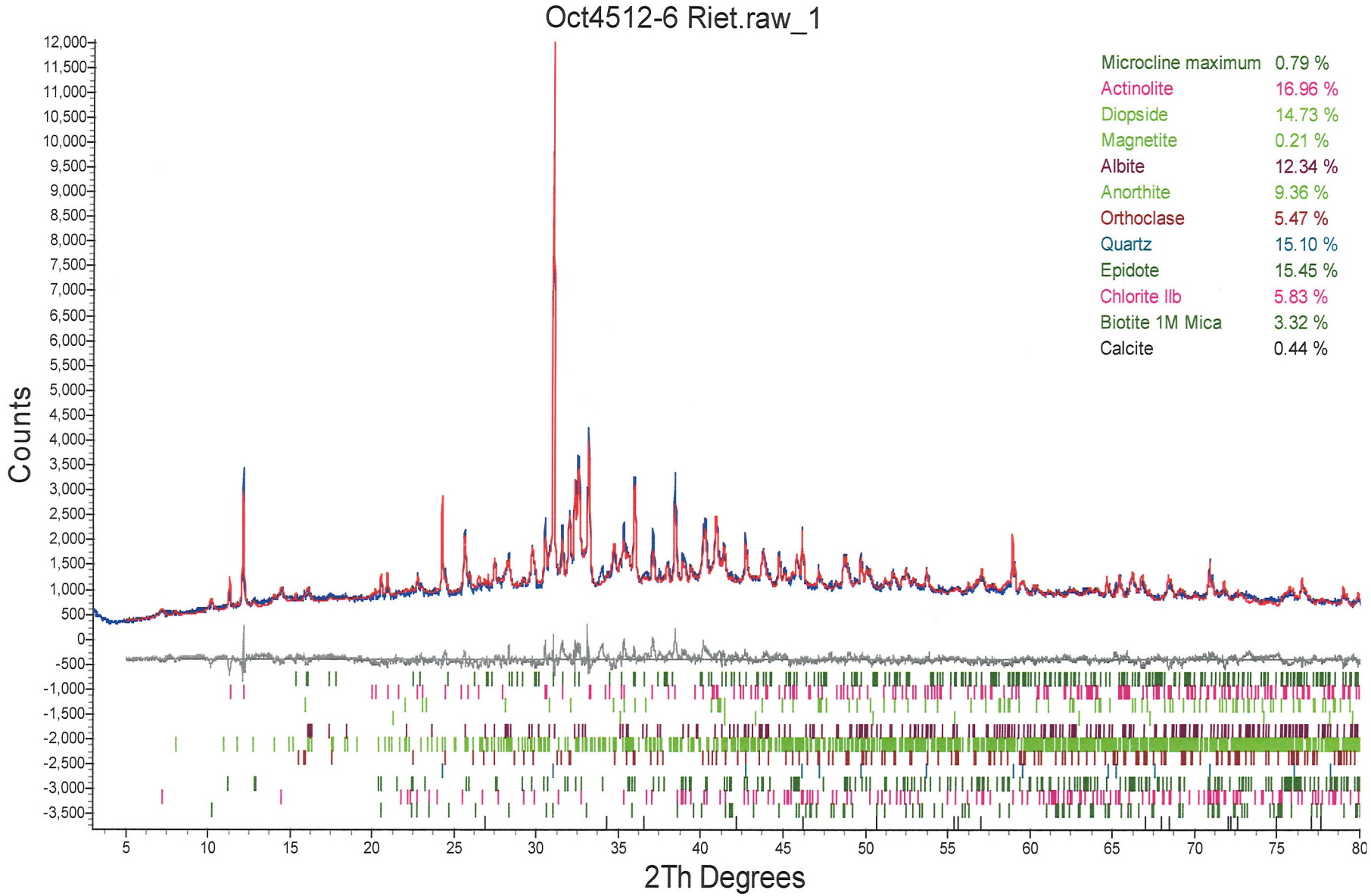

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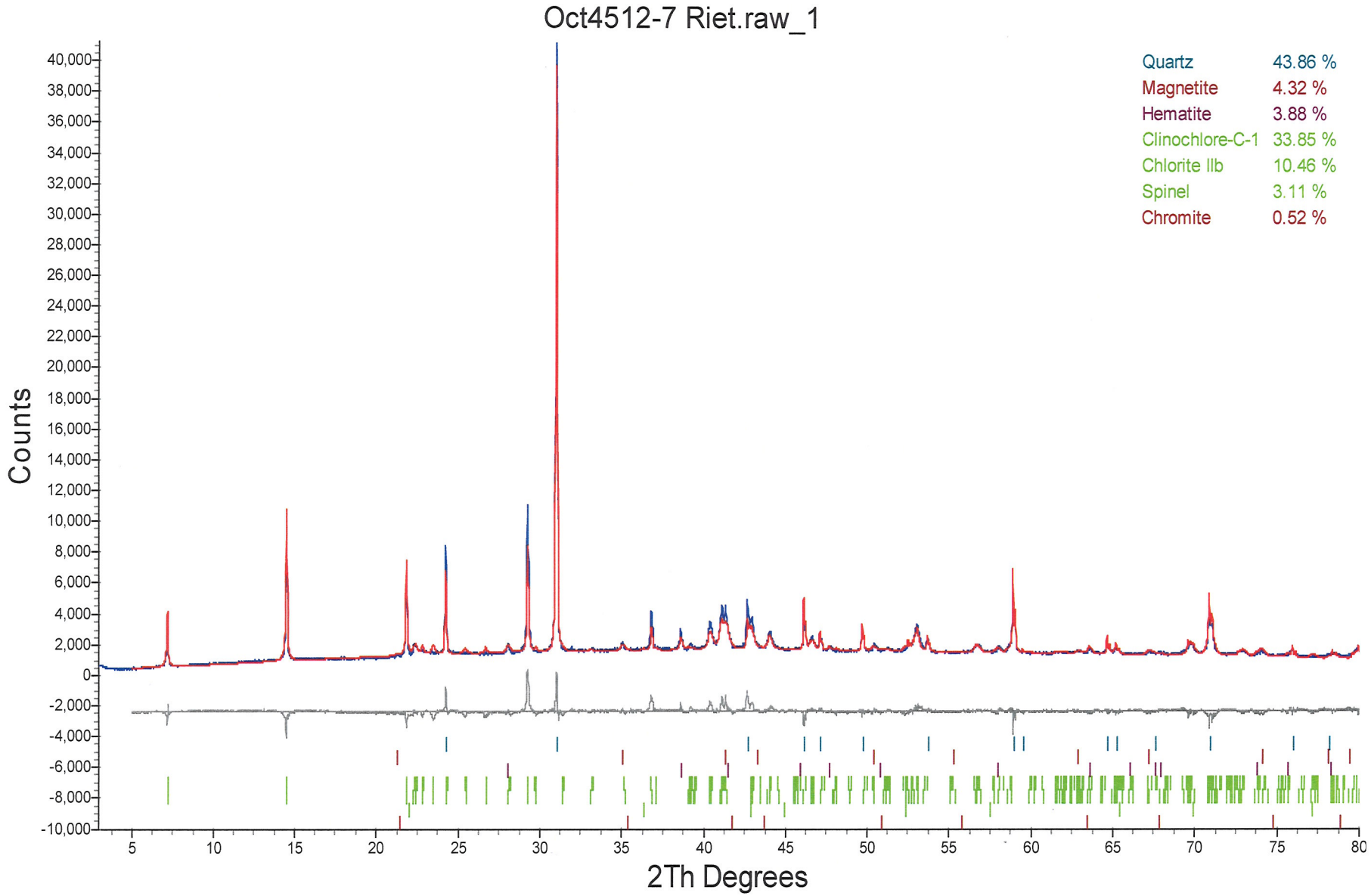
Tel: (705) 652-2000 Fax: (705) 652-6365 Mini-method available upon request.



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Tel: (705) 652-2000 Fax: (705) 652-6365 Mini-method available upon request.

APPENDIX D

BAFFINLAND SITE DRAINAGE RESULTS

LIST OF TABLES

D-1 Weathered Ore and Waste Rock Stockpile Drainage Data Near Bulk Sample Pit (MRY-10)
D-2 Ore Stockpile Drainage Data at Crusher Site (MRY-11 Test Pits)
D-3 Ore Stockpile Drainage Data at Milne Inlet (MRY-12 Drive Points)
D-4 Seepage Data from Rock Face Near Bulk Sample Pit (MRY-9)

Note: Site Drainage Sampling Data (crusher site lysimeter results presented in Table 8)

Table D-1. Weathered Ore and Waste Rock Stockpile Drainage Data Near Bulk Sample Pit (MRY-10)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	652435	821636	726623	737178	827284	827277
						2008-08-16	2010-08-13	2009-06-29	2009-06-29	2010-09-07	2010-09-07
						MRY-10	MRY-10	MRY-10	MRY-10	MRY-10	MRY-10
						Total	Total	Dissolved	Total	Dissolved	Total
Chloride	mg/L		230	<250					<1		2
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]								1.25
N-NO3 (Nitrate)	mg/L		13	10					<0.10		9.94
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5				7.23		7.68
Sulphate	mg/L			<500[c]					<1		5
Total Suspended Solids	mg/L	15	5		120				8		3
Aluminum	mg/L	-	0.005-0.1[a]	-		0.05	2.16	0.0041	0.226	0.0073	0.367
Antimony	mg/L	-		0.006			0.00017	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		<0.001	0.00032	<0.0001	<0.0001	<0.0001	<0.0001
Barium	mg/L	-	-	1		<0.01	0.0556	0.00114	0.00217	0.0104	0.0127
Cadmium	mg/L	-	0.000017	0.005		<0.0001	0.000012	<0.00001	<0.00001	<0.00001	<0.00001
Chromium	mg/L	-	0.001	0.051		<0.001	0.00715	<0.0005	0.00097	<0.0005	0.00135
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0		<0.001	0.00475	0.00078	<0.0005	0.00068	0.00154
Iron	mg/L	-	0.3	<0.3		0.07	3.07	<0.03	0.237	<0.03	0.505
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.001	0.00581	<0.00005	0.00016	<0.00005	0.00067
Manganese	mg/L	-	-	≤0.05		<0.01	0.106	0.000703	0.00576	0.00743	0.016
Mercury	mg/L	-	0.026	0.001			<0.00001	<0.00001	<0.00001	0.000014	0.000018
Molybdenum	mg/L	-	0.073	-		<0.005	0.000341	<0.00005	<0.00005	0.000192	0.00028
Nickel	mg/L	0.5	0.025-0.15[b]	-		<0.005	0.00742	<0.0005	<0.0008	<0.0005	0.00146
Selenium	mg/L	-	0.001	-		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		<0.01	0.0059	<0.001	0.0019	<0.001	0.003

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
CDWQ = Health Canada - Canadian Drinking Water Quality Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).
NWB = Nunavut Water Board Wastewater Criteria
a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

Table D-2. Ore Stockpile Drainage Data at Crusher Site (MRY-11 Test Pit)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	827285	827278	821633	821634	821635	827286	827279
						2010-09-07	2010-09-07	2010-08-13	2010-08-13	2010-08-13	2010-09-07	2010-09-07
						MRY-TP1	MRY-TP1	MRY-TP2	MRY-TP3	MRY-TP4	MRY-TP4	MRY-TP4
						Dissolved	Total	Total	Total	Total	Dissolved	Total
Chloride	mg/L		230	<250			1					3
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]				<0.02					<0.02
N-NO3 (Nitrate)	mg/L		13	10			<0.10					2.13
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5		7.58					7.99
Sulphate	mg/L			<500[c]			16					32
Total Suspended Solids	mg/L	15	5		120		5					15
Aluminum	mg/L	-	0.005-0.1[a]	-		0.0104	0.387	0.0904	0.0482	0.0629	0.0061	0.58
Antimony	mg/L	-		0.006		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		<0.0001	<0.0001	0.00025	<0.0001	0.00015	<0.0001	0.00012
Barium	mg/L	-	-	1		0.00486	0.00664	0.0389	0.0157	0.041	0.0194	0.0162
Cadmium	mg/L	-	0.000017	0.005		<0.00001	0.000015	0.000021	<0.00001	0.000011	<0.00001	0.000019
Chromium	mg/L	-	0.001	0.051		<0.0005	0.00141	<0.001	0.00076	0.00078	<0.0005	0.00147
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0		0.00026	0.00151	0.00259	0.00141	0.00201	0.00101	0.00213
Iron	mg/L	-	0.3	<0.3		<0.03	0.746	0.134	0.044	0.076	<0.03	0.874
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.00005	0.00129	0.0002	0.00008	0.00013	<0.00005	0.00089
Manganese	mg/L	-	-	≤0.05		0.00891	0.028	0.0151	0.00821	0.0668	0.0237	0.0779
Mercury	mg/L	-	0.026	0.001		<0.00001	<0.00001	0.000018	0.000017	<0.00001	<0.00001	0.000035
Molybdenum	mg/L	-	0.073	-		0.00153	0.00128	0.00042	0.000288	0.000453	0.000632	0.000525
Nickel	mg/L	0.5	0.025-0.15[b]	-		<0.0005	0.00196	0.0033	0.0011	0.00457	0.00116	0.00263
Selenium	mg/L	-	0.001	-		<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		<0.001	0.0029	0.0275	0.0032	0.0162	<0.001	0.0035

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
CDWQ = Health Canada - Canadian Drinking Water Quality Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).
NWB = Nunavut Water Board Wastewater Criteria
a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

Table D-3. Ore Stockpile Drainage Data at Milne Inlet (MRY-12 Drive Points)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	828062	828058	828063	828059	828064	828064	828065	828061
						2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09
						MRY-12-DP1	MRY-12-DP1	MRY-12-DP101	MRY-12-DP101	MRY-12-DP2	MRY-12-DP2	MRY-12-DP3	MRY-12-DP3
						Dissolved	Total *	Dissolved	Total *	Dissolved	Total *	Dissolved	Total *
Chloride	mg/L		230	<250			199		188		272		120
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]				<0.02		<0.02		0.24		<0.02
N-NO3 (Nitrate)	mg/L		13	10			4.47		4.62		2.16		15.2
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5		8.07		8.07		8.15		7.64
Sulphate	mg/L			<500[c]			457		434		123		48
Total Suspended Solids	mg/L	15	5		120		**11900**		**4170**		**230**		**417**
Aluminum	mg/L	-	0.005-0.1[a]	-		0.0034	12	0.003	8.39	0.0035	7.77	0.0032	2.35
Antimony	mg/L	-		0.006		<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Arsenic	mg/L	0.5	0.005	0.005		<0.0014	0.0541	<0.0016	0.0343	<0.0018	<0.006	0.00048	0.00095
Barium	mg/L	-	-	1		0.00246	0.0768	0.00271	0.0541	0.00646	0.0329	0.00654	0.0165
Cadmium	mg/L	-	0.000017	0.005		<0.00002	0.000141	0.00002	0.000115	<0.00002	0.000056	<0.00002	0.000023
Chromium	mg/L	-	0.001	0.051		<0.001	0.102	<0.001	0.0602	<0.006	0.148	0.0016	0.0597
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0		<0.004	0.0457	<0.004	0.031	0.00237	0.0215	0.00249	0.0139
Iron	mg/L	-	0.3	<0.3		<0.03	45.4	<0.03	30.1	0.036	7.96	<0.03	2.86
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.0001	0.0162	<0.0001	0.0107	<0.0001	0.0053	<0.0001	0.0015
Manganese	mg/L	-	-	≤0.05		0.0509	0.726	0.0479	0.497	0.0378	0.177	0.00453	0.0817
Mercury	mg/L	-	0.026	0.001		0.000015	0.000013	0.000015	0.00003	<0.00001	0.000058	<0.00001	<0.00001
Molybdenum	mg/L	-	0.073	-		0.00551	0.00903	0.00537	0.00754	0.00412	0.00539	0.00342	0.00359
Nickel	mg/L	0.5	0.025-0.15[b]	-		0.0056	0.0595	0.0035	0.04	0.0102	0.0764	0.0031	0.029
Selenium	mg/L	-	0.001	-		<0.008	<0.005	<0.008	<0.005	<0.006	<0.008	<0.002	<0.002
Zinc	mg/L	0.5	0.03	≤5.0		<0.002	0.0352	<0.002	0.0275	0.0039	0.0217	0.0025	0.0118

Note:
* Elevated suspended solids due to silting of drive points during sampling. Total metal concentrations may not be representative and are not included in Max and Min statistics reported in Table 8.
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
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a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

Table D-4. Bulk Sample Pit Seepage Data (MRY-9)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	645773	645776	827283	827276
						2008-07-25	2008-07-25	2010-09-07	2010-09-07
						MRY-9	MRY-9	MRY-9	MRY-9
						Dissolved	Total	Dissolved	Total
Chloride	mg/L		230	<250					3
N-NH3 (Ammonia)	mg/L		1.73-38.6[d)]				0.07		<0.02
N-NO3 (Nitrate)	mg/L		13	10					0.82
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5		7.31		7.57
Sulphate	mg/L			<500[c)]					48
Total Suspended Solids	mg/L	15	5		120		15		23
Aluminum	mg/L	-	0.005-0.1[a)]	-		<0.01	0.67	0.0058	0.287
Antimony	mg/L	-		0.006				<0.0001	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		<0.001	<0.001	<0.0001	<0.0001
Barium	mg/L	-	-	1		0.01	0.02	0.00522	0.00679
Cadmium	mg/L	-	0.000017	0.005		<0.0001	<0.0001	<0.00001	<0.00001
Chromium	mg/L	-	0.001	0.051		<0.001	0.003	<0.0005	0.00106
Copper	mg/L	0.3	0.002-0.004[b)]	≤1.0		<0.001	0.005	0.00032	0.00083
Iron	mg/L	-	0.3	<0.3		<0.03	1.11	<0.03	0.382
Lead	mg/L	0.2	0.001-0.007[b)]	0.01		<0.001	0.016	<0.00005	0.00033
Manganese	mg/L	-	-	≤0.05		0.32	0.40	0.00134	0.0136
Mercury	mg/L	-	0.026	0.001				0.000013	<0.00001
Molybdenum	mg/L	-	0.073	-		<0.005	<0.005	0.000102	0.000164
Nickel	mg/L	0.5	0.025-0.15[b)]	-		<0.005	<0.005	<0.0005	0.00101
Selenium	mg/L	-	0.001	-		<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		<0.01	<0.01	<0.001	0.0014

Note:
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CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).
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a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

END OF 2010 INTERIM ML/ABA REPORT

END OF 2010 INTERIM ML/ABA REPORT

APPENDIX B

RESULTS OF ABA AND METAL ANALYSES

LIST OF TABLES

B-1 Acid Base Accounting Results by Waste Type and Lithology (all data)
B-2 Net Acid Generation (NAG) Testing Results by Waste Type and Lithology (2011 data)
B-3 Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)
B-4 NAG Leachate Results by Waste Type and Lithology (2011 data)

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	From	To	Waste Rock Code	Lithology	Rock Type Code	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		m	m						(wt.%)				(kg CaCO3/tonne)				
16086	ARP-2A-NW	12.40	13.40	FW	ab_QF gneiss	5b	Baffinland 2011	9.93	0.148	0.09	0.05	0.021	1.6	12.8	1.8	8.2	1.1
16136	ARD-2A-SE	6.90	7.90	FW	ab_QF gneiss	5b	Baffinland 2011	9.89	0.228	0.04	0.19	<0.005	5.9	15	0.4	2.5	0.1
16138	ARD-2A-SE	17.81	18.86	FW	ab_QF gneiss	5b	Baffinland 2011	9.63	0.259	0.07	0.19	<0.005	5.9	14	0.4	2.4	0.1
16146	ARD-2A-SE	48.46	49.40	FW	ab_QF gneiss	5b	Baffinland 2011	9.88	0.154	0.06	0.09	0.014	2.8	10	1.2	3.6	0.4
16148	ARD-2A-SE	58.60	58.10	FW	ab_QF gneiss	5b	Baffinland 2011	9.97	<0.005	<0.01	<0.01	0.131	0.3	20	10.9	64.0	34.9
16338	MR1-08-141	343.20	344.22	FW	ab_QF gneiss	5b	Baffinland 2011	9.08	0.017	<0.01	0.02	0.023	0.6	22.3	1.9	35.7	3.1
16112	ARD-2B-NW	8.85	9.90	FW	ab_QF gneiss, granite	5b, 12a	Baffinland 2011	9.43	<0.005	<0.01	<0.01	<0.005	0.3	9.7	0.4	31.0	1.3
16114	ARD-2B-NW	10.47	11.44	FW	ab_QF gneiss, granite	5b, 12a	Baffinland 2011	9.37	<0.005	<0.01	<0.01	<0.005	0.3	9.9	0.4	31.7	1.3
UCS11	MR1-06-81	88	NA*	FW	Gneiss/Amphibolite		Knight Piesold 2006-2007	7.36	0.262	0.09	0.172	0.01	5.4	10.1	0.8	1.9	0.2
5182	ARD-2B-NW	61	62	FW	Gneiss/Schist	5b,4cb	AMEC 2010	9.5	0.658	0.12	0.538	0.013	16.8	11.1	1.1	0.7	0.1
5183	ARD-2B-NW	66	67	FW	Gneiss/Schist	5b,4cb	AMEC 2010	9.8	0.032	0.03	<0.01	0.014	0.3	7.4	1.2	24	3.7
5184	ARD-2B-NW	73	74	FW	Gneiss/Schist	5b,4cb	AMEC 2010	9.8	0.021	0.02	<0.01	0.026	0.31	12.4	2.2	40	6.9
5186	ARD-2B-NW	84	85	FW	Gneiss/Schist	5b,4cb	AMEC 2010	9.5	0.094	0.08	0.014	0.020	0.4	13.5	1.7	31	3.8
5187	ARD-2B-NW	89	90	FW	Gneiss/Schist	5b,4cb	AMEC 2010	9.3	0.023	0.02	0.010	0.015	0.3	11.4	1.3	37	13.3
5188	ARD-2B-NW	95	96	FW	Gneiss/Schist	5b,4cb	AMEC 2010	9.8	0.018	0.02	<0.01	0.023	0.3	10.5	1.9	34	6.1
5189	ARD-2B-NW	100	101	FW	Gneiss/Schist	5b,4cb	AMEC 2010	9.3	0.020	0.02	<0.01	0.013	0.3	13.6	1.1	44	3.5
16098	ARP-2A-NW	56.68	57.58	FW	mica amphibole chlorite schist	4bca	Baffinland 2011	9.61	0.024	0.02	<0.01	0.036	0.3	13.2	3.0	42.2	9.6
16100	ARP-2A-NW	68.10	69.30	FW	mica amphibole chlorite schist	4bca	Baffinland 2011	9.87	0.033	0.03	<0.01	0.026	0.3	10.6	2.2	33.9	6.9
16102	ARP-2A-NW	72.40	73.60	FW	mica amphibole chlorite schist	4bca	Baffinland 2011	9.33	0.375	0.04	0.33	0.020	10.3	5.2	1.7	0.5	0.2
16092	ARP-2A-NW	36.60	37.60	FW	mica amphibole schist	4bc	Baffinland 2011	9.77	0.051	0.03	0.02	0.029	0.6	24.1	2.4	38.6	3.9
16154	ARD-2A-SE	84.28	85.39	FW	mica amphibole schist	4bc	Baffinland 2011	9.84	0.376	0.09	0.29	0.026	9.1	21	2.2	2.3	0.2
16158	ARD-2A-SE	104.79	105.76	FW	mica amphibole schist	4bc	Baffinland 2011	9.85	<0.005	<0.01	<0.01	0.142	0.3	30	11.8	96.0	37.9
16104	ARP-2A-NW	77.60	78.70	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	9.88	0.026	<0.01	0.02	<0.005	0.6	15	0.4	24.0	0.7
16106	ARP-2A-NW	84.37	85.30	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	10.07	0.061	0.02	0.04	0.007	1.3	9.4	0.6	7.5	0.5
16108	ARP-2A-NW	98.15	99.20	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	10.05	0.081	0.04	0.04	0.022	1.3	9.4	1.8	7.5	1.5
16110	ARP-2A-NW	103.91	104.91	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	10.20	0.056	<0.01	0.05	<0.005	1.6	14	0.4	9.0	0.3
16310	MR1-08-145	132.50	133.65	FW	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	8.53	<0.005	<0.01	<0.01	0.023	0.3	8.1	1.9	25.9	6.1
16312	MR1-08-145	145.20	146.10	FW	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	8.63	<0.005	<0.01	<0.01	0.034	0.3	9.5	2.8	30.4	9.1
16126	ARD-2B-NW	58.76	59.76	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	9.58	0.210	0.03	0.18	<0.005	5.6	16	0.4	2.8	0.1
16128	ARD-2B-NW	62.70	63.88	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	9.63	0.012	<0.01	0.01	<0.005	0.3	17	0.4	54.4	1.3
16130	ARD-2B-NW	78.51	79.43	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	9.48	0.274	0.03	0.25	<0.005	7.8	15	0.4	1.9	0.1
16132	ARD-2B-NW	87.80	88.90	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	9.58	0.019	<0.01	0.02	<0.005	0.6	15	0.4	24.0	0.7
16134	ARD-2B-NW	93.12	94.12	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	9.99	<0.005	<0.01	<0.01	0.020	0.3	11	1.7	35.2	5.3
5155	ARD-2A-NW	95	96	FW	Schist/Gneiss	4bc,5b	AMEC 2010	9.3	<0.005	<0.01	<0.01	0.013	0.3	7.0	1.1	22	3.5
5156	ARD-2A-NW	105	106	FW	Schist/Gneiss	4bc,5b	AMEC 2010	9.8	0.070	0.03	0.040	0.015	1.3	11.5	1.3	9.2	1.0
UCS27	MR1-06-81	244.4	NA*	FW	Volcanic Tuff /Schist		Knight Piesold 2006-2007	9.11	0.02	0.02	<0.01	0.016	0.3	24	1	77	4.3
16120	ARD-2B-NW	33.61	34.61	FW	amphibole schist	4c	Baffinland 2011	8.86	0.007	<0.01	0.01	<0.005	0.3	14	0	44.8	1.3
16122	ARD-2B-NW	47.77	48.77	FW	amphibole schist	4c	Baffinland 2011	8.76	0.006	<0.01	0.01	<0.005	0.3	15	0	48.0	1.3
16124	ARD-2B-NW	51.72	52.80	FW	amphibole schist	4c	Baffinland 2011	8.63	<0.005	<0.01	<0.01	<0.005	0.3	17	0	54.4	1.3
16288	MR1-05-51	383.90	384.97	FW	amphibolite	3.00	Baffinland 2011	8.74	0.021	<0.01	0.02	0.016	0.6	14.4	1	23.0	2.1
16630	MR1-08-154	253.95	254.88	FW	amphibolite	3.00	Baffinland 2011	8.26	0.007	<0.01	<0.01	0.013	0.3	17.0	1	54.4	3.5
16116	ARD-2B-NW	14.68	15.83	FW	chlorite amphibole schist	4ac	Baffinland 2011	8.91	0.044	0.01	0.03	0.006	0.9	36	1	38.4	0.5
16118	ARD-2B-NW	22.61	23.73	FW	chlorite amphibole schist	4ac	Baffinland 2011	8.20	1.77	0.39	1.37	0.009	42.8	23	1	0.5	0.0
5146	ARD-2A-NW	35	36	FW	Schist	4bc	AMEC 2010	9.6	0.044	0.04	<0.01	0.029	0.3	17.0	2.4	54	7.7
5150	ARD-2A-NW	59	60	FW	Schist	4bca	AMEC 2010	9.4	0.024	0.02	<0.01	0.028	0.3	15.9	2.3	51	7.5
5151	ARD-2A-NW	65	66	FW	Schist	4bca	AMEC 2010	9.8	0.130	0.06	0.070	0.019	2.2	16.1	1.6	7.4	0.7
5152	ARD-2A-NW	70	71	FW	Schist	4bca	AMEC 2010	10.0	0.062	0.04	0.022	0.016	0.7	9.1	1.3	13	1.9
5153	ARD-2A-NW	75	76	FW	Schist	4bca	AMEC 2010	9.0	0.081	0.06	0.021	0.022	0.7	16.2	1.8	25	2.8
5154	ARD-2A-NW	85	86	FW	Schist	4bca	AMEC 2010	10.1	0.032	0.03	<0.01	0.021	0.3	8.5	1.8	27	5.6
5170	ARD-2A-SE	85	86	FW	Schist	4bca	AMEC 2010	9.9	0.194	0.08	0.114	0.125	3.6	25.8	10	7.2	2.9
5173	ARD-2A-SE	103	104	FW	Schist	4bc	AMEC 2010	8.3	0.018	0.02	<0.01	0.101	0.3	22.4	8.4	72	26.9
5176	ARD-2B-NW	14	15	FW	Schist	4ac	AMEC 2010	8.8	0.095	0.08	0.015	0.017	0.5	21.9	1.4	47	3.0
5177	ARD-2B-NW	18	19	FW	Schist	4ac	AMEC 2010	9.0	0.139	0.14	<0.010	0.018	0.3	24.4	1.5	78	4.8
5178	ARD-2B-NW	24	25	FW	Schist	4ac	AMEC 2010	8.5	1.460	0.55	0.910	0.018	28.4	22.6	1.5	0.8	0.1
5179	ARD-2B-NW	35	36	FW	Schist	4c	AMEC 2010	8.8	0.038	0.04	<0.01	0.023	0.3	9.3	1.9	29.8	6.1
5180	ARD-2B-NW	47	48	FW	Schist	4c	AMEC 2010	8.9	0.034	0.03	<0.01	0.020	0.3	13.2	1.7	42.2	5.3
5181	ARD-2B-NW	55	56	FW	Schist	4c	AMEC 2010	8.8	0.027	0.03	<0.01	0.016	0.3	14.1	1.3	45.1	4.3
5185	ARD-2B-NW	79	80	FW	Schist	5b,4cb	AMEC 2010	9.6	0.089	0.04	0.049	0.018	1.5	12.8	1.5	8.4	1.0
5141	ARD-2A-NW	10	11	FW	Gneiss	5b	AMEC 2010	9.0	0.142	0.08	0.062	0.021	1.9	14.5	1.8	7.5	0.9
5142	ARD-2A-NW	15	16	FW	Gneiss	5b	AMEC 2010	9.9	0.140	0.05	0.090	0.024	2.8	11.1	2.0	3.9	0.7
5157	ARD-2A-SE	6	7	FW	Gneiss	5b	AMEC 2010	9.9	0.103	0.05	0.053	0.020	1.7	11.6	1.7	7.0	1.0
5158	ARD-2A-SE	11	12	FW	Gneiss	5b	AMEC 2010	10.0	0.174	0.10	0.074	0.017	2.3	12.3	1.4	5.3	0.6
5159	ARD-2A-SE	17	18	FW	Gneiss	5b	AMEC 2010	9.5	0.220	0.09	0.130	0.018	4.1	13.8	1.5	3.4	0.4
5160	ARD-2A-SE	21.5	22.5	FW	Gneiss	5b	AMEC 2010	9.7	0.013	0.01	<0.01	0.054	0.3	11.6	4.5	37	14.4
5164	ARD-2A-SE	49	50	FW	Gneiss	5b	AMEC 2010	10.1	0.056	0.03	0.026	0.017	0.8	7.9	1.4	10	1.7
5165	ARD-2A-SE	55	56	FW	Gneiss	5b	AMEC 2010	9.8	0.014	0.01	<0.01	0.109	0.3	15.6	9.1	50	29.1
5166	ARD-2A-SE	60	61	FW	Gneiss	5b	AMEC 2010	9.9	0.034	0.03	<0.01	0.019	0.3	10.7	1.6	34	5.1
5171	ARD-2A-SE	90	91	FW	Gneiss	6a	AMEC 2010	5.5	0.399	0.17	0.229	0.054	7.2	9.0	4.5	1.3	0.6
5172	ARD-2A-SE	96	97	FW	Gneiss	6a	AMEC 2010	9.2	0.137	0.06	0.077	0.066	2.4	10.4	5.5	4.3	2.3
5174	ARD-2B-NW	7	8	FW	Gneiss	5b,12a	AMEC 2010	9.2	0.068	0.02	0.048	0.014	1.5	3.7	1.2	2.5	0.8
5175	ARD-2B-NW	10	11	FW	Gneiss	5b,12a	AMEC 2010	9.0	0.010	0.01	<0.01	0.012	0.3	5.1	1.0	16	3.2
MRARD10-030	MR1-09-170	103	104	FW	Gneiss	5a	AMEC 2010	8.6	0.268	0.08	0.188	0.015	5.9	12.2	1.3	2.1	0.2
MRARD10-031	MR1-09-170	115.15	116	FW	Gneiss	5a	AMEC 2010	9.2	0.009	<0.01	<0.01	<0.005	0.3	4.6	0.4	15	1.3
MRARD10-034	MR1-08-162	185	186	FW	Gneiss	5c	AMEC 2010	9.0	0.183	0.13	0.053	0.012	1.7	7.7	1.0	4.6	0.6
MRARD10-043	MR1-09-167	40	40.7	FW	Gneiss	5a	AMEC 2010	9.5	0.020	0.02	<0.01	0.006	0.3	10.0	0.5	32	1.6
MRARD10-045	MR1-09-167	50	51	FW	Gneiss	5a	AMEC 2010	9.6	0.025	0.02	<0.01	<0.005	0.3	6.4	0.4	20	1.3
MRARD10-046	MR1-09-167	65	65.9	FW	Gneiss	5a	AMEC 2010	9.1	<0.005	<0.01	<0.01	<0.005	0.3	6.7	0.4	21	1.3
07ARD32	MR1-06-81	75	95	FW	Gneiss		Knight Piesold 2006-2007	9.26	0.185	0.12	0.065	0.018	2.0	24.2	2	12	0.7
ARD2	MR1-05-72	334	NA*	FW	Gneiss		Knight Piesold 2006-2007	10.03	<0.005	<0.01	<0.01	0.011	0.3	9.4	1	30	2.9
ARD4	MR1-05-73	297.5	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.93	<0.005	<0.01	<0.01	0.016	0.3	9.5	1	30	4.3
ARD5	MR1-05-73	292	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.75	0.008	<0.01	<0.01	0.01	0.3	9.2	1	29	2.7
ARD6	MR1-05-73	290.5	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.58	<0.005	<0.01	<0.01	0.015	0.3	8.9	1	28	4.0
UCS10	MR1-06-81	82.2	NA*	FW	Gneiss		Knight Piesold 2006-2007	6.48	3.28	0.63	2.650	0.005	82.8	14	0	0.2	0.0
UCS12	MR1-06-81	99	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.51	0.02	0.02	<0.01	0.026	0.3	6.2	2	20	6.9
UCS13	MR1-06-81	116.8	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.55	0.735	0.06	0.675	0.029	21.1	13.9	2	0.7	0.1
UCS22	MR1-06-81	126	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.28	0.077	0.04	0.037	0.012	1.2	7.8	1	6.7	0.9
UCS23	MR1-06-81	156.8	NA*	FW	Gneiss		Knight Piesold 2006-2007	10.05	0.054	0.01	0.044	0.007	1.4	9.1	1	6.6	0.4
UCS24	MR1-06-81	188	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.69	0.183	0.04	0.143	0.09	4.5	6.8	8	1.5	1.7
UCS51	MR1-06-105	212	NA*	FW	Gneiss		Knight Piesold 2006-2007	9.57	0.016	<0.01	0.016	0.03	0.5	8.5	3	17	5.0
MRARD10-055	MR1-08-159	190	191	FW	Gneiss	5c	AMEC 2010	9.2	0.360	0.07	0.290	0.006	9.1	9.6	0.5	1.1	0.1
16062	MR1-05-72	214.21	315.21	FW	QFm gneiss	5a	Baffinland 2011	8.85	0.007	<0.01	0.01	0.022	0.3	11.0	2	35.2	5.9
16064	MR1-05-72	328.13	329.10	FW	QFm gneiss	5a	Baffinland 2011	9.80	0.217	0.11	0.11	0.009	3.4	6.4	1	1.9	0.2
16066	MR1-05-72	334.78	335.88	FW	QFm gneiss	5a	Baffinland 2011	9.93	<0.005	<0.01	<0.01	0.011	0.3	7.7	1	24.6	2.9
16390	MR1-05-49	373.20	374.20	FW	QFm gneiss	5a	Baffinland 2011	9.74	0.025	0.02	<0.01	0.017	0.3	10.7	1	34.2	4.5
16392	MR1-05-49	382.59	383.49	FW	QFm gneiss	5a	Baffinland 2011	9.73	<0.005	<0.01	<0.01	0.017	0.3	11.4	1	36.5	4.5
16394	MR1-05-49	391.70	392.60	FW	QFm gneiss	5a	Baffinland 2011	9.52	0.042	0.04	<0.01	0.022	0.3	10.1	2	32.3	5.9
16578	MR1-09-172	186.90	188.00	FW	QFm gneiss	5a	Baffinland 2011	8.95	<0.005	<0.01	<0.01	0.014	0.3	8.7	1	27.8	3.7
16580	MR1-09-172	195.30	196.30	FW	QFm gneiss	5a	Baffinland 2011	9.64	<0.005	<0.01	<0.01	0.009	0.3	9.3	1	29.8	2.4
16582	MR1-09-172	206.40	207.41	FW	QFm gneiss	5a	Baffinland 2011	9.45	<0.005	<0.01	<0.01	0.008	0.3	10.1	1	32.3	2.1
16616	MR1-05-67	206.17	207.15	FW	QFm gneiss	5a	Baffinland 2011	9.47	<0.005	<0.01	<0.01	0.006	0.3	8.7	1	27.8	1.6
16632	MR1-08-154	257.79	258.77	FW	QFm gneiss	5a	Baffinland 2011	8.78	0.050	0.01	0.04	0.010	1.3	7.6	1	6.1	0.7

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	From	To	Waste Rock Code	Lithology	Rock Type Code	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		m	m						(wt.%)				(kg CaCO3/tonne)				
16088	ARP-2A-NW	23.00	24.00	FW	greywacke	6e	Baffinland 2011	10.08	0.058	0.04	0.01	0.011	0.3	11.6	1	37.1	2.9
16090	ARP-2A-NW	33.36	34.49	FW	greywacke	6e	Baffinland 2011	10.12	<0.005	<0.01	<0.01	0.031	0.3	9.6	3	30.7	8.3
16094	ARP-2A-NW	46.78	47.70	FW	greywacke	6e	Baffinland 2011	10.02	0.045	0.05	<0.01	0.026	0.3	8.0	2	25.6	6.9
16096	ARP-2A-NW	50.88	51.88	FW	greywacke	6e	Baffinland 2011	10.12	0.017	0.02	<0.01	0.018	0.3	11.8	2	37.8	4.8
16140	ARD-2A-SE	23.52	24.52	FW	greywacke	6e	Baffinland 2011	10.05	0.023	<0.01	0.02	0.006	0.6	13	1	20.8	0.8
16142	ARD-2A-SE	32.34	32.26	FW	greywacke	6e	Baffinland 2011	10.19	<0.005	<0.01	<0.01	0.010	0.3	11	1	35.2	2.7
16144	ARD-2A-SE	41.18	42.18	FW	greywacke	6e	Baffinland 2011	10.06	<0.005	<0.01	<0.01	0.013	0.3	9.3	1	29.8	3.5
16150	ARD-2A-SE	66.84	67.74	FW	greywacke	6e	Baffinland 2011	9.96	0.027	0.03	<0.01	0.077	0.3	20	6	64.0	20.5
16152	ARD-2A-SE	78.62	79.54	FW	greywacke	6e	Baffinland 2011	10.13	0.224	0.19	0.04	0.038	1.3	9.8	3	7.8	2.5
16576	MR1-09-172	181.44	182.41	FW	greywacke	6e	Baffinland 2011	8.85	0.468	0.14	0.33	0.012	10.3	14.3	1	1.4	0.1
5143	ARD-2A-NW			FW	Metasediment		AMEC 2010	9.9	0.027	0.03	<0.01	0.016	0.3	9.5	1.3	30	4.3
5144	ARD-2A-NW			FW	Metasediment		AMEC 2010	9.9	0.347	0.35	<0.01	0.020	0.3	9.1	1.7	29	5.3
5145	ARD-2A-NW	30	31	FW	Metasediment	6e	AMEC 2010	9.9	0.008	<0.01	<0.01	0.015	0.3	11.0	1.3	35	4.0
5147	ARD-2A-NW	40	41	FW	Metasediment	6e	AMEC 2010	10.0	0.075	0.05	0.025	0.024	0.8	7.9	2.0	10	2.6
5148	ARD-2A-NW	45	46	FW	Metasediment	6e	AMEC 2010	10.0	0.013	0.01	<0.01	0.025	0.3	11.7	2.1	37	6.7
5149	ARD-2A-NW	53	54	FW	Metasediment	6e	AMEC 2010	10.0	0.099	0.06	0.039	0.029	1.2	11.1	2.4	9.1	2.0
5161	ARD-2A-SE	26	27	FW	Metasediment	6e	AMEC 2010	10.1	0.011	0.01	<0.01	0.013	0.31	9.3	1.1	30	3.5
5162	ARD-2A-SE	34	35	FW	Metasediment	6e	AMEC 2010	10.1	<0.005	<0.01	<0.010	0.016	0.3	8.7	1.3	28	4.3
5163	ARD-2A-SE	44	45	FW	Metasediment	6e	AMEC 2010	10.1	0.008	<0.01	<0.01	0.014	0.3	8.5	1.2	27	3.7
5167	ARD-2A-SE	65	66	FW	Metasediment	6e	AMEC 2010	10.0	0.071	0.04	0.031	0.024	1.0	11.9	2.0	12	2.1
5168	ARD-2A-SE	72	73	FW	Metasediment	6e	AMEC 2010	10.1	0.021	0.02	<0.01	0.032	0.31	12.0	2.7	38	8.5
5169	ARD-2A-SE	79	80	FW	Metasediment	6e	AMEC 2010	10.2	0.137	0.12	0.017	0.038	0.5	7.4	3.2	14	6.0
16156	ARD-2A-SE	92.70	93.80	FW	quartzite	6a	Baffinland 2011	9.81	0.208	0.06	0.15	0.107	4.7	31	9	6.6	1.9
UCS25	MR1-06-81	216.2	NA*	FW	Volcanic Tuff		Knight Piesold 2006-2007	9.66	0.156	<0.01	0.156	0.014	4.9	33	1	7	0.2
UCS26	MR1-06-81	225.2	NA*	FW	Volcanic Tuff		Knight Piesold 2006-2007	9.14	0.019	0.03	<0.01	0.012	0.3	6.1	1	20	3.2
16348	MR1-04-38	140.80	141.80	FW	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	4.76	1.27	0.48	0.80	2.50	25.0	16.7	208	0.7	8.3
16736	MR1-06-80	186.81	187.81	FW1300	chlorite amphibole schist	4ac	Baffinland 2011	9.54	0.604	0.14	0.46	0.015	14.4	19.7	1	1.4	0.1
16730	MR1-06-80	170.96	172.00	FW1300	chlorite schist	4a	Baffinland 2011	9.51	0.713	0.16	0.55	0.010	17.2	20.6	1	1.2	0.0
16168	MR1-08-160	176.70	177.80	FW 1400	mica schist	4b	Baffinland 2011	8.84	<0.005	<0.01	<0.01	0.019	0.3	13	2	41.6	5.1
16164	MR1-08-160	152.40	153.59	FW 1400	chlorite schist	4a	Baffinland 2011	8.09	0.137	0.07	0.07	4.73	2.2	74	394	33.8	180.2
MRARD10-071	MR1-08-160	155	156	FW_1400	Schist	3.00	AMEC 2010	8.0	0.098	0.02	0.078	0.013	2.4	38	1	16	0.4
MRARD10-131	MR1-08-160	154	155	FW-1400	Amphibolite	3.00	AMEC 2010	8.0	0.292	0.11	0.182	4.27	5.7	92	356	16	63
16284	MR1-05-51	369.20	370.10	FW1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.63	0.187	0.01	0.18	1.05	5.6	43.4	88	7.7	15.6
16286	MR1-05-51	373.60	374.60	FW1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	7.92	0.579	0.09	0.49	1.35	15.3	32.6	113	2.1	7.3
16734	MR1-06-80	182.00	183.01	FW1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.30	0.332	0.13	0.20	0.012	6.3	8.9	1	1.4	0.2
16738	MR1-06-80	200.14	201.14	FW1300	QFm gneiss	5a	Baffinland 2011	9.71	0.412	0.20	0.21	0.012	6.6	9.9	1	1.5	0.2
16056	MR1-05-72	296.90	298.00	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.44	1.42	0.47	0.95	0.662	29.7	20.5	55	0.7	1.9
16058	MR1-05-72	305.90	307.10	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.35	2.46	0.94	1.52	1.39	47.5	26.6	116	0.6	2.4
16068	MR1-06-105	151.82	152.82	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	3.77	0.598	0.52	0.08	0.018	2.5	0.0	2	-2.3	0.6
16070	MR1-06-105	165.60	166.05	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	7.20	1.45	0.52	0.93	3.29	29.1	31.2	274	1.1	9.4
16060	MR1-05-72	309.25	310.25	FW 1300	volcanic tuff (layered), mica schist	11a, 4b	Baffinland 2011	8.20	0.025	<0.01	0.02	0.017	0.6	26.0	1	41.6	2.3
16728	MR1-06-80	167.00	168.04	FW1300	Banded_IF 50-60% Fe 25-60% mag.	9b	Baffinland 2011	7.57	4.37	0.32	4.05	0.023	126.6	12.8	2	0.1	0.0
16732	MR1-06-80	176.00	177.00	FW1300	Banded_IF 50-60% Fe 25-60% mag.	9b	Baffinland 2011	8.17	0.807	0.13	0.67	0.041	20.9	14.6	3	0.7	0.2
16282	MR1-05-51	361.20	362.18	FW1300	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	8.53	1.09	1.09	<0.01	0.147	0.3	10.5	12	33.6	39.2
16166	MR1-08-160	166.47	167.52	FW 1400	HG_IF 60-72.36% Fe 60-100% mag., chlorite schist	7f, 4a	Baffinland 2011	8.39	0.128	0.04	0.08	3.79	2.5	43	316	17.2	126.3
16328	MR1-08-141	298.11	299.01	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.18	3.88	0.20	3.67	3.17	114.7	61.9	264	0.5	2.3
16330	MR1-08-141	304.40	305.53	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	9.02	0.348	0.10	0.25	2.59	7.8	55.8	216	7.1	27.6
16382	MR1-05-49	348.56	349.56	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.75	0.356	0.07	0.28	2.17	8.8	32.0	181	3.7	20.7
16384	MR1-05-49	350.30	351.54	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.78	0.324	0.08	0.24	0.977	7.5	10.3	81	1.4	10.9
16622	MR1-08-154	224.92	225.92	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	6.32	1.45	0.21	1.24	2.34	38.8	3.5	195	0.1	5.0
16624	MR1-08-154	237.53	238.48	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	6.79	0.660	0.04	0.62	3.33	19.4	5.7	278	0.3	14.3
16626	MR1-08-154	241.81	242.76	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.71	0.304	0.02	0.29	5.27	9.1	59.9	439	6.6	48.5
16628	MR1-08-154	251.53	252.53	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.43	0.972	0.09	0.88	0.148	27.5	13.3	12	0.5	0.4
16306	MR1-04-44	388.64	389.60	FWS	amphibolite, QFm gneiss, greywacke	3,5a,be	Baffinland 2011	9.54	0.008	<0.01	<0.01	0.015	0.3	10.5	1	33.6	4.0
16358	MR1-04-38	176.38	177.28	FWS	greywacke, QFm gneiss	6e, 5a	Baffinland 2011	10.14	<0.005	<0.01	<0.01	0.020	0.3	13.2	2	42.2	5.3
16360	MR1-04-38	182.16	183.16	FWS	greywacke, QFm gneiss	6e, 5a	Baffinland 2011	10.05	0.061	0.02	0.04	0.020	1.3	11.2	2	9.0	1.3
16362	MR1-04-38	197.14	198.04	FWS	greywacke, QFm gneiss	6e, 5a	Baffinland 2011	10.10	<0.005	<0.01	<0.01	0.018	0.3	12.6	2	40.3	4.8
16304	MR1-04-44	371.69	372.69	FWS	QFm gneiss(greywacke)	5a(6e)	Baffinland 2011	9.84	0.008	<0.01	<0.01	0.018	0.3	14.6	2	46.7	4.8
16314	MR1-08-145	152.16	153.16	FWS	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	9.30	<0.005	<0.01	<0.01	0.016	0.3	12.3	1	39.4	4.3
16654	MR1-08-159	182.30	183.25	FWS	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	9.53	0.047	0.03	0.02	0.010	0.6	7.6	1	12.2	1.3
MRARD10-029	MR1-09-170	85	86	FWS	Volcanic Tuff /Schist	4b/(9b)	AMEC 2010	8.1	0.240	0.14	0.100	0.018	3.1	36	2	12	0.5
07ARD21	MR1-06-90	22.1	35.7	FWS	Schist /Amphibolite/Volcanic Tuff		Knight Piesold 2006-2007	8.17	1.68	0.67	1.010	0.039	32	18	3	0.6	0.1
07ARD14	MR1-06-84	187.7	203.7	FWS	Schist/Volcanic Tuff/Gneiss		Knight Piesold 2006-2007	8.10	0.064	0.03	0.034	0.043	1.1	21	4	20	3.4
07ARD38	MR1-05-67	189.4	211	FWS	Amphibolite/Gneiss		Knight Piesold 2006-2007	9.75	0.041	0.04	<0.01	0.039	0.3	36	3	114	10
07ARD22	MR1-06-90	149.2	162	FWS	Gneiss		Knight Piesold 2006-2007	7.61	0.104	0.07	0.034	0.009	1.1	13.0	1	12	0.7
07ARD33	MR1-06-105	184.2	187.7	FWS	Schist		Knight Piesold 2006-2007	9.11	0.076	0.06	0.016	0.008	0.5	8.6	1	17	1.3
16388	MR1-05-49	367.55	368.60	FWS	amphibolite	3.00	Baffinland 2011	8.62	0.140	0.07	0.07	0.013	2.2	16.4	1	7.5	0.5
16614	MR1-05-67	194.67	195.64	FWS	amphibolite	3.00	Baffinland 2011	9.29	0.005	<0.01	<0.01	0.014	0.3	21.3	1	68.2	3.7
UCS9	MR1-06-81	70.5	NA*	FWS	Amphibolite		Knight Piesold 2006-2007	7.14	0.022	0.02	<0.01	0.019	0.3	13.2	2	42	5.1
16172	MR1-08-158	270.56	271.60	FWS	chlorite amphibole schist	4ac	Baffinland 2011	8.39	0.139	0.05	0.09	0.020	2.8	16	2	5.7	0.6
16174	MR1-08-158	276.30	277.40	FWS	chlorite amphibole schist	4ac	Baffinland 2011	7.89	0.167	0.02	0.15	0.011	4.7	21	1	4.5	0.2
16680	MR1-08-146	201.60	202.63	FWS	chlorite amphibole schist	4ac	Baffinland 2011	7.90	0.292	0.16	0.13	0.021	4.1	26.0	2	6.4	0.4
16178	MR1-08-158	294.40	295.40	FWS	chlorite mica amphibole schist	4abc	Baffinland 2011	9.35	0.463	0.11	0.35	0.005	10.9	9.5	0	0.9	0.0
16754	MR1-08-159	171.44	172.39	FWS	chlorite mica schist	4ab	Baffinland 2011	9.38	0.084	0.08	<0.01	0.015	0.3	20.1	1	64.3	4.0
16336	MR1-08-141	334.70	335.75	FWS	chlorite schist	4a	Baffinland 2011	8.51	0.022	0.02	<0.01	0.036	0.3	20.7	3	66.2	9.6
16466	MR1-04-41	122.42	123.39	FWS	chlorite schist	4a	Baffinland 2011	8.30	0.148	0.03	0.12	0.016	3.8	20.8	1	5.5	0.4
16468	MR1-04-41	130.60	131.56	FWS	chlorite schist	4a	Baffinland 2011	9.16	<0.005	<0.01	<0.01	0.024	0.3	16.9	2	54.1	6.4
16642	MR1-08-159	130.61	131.61	FWS	chlorite schist	4a	Baffinland 2011	3.85	3.74	1.09	2.66	0.677	83.1	0.01	56	-0.2	0.7
16646	MR1-08-159	141.86	142.93	FWS	chlorite schist	4a	Baffinland 2011	8.27	0.043	0.04	<0.01	0.016	0.3	16.6	1	53.1	4.3
16690	MR1-08-146	243.39	244.40	FWS	chlorite schist	4a	Baffinland 2011	9.29	0.109	0.11	<0.01	0.020	0.3	22.4	2	71.7	5.3
16722	MR1-06-90	141.90	142.90	FWS	chlorite schist	4a	Baffinland 2011	7.62	2.02	0.25	1.77	0.014	55.3	16.9	1	0.3	0.0
MRARD10-035	MR1-08-163	155	156	FWS	Schist	4a	AMEC 2010	7.9	0.007	<0.01	<0.01	0.020	0.3	9.7	1.7	31	5.3
MRARD10-037	MR1-08-160	180	181	FWS	Schist	4b	AMEC 2010	8.9	0.158	0.10	0.058	0.020	1.8	8.3	1.7	4.6	0.9
MRARD10-047	MR1-08-163	110	111	FWS	Schist	4a	AMEC 2010	8.5	<0.005	<0.01	<0.010	0.011	0.3	14	1	46	2.9
MRARD10-049	MR1-08-163	135	136	FWS	Schist	4a	AMEC 2010	8.2	0.014	0.01	<0.01	0.021	0.3	16.3	1.8	52	5.6
MRARD10-056	MR1-08-152	165	166	FWS	Schist	4a	AMEC 2010	8.3	0.008	<0.01	<0.01	0.009	0.3	17	1	54	2.4
MRARD10-058	MR1-08-159	160	161	FWS	Schist	4ab	AMEC 2010	9.9	0.295	0.08	0.215	<0.005	6.7	12.4	0.4	1.8	0.1
MRARD10-063	MR1-08-157	173.4	174.4	FWS	Schist	4a	AMEC 2010	8.1	0.305	0.14	0.165	0.017	5.2	23	1	4.4	0.3
MRARD10-085	MR1-08-144	210	211	FWS	Schist	11a-b	AMEC 2010	7.8	6.130	0.17	5.960	0.005	186.3	14.8	0.4	0.1	0.0
MRARD10-097	MR1-08-143	185	186	FWS	Schist	4a-b	AMEC 2010	9.6	0.019	0.02	<0.01	0.087	0.3	17	7	53	23
MRARD10-099	MR1-08-144	193	193.8	FWS	Schist	5b	AMEC 2010	9.0	<0.005	<0.01	<0.01	0.010	0.3	18.8	0.8	60	2.7
MRARD10-114	MR1-07-121	220	221	FWS	Schist	5c	AMEC 2010	9.5	0.085	0.03	0.055	0.006	1.7	9.1	1	5.3	0.3
MRARD10-116	MR1-07-121	194.7	195.7	FWS	Schist	11a-4a-6a	AMEC 2010	7.3	1.29	0.25	1.040	0.036	32.5	26	3	0.8	0.1
MRARD10-128	MR1-08-141	165	166	FWS	Schist	4a	AMEC 2010	8.4	0.220	0.02	0.200	0.012	6.3	29	1	4.7	0.2
16574	MR1-09-172	173.00	174.00	FWS	mica amphibole schist	4bc	Baffinland 2011	8.44	1.15	0.32	0.84	0.036	26.3	17.3	3	0.7	0.1
16752	MR1-06-84	204.15	205.15	FWS	mica amphibole schist	4bc	Baffinland 2011	9.27	0.086	0.09	<0.01	0.017	0.3	15.7	1	50.2	4.5
16648	MR1-08-159	147.43	148.43	FWS	mica chlorite schist	4ba	Baffinland 2011	9.14	0.063	0.02	0.04	0.009	1.3	10.6	1	8.5	0.6
16650	MR1-08-159	153.30	154.28	FWS	mica chlorite schist	4ba	Baffinland 2011	9.76	0.076	0.03	0.04	0.012	1.3	25.5	1	20.4	0.8
16652	MR1-08-159	164.20	165.00	FWS	mica chlorite schist	4ba	Baffinland 2011	8.09	0.745	<0.01	0.74	0.012	23.1	13.7	1	0.6	0.0
16078	MR1-06-105	186.70	187.70	FWS	mica schist	4b	Baffinland 2011	9.05	0.011	<0.01	<0.01	0.009	0.3	10.8	1	34.6	2.4
16572	MR1-09-172	164.43	165.46	FWS	mica schist	4b	Baffinland 2011	8.47	0.277	0.14	0.13	0.018	4.1	17.6	2	4.3	0.4

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	From	To	Waste Rock Code	Lithology	Rock Type Code	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		m	m						(wt.%)				(kg CaCO3/tonne)				
16518	MR1-07-118	14.61	15.56	FWS	ab_QF gneiss	5b	Baffinland 2011	9.15	0.058	0.02	0.03	0.024	0.9	7.2	2	7.7	2.1
16520	MR1-07-118	28.90	29.83	FWS	ab_QF gneiss	5b	Baffinland 2011	9.39	<0.005	<0.01	<0.01	0.012	0.3	7.1	1	22.7	3.2
16726	MR1-06-90	153.40	154.38	FWS	ab_QF gneiss	5b	Baffinland 2011	9.05	0.090	0.09	<0.01	0.015	0.3	10.7	1	34.2	4.0
16750	MR1-06-84	192.39	193.49	FWS	ab_QF gneiss	5b	Baffinland 2011	9.30	0.058	0.06	<0.01	0.014	0.3	10.1	1	32.3	3.7
MRARD10-004	MR1-09-179	160	161	FWS	Gneiss	5e	AMEC 2010	9.5	0.016	0.02	<0.01	0.013	0.3	9.7	1.1	31	3.5
MRARD10-005	MR1-09-179	176	177	FWS	Gneiss	5e	AMEC 2010	9.4	0.015	0.02	<0.01	0.009	0.3	5.8	0.8	19	2.4
MRARD10-011	MR1-09-178	150	151	FWS	Gneiss	5c	AMEC 2010	8.1	0.026	0.03	<0.01	0.014	0.3	15.9	1.2	51	3.7
MRARD10-015	MR1-09-178	165.3	166	FWS	Gneiss	5a	AMEC 2010	8.9	0.016	0.02	<0.01	0.013	0.3	7.8	1.1	25	3.5
MRARD10-033	MR1-08-162	170	171	FWS	Gneiss	5c	AMEC 2010	9.4	0.016	0.02	<0.01	<0.005	0.3	6.5	0.4	21	1.3
MRARD10-057	MR1-08-161	160	161	FWS	Gneiss	5c	AMEC 2010	9.5	0.426	0.19	0.236	0.014	7.4	10.3	1.2	1.4	0.2
MRARD10-074	MR1-08-149	220	221	FWS	Gneiss	5b	AMEC 2010	7.3	0.664	0.09	0.574	0.019	17.9	8.0	1.6	0.4	0.1
MRARD10-104	MR1-08-140	165	166	FWS	Gneiss	5b	AMEC 2010	8.4	0.009	<0.01	<0.01	<0.005	0.3	8.7	0.4	28	1.3
MRARD10-115	MR1-07-121	236	237	FWS	Gneiss	5c	AMEC 2010	9.3	0.012	<0.01	0.012	0.012	0.4	13	1	34	2.7
MRARD10-125	MR1-08-144	195	196	FWS	Gneiss	5b	AMEC 2010	9.3	<0.005	<0.01	<0.01	0.010	0.3	6.2	0.8	20	2.7
ARD1	MR1-05-72	322	NA*	FWS	Gneiss		Knight Piesold 2006-2007	9.78	0.006	0.016	<0.01	0.012	0.3	9.6	1	31	3.2
ARD3	MR1-05-72	325	NA*	FWS	Gneiss		Knight Piesold 2006-2007	10.15	0.042	0.042	<0.01	0.01	0.3	9	1	29	2.7
UCS49	MR1-06-105	193.2	NA*	FWS	Gneiss		Knight Piesold 2006-2007	9.91	0.247	<0.01	0.247	0.012	7.7	7.8	1	1.0	0.1
16080	MR1-06-105	195.09	196.09	FWS	QFm gneiss	5a	Baffinland 2011	9.11	0.066	<0.01	0.06	0.008	1.9	10.8	1	5.8	0.4
16082	MR1-06-105	205.29	206.24	FWS	QFm gneiss	5a	Baffinland 2011	9.54	<0.005	<0.01	<0.01	0.006	0.3	7.8	1	25.0	1.6
16084	MR1-06-105	215.38	216.38	FWS	QFm gneiss	5a	Baffinland 2011	9.45	<0.005	<0.01	<0.01	0.012	0.3	7.7	1	24.6	3.2
16180	MR1-08-158	306.89	307.99	FWS	QFm gneiss	5a	Baffinland 2011	9.70	0.034	0.02	0.01	0.015	0.3	7.1	1	22.7	4.0
16302	MR1-04-44	362.60	363.62	FWS	QFm gneiss	5a	Baffinland 2011	9.70	0.047	<0.01	0.04	0.021	1.3	11.5	2	9.2	1.4
16308	MR1-04-44	394.20	395.30	FWS	QFm gneiss	5a	Baffinland 2011	9.73	0.006	<0.01	<0.01	0.014	0.3	11.2	1	35.8	3.7
16352	MR1-04-38	155.66	156.56	FWS	QFm gneiss	5a	Baffinland 2011	9.06	0.018	0.02	<0.01	0.018	0.3	9.7	2	31.0	4.8
16354	MR1-04-38	164.50	165.48	FWS	QFm gneiss	5a	Baffinland 2011	9.92	0.026	0.03	<0.01	0.020	0.3	9.3	2	29.8	5.3
16356	MR1-04-38	170.47	171.37	FWS	QFm gneiss	5a	Baffinland 2011	10.07	<0.005	<0.01	<0.01	0.016	0.3	11.9	1	38.1	4.3
16386	MR1-05-49	355.12	356.02	FWS	QFm gneiss	5a	Baffinland 2011	9.66	0.046	0.03	0.02	0.024	0.6	10.7	2	17.1	3.2
16610	MR1-05-67	173.35	174.36	FWS	QFm gneiss	5a	Baffinland 2011	9.24	0.012	0.01	<0.01	0.005	0.3	5.7	0	18.2	1.3
16612	MR1-05-67	181.90	182.89	FWS	QFm gneiss	5a	Baffinland 2011	8.79	0.064	0.06	<0.01	0.008	0.3	8.8	1	28.2	2.1
16350	MR1-04-38	146.60	147.60	FWS	greywacke	6e	Baffinland 2011	6.82	1.08	0.08	1.00	0.007	31.3	13.5	1	0.4	0.0
16464	MR1-04-41	113.85	114.81	FWS	greywacke	6e	Baffinland 2011	9.58	<0.005	<0.01	<0.01	0.013	0.3	24.9	1	79.7	3.5
16074	MR1-06-105	176.00	177.03	FWS	gabbro	12b	Baffinland 2011	8.31	0.064	0.05	0.01	0.028	0.3	21.6	2	69.1	7.5
MRARD10-081	MR1-08-142	168.1	169	FWS	Metasediment	6a	AMEC 2010	9.3	<0.005	<0.01	<0.01	0.007	0.3	8.1	0.6	26	1.9
MRARD10-077	MR1-08-146	210	211	FWS	Volcanic tuff	11a	AMEC 2010	9.8	<0.005	<0.01	<0.01	0.006	0.3	15.2	0.5	49	1.6
UCS2	MR1-06-81	33.8	NA*	FWS	Volcanic Tuff		Knight Piesold 2006-2007	6.26	0.157	0.16	<0.01	0.012	0.3	12	1	38	3.2
16684	MR1-08-146	214.93	215.93	FWS	volcanic tuff (layered)	11a	Baffinland 2011	9.28	0.074	0.03	0.04	0.142	1.3	16.8	12	13.4	9.5
16692	MR1-08-146	251.20	252.25	FWS	volcanic tuff (layered)	11a	Baffinland 2011	10.05	0.044	<0.01	0.04	0.006	1.3	19.9	1	15.9	0.4
16724	MR1-06-90	144.70	145.69	FWS	chlorite schist, HG_IF	4a/7d	Baffinland 2011	8.07	0.199	0.20	<0.01	1.45	0.3	23.8	121	76.2	386.7
16076	MR1-06-105	182.01	182.96	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	7.66	5.62	1.47	4.15	1.25	129.7	26.7	104	0.2	0.8
16170	MR1-08-158	264.90	265.90	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	8.33	1.86	<0.01	1.88	1.73	58.8	24	144	0.4	2.5
16640	MR1-08-159	121.80	122.83	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	4.06	0.594	0.34	0.25	0.030	7.8	0.01	3	-0.2	0.3
16644	MR1-08-159	134.90	135.90	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	7.30	0.132	0.06	0.07	2.87	2.2	36.4	239	16.6	109.3
16072	MR1-06-105	171.52	172.52	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	7.92	2.17	0.62	1.54	3.34	48.1	59.1	278	1.2	5.8
16176	MR1-08-158	287.46	288.50	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.02	0.282	0.07	0.21	0.010	6.6	12	1	1.8	0.1
16332	MR1-08-141	313.10	314.00	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.78	0.548	0.11	0.43	1.09	13.4	39.6	91	2.9	6.8
16334	MR1-08-141	321.90	322.90	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.46	0.737	0.03	0.71	0.612	22.2	12.9	51	0.6	2.3
16462	MR1-04-41	109.51	110.47	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.64	0.798	0.08	0.72	0.946	22.5	70.5	79	3.1	3.5
16682	MR1-08-146	207.00	208.04	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.31	0.389	0.05	0.34	<0.005	10.6	14.6	0	1.4	0.0
16686	MR1-08-146	224.61	225.66	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.25	0.879	0.09	0.79	<0.005	24.7	14.2	0	0.6	0.0
16688	MR1-08-146	231.70	232.75	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.90	0.317	0.02	0.30	0.197	9.4	14.1	16	1.5	1.8
16678	MR1-08-146	198.21	199.24	FWS	HG_IF 60-72.36% Fe 60-100% mag., chlorite schist	7f/4a	Baffinland 2011	8.03	2.49	0.14	2.35	0.019	73.4	16.2	2	0.2	0.0
MRARD10-040	MR1-08-158	160.3	161	HW	Gneiss/Amphibolite	11ba	AMEC 2010	9.4	0.133	0.11	0.023	0.070	0.7	21	6	29	8.1
16552	MR1-09-176	173.70	174.70	HW	amphibole chlorite schist	4ca	Baffinland 2011	8.62	0.066	0.04	0.03	0.021	0.9	19.5	2	20.8	1.9
16426	MR1-05-47	173.22	174.22	HW	amphibole mica schist	4c/b	Baffinland 2011	8.43	0.197	0.14	0.06	0.019	1.9	15.6	2	8.3	0.8
16406	MR1-05-47	76.00	76.90	HW	amphibole schist	4c	Baffinland 2011	8.16	<0.005	<0.01	<0.01	0.027	0.3	15.0	2	48.0	7.2
16414	MR1-05-47	116.57	117.66	HW	amphibole schist	4c	Baffinland 2011	8.33	0.173	0.17	<0.01	0.034	0.3	21.8	3	69.8	9.1
16418	MR1-05-47	136.94	137.94	HW	amphibole schist	4c	Baffinland 2011	8.17	1.16	0.62	0.54	0.030	16.9	19.5	3	1.2	0.1
16420	MR1-05-47	143.77	144.87	HW	amphibole schist	4c	Baffinland 2011	7.31	22.2	<0.01	23.4	0.029	731.3	33.4	2	0.0	0.0
16264	MR1-05-51	188.70	189.85	HW	amphibolite	3.00	Baffinland 2011	8.33	0.092	0.05	0.04	0.011	1.3	24.2	1	19.4	0.7
16268	MR1-05-51	202.74	203.79	HW	amphibolite	3.00	Baffinland 2011	8.24	0.131	0.08	0.05	0.012	1.6	17.4	1	11.1	0.6
16340	MR1-04-38	11.17	12.07	HW	amphibolite	3.00	Baffinland 2011	8.19	0.285	0.03	0.26	0.010	8.1	14.2	1	1.7	0.1
16364	MR1-04-33	13.60	14.50	HW	amphibolite	3.00	Baffinland 2011	9.23	0.132	0.02	0.11	0.243	3.4	26.8	20	7.8	5.9
16366	MR1-04-33	22.50	23.50	HW	amphibolite	3.00	Baffinland 2011	8.53	0.629	0.09	0.54	0.436	16.9	38.3	36	2.3	2.2
16368	MR1-04-33	31.60	32.60	HW	amphibolite	3.00	Baffinland 2011	9.26	0.099	<0.01	0.11	0.327	3.4	40.1	27	11.7	7.9
16372	MR1-04-33	43.20	44.25	HW	amphibolite	3.00	Baffinland 2011	9.74	0.182	0.05	0.13	0.197	4.1	26.7	16	6.6	4.0
16374	MR1-04-33	52.38	53.28	HW	amphibolite	3.00	Baffinland 2011	9.76	0.116	<0.01	0.11	0.012	3.4	16.8	1	4.9	0.3
16396	MR1-05-47	22.90	23.94	HW	amphibolite	3.00	Baffinland 2011	8.59	0.011	0.01	<0.01	0.019	0.3	21.9	2	70.1	5.1
16398	MR1-05-47	35.76	36.80	HW	amphibolite	3.00	Baffinland 2011	8.43	0.008	<0.01	<0.01	0.019	0.3	16.8	2	53.8	5.1
16400	MR1-05-47	45.78	46.73	HW	amphibolite	3.00	Baffinland 2011	8.51	<0.005	<0.01	<0.01	0.019	0.3	20.0	2	64.0	5.1
16402	MR1-05-47	55.40	56.34	HW	amphibolite	3.00	Baffinland 2011	8.74	0.176	0.07	0.10	0.018	3.1	18.9	2	6.0	0.5
16404	MR1-05-47	63.50	64.47	HW	amphibolite	3.00	Baffinland 2011	8.34	0.007	<0.01	<0.01	0.020	0.3	22.0	2	70.4	5.3
16408	MR1-05-47	82.82	83.82	HW	amphibolite	3.00	Baffinland 2011	9.34	0.006	<0.01	<0.01	0.047	0.3	50.6	4	161.9	12.5
16584	MR1-05-77	11.81	12.76	HW	amphibolite	3.00	Baffinland 2011	9.08	0.172	0.07	0.10	0.030	3.1	14.2	3	4.5	0.8
16590	MR1-05-77	41.13	42.10	HW	amphibolite	3.00	Baffinland 2011	9.27	0.011	0.01	<0.01	0.114	0.3	17.4	10	55.7	30.4
16592	MR1-05-77	52.71	53.70	HW	amphibolite	3.00	Baffinland 2011	9.45	0.197	0.10	0.10	0.158	3.1	27.3	13	8.7	4.2
16594	MR1-05-77	61.50	62.48	HW	amphibolite	3.00	Baffinland 2011	9.26	0.138	0.07	0.07	0.070	2.2	19.5	6	8.9	2.7
16596	MR1-05-77	70.65	71.65	HW	amphibolite	3.00	Baffinland 2011	9.20	0.138	0.08	0.06	0.184	1.9	26.2	15	14.0	8.2
ARD12	MR1-05-47	34	NA*	HW	Amphibolite		Knight Piesold 2006-2007	8.24	0.007	0.057	<0.01	0.016	0.3	27	1	85	4.3
ARD15	MR1-05-51	20.5	NA*	HW	Amphibolite		Knight Piesold 2006-2007	9.48	0.05	0.044	0.010	0.22	0.3	24	18	78	59
ARD16	MR1-05-51	60.5	NA*	HW	Amphibolite		Knight Piesold 2006-2007	8.65	0.12	0.084	0.036	0.015	1.1	10	1	9.1	1.1
16410	MR1-05-47	93.40	94.40	HW	amphibolite (amphibole schist)	3 (4c?)	Baffinland 2011	9.63	<0.005	<0.01	<0.01	0.025	0.3	27.9	2	89.3	6.7
16546	MR1-09-176	155.63	156.63	HW	chlorite mica schist	4ab	Baffinland 2011	8.35	0.594	0.14	0.45	0.020	14.1	19.8	2	1.4	0.1
16550	MR1-09-176	166.54	167.54	HW	chlorite schist	4a	Baffinland 2011	8.41	0.039	0.02	0.02	0.020	0.6	20.2	2	32.3	2.7
16556	MR1-09-176	193.59	194.57	HW	chlorite schist	4a	Baffinland 2011	8.94	<0.005	<0.01	<0.01	0.045	0.3	23.3	4	74.6	12.0
16412	MR1-05-47	106.30	107.30	HW	mica amphibole schist	4b,c	Baffinland 2011	8.80	0.038	<0.01	<0.01	0.026	0.3	20.2	2	64.6	6.9
16416	MR1-05-47	125.40	126.30	HW	mica amphibole schist	4b/c	Baffinland 2011	8.24	0.031	0.03	<0.01	0.024	0.3	21.7	2	69.4	6.4
16422	MR1-05-47	158.31	159.31	HW	mica schist	4b	Baffinland 2011	8.18	0.446	0.22	0.23	0.023	7.2	21.3	2	3.0	0.3
16424	MR1-05-47	164.20	165.34	HW	mica schist	4b	Baffinland 2011	8.26	0.541	0.26	0.28	0.026	8.8	16.6	2	1.9	0.2
MRARD10-008	MR1-09-176	60	61	HW	Schist	6e/11b	AMEC 2010	8.4	0.075	0.08	<0.01	0.017	0.3	14	1	45	4.5
MRARD10-009	MR1-09-176	100	101	HW	Schist	6e/11b	AMEC 2010	8.4	0.285	0.13	0.155	0.017	4.8	17	1	3.4	0.3
MRARD10-014	MR1-09-176	185.2	186	HW	Schist	4a	AMEC 2010	8.4	0.029	0.03	<0.01	0.019	0.3	28	2	89	5.1
MRARD10-052	MR1-08-158	20	21	HW	Schist	11ba	AMEC 2010	8.2	0.055	0.03	0.025	0.084	0.8	14	7	18	9
MRARD10-130	MR1-08-153	54.9	55.9	HW	Schist	4ac	AMEC 2010	8.7	0.051	<0.01	0.051	0.117	1.6	25	10	16	6.1
ARD 18	MR1-05-47	134.5	NA*	HW	Schist		Knight Piesold 2006-2007	8.45	0.3	0.271	0.029	0.022	0.9	11	2	13	2.0
ARD19	MR1-05-47	160	NA*	HW	Schist		Knight Piesold 2006-2007	8.49	1.47	0.024	1.446	0.014	45	14	1	0.3	0.03
MRARD10-010	MR1-09-176	140	141	HW	Gneiss	6e/11b	AMEC 2010	8.5	<0.005	<0.01	<0.01	0.016	0.3	11	1	34	4.3
16600	MR1-05-77	82.35	83.36	HW	ab_QF gneiss	5b	Baffinland 2011	9.01	0.148	0.08	0.06	0.031	1.9	16.6	3	8.9	1.4
16182	MR1-08-158	14.90	16.00	HW	greywacke	6e	Baffinland 2011	8.49	0.044	0.02	0.02	0.025	0.6	13	2	20.8	3.3
16184	MR1-08-158	24.09	25.09	HW	greywacke	6e	Baffinland 2011	8.45	0.104	0.05	0.05	0.260	1.6	28	22	17.9	13.9
16186	MR1-08-158	34.57	35.57	HW	greywacke	6e	Baffinland 2011	8.42	0.028	0.01	0.02	0.596	0.6	58	50	92.8	79.5
16188	MR1-08-158	46.70	47.60	HW	greywacke	6e	Baffinland 2011	9.10	0.419	0.15	0.26	0.804	8.1	81	67	10.0	8.2
16190	MR1-08-158	65.38	65.53	HW	greywacke	6e	Baffinland 2011	9.11	0.086	0.02	0.06	0.355	1.9	41	30	21.9	15.8
16192	MR1-08-158	65.53	66.60	HW	greywacke	6e	Baffinland 2011	9.27	0.008	<0.01	<0.01	0.276	0.3	35	23	112.0	73.6
16194	MR1-08-158	73.75	74.79	HW	greywacke	6e	Baffinland 2011	8.82	0.112	0.03	0.08	0.478	2.5	53	40	21.2	15.9
16196	MR1-08-158	85.35	86.39	HW	greywacke	6e	Baffinland 2011	9.65	0.092	0.03	0.06	0.210	1.9	25	18	13.3	9.3

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	From	To	Waste Rock Code	Lithology	Rock Type Code	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		m	m						(wt.%)				(kg CaCO3/tonne)				
16198	MR1-08-158	95.28	96.19	HW	greywacke	6e	Baffinland 2011	9.34	0.433	0.17	0.26	0.644	8.1	64	54	7.9	6.6
16200	MR1-08-158	105.13	106.17	HW	greywacke	6e	Baffinland 2011	9.54	0.100	0.04	0.06	0.027	1.9	19	2	10.1	1.2
16202	MR1-08-158	114.63	115.60	HW	greywacke	6e	Baffinland 2011	9.31	0.250	0.06	0.19	0.529	5.9	51.9	44	8.7	7.4
16204	MR1-08-158	125.50	126.48	HW	greywacke	6e	Baffinland 2011	9.61	0.090	0.03	0.06	0.191	1.9	27.1	16	14.5	8.5
16206	MR1-08-158	134.20	135.10	HW	greywacke	6e	Baffinland 2011	9.33	0.555	0.13	0.42	0.382	13.1	45.1	32	3.4	2.4
16208	MR1-08-158	145.90	146.93	HW	greywacke	6e	Baffinland 2011	9.40	0.032	0.03	<0.01	0.364	0.3	38.7	30	123.8	97.1
16210	MR1-08-158	154.67	155.67	HW	greywacke	6e	Baffinland 2011	9.64	0.044	0.03	0.02	0.123	0.6	26.2	10	41.9	16.4
16212	MR1-08-158	163.10	164.14	HW	greywacke	6e	Baffinland 2011	9.16	0.034	0.02	0.02	0.674	0.6	64.1	56	102.6	89.9
16342	MR1-04-38	16.97	17.87	HW	greywacke	6e	Baffinland 2011	9.11	0.008	<0.01	<0.01	0.012	0.3	9.5	1	30.4	3.2
16522	MR1-09-176	33.00	34.00	HW	greywacke	6e	Baffinland 2011	8.62	<0.005	<0.01	<0.01	0.020	0.3	14.0	2	44.8	5.3
16524	MR1-09-176	42.50	43.58	HW	greywacke	6e	Baffinland 2011	8.44	<0.005	<0.01	<0.01	0.018	0.3	18.3	2	58.6	4.8
16526	MR1-09-176	52.50	53.50	HW	greywacke	6e	Baffinland 2011	8.78	<0.005	<0.01	<0.01	0.025	0.3	20.9	2	66.9	6.7
16528	MR1-09-176	63.92	64.92	HW	greywacke	6e	Baffinland 2011	8.43	<0.005	<0.01	<0.01	0.024	0.3	15.8	2	50.6	6.4
16530	MR1-09-176	71.98	72.98	HW	greywacke	6e	Baffinland 2011	8.60	<0.005	<0.01	<0.01	0.017	0.3	15.6	1	49.9	4.5
16532	MR1-09-176	82.67	83.62	HW	greywacke	6e	Baffinland 2011	9.70	0.037	0.02	0.01	0.441	0.3	15.6	37	49.9	117.6
16534	MR1-09-176	93.96	94.91	HW	greywacke	6e	Baffinland 2011	8.67	<0.005	<0.01	<0.01	0.014	0.3	11.3	1	36.2	3.7
16536	MR1-09-176	104.66	105.66	HW	greywacke	6e	Baffinland 2011	8.34	<0.005	<0.01	<0.01	0.009	0.3	9.0	1	28.8	2.4
16538	MR1-09-176	115.20	116.17	HW	greywacke	6e	Baffinland 2011	8.29	0.173	0.05	0.12	0.018	3.8	15.0	2	4.0	0.4
16540	MR1-09-176	123.00	124.00	HW	greywacke	6e	Baffinland 2011	9.00	0.049	0.02	0.03	0.010	0.9	10.6	1	11.3	0.9
16542	MR1-09-176	132.77	133.72	HW	greywacke	6e	Baffinland 2011	8.61	0.008	<0.01	<0.01	0.024	0.3	9.1	2	29.1	6.4
16544	MR1-09-176	141.43	142.43	HW	greywacke	6e	Baffinland 2011	8.28	0.045	0.02	0.02	0.018	0.6	18.9	2	30.2	2.4
16586	MR1-05-77	21.62	22.62	HW	greywacke	6e	Baffinland 2011	9.22	<0.005	<0.01	<0.01	0.061	0.3	13.7	5	43.8	16.3
16588	MR1-05-77	30.96	31.96	HW	greywacke	6e	Baffinland 2011	9.16	<0.005	<0.01	<0.01	0.018	0.3	10.4	2	33.3	4.8
16598	MR1-05-77	76.50	77.46	HW	greywacke	6e	Baffinland 2011	9.33	<0.005	<0.01	<0.01	0.015	0.3	15.4	1	49.3	4.0
16694	MR1-08-156	8.73	9.79	HW	greywacke	6e	Baffinland 2011	8.93	<0.005	<0.01	<0.01	0.107	0.3	16.3	9	52.2	28.5
16696	MR1-08-156	15.34	16.31	HW	greywacke	6e	Baffinland 2011	9.46	0.046	0.03	0.01	0.035	0.3	11.7	3	37.4	9.3
MRARD10-090	MR1-08-144	60	61	HW	Metasediment	4ab/11a	AMEC 2010	9.5	0.012	0.01	<0.01	0.009	0.3	13	1	41	2.4
MRARD10-100	MR1-08-146	60	61	HW	Metasediment	11b-11a	AMEC 2010	9.4	0.018	0.02	<0.01	0.225	0.3	30.6	19	98	60
ARD 13	MR1-05-59	20	NA*	HW	Metasediment		Knight Piesold 2006-2007	8.3	0.035	0.035	<0.01	0.028	0.3	11	2	36	7.5
16376	MR1-04-33	61.38	62.28	HW	ultramafite	12c	Baffinland 2011	9.73	<0.005	<0.01	0.01	0.019	0.3	17.3	2	55.4	5.1
16378	MR1-04-33	67.50	68.40	HW	ultramafite	12c	Baffinland 2011	9.71	0.020	<0.01	0.01	0.020	0.3	15.9	2	50.9	5.3
16380	MR1-04-33	73.47	74.37	HW	ultramafite	12c	Baffinland 2011	9.78	0.015	0.01	<0.01	0.019	0.3	13.5	2	43.2	5.1
MRARD10-012	MR1-09-173	20	21	HW	Volcanic Tuff	11b	AMEC 2010	9.1	0.055	0.06	<0.01	1.07	0.3	129	89	413	285
MRARD10-023	MR1-09-173	45	46	HW	Volcanic Tuff	11b	AMEC 2010	9.0	0.054	0.05	<0.01	0.738	0.3	98	62	314	197
MRARD10-025	MR1-09-173	70	71	HW	Volcanic Tuff	11a/4a	AMEC 2010	8.1	0.056	0.06	<0.01	0.021	0.3	18	2	57	5.6
MRARD10-042	MR1-08-158	80	80.9	HW	Volcanic Tuff	11ba	AMEC 2010	9.2	0.039	0.02	0.019	0.362	0.6	46	30	77	51
MRARD10-051	MR1-08-158	120	121	HW	Volcanic Tuff	11ba	AMEC 2010	8.1	0.354	0.12	0.234	0.967	7.3	99	81	13	11
MRARD10-053	MR1-08-152	30	31	HW	Volcanic Tuff	11a	AMEC 2010	9.5	0.092	0.03	0.062	0.126	1.9	19	11	10	5.4
MRARD10-054	MR1-08-158	40	41	HW	Volcanic Tuff	11ba	AMEC 2010	9.0	0.009	<0.01	<0.01	0.177	0.3	27	15	85	47
MRARD10-059	MR1-08-152	50	51	HW	Volcanic Tuff	11a	AMEC 2010	9.4	0.008	<0.01	<0.01	0.013	0.3	14	1	44	3.5
MRARD10-067	MR1-08-150	75	75.9	HW	Volcanic Tuff	11.00	AMEC 2010	8.6	0.019	0.02	<0.01	0.008	0.3	14	1	45	2.1
MRARD10-076	MR1-08-157	45	46	HW	Volcanic Tuff	11b	AMEC 2010	8.2	0.037	0.02	0.017	0.081	0.5	31	7	59	13
MRARD10-079	MR1-08-146	40	40.9	HW	Volcanic tuff	11b-11a	AMEC 2010	9.3	0.102	0.06	0.042	0.654	1.3	63.9	55	49	42
MRARD10-082	MR1-08-150	40	41	HW	Volcanic Tuff	11-6e	AMEC 2010	8.8	0.120	0.02	0.100	0.437	3.1	42	36	13	12
MRARD10-084	MR1-08-147	55	56	HW	Volcanic Tuff	4ac	AMEC 2010	8.7	0.016	0.02	<0.01	0.040	0.3	18	3	56	11
MRARD10-087	MR1-08-147	40	41	HW	Volcanic Tuff	11.00	AMEC 2010	8.8	0.447	0.09	0.357	0.966	11.2	96	81	8.6	7.2
MRARD10-088	MR1-08-147	25	26	HW	Volcanic Tuff	11.00	AMEC 2010	8.5	0.033	0.02	0.013	0.110	0.4	27	9	66	23
MRARD10-089	MR1-08-147	70	71	HW	Volcanic Tuff	11.00	AMEC 2010	8.7	0.075	0.03	0.045	0.212	1.4	44	18	31	13
MRARD10-098	MR1-08-153	35	36	HW	Volcanic Tuff	11b-6e	AMEC 2010	9.5	0.009	<0.01	<0.01	0.045	0.3	15	4	46	12
MRARD10-112	MR1-08-156	40.3	41.3	HW	Volcanic Tuff	11b-6e	AMEC 2010	9.0	0.009	<0.01	<0.01	0.871	0.3	84	73	268	232
ARD20	MR1-05-59	33	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	8.45	0.048	0.048	<0.01	0.023	0.3	13	2	40	6.1
ARD22	MR1-05-77	33	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.43	0.03	0.03	<0.01	0.027	0.3	12	2	38	7.2
ARD26	MR1-06-86	198	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.75	0.066	0.01	0.056	0.507	1.8	49	42	28	24
UCS15	MR1-05-77	69	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.89	0.171	0.04	0.131	0.138	4.1	19	12	5	2.8
UCS28	MR1-06-86	149.5	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.77	0.005	<0.01	<0.01	0.009	0.3	11	1	34	2.4
UCS29	MR1-06-86	171.8	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.72	0.165	0.02	0.145	0.021	4.5	13	2	3	0.4
UCS30	MR1-06-86	195.1	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.76	<0.005	<0.01	<0.01	0.025	0.3	26	2	84	6.7
UCS31	MR1-06-91	203.5	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.98	0.007	<0.01	<0.01	0.132	0.3	15	11	49	35
UCS32	MR1-06-91	220	NA*	HW	Volcanic Tuff		Knight Piesold 2006-2007	9.64	0.049	<0.01	0.049	0.043	1.5	10	4	7	2.3
16262	MR1-05-51	183.09	184.09	HW	volcanic tuff (layered)	11a	Baffinland 2011	7.60	1.36	0.22	1.14	0.018	35.6	7.8	2	0.2	0.0
16266	MR1-05-51	197.00	197.90	HW	volcanic tuff (layered)	11a	Baffinland 2011	8.12	1.29	0.35	0.93	0.009	29.1	7.6	1	0.3	0.0
16270	MR1-05-51	214.00	215.00	HW	volcanic tuff (layered)	11a	Baffinland 2011	8.53	0.174	0.02	0.15	0.014	4.7	19.9	1	4.2	0.2
16370	MR1-04-33	37.74	38.64	HW	volcanic tuff (layered)	11a	Baffinland 2011	9.30	0.095	<0.01	0.09	0.174	2.8	25.3	15	9.0	5.2
16554	MR1-09-176	182.43	183.43	HW	volcanic tuff (masive)	11b	Baffinland 2011	8.61	0.054	0.01	0.04	0.015	1.3	14.9	1	11.9	1.0
16656	MR1-08-146	14.00	14.98	HW	volcanic tuff (masive)	11b	Baffinland 2011	8.31	0.034	0.02	0.01	0.161	0.3	20.0	13	64.0	42.9
16658	MR1-08-146	25.34	26.30	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.28	0.022	<0.01	0.01	0.775	0.3	67.6	65	216.3	206.7
16660	MR1-08-146	35.30	36.30	HW	volcanic tuff (masive)	11b	Baffinland 2011	8.80	0.063	0.01	0.05	1.07	1.6	98.2	89	62.8	57.1
16662	MR1-08-146	43.81	44.82	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.05	0.116	0.04	0.08	0.715	2.5	69.1	60	27.6	23.8
16664	MR1-08-146	55.52	56.48	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.12	0.026	0.03	<0.01	0.180	0.3	23.3	15	74.6	48.0
16666	MR1-08-146	64.23	65.23	HW	volcanic tuff (masive)	11b	Baffinland 2011	8.85	1.09	0.10	0.99	0.158	30.9	28.1	13	0.9	0.4
16668	MR1-08-146	72.71	73.66	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.59	0.130	0.06	0.08	0.084	2.5	27.1	7	10.8	2.8
16670	MR1-08-146	84.19	85.20	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.76	0.089	0.05	0.04	0.033	1.3	25.4	3	20.3	2.2
16698	MR1-08-156	23.00	23.95	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.25	0.069	0.05	0.02	0.998	0.6	86.8	83	138.9	133.1
16700	MR1-08-156	33.82	34.82	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.17	0.195	0.11	0.08	0.724	2.5	67.8	60	27.1	24.1
16702	MR1-08-156	43.25	44.25	HW	volcanic tuff (masive)	11b	Baffinland 2011	9.48	0.105	0.10	<0.01	0.223	0.3	31.6	19	101.1	59.5
16704	MR1-08-156	51.73	52.74	HW	volcanic tuff (masive)	11b	Baffinland 2011	8.96	0.200	0.11	0.09	1.09	2.8	104	91	37.0	32.3
UCS33	MR1-06-91	235	NA*	HW at pit	Volcanic Tuff		Knight Piesold 2006-2007	10.03	0.01	<0.01	0.010	0.02	0.3	15	2	48	5.3
UCS34	MR1-06-91	249.4	NA*	HW beyon	Volcanic Tuff		Knight Piesold 2006-2007	9.81	<0.005	<0.01	<0.01	0.014	0.3	22	1	69	3.7
UCS35	MR1-06-91	267.4	NA*	HW beyon	Volcanic Tuff		Knight Piesold 2006-2007	9.65	<0.005	<0.01	<0.01	0.037	0.3	12	3	39	9.9
16548	MR1-09-176	164.29	165.39	HW	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.27	0.634	0.26	0.37	3.84	11.6	37.8	320	3.3	27.7
07ARD27	MR1-05-62	50	70	HW	Amphibolite		Knight Piesold 2006-2007	8.31	0.682	0.41	0.272	0.058	8.5	27	5	3.2	0.6
07ARD28	MR1-05-62	17.7	37.7	HW	Amphibolite		Knight Piesold 2006-2007	8.42	0.068	0.07	<0.01	0.022	0.3	51	2	163	5.9
07ARD15	MR1-05-68	22.1	35.7	HW	Schist/Volcanic Tuff		Knight Piesold 2006-2007	8.47	0.021	<0.01	0.021	0.009	0.7	10	1	15	1.1
07ARD31	MR1-05-54	51	62.6	HW	Volcanic Tuff /Chert /Schist		Knight Piesold 2006-2007	8.06	0.975	0.25	0.725	0.020	22.7	25	2	1.1	0.1
07ARD23	MR1-06-103	18	44.7	HW	Volcanic Tuff /Schist		Knight Piesold 2006-2007	8.21	0.171	0.15	0.021	0.016	0.7	19	1	30	2.0
07ARD24	MR1-05-55	25.5	48.9	HW	Volcanic Tuff /Schist		Knight Piesold 2006-2007	8.53	0.111	0.11	<0.01	0.015	0.31	34	1	107	4.0
07ARD35	MR!-06-101	6	26	HW	Volcanic Tuff /Schist		Knight Piesold 2006-2007	9.78	0.052	0.04	0.012	0.071	0.4	15	6	40	16
07ARD37	MR1-04-36	46.9	71.4	HW	Amphibolite/Volcanic Tuff /Schist /Gneiss		Knight Piesold 2006-2007	9.33	0.150	0.08	0.070	0.087	2.2	28	7	13	3.3
16162	MR1-08-160	15.20	16.20	HWS	amphibolite (chlorite-amphibole schist)	3 (4ac)	Baffinland 2011	8.19	0.038	0.02	0.01	0.015	0.3	37	1	118.4	4.0
16036	MR1-05-72	142.74	143.74	HWS	amphibolite, HG_IF	3, 7c	Baffinland 2011	7.19	1.49	0.30	1.19	0.013	37.2	6.8	1	0.2	0.0
16046	MR1-05-72	188.80	189.80	HWS	amphibolite, HG_IF	3, 7c	Baffinland 2011	7.64	17.8	5.53	12.2	0.021	381.3	10.2	2	0.0	0.0
16050	MR1-05-72	203.40	204.20	HWS	amphibolite, HG_IF	3, 7f	Baffinland 2011	6.07	5.22	0.45	4.77	0.012	149.1	7.8	1	0.1	0.0
16054	MR1-05-72	216.66	217.66	HWS	amphibolite, HG_IF	3, 7f	Baffinland 2011	8.30	0.471	0.08	0.39	0.010	12.2	7.7	1	0.6	0.1
16040	MR1-05-72	162.30	163.30	HWS	amphibolite, volcanic Tuff (layered)	3, 11a	Baffinland 2011	7.15	0.012	<0.01	<0.01	0.009	0.3	10.6	1	33.9	2.4
16042	MR1-05-72	171.26	172.26	HWS	amphibolite, volcanic Tuff (layered)	3, 11a	Baffinland 2011	7.82	0.008	<0.01	<0.01	0.025	0.3	9.4	2	30.1	6.7
16044	MR1-05-72	182.77	183.77	HWS	amphibolite, volcanic Tuff (layered)	3, 11a	Baffinland 2011	8.38	<0.005	<0.01	<0.01	0.016	0.3	10.3	1	33.0	4.3
ARD21	MR1-05-77	90	NA*	HWS	Amphibolite/Gneiss		Knight Piesold 2006-2007	9.77	0.05	0.03	0.020	0.012	0.6	10	1	16	1.6
ARD10	MR1-05-77	117	NA*	HWS	Amphibolite/Volcanic Tuff		Knight Piesold 2006-2007	8.33	0.11	0.017	0.093	0.011	2.9	5.7	1	2.0	0.3
ARD11	MR1-05-77	188	NA*	IW	Amphibolite/Volcanic Tuff		Knight Piesold 2006-2007	8.04	0.072	0.032	0.040	0.01	1.3	9.9	1	7.9	0.8
16428	MR1-05-47	178.00	179.00	HWS	amphibole chlorite schist	4c/a	Baffinland 2011	8.45	1.85	0.49	1.36	0.026	42.5	20.3	2	0.5	0.1
16506	MR1-04-45	205.50	206.60	HWS	amphibole chlorite schist	4ca	Baffinland 2011	8.00	0.410	0.04	0.37	0.012	11.6	17.5	1	1.5	0.1
16508	MR1-04-45	213.90	214.85	HWS	amphibole chlorite schist	4ca	Baffinland 2011	7.97	0.374	0.04	0.33	0.014	10.3	17.6	1	1.7	0.1
16510	MR1-04-45	223.02	224.02	HWS	amphibole chlorite schist	4ca	Baffinland 2011	7.93	0.724	<0.01	0.73	0.010	22.8	19.1	1	0.8	0.0
16568	MR1-09-172	29.83	30.82	HWS	amphibole chlorite schist	4ca	Baffinland 2011	8.65	0.146	0.08	0.06	0.016	1.9	15.1	1	8.1	0.7
16160	MR1-08-160	11.15	11.25	HWS	amphibole schist	4cc	Baffinland 2011	8.21	<0.005	<0.01	<0.01	0.018	0.3	14	2	44.8	4.8
16228	MR1-05-53	114.20	115.30	HWS	amphibole schist	4c	Baffinland 2011	8.03	0.025	0.02	<0.01	0.043	0.3	22.7	4	72.6	11.5

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	From	To	Waste Rock Code	Lithology	Rock Type Code	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		m	m						(wt.%)				(kg CaCO3/tonne)				
16230	MR1-05-53	125.90	126.79	HWS	amphibole schist	4c	Baffinland 2011	7.49	4.68	0.14	4.55	0.049	142.2	19.8	4	0.1	0.0
16254	MR1-05-51	156.02	157.02	HWS	amphibole schist	4c	Baffinland 2011	8.35	0.019	0.02	<0.01	0.018	0.3	17.2	2	55.0	4.8
16256	MR1-05-51	163.20	164.27	HWS	amphibole schist	4c	Baffinland 2011	8.38	0.122	0.07	0.05	0.018	1.6	19.3	2	12.4	1.0
16430	MR1-05-47	189.17	190.17	HWS	amphibole schist	4c	Baffinland 2011	8.36	0.224	0.12	0.10	0.025	3.1	19.8	2	6.3	0.7
16008	MR1-05-72	39.95	40.95	HWS	amphibolite	3.00	Baffinland 2011	6.89	<0.005	<0.01	<0.01	0.044	0.3	4.5	4	14.4	11.7
16010	MR1-05-72	50.30	51.30	HWS	amphibolite	3.00	Baffinland 2011	7.40	<0.005	<0.01	<0.01	0.140	0.3	6.7	12	21.4	37.3
16014	MR1-05-72	65.35	66.35	HWS	amphibolite	3.00	Baffinland 2011	7.89	0.124	0.06	0.07	0.011	2.2	10.2	1	4.7	0.4
16018	MR1-05-72	77.20	78.10	HWS	amphibolite	3.00	Baffinland 2011	8.30	<0.005	<0.01	<0.01	0.013	0.3	6.9	1	22.1	3.5
16022	MR1-05-72	92.70	93.65	HWS	amphibolite	3.00	Baffinland 2011	7.77	<0.005	<0.01	<0.01	0.014	0.3	7.0	1	22.4	3.7
16024	MR1-05-72	101.40	102.45	HWS	amphibolite	3.00	Baffinland 2011	8.16	0.072	0.04	0.03	0.008	0.9	13.4	1	14.3	0.7
16224	MR1-05-53	37.30	38.30	HWS	amphibolite	3.00	Baffinland 2011	8.45	0.031	0.03	<0.01	0.045	0.3	28.3	4	90.6	12.0
16226	MR1-05-53	45.77	46.70	HWS	amphibolite	3.00	Baffinland 2011	8.43	0.013	0.01	<0.01	0.042	0.3	29.1	4	93.1	11.2
16232	MR1-05-53	131.80	132.80	HWS	amphibolite	3.00	Baffinland 2011	7.90	6.30	0.24	6.06	0.066	189.4	24.4	6	0.1	0.0
16236	MR1-05-51	24.70	25.80	HWS	amphibolite	3.00	Baffinland 2011	8.27	0.260	0.03	0.23	0.612	7.2	58.2	51	8.1	7.1
16238	MR1-05-51	33.80	34.73	HWS	amphibolite	3.00	Baffinland 2011	9.13	0.016	0.02	<0.01	2.27	0.3	194	189	620.8	605.4
16240	MR1-05-51	41.97	43.01	HWS	amphibolite	3.00	Baffinland 2011	8.73	0.075	0.03	0.04	2.19	1.3	196	183	156.8	146.0
16242	MR1-05-51	57.54	58.60	HWS	amphibolite	3.00	Baffinland 2011	9.07	0.082	0.04	0.05	0.025	1.6	0.010	2	-1.4	1.3
16244	MR1-05-51	71.50	72.43	HWS	amphibolite	3.00	Baffinland 2011	9.44	0.051	0.02	0.04	0.041	1.3	12.0	3	9.6	2.7
16246	MR1-05-51	88.00	89.03	HWS	amphibolite	3.00	Baffinland 2011	8.42	0.040	0.03	0.01	0.023	0.3	15.9	2	50.9	6.1
16248	MR1-05-51	96.30	97.20	HWS	amphibolite	3.00	Baffinland 2011	8.21	0.023	0.02	<0.01	0.017	0.3	14.3	1	45.8	4.5
16250	MR1-05-51	106.10	107.40	HWS	amphibolite	3.00	Baffinland 2011	8.44	0.014	0.01	<0.01	0.019	0.3	18.3	2	58.6	5.1
16252	MR1-05-51	142.30	143.30	HWS	amphibolite	3.00	Baffinland 2011	8.48	0.040	0.03	0.01	0.021	0.3	19.6	2	62.7	5.6
16440	MR1-05-47	266.33	267.40	HWS	amphibolite	3.00	Baffinland 2011	8.33	0.076	0.06	0.02	0.037	0.6	43.1	3	69.0	4.9
16444	MR1-05-47	275.98	277.03	HWS	amphibolite	3.00	Baffinland 2011	8.46	0.013	0.01	<0.01	0.027	0.3	35.1	2	112.3	7.2
16448	MR1-05-47	288.16	289.27	HWS	amphibolite	3.00	Baffinland 2011	8.53	0.370	0.11	0.26	0.030	8.1	18.5	3	2.3	0.3
16452	MR1-05-47	298.35	299.38	HWS	amphibolite	3.00	Baffinland 2011	8.43	0.427	0.08	0.34	0.024	10.6	20.0	2	1.9	0.2
16454	MR1-05-47	304.32	305.34	HWS	amphibolite	3.00	Baffinland 2011	8.34	0.032	0.03	<0.01	0.021	0.3	21.7	2	69.4	5.6
16458	MR1-05-47	317.99	319.02	HWS	amphibolite	3.00	Baffinland 2011	8.31	0.017	0.02	<0.01	0.014	0.3	17.0	1	54.4	3.7
16460	MR1-05-47	326.17	327.14	HWS	amphibolite	3.00	Baffinland 2011	8.41	0.018	0.02	<0.01	0.014	0.3	12.8	1	41.0	3.7
16480	MR1-05-46	227.75	228.75	HWS	amphibolite	3.00	Baffinland 2011	8.56	0.008	<0.01	<0.01	0.021	0.3	14.0	2	44.8	5.6
16482	MR1-05-46	234.67	235.68	HWS	amphibolite	3.00	Baffinland 2011	8.34	1.28	0.16	1.12	0.008	35.0	14.3	1	0.4	0.0
16486	MR1-05-46	253.90	254.95	HWS	amphibolite	3.00	Baffinland 2011	8.27	0.119	0.04	0.08	0.014	2.5	12.1	1	4.8	0.5
16488	MR1-05-46	266.81	267.80	HWS	amphibolite	3.00	Baffinland 2011	8.17	0.072	0.05	0.02	0.016	0.6	17.8	1	28.5	2.1
16490	MR1-05-46	271.33	272.42	HWS	amphibolite	3.00	Baffinland 2011	8.65	0.528	0.09	0.43	0.007	13.4	7.8	1	0.6	0.0
16492	MR1-05-46	280.36	281.34	HWS	amphibolite	3.00	Baffinland 2011	8.22	0.086	0.03	0.05	0.012	1.6	19.5	1	12.5	0.6
16504	MR1-04-45	201.30	202.33	HWS	amphibolite	3.00	Baffinland 2011	8.17	0.382	0.17	0.21	0.012	6.6	15.0	1	2.3	0.2
16516	MR1-04-45	246.59	247.69	HWS	amphibolite	3.00	Baffinland 2011	8.52	0.837	0.04	0.80	0.126	25.0	16.2	11	0.6	0.4
16604	MR1-05-77	102.80	103.76	HWS	amphibolite	3.00	Baffinland 2011	8.86	0.336	0.16	0.18	0.018	5.6	17.1	2	3.0	0.3
16606	MR1-05-77	111.32	112.29	HWS	amphibolite	3.00	Baffinland 2011	8.84	0.103	0.07	0.03	0.023	0.9	14.4	2	15.4	2.0
ARD14	MR1-05-59	60	NA*	HWS	Amphibolite		Knight Piesold 2006-2007	8.1	0.014	<0.01	0.014	0.019	0.4	9.4	2	21	3.6
ARD17	MR1-05-51	99	NA*	HWS	Amphibolite		Knight Piesold 2006-2007	8.48	0.009	0.039	<0.01	0.014	0.3	18	1	56	3.7
ARD23	MR1-05-76	38.2	NA*	HWS	Amphibolite		Knight Piesold 2006-2007	9.05	0.019	0.049	<0.01	0.014	0.3	16	1	50	3.7
ARD24	MR1-05-76	42	NA*	HWS	Amphibolite		Knight Piesold 2006-2007	9	0.014	0.014	<0.01	0.009	0.3	7.6	1	24	2.4
16434	MR1-05-47	224.06	225.06	HWS	chlorite amphibole schist	4ac	Baffinland 2011	8.48	0.026	0.03	<0.01	0.027	0.3	18.7	2	59.8	7.2
16500	MR1-04-45	184.86	185.86	HWS	chlorite amphibole schist	4ac	Baffinland 2011	8.23	0.344	0.10	0.24	0.033	7.5	18.2	3	2.4	0.4
16512	MR1-04-45	233.68	234.70	HWS	chlorite amphibole schist	4ac	Baffinland 2011	8.42	1.52	0.24	1.29	0.018	40.3	15.0	2	0.4	0.0
16002	MR1-05-72	19.90	20.90	HWS	chlorite schist	4a	Baffinland 2011	7.37	0.025	<0.01	0.01	0.022	0.3	4.2	2	13.4	5.9
16004	MR1-05-72	23.50	24.60	HWS	chlorite schist	4a	Baffinland 2011	7.78	<0.005	<0.01	<0.01	0.054	0.3	5.8	5	18.6	14.4
16214	MR1-08-158	176.50	177.50	HWS	chlorite schist	4a	Baffinland 2011	8.60	0.010	0.01	<0.01	0.230	0.3	29.8	19	95.4	61.3
16216	MR1-08-158	183.68	184.68	HWS	chlorite schist	4a	Baffinland 2011	8.35	0.032	0.03	<0.01	0.076	0.3	18.1	6	57.9	20.3
16218	MR1-08-158	193.04	194.10	HWS	chlorite schist	4a	Baffinland 2011	8.38	1.58	0.08	1.50	0.056	46.9	16.5	5	0.4	0.1
16220	MR1-08-158	197.23	198.25	HWS	chlorite schist	4a	Baffinland 2011	8.49	0.224	0.06	0.16	0.017	5.0	11.7	1	2.3	0.3
16290	MR1-04-44	106.93	107.83	HWS	chlorite schist	4a	Baffinland 2011	8.23	0.017	<0.01	0.01	0.025	0.3	25.6	2	81.9	6.7
16292	MR1-04-44	215.87	216.97	HWS	chlorite schist	4a	Baffinland 2011	8.27	0.501	0.09	0.41	0.024	12.8	33.2	2	2.6	0.2
16316	MR1-08-141	142.91	143.93	HWS	chlorite schist	4a	Baffinland 2011	8.16	0.212	<0.01	0.23	0.017	7.2	37.5	1	5.2	0.2
16318	MR1-08-141	153.90	154.90	HWS	chlorite schist	4a	Baffinland 2011	7.88	0.126	0.03	0.10	0.036	3.1	36.6	3	11.7	1.0
16320	MR1-08-141	162.62	163.60	HWS	chlorite schist	4a	Baffinland 2011	7.40	0.339	0.05	0.29	0.018	9.1	37.3	2	4.1	0.2
16322	MR1-08-141	171.24	172.24	HWS	chlorite schist	4a	Baffinland 2011	7.77	0.046	<0.01	0.04	0.022	1.3	27.7	2	22.2	1.5
16344	MR1-04-38	25.70	26.70	HWS	chlorite schist	4a	Baffinland 2011	8.53	0.012	<0.01	0.04	0.013	1.3	13.0	1	10.4	0.9
16346	MR1-04-38	36.80	37.73	HWS	chlorite schist	4a	Baffinland 2011	8.44	<0.005	<0.01	0.06	0.014	1.9	15.4	1	8.2	0.6
16472	MR1-05-46	82.60	83.60	HWS	chlorite schist	4a	Baffinland 2011	8.39	0.091	0.06	0.03	0.092	0.9	27.7	8	29.5	8.2
16560	MR1-09-176	204.31	205.34	HWS	chlorite schist	4a	Baffinland 2011	8.69	<0.005	<0.01	<0.01	0.028	0.3	27.3	2	87.4	7.5
16570	MR1-09-172	114.30	115.25	HWS	chlorite schist	4a	Baffinland 2011	7.85	0.097	0.07	0.03	0.017	0.9	24.5	1	26.1	1.5
16618	MR1-08-154	105.70	106.65	HWS	chlorite schist	4a	Baffinland 2011	8.16	0.202	0.10	0.10	0.028	3.1	31.4	2	10.0	0.7
16620	MR1-08-154	112.42	113.42	HWS	chlorite schist	4a	Baffinland 2011	8.18	0.251	0.14	0.11	0.046	3.4	31.1	4	9.0	1.1
16672	MR1-08-146	92.33	93.28	HWS	chlorite schist	4a	Baffinland 2011	8.48	0.044	0.04	<0.01	0.020	0.3	19.8	2	63.4	5.3
16674	MR1-08-146	103.33	104.30	HWS	chlorite schist	4a	Baffinland 2011	9.14	0.052	0.05	<0.01	0.026	0.3	18.1	2	57.9	6.9
16676	MR1-08-146	114.90	115.90	HWS	chlorite schist	4a	Baffinland 2011	7.73	0.237	0.09	0.14	0.019	4.4	16.6	2	3.8	0.4
16712	MR1-08-156	84.07	85.17	HWS	chlorite schist	4a	Baffinland 2011	8.64	0.186	0.07	0.12	0.013	3.8	16.3	1	4.3	0.3
16714	MR1-08-156	92.03	93.06	HWS	chlorite schist	4a	Baffinland 2011	7.96	0.212	0.11	0.10	0.015	3.1	13.0	1	4.2	0.4
16716	MR1-08-156	100.18	101.12	HWS	chlorite schist	4a	Baffinland 2011	8.29	0.419	0.08	0.34	0.022	10.6	27.2	2	2.6	0.2
16740	MR1-06-84	16.55	17.63	HWS	chlorite schist	4a	Baffinland 2011	8.42	0.090	0.09	<0.01	0.023	0.3	14.1	2	45.1	6.1
16742	MR1-06-84	24.68	25.63	HWS	chlorite schist	4a	Baffinland 2011	8.38	0.188	0.11	0.07	0.019	2.2	13.8	2	6.3	0.7
16744	MR1-06-84	35.70	36.67	HWS	chlorite schist	4a	Baffinland 2011	8.25	0.112	0.11	<0.01	0.027	0.3	14.3	2	45.8	7.2
16748	MR1-06-84	53.21	54.31	HWS	chlorite schist	4a	Baffinland 2011	7.83	0.125	0.13	<0.01	0.020	0.3	8.4	2	26.9	5.3
16258	MR1-05-51	167.85	168.77	HWS	mica schist	4b	Baffinland 2011	8.67	0.291	0.11	0.18	0.016	5.6	20.1	1	3.6	0.2
16260	MR1-05-51	173.39	174.39	HWS	mica schist	4b	Baffinland 2011	8.23	0.063	0.05	0.02	0.022	0.6	21.5	2	34.4	2.9
MRARD10-001	MR1-09-171	67	68	HWS	Schist	4a/4c	AMEC 2010	7.6	0.320	0.24	0.080	0.029	2.5	36	2	14	1.0
MRARD10-002	MR1-09-179	30.2	31.2	HWS	Schist	4a	AMEC 2010	8.4	0.016	0.02	<0.01	0.017	0.3	10	1	32	4.5
MRARD10-003	MR1-09-179	45	46	HWS	Schist	4a	AMEC 2010	7.7	0.029	0.03	<0.01	0.407	0.3	7.9	34	25	109
MRARD10-006	MR1-09-177	130.2	131	HWS	Schist	4a	AMEC 2010	8.3	0.056	0.04	0.016	0.019	0.5	15	2	31	3.2
MRARD10-007	MR1-09-177	55	56	HWS	Schist	4a	AMEC 2010	8.5	0.198	0.18	0.018	0.023	0.6	16	2	29	3.4
MRARD10-013	MR1-09-176	260	260.4	HWS	Schist	6e/11b	AMEC 2010	8.5	0.098	0.10	<0.01	0.026	0.3	42	2	133	6.9
MRARD10-016	MR1-09-172	63	64	HWS	Schist	4a	AMEC 2010	8.7	0.271	0.09	0.181	0.026	5.7	19	2	3.4	0.4
MRARD10-017	MR1-09-172	30.65	31.65	HWS	Schist	4ac	AMEC 2010	8.6	0.153	0.09	0.063	0.024	2.0	26	2	13	1.0
MRARD10-020	MR1-09-172	115	116	HWS	Schist	4a	AMEC 2010	8.0	0.463	0.21	0.253	0.015	7.9	26	1	3.3	0.2
MRARD10-022	MR1-09-176	275	276	HWS	Schist	4a	AMEC 2010	8.1	0.026	0.03	<0.01	0.018	0.3	26	2	83	4.8
MRARD10-026	MR1-09-173	130	131	HWS	Schist	4a/6e	AMEC 2010	8.3	0.556	0.28	0.276	0.021	8.6	20	2	2.4	0.2
MRARD10-027	MR1-09-169	52.2	53	HWS	Schist	4b/(9b)	AMEC 2010	8.5	0.034	0.03	<0.01	0.030	0.3	15	3	47	8.0
MRARD10-028	MR1-09-169	45	46	HWS	Schist	4a	AMEC 2010	8.2	0.650	0.18	0.470	0.010	14.7	10	1	0.7	0.1
MRARD10-041	MR1-08-158	185	185.7	HWS	Schist	4a	AMEC 2010	8.3	0.073	0.07	<0.01	0.041	0.3	25	3	79	10.9
MRARD10-050	MR1-08-152	75	75.6	HWS	Schist	4a	AMEC 2010	7.9	0.014	0.01	<0.01	0.029	0.3	18	2	56	7.7
MRARD10-060	MR1-08-157	85	86	HWS	Schist	4ab	AMEC 2010	8.1	0.185	0.06	0.125	0.006	3.9	14	1	3.6	0.1
MRARD10-068	MR1-08-140	50	51	HWS	Schist	4a-4c	AMEC 2010	7.6	1.18	0.21	0.970	0.007	30.3	12	1	0.4	0.02
MRARD10-073	MR1-08-155	20	21	HWS	Schist	4a	AMEC 2010	7.7	0.018	0.02	<0.01	0.009	0.3	21	1	67	2.4
MRARD10-078	MR1-08-153	80	81	HWS	Schist	4ac	AMEC 2010	8.3	0.124	0.03	0.094	<0.005	2.9	13	0	4.4	0.1
MRARD10-086	MR1-08-147	90	91	HWS	Schist	4ac	AMEC 2010	8.4	0.107	0.04	0.067	0.012	2.1	20	1	9.4	0.5
MRARD10-092	MR1-08-142	30	31	HWS	Schist	4a	AMEC 2010	7.7	0.594	0.29	0.304	0.006	9.5	23	1	2.5	0.1
MRARD10-094	MR1-08-147	110	110.5	HWS	Schist	4ac	AMEC 2010	8.2	0.253	0.13	0.123	0.017	3.8	27	1	6.9	0.4
MRARD10-096	MR1-08-146	99.5	100.5	HWS	Schist	4a	AMEC 2010	8.9	0.009	<0.01	<0.01	0.079	0.3	23.4	6.6	75	21
MRARD10-101	MR1-08-153	100	101	HWS	Schist	4a	AMEC 2010	8.2	0.086	0.04	0.046	0.012	1.4	21	1	15	0.7
MRARD10-103	MR1-08-141	227.8	228.8	HWS	Schist	4a	AMEC 2010	8.0	0.089	0.09	<0.01	0.020	0.3	18	2	57	5.3
MRARD10-109	MR1-08-141	145	146	HWS	Schist	4a	AMEC 2010	7.6	0.229	0.18	0.049	0.032	1.5	27	3	18	1.7
MRARD10-111	MR1-08-144	100	101	HWS	Schist	4ab-11a	AMEC 2010	8.3	0.010	0.01	<0.01	0.009	0.3	12	1	38	2.4
MRARD10-117	MR1-08-156	60	61	HWS	Schist	4a	AMEC 2010	8.9	0.086	<0.01	0.086	0.018	2.7	18	2	6.6	0.6
MRARD10-119	MR1-08-156	80.8	81	HWS	Schist	4a	AMEC 2010	8.0	0.021	0.02	<0.01	0.007	0.31	19	1	59	1.9

Table B-1. Acid Base Accounting Results by Lithology (continued)

Sample ID	Borehole ID	From	To	Waste Rock Code	Lithology	Rock Type Code	Sampling Program	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*	Total Carbon	AP	NP	Ca-NP	NPR	Ca-NPR
		m	m						(wt.%)				(kg CaCO3/tonne)				
MRARD10-126	MR1-08-145	27	28	HWS	Schist	4a	AMEC 2010	7.4	0.011	<0.01	0.011	0.012	0.3	8.1	1	24	2.9
MRARD10-127	MR1-08-143	20	21	HWS	Schist	4a-b	AMEC 2010	8.1	0.005	<0.01	<0.01	0.022	0.3	15	2	49	5.9
UCS14	MR1-04-38	24	NA*	HWS	Schist		Knight Piesold 2006-2007	8.7	0.376	0.11	0.266	0.1	8.3	13	8	1.5	1.0
MRARD10-123	MR1-08-155	149	150	HWS	Gneiss	5b-4a	AMEC 2010	9.2	0.455	0.13	0.325	<0.005	10.2	23.2	0.4	2.3	0.0
16602	MR1-05-77	91.15	92.18	HWS	ab_QF gneiss	5b	Baffinland 2011	9.65	0.034	0.03	<0.01	0.013	0.3	17.0	1	54.4	3.5
16026	MR1-05-72	110.00	111.05	HWS	greywacke	6e	Baffinland 2011	8.43	0.008	<0.01	<0.01	0.007	0.3	13.3	1	42.6	1.9
16034	MR1-05-72	138.40	139.40	HWS	greywacke	6e	Baffinland 2011	7.94	2.14	0.59	1.55	0.009	48.4	9.4	1	0.2	0.0
16038	MR1-05-72	153.30	154.32	HWS	greywacke	6e	Baffinland 2011	9.40	0.424	0.12	0.30	0.017	9.4	12.8	1	1.4	0.2
16294	MR1-04-44	224.40	225.43	HWS	greywacke	6e	Baffinland 2011	8.34	0.317	0.09	0.23	0.021	7.2	16.1	2	2.2	0.2
16296	MR1-04-44	233.10	234.17	HWS	greywacke	6e	Baffinland 2011	8.04	1.64	0.37	1.27	0.020	39.7	10.8	2	0.3	0.0
16298	MR1-04-44	245.50	246.50	HWS	greywacke	6e	Baffinland 2011	8.20	0.592	0.08	0.52	0.021	16.3	15.8	2	1.0	0.1
16300	MR1-04-44	258.73	259.70	HWS	greywacke	6e	Baffinland 2011	8.36	0.087	0.05	0.04	0.023	1.3	15.9	2	12.7	1.5
16484	MR1-05-46	245.03	246.00	HWS	greywacke	6e	Baffinland 2011	8.98	0.133	0.04	0.09	0.010	2.8	6.4	1	2.3	0.3
16494	MR1-05-46	288.50	289.55	HWS	greywacke	6e	Baffinland 2011	8.50	0.016	0.02	<0.01	0.014	0.3	8.9	1	28.5	3.7
16496	MR1-05-46	293.16	294.12	HWS	greywacke	6e	Baffinland 2011	8.80	0.121	0.03	0.09	0.011	2.8	7.7	1	2.7	0.3
16502	MR1-04-45	192.50	193.59	HWS	greywacke	6e	Baffinland 2011	8.36	0.312	0.08	0.23	0.028	7.2	16.2	2	2.3	0.3
16028	MR1-05-72	122.35	123.30	HWS	QFm gneiss(greywacke)	5a/6e	Baffinland 2011	8.02	0.366	0.11	0.25	0.008	7.8	9.0	1	1.2	0.1
16030	MR1-05-72	132.87	133.87	HWS	quartz zone	14.00	Baffinland 2011	6.81	0.017	0.02	<0.01	0.014	0.3	5.6	1	17.9	3.7
MRARD10-095	MR1-08-146	80.2	81.2	HWS	Metasediment	11b-11a	AMEC 2010	9.3	0.252	0.07	0.182	0.087	5.7	18.7	7.3	3.3	1.3
MRARD10-021	MR1-09-173	90	90.6	HWS	Volcanic Tuff	11a/4a	AMEC 2010	9.0	0.099	0.09	<0.01	0.012	0.3	13	1	40	3.2
MRARD10-066	MR1-08-150	95	96	HWS	Volcanic Tuff	11.00	AMEC 2010	8.3	0.199	0.06	0.139	0.016	4.3	19	1	4.4	0.3
MRARD10-080	MR1-08-149	90	91	HWS	Volcanic Tuff	11b	AMEC 2010	7.9	1.28	0.28	1.000	0.009	31.3	20	1	0.6	0.02
MRARD10-083	MR1-08-157	65.4	66	HWS	Volcanic Tuff	11b	AMEC 2010	8.9	0.016	0.02	<0.01	0.045	0.3	14	4	45	12
MRARD10-105	MR1-08-141	200	201	HWS	Volcanic Tuff	11b	AMEC 2010	8.2	0.870	0.26	0.610	0.065	19.1	16	5	0.8	0.3
MRARD10-113	MR1-08-144	80	81	HWS	Volcanic Tuff	4ab-11a	AMEC 2010	8.6	0.032	<0.01	0.032	0.014	1.0	27	1	27	1.2
ARD25	MR1-06-86	136	NA*	HWS	Volcanic Tuff		Knight Piesold 2006-2007	9.48	0.007	0.02	<0.01	0.096	0.3	18	8	58	26
UCS16	MR1-06-86	22	NA*	HWS	Volcanic Tuff		Knight Piesold 2006-2007	9.03	0.05	<0.01	0.050	0.026	1.6	17	2	11	1.4
UCS17	MR1-06-86	41.6	NA*	HWS	Volcanic Tuff		Knight Piesold 2006-2007	10.16	0.022	0.02	<0.01	0.039	0.3	25	3	80	10
UCS18	MR1-06-86	65.6	NA*	HWS	Volcanic Tuff		Knight Piesold 2006-2007	9.64	0.267	0.05	0.217	0.086	6.8	15	7	2	1.1
UCS19	MR1-06-86	86.5	NA*	HWS	Volcanic Tuff		Knight Piesold 2006-2007	9.69	0.08	0.04	0.040	0.015	1.3	22	1	18	1.0
UCS20	MR1-06-86	115	NA*	HWS	Volcanic Tuff		Knight Piesold 2006-2007	9.14	0.094	<0.01	0.094	0.496	2.9	59	41	20	14
UCS21	MR1-06-86	117.5	NA*	HWS	Volcanic Tuff		Knight Piesold 2006-2007	9.34	0.08	0.04	0.040	0.244	1.3	26	20	21	16
16006	MR1-05-72	30.46	31.46	HWS	volcanic tuff (layered)	11a	Baffinland 2011	8.04	0.012	<0.01	<0.01	0.009	0.3	4.8	1	15.4	2.4
16032	MR1-05-72	135.55	136.00	HWS	volcanic tuff (layered)	11a	Baffinland 2011	7.90	0.043	0.04	<0.01	0.008	0.3	8.6	1	27.5	2.1
16272	MR1-05-51	224.28	225.28	HWS	volcanic tuff (layered)	11a	Baffinland 2011	8.69	0.386	0.20	0.19	0.010	5.9	17.9	1	3.0	0.1
16718	MR1-06-90	14.21	15.17	HWS	volcanic tuff (layered)	11a	Baffinland 2011	8.41	0.205	0.09	0.12	0.017	3.8	17.8	1	4.7	0.4
16720	MR1-06-90	22.50	23.56	HWS	volcanic tuff (layered)	11a	Baffinland 2011	8.31	0.265	0.11	0.16	0.013	5.0	12.6	1	2.5	0.2
16746	MR1-06-84	44.00	44.93	HWS	volcanic tuff (layered)	11a	Baffinland 2011	8.32	0.155	0.14	0.02	0.021	0.6	25.4	2	40.6	2.8
16470	MR1-05-46	55.72	56.72	HWS	volcanic tuff (masive)	11b	Baffinland 2011	8.32	<0.005	<0.01	<0.01	0.043	0.3	20.3	4	65.0	11.5
16706	MR1-08-156	58.53	59.53	HWS	volcanic tuff (masive)	11b	Baffinland 2011	9.64	0.007	<0.01	<0.01	0.014	0.3	13.5	1	43.2	3.7
16708	MR1-08-156	65.37	66.38	HWS	volcanic tuff (masive)	11b	Baffinland 2011	9.49	0.128	0.11	0.02	0.023	0.6	16.1	2	25.8	3.1
16710	MR1-08-156	76.70	77.69	HWS	volcanic tuff (masive)	11b	Baffinland 2011	8.48	0.167	0.17	<0.01	0.025	0.3	14.8	2	47.4	6.7
16498	MR1-04-45	176.08	177.22	HWS	HG_IF 50-60% Fe <25% mag.	7a	Baffinland 2011	8.24	1.69	0.01	1.68	0.024	52.5	10.3	2	0.2	0.0
16222	MR1-08-158	204.15	205.15	HWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	8.84	0.013	0.01	<0.01	0.014	0.3	6.7	1	21.4	3.7
16566	MR1-09-176	223.60	224.61	HWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	8.85	0.406	0.16	0.25	0.014	7.8	11.0	1	1.4	0.1
16234	MR1-05-53	139.25	140.25	HWS	HG_IF 60-72.36% Fe <25% mag.	7d	Baffinland 2011	8.12	0.358	0.04	0.32	0.592	10.0	58.5	49	5.9	4.9
16012	MR1-05-72	58.70	59.60	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	6.56	5.65	1.86	3.79	0.556	118.4	9.5	46	0.1	0.4
16016	MR1-05-72	69.60	70.60	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	7.41	1.99	0.54	1.45	1.43	45.3	4.1	119	0.1	2.6
16020	MR1-05-72	84.20	85.20	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	6.38	1.04	0.47	0.57	2.32	17.8	3.4	193	0.2	10.9
16324	MR1-08-141	182.22	183.12	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.60	0.122	0.03	0.10	0.016	3.1	12.4	1	4.0	0.4
16442	MR1-05-47	270.91	271.92	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.62	0.153	0.06	0.10	0.023	3.1	14.8	2	4.7	0.6
16450	MR1-05-47	294.37	295.37	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.37	0.243	<0.01	0.24	0.020	7.5	27.8	2	3.7	0.2
16456	MR1-05-47	313.64	314.75	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	7.83	2.72	<0.01	2.90	0.025	90.6	10.3	2	0.1	0.0
16478	MR1-05-46	212.80	213.81	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.19	0.667	0.11	0.56	0.026	17.5	12.0	2	0.7	0.1
16558	MR1-09-176	203.44	204.41	HWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	8.88	0.006	<0.01	<0.01	0.044	0.3	14.7	4	47.0	11.7
16446	MR1-05-47	282.50	283.60	HWS	HG_IF 60-72.36% Fe 60-100% mag., amphibole chlorite mica schist	7f,4cab	Baffinland 2011	8.31	0.398	0.07	0.32	0.025	10.0	20.0	2	2.0	0.2
16052	MR1-05-72	208.30	209.30	HWS	HG_IF 60-72.36% Fe 60-100% mag., HG_IF 50-60% Fe 60-100% mag.	7f, 7c	Baffinland 2011	7.74	0.464	0.18	0.28	0.010	8.8	8.2	1	0.9	0.1
16326	MR1-08-141	212.23	213.13	HWS	Banded_IF 50-60% Fe 25-60% mag.	9b	Baffinland 2011	8.86	0.179	0.04	0.14	6.69	4.4	487	558	111.3	127.4
16438	MR1-05-47	235.23	236.28	HWS	Banded_IF 50-60% Fe 25-60% mag.	9b	Baffinland 2011	8.79	0.522	0.09	0.44	0.115	13.8	23.5	10	1.7	0.7
16432	MR1-05-47	203.41	204.48	HWS	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	8.51	0.662	0.07	0.59	3.40	18.4	29.3	283	1.6	15.4
16474	MR1-05-46	156.69	157.61	HWS	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	8.76	0.290	0.06	0.23	0.008	7.2	13.3	1	1.9	0.1
16476	MR1-05-46	161.44	162.52	HWS	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	8.88	0.422	0.02	0.40	0.018	12.5	12.3	2	1.0	0.1
16514	MR1-04-45	236.47	237.57	HWS	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	8.91	0.279	0.05	0.23	5.00	7.2	356	417	49.5	58.0
16562	MR1-09-176	207.95	208.93	HWS	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	8.72	0.600	0.16	0.44	0.019	13.8	9.4	2	0.7	0.1
16436	MR1-05-47	230.28	231.23	HWS	Banded_IF 60-72.36% Fe 0-25% mag., HG_IF 50-60% Fe 60-100% mag.	9d/7c	Baffinland 2011	8.65	1.07	0.19	0.88	4.31	27.5	314	359	11.4	13.1
16564	MR1-09-176	215.39	216.37	HWS	Banded_IF 60-72.36% Fe 0-25% mag., HG_IF 50-60% Fe 60-100% mag.	9d/7c	Baffinland 2011	8.91	0.131	0.06	0.07	0.016	2.2	10.4	1	4.8	0.6
07ARD07	MR1-05-76	30.5	46.5	HWS	Amphibolite/Schist/Volcanic Tuff		Knight Piesold 2006-2007	8.68	0.082	<0.01	0.082	0.062	2.56	12	5	4.6	2.0
07ARD30	MR1-05-51	164	184	HWS	Amphibolite/Schist/Volcanic Tuff		Knight Piesold 2006-2007	8.61	0.536	0.23	0.306	0.022	9.56	39	2	4.1	0.2
07ARD12	MR1-05-46	223.5	246.5	HWS	Amphibolite/Volcanic Tuff /Greywacke		Knight Piesold 2006-2007	8.01	0.410	0.06	0.350	0.033	10.94	0.7	3	0.1	0.3
07ARD13	MR1-06-84	4.4	24.4	HWS	Amphibolite/Volcanic Tuff /Greywacke		Knight Piesold 2006-2007	8.43	0.150	0.05	0.100	0.027	3.13	0.2	2	0.1	0.7
07ARD25	MR1-05-52	107.3	123.3	HWS	Amphibolte/Schist		Knight Piesold 2006-2007	8.21	0.582	0.38	0.202	0.013	6.31	8.0	1	1.3	0.2
07ARD29	MR1-05-59	106.2	121.6	HWS	Amphibolte/Schist		Knight Piesold 2006-2007	8.40	0.050	0.05	<0.01	0.011	0.31	15	1	47	2.9
07ARD06	MR1-04-39	103.7	112.7	HWS	Schist		Knight Piesold 2006-2007	8.88	0.841	0.15	0.691	0.418	21.59	49	35	2.3	1.6
07ARD16	MR1-05-58	113.8	126.2	HWS	Schist		Knight Piesold 2006-2007	8.16	0.313	0.13	0.183	0.009	5.72	18	1	3.2	0.1
07ARD20	MR1-05-60	35.8	51.5	HWS	Schist/Amphibolite		Knight Piesold 2006-2007	8.02	0.47	0.05	0.420	0.207	13.13	12	17	1	1
07ARD39	MR1-06-96	3.5	25.6	HWS	Schist/Volcanic Tuff		Knight Piesold 2006-2007	8.53	0.039	0.04	<0.01	0.018	0.31	34	2	108	4.8
07ARD40	MR1-05-54	27	34.7	HWS	Schist/Volcanic Tuff /Amphibolite		Knight Piesold 2006-2007	8.44	0.017	0.02	<0.01	0.022	0.31	19	2	61	5.9
07ARD08	MR1-05-53	113.3	127.5	HWS	Volcanic Tuff		Knight Piesold 2006-2007	8.26	1.10	0.36	0.740	0.041	23.13	35	3	2	0.1
07ARD26	MR1-06-93	9	18.2	HWS	Volcanic Tuff /Schist		Knight Piesold 2006-2007	7.83	0.109	0.11	<0.01	0.163	0.31	30	14	95	43
07ARD41	MR1-06-95	75.4	85	HWS	Volcanic Tuff /Schist		Knight Piesold 2006-2007	8.19	0.307	0.19	0.117	0.008	3.66	6.1	1	2	0.2
07ARD10	MR1-05-53	131.6	134.7	HWS	Amphibolite		Knight Piesold 2006-2007	7.86	5.16	0.59	4.570	0.019	142.81	25	2	0.2	0.01
07ARD17	MR1-05-57	74	82.8	HWS	Amphibolite		Knight Piesold 2006-2007	8.51	0.022	0.02	<0.01	0.007	0.31	15	1	49	1.9
07ARD19	MR1-05-60	7	26.3	HWS	Amphibolite		Knight Piesold 2006-2007	8.39	0.031	0.03	<0.01	0.012	0.31	34	1	108	3.2
16608	MR1-05-77	180.77	181.76	IW	amphibolite	3.00	Baffinland 2011	8.54	0.023	0.02	<0.01	0.030	0.31	15.3	3	49.0	8.0
MRARD10-036	MR1-08-161	110	111	IW	Schist	4a	AMEC 2010	8.2	0.250	0.16	0.090	0.015	2.8	12	1	4.3	0.4
MRARD10-061	MR1-08-159	78	79	IW	Schist	4a	AMEC 2010	8.6	0.009	<0.01	<0.01	0.019	0.3	26	2	83	5.1
MRARD10-072	MR1-08-149	110	110.6	IW	Schist	11b	AMEC 2010	8.0	0.034	0.03	<0.01	0.008	0.3	44	1	141	2.1
16274	MR1-05-51	314.16	315.16	IW1100	amphibolite	3.00	Baffinland 2011	8.65	0.879	0.28	0.60	0.017	18.8	26.1	1	1.4	0.1
16636	MR1-08-159	93.97	94.94	IW1000	chlorite schist	4a	Baffinland 2011	8.00	0.018	0.02	<0.01	0.016	0.3	20.7	1	66.2	4.3
16634	MR1-08-159	90.58	91.54	IW1000	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	8.15	0.532	0.03	0.50	0.007	15.6	6.2	1	0.4	0.0
16276	MR1-05-51	317.90	318.90	IW1100	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	9.16	0.030	0.01	0.02	0.025	0.6	6.1	2	9.8	3.3
16278	MR1-05-51	322.85	323.75	IW1100	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	9.27	0.008	<0.01	<0.01	0.020	0.3	4.7	2	15.0	5.3
16638	MR1-08-159	97.82	98.79	IW1000	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	7.85	1.29	0.03	1.25	0.106	39.1	13.7	9	0.4	0.2
16280	MR1-05-51	335.95	336.93	IW1100	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	9.46	0.015	<0.01	<0.01	0.010	0.3	5.3	1	17.0	2.7

Notes:

AP = Acid potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material. AP is determined from calculated sulphide sulphur content: S(T) - S(SO)

NP = Neutralization potential in tonnes $CaCO_3$ equivalent per 1000 tonnes of material.

Carbonate NP is calculated from total carbon and is expressed in kg $CaCO_3$/tonne.

NPR = Net Potential Ratio = NP/AP; Carb-NPR = Carb-NP/AP

*Where NP or AP values are equal to or less than zero, NPR is calculated assuming detection limit (NP = 0.2 kg $CaCO_3$/tonne, AP = 0.03 kg $CaCO_3$/tonne).

Table B-2. Static NAG pH Test Results by Lithology (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Code	NAG Final pH units	NAG (pH 4.5) kg H_2SO_4/tonne	NAG (pH 7.0) kg H_2SO_4/tonne
16288	MR1-05-51	383.90	384.97	FW	3	7.91	0.0	0.0
16630	MR1-08-154	253.95	254.88	FW	3	8.36	0.0	0.0
16116	ARD-2B-NW	14.68	15.83	FW	4ac	8.88	0.0	0.0
16118	ARD-2B-NW	22.61	23.73	FW	4ac	2.85	14.8	30.0
16092	ARP-2A-NW	36.60	37.60	FW	4b,c	8.06	0.0	0.0
16154	ARD-2A-SE	84.28	85.39	FW	4bc	4.95	0.0	1.9
16158	ARD-2A-SE	104.79	105.76	FW	4bc	9.09	0.0	0.0
16104	ARP-2A-NW	77.60	78.70	FW	4bc, 5b	7.63	0.0	0.0
16106	ARP-2A-NW	84.37	85.30	FW	4bc, 5b	7.27	0.0	0.0
16108	ARP-2A-NW	98.15	99.20	FW	4bc, 5b	7.27	0.0	0.0
16110	ARP-2A-NW	103.91	104.91	FW	4bc, 5b	7.42	0.0	0.0
16098	ARP-2A-NW	56.68	57.58	FW	4bca	7.81	0.0	0.0
16100	ARP-2A-NW	68.10	69.30	FW	4bca	7.42	0.0	0.0
16102	ARP-2A-NW	72.40	73.60	FW	4bca	5.67	0.0	1.4
16120	ARD-2B-NW	33.61	34.61	FW	4c	7.84	0.0	0.0
16122	ARD-2B-NW	47.77	48.77	FW	4c	7.93	0.0	0.0
16124	ARD-2B-NW	51.72	52.80	FW	4c	8.14	0.0	0.0
16062	MR1-05-72	214.21	315.21	FW	5a	7.80	0.0	0.0
16064	MR1-05-72	328.13	329.10	FW	5a	3.43	2.4	4.0
16066	MR1-05-72	334.78	335.88	FW	5a	7.06	0.0	0.0
16390	MR1-05-49	373.20	374.20	FW	5a	7.90	0.0	0.0
16392	MR1-05-49	382.59	383.49	FW	5a	7.59	0.0	0.0
16394	MR1-05-49	391.70	392.60	FW	5a	7.34	0.0	0.0
16578	MR1-09-172	186.90	188.00	FW	5a	7.39	0.0	0.0
16580	MR1-09-172	195.30	196.30	FW	5a	7.34	0.0	0.0
16582	MR1-09-172	206.40	207.41	FW	5a	7.44	0.0	0.0
16616	MR1-05-67	206.17	207.15	FW	5a	7.54	0.0	0.0
16632	MR1-08-154	257.79	258.77	FW	5a	7.17	0.0	0.0
16086	ARP-2A-NW	12.40	13.40	FW	5b	6.68	0.0	0.3
16136	ARD-2A-SE	6.90	7.90	FW	5b	5.42	0.0	1.0
16138	ARD-2A-SE	17.81	18.86	FW	5b	4.90	0.0	1.4
16146	ARD-2A-SE	48.46	49.40	FW	5b	6.31	0.0	0.3
16148	ARD-2A-SE	58.60	58.10	FW	5b	10.25	0.0	0.0
16338	MR1-08-141	343.20	344.22	FW	5b	7.47	0.0	0.0
16112	ARD-2B-NW	8.85	9.90	FW	5b, 12a	7.75	0.0	0.0
16114	ARD-2B-NW	10.47	11.44	FW	5b, 12a	7.25	0.0	0.0
16310	MR1-08-145	132.50	133.65	FW	5c	7.49	0.0	0.0
16312	MR1-08-145	145.20	146.10	FW	5c	7.87	0.0	0.0
16126	ARD-2B-NW	58.76	59.76	FW	5c, 4cb	7.17	0.0	0.0
16128	ARD-2B-NW	62.70	63.88	FW	5c, 4cb	8.17	0.0	0.0
16130	ARD-2B-NW	78.51	79.43	FW	5c, 4cb	5.87	0.0	1.2
16132	ARD-2B-NW	87.80	88.90	FW	5c, 4cb	7.78	0.0	0.0
16134	ARD-2B-NW	93.12	94.12	FW	5c, 4cb	7.72	0.0	0.0
16156	ARD-2A-SE	92.70	93.80	FW	6a	7.74	0.0	0.0
16088	ARP-2A-NW	23.00	24.00	FW	6e	7.28	0.0	0.0
16090	ARP-2A-NW	33.36	34.49	FW	6e	7.44	0.0	0.0
16094	ARP-2A-NW	46.78	47.70	FW	6e	6.40	0.0	0.7
16096	ARP-2A-NW	50.88	51.88	FW	6e	6.92	0.0	0.3
16140	ARD-2A-SE	23.52	24.52	FW	6e	7.68	0.0	0.0
16142	ARD-2A-SE	32.34	32.26	FW	6e	7.61	0.0	0.0
16144	ARD-2A-SE	41.18	42.18	FW	6e	7.32	0.0	0.0
16150	ARD-2A-SE	66.84	67.74	FW	6e	8.38	0.0	0.0
16152	ARD-2A-SE	78.62	79.54	FW	6e	5.43	0.0	1.0
16576	MR1-09-172	181.44	182.41	FW	6e	3.84	1.3	8.0
16348	MR1-04-38	140.80	141.80	FW	7f	6.58	0.0	0.9
16060	MR1-05-72	309.25	310.25	FW 1300	11a, 4b	8.28	0.0	0.0
16056	MR1-05-72	296.90	298.00	FW 1300	7f	4.51	0.0	1.8
16058	MR1-05-72	305.90	307.10	FW 1300	7f	4.59	0.0	3.2
16068	MR1-06-105	151.82	152.82	FW 1300	7f	2.73	8.4	11
16070	MR1-06-105	165.60	166.05	FW 1300	7f	7.08	0.0	0.0
16164	MR1-08-160	152.40	153.59	FW 1400	4a	7.86	0.0	0.0
16168	MR1-08-160	176.70	177.80	FW 1400	4b	7.87	0.0	0.0
16166	MR1-08-160	166.47	167.52	FW 1400	7f, 4a	8.23	0.0	0.0
16730	MR1-06-80	170.96	172.00	FW1300	4a	3.72	2.0	5.3
16736	MR1-06-80	186.81	187.81	FW1300	4ac	7.71	0.0	0.0
16738	MR1-06-80	200.14	201.14	FW1300	5a	7.59	0.0	0.0
16284	MR1-05-51	369.20	370.10	FW1300	7f	8.30	0.0	0.0
16286	MR1-05-51	373.60	374.60	FW1300	7f	7.20	0.0	0.0
16734	MR1-06-80	182.00	183.01	FW1300	7f	6.97	0.0	0.2
16728	MR1-06-80	167.00	168.04	FW1300	9b	3.06	6.9	12

Table B-2. Static NAG pH Test Results by Lithology (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Code	NAG Final pH units	NAG (pH 4.5) kg H_2SO_4/tonne	NAG (pH 7.0) kg H_2SO_4/tonne
16732	MR1-06-80	176.00	177.00	FW1300	9b	7.42	0.0	0.0
16282	MR1-05-51	361.20	362.18	FW1300	9d	2.55	17.1	22.7
16328	MR1-08-141	298.11	299.01	FW1400	7f	2.33	38.4	61.9
16330	MR1-08-141	304.40	305.53	FW1400	7f	8.34	0.0	0.0
16382	MR1-05-49	348.56	349.56	FW1400	7f	8.69	0.0	0.0
16384	MR1-05-49	350.30	351.54	FW1400	7f	3.65	1.3	3.7
16622	MR1-08-154	224.92	225.92	FW1400	7f	2.25	40	47
16624	MR1-08-154	237.53	238.48	FW1400	7f	2.88	10.0	17
16626	MR1-08-154	241.81	242.76	FW1400	7f	8.04	0.0	0.0
16628	MR1-08-154	251.53	252.53	FW1400	7f	2.79	11.0	16
16388	MR1-05-49	367.55	368.60	FWS	3	7.14	0.0	0.0
16614	MR1-05-67	194.67	195.64	FWS	3	7.92	0.0	0.0
16684	MR1-08-146	214.93	215.93	FWS	11a	7.34	0.0	0.0
16692	MR1-08-146	251.20	252.25	FWS	11a	7.66	0.0	0.0
16074	MR1-06-105	176.00	177.03	FWS	12b	7.58	0.0	0.0
16306	MR1-04-44	388.64	389.60	FWS	3,5a,be	7.85	0.0	0.0
16336	MR1-08-141	334.70	335.75	FWS	4a	7.77	0.0	0.0
16466	MR1-04-41	122.42	123.39	FWS	4a	7.44	0.0	0.0
16468	MR1-04-41	130.60	131.56	FWS	4a	7.78	0.0	0.0
16642	MR1-08-159	130.61	131.61	FWS	4a	2.17	61.0	86
16646	MR1-08-159	141.86	142.93	FWS	4a	7.67	0.0	0.0
16690	MR1-08-146	243.39	244.40	FWS	4a	8.21	0.0	0.0
16722	MR1-06-90	141.90	142.90	FWS	4a	2.89	17.1	30
16724	MR1-06-90	144.70	145.69	FWS	4a/7d	2.34	44.8	77
16754	MR1-08-159	171.44	172.39	FWS	4ab	7.99	0.0	0.0
16178	MR1-08-158	294.40	295.40	FWS	4abc	3.48	3.6	8.8
16172	MR1-08-158	270.56	271.60	FWS	4ac	7.51	0.0	0.0
16174	MR1-08-158	276.30	277.40	FWS	4ac	7.38	0.0	0.0
16680	MR1-08-146	201.60	202.63	FWS	4ac	6.96	0.0	0.3
16078	MR1-06-105	186.70	187.70	FWS	4b	7.62	0.0	0.0
16572	MR1-09-172	164.43	165.46	FWS	4b	6.71	0.0	0.5
16648	MR1-08-159	147.43	148.43	FWS	4ba	7.34	0.0	0.0
16650	MR1-08-159	153.30	154.28	FWS	4ba	7.64	0.0	0.0
16652	MR1-08-159	164.20	165.00	FWS	4ba	3.12	7.0	14
16574	MR1-09-172	173.00	174.00	FWS	4bc	3.52	3.3	11
16752	MR1-06-84	204.15	205.15	FWS	4bc	3.99	0.7	3.9
16080	MR1-06-105	195.09	196.09	FWS	5a	6.36	0.0	0.3
16082	MR1-06-105	205.29	206.24	FWS	5a	7.06	0.0	0.0
16084	MR1-06-105	215.38	216.38	FWS	5a	6.98	0.0	0.2
16180	MR1-08-158	306.89	307.99	FWS	5a	7.53	0.0	0.0
16302	MR1-04-44	362.60	363.62	FWS	5a	7.55	0.0	0.0
16308	MR1-04-44	394.20	395.30	FWS	5a	7.87	0.0	0.0
16352	MR1-04-38	155.66	156.56	FWS	5a	7.39	0.0	0.0
16354	MR1-04-38	164.50	165.48	FWS	5a	7.44	0.0	0.0
16356	MR1-04-38	170.47	171.37	FWS	5a	7.51	0.0	0.0
16386	MR1-05-49	355.12	356.02	FWS	5a	7.38	0.0	0.0
16610	MR1-05-67	173.35	174.36	FWS	5a	7.32	0.0	0.0
16612	MR1-05-67	181.90	182.89	FWS	5a	7.47	0.0	0.0
16304	MR1-04-44	371.69	372.69	FWS	5a(6e)	8.04	0.0	0.0
16518	MR1-07-118	14.61	15.56	FWS	5b	7.13	0.0	0.0
16520	MR1-07-118	28.90	29.83	FWS	5b	7.46	0.0	0.0
16726	MR1-06-90	153.40	154.38	FWS	5b	3.47	3.4	7.9
16750	MR1-06-84	192.39	193.49	FWS	5b	3.11	6.0	6.9
16314	MR1-08-145	152.16	153.16	FWS	5c	7.75	0.0	0.0
16654	MR1-08-159	182.30	183.25	FWS	5c	7.20	0.0	0.0
16350	MR1-04-38	146.60	147.60	FWS	6e	2.69	15.8	24.8
16464	MR1-04-41	113.85	114.81	FWS	6e	7.85	0.0	0.0
16358	MR1-04-38	176.38	177.28	FWS	6e, 5a	7.33	0.0	0.0
16360	MR1-04-38	182.16	183.16	FWS	6e, 5a	7.64	0.0	0.0
16362	MR1-04-38	197.14	198.04	FWS	6e, 5a	7.81	0.0	0.0
16076	MR1-06-105	182.01	182.96	FWS	7c	3.42	4.0	35
16170	MR1-08-158	264.90	265.90	FWS	7c	7.26	1.8	12
16640	MR1-08-159	121.80	122.83	FWS	7c	2.96	6.7	11
16644	MR1-08-159	134.90	135.90	FWS	7c	7.59	0.0	0.0
16072	MR1-06-105	171.52	172.52	FWS	7f	7.06	0.0	0.0
16176	MR1-08-158	287.46	288.50	FWS	7f	3.30	3.1	5.7
16332	MR1-08-141	313.10	314.00	FWS	7f	9.02	0.0	0.0
16334	MR1-08-141	321.90	322.90	FWS	7f	3.31	3.5	10.8
16462	MR1-04-41	109.51	110.47	FWS	7f	9.01	0.0	0.0
16682	MR1-08-146	207.00	208.04	FWS	7f	3.28	3.6	5.8

Table B-2. Static NAG pH Test Results by Lithology (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Code	NAG Final pH units	NAG (pH 4.5) kg H_2SO_4/tonne	NAG (pH 7.0) kg H_2SO_4/tonne
16686	MR1-08-146	224.61	225.66	FWS	7f	2.68	14.9	20
16688	MR1-08-146	231.70	232.75	FWS	7f	6.06	0.0	0.5
16678	MR1-08-146	198.21	199.24	FWS	7f/4a	2.47	29.4	45
16264	MR1-05-51	188.70	189.85	HW	3	7.38	0.0	0.0
16268	MR1-05-51	202.74	203.79	HW	3	7.56	0.0	0.0
16340	MR1-04-38	11.17	12.07	HW	3	5.24	0.0	1.7
16364	MR1-04-33	13.60	14.50	HW	3	10.60	0.0	0.0
16366	MR1-04-33	22.50	23.50	HW	3	10.30	0.0	0.0
16368	MR1-04-33	31.60	32.60	HW	3	10.74	0.0	0.0
16372	MR1-04-33	43.20	44.25	HW	3	10.46	0.0	0.0
16374	MR1-04-33	52.38	53.28	HW	3	6.94	0.0	0.2
16396	MR1-05-47	22.90	23.94	HW	3	8.32	0.0	0.0
16398	MR1-05-47	35.76	36.80	HW	3	7.79	0.0	0.0
16400	MR1-05-47	45.78	46.73	HW	3	7.75	0.0	0.0
16402	MR1-05-47	55.40	56.34	HW	3	7.12	0.0	0.0
16404	MR1-05-47	63.50	64.47	HW	3	7.98	0.0	0.0
16408	MR1-05-47	82.82	83.82	HW	3	7.55	0.0	0.0
16584	MR1-05-77	11.81	12.76	HW	3	6.86	0.0	0.4
16590	MR1-05-77	41.13	42.10	HW	3	9.02	0.0	0.0
16592	MR1-05-77	52.71	53.70	HW	3	9.65	0.0	0.0
16594	MR1-05-77	61.50	62.48	HW	3	7.85	0.0	0.0
16596	MR1-05-77	70.65	71.65	HW	3	9.99	0.0	0.0
16262	MR1-05-51	183.09	184.09	HW	11a	2.62	18.6	33.6
16266	MR1-05-51	197.00	197.90	HW	11a	2.39	23.8	31.5
16270	MR1-05-51	214.00	215.00	HW	11a	7.48	0.0	0.0
16370	MR1-04-33	37.74	38.64	HW	11a	10.34	0.0	0.0
16554	MR1-09-176	182.43	183.43	HW	11b	7.61	0.0	0.0
16656	MR1-08-146	14.00	14.98	HW	11b	9.87	0.0	0.0
16658	MR1-08-146	25.34	26.30	HW	11b	10.83	0.0	0.0
16660	MR1-08-146	35.30	36.30	HW	11b	10.93	0.0	0.0
16662	MR1-08-146	43.81	44.82	HW	11b	11.03	0.0	0.0
16664	MR1-08-146	55.52	56.48	HW	11b	10.52	0.0	0.0
16666	MR1-08-146	64.23	65.23	HW	11b	3.45	3.8	9.0
16668	MR1-08-146	72.71	73.66	HW	11b	9.13	0.0	0.0
16670	MR1-08-146	84.19	85.20	HW	11b	8.28	0.0	0.0
16698	MR1-08-156	23.00	23.95	HW	11b	11.01	0.0	0.0
16700	MR1-08-156	33.82	34.82	HW	11b	10.99	0.0	0.0
16702	MR1-08-156	43.25	44.25	HW	11b	10.70	0.0	0.0
16704	MR1-08-156	51.73	52.74	HW	11b	10.57	0.0	0.0
16376	MR1-04-33	61.38	62.28	HW	12c	8.04	0.0	0.0
16378	MR1-04-33	67.50	68.40	HW	12c	8.08	0.0	0.0
16380	MR1-04-33	73.47	74.37	HW	12c	8.14	0.0	0.0
16410	MR1-05-47	93.40	94.40	HW	3 (4c?)	7.60	0.0	0.0
16550	MR1-09-176	166.54	167.54	HW	4a	7.64	0.0	0.0
16556	MR1-09-176	193.59	194.57	HW	4a	7.85	0.0	0.0
16546	MR1-09-176	155.63	156.63	HW	4ab	4.55	0.0	3.3
16422	MR1-05-47	158.31	159.31	HW	4b	6.59	0.0	0.3
16424	MR1-05-47	164.20	165.34	HW	4b	4.03	0.9	4.7
16412	MR1-05-47	106.30	107.30	HW	4b,c	7.44	0.0	0.0
16416	MR1-05-47	125.40	126.30	HW	4b/c	7.62	0.0	0.0
16406	MR1-05-47	76.00	76.90	HW	4c	7.84	0.0	0.0
16414	MR1-05-47	116.57	117.66	HW	4c	7.12	0.0	0.0
16418	MR1-05-47	136.94	137.94	HW	4c	3.33	4.5	13
16420	MR1-05-47	143.77	144.87	HW	4c	1.96	131	237
16426	MR1-05-47	173.22	174.22	HW	4c/b	7.08	0.0	0.0
16552	MR1-09-176	173.70	174.70	HW	4ca	7.56	0.0	0.0
16600	MR1-05-77	82.35	83.36	HW	5b	6.89	0.0	1.9
16182	MR1-08-158	14.90	16.00	HW	6e	7.72	0.0	0.0
16184	MR1-08-158	24.09	25.09	HW	6e	10.23	0.0	0.0
16186	MR1-08-158	34.57	35.57	HW	6e	10.67	0.0	0.0
16188	MR1-08-158	46.70	47.60	HW	6e	10.87	0.0	0.0
16190	MR1-08-158	65.38	65.53	HW	6e	10.75	0.0	0.0
16192	MR1-08-158	65.53	66.60	HW	6e	10.63	0.0	0.0
16194	MR1-08-158	73.75	74.79	HW	6e	10.71	0.0	0.0
16196	MR1-08-158	85.35	86.39	HW	6e	10.18	0.0	0.0
16198	MR1-08-158	95.28	96.19	HW	6e	10.93	0.0	0.0
16200	MR1-08-158	105.13	106.17	HW	6e	7.24	0.0	0.0
16202	MR1-08-158	114.63	115.60	HW	6e	11.15	0.0	0.0
16204	MR1-08-158	125.50	126.48	HW	6e	10.48	0.0	0.0
16206	MR1-08-158	134.20	135.10	HW	6e	10.49	0.0	0.0

Table B-2. Static NAG pH Test Results by Lithology (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Code	NAG Final pH units	NAG (pH 4.5) kg H_2SO_4/tonne	NAG (pH 7.0) kg H_2SO_4/tonne
16208	MR1-08-158	145.90	146.93	HW	6e	10.82	0.0	0.0
16210	MR1-08-158	154.67	155.67	HW	6e	10.30	0.0	0.0
16212	MR1-08-158	163.10	164.14	HW	6e	11.17	0.0	0.0
16342	MR1-04-38	16.97	17.87	HW	6e	7.86	0.0	0.0
16522	MR1-09-176	33.00	34.00	HW	6e	8.36	0.0	0.0
16524	MR1-09-176	42.50	43.58	HW	6e	8.53	0.0	0.0
16526	MR1-09-176	52.50	53.50	HW	6e	8.49	0.0	0.0
16528	MR1-09-176	63.92	64.92	HW	6e	8.60	0.0	0.0
16530	MR1-09-176	71.98	72.98	HW	6e	8.50	0.0	0.0
16532	MR1-09-176	82.67	83.62	HW	6e	8.86	0.0	0.0
16534	MR1-09-176	93.96	94.91	HW	6e	8.09	0.0	0.0
16536	MR1-09-176	104.66	105.66	HW	6e	7.55	0.0	0.0
16538	MR1-09-176	115.20	116.17	HW	6e	7.29	0.0	0.0
16540	MR1-09-176	123.00	124.00	HW	6e	7.38	0.0	0.0
16542	MR1-09-176	132.77	133.72	HW	6e	7.85	0.0	0.0
16544	MR1-09-176	141.43	142.43	HW	6e	7.66	0.0	0.0
16586	MR1-05-77	21.62	22.62	HW	6e	7.70	0.0	0.0
16588	MR1-05-77	30.96	31.96	HW	6e	7.65	0.0	0.0
16598	MR1-05-77	76.50	77.46	HW	6e	7.58	0.0	0.0
16694	MR1-08-156	8.73	9.79	HW	6e	9.76	0.0	0.0
16696	MR1-08-156	15.34	16.31	HW	6e	7.85	0.0	0.0
16548	MR1-09-176	164.29	165.39	HW	7f	8.01	0.0	0.0
16008	MR1-05-72	39.95	40.95	HWS	3	6.70	0.0	0.2
16010	MR1-05-72	50.30	51.30	HWS	3	6.89	0.0	0.2
16014	MR1-05-72	65.35	66.35	HWS	3	4.28	0.2	1.5
16018	MR1-05-72	77.20	78.10	HWS	3	7.40	0.0	0.0
16022	MR1-05-72	92.70	93.65	HWS	3	7.68	0.0	0.0
16024	MR1-05-72	101.40	102.45	HWS	3	6.84	0.0	0.2
16224	MR1-05-53	37.30	38.30	HWS	3	8.43	0.0	0.0
16226	MR1-05-53	45.77	46.70	HWS	3	8.50	0.0	0.0
16232	MR1-05-53	131.80	132.80	HWS	3	2.73	32.8	86.1
16236	MR1-05-51	24.70	25.80	HWS	3	10.96	0.0	0.0
16238	MR1-05-51	33.80	34.73	HWS	3	11.14	0.0	0.0
16240	MR1-05-51	41.97	43.01	HWS	3	11.12	0.0	0.0
16242	MR1-05-51	57.54	58.60	HWS	3	7.71	0.0	0.0
16244	MR1-05-51	71.50	72.43	HWS	3	8.00	0.0	0.0
16246	MR1-05-51	88.00	89.03	HWS	3	7.64	0.0	0.0
16248	MR1-05-51	96.30	97.20	HWS	3	7.88	0.0	0.0
16250	MR1-05-51	106.10	107.40	HWS	3	8.49	0.0	0.0
16252	MR1-05-51	142.30	143.30	HWS	3	8.08	0.0	0.0
16440	MR1-05-47	266.33	267.40	HWS	3	7.73	0.0	0.0
16444	MR1-05-47	275.98	277.03	HWS	3	7.76	0.0	0.0
16448	MR1-05-47	288.16	289.27	HWS	3	6.60	0.0	0.3
16452	MR1-05-47	298.35	299.38	HWS	3	5.95	0.0	0.6
16454	MR1-05-47	304.32	305.34	HWS	3	7.52	0.0	0.0
16458	MR1-05-47	317.99	319.02	HWS	3	7.37	0.0	0.0
16460	MR1-05-47	326.17	327.14	HWS	3	7.42	0.0	0.0
16480	MR1-05-46	227.75	228.75	HWS	3	7.29	0.0	0.0
16482	MR1-05-46	234.67	235.68	HWS	3	3.03	8.3	17
16486	MR1-05-46	253.90	254.95	HWS	3	6.91	0.0	0.2
16488	MR1-05-46	266.81	267.80	HWS	3	7.10	0.0	0.0
16490	MR1-05-46	271.33	272.42	HWS	3	3.03	6.4	11
16492	MR1-05-46	280.36	281.34	HWS	3	7.15	0.0	0.0
16504	MR1-04-45	201.30	202.33	HWS	3	4.20	0.5	3.0
16516	MR1-04-45	246.59	247.69	HWS	3	3.32	5.1	11
16604	MR1-05-77	102.80	103.76	HWS	3	5.42	0.0	1.2
16606	MR1-05-77	111.32	112.29	HWS	3	7.19	0.0	0.0
16030	MR1-05-72	132.87	133.87	HWS	14	6.07	0.0	0.4
16006	MR1-05-72	30.46	31.46	HWS	11a	6.61	0.0	0.2
16032	MR1-05-72	135.55	136.00	HWS	11a	7.14	0.0	0.0
16272	MR1-05-51	224.28	225.28	HWS	11a	5.30	0.0	1.5
16718	MR1-06-90	14.21	15.17	HWS	11a	7.08	0.0	0.0
16720	MR1-06-90	22.50	23.56	HWS	11a	6.29	0.0	0.4
16746	MR1-06-84	44.00	44.93	HWS	11a	7.82	0.0	0.0
16470	MR1-05-46	55.72	56.72	HWS	11b	7.93	0.0	0.0
16706	MR1-08-156	58.53	59.53	HWS	11b	8.31	0.0	0.0
16708	MR1-08-156	65.37	66.38	HWS	11b	7.70	0.0	0.0
16710	MR1-08-156	76.70	77.69	HWS	11b	7.97	0.0	0.0
16162	MR1-08-160	15.20	16.20	HWS	3 (4ac)	7.72	0.0	0.0
16040	MR1-05-72	162.30	163.30	HWS	3, 11a	7.12	0.0	0.0

Table B-2. Static NAG pH Test Results by Lithology (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Code	NAG Final pH units	NAG (pH 4.5) kg H_2SO_4/tonne	NAG (pH 7.0) kg H_2SO_4/tonne
16042	MR1-05-72	171.26	172.26	HWS	3, 11a	7.67	0.0	0.0
16044	MR1-05-72	182.77	183.77	HWS	3, 11a	7.38	0.0	0.0
16036	MR1-05-72	142.74	143.74	HWS	3, 7c	2.58	23	35
16046	MR1-05-72	188.80	189.80	HWS	3, 7c	2.15	74	142
16050	MR1-05-72	203.40	204.20	HWS	3, 7f	2.24	55	83
16054	MR1-05-72	216.66	217.66	HWS	3, 7f	3.20	4.2	8.0
16002	MR1-05-72	19.90	20.90	HWS	4a	6.08	0.0	0.4
16004	MR1-05-72	23.50	24.60	HWS	4a	6.86	0.0	0.2
16214	MR1-08-158	176.50	177.50	HWS	4a	9.97	0.0	0.0
16216	MR1-08-158	183.68	184.68	HWS	4a	7.88	0.0	0.0
16218	MR1-08-158	193.04	194.10	HWS	4a	2.68	22.0	33.9
16220	MR1-08-158	197.23	198.25	HWS	4a	6.79	0.0	0.4
16290	MR1-04-44	106.93	107.83	HWS	4a	8.00	0.0	0.0
16292	MR1-04-44	215.87	216.97	HWS	4a	7.06	0.0	0.0
16316	MR1-08-141	142.91	143.93	HWS	4a	7.46	0.0	0.0
16318	MR1-08-141	153.90	154.90	HWS	4a	7.37	0.0	0.0
16320	MR1-08-141	162.62	163.60	HWS	4a	7.21	0.0	0.0
16322	MR1-08-141	171.24	172.24	HWS	4a	7.51	0.0	0.0
16344	MR1-04-38	25.70	26.70	HWS	4a	7.98	0.0	0.0
16346	MR1-04-38	36.80	37.73	HWS	4a	7.81	0.0	0.0
16472	MR1-05-46	82.60	83.60	HWS	4a	7.54	0.0	0.0
16560	MR1-09-176	204.31	205.34	HWS	4a	7.99	0.0	0.0
16570	MR1-09-172	114.30	115.25	HWS	4a	7.34	0.0	0.0
16618	MR1-08-154	105.70	106.65	HWS	4a	7.53	0.0	0.0
16620	MR1-08-154	112.42	113.42	HWS	4a	7.07	0.0	0.0
16672	MR1-08-146	92.33	93.28	HWS	4a	7.89	0.0	0.0
16674	MR1-08-146	103.33	104.30	HWS	4a	8.99	0.0	0.0
16676	MR1-08-146	114.90	115.90	HWS	4a	7.10	0.0	0.0
16712	MR1-08-156	84.07	85.17	HWS	4a	7.07	0.0	0.0
16714	MR1-08-156	92.03	93.06	HWS	4a	6.99	0.0	0.2
16716	MR1-08-156	100.18	101.12	HWS	4a	6.45	0.0	0.4
16740	MR1-06-84	16.55	17.63	HWS	4a	7.64	0.0	0.0
16742	MR1-06-84	24.68	25.63	HWS	4a	7.69	0.0	0.0
16744	MR1-06-84	35.70	36.67	HWS	4a	7.92	0.0	0.0
16748	MR1-06-84	53.21	54.31	HWS	4a	7.46	0.0	0.0
16434	MR1-05-47	224.06	225.06	HWS	4ac	8.04	0.0	0.0
16500	MR1-04-45	184.86	185.86	HWS	4ac	5.55	0.0	1.2
16512	MR1-04-45	233.68	234.70	HWS	4ac	2.96	13	22
16258	MR1-05-51	167.85	168.77	HWS	4b	6.77	0.0	0.3
16260	MR1-05-51	173.39	174.39	HWS	4b	7.58	0.0	0.0
16228	MR1-05-53	114.20	115.30	HWS	4c	7.78	0.0	0.0
16230	MR1-05-53	125.90	126.79	HWS	4c	2.70	34.4	73.9
16254	MR1-05-51	156.02	157.02	HWS	4c	7.66	0.0	0.0
16256	MR1-05-51	163.20	164.27	HWS	4c	7.26	0.0	0.0
16430	MR1-05-47	189.17	190.17	HWS	4c	7.09	0.0	0.0
16428	MR1-05-47	178.00	179.00	HWS	4c/a	3.01	11	24
16506	MR1-04-45	205.50	206.60	HWS	4ca	5.05	0.0	1.8
16508	MR1-04-45	213.90	214.85	HWS	4ca	5.86	0.0	0.9
16510	MR1-04-45	223.02	224.02	HWS	4ca	3.28	4.8	9.8
16568	MR1-09-172	29.83	30.82	HWS	4ca	6.82	0.0	2.9
16160	MR1-08-160	11.15	11.25	HWS	4cc	7.47	0.0	0.0
16028	MR1-05-72	122.35	123.30	HWS	5a/6e	3.53	2.2	4.8
16602	MR1-05-77	91.15	92.18	HWS	5b	7.56	0.0	0.0
16026	MR1-05-72	110.00	111.05	HWS	6e	7.82	0.0	0.0
16034	MR1-05-72	138.40	139.40	HWS	6e	2.57	25	41
16038	MR1-05-72	153.30	154.32	HWS	6e	3.47	2.6	6.6
16294	MR1-04-44	224.40	225.43	HWS	6e	6.34	0.0	0.3
16296	MR1-04-44	233.10	234.17	HWS	6e	2.68	19.5	33.9
16298	MR1-04-44	245.50	246.50	HWS	6e	4.19	0.4	4.8
16300	MR1-04-44	258.73	259.70	HWS	6e	7.32	0.0	0.0
16484	MR1-05-46	245.03	246.00	HWS	6e	4.43	0.3	1.4
16494	MR1-05-46	288.50	289.55	HWS	6e	7.42	0.0	0.0
16496	MR1-05-46	293.16	294.12	HWS	6e	6.20	0.0	0.4
16502	MR1-04-45	192.50	193.59	HWS	6e	5.47	0.0	1.1
16498	MR1-04-45	176.08	177.22	HWS	7a	2.32	34	41
16222	MR1-08-158	204.15	205.15	HWS	7c	7.40	0.0	0.0
16566	MR1-09-176	223.60	224.61	HWS	7c	3.09	4.8	8.7
16234	MR1-05-53	139.25	140.25	HWS	7d	10.96	0.0	0.0
16012	MR1-05-72	58.70	59.60	HWS	7f	1.93	96	106
16016	MR1-05-72	69.60	70.60	HWS	7f	2.28	37	44

Table B-2. Static NAG pH Test Results by Lithology (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Code	NAG Final pH	NAG (pH 4.5)	NAG (pH 7.0)
						units	kg H_2SO_4/tonne	kg H_2SO_4/tonne
16020	MR1-05-72	84.20	85.20	HWS	7f	2.43	25	28
16324	MR1-08-141	182.22	183.12	HWS	7f	6.87	0.0	0.3
16442	MR1-05-47	270.91	271.92	HWS	7f	6.88	0.0	0.2
16450	MR1-05-47	294.37	295.37	HWS	7f	7.07	0.0	0.0
16456	MR1-05-47	313.64	314.75	HWS	7f	2.35	36	56
16478	MR1-05-46	212.80	213.81	HWS	7f	3.09	5.4	9.7
16558	MR1-09-176	203.44	204.41	HWS	7f	6.90	0.0	0.2
16052	MR1-05-72	208.30	209.30	HWS	7f, 7c	3.01	6.4	9.3
16446	MR1-05-47	282.50	283.60	HWS	7f,4cab	4.61	0.0	1.8
16326	MR1-08-141	212.23	213.13	HWS	9b	9.03	0.0	0.0
16438	MR1-05-47	235.23	236.28	HWS	9b	6.20	0.0	0.7
16432	MR1-05-47	203.41	204.48	HWS	9d	8.94	0.0	0.0
16474	MR1-05-46	156.69	157.61	HWS	9d	4.65	0.0	1.1
16476	MR1-05-46	161.44	162.52	HWS	9d	3.35	2.6	4.8
16514	MR1-04-45	236.47	237.57	HWS	9d	8.93	0.0	0.0
16562	MR1-09-176	207.95	208.93	HWS	9d	2.80	11	16
16436	MR1-05-47	230.28	231.23	HWS	9d/7c	8.84	0.0	0.0
16564	MR1-09-176	215.39	216.37	HWS	9d/7c	7.49	0.0	0.0
16608	MR1-05-77	180.77	181.76	IW	3	7.88	0.0	0.0
16636	MR1-08-159	93.97	94.94	IW1000	4a	7.53	0.0	0.0
16638	MR1-08-159	97.82	98.79	IW1000	7c	2.59	18.5	26
16634	MR1-08-159	90.58	91.54	IW1000	9d	2.97	7.3	11
16274	MR1-05-51	314.16	315.16	IW1100	3	3.48	3.4	8.4
16280	MR1-05-51	335.95	336.93	IW1100	7f	7.38	0.0	0.0
16276	MR1-05-51	317.90	318.90	IW1100	9d	7.21	0.0	0.0
16278	MR1-05-51	322.85	323.75	IW1100	9d	7.37	0.0	0.0
16048	MR1-05-72	193.45	194.45	Ore	7f	2.98	6.5	8.0

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	From m	To m	Waste Rock Code	Lithology	Rock Code	Sampling Program	Hg µg/g	Al %	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca %	Cd µg/g
Average Concentration (Continental Crustal)*								0.085	8.23	1.8	425	3	0.0085	4.15	0.15
16086	ARP-2A-NW	12.40	13.40	FW	ab_QF gneiss	5b	Baffinland 2011	<0.1	2.4	<0.5	130	0.37	0.20	0.29	0.28
16136	ARD-2A-SE	6.90	7.90	FW	ab_QF gneiss	5b	Baffinland 2011	<0.1	2.7	0.6	520	0.31	0.12	0.50	0.09
16138	ARD-2A-SE	17.81	18.86	FW	ab_QF gneiss	5b	Baffinland 2011	<0.1	3.0	0.8	420	0.28	0.14	0.39	0.31
16146	ARD-2A-SE	48.46	49.40	FW	ab_QF gneiss	5b	Baffinland 2011	<0.1	2.3	0.7	150	0.24	<0.1	0.16	0.25
16148	ARD-2A-SE	58.60	58.10	FW	ab_QF gneiss	5b	Baffinland 2011	<0.1	0.5	0.8	38	0.93	0.36	1.30	0.16
16338	MR1-08-141	343.20	344.22	FW	ab_QF gneiss	5b	Baffinland 2011	<0.1	2.3	<0.5	26	0.03	0.12	0.41	0.02
16112	ARD-2B-NW	8.85	9.90	FW	ab_QF gneiss, granite	5b, 12a	Baffinland 2011	<0.1	2.8	0.6	110	2.5	0.37	0.03	0.49
16114	ARD-2B-NW	10.47	11.44	FW	ab_QF gneiss, granite	5b, 12a	Baffinland 2011	<0.1	1.3	<0.5	110	2.2	<0.1	0.02	0.21
UCS11	MR1-06-81	88.00	NA*	FW	Gneiss/Amphibolite		Knight Piesold 2006-2007	-	7.7	<6.0	2000	1.7	<2.0	0.32	0.90
5182	ARD-2B-NW	61.00	62.00	FW	Gneiss/Schist	5b,4cb	AMEC 2010	<0.1	3.3	0.5	220	0.9	0.24	0.29	0.39
5183	ARD-2B-NW	66.00	67.00	FW	Gneiss/Schist	5b,4cb	AMEC 2010	<0.1	3.3	0.5	260	0.7	<0.1	0.11	<0.1
5184	ARD-2B-NW	73.00	74.00	FW	Gneiss/Schist	5b,4cb	AMEC 2010	<0.1	5.9	0.5	560	1.00	<0.1	0.35	<0.0
5186	ARD-2B-NW	84.00	85.00	FW	Gneiss/Schist	5b,4cb	AMEC 2010	<0.1	3.7	0.5	270	1.0	<0.2	1.60	<0.0
5187	ARD-2B-NW	89.00	90.00	FW	Gneiss/Schist	5b,4cb	AMEC 2010	<0.1	4.7	0.5	280	1.5	<0.1	0.17	0.02
5188	ARD-2B-NW	95.00	96.00	FW	Gneiss/Schist	5b,4cb	AMEC 2010	<0.1	2.8	0.5	150.0	0.5	<0.1	0.27	0
5189	ARD-2B-NW	100	101	FW	Gneiss/Schist	5b,4cb	AMEC 2010	<0.1	7.0	<0.5	700	0.89	0.12	0.33	0.02
16098	ARP-2A-NW	56.68	57.58	FW	mica amphibole chlorite schist	4bca	Baffinland 2011	<0.1	3.0	<0.5	430	0.43	0.59	0.25	0.32
16100	ARP-2A-NW	68.1	69.3	FW	mica amphibole chlorite schist	4bca	Baffinland 2011	<0.1	1.1	<0.5	160	0.16	0.72	0.16	3.70
16102	ARP-2A-NW	72.4	73.6	FW	mica amphibole chlorite schist	4bca	Baffinland 2011	<0.1	5.8	<0.7	700	0.66	0.83	0.19	3.30
16092	ARP-2A-NW	36.6	37.6	FW	mica amphibole schist	4bc	Baffinland 2011	<0.1	4.5	<0.5	340	0.45	0.09	0.76	0.09
16154	ARD-2A-SE	84.28	85.39	FW	mica amphibole schist	4bc	Baffinland 2011	<0.1	1.5	<1.0	110	0.38	0.3	0.94	0.42
16158	ARD-2A-SE	104.79	105.76	FW	mica amphibole schist	4bc	Baffinland 2011	<0.1	1.7	<0.9	95	0.38	<0.09	1.20	4.20
16104	ARP-2A-NW	77.6	78.7	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	<0.1	2.6	0.8	270	0.17	0.10	0.40	0.36
16106	ARP-2A-NW	84.37	85.3	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	<0.1	1.6	<0.8	140	0.18	<1.10	0.20	0.27
16108	ARP-2A-NW	98.15	99.2	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	<0.1	1.0	0.7	86	0.31	0.24	0.14	0.80
16110	ARP-2A-NW	103.91	104.91	FW	mica amphibole schist, ABQF gneiss	4bc, 5b	Baffinland 2011	<0.1	2.2	0.8	210	0.22	0.14	0.40	0.07
16310	MR1-08-145	132.5	133.65	FW	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	<0.1	2.0	0.7	85	0.76	<0.09	0.14	0.02
16312	MR1-08-145	145.2	146.1	FW	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	<0.1	2.9	<0.6	86	0.7	<0.09	0.09	0.02
16126	ARD-2B-NW	58.76	59.76	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	<0.1	4.3	0.5	250	0.90	<0.09	0.16	<0.3
16128	ARD-2B-NW	62.7	63.88	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	<0.1	4	<0.5	300	1.10	<0.10	0.46	<0.2
16130	ARD-2B-NW	78.51	79.43	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	<0.1	3.2	0.5	280	0.83	<0.18	0.86	<0.0
16132	ARD-2B-NW	87.8	88.9	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	<0.1	4.7	<0.5	430	1.20	<0.09	0.29	<0.0
16134	ARD-2B-NW	93.12	94.12	FW	QFm gneiss-chloritic_QFm schist, amphibole mica schist	5c, 4cb	Baffinland 2011	<0.1	3.5	<0.5	290	0.60	<0.09	0.12	<0.0
5155	ARD-2A-NW	95	96	FW	Schist/Gneiss	4bc,5b	AMEC 2010	<0.1	1.6	<0.5	83	0.56	0.71	0.11	<0.3
5156	ARD-2A-NW	105	106	FW	Schist/Gneiss	4bc,5b	AMEC 2010	<0.1	2.3	1	250	0.3	0.17	0.32	0.27
UCS27	MR1-06-81	244.4	NA*	FW	Volcanic Tuff /Schist		Knight Piesold 2006-2007	-	9.3	<6	38	1	<34	0.6	4.0
16120	ARD-2B-NW	33.61	34.61	FW	amphibole schist	4c	Baffinland 2011	0.1	5.5	<1	230	4.80	<0	0.24	0.1
16122	ARD-2B-NW	47.77	48.77	FW	amphibole schist	4c	Baffinland 2011	0.1	5.3	<1	240	2.60	<0	0.12	0.0
16124	ARD-2B-NW	51.72	52.8	FW	amphibole schist	4c	Baffinland 2011	0.1	6.9	<1	370	3.60	<0	0.36	0.0
16288	MR1-05-51	383.9	384.97	FW	amphibolite	3	Baffinland 2011	0.1	3.7	<1	55	0.9	<0	0.08	<0
16630	MR1-08-154	253.95	254.88	FW	amphibolite	3	Baffinland 2011	0.1	5.4	<1	210	2.2	<0	0.084	<0
16116	ARD-2B-NW	14.68	15.83	FW	chlorite amphibole schist	4ac	Baffinland 2011	0.1	6.8	1	81	2.3	<0	0.42	<0
16118	ARD-2B-NW	22.61	23.73	FW	chlorite amphibole schist	4ac	Baffinland 2011	0.1	5.3	<1	3	1.0	<0	0.52	30.0
5146	ARD-2A-NW	35	36	FW	Schist	4bc	AMEC 2010	0.1	7.5	<1	540	0.4	<0	0.22	<0
5150	ARD-2A-NW	59	60	FW	Schist	4bca	AMEC 2010	0.1	3.3	<1	350	0.6	<3	0.36	<0
5151	ARD-2A-NW	65	66	FW	Schist	4bca	AMEC 2010	0.1	4	<1	650	0.4	<1	0.49	<1
5152	ARD-2A-NW	70	71	FW	Schist	4bca	AMEC 2010	0.1	2.9	<1	450	0.3	<0	0.14	2.1
5153	ARD-2A-NW	75	76	FW	Schist	4bca	AMEC 2010	<0.1	4.9	0.5	370	0.96	4.20	0.37	0.56
5154	ARD-2A-NW	85	86	FW	Schist	4bca	AMEC 2010	<0.1	2.0	<0.5	250	0.12	<0.70	0.23	0.14
5170	ARD-2A-SE	85	86	FW	Schist	4bca	AMEC 2010	<0.1	1.8	<0.7	93	0.5	<0.34	1.10	<0.45
5173	ARD-2A-SE	103	104	FW	Schist	4bc	AMEC 2010	<0.1	1.5	<0.5	70	0.3	0.09	1.00	0.10
5176	ARD-2B-NW	14	15	FW	Schist	4ac	AMEC 2010	<0.1	9.2	<0.8	95	2.4	<0.09	0.34	<0.25
5177	ARD-2B-NW	18	19	FW	Schist	4ac	AMEC 2010	<0.1	8.0	<13.0	67	3.60	<0.09	0.40	2.60
5178	ARD-2B-NW	24	25	FW	Schist	4ac	AMEC 2010	<0.1	7.1	<0.9	3	0.63	0.09	0.59	<0.26
5179	ARD-2B-NW	35.00	36.00	FW	Schist	4c	AMEC 2010	<0.1	5.5	<0.5	160	5.10	<0.1	0.09	0.03
5180	ARD-2B-NW	47.00	48.00	FW	Schist	4c	AMEC 2010	<0.1	7.3	<0.5	270	3.30	0.09	0.18	0.02
5181	ARD-2B-NW	55.00	56.00	FW	Schist	4c	AMEC 2010	<0.1	8.4	<0.5	490	3.20	0.09	0.31	0.02
5185	ARD-2B-NW	79.00	80.00	FW	Schist	5b,4cb	AMEC 2010	<0.1	3.7	<0.5	220	0.57	0.14	0.54	0.03

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti
		µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%
Average Concentration (Continen		25	102	60	5.63	2.085	20	2.33	950	1.2	2.355	84	14	0.2	0.05	2.3	370	0.565
16086	ARP-2A-NW	7.5	53	27	4.4	1.90	32	1.1	530	2.7	0	4.8	32	<0.8	<0.7	2.4	7.0	0.34
16136	ARD-2A-SE	8.4	56	49	5.1	2.40	28	1.5	870	2.3	0	6.0	7.3	<0.8	<0.7	0.8	12	0.44
16138	ARD-2A-SE	9.8	55	48	5.6	2.60	30	1.4	630	2.1	0	6.7	13	<0.8	<0.7	3.6	8.2	0.47
16146	ARD-2A-SE	7.7	75	15	4.0	2.00	31	1.2	510	2.0	0	7.5	8.7	<0.8	<0.7	<0.5	3.4	0.28
16148	ARD-2A-SE	1.2	58	2.3	0.7	0.20	3	0.5	410	1.1	0	2.3	14	<0.8	<0.7	<0.5	16	0.09
16338	MR1-08-141	13	410	50	2.3	0.18	16	2.6	210	1.1	0	83	2.4	<0.8	<0.7	<0.5	8.5	0.02
16112	ARD-2B-NW	6.0	96	8.5	2.7	1.10	26	2.6	420	2.3	0	7.6	17	<0.8	<0.7	0.9	2.5	0.03
16114	ARD-2B-NW	3.3	170	16	1.2	0.72	13	1.0	270	2.6	0	6.6	9.4	<0.8	<0.7	<0.5	2.3	0.01
UCS11	MR1-06-81	22.0	130	25.0	5.7	4.30	3	1.8	410	2.0	-	6	35	<2.0	<10.0	6.0	26.0	0.53
5182	ARD-2B-NW	22.0	82	200.0	4.9	2.10	23	1.9	290	0.3	0	16.0	18	<0.8	<1.4	0.6	3.6	0.24
5183	ARD-2B-NW	21	64	29	3.7	2.20	26	2.1	340	0.3	0	35	15	<0.8	<1.0	0.7	3	0.28
5184	ARD-2B-NW	20.0	69	1.5	5.7	3.80	28	3.8	530	2.1	0	38	11.00	<0.8	<0.7	<1.8	7.2	0.41
5186	ARD-2B-NW	16.0	67	29.0	4.5	1.50	22	1.7	410	0.2	0	13	9.7	<0.8	<1.3	<1.0	15.0	0.28
5187	ARD-2B-NW	22	27	2	5.3	2.50	25	3.0	320	0.1	0	33	5	<0.8	<0.7	1.0	3.4	0.27
5188	ARD-2B-NW	15	74	26	3.3	1.60	15	1.8	270	0.6	0	17	12	<0.8	<1.3	<0.5	2.6	0.22
5189	ARD-2B-NW	24	47	22	6.9	4.5	33	4.4	570	1.3	0.089	30	10.0	<0.8	<0.8	1.5	5.3	0.47
16098	ARP-2A-NW	19	110	200	4.8	2.5	44	3.2	640	2.7	0.049	54.0	4	<0.8	<0.7	3.3	6.6	0.36
16100	ARP-2A-NW	5.9	87	260	1.7	0.9	15	1.0	320	5.8	0.036	21.0	13.0	<0.8	0.7	3.0	5.8	0.07
16102	ARP-2A-NW	27.0	110	330	9.6	5.0	59	5.3	990	4.6	0.064	42.0	9.5	<0.8	<0.7	9.9	5	0.43
16092	ARP-2A-NW	25.0	190	23	6.5	3.5	48	3.9	990	2.3	0.049	64.0	18	<0.8	<0.7	0.7	8.6	0.53
16154	ARD-2A-SE	19.0	340	120	2.6	1.6	19	1.5	230	2.5	0.060	110.0	50.0	<0.8	0.7	0.6	33	0.22
16158	ARD-2A-SE	15.0	480	39.0	2.9	1.7	40	1.9	340	1.7	0.071	92.0	7.4	<0.8	<0.7	0.6	29.0	0.27
16104	ARP-2A-NW	10.0	83	33.0	4.3	2.3	31	1.3	610	2.3	0.140	9.0	8	<0.8	0.7	<2.9	9	0.36
16106	ARP-2A-NW	5.3	88	38	2.6	1.4	20	0.8	460	41.0	0.130	4.1	6.2	<0.8	<0.7	2.1	8.2	0.18
16108	ARP-2A-NW	3.0	110	29	1.6	0.7	14	0.6	300	3.9	0.150	3.6	17	<0.8	0.7	1.9	11	0.08
16110	ARP-2A-NW	8.4	67	19	4.2	2.0	23	1.2	570	7.4	0.140	5.4	8	<0.8	0.7	2.3	11	0.38
16310	MR1-08-145	7.1	110	4	3.5	0.7	12	1.1	170	2.2	0.014	9.0	2	<0.8	0.7	<0.5	4.0	0.06
16312	MR1-08-145	13.0	88	8.7	4.9	1.1	19	1.9	560	1.7	0.024	34.0	2	<0.8	0.7	<0.5	3.9	0.06
16126	ARD-2B-NW	22	42	99.0	6	3.1	24	2.9	340	1.9	0.049	26	48	<0.8	<0.7	1.1	2.9	0.35
16128	ARD-2B-NW	21.0	61	79.0	5.3	2.8	31	2.8	440	1.0	0.051	25	16.0	<0.8	<0.7	1.2	4.2	0.37
16130	ARD-2B-NW	15.0	56	99	4.3	1.9	26	1.7	390	0.7	0.06	7.4	8.4	<0.8	<0.7	<0.9	10.0	0.26
16132	ARD-2B-NW	20.0	42	18	6	3.3	28	3.1	380	0.8	0.067	30	8	<0.8	<0.7	1.4	5.0	0.36
16134	ARD-2B-NW	17.0	91	19	4.4	2.7	17	2.4	280	1	0.059	32.0	8.3	<0.8	<0.7	0.7	3.1	0.30
5155	ARD-2A-NW	4.3	110	12	2.1	1	31	1	400	6	0.049	5.6	28.0	<0.8	<0.7	1.6	4.3	0.14
5156	ARD-2A-NW	8	72	15	4.1	1.8	24	1.2	560	47	0.062	5	3	0.8	<1	2.6	7	0.37
UCS27	MR1-06-81	56	1400	12.0	10	0.19	12	14.7	1300	0	-	370	200	<17	<20	<6	13	0.17
16120	ARD-2B-NW	9.4	27	3.1	4.4	3.4	48	5	610	<0	0.058	11	16	<1	<1	<2	6	0.22
16122	ARD-2B-NW	5.7	16	2	3.2	2.9	66	5.2	460	0	0.052	5	18	<1	<1	<2	7	0.05
16124	ARD-2B-NW	13.0	35	35	5.3	4.3	69	5.4	420	0	0.074	21	15	<1	<1	<2	12	0.23
16288	MR1-05-51	9	43	2	7.1	0.35	10	2.8	1200	1	0.012	14	1	1	<1	<1	3	0.03
16630	MR1-08-154	<7	68	1.8	13	0.43	<30	4.7	880	<3	0.013	12	3	1	<1	<1	4	0.07
16116	ARD-2B-NW	46	1160	20	8.7	3.4	<29	8.7	520	1	0.065	310	16	1	<1	<1	4	0.36
16118	ARD-2B-NW	79	2080	120.0	7.8	0.081	<10	7	370	<5	0.0074	790	2174	<1	<1	<1	3	0.05
5146	ARD-2A-NW	<28	180	11	8.9	6	49	5.7	810	<31	0.065	70	5	1	<1	<1	4	0.63
5150	ARD-2A-NW	<24	260	66	4.1	2.1	<49	3.4	550	<3	0.043	110	4	<1	<1	<3	7	0.33
5151	ARD-2A-NW	23	310	150.0	4.9	3	43	3.3	550	<1	0.064	110	8	<1	<1	<5	12	0.38
5152	ARD-2A-NW	11	74	260	4.1	2.2	<32	1.6	490	<2	0.059	7	21	<1	<1	<11	6	0.26
5153	ARD-2A-NW	24	100	170	6.5	2.3	69	4.2	880	6.3	0.034	40	120	<0.8	0.7	6.0	6.0	0.48
5154	ARD-2A-NW	7	75	20	3.1	1.5	22	0.9	460	37.0	0.073	5	4	<0.8	0.7	2.5	6.2	0.28
5170	ARD-2A-SE	21	390	110.0	2.6	1.5	27	1.7	290	1.1	0.034	100	55	<0.8	<0.8	0.7	36.0	0.25
5173	ARD-2A-SE	15	370	34	2.3	1.3	34	1.4	260	1.3	0.043	65	7.0	<0.8	0.8	0.5	26	0.25
5176	ARD-2B-NW	34	700	13.0	9.4	3.7	35	8.6	860	0.7	0.057	150	13.0	<0.8	0.7	1.6	3.9	0.31
5177	ARD-2B-NW	36	780	8	9.1	2.5	26	8.6	280	53.0	0.054	180	12	<0.8	0.7	<1.3	5.2	0.37
5178	ARD-2B-NW	73	2200	67	7.7	0.0	7	7.4	430	0.9	0.003	620	27	<0.8	0.8	0.5	3.9	0.04
5179	ARD-2B-NW	10.0	100	2	3.8	2.10	52	4.5	490	2.1	0	26.0	14.0	<0.8	<0.7	1.3	4.3	0.08
5180	ARD-2B-NW	6.4	17	1	3.1	3.50	92	5.7	440	0.8	0	4.9	12	<0.8	<0.7	1.5	15	0.04
5181	ARD-2B-NW	14.0	34	8	5.5	4.30	81	5.6	420	0.6	0	23.0	26	<0.8	<0.7	1.8	14.0	0.25
5185	ARD-2B-NW	21	49	36	5.0	2.00	24	2.3	410	0	0	9	6	<0.8	<0.7	0.8	6.1	0.36

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	From m	To m	Waste Rock Code	Lithology	Rock Code	Sampling Program	Hg µg/g	Al %	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca %	Cd µg/g
Average Concentration (Continental Crustal)*								0.085	8.23	1.8	425	3	0.0085	4.15	0.15
5141	ARD-2A-NW	10.00	11.00	FW	Gneiss	5b	AMEC 2010	<0.1	4.3	0.5	250	0.95	0.14	0.31	0.06
5142	ARD-2A-NW	15.00	16.00	FW	Gneiss	5b	AMEC 2010	<0.1	2.9	<0.5	150	0.18	<0.1	0.29	0.30
5157	ARD-2A-SE	6.00	7.00	FW	Gneiss	5b	AMEC 2010	<0.1	2.1	0.5	450	0.21	<0.1	0.38	0.13
5158	ARD-2A-SE	11.00	12.00	FW	Gneiss	5b	AMEC 2010	<0.1	2.9	0.5	390	0.24	0.22	0.49	0.10
5159	ARD-2A-SE	17.00	18.00	FW	Gneiss	5b	AMEC 2010	<0.1	3.5	0.5	680	0.19	0.18	0.34	0.40
5160	ARD-2A-SE	21.50	22.50	FW	Gneiss	5b	AMEC 2010	0.1	1.7	<1	130	1	<1	0.82	0.1
5164	ARD-2A-SE	49.00	50.00	FW	Gneiss	5b	AMEC 2010	<0.1	2.0	0.5	130.0	0.16	0.09	0.13	0.07
5165	ARD-2A-SE	55	56	FW	Gneiss	5b	AMEC 2010	<0.1	0.6	<0.7	41	0.62	<0.23	0.67	0.06
5166	ARD-2A-SE	60	61	FW	Gneiss	5b	AMEC 2010	<0.1	3.0	<0.5	170	0.27	<0.09	0.47	0.22
5171	ARD-2A-SE	90	91	FW	Gneiss	6a	AMEC 2010	<0.1	0.9	<0.6	67	0.34	<0.49	0.21	0.15
5172	ARD-2A-SE	96	97	FW	Gneiss	6a	AMEC 2010	<0.1	0.8	<0.7	78	0.84	<0.76	0.32	0.22
5174	ARD-2B-NW	7	8	FW	Gneiss	5b,12a	AMEC 2010	<0.1	0.7	<0.6	38	0.45	0.09	0.01	0.28
5175	ARD-2B-NW	10	11	FW	Gneiss	5b,12a	AMEC 2010	<0.1	2.0	<0.5	79	2.30	0.1	0.02	0.2
MRARD10-030	MR1-09-170	103	104	FW	Gneiss	5a	AMEC 2010	<0.1	3.8	<0.6	380	0.69	<0.09	0.08	0.20
MRARD10-031	MR1-09-170	115.15	116	FW	Gneiss	5a	AMEC 2010	<0.1	1.0	<0.5	69	0.24	<0.09	0.02	0.20
MRARD10-034	MR1-08-162	185	186	FW	Gneiss	5c	AMEC 2010	<0.1	2.0	<0.7	120	0.24	<0.09	0.09	0.20
MRARD10-043	MR1-09-167	40	40.7	FW	Gneiss	5a	AMEC 2010	<0.1	5.9	<0.5	450	0.71	<0.09	0.10	0.20
MRARD10-045	MR1-09-167	50	51	FW	Gneiss	5a	AMEC 2010	<0.1	2.1	<0.5	160	0.20	0.09	0.09	0.20
MRARD10-046	MR1-09-167	65	65.9	FW	Gneiss	5a	AMEC 2010	<0.1	1.7	<0.5	320	0.29	0.14	0.10	0.2
07ARD32	MR1-06-81	75.00	95.00	FW	Gneiss		Knight Piesold 2006-2007	<0.1	7.4	<7.0	1500	1.30	0.06	0.24	0.38
ARD2	MR1-05-72	334.00	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	8.5	<6.0	490	1.00	3.00	1.50	0.3
ARD4	MR1-05-73	297.50	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	7.6	6.0	1700	0.48	3.00	0.26	0.2
ARD5	MR1-05-73	292.00	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	7.4	<6.0	1500	0.56	<3.0	0.19	0.20
ARD6	MR1-05-73	290.50	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	5.0	6.0	1200	0.52	3.00	0.13	0.20
UCS10	MR1-06-81	82.20	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	7.3	6.0	750	1.10	<34.0	0.54	4.0
UCS12	MR1-06-81	99.00	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	6.0	6.0	1800	1.60	34.00	0.08	4.00
UCS13	MR1-06-81	116.80	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	7.0	7.0	2400	2.10	34.0	0.31	4.00
UCS22	MR1-06-81	126.00	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	7.3	6.0	2900	1.90	2.00	0.22	0.70
UCS23	MR1-06-81	156.80	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	5.2	6.0	1400	0.20	34.00	0.12	4.00
UCS24	MR1-06-81	188.00	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	6.1	<6.0	3000	1.30	<34.0	0.12	4.00
UCS51	MR1-06-105	212.00	NA*	FW	Gneiss		Knight Piesold 2006-2007	-	8.1	<6.0	1400	1.60	34.00	0.16	4.00
MRARD10-055	MR1-08-159	190.00	191.00	FW	Gneiss	5c	AMEC 2010	<0.1	2.3	<1.2	180	0.66	<0.1	0.15	0.20
16062	MR1-05-72	214.21	315.21	FW	QFm gneiss	5a	Baffinland 2011	<0.1	4.4	<0.5	480	0.63	0.09	0.12	<0.1
16064	MR1-05-72	328.13	329.10	FW	QFm gneiss	5a	Baffinland 2011	<0.1	1.9	<0.5	300	0.33	<0.1	0.08	<0.0
16066	MR1-05-72	334.78	335.88	FW	QFm gneiss	5a	Baffinland 2011	<0.1	1.9	<0.5	330	0.13	0.09	0.16	0.03
16390	MR1-05-49	373.20	374.20	FW	QFm gneiss	5a	Baffinland 2011	0.1	3.0	<1	300	1	<0	0.17	0.0
16392	MR1-05-49	382.59	383.49	FW	QFm gneiss	5a	Baffinland 2011	0.1	2.3	<1	180	1	<0	0.18	0.0
16394	MR1-05-49	391.70	392.60	FW	QFm gneiss	5a	Baffinland 2011	0.1	1.3	<1	170	0	<0	0.27	0.0
16578	MR1-09-172	186.90	188.00	FW	QFm gneiss	5a	Baffinland 2011	0.1	2.2	<1	210	1	<0	910.00	0.0
16580	MR1-09-172	195.30	196.30	FW	QFm gneiss	5a	Baffinland 2011	<0.1	2.9	0.5	270	0.6	0.09	1200.00	<0.0
16582	MR1-09-172	206.40	207.41	FW	QFm gneiss	5a	Baffinland 2011	<0.1	2.2	0.5	310	0.34	<0.1	1600.00	0.02
16616	MR1-05-67	206.17	207.15	FW	QFm gneiss	5a	Baffinland 2011	<0.1	1.3	0.5	210	0.15	<0.2	2500.00	<0.0
16632	MR1-08-154	257.79	258.77	FW	QFm gneiss	5a	Baffinland 2011	<0.1	2.2	<1.3	120	1.00	<0.1	0.07	0.02
16088	ARP-2A-NW	23.00	24.00	FW	greywacke	6e	Baffinland 2011	<0.1	2.3	<0.5	160	0.2	0.09	0.22	0.09
16090	ARP-2A-NW	33.36	34.49	FW	greywacke	6e	Baffinland 2011	<0.1	1.3	<0.5	150	0.20	0.25	0.22	0.14
16094	ARP-2A-NW	46.78	47.70	FW	greywacke	6e	Baffinland 2011	<0.1	1.0	<0.5	89	0.1	<0.7	0.12	<0.4
16096	ARP-2A-NW	50.88	51.88	FW	greywacke	6e	Baffinland 2011	<0.1	1.8	0.5	61	0.16	<0.3	0.30	0.33
16140	ARD-2A-SE	23.52	24.52	FW	greywacke	6e	Baffinland 2011	<0.1	2.3	0.6	130	0.6	0.1	0.52	0.09
16142	ARD-2A-SE	32.34	32.26	FW	greywacke	6e	Baffinland 2011	<0.1	2.1	<0.5	140	0.14	<0.09	0.24	0.22
16144	ARD-2A-SE	41.18	42.18	FW	greywacke	6e	Baffinland 2011	<0.1	1.5	<0.6	85	0.22	0.1	0.19	0.05
16150	ARD-2A-SE	66.84	67.74	FW	greywacke	6e	Baffinland 2011	<0.1	2.3	<1.0	200	0.94	0.12	0.73	0.1
16152	ARD-2A-SE	78.62	79.54	FW	greywacke	6e	Baffinland 2011	<0.1	0.9	<1.0	66	0.24	0.10	0.22	0.1
16576	MR1-09-172	181.44	182.41	FW	greywacke	6e	Baffinland 2011	<0.1	1.3	<0.7	3	0.08	0.2	1100.00	0.06
5143	ARD-2A-NW			FW	Metasediment		AMEC 2010	<0.1	2.5	<0.5	140	0.20	0.09	0.20	0.07
5144	ARD-2A-NW			FW	Metasediment		AMEC 2010	<0.1	2.8	0.5	150	0.24	0.09	0.20	0.03
5145	ARD-2A-NW	30	31	FW	Metasediment	6e	AMEC 2010	<0.1	3.1	0.5	130	0.23	<0.09	0.23	0.06
5147	ARD-2A-NW	40	41	FW	Metasediment	6e	AMEC 2010	<0.1	1.8	0.5	110	0.3	0.09	0.14	0.18
5148	ARD-2A-NW	45	46	FW	Metasediment	6e	AMEC 2010	<0.1	2.3	1	140	0.2	<0.13	0.21	0.2

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti
		µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%
Average Concentration (Continen		25	102	60	5.63	2.085	20	2.33	950	1.2	2.355	84	14	0.2	0.05	2.3	370	0.565
5141	ARD-2A-NW	26	130	79	6.7	1.80	52	3.4	820	1.9	0	64	7	<0.8	<0.7	2.2	4	0.44
5142	ARD-2A-NW	10.0	60	35.0	4.8	2.30	32	1.3	500	4.5	0	5.7	19	<0.8	<0.7	3.5	4.4	0.47
5157	ARD-2A-SE	9.3	83	28.0	3.6	1.60	25	1.2	770	2.0	0	7.0	5.2	<0.8	<0.9	1.0	8.5	0.29
5158	ARD-2A-SE	8.4	58	26	4.9	2.30	27	1.4	790	8.7	0	4.7	8.0	<0.8	<0.7	1.5	11	0.47
5159	ARD-2A-SE	9.1	58	48	5.8	2.70	30	1.7	800	1.7	0	7.8	13	<0.8	<0.7	4.3	8	0.47
5160	ARD-2A-SE	6	87	12	2.6	1.30	28	1.0	510	1	0.043	8	5	<1	<1	<2	15.0	0.20
5164	ARD-2A-SE	7.2	80	7	2.9	1.60	<30.0	1.0	430	1.5	0	7.1	3.7	<0.8	0.7	<0.5	3.3	0.27
5165	ARD-2A-SE	2	78	7	0.7	0.3	9	0.5	370	0.4	0.029	4.0	18.0	<0.8	<0.9	0.5	13.0	0.07
5166	ARD-2A-SE	9	65	21.0	4.7	2.3	35	1.6	760	1.5	0.051	9.4	7.4	<0.8	<0.7	1.2	9.9	0.43
5171	ARD-2A-SE	5	67	92	2.0	0.8	20	0.7	360	0.2	0.035	4	20.0	<0.8	<0.9	1.0	13.0	0.09
5172	ARD-2A-SE	3.5	120	43	1.6	0.5	17	0.5	330	0.7	0.065	5.1	24.0	<0.8	<1.2	1.7	18.0	0.08
5174	ARD-2B-NW	2.7	140	17	0.8	0.3	6	0.4	110	1.9	0.008	5.7	55.0	<0.8	<1.0	0.5	1.6	0.01
5175	ARD-2B-NW	4.3	110	8	1.6	0.9	16	1.6	320	0.4	0.014	6.6	11	<0.8	<1.1	0.5	2.2	0.02
MRARD10-030	MR1-09-170	13	95	5.8	6.4	1.8	12	1.6	260	3.4	0.042	46	15.0	<0.8	<0.7	0.9	4.6	0.14
MRARD10-031	MR1-09-170	4.6	87	6.8	1.0	0.6	6	0.6	150	2.7	0.016	13.0	2.7	<0.8	0.7	0.7	3.1	0.01
MRARD10-034	MR1-08-162	6.5	92	19.0	3.2	0.5	7	1.2	670	1.1	0.016	7.8	2.6	<0.8	<0.7	0.5	2.9	0.04
MRARD10-043	MR1-09-167	8.6	55	11	7.7	3.4	17	2.5	320	4.4	0.086	18.0	16.0	<0.8	<0.7	1.1	3	0.21
MRARD10-045	MR1-09-167	7.6	73	11	3.0	1.4	7	0.8	120	15.0	0.037	9.4	4.2	<0.8	<0.7	1.3	3.6	0.13
MRARD10-046	MR1-09-167	6.1	100	11	2.2	1.0	12	0.8	420	10.0	0.031	8.5	6	<0.8	0.7	1.0	10	0.11
07ARD32	MR1-06-81	12	140	25	7.4	4.00	9	2.4	440	10.0	0	22	26.0	<1.1	<1.0	3.3	16.0	0.40
ARD2	MR1-05-72	12.0	8	6	4.4	2.50	10	1.2	780	4.0	-	22	25	<25.0	<6.0	6.0	170.0	0.31
ARD4	MR1-05-73	8	12	6	4.2	4.50	11	1.4	550	2.0	-	9	22.0	<25.0	<6.0	6.0	31.0	0.32
ARD5	MR1-05-73	10	12	14	4.8	3.60	5	1.4	610	2.0	-	15	17	<25.0	<6.0	6.0	21.0	0.21
ARD6	MR1-05-73	9	12	10	4.3	3.30	4	1.2	370	3.0	-	11	14	<25.0	<6.0	6.0	13	0.19
UCS10	MR1-06-81	29	72	150	16.0	3.80	14	3.4	570	4.0	-	15	43.0	<5.0	<20.0	6.0	16	0.56
UCS12	MR1-06-81	8	140	4	2.7	3.00	3	0.7	300	2.0	-	12.0	30.0	<2.0	<20.0	6.0	21.0	0.16
UCS13	MR1-06-81	14.0	120	72	6.1	3.40	3	1.7	590	4	-	19.0	48.0	<3.0	<20.0	6.0	28.0	0.32
UCS22	MR1-06-81	17.0	130	8	5.1	3.80	3	1.2	720	2.0	-	5.0	16	<2.0	<10.0	6.0	22	0.44
UCS23	MR1-06-81	8.0	140	15	5.5	3.10	5	1.7	550	2.0	-	14.0	23.0	<3.0	<20.0	6.0	11	0.31
UCS24	MR1-06-81	8	110	19.0	1.2	4.50	3	0.4	140	2.0	-	18	250.0	<2.0	<20.0	6.0	160.0	0.10
UCS51	MR1-06-105	12.0	120	4	4.7	3.60	7	1.9	430	2.0	-	30.0	13.0	<2.0	<20.0	<6.0	22.0	0.25
MRARD10-055	MR1-08-159	28.0	75	30	2.8	1.20	10	1.2	280	16.0	0	50	16.0	<0.8	<0.7	0.7	3.2	0.14
16062	MR1-05-72	23.0	150	6	7.2	1.90	20	2.7	400	1.2	0	40.0	9.1	<0.8	<0.7	0.8	7.6	0.21
16064	MR1-05-72	7.2	31	120.0	3.1	1.50	10	1.2	400	0.7	0	5.6	4.7	<0.8	<0.7	0.5	1.7	0.17
16066	MR1-05-72	9.7	15	12	3.1	1.50	15	1.1	510	0.7	0	15.0	3.2	<0.8	<0.7	<1.2	3.2	0.23
16390	MR1-05-49	8	93	190	3.9	1.90	11	2.2	230	9	0.048	8	6	<1	<1	<1	3.2	0.22
16392	MR1-05-49	7	77	4	3.6	1.30	11	1.7	250	3	0.038	8	5	<1	<1	<1	3.5	0.13
16394	MR1-05-49	7	79	31	2.8	0.38	10	1.0	430	1	0.045	8	4	<1	<1	<1	7.4	0.07
16578	MR1-09-172	5	110	8	3.8	######	11	1.4	260	11	0.025	8	7	<1	<1	<1	3.6	0.12
16580	MR1-09-172	6.7	94	8	4.3	######	12	1.6	170	2.6	0	9	7.9	<0.8	<0.7	<0.7	2.9	0.19
16582	MR1-09-172	7.5	81	6.0	3.4	######	11	1.3	540	3.0	0	7.8	3.1	<0.8	<0.7	<0.5	3.9	0.18
16616	MR1-05-67	7	79	16.0	2.0	5900.00	10	0.9	260	0.5	0	9	1.1	<0.8	<0.7	<0.5	2.6	0.09
16632	MR1-08-154	7	96	22	3.3	0.80	11	1.3	400	6.5	0	11	2	<0.8	<0.7	0.5	6.1	0.09
16088	ARP-2A-NW	10	48	32	4.0	2.10	30	1.3	380	0.7	0	10	6	<0.8	<0.7	1.3	5.8	0.38
16090	ARP-2A-NW	4	75	16	1.9	1.00	19	0.8	460	0.7	0	6.4	62.0	<0.8	<0.7	1.9	16	0.13
16094	ARP-2A-NW	6	21	28	1.6	0.90	13	0.7	530	1.0	0	5	14.0	<0.8	<0.7	3.2	7.7	0.09
16096	ARP-2A-NW	15	330	41	2.8	1.80	31	1.9	490	14.0	0	110	11.0	<0.8	<0.7	9.4	6.1	0.22
16140	ARD-2A-SE	10.0	71	17	3.4	2.10	30	1.6	870	1.5	0	15.0	11	<0.8	<0.7	0.7	13	0.28
16142	ARD-2A-SE	8	62	8	3.2	2.1	31	1.2	640	1	0.120	8	10.0	<0.8	<0.7	2.7	7.0	0.31
16144	ARD-2A-SE	6	64	7	2.3	1.5	25	0.9	410	1.2	0.054	6	3.2	<0.8	<0.7	0.9	3.7	0.24
16150	ARD-2A-SE	8	57	23	3.6	2.1	38	1.9	860	0.8	0.095	8	9.3	<0.8	<0.7	0.9	16	0.27
16152	ARD-2A-SE	4	100	48	1.5	0.7	9	0.6	220	2.1	0.180	4.2	10	<0.8	<0.7	1	22.0	0.10
16576	MR1-09-172	27	250	68	3.2	290.0	13	1.2	340	3.9	0.015	460	2	<0.8	<0.7	0.5	4.2	0.04
5143	ARD-2A-NW	11.0	57	19	3.6	2.0	31	1.3	360	2	0.043	8.9	5.4	<0.8	<0.7	1.6	4.9	0.37
5144	ARD-2A-NW	11	72	6	4.0	2.1	33	1.5	490	0.3	0.043	9	4	<0.8	0.7	2.6	4	0.37
5145	ARD-2A-NW	11	67	13	4.2	2.4	35	2.1	570	2.6	0.059	18	3.4	<0.8	0.7	<1.9	5	0.38
5147	ARD-2A-NW	7	77	25	2.3	1.4	20	1.0	530	3.9	0.057	7	7	<0.8	<0.7	1.8	7.8	0.20
5148	ARD-2A-NW	9	88	36.0	2.8	1.7	24	1.5	520	1	0.045	8	9	<0.8	<0.7	7.2	6.5	0.20

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	From m	To m	Waste Rock Code	Lithology	Rock Code	Sampling Program	Hg µg/g	Al %	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca %	Cd µg/g
Average Concentration (Continental Crustal)*								0.085	8.23	1.8	425	3	0.0085	4.15	0.15
5149	ARD-2A-NW	53	54	FW	Metasediment	6e	AMEC 2010	<0.1	1.6	0.5	170.0	0.17	3.90	0.15	6.00
5161	ARD-2A-SE	26	27	FW	Metasediment	6e	AMEC 2010	<0.1	2.6	<0.5	95	0.1	0.09	0.21	0.06
5162	ARD-2A-SE	34	35	FW	Metasediment	6e	AMEC 2010	<0.1	1.9	<0.5	120	0.1	<0.09	0.17	<0.09
5163	ARD-2A-SE	44	45	FW	Metasediment	6e	AMEC 2010	<0.1	2.5	<0.5	120	0.2	<0.09	0.15	0.04
5167	ARD-2A-SE	65	66	FW	Metasediment	6e	AMEC 2010	<0.1	2.1	<0.5	190	0.23	0.09	0.37	0.05
5168	ARD-2A-SE	72	73	FW	Metasediment	6e	AMEC 2010	<0.1	2.5	<0.5	170	0.49	0.09	0.34	0.05
5169	ARD-2A-SE	79	80	FW	Metasediment	6e	AMEC 2010	<0.1	0.9	<0.5	52	0.21	0.12	0.12	2.90
16156	ARD-2A-SE	92.7	93.8	FW	quartzite	6a	Baffinland 2011	0.1	1.0	<1	87	1.5	<3	0.59	<0
UCS25	MR1-06-81	216.2	NA*	FW	Volcanic Tuff		Knight Piesold 2006-2007	-	6.2	<6	150	1.40	<34	0.62	4.0
UCS26	MR1-06-81	225.2	NA*	FW	Volcanic Tuff		Knight Piesold 2006-2007	-	8.4	<6	17	1.0	<2	0.64	<2
16348	MR1-04-38	140.8	141.8	FW	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.35	0.6	3	0.82	<0.16	0.22	<0.1
16736	MR1-06-80	186.81	187.81	FW1300	chlorite amphibole schist	4ac	Baffinland 2011	<0.1	6.9	<0.5	1200.00	1.00	0.09	0.23	0.05
16730	MR1-06-80	170.96	172.00	FW1300	chlorite schist	4a	Baffinland 2011	<0.1	6.8	<0.5	1900.00	1.10	0.43	0.21	<0.1
16168	MR1-08-160	176.70	177.80	FW 1400	mica schist	4b	Baffinland 2011	<0.1	4.5	1.4	470.0	1.90	0.17	0.06	0.02
16164	MR1-08-160	152.40	153.59	FW 1400	chlorite schist	4a	Baffinland 2011	<0.1	0.7	38.0	2.4	0.68	0.09	0.14	0.12
MRARD10-071	MR1-08-160	155.00	156.00	FW_1400	Schist	3	AMEC 2010	<0.1	6.8	<1.3	0	3.1	0.09	0.16	0.20
MRARD10-131	MR1-08-160	154.00	155.00	FW-1400	Amphibolite	3	AMEC 2010	<0.1	0.7	27	1.6	0.44	<0.1	0.18	0.20
16284	MR1-05-51	369.20	370.10	FW1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.1	5	0.46	0.12	<0.1	0.35	0.06
16286	MR1-05-51	373.60	374.60	FW1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.1	1.6	1	0.2	0.12	0.06	<0.1
16734	MR1-06-80	182	183.01	FW1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.35	0.5	1.20	0.5	<0.09	0.4	<0.0
16738	MR1-06-80	200.14	201.14	FW1300	QFm gneiss	5a	Baffinland 2011	<0.1	2.6	0.5	450.0	0.64	0.1	0.17	0.08
16056	MR1-05-72	296.90	298.00	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.2	0.5	0.8	0.45	0.31	0.09	0.16
16058	MR1-05-72	305.90	307.10	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.2	0.5	0.35	0.27	<0.9	0.17	<0.0
16068	MR1-06-105	151.82	152.82	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.1	<0.6	5	0.1	<0.8	0.00	0.04
16070	MR1-06-105	165.60	166.05	FW 1300	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.4	<2.2	3	0.2	0.25	0.36	0.38
16060	MR1-05-72	309.25	310.25	FW 1300	volcanic tuff (layered), mica schist	11a, 4b	Baffinland 2011	<0.1	6.0	0.5	490.00	6.40	<0.1	0.66	0.07
16728	MR1-06-80	167.00	168.04	FW1300	Banded_IF 50-60% Fe 25-60% mag.	9b	Baffinland 2011	<0.1	1.8	0.5	3.3	0.83	1.50	0.19	0.04
16732	MR1-06-80	176.00	177.00	FW1300	Banded_IF 50-60% Fe 25-60% mag.	9b	Baffinland 2011	<0.1	2.2	<3.0	3.2	0.35	<0.3	0.32	0.03
16282	MR1-05-51	361.20	362.18	FW1300	Banded_IF 60-72.36% Fe 0-25% mag.	9d	Baffinland 2011	<0.1	0.1	<2.4	1	0.64	<0.1	0.03	0.02
16166	MR1-08-160	166.47	167.52	FW 1400	HG_IF 60-72.36% Fe 60-100% mag., chlorite schist	7f, 4a	Baffinland 2011	<0.1	0.9	23	0.7	0.68	0.09	0.40	0.06
16328	MR1-08-141	298.11	299.01	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.4	260.0	2.2	0.44	<0.3	1.20	0.03
16330	MR1-08-141	304.40	305.53	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.2	8	1.1	0.21	0.09	0.41	0.04
16382	MR1-05-49	348.56	349.56	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.2	14.0	2.8	0.29	0.21	0.49	0.04
16384	MR1-05-49	350.30	351.54	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	0.1	1.1	<8	3	1	<0	0.08	0.0
16622	MR1-08-154	224.92	225.92	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.2	94	1.3	0.4	0.10	160.00	0.04
16624	MR1-08-154	237.53	238.48	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.4	150	6.90	1.40	<0.1	0.06	0.32
16626	MR1-08-154	241.81	242.76	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.1	15.0	0.98	0.14	0.09	0.48	<0.1
16628	MR1-08-154	251.53	252.53	FW1400	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.37	5	0.7	0.41	<0.90	0.22	<0.0
16306	MR1-04-44	388.64	389.60	FWS	amphibolite, QFm gneiss, greywacke	3,5a,be	Baffinland 2011	0.1	4.0	<1	600	1	<0	0.07	0.0
16358	MR1-04-38	176.38	177.28	FWS	greywacke, QFm gneiss	6e, 5a	Baffinland 2011	0.1	4.5	<1	540	0	<0	0.17	0.1
16360	MR1-04-38	182.16	183.16	FWS	greywacke, QFm gneiss	6e, 5a	Baffinland 2011	<0.1	3.6	<0.5	290	0.5	0.09	0.17	<0.1
16362	MR1-04-38	197.14	198.04	FWS	greywacke, QFm gneiss	6e, 5a	Baffinland 2011	<0.1	4.5	<0.5	850	0.36	<0.1	0.13	<0.0
16304	MR1-04-44	371.69	372.69	FWS	QFm gneiss(greywacke)	5a(6e)	Baffinland 2011	<0.1	4.3	0.5	610	0.38	<0.80	0.12	<0.0
16314	MR1-08-145	152.16	153.16	FWS	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	0.1	2.6	<1	260	0.42	<0	0.3	<0
16654	MR1-08-159	182.30	183.25	FWS	QFm gneiss-chloritic_QFm schist	5c	Baffinland 2011	<0.1	2.3	0.5	140	0.8	0.09	0.11	<0.1
MRARD10-029	MR1-09-170	85.00	86.00	FWS	Volcanic Tuff /Schist	4b/(9b)	AMEC 2010	0.1	3.3	<1	5	1	<0	0.14	0.2
07ARD21	MR1-06-90	22.10	35.70	FWS	Schist /Amphibolite/Volcanic Tuff		Knight Piesold 2006-2007	<0.1	6.5	<2.0	9	1.60	<0.5	0.04	<0.1
07ARD14	MR1-06-84	187.7	203.7	FWS	Schist/Volcanic Tuff/Gneiss		Knight Piesold 2006-2007	<0.1	5.6	<4	300	1.7	0.17	0.10	0.26
07ARD38	MR1-05-67	189.40	211.00	FWS	Amphibolite/Gneiss		Knight Piesold 2006-2007	<0.1	8.5	2.0	1800	1.10	0.3	0.71	0.18
07ARD22	MR1-06-90	149.20	162.00	FWS	Gneiss		Knight Piesold 2006-2007	<0.1	6.8	3.0	520	2.3	0.19	0.07	0.42
07ARD33	MR1-06-105	184.20	187.70	FWS	Schist		Knight Piesold 2006-2007	<0.1	10.0	<4.0	1300	1.90	0.14	0.21	0.35
16388	MR1-05-49	367.55	368.60	FWS	amphibolite	3	Baffinland 2011	<0.1	7.3	<0.6	600	2.00	0.41	0.22	0.02
16614	MR1-05-67	194.67	195.64	FWS	amphibolite	3	Baffinland 2011	<0.1	2.2	<0.5	380	0.5	<0.2	6300.00	0.04
UCS9	MR1-06-81	70.50	NA*	FWS	Amphibolite		Knight Piesold 2006-2007	-	9.0	6.0	7	0.6	34.00	0.26	<4.0
16172	MR1-08-158	270.56	271.60	FWS	chlorite amphibole schist	4ac	Baffinland 2011	<0.1	7.5	1.0	130	0.8	<1.1	0.32	<0.1
16174	MR1-08-158	276.30	277.40	FWS	chlorite amphibole schist	4ac	Baffinland 2011	<0.1	6.9	<0.9	12	1.10	<0.3	0.33	<0.0
16680	MR1-08-146	201.60	202.63	FWS	chlorite amphibole schist	4ac	Baffinland 2011	<0.1	7.5	0.5	59	0.8	0.12	0.56	0.08
16178	MR1-08-158	294.40	295.40	FWS	chlorite mica amphibole schist	4abc	Baffinland 2011	<0.1	2.3	<0.5	310	0.6	<0.1	0.20	0.22

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti
		µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%
Average Concentration (Continen		25	102	60	5.63	2.085	20	2.33	950	1.2	2.355	84	14	0.2	0.05	2.3	370	0.565
5149	ARD-2A-NW	7	89	100	2.6	1.3	19	1.1	650	1.3	0.056	7	39	<0.8	0.7	<3.9	8.0	0.20
5161	ARD-2A-SE	11	70	9.0	3.6	2.2	30	1.5	570	0.4	0.043	17	6	<0.8	0.7	1.6	4.7	0.39
5162	ARD-2A-SE	7.1	63	3.3	2.6	1.6	26	1.0	460	0.4	0.039	7.4	7	<0.8	<0.8	1.4	4	0.29
5163	ARD-2A-SE	9	60	2.9	3.5	2.1	35	1.4	520	0.5	0.037	8	6	<0.8	<0.7	2.0	4	0.33
5167	ARD-2A-SE	8	67	24	3.0	1.6	24	1.4	590	0.4	0.066	7.9	9.3	<0.8	<0.7	0.9	13.0	0.27
5168	ARD-2A-SE	9.2	69	14	3.6	2.1	32	1.7	690	6.6	0.057	7.7	8	<0.8	<0.7	1.7	9.3	0.33
5169	ARD-2A-SE	4.6	96	41	1.3	0.7	9	0.6	200	1	0.079	4.8	52.0	<0.8	<0.8	1.2	14.0	0.11
16156	ARD-2A-SE	3	97	78	2	0.76	19	0.65	420	<2	0.16	4	39	1	<1	<1	33	0.078
UCS25	MR1-06-81	45	940	84.0	9	0.93	6	7.9	840	<2	-	420	28	<11	<20	<6	11	0.35
UCS26	MR1-06-81	72	2100	6	9.3	0.055	7	13	910	2	-	870	9	2	<10	<6	13	0.20
16348	MR1-04-38	3	32	39	62	0.013	2	1.1	18000	8	0.015	7	8	<0.8	<0.8	0.5	4.6	0.01
16736	MR1-06-80	12	42	45	14.0	3.90	<17.0	3.5	230	2.0	0	10	32	<0.8	0.7	<2.5	5.00	0.44
16730	MR1-06-80	14	81	43	14.0	3.70	<13.0	4.0	200	3.9	0	39	20.0	<0.8	0.7	2.1	9.20	0.32
16168	MR1-08-160	7.1	86	3	7.1	2.00	<14.0	2.8	300	4	0	17	22	<0.8	0.7	<1.1	9.7	0.16
16164	MR1-08-160	8	49	28	41.0	0.02	<7.0	2.2	18000	57	0	24	1.2	<0.8	0.7	0.5	1.90	0.02
MRARD10-071	MR1-08-160	39	920	37.0	16.0	0.01	47	7.6	1900	1.5	0	550	1.7	<0.8	<0.7	1.0	5	0.01
MRARD10-131	MR1-08-160	10.0	40	31	0.7	0.02	5	2.0	32000	56	0	25	1.2	<0.8	<0.7	1.2	1.9	0.02
16284	MR1-05-51	32.0	14	9	70.0	0.01	2	0.5	15000	2.4	0	39	1.40	<0.8	<0.7	0.5	2.1	0.00
16286	MR1-05-51	48.0	15	9.8	68.0	0.01	2	0.5	22000	2.9	0	46	2	<0.8	<0.8	0.6	2.5	0.00
16734	MR1-06-80	2	43	12	64	0.0077	2	0.16	950	1.2	0.006	9	3.0	<0.8	<0.7	2.1	3.7	0.019
16738	MR1-06-80	7	65	15	4.5	1.80	<8.0	1.2	310	1.0	0	9	18.0	<0.8	0.7	0.6	4.4	0.21
16056	MR1-05-72	34.0	20	85	51.0	0.00	<2.0	0.7	11000	9.7	0	54	26.0	<0.8	<2.4	0.5	0.6	0.01
16058	MR1-05-72	21	14	44	44.0	0.00	<2.0	1.1	8300	1.2	0	34	7.1	<0.8	<1.1	<1.0	0.7	0.01
16068	MR1-06-105	3	18	20	53.0	0.01	2	0.1	4100	55.0	0	10	13	<0.8	<2.0	0.5	2.0	0.00
16070	MR1-06-105	17	21	31	47.0	0.02	2	1.7	11000	13.0	0	43	9	<0.8	<0.7	1.0	0.8	0.02
16060	MR1-05-72	25	390	2.4	11.0	1.40	<13.0	7.2	1300	1.2	0	130	4.3	<0.8	<0.7	<1.3	11.0	0.20
16728	MR1-06-80	20	70	250.0	40.0	0.01	<2.0	1.5	2000	4.0	0	49	9.4	<0.8	1.9	0.8	2.2	0.02
16732	MR1-06-80	7.0	44	27	41.0	0.01	<2.0	2.0	1300	2.9	0	22.0	7.1	<0.8	<0.7	1.8	3.3	0.05
16282	MR1-05-51	23.0	35	34	52.0	0.01	2	0.4	4200	2.0	0	32.0	3	<0.8	<0.7	0.5	1.1	0.01
16166	MR1-08-160	4	30	16	43.0	0.01	<3.0	2.6	16000	5	0	14	1.0	<0.8	0.7	0.7	3.1	0.04
16328	MR1-08-141	51	35	110.0	65.0	0.01	<2.0	0.8	4700	20.0	0	88	7.6	<0.8	3.5	<0.6	4.6	0.02
16330	MR1-08-141	18	12	9	64.0	0.01	<2.0	0.9	12000	1.6	0	29	1.1	<0.8	<0.9	0.5	2.2	0.01
16382	MR1-05-49	17	30	27	70.0	0.02	2	0.5	8000	1.1	0	38	2.6	<0.8	<0.7	0.6	2.0	0.01
16384	MR1-05-49	13	75	50	59.0	0.02	4	1.1	2400	4	0.012	53	7	<1	<1	<1	2.0	0.05
16622	MR1-08-154	18	45	46	68.0	70.00	2	0.1	1200	45	0	41	6.0	0.8	<1.3	<0.5	2.6	0.01
16624	MR1-08-154	54.0	58	40.0	69.0	0.01	<5.0	0.2	1400	450.0	0	80	2.6	<0.9	<0.7	<0.5	5.9	0.02
16626	MR1-08-154	4.7	14	6	60.0	0.01	<2.0	1.9	21000	5.5	0	13	1.4	<0.8	<0.7	<0.5	3.0	0.00
16628	MR1-08-154	6.6	54	56	64	0.005	2	0.51	4600	7	0.0036	16	6.6	<0.8	<0.7	0.5	2.4	0.015
16306	MR1-04-44	10	72	4	5.1	2.60	25	2.3	280	28	0.057	21	13	<1	<1	<2	12.0	0.16
16358	MR1-04-38	12	66	13	6.6	3.40	12	2.5	410	11	0.078	34	17	<1	<1	<2	2.6	0.36
16360	MR1-04-38	14	58	5	5.1	2.70	12	2.0	280	2.2	0	32	11.0	<0.8	<0.7	1.0	4.0	0.29
16362	MR1-04-38	16.0	96	5	6.1	3.30	13	2.7	460	3.3	0	44.0	11.0	<0.8	<0.7	1.4	3.0	0.36
16304	MR1-04-44	11.0	75	5.3	6.7	3.1	17	2.3	180	10.0	0.086	25	8.1	0.8	<0.7	2.1	19.0	0.31
16314	MR1-08-145	12	130	32.0	4.1	1.8	<22	1.7	580	<2	0.047	30	2	1	<1	1	5.4	0.24
16654	MR1-08-159	15.0	76	10	3.3	1.70	10	1.3	170	5.9	0	25.0	29	<0.8	<0.7	0.5	3	0.16
MRARD10-029	MR1-09-170	45	610	38	8.2	0.08	36	4.0	830	1	0.022	440	4	<1	<1	<1	5.7	0.01
07ARD21	MR1-06-90	63.0	120	21.0	29.0	0.28	50	6.7	570	62	0	180	12	<0.3	<1.0	2.0	2	0.05
07ARD14	MR1-06-84	19	290	43	8	1.43	27	2.6	890	16	0.05	58	7.8	<1.0	<2	2.4	9	0.14
07ARD38	MR1-05-67	32	330	43.0	9.4	3.30	32	5.5	1100	22.0	0	150	5.3	<0.1	<1.0	<1.6	42.0	0.30
07ARD22	MR1-06-90	14	180	25.0	11.0	1.80	27	3.8	250	9.9	0	35	7.7	<0.1	<1.0	<2.5	22.0	0.17
07ARD33	MR1-06-105	84	83	37	13.0	4.70	23	3.3	720	64.0	0	240	27.0	<1.1	<2.0	4.7	14.0	0.37
16388	MR1-05-49	7	25	45	9.5	2.60	39	4.8	410	1.5	0	6	24.0	<0.8	<0.7	1.8	13.0	0.17
16614	MR1-05-67	15	340	5.6	2.5	######	28	3.0	430	0.7	0	110	2	<0.8	<0.7	0.5	11.0	0.16
UCS9	MR1-06-81	20	260	3.6	19.0	0.01	3	4.3	1800	2.0	-	84	410.0	<9.0	<20.0	<10.0	3.5	0.13
16172	MR1-08-158	20	120	6	17.0	0.02	4	4.3	2300	5.2	0	51	5.2	<0.8	<0.7	0.5	7.7	0.05
16174	MR1-08-158	17.0	250	9.3	13.0	0.01	2	5.8	960	0.5	0	55.0	2.5	<0.8	<0.7	0.5	4.8	0.03
16680	MR1-08-146	26	440	13	15.0	0.24	<7.0	6.9	880	1.1	0	340	3.3	<0.8	0.7	<0.6	9.9	0.06
16178	MR1-08-158	22	61	30.0	3.4	1.90	8	1.4	250	2	0	16	7.6	<0.8	<0.7	0.6	3.5	0.19

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	From m	To m	Waste Rock Code	Lithology	Rock Code	Sampling Program	Hg µg/g	Al %	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca %	Cd µg/g
Average Concentration (Continental Crustal)*								0.085	8.23	1.8	425	3	0.0085	4.15	0.15
16754	MR1-08-159	171.44	172.39	FWS	chlorite mica schist	4ab	Baffinland 2011	<0.1	5.1	<0.5	780	1.5	<0.1	0.32	0.11
16336	MR1-08-141	334.70	335.75	FWS	chlorite schist	4a	Baffinland 2011	<0.1	4.0	6.0	20.0	1.1	0.16	0.24	0.02
16466	MR1-04-41	122.42	123.39	FWS	chlorite schist	4a	Baffinland 2011	<0.1	7.1	3.5	410.0	3.60	0.09	0.21	0.02
16468	MR1-04-41	130.60	131.56	FWS	chlorite schist	4a	Baffinland 2011	<0.1	5.5	<0.5	490	0.7	0.09	0.11	0.02
16642	MR1-08-159	130.61	131.61	FWS	chlorite schist	4a	Baffinland 2011	<0.1	1.8	1.2	350	1.40	<0.26	0.28	<0.1
16646	MR1-08-159	141.86	142.93	FWS	chlorite schist	4a	Baffinland 2011	<0.1	5	0.5	750	2.00	<0.09	0.31	<0.0
16690	MR1-08-146	243.39	244.4	FWS	chlorite schist	4a	Baffinland 2011	<0.1	6.1	0.5	310	2.3	<0.09	0.75	<0.1
16722	MR1-06-90	141.9	142.9	FWS	chlorite schist	4a	Baffinland 2011	<0.1	7.1	<0.8	6	1.50	<0.48	0.039	<0.3
MRARD10-035	MR1-08-163	155	156	FWS	Schist	4a	AMEC 2010	<0.1	8.1	<0.5	1470	3.30	<0.09	0.16	<0.2
MRARD10-037	MR1-08-160	180	181	FWS	Schist	4b	AMEC 2010	<0.1	3.6	<1.5	220	0.49	<0.28	0.025	<0.2
MRARD10-047	MR1-08-163	110	111	FWS	Schist	4a	AMEC 2010	<0.1	5.6	0.5	4	0.5	0.09	0.21	<0.2
MRARD10-049	MR1-08-163	135	136	FWS	Schist	4a	AMEC 2010	<0.1	9.1	<0.5	4	0.88	<0.09	0.22	<0.2
MRARD10-056	MR1-08-152	165	166	FWS	Schist	4a	AMEC 2010	<0.1	10	<0.5	6	0.68	<0.18	0.18	<0.2
MRARD10-058	MR1-08-159	160	161	FWS	Schist	4ab	AMEC 2010	<0.1	4.7	<0.5	960	0.4	<0.11	0.19	<0.2
MRARD10-063	MR1-08-157	173.4	174.4	FWS	Schist	4a	AMEC 2010	<0.1	8.5	<2.2	1	0.8	<3.30	0.12	<0.2
MRARD10-085	MR1-08-144	210	211	FWS	Schist	11a-b	AMEC 2010	<0.1	6	1	160	2.5	28.00	0.17	0.20
MRARD10-097	MR1-08-143	185	186	FWS	Schist	4a-b	AMEC 2010	0.1	1.8	<1	16	0.2	<0	1.1	0.2
MRARD10-099	MR1-08-144	193	193.8	FWS	Schist	5b	AMEC 2010	0.1	7.2	<1	410	0.8	<0	0.18	0.2
MRARD10-114	MR1-07-121	220	221	FWS	Schist	5c	AMEC 2010	0.1	1.7	<1	96	0	<0	0.22	<0
MRARD10-116	MR1-07-121	194.70	195.70	FWS	Schist	11a-4a-6a	AMEC 2010	<0.1	7.3	0.5	510	1.1	0.19	1.20	0.20
MRARD10-128	MR1-08-141	165.00	166.00	FWS	Schist	4a	AMEC 2010	<0.1	4.1	<3.5	6	1.7	0.10	0.13	0.20
16574	MR1-09-172	173.00	174.00	FWS	mica amphibole schist	4bc	Baffinland 2011	<0.1	3.3	<5.5	20	0.71	<0.3	1300.00	0.20
16752	MR1-06-84	204.15	205.15	FWS	mica amphibole schist	4bc	Baffinland 2011	<0.1	3.3	<0.5	330	0.65	<0.1	0.32	0.13
16648	MR1-08-159	147.43	148.43	FWS	mica chlorite schist	4ba	Baffinland 2011	<0.1	3.4	<0.5	820	0.86	<0.1	0.18	0.03
16650	MR1-08-159	153.30	154.28	FWS	mica chlorite schist	4ba	Baffinland 2011	<0.1	6.5	<0.5	1200.00	1.50	0.11	0.67	0.05
16652	MR1-08-159	164.20	165.00	FWS	mica chlorite schist	4ba	Baffinland 2011	<0.1	6.7	0.8	730	2.0	0.22	0.25	0.06
16078	MR1-06-105	186.70	187.70	FWS	mica schist	4b	Baffinland 2011	<0.1	5.0	<0.5	700	0.9	<0.1	0.21	0.04
16572	MR1-09-172	164.43	165.46	FWS	mica schist	4b	Baffinland 2011	<0.1	3.1	16.0	240.0	2.20	<0.2	1600.00	0.04
16518	MR1-07-118	14.61	15.56	FWS	ab_QF gneiss	5b	Baffinland 2011	<0.1	1.9	1	140.0	0.31	0.09	1000.00	0.03
16520	MR1-07-118	28.90	29.83	FWS	ab_QF gneiss	5b	Baffinland 2011	<0.1	1.5	1.2	180.0	0.29	0.09	1200.00	<0.0
16726	MR1-06-90	153.40	154.38	FWS	ab_QF gneiss	5b	Baffinland 2011	<0.1	3.4	0.5	360.0	1.20	<0.1	0.08	<0.0
16750	MR1-06-84	192.39	193.49	FWS	ab_QF gneiss	5b	Baffinland 2011	<0.1	2.7	1	230.0	0.83	0.09	0.04	0.02
MRARD10-004	MR1-09-179	160.00	161.00	FWS	Gneiss	5e	AMEC 2010	<0.1	3.4	0.6	520.0	0.32	0.1	0.17	<0.2
MRARD10-005	MR1-09-179	176.00	177.00	FWS	Gneiss	5e	AMEC 2010	<0.1	1.7	<0.7	99	0.62	0.09	0.05	0.20
MRARD10-011	MR1-09-178	150.00	151.00	FWS	Gneiss	5c	AMEC 2010	<0.1	8.3	<0.6	230.0	2.5	0.09	0.18	0.20
MRARD10-015	MR1-09-178	165.30	166.00	FWS	Gneiss	5a	AMEC 2010	<0.1	2.5	<0.5	160.0	0.71	0.09	0.17	<0.2
MRARD10-033	MR1-08-162	170.00	171.00	FWS	Gneiss	5c	AMEC 2010	<0.1	1.6	<0.5	140	0.17	0.09	0.08	0.20
MRARD10-057	MR1-08-161	160	161	FWS	Gneiss	5c	AMEC 2010	<0.1	4.4	<0.5	690	0.6	<0.09	0.15	<0.2
MRARD10-074	MR1-08-149	220.00	221.00	FWS	Gneiss	5b	AMEC 2010	0.1	3.1	<3	420	1	<1	0.15	0.2
MRARD10-104	MR1-08-140	165.00	166.00	FWS	Gneiss	5b	AMEC 2010	<0.1	3.3	<0.5	130	0.89	<0.1	0.14	0.20
MRARD10-115	MR1-07-121	236.00	237.00	FWS	Gneiss	5c	AMEC 2010	<0.1	4.8	<0.5	470	1.90	<0.1	0.20	0.20
MRARD10-125	MR1-08-144	195.00	196.00	FWS	Gneiss	5b	AMEC 2010	<0.1	2.1	<0.5	260	1.1	0.09	0.09	0.20
ARD1	MR1-05-72	322.00	NA*	FWS	Gneiss		Knight Piesold 2006-2007	-	12.0	6.0	2200	5.2	3.00	0.17	0.30
ARD3	MR1-05-72	325.00	NA*	FWS	Gneiss		Knight Piesold 2006-2007	-	5.8	<6.0	1700	4.90	<3.0	0.14	0.20
UCS49	MR1-06-105	193.20	NA*	FWS	Gneiss		Knight Piesold 2006-2007	-	7.0	<6	1000	1	<34	0.14	4.0
16080	MR1-06-105	195.09	196.09	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	2.6	<0.5	220	0.63	<0.1	0.15	0.04
16082	MR1-06-105	205.29	206.24	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	2.7	<0.5	210	0.65	<0.1	0.19	0.03
16084	MR1-06-105	215.38	216.38	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	2.0	<0.5	97	0.59	<0.1	0.17	0.05
16180	MR1-08-158	306.89	307.99	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	1.3	0.6	100	0.14	<0.1	0.14	0.05
16302	MR1-04-44	362.60	363.62	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	2.9	<0.5	280	0.83	<0.1	0.19	0.02
16308	MR1-04-44	394.20	395.30	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	4.1	<0.5	1100	0.59	<0.1	0.19	<0.0
16352	MR1-04-38	155.66	156.56	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	2.8	<0.5	310	1.2	<0.1	0.20	0.18
16354	MR1-04-38	164.50	165.48	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	2.6	<0.5	450	0.56	<0.1	0.14	0.08
16356	MR1-04-38	170.47	171.37	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	3.2	<0.5	280	1.4	<0.1	0.15	0.15
16386	MR1-05-49	355.12	356.02	FWS	QFm gneiss	5a	Baffinland 2011	<0.1	2.9	0.6	660	0.68	0.80	0.11	<0.0
16610	MR1-05-67	173.35	174.36	FWS	QFm gneiss	5a	Baffinland 2011	0.1	1.6	<2	82	1	<2	290.00	0.0
16612	MR1-05-67	181.90	182.89	FWS	QFm gneiss	5a	Baffinland 2011	0.1	2.3	<1	30	1	<0	300.00	0.0
16350	MR1-04-38	146.60	147.60	FWS	greywacke	6e	Baffinland 2011	<0.1	4.5	<1.3	490	1.30	0.17	0.24	<0.2

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti
		µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%
Average Concentration (Continen		25	102	60	5.63	2.085	20	2.33	950	1.2	2.355	84	14	0.2	0.05	2.3	370	0.565
16754	MR1-08-159	18	73	3.8	8.4	2.10	12	3.0	130	3.2	0	22.0	23	<0.8	<0.7	1.8	9	0.31
16336	MR1-08-141	14	210	6	6.1	0.09	19	3.9	530	3	0	84	2	<0.8	<0.7	0.5	6.3	0.02
16466	MR1-04-41	21.0	180	21.0	9.9	1.40	32	6.5	440	2.0	0	70	5.9	<0.8	<0.7	1.8	5.1	0.22
16468	MR1-04-41	5	43	2.1	5.7	2.00	38	4.4	440	2.3	0	6	9.2	<0.8	<0.7	<2.0	8	0.18
16642	MR1-08-159	13.0	130	65.0	34	0.046	2	1.6	2600	6.4	0.0082	33	4.1	<0.8	<0.8	0.5	5.1	0.04
16646	MR1-08-159	11.0	110	3	8.6	0.78	10	3.1	200	10.0	0.019	14.0	5.5	<0.8	<0.7	0.7	7.4	0.12
16690	MR1-08-146	11	50	2.5	10	1.8	13	4	70	3	0.044	4	19.0	<0.8	<0.7	1.7	15.0	0.21
16722	MR1-06-90	52.0	35	13.0	18	0.088	66	9.1	410	360.0	0.036	140.0	16.0	<0.8	<0.7	1.3	1.9	0.04
MRARD10-035	MR1-08-163	9.1	14	5.8	7.5	3.4	140	3.7	480	0.4	0.08	3.5	12.0	<0.8	<0.7	3.3	10.0	0.17
MRARD10-037	MR1-08-160	5	110	40	5.4	1.4	7	1.7	250	2.3	0.039	12	6	<0.8	<0.7	1.0	2.5	0.11
MRARD10-047	MR1-08-163	25	500	2	6.4	0.016	2	4.4	540	1	0.0064	190	1.9	<0.8	<0.7	0.9	3.3	0.02
MRARD10-049	MR1-08-163	25	31	2.3	13	0.012	10	5.2	2300	1.2	0.0083	35	1.5	<0.8	<0.7	0.5	3.3	0.02
MRARD10-056	MR1-08-152	33.0	180	0.6	14	0.023	7	6.2	730	9.2	0.0071	88.0	0.8	0.8	<0.7	0.6	3.4	0.01
MRARD10-058	MR1-08-159	18.0	59	70.0	6.3	2.9	5	2.1	170	1.0	0.075	17.0	32.0	<0.8	<0.7	3.0	8.4	0.26
MRARD10-063	MR1-08-157	27.0	110	2.1	14.8	0.0063	24	9.3	190	7.0	0.01	210.0	9.0	<0.8	<0.7	0.6	4.4	0.00
MRARD10-085	MR1-08-144	48	150	169	16	1.1	36	3.3	530	1.9	0.027	92	113.0	<1.2	<1	1.2	3	0.09
MRARD10-097	MR1-08-143	17.0	110	98	1.7	0.24	24	1	360	0	0.14	48	6	<1	<1	<1	15	0.14
MRARD10-099	MR1-08-144	10.0	42	2	9.9	1.2	<11	4.1	230	1	0.021	10	5	<1	<1	<1	5	0.12
MRARD10-114	MR1-07-121	8	130	51	2.6	0.74	8	0.8	180	<12	0.024	16	4	1	<1	<1	5	0.04
MRARD10-116	MR1-07-121	55	74	33	15.5	3.10	17	1.9	140	18.0	0	70	15	<0.8	<0.7	1.9	35.0	0.17
MRARD10-128	MR1-08-141	26	600	29.0	9.8	0.02	32	3.5	600	1.2	0	320	4	<0.8	<0.7	0.9	11	0.02
16574	MR1-09-172	31	700	120	8.1	1200.00	26	3.7	760	16	0	340	19	<0.8	<0.7	0.5	3.5	0.03
16752	MR1-06-84	12	75	6.6	5.3	1.40	17	2.3	310	140.0	0	8	4	<0.8	<0.7	0.6	5.1	0.15
16648	MR1-08-159	15	83	12.0	5.0	2.40	9	1.8	260	4.3	0	16	15	<0.8	<0.7	1.2	7.4	0.31
16650	MR1-08-159	26	310	13	12.0	3.80	<9.0	3.8	98	2.2	0	110	24.0	<0.8	1.3	<3.8	22	0.43
16652	MR1-08-159	34.0	28	78	12.0	3.70	34	3.9	350	3.3	0	29	26.0	<0.8	1.0	<3.0	8.7	0.41
16078	MR1-06-105	11.0	12	15	9.2	2.80	<19.0	2.3	630	1.4	0	17.0	15.0	<0.8	<0.7	<1.3	3.1	0.29
16572	MR1-09-172	26.0	710	34.0	6.2	5700.00	<22.0	2.8	420	1.6	0	320.0	10.00	<0.8	<0.7	<0.9	9.5	0.10
16518	MR1-07-118	4	120	31	3.8	8900.00	<13.0	0.9	230	2.8	0	5	4.3	<0.8	0.7	0.5	1.7	0.10
16520	MR1-07-118	7.9	76	5	2.4	4200.00	<8.0	0.9	180	0.8	0	17.0	2.80	<0.8	<0.7	<0.5	2.8	0.04
16726	MR1-06-90	10.0	91	28	4.6	1.70	<20.0	2.2	170	3.8	0	12	3.5	<0.8	0.7	<1.4	5.7	0.23
16750	MR1-06-84	5	130	13	4.2	1.50	<16.0	1.5	150	6	0	7	5.2	<0.8	0.7	1.6	5.7	0.10
MRARD10-004	MR1-09-179	7.7	100	9	5.3	1.80	<8.0	1.7	130	4.4	0	14.0	3.7	<0.8	<0.7	3.7	7.5	0.20
MRARD10-005	MR1-09-179	5.3	120	79	2.3	0.86	7	0.8	100	2.4	0	8	4.9	<0.8	<0.7	0.6	3.2	0.04
MRARD10-011	MR1-09-178	18.0	28	2	13.0	1.00	<36.0	8.2	310	15.0	0	85	2.3	<0.8	<0.7	3.3	6.3	0.11
MRARD10-015	MR1-09-178	6.7	91	3	3.4	0.65	<10.0	1.6	330	0.5	0	7.5	2.4	<0.8	<0.7	<0.7	3.2	0.07
MRARD10-033	MR1-08-162	6	67	5	2.2	0.88	8	0.9	380	1	0	8	3.0	<0.8	0.7	0.7	3	0.07
MRARD10-057	MR1-08-161	12.0	77	29.0	6.2	2.7	11	1.8	310	2.2	0.061	15	15.0	<0.8	<0.7	1.5	4.4	0.22
MRARD10-074	MR1-08-149	14	130	22	9.9	1.10	13	1.5	400	25	0.031	37	6	<1	<1	<1	7.3	0.11
MRARD10-104	MR1-08-140	10	76	6.2	4.5	1.10	19	1.9	470	1	0	23.0	2.2	<0.8	<0.7	0.6	2.9	0.08
MRARD10-115	MR1-07-121	8	75	3	4.2	2.30	24	3.1	300	1.1	0	7	5	<0.8	<0.7	1.7	6.8	0.18
MRARD10-125	MR1-08-144	8	85	2	2.1	1.20	15	1.1	150	0.7	0	9	7	<0.8	0.7	0.6	6	0.09
ARD1	MR1-05-72	7	12	22	8.9	6.50	5	1.4	440	5.0	-	7	34	<25.0	6.0	6.0	13.0	0.27
ARD3	MR1-05-72	6	12	37	3.4	3.10	3	1.0	260	8.0	-	9	26	<25.0	<6.0	6.0	15.0	0.28
UCS49	MR1-06-105	13	130	78	5.2	3.40	4	1.5	500	2	-	12	36	<3	<20	<6	17.0	0.34
16080	MR1-06-105	9.3	29	43	4.6	1.50	13	1.5	600	0.8	0	14	4.5	<0.8	<0.7	0.6	2.6	0.20
16082	MR1-06-105	17	23	5.6	4.4	1.90	18	1.6	380	0.3	0	34	14	<0.8	<0.7	<0.5	1.9	0.22
16084	MR1-06-105	8.1	31	3.6	3.4	0.73	15	1.7	460	0.3	0	9.2	3.2	<0.8	<0.7	<0.5	2.5	0.09
16180	MR1-08-158	7.7	67	5.6	1.9	1.10	15	0.7	380	1.2	0	17	33	<0.8	<0.7	0.8	5.9	0.14
16302	MR1-04-44	9.9	72	17	4.7	1.90	8	1.7	230	2.0	0	14	7.6	<0.8	<0.7	1.1	26	0.24
16308	MR1-04-44	8.5	73	4.1	5.5	2.80	17	2.4	230	1.5	0	9.7	8.6	<0.8	<0.7	1.5	16	0.32
16352	MR1-04-38	7.9	75	4.1	4.1	2.00	9	1.5	230	69	0	9.3	9.3	<0.8	<0.7	0.8	4.4	0.19
16354	MR1-04-38	10	72	6.5	4.2	1.90	9	1.3	250	1.2	0	15	9.1	<0.8	<0.7	0.7	3.7	0.22
16356	MR1-04-38	12	82	4.0	4.4	2.40	11	1.9	280	1.6	0	33	13	<0.8	<0.7	0.8	3.4	0.26
16386	MR1-05-49	4.3	95	19	4.4	1.70	10	1.6	140	2.5	0	7.3	20	<0.8	<0.7	1.3	7.6	0.20
16610	MR1-05-67	8	120	14	2.4	7700.00	11	0.7	120	4	0.02	11	5	<1	<1	<1	7.1	0.06
16612	MR1-05-67	5	74	29	2.9	2400.00	15	2.7	330	2	0.019	7	4	<1	<1	<1	4.4	0.00
16350	MR1-04-38	15	70	64.0	9.5	2.10	12	2.3	320	4	0	16	26.0	<0.8	<0.7	2.2	8	0.30

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	From m	To m	Waste Rock Code	Lithology	Rock Code	Sampling Program	Hg µg/g	Al %	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca %	Cd µg/g
Average Concentration (Continental Crustal)*								0.085	8.23	1.8	425	3	0.0085	4.15	0.15
16464	MR1-04-41	113.85	114.81	FWS	greywacke	6e	Baffinland 2011	<0.1	5.3	<0.5	1400	1.00	0.10	0.63	0.12
16074	MR1-06-105	176.00	177.03	FWS	gabbro	12b	Baffinland 2011	<0.1	4.1	<0.5	15	1.00	<0.1	0.81	0.11
MRARD10-081	MR1-08-142	168.1	169	FWS	Metasediment	6a	AMEC 2010	<0.1	2.8	<0.5	160	1.2	<0.09	0.064	<0.2
MRARD10-077	MR1-08-146	210	211	FWS	Volcanic tuff	11a	AMEC 2010	<0.1	4.9	0.5	1200	0.95	0.09	0.22	<0.2
UCS2	MR1-06-81	33.8	NA*	FWS	Volcanic Tuff		Knight Piesold 2006-2007	-	9.6	<6.0	15.0	0.85	<34.00	0.73	<4.0
16684	MR1-08-146	214.93	215.93	FWS	volcanic tuff (layered)	11a	Baffinland 2011	<0.1	5.6	<0.5	1900.0	1.80	<0.11	0.25	<0.0
16692	MR1-08-146	251.2	252.25	FWS	volcanic tuff (layered)	11a	Baffinland 2011	<0.1	5.9	<0.5	970.0	1.20	0.10	0.46	<0.0
16724	MR1-06-90	144.7	145.69	FWS	chlorite schist, HG_IF	4a/7d	Baffinland 2011	<0.1	3.1	<2.0	3	0.41	0.39	0.14	<0.0
16076	MR1-06-105	182.01	182.96	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	<0.1	1.1	0.5	0.98	0.79	0.9	1.5	<0.1
16170	MR1-08-158	264.9	265.9	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	<0.1	0.7	1.1	340	1.3	1	0.35	<0.1
16640	MR1-08-159	121.8	122.83	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	<0.1	0.24	<0.5	220	1.10	<0.09	0.13	<0.0
16644	MR1-08-159	134.9	135.9	FWS	HG_IF 50-60% Fe 60-100% mag.	7c	Baffinland 2011	<0.1	0.33	<0.8	2	0.62	<0.09	0.23	<0.1
16072	MR1-06-105	171.52	172.52	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.17	<14.0	1	0.43	<0.24	1	<0.1
16176	MR1-08-158	287.46	288.5	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.42	<0.8	3	0.4	0.20	0.54	<0.0
16332	MR1-08-141	313.1	314	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.14	4.5	1.4	0.2	0.09	0.85	<0.0
16334	MR1-08-141	321.9	322.9	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.9	17	2	0.6	0.31	0.04	0.02
16462	MR1-04-41	109.51	110.47	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.3	<1	2	0.5	1.00	1.60	0.02
16682	MR1-08-146	207	208.04	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.7	1	47	0.6	0.15	0.31	0.06
16686	MR1-08-146	224.61	225.66	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	<0.1	0.56	<0.5	1	1.00	<0.18	0.65	<0.1
16688	MR1-08-146	231.7	232.75	FWS	HG_IF 60-72.36% Fe 60-100% mag.	7f	Baffinland 2011	0.1	0.6	<1	3	0.76	<0	0.36	<0
16678	MR1-08-146	198.21	199.24	FWS	HG_IF 60-72.36% Fe 60-100% mag., chlorite schist	7f/4a	Baffinland 2011	<0.1	1.8	<0.5	73	0.9	0.69	0.31	0.04
MRARD10-040	MR1-08-158	160.30	161.00	HW	Gneiss/Amphibolite	11ba	AMEC 2010	<0.2	4.5	<0.5	300	0.4	0.09	1.80	0.20
16552	MR1-09-176	173.7	174.7	HW	amphibole chlorite schist	4ca	Baffinland 2011	<0.1	4.2	0.7	81.0	2.0	<0.11	890	<0.0
16426	MR1-05-47	173.22	174.22	HW	amphibole mica schist	4c/b	Baffinland 2011	0.1	7.3	<1	12	3	<0	0.07	0.1
16406	MR1-05-47	76.00	76.90	HW	amphibole schist	4c	Baffinland 2011	0.1	7.0	<5	3	0	<0	0.03	0.0
16414	MR1-05-47	116.57	117.66	HW	amphibole schist	4c	Baffinland 2011	<0.1	7.9	0.7	22	1.8	0.09	0.16	0.03
16418	MR1-05-47	136.94	137.94	HW	amphibole schist	4c	Baffinland 2011	<0.1	7.7	3.0	3.0	1.60	<0.1	0.13	<0.0
16420	MR1-05-47	143.77	144.87	HW	amphibole schist	4c	Baffinland 2011	<0.1	4.5	130.0	2	1.5	<0.9	0.07	0.02
16264	MR1-05-51	188.70	189.85	HW	amphibolite	3	Baffinland 2011	<0.1	7.3	0.5	14.0	1.1	<0.1	0.24	<0.0
16268	MR1-05-51	202.74	203.79	HW	amphibolite	3	Baffinland 2011	<0.1	7.7	2	0.8	1.9	0.09	0.04	0.02
16340	MR1-04-38	11.17	12.07	HW	amphibolite	3	Baffinland 2011	<0.1	4.4	1	84	0.2	0.09	0.05	0.02
16364	MR1-04-33	13.6	14.5	HW	amphibolite	3	Baffinland 2011	<0.1	1.9	1	9	0.1	0.17	2.20	0.08
16366	MR1-04-33	22.5	23.5	HW	amphibolite	3	Baffinland 2011	0.1	1.8	<1	8	0.0	<0	2.70	0
16368	MR1-04-33	31.6	32.6	HW	amphibolite	3	Baffinland 2011	0.1	3.5	1	49	0.06	<0	3.50	0.0
16372	MR1-04-33	43.2	44.25	HW	amphibolite	3	Baffinland 2011	0.1	2.5	<1	71	0.060	<0	1.70	0.0
16374	MR1-04-33	52.38	53.28	HW	amphibolite	3	Baffinland 2011	<0.1	1.8	0.5	170	0.1	<0.1	0.87	0.02
16396	MR1-05-47	22.90	23.94	HW	amphibolite	3	Baffinland 2011	<0.1	7.6	0.5	61.00	1.6	<0.1	0.14	<0.0
16398	MR1-05-47	35.76	36.80	HW	amphibolite	3	Baffinland 2011	<0.1	8.0	0.5	3	1.90	<0.1	0.12	<0.0
16400	MR1-05-47	45.78	46.73	HW	amphibolite	3	Baffinland 2011	<0.1	4.8	<1.4	32.0	1.00	0.09	0.10	0.03
16402	MR1-05-47	55.40	56.34	HW	amphibolite	3	Baffinland 2011	<0.1	3.5	<7.2	41.0	0.94	0.09	0.32	0.02
16404	MR1-05-47	63.50	64.47	HW	amphibolite	3	Baffinland 2011	<0.1	8.1	<0.5	43	2.50	<0.1	0.13	0.02
16408	MR1-05-47	82.82	83.82	HW	amphibolite	3	Baffinland 2011	<0.1	6.5	<1.4	1	0.32	<0.1	0.04	0.02
16584	MR1-05-77	11.81	12.76	HW	amphibolite	3	Baffinland 2011	<0.1	2.5	<0.5	200	0.11	<0.1	#######	<0.0
16590	MR1-05-77	41.13	42.10	HW	amphibolite	3	Baffinland 2011	<0.1	2.1	<0.5	15	0.1	<0.1	#######	<0.1
16592	MR1-05-77	52.71	53.70	HW	amphibolite	3	Baffinland 2011	<0.1	2.6	<0.5	53.0	0.1	<0.1	#######	<0.0
16594	MR1-05-77	61.50	62.48	HW	amphibolite	3	Baffinland 2011	<0.1	3.1	0.5	31	0.1	<0.1	#######	0.05
16596	MR1-05-77	70.65	71.65	HW	amphibolite	3	Baffinland 2011	<0.1	2.3	0.5	33	0.07	<0.1	#######	<0.1

Table B-3. Total Metal Concentrations (aqua-regia) by Waste Type and Lithology (all data)

Sample ID	Borehole ID	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti
		µg/g	µg/g	µg/g	%	%	µg/g	%	µg/g	µg/g	%	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	%
Average Concentration (Continen		25	102	60	5.63	2.085	20	2.33	950	1.2	2.355	84	14	0.2	0.05	2.3	370	0.565
16464	MR1-04-41	11	68	3	8.9	2.60	13	3.2	120	1.1	0	19	26.0	<0.8	<0.7	2.0	21.0	0.33
16074	MR1-06-105	17	330	3	5.8	0.05	4	4.1	200	1.7	0	95	3	<0.8	<0.7	<0.5	12.0	0.03
MRARD10-081	MR1-08-142	9.9	74	1.6	3.5	1.1	11	1.5	320	2.0	0.03	14.0	3	<0.8	<0.7	0.8	4	0.07
MRARD10-077	MR1-08-146	18.0	60	3	6.1	2.8	15	2.5	230	3.0	0.062	10	12.0	<0.8	<0.7	2.5	6.7	0.26
UCS2	MR1-06-81	72	1500	8.9	19	0.016	3	8.9	1500	2.0	-	450	14.0	<21.0	<20.0	6.0	20.0	0.16
16684	MR1-08-146	18	35	41.0	8.5	3.9	34	3.1	260	2.4	0.085	14	18.0	<0.8	<0.9	<1.9	10.0	0.42
16692	MR1-08-146	17	38	13.0	10	4.2	10	3.3	200	2.1	0.081	17	15.00	<0.8	<0.8	2.6	11.0	0.483
16724	MR1-06-90	7	63	6	27	0.033	7	2.8	540	7.7	0.0086	19	1	<0.8	<0.7	0.9	1.8	0.03
16076	MR1-06-105	19	36	380.0	40	0.0041	2	1.5	9300	3.2	0.0028	56	4.7	<0.8	<2.6	0.5	16.0	0.03
16170	MR1-08-158	7	41	54	35	0.048	6	1.5	18000	3.2	0.0089	22	10	0.8	0.8	0.5	6.1	0.04
16640	MR1-08-159	3	54	16	46	0.024	2	0.26	3000	4.6	0.011	7	1.6	<0.8	<0.7	0.5	3	0.023
16644	MR1-08-159	2	31	6.1	61	0.0038	2	2	23000	2.8	0.0045	5.0	0.9	<0.8	<0.7	0.5	1.8	0.01
16072	MR1-06-105	23.0	29	72	47	0.004	2	1.3	11000	3	0.0056	40	4.6	<0.8	<1.3	0.7	2.6	0.0072
16176	MR1-08-158	2	35	13	47	0.011	2	0.22	1800	1	0.0098	7	1	<0.8	<0.7	0.5	7	0.028
16332	MR1-08-141	7	22	15	66	0.0059	2	0.42	3600	2.5	0.0053	16	3.7	<0.8	<0.8	0.5	3	0.0047
16334	MR1-08-141	10	49	51	46	0.01	2	1.1	6000	25	0.0057	23	7	0.8	1	1.5	2	0.021
16462	MR1-04-41	4	20	30	53	0.01	2	1.2	6200	2	0.011	8	4	0.8	1	1.8	5.4	0.011
16682	MR1-08-146	6	61	36	61	0.10	7	0.45	750	3	0.0071	13	4.0	0.8	1	2.1	5.4	0.039
16686	MR1-08-146	4	48	59.0	59	0.0069	2	0.35	1100	1.8	0.0064	11	3	0.8	<0.7	0.8	7.7	0.03
16688	MR1-08-146	3	35	14.0	69	0.01	<2	0.76	6,800	<2	0.0085	9	2	1	<1	<1	2	0.02
16678	MR1-08-146	11	61	310	52.0	0.26	8	1.5	2100	12.0	0	60	8	<0.8	1.9	0.9	11	0.04
MRARD10-040	MR1-08-158	23	220	57	4.1	1.80	20	2.6	680	1.1	0	110	4	<0.8	0.7	1.0	12	0.22
16552	MR1-09-176	4	81	6	6.6	8200	41	2.9	790	8.2	0.027	55	6.8	<0.8	<0.7	2.4	6.5	0.061
16426	MR1-05-47	17	10	2	8.8	0.10	15	9.5	4300	0	0.017	89	7	<1	<2	<3	3.8	0.06
16406	MR1-05-47	63	2400	66	9.0	0.02	8	7.5	570	0	0.013	460	1	<1	<1	<1	2.4	0.03
16414	MR1-05-47	22	880	29.0	14.0	0.24	12	12.0	4000	0.7	0	91	2.1	<0.8	0.7	1.3	6.0	0.11
16418	MR1-05-47	21	1300	51	16.0	0.04	17	9.4	3300	0.7	0	77	3.20	<0.8	<1.0	<1.4	3.5	0.05
16420	MR1-05-47	92	620	66	31.0	0.02	11	5.9	2300	2.3	0	150	9.2	<0.8	<5.9	0.9	3.3	0.04
16264	MR1-05-51	17	25	4	18.0	0.10	13	7.6	1800	3.2	0	32	3.8	<0.8	0.7	1.7	6.5	0.05
16268	MR1-05-51	31	940	16	20.0	0.03	13	8.0	2900	1.5	0	97	0.9	<0.8	0.7	0.8	2.8	0.01
16340	MR1-04-38	40	310	120	8	1.40	20	2.5	180	3.0	0.046	160	4.9	<0.8	<1	0.6	9.1	0.16
16364	MR1-04-33	13	70	140	1	0.05	4	0.3	280	0.6	0.24	34	1.9	0.8	**1**	0.5	39	0.12
16366	MR1-04-33	26	70	160	3	0.10	6	0.47	510	<1	0.17	68	1	<1	<3	<1	30.0	0.076
16368	MR1-04-33	20	120	110	2	0.44	<12	0.78	640	<1	0.24	74	1	<1	<1	<1	23	0.17
16372	MR1-04-33	25	96	140	4	1.50	14	1.2	720	1	0.14	75	1	<1	<1	<1	10	0.28
16374	MR1-04-33	18	31	100.0	3.0	0.78	17	1.1	160	0.8	0	15	0.4	<0.8	<0.7	0.5	22.0	0.19
16396	MR1-05-47	40	170	67	9.2	0.64	30	7.2	1100	0.3	0	140	1.20	<0.8	<0.7	0.5	4.0	0.06
16398	MR1-05-47	35	140	34	8.9	0.02	17	10.0	1800	0.1	0	93	2.8	<0.8	<0.7	0.5	4.7	0.01
16400	MR1-05-47	41	230	150	7.2	0.26	28	7.3	940	0.4	0	150	2.9	<0.8	<0.8	<0.5	4	0.00
16402	MR1-05-47	41	220	100	3.9	0.40	28	4.1	620	0.6	0	150	3.9	<0.8	1.0	<0.5	11	0.00
16404	MR1-05-47	38	210	81	13.0	0.25	21	9.4	2200	0.3	0	100	1.2	<0.8	0.7	<0.7	5	0.10
16408	MR1-05-47	18	260	43	16.0	0.01	11	7.7	1400	1.2	0	96	0.5	<0.8	<0.7	<0.5	2	0.01
16584	MR1-05-77	27	130	110	2.5	4000.00	26	1.0	240	0.6	0	92	0.62	<0.8	<0.7	<0.5	19	0.15
16590	MR1-05-77	11	59	110	1.9	1700.00	15	1.1	310	0.5	0	30	1.4	<0.8	<0.7	<0.5	13.0	0.09
16592	MR1-05-77	27	130	130	2.2	5800.00	22	1.0	300	0.5	0	110	1.8	<0.8	<0.7	<0.5	23.0	0.22
16594	MR1-05-77	25	89	92	2.5	2300.00	23	1.2	430	0.4	0	84	2.2	<0.8	0.7	0.5	25.0	0.13
16596	MR1-05-77	19	65	110	2.1	2400.00	10	0.8	550	0.5	0	69	2.0	<0.8	0.7	<0.5	18	0.14

Table B-4. NAG Leachate Results (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Type	Final pH	pH	Alkalinity	Acidity	SO_4	S	Hg	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co
								mg/L as CaCO3		mg/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
16118	ARD-2B-NW	22.61	23.73	FW	4ac	2.79	2.86	< 2	266	540	1.80	< 0.0001	0.0282	14.8	0.0008	0.0265	0.00111	0.00130	< 0.00001	2.22	0.296	0.592
16154	ARD-2A-SE	84.28	85.39	FW	4bc	5.06	4.96	< 2	10	140	0.47	< 0.0001	0.0003	0.23	0.0005	0.136	0.174	0.00005	< 0.00001	16.7	0.00137	0.0498
16102	ARP-2A-NW	72.40	73.60	FW	4bca	5.50	5.58	< 2	6	150	0.50	< 0.0001	0.0005	0.04	0.0003	0.159	0.163	< 0.00002	< 0.00001	5.53	0.0104	0.00793
16064	MR1-05-72	328.13	329.10	FW	5a	3.36	3.46	< 2	35	62	0.21	< 0.0001	0.0006	1.21	< 0.0002	0.1610	0.19300	0.00033	< 0.00001	1.58	0.000417	0.030
16066	MR1-05-72	334.78	335.88	FW	5a	2.63	2.75	< 2	176	110	0.37	< 0.0001	0.0027	0.21	< 0.0002	0.1460	0.0099	0.00022	< 0.00001	0.42	0.000081	0.0050
16136	ARD-2A-SE	6.90	7.90	FW	5b	5.29	5.32	< 2	8	84	0.28	< 0.0001	0.0002	0.09	< 0.0002	0.0802	0.122	< 0.00002	< 0.00001	7.28	0.000232	0.00307
16138	ARD-2A-SE	17.81	18.86	FW	5b	4.88	4.84	< 2	209	83	0.28	< 0.0001	0.0004	0.26	< 0.0002	0.0816	0.136	< 0.00002	< 0.00001	5.07	0.00178	0.00437
16130	ARD-2B-NW	78.51	79.43	FW	5c, 4cb	5.33	5.32	< 2	9	92	0.31	< 0.0001	0.0001	0.05	< 0.0002	0.106	0.0801	< 0.00002	< 0.00001	7.51	0.000080	0.000973
16152	ARD-2A-SE	78.62	79.54	FW	6e	5.10	5.31	< 2	252	75	0.25	< 0.0001	0.0002	0.08	< 0.0002	0.0648	0.0710	< 0.00002	< 0.00001	11.6	0.000419	0.00391
16576	MR1-09-172	181.44	182.41	FW	6e	3.74	3.83	< 2	31	120	0.40	< 0.0001	0.00027	1.53	0.0004	0.0949	0.0205	0.00008	< 0.00001	2.45	0.000265	0.209
16068	MR1-06-105	151.82	152.82	FW 1300	7f	3.56	3.56	< 2	408	790	2.63	< 0.0001	0.0000	0.93	0.0008	0.153	0.00610	0.00227	< 0.00001	41.6	0.000638	0.1390
16730	MR1-06-80	170.96	172.00	FW1300	4a	3.48	3.52	< 2	63	190	0.64	< 0.0001	0.00080	6.31	0.0002	0.0481	0.198	0.00098	< 0.00001	1.99	0.000300	0.0642
16736	MR1-06-80	186.81	187.81	FW1300	4ac	3.89	3.94	< 2	40	170	0.57	< 0.0001	0.00031	4.14	< 0.0002	0.0818	0.266	0.00044	< 0.00001	2.72	0.000124	0.0528
16738	MR1-06-80	200.14	201.14	FW1300	5a	3.72	3.79	< 2	50	110	0.37	< 0.0001	0.00095	5.22	< 0.0002	0.0584	0.544	0.00123	< 0.00001	2.13	0.000626	0.0056
16734	MR1-06-80	182.00	183.01	FW1300	7f	3.12	3.19	< 2	63	96	0.32	< 0.0001	0.00045	2.98	< 0.0002	0.0245	0.00507	0.00181	< 0.00001	10.2	0.000176	0.0134
16728	MR1-06-80	167.00	168.04	FW1300	9b	2.39	2.42	< 2	761	910	3.02	< 0.0001	0.00499	32.4	0.0006	0.101	0.0282	0.00518	< 0.00001	9.91	0.000204	0.155
16732	MR1-06-80	176.00	177.00	FW1300	9b	3.09	3.12	< 2	112	220	0.73	< 0.0001	0.00147	9.13	< 0.0002	0.0400	0.0161	0.00081	< 0.00001	5.31	0.000221	0.0597
16282	MR1-05-51	361.20	362.18	FW1300	9d	2.60	2.68	< 2	636	330	1.10	< 0.0001	0.0014	2.19	0.0003	0.170	0.00527	0.00452	< 0.00001	3.44	0.000138	0.186
16328	MR1-08-141	298.11	299.01	FW1400	7f	2.28	2.37	< 2	594	1300	4.28	< 0.0001	0.0061	11.70	0.0625	0.0754	0.016	0.00313	< 0.00001	129.00	0.000300	0.500
16384	MR1-05-49	350.30	351.54	FW1400	7f	3.66	3.75	< 2	45	110	0.37	< 0.0001	0.00	2.0	< 0.0002	0.0792	0.023	0.00072	< 0.00001	6.68	0.00020	0.083
16622	MR1-08-154	224.92	225.92	FW1400	7f	2.25	2.31	< 2	451	460	1.55	< 0.0001	0.00185	7.84	0.0058	0.0832	0.0116	0.00080	< 0.00001	2.22	0.000179	0.143
16624	MR1-08-154	237.53	238.48	FW1400	7f	2.88	2.95	< 2	144	180	0.61	< 0.0001	0.00094	6.66	0.0031	0.0967	0.0284	0.00466	< 0.00001	6.27	0.000294	0.500
16628	MR1-08-154	251.53	252.53	FW1400	7f	2.78	2.91	< 2	135	280	0.94	< 0.0001	0.00365	4.32	0.0006	0.0541	0.00435	0.00122	< 0.00001	25.5	0.000141	0.0606
16642	MR1-08-159	130.61	131.61	FWS	4a	2.19	2.20	< 2	832	1000	3.33	< 0.0001	0.00017	37.1	0.0007	0.0732	0.130	0.00485	< 0.00001	18.9	0.000872	0.149
16722	MR1-06-90	141.90	142.90	FWS	4a	3.04	3.05	< 2	221	650	2.18	< 0.0001	0.00390	24.5	0.0004	0.106	0.0355	0.00317	< 0.00001	3.94	0.000042	0.402
16178	MR1-08-158	294.40	295.40	FWS	4abc	3.34	3.44	< 2	62	160	0.53	< 0.0001	0.0003	6.14	< 0.0002	0.123	0.364	0.00103	< 0.00001	2.77	0.00214	0.0781
16652	MR1-08-159	164.20	165.00	FWS	4ba	3.10	3.10	< 2	107	230	0.77	< 0.0001	0.00320	7.88	0.0005	0.0755	0.400	0.00249	< 0.00001	5.02	0.000307	0.256
16574	MR1-09-172	173.00	174.00	FWS	4bc	3.47	3.55	< 2	71	340	1.11	< 0.0001	0.00194	3.82	0.0004	0.0824	0.0994	0.00114	< 0.00001	6.91	0.00222	0.293
16350	MR1-04-38	146.60	147.60	FWS	6e	2.69	2.80	< 2	228	350	1.18	< 0.0001	0.0023	16.90	0.0004	0.0526	0.38500	0.00328	< 0.00001	9.29	0.001140	0.113
16640	MR1-08-159	121.80	122.83	FWS	7c	2.94	3.03	< 2	83	170	0.57	< 0.0001	0.00113	2.86	< 0.0002	0.0963	0.252	0.00226	< 0.00001	8.13	0.000316	0.0216
16176	MR1-08-158	287.46	288.50	FWS	7f	3.24	3.38	< 2	45	88	0.29	< 0.0001	0.0002	2.38	< 0.0002	0.0824	0.0158	0.00130	< 0.00001	8.99	0.000091	0.0139
16334	MR1-08-141	321.90	322.90	FWS	7f	3.22	3.30	< 2	81	250	0.84	< 0.0001	0.0027	2.4	0.0006	0.064	0.009	0.00189	< 0.00001	3.88	0.000196	0.104
16686	MR1-08-146	224.61	225.66	FWS	7f	2.75	2.80	< 2	168	260	0.87	< 0.0001	0.00146	8.20	0.0005	0.0815	0.00959	0.00364	< 0.00001	35.7	0.000343	0.0346
16682	MR1-08-146	207.00	208.04	FWS	7f	3.27	3.29	< 2	56	110	0.37	< 0.0001	0.00071	3.15	< 0.0002	0.0382	0.229	0.00093	< 0.00001	6.28	0.000184	0.0389
16688	MR1-08-146	231.70	232.75	FWS	7f	5.93	5.76	< 2	34	110	0.37	< 0.0001	0.00005	0.02	< 0.0002	0.0592	0.0114	0.00002	< 0.00001	7.93	0.000015	0.0049
16678	MR1-08-146	198.21	199.24	FWS	7f/4a	2.47	2.52	< 2	446	660	2.20	< 0.0001	0.00347	27.2	0.0011	0.0748	0.322	0.00333	< 0.00001	29.9	0.000583	0.105
16584	MR1-05-77	11.81	12.76	HW	3	6.45	6.11	3	7	60	0.20	< 0.0001	< 0.00001	0.03	0.0003	0.0373	0.127	< 0.00002	< 0.00001	8.83	< 0.000003	0.000380
16262	MR1-05-51	183.09	184.09	HW	11a	2.61	2.72	< 2	25	410	1.37	< 0.0001	0.0005	7.29	0.0018	0.1000	0.00685	0.00143	< 0.00001	5.91	0.000174	0.0218
16266	MR1-05-51	197.00	197.90	HW	11a	2.39	2.50	< 2	298	390	1.30	< 0.0001	0.0003	3.39	0.0003	0.205	0.00604	0.00081	< 0.00001	9.15	0.000208	0.0169
16666	MR1-08-146	64.23	65.23	HW	11b	3.47	3.60	< 2	54	370	1.21	< 0.0001	0.00007	5.69	0.0007	0.0846	0.447	0.00005	< 0.00001	77.5	0.000322	0.0970
16546	MR1-09-176	155.63	156.63	HW	4ab	4.48	4.60	< 2	11	190	0.64	< 0.0001	0.00117	0.26	0.0005	0.0510	0.0379	0.00017	< 0.00001	4.71	0.000015	0.0122
16424	MR1-05-47	164.20	165.34	HW	4b	3.84	3.90	< 2	31	170	0.57	< 0.0001	0.00081	2.25	0.0005	0.0404	0.0756	0.00095	< 0.00001	3.23	0.000079	0.0320
16422	MR1-05-47	158.31	159.31	HW	4b	6.24	5.97	< 2	4	120	0.40	< 0.0001	0.00005	< 0.01	< 0.0002	0.0756	0.00432	< 0.00002	< 0.00001	4.03	< 0.000003	0.000547
16420	MR1-05-47	143.77	144.87	HW	4c	1.96	3.40	< 2	61	3300	10.83	< 0.0001	0.00018	111	0.0152	0.136	0.0117	0.00809	0.00003	4.61	0.000167	0.435
16418	MR1-05-47	136.94	137.94	HW	4c	3.27	3.39	< 2	92	390	1.28	< 0.0001	0.00155	9.13	0.0004	0.0914	0.0191	0.00141	< 0.00001	3.77	0.000135	0.174
16600	MR1-05-77	82.35	83.36	HW	5b	6.85	6.25	4	3	78	0.26	< 0.0001	< 0.00001	0.05	< 0.0002	0.0594	0.00877	< 0.00002	< 0.00001	1.45	< 0.000003	0.000153
16014	MR1-05-72	65.35	66.35	HWS	3	4.15	4.07	< 2	15	97	0.31	< 0.0001	0.0010	0.64	< 0.0002	0.0664	0.00142	0.00006	< 0.00001	0.91	0.000144	0.079
16232	MR1-05-53	131.80	132.80	HWS	3	2.75	2.84	< 2	759	1500	4.81	< 0.0001	0.0019	35.4	0.0020	0.103	0.0211	0.00402	< 0.00001	11.0	0.000249	0.203

Table B-4. NAG Leachate Results (continued)

Sample ID	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
16118	0.0884	1.03	3.99	6.75	0.011	63.0	0.281	0.00127	0.73	9.60	4.63	< 0.0002	0.004	0.00008	0.00614	0.0019	0.0119	0.00541	0.00027	39.9
16154	0.112	0.0154	0.011	30.9	0.010	12.3	0.284	0.00036	2.69	0.354	0.00134	0.0004	0.007	0.00004	0.109	0.0010	0.00036	0.000071	0.00069	0.013
16102	0.0199	0.0073	0.006	49.8	0.018	17.7	0.391	0.00099	2.00	0.0083	< 0.00002	< 0.0002	0.007	< 0.00001	0.0260	0.0010	0.00022	0.000052	0.00007	0.020
16064	0.0067	0.717	0.498	14.200	0.008	3.1	0.3	0.00002	1.12	0.023	0.00135	< 0.0002	0.003	0.00001	0.0067	0.0009	0.00016	0.01020	< 0.00003	0.019
16066	0.0524	0.008	0.116	0.86	< 0.001	3.2	8.87	0.06090	0.49	0.014	0.02810	0.0003	0.004	0.00007	0.0101	0.0023	0.00025	0.00005	0.00142	0.028
16136	0.0041	0.0014	0.003	25.8	0.010	7.16	0.574	0.0186	3.20	0.0020	0.00024	< 0.0002	0.002	< 0.00001	0.0260	0.0104	0.00005	0.000146	0.0134	0.004
16138	0.0038	0.0035	< 0.003	26.2	0.015	7.48	0.493	0.0172	3.60	0.0046	0.00047	< 0.0002	0.002	< 0.00001	0.0241	0.0058	0.00010	0.000251	0.0187	0.013
16130	0.0029	0.0010	0.006	26.3	< 0.001	10.0	0.223	0.00103	2.24	0.0017	0.00020	< 0.0002	0.004	0.00013	0.0311	0.0058	0.00009	0.000134	0.0487	0.002
16152	0.0134	0.0020	< 0.003	14.8	0.002	3.13	0.286	0.00508	8.69	0.0054	0.00018	< 0.0002	0.002	< 0.00001	0.0818	0.0018	0.00015	0.000279	0.0113	0.003
16576	0.0062	0.226	3.48	2.64	0.020	22.5	0.681	0.00054	1.25	4.02	0.00028	0.0002	0.003	0.00002	0.0133	0.0009	0.00066	0.00149	< 0.00003	0.031
16068	0.0008	1.9100	184	0.663	0.003	44.50	112.00	0.00011	0.42	0.368	0.00044	< 0.0002	0.012	0.00003	0.0272	0.0014	0.00009	0.000594	0.00007	0.041
16730	0.0135	0.146	0.264	43.3	0.019	20.5	0.287	0.00006	1.54	0.166	0.00127	0.0004	0.010	0.00002	0.0110	0.0019	0.00034	0.0189	< 0.00003	0.095
16736	0.0040	0.0885	0.060	48.4	0.022	20.8	0.305	0.00020	1.78	0.0408	0.00172	0.0004	0.002	0.00004	0.0087	0.0026	0.00019	0.0156	0.00168	0.010
16738	0.0086	0.0038	0.086	35.0	0.006	7.52	0.277	0.00394	2.44	0.0323	0.00436	0.0004	< 0.001	0.00004	0.0211	0.0089	0.00018	0.00343	0.0171	0.004
16734	0.0158	0.107	0.303	0.768	0.002	5.97	1.17	0.00008	0.84	0.0568	0.00344	0.0003	0.003	< 0.00001	0.0105	0.0009	0.00011	0.000794	< 0.00003	0.017
16728	0.0739	2.56	168	1.68	0.006	38.9	6.55	0.00018	1.21	0.406	0.0499	0.0002	0.017	0.00006	0.0152	0.0063	0.00089	0.00732	< 0.00003	0.081
16732	0.0062	0.216	2.07	0.985	0.002	28.4	2.86	0.00005	0.98	0.177	0.0126	0.0004	0.009	0.00001	0.0080	0.0019	0.00041	0.00607	< 0.00003	0.102
16282	0.0157	0.289	29.7	0.894	0.006	20.6	23.3	0.00007	1.06	0.269	0.00564	< 0.0002	0.007	< 0.00001	0.00960	0.0018	0.00023	0.00281	0.00013	0.056
16328	0.0206	0.851	82.6	1.3	0.010	73.9	42.800	0.00017	1.28	0.917	0.02150	< 0.0002	0.037	0.00002	0.0480	0.0022	0.00234	0.000688	< 0.00003	0.074
16384	0.0121	0.152	0.072	9.9	0.006	16.7	1.230	0.00097	1.49	0.236	0.00898	< 0.0002	0.004	0.00004	0.0127	0.0009	0.00044	0.00211	0.00040	0.058
16622	0.0807	0.444	46.3	1.14	0.006	5.02	1.56	0.00009	1.14	0.324	0.04460	0.0002	0.013	0.00002	0.0292	0.0010	0.00040	0.000713	0.00030	0.038
16624	0.0347	0.406	13.4	1.59	0.013	10.3	3.10	0.0138	1.02	0.720	0.00465	0.0004	0.008	0.00007	0.0544	0.0015	0.00051	0.000969	0.00181	0.040
16628	0.0224	0.613	9.00	0.836	0.005	21.6	3.92	0.00016	0.57	0.137	0.0271	0.0003	0.005	0.00010	0.0250	0.0023	0.00047	0.000776	0.00005	0.030
16642	0.158	0.723	83.9	0.514	0.004	47.5	9.47	0.00004	0.57	0.394	0.00055	0.0003	0.013	0.00005	0.0292	0.0080	0.00014	0.00729	0.00063	0.057
16722	0.0017	0.0558	6.52	6.55	0.112	118	0.473	0.00298	4.42	0.911	0.0185	0.0003	0.015	0.00001	0.0237	0.0046	0.00064	0.00175	0.00005	0.084
16178	0.0074	0.0298	0.163	43.5	0.012	9.95	0.346	0.0146	2.70	0.115	0.00268	< 0.0002	< 0.001	0.00002	0.0179	0.0119	0.00086	0.0151	0.0764	0.219
16652	0.0080	0.491	0.721	43.5	0.058	18.5	0.463	< 0.00001	1.49	0.237	0.0144	0.0003	0.010	0.00003	0.0252	0.0023	0.00052	0.0126	< 0.00003	0.033
16574	0.0124	0.438	10.4	7.82	0.023	61.9	3.09	0.00046	1.66	3.03	0.0151	< 0.0002	0.011	0.00003	0.0256	0.0021	0.00129	0.00534	0.00011	0.274
16350	0.0122	0.3340	2.58	31.20	0.032	22.2	0.89	0.00004	1.63	0.124	0.00204	< 0.0002	0.003	0.00006	0.0297	0.0037	0.00029	0.009910	0.00022	0.078
16640	0.0546	0.0925	0.348	1.13	0.003	14.8	12.6	0.0251	1.34	0.0561	0.00018	0.0003	0.003	0.00002	0.0195	0.0021	0.00009	0.000639	0.00353	0.025
16176	0.0046	0.100	0.660	1.29	0.004	7.25	1.70	0.00003	1.41	0.0462	0.00031	0.0004	0.002	0.00005	0.0186	0.0006	0.00279	0.000623	< 0.00003	0.030
16334	0.0049	0.375	11.5	0.7	0.004	29.9	39.300	0.00008	0.73	0.23	0.0037	< 0.0002	0.008	< 0.00001	0.0119	0.0014	0.00098	0.007180	< 0.00003	0.089
16686	0.0099	0.641	12.4	1.02	0.003	9.46	1.53	0.00011	0.99	0.108	0.00343	0.0003	0.008	0.00002	0.0458	0.0024	0.00036	0.000807	< 0.00003	0.021
16682	0.0089	0.243	0.596	6.44	0.010	11.7	0.627	0.00011	0.99	0.0821	0.00405	0.0004	0.004	0.00001	0.0145	0.0011	0.00050	0.000781	< 0.00003	0.060
16688	0.0075	0.0016	0.015	1.12	0.002	16.3	19.8	0.00026	1.04	0.0136	< 0.00002	0.0002	0.003	< 0.00001	0.0057	0.0010	0.00013	0.000004	< 0.00003	0.003
16678	0.0333	3.28	39.6	14.0	0.017	34.4	3.52	0.00260	1.13	0.624	0.0236	0.0003	0.027	0.00004	0.121	0.0053	0.00074	0.00181	0.00006	0.105
16584	0.0711	0.0007	0.024	18.7	0.009	4.46	0.0167	0.00127	3.26	0.0017	< 0.00002	0.0002	0.008	0.00006	0.0140	0.0037	0.00008	0.000014	0.107	0.001
16262	0.0507	0.0773	62.0	1.29	0.007	25.9	7.18	0.00007	1.55	0.103	0.00209	< 0.0002	0.013	< 0.00001	0.0260	0.0022	0.00012	0.000442	0.00029	0.037
16266	0.0233	0.0397	10.2	10.6	0.003	23.8	3.30	0.00003	1.57	0.0606	0.00440	< 0.0002	0.004	0.00002	0.0557	0.0022	0.00003	0.000248	0.00130	0.024
16666	0.0238	0.244	0.198	63.8	0.025	14.3	1.22	< 0.00001	4.44	0.281	0.00071	0.0003	0.023	0.00001	0.0773	0.0048	0.00067	0.000234	0.00014	0.078
16546	0.112	0.0216	0.008	9.09	0.007	42.9	2.31	0.00268	0.78	0.0210	0.00014	< 0.0002	0.014	0.00002	0.0458	0.0016	0.00026	0.000342	0.0184	0.006
16424	0.0130	0.0050	0.029	6.48	0.005	36.3	1.96	0.00740	1.80	0.0468	0.00433	0.0005	0.013	0.00010	0.0393	0.0020	0.00030	0.000475	0.0215	0.012
16422	0.182	< 0.0005	< 0.003	3.41	0.001	31.7	0.510	0.0153	1.21	0.0005	< 0.00002	0.0004	0.006	0.00005	0.0365	0.0008	0.00014	0.000020	0.00003	< 0.001
16420	0.882	0.487	692	2.07	0.034	175	8.08	0.00011	2.00	0.584	0.0152	0.0006	0.038	0.00037	0.0358	0.0251	0.00187	0.00745	0.0165	0.220
16418	0.108	0.257	0.825	2.90	0.010	64.1	2.44	0.00006	1.58	0.369	0.00199	< 0.0002	0.014	0.00003	0.0375	0.0019	0.00038	0.00609	0.00006	0.076
16600	0.0625	0.0010	0.064	20.5	0.006	6.22	0.00247	0.00099	1.71	0.0006	< 0.00002	< 0.0002	0.008	0.00008	0.0071	0.0029	< 0.00002	0.000003	0.170	< 0.001
16014	0.0199	0.0292	0.030	0.69	0.003	10.9	0.70	0.0682	0.43	0.1530	0.0006	0.0004	0.002	0.00002	0.0073	0.0004	0.00025	0.00233	0.0084	0.016
16232	0.0175	0.0264	241	1.56	0.050	186	2.31	0.00008	2.08	0.379	0.0449	< 0.0002	0.026	< 0.00001	0.113	0.0033	0.00047	0.00232	0.00162	0.154

Table B-4. NAG Leachate Results (continued)

Sample ID	Hole-ID	From	To	Waste Rock Code	Rock Type	Final pH	pH	Alkalinity	Acidity	SO_4	S	Hg	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co
								mg/L as CaCO3		mg/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
16482	MR1-05-46	234.67	235.68	HWS	3	2.98	3.10	< 2	135	360	1.22	< 0.0001	0.00228	12.7	0.0004	0.0358	0.0492	0.00308	< 0.00001	3.36	0.000036	0.0872
16490	MR1-05-46	271.33	272.42	HWS	3	3.04	3.12	< 2	100	140	0.47	< 0.0001	0.00058	5.99	0.0002	0.0610	0.00260	0.00104	< 0.00001	0.55	0.000129	0.183
16516	MR1-04-45	246.59	247.69	HWS	3	3.27	3.36	< 2	75	230	0.75	< 0.0001	0.00174	7.08	0.0005	0.0276	0.00367	0.00133	< 0.00001	1.62	0.000102	0.287
16452	MR1-05-47	298.35	299.38	HWS	3	5.69	5.39	< 2	7	130	0.43	< 0.0001	0.00036	< 0.01	0.0002	0.0735	0.0144	< 0.00002	< 0.00001	2.62	0.000007	0.00670
16504	MR1-04-45	201.30	202.33	HWS	3	4.05	4.20	< 2	18	110	0.36	< 0.0001	0.00066	1.06	< 0.0002	0.214	0.0394	0.00066	< 0.00001	2.86	0.000027	0.117
16448	MR1-05-47	288.16	289.27	HWS	3	6.38	6.09	2	5	120	0.40	< 0.0001	0.00007	< 0.01	0.0004	0.0456	0.00992	< 0.00002	< 0.00001	2.94	< 0.000003	0.000251
16604	MR1-05-77	102.80	103.76	HWS	3	5.23	5.24	< 2	7	100	0.33	< 0.0001	0.00006	0.04	0.0003	0.145	0.0869	< 0.00002	< 0.00001	3.00	0.000230	0.00796
16486	MR1-05-46	253.90	254.95	HWS	3	6.74	6.15	3	4	41	0.14	< 0.0001	0.00003	< 0.01	0.0003	0.0432	0.00057	< 0.00002	< 0.00001	1.48	< 0.000003	0.000281
16272	MR1-05-51	224.28	225.28	HWS	11a	5.09	5.14	< 2	8	120	0.40	< 0.0001	0.0001	0.06	< 0.0002	0.119	0.00068	0.00004	< 0.00001	1.71	0.000048	0.0108
16036	MR1-05-72	142.74	143.74	HWS	3, 7c	2.45	2.55	< 2	327	370	1.23	< 0.0001	0.0037	14.40	0.0055	0.062	0.0044	0.00044	< 0.00001	1.11	0.000421	0.285
16046	MR1-05-72	188.80	189.80	HWS	3, 7c	2.10	2.19	< 2	162	1600	5.33	< 0.0001	0.0007	41.00	0.0196	0.113	0.00961	0.00499	< 0.00001	4.16	0.000195	0.476
16050	MR1-05-72	203.40	204.20	HWS	3, 7f	2.15	2.28	< 2	840	900	3.00	< 0.0001	0.0018	31.80	0.0008	0.1680	0.00579	0.00384	< 0.00001	0.59	0.000199	0.1460
16054	MR1-05-72	216.66	217.66	HWS	3, 7f	3.07	3.16	< 2	81	130	0.43	< 0.0001	0.0011	4.6	0.0002	0.2790	0.0025	0.00232	< 0.00001	1	0.000489	0.445
16218	MR1-08-158	193.04	194.10	HWS	4a	2.65	2.69	< 2	300	520	1.73	< 0.0001	0.0027	25.8	0.0011	0.0197	0.0129	0.00262	< 0.00001	12.1	0.000576	0.298
16512	MR1-04-45	233.68	234.70	HWS	4ac	2.97	3.01	< 2	217	430	1.42	< 0.0001	0.00246	19.2	0.0008	0.0706	0.0101	0.00122	< 0.00001	1.28	0.000098	0.222
16500	MR1-04-45	184.86	185.86	HWS	4ac	5.43	5.25	< 2	6	110	0.37	< 0.0001	0.00057	< 0.01	0.0002	0.0406	0.00302	< 0.00002	< 0.00001	6.90	0.000019	0.0139
16230	MR1-05-53	125.90	126.79	HWS	4c	2.70	2.78	< 2	339	1200	4.00	< 0.0001	0.0027	33.9	0.0024	0.0524	0.0653	0.00517	< 0.00001	8.66	0.000205	0.272
16428	MR1-05-47	178.00	179.00	HWS	4c/a	2.91	3.02	< 2	185	510	1.72	< 0.0001	0.00164	19.7	0.0005	0.0363	0.0226	0.00290	< 0.00001	4.64	0.000156	0.130
16510	MR1-04-45	223.02	224.02	HWS	4ca	3.30	3.45	< 2	67	200	0.67	< 0.0001	0.00139	6.19	< 0.0002	0.101	0.0130	0.00185	< 0.00001	2.68	0.000009	0.137
16506	MR1-04-45	205.50	206.60	HWS	4ca	4.76	4.90	< 2	10	130	0.43	< 0.0001	0.00045	0.06	0.0003	0.128	0.00396	0.00009	< 0.00001	3.68	0.000005	0.0683
16508	MR1-04-45	213.90	214.85	HWS	4ca	5.91	5.75	< 2	5	120	0.40	< 0.0001	0.00013	< 0.01	0.0002	0.0887	0.00068	< 0.00002	< 0.00001	5.17	< 0.000003	0.00644
16568	MR1-09-172	29.83	30.82	HWS	4ca	6.86	6.33	5	< 2	84	0.28	< 0.0001	< 0.00001	0.08	0.0003	0.0569	0.0259	< 0.00002	< 0.00001	1.06	< 0.000003	0.000115
16028	MR1-05-72	122.35	123.30	HWS	5a/6e	3.32	3.44	< 2	43	110	0.37	< 0.0001	0.0006	2.4	< 0.0002	0.077	0.15200	0.00078	< 0.00001	1.82	0.000104	0.248
16034	MR1-05-72	138.40	139.40	HWS	6e	2.47	2.58	< 2	406	580	1.93	< 0.0001	0.0021	24.70	0.0005	0.335	0.33100	0.00238	< 0.00001	3.15	0.000950	0.600
16296	MR1-04-44	233.10	234.17	HWS	6e	2.67	2.75	< 2	18	490	1.63	< 0.0001	0.0016	31.6	0.0003	0.103	0.00323	0.00099	< 0.00001	0.63	0.000105	0.272
16298	MR1-04-44	245.50	246.50	HWS	6e	4.11	4.11	< 2	19	170	0.57	< 0.0001	0.0003	1.81	0.0003	0.085	0.00364	0.00021	< 0.00001	1.19	0.000343	0.16400
16502	MR1-04-45	192.50	193.59	HWS	6e	5.16	5.14	< 2	6	110	0.36	< 0.0001	0.00044	0.01	0.0002	0.101	0.00844	0.00002	< 0.00001	5.14	0.000012	0.0183
16484	MR1-05-46	245.03	246.00	HWS	6e	4.22	4.38	< 2	30	49	0.17	< 0.0001	0.00037	0.41	< 0.0002	0.106	0.0185	0.00008	< 0.00001	1.21	0.000060	0.00468
16496	MR1-05-46	293.16	294.12	HWS	6e	6.00	5.76	< 2	8	52	0.17	< 0.0001	0.00004	< 0.01	0.0003	0.130	0.00906	< 0.00002	< 0.00001	1.67	0.000012	0.000263
16498	MR1-04-45	176.08	177.22	HWS	7a	2.26	2.34	< 2	407	510	1.71	< 0.0001	0.00020	9.82	0.0026	0.119	0.0152	0.00066	< 0.00001	20.6	0.000051	0.0212
16566	MR1-09-176	223.60	224.61	HWS	7c	3.09	3.12	< 2	59	120	0.40	< 0.0001	0.00090	0.43	0.0004	0.0695	0.00325	0.00044	< 0.00001	1.69	0.000017	0.0223
16012	MR1-05-72	58.70	59.60	HWS	7f	1.85	2.00	< 2	990	1100	3.67	< 0.0001	0.0020	2.33	0.0059	0.1090	0.01440	0.00017	< 0.00001	2.64	0.000238	0.7210
16016	MR1-05-72	69.60	70.60	HWS	7f	2.22	2.33	< 2	429	580	1.93	< 0.0001	0.0017	7.1	0.0006	0.1110	0.00295	0.00013	< 0.00001	7.72	0.000113	0.349
16020	MR1-05-72	84.20	85.20	HWS	7f	2.34	2.44	< 2	278	280	0.93	< 0.0001	0.0022	2.1	< 0.0002	0.103	0.00336	0.00041	< 0.00001	1.26	0.002150	0.297
16456	MR1-05-47	313.64	314.75	HWS	7f	2.35	2.47	< 2	604	740	2.43	< 0.0001	0.00516	36.5	0.0008	0.169	0.00357	0.00363	< 0.00001	1.44	0.000126	0.336
16478	MR1-05-46	212.80	213.81	HWS	7f	3.07	3.16	< 2	77	200	0.66	< 0.0001	0.00135	4.56	< 0.0002	0.0590	0.00951	0.00088	< 0.00001	7.87	0.000054	0.0875
16442	MR1-05-47	270.91	271.92	HWS	7f	6.58	6.26	3	6	49	0.17	< 0.0001	0.00003	0.01	0.0005	0.0450	0.00032	< 0.00002	< 0.00001	2.90	< 0.000003	0.000225
16052	MR1-05-72	208.30	209.30	HWS	7f, 7c	2.91	3.01	< 2	104	140	0.47	< 0.0001	0.0005	3.44	0.0002	0.287	0.00442	0.00168	< 0.00001	14.1	0.000976	0.059
16446	MR1-05-47	282.50	283.60	HWS	7f,4cab	4.50	4.49	< 2	12	110	0.36	< 0.0001	0.00170	0.38	0.0006	0.0646	0.00392	0.00023	< 0.00001	5.98	0.000030	0.0487
16438	MR1-05-47	235.23	236.28	HWS	9b	5.60	5.73	< 2	11	170	0.57	< 0.0001	0.00001	< 0.01	0.0002	0.0736	0.0104	< 0.00002	< 0.00001	19.0	0.000018	0.00519
16562	MR1-09-176	207.95	208.93	HWS	9d	6.98	6.54	7	< 2	23	0.08	< 0.0001	0.00001	0.11	0.0002	0.0872	0.00217	< 0.00002	< 0.00001	0.72	0.000005	0.000024
16476	MR1-05-46	161.44	162.52	HWS	9d	3.29	3.38	< 2	44	130	0.43	< 0.0001	0.00018	1.26	0.0012	0.0315	0.00824	0.00037	< 0.00001	6.42	0.000061	0.00826
16474	MR1-05-46	156.69	157.61	HWS	9d	4.55	4.63	< 2	25	120	0.40	< 0.0001	0.00018	0.14	0.0003	0.100	0.00297	0.00007	< 0.00001	4.38	0.000107	0.00267
16638	MR1-08-159	97.82	98.79	IW1000	7c	2.60	2.71	< 2	227	390	1.29	< 0.0001	0.00188	5.71	0.0006	0.105	0.0631	0.00213	< 0.00001	13.7	0.000214	0.168
16634	MR1-08-159	90.58	91.54	IW1000	9d	2.98	3.01	< 2	99	150	0.50	< 0.0001	0.00044	3.21	0.0002	0.0766	0.298	0.00167	< 0.00001	5.90	0.000132	0.0329
16274	MR1-05-51	314.16	315.16	IW1100	3	3.46	3.53	< 2	61	250	0.83	< 0.0001	0.0004	6.44	0.0007	0.046	0.008	0.00564	< 0.00001	5.98	0.000263	0.2520
16048	MR1-05-72	193.45	194.45	Ore	7f	2.89	2.99	< 2	71	74	0.25	< 0.0001	0.0004	1.37	0.0004	0.025	0.00243	0.00046	< 0.00001	0.47	0.00004	0.048

Note: 'Final pH' represents the pH after the sample reaction with perioxide, while 'pH' represents the pH of the filtered sample solution.

Table B-4. NAG Leachate Results (continued)

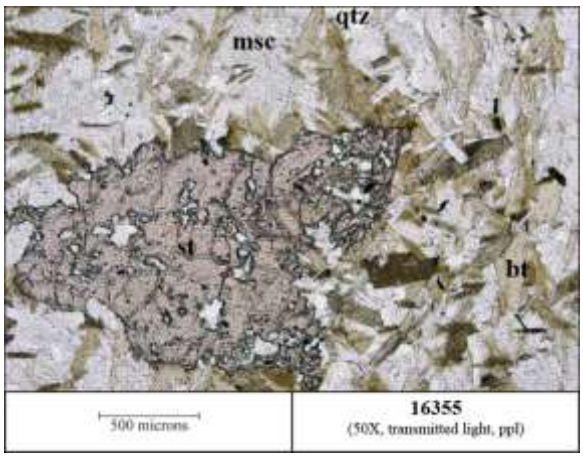
Sample ID	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	U	V	Zn
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
16482	0.0032	0.121	1.24	9.24	0.017	58.8	1.52	0.00004	1.04	0.110	0.00416	0.0004	0.011	0.00005	0.0704	0.0026	0.00051	0.00828	0.00004	0.041
16490	0.0080	0.569	7.51	0.904	0.008	11.5	0.333	0.00045	1.05	3.31	0.00252	0.0003	0.004	0.00002	0.00859	0.0010	0.00010	0.00696	0.00008	0.153
16516	0.0073	0.195	2.04	0.884	0.005	43.7	0.516	0.00023	1.01	2.13	0.00764	0.0002	0.007	0.00002	0.0078	0.0017	0.00031	0.0202	< 0.00003	0.075
16452	0.216	0.0018	< 0.003	4.52	0.004	35.3	0.581	0.00676	1.72	0.0555	0.00003	0.0004	0.008	0.00007	0.0301	0.0011	0.00004	0.000038	0.00082	0.002
16504	0.0253	0.0441	0.029	1.72	0.100	24.3	0.652	0.00260	1.10	0.805	0.00029	0.0003	0.005	0.00011	0.0653	0.0008	0.00011	0.00439	0.0104	0.018
16448	0.0099	0.0005	0.011	10.7	0.001	29.4	0.131	0.0101	1.79	0.0006	< 0.00002	0.0005	0.015	0.00006	0.0390	0.0011	0.00010	0.000020	< 0.00003	< 0.001
16604	0.0514	0.0039	0.012	32.7	0.022	16.0	0.307	0.00040	1.81	0.0137	< 0.00002	< 0.0002	0.012	< 0.00001	0.0420	0.0008	0.00006	0.000002	0.0778	0.002
16486	0.0823	0.0015	0.008	1.31	0.002	10.6	0.0107	0.00455	0.43	0.0007	< 0.00002	0.0006	0.008	0.00002	0.0213	0.0003	< 0.00002	0.000012	0.00068	< 0.001
16272	0.0424	0.0009	0.014	5.78	< 0.001	26.8	0.989	0.04603	0.85	0.0137	0.00005	< 0.0002	0.005	0.00001	0.00790	0.0008	0.00004	0.000010	0.0884	0.002
16036	0.0440	0.554	23.8	0.799	0.003	15.0	0.92	0.00123	0.53	0.66	0.026	0.0004	0.005	0.00003	0.0094	0.0025	0.00029	0.00417	0.00056	0.033
16046	0.0722	4.130	243.0	1.270	0.016	37.5	1.27	0.00025	0.44	1.390	0.0837	< 0.0002	0.009	0.00024	0.0214	0.0069	0.00053	0.00308	0.00293	0.096
16050	0.0463	0.1870	96.9	1.420	0.005	29.50	0.645	0.00013	0.49	0.740	0.04270	< 0.0002	0.011	0.00007	0.00679	0.0065	0.00050	0.018500	0.00004	0.039
16054	0.0207	1.060	0.82	0.72	0.003	13.2	0.2	0.00016	0.78	1.130	0.0080	< 0.0002	0.008	0.00003	0.0068	0.0007	0.00003	0.000647	< 0.00003	0.074
16218	0.0562	0.516	4.36	1.71	0.005	44.2	0.861	0.00036	1.09	2.45	0.0861	< 0.0002	0.023	0.00004	0.0196	0.0025	0.00088	0.00377	< 0.00003	0.097
16512	0.0308	0.522	22.1	1.33	0.008	56.1	0.916	0.00011	0.83	1.18	0.00413	0.0002	0.010	0.00001	0.0166	0.0029	0.00045	0.0214	0.00023	0.138
16500	0.221	0.0028	< 0.003	0.750	0.004	28.2	0.662	0.00033	0.86	0.0816	< 0.00002	0.0004	0.007	0.00005	0.0901	0.0010	0.00005	0.000036	0.00172	0.001
16230	0.0146	0.0356	159	12.1	0.040	167	1.11	0.00010	2.34	0.434	0.0524	< 0.0002	0.028	0.00002	0.0901	0.0032	0.00050	0.00435	0.00207	0.130
16428	0.0185	0.118	1.61	3.70	0.014	77.4	2.77	0.00008	1.78	0.220	0.00596	< 0.0002	0.018	0.00003	0.0387	0.0022	0.00049	0.00436	0.00006	0.100
16510	0.0277	0.0858	0.360	1.80	0.029	34.2	0.912	0.00011	0.97	0.888	0.00113	0.0003	0.004	< 0.00001	0.0490	0.0013	0.00033	0.00575	0.00005	0.044
16506	0.0333	0.0028	< 0.003	1.08	0.017	32.1	1.18	0.00166	0.94	0.575	< 0.00002	0.0004	0.005	0.00010	0.0545	0.0011	0.00002	0.000032	0.00773	0.004
16508	0.157	0.0007	< 0.003	0.873	0.002	30.5	0.302	0.00013	0.98	0.0222	0.00003	0.0003	0.005	0.00005	0.0618	0.0011	< 0.00002	0.000010	0.00009	0.001
16568	0.147	0.0008	0.114	10.8	0.010	9.79	0.00251	0.0176	0.78	0.0007	0.00007	0.0003	0.002	0.00017	0.0092	0.0022	< 0.00002	0.000020	0.0570	< 0.001
16028	0.0361	0.369	0.167	15.90	0.058	12.2	0.816	0.00012	1.24	0.809	0.0011	< 0.0002	0.003	0.00001	0.02380	0.0008	0.00039	0.0006	< 0.00003	0.299
16034	0.0425	0.97	46.3	32.400	0.040	24.4	0.554	0.00038	1.37	2.39	0.07580	0.0003	0.005	0.00004	0.01900	0.0057	0.00085	0.000323	0.00249	0.203
16296	0.0208	0.212	18.1	0.905	0.012	38.4	1.68	0.00012	1.23	0.779	0.00350	< 0.0002	0.007	< 0.00001	0.00612	0.0028	0.00023	0.00462	0.00011	0.104
16298	0.0059	0.0203	0.025	2.450	0.014	34.60	1.71	0.0052	0.96	0.3600	0.0001	< 0.0002	0.006	0.00006	0.0378	0.0010	0.00014	0.000730	0.00668	0.091
16502	0.0865	0.0016	< 0.003	0.793	0.004	25.7	0.832	0.00292	0.64	0.0598	0.00007	0.0004	0.005	0.00007	0.0464	0.0009	0.00004	0.000022	0.0336	0.002
16484	0.0144	0.0020	0.006	11.8	0.008	7.34	0.300	0.0220	0.88	0.0401	0.00019	0.0003	0.003	0.00006	0.0468	0.0012	0.00014	0.000336	0.0159	0.002
16496	0.0205	< 0.0005	< 0.003	17.2	< 0.001	6.88	0.0749	0.0447	0.94	0.0004	< 0.00002	0.0004	0.007	0.00009	0.0474	0.0005	0.00005	0.000020	0.0126	< 0.001
16498	0.0046	0.0256	11.1	1.24	0.009	23.0	0.341	0.00003	1.42	0.0296	0.00294	0.0003	0.016	0.00004	0.0710	0.0038	0.00009	0.000437	0.00009	0.029
16566	0.0259	0.0130	0.112	0.755	0.002	17.9	0.638	0.00888	0.80	0.0133	0.00116	0.0003	0.006	0.00003	0.0116	0.0014	0.00004	0.000222	0.00082	0.017
16012	0.0062	0.1640	86.0	0.991	0.009	27.9	2.940	0.0003	0.62	1.060	0.34700	0.0005	0.009	0.00010	0.03230	0.0051	0.00114	0.00160	0.00084	0.026
16016	0.0055	0.695	12.6	0.466	0.001	10.5	2.040	0.00026	0.63	0.859	0.0464	< 0.0002	0.008	0.00003	0.02010	0.0017	0.00035	0.00118	< 0.00003	0.036
16020	0.0099	0.13	3.98	0.59	0.002	2.7	1.18	0.00010	0.49	0.66	0.0247	< 0.0002	0.006	0.00003	0.0174	0.0015	0.00297	0.00103	< 0.00003	0.195
16456	0.0214	0.855	62.2	2.63	0.005	39.4	2.01	0.00013	1.94	0.686	0.0297	< 0.0002	0.010	0.00003	0.0227	0.0042	0.00033	0.00438	< 0.00003	0.116
16478	0.0016	0.0213	0.252	0.944	0.011	32.7	0.961	0.00429	0.90	0.0584	0.00191	0.0003	0.005	0.00002	0.0381	0.0018	0.00006	0.000498	0.00604	0.037
16442	0.0128	< 0.0005	0.052	0.929	0.003	12.0	0.0133	0.00350	1.86	0.0003	< 0.00002	0.0005	0.008	0.00014	0.0189	0.0008	< 0.00002	0.000025	0.00213	< 0.001
16052	0.0073	0.09	0.194	0.939	0.002	4.7	1	0.00027	0.84	0.165	0.00846	< 0.0002	0.003	< 0.00001	0.0180	0.0008	0.00026	0.000314	< 0.00003	0.027
16446	0.0121	0.0702	0.007	1.10	0.009	24.4	0.668	0.00041	1.47	0.0209	0.00020	< 0.0002	0.019	< 0.00001	0.0325	0.0008	0.00011	0.000103	0.00149	0.020
16438	0.0104	0.0009	< 0.003	5.57	0.005	31.8	3.13	0.00067	3.06	0.0157	< 0.00002	0.0004	0.006	0.00002	0.0428	0.0014	0.00006	0.000008	0.00008	0.002
16562	0.0161	< 0.0005	0.087	14.7	0.006	3.27	0.00431	0.0859	0.78	0.0002	0.00003	0.0003	< 0.001	0.00013	0.0058	0.0012	< 0.00002	0.000029	0.00230	< 0.001
16476	0.0102	0.0103	0.060	1.25	0.007	24.0	0.340	0.00275	1.76	0.0100	0.00104	0.0003	0.042	0.00005	0.0235	0.0014	0.00002	0.000119	0.00215	0.073
16474	0.0172	0.0005	< 0.003	1.68	0.009	21.8	0.212	0.00356	1.43	0.0039	< 0.00002	0.0004	0.007	0.00008	0.0123	0.0011	0.00003	0.000023	0.00262	0.003
16638	0.0352	0.753	23.7	1.32	0.004	31.0	3.44	< 0.00001	1.04	0.237	0.00718	0.0003	0.008	0.00003	0.0364	0.0028	0.00071	0.00108	0.00012	0.036
16634	0.0061	0.233	5.97	1.02	0.003	11.0	1.83	< 0.00001	0.91	0.0676	0.00169	0.0003	0.004	0.00002	0.0207	0.0011	0.00022	0.00107	< 0.00003	0.049
16274	0.0538	0.013	0.130	2.2	0.016	43.10	1.220	0.02260	1.31	0.0817	0.01710	< 0.0002	0.020	< 0.00001	0.02540	0.0022	0.00005	0.0026	0.088	0.057
16048	0.0093	0.059	0.54	0.518	0.002	1.79	0.15	0.00483	0.41	0.114	0.0058	0.0003	0.002	0.00006	0.0054	0.0009	0.00015	0.00045	0.00088	0.011

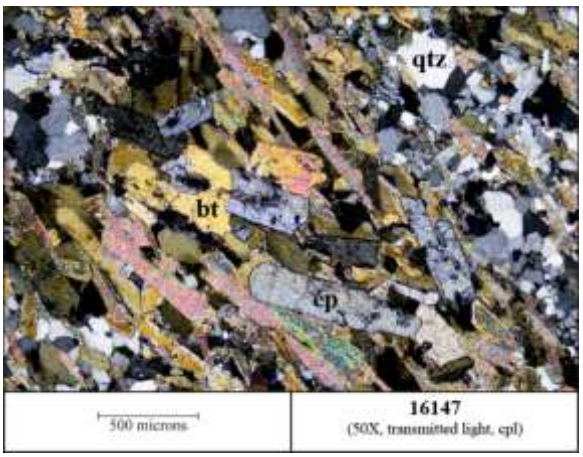
Note: 'Final

APPENDIX C

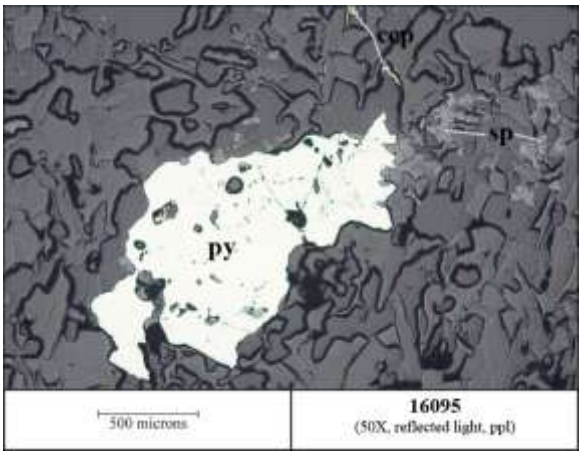
MINERALOGY REPORT

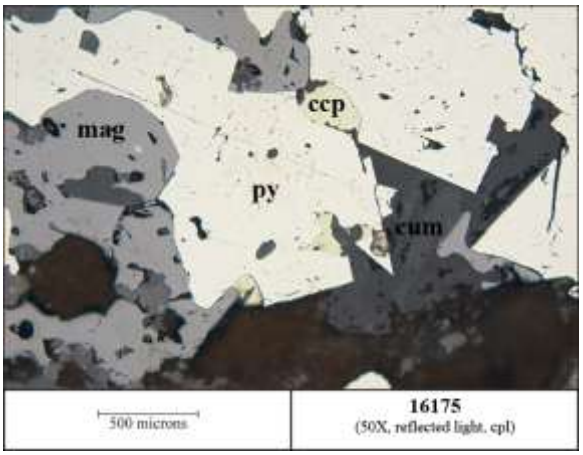
Mineralogical Characterization Report: BIMC-11-001





Mineralogical Characterization of Twenty Samples from the Mary River Deposit, Baffinland Iron Mines Corp.





January 3, 2012

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Summary

Twenty samples of drill core were analyzed in this study. The samples contain mineral assemblages typical of at least amphibolite grade. Sixteen of the twenty samples contain sulfides. A variety of sulfides were identified in the rocks studied. Pyrite, chalcopyrite, pyrrhotite, and sphalerite are common accessory minerals and were identified in many of the rock types studied. Marcasite was identified in one sample and pentlandite was identified in three samples. Only sample, 16175 contained measurable amounts (1.8 wt.%, by Rietveld analysis) of pyrite. No sulfides were identified in four of the samples: 16137, 16355, 16397, and 16467. All other samples contained sulfide in trace amounts. In most cases the sulfides were disseminated and fresh without oxidized shells.

The major rock forming silicate minerals observed in this study include quartz, feldspar (plagioclase and alkali feldspar), amphibole (cummingtonite and hornblende), biotite, muscovite, and chlorite. The other major rock forming mineral is the oxide magnetite, which occurs in iron formation. The rocks observed in this study can be subdivided into five groups based on the relative abundance of the major rock forming minerals: quartz-feldspar-rich, amphibolite (composed dominantly of amphibole and plagioclase), magnetite-rich, mica-rich (biotite and/or muscovite), and chlorite-rich.

No asbestos was identified in the rocks studied. However, the metamorphic and structural conditions necessary for the growth of asbestiform amphiboles are present. Special attention should be given to logging with careful attention to the presence of fibrous amphiboles.

Introduction

Twenty samples of drill core were analyzed in this study. The samples represent waste rock types that will be handled and stored during the life of mining operation at Mary River. The purpose of this mineralogical characterization was to: 1) identify the minerals with particular attention to minerals with the potential to generate and neutralize acid, 2) identify textures and fabrics that can affect the rate at which acid generating and acid neutralizing minerals and could be weathered, and 3) identify asbestos minerals, if present.

Methods

Twenty samples of saw-cut drill core were provided for mineralogical analysis by Baffinland Iron Mines. The core samples and the rock names assigned by Baffinland Iron Mines are listed in Table 1. Twenty matching samples of pulverized drill core were provided by SGS Mineral Services, Lakefield on Baffinland Iron Mines behalf. Digital images were acquired for each sample (Appendix A). A thin section and polished mount of each sample were prepared at Rod Johnson and Associates, Inc. in Negaunee, Michigan. Thin sections were selected from an area of the drill core sample that was thought to be most representative of the sample. Samples for polished mounts were selected from an area of the drill core that contained sulfides, if present. Therefore, thin sections and polished mounts in some instances were selected from different areas of the drill core. The thin sections and polished mounts were analyzed with transmitted and reflected light respectively, using an Olympus BX60 petrographic microscope. Images were acquired using a Canon 5D digital SLR camera and processed using Adobe Photoshop C3 Extended. Cursory image analysis was also performed using Adobe Photoshop CS5 Extended. Minerals were identified using a combination of optical properties in transmitted and reflected light, x-ray diffraction (XRD), scanning electron microscopy (SEM), and energy dispersive spectroscopy (EDS). Description of each sample is provided in Appendix A.

Table 1. List of samples analyzed in this study with field identification names assigned by Baffinland Iron Mines.

Sample ID	Rock Type
16095	greywacke
16099	mica amphibole chlorite schist
16137	ab_QF gneiss
16147	ab_QF gneiss
16151	greywacke
16175	HG_IF 60-72.36% Fe 60-100% mag.
16195	greywacke
16241	amphibolite
16281	Banded_IF 60-72.36% Fe 0-25% mag.
16299	greywacke
16355	QFm gneiss
16393	QFm gneiss
16397	amphibolite
16415	mica amphibole schist
16441	HG_IF 60-72.36% Fe 60-100% mag.
16467	chlorite schist
16667	volcanic tuff (massive)
16729	chlorite schist
16739	chlorite schist
16745	volcanic tuff (layered)

XRD scans were collected of each sample using a Scintag XDS 2000 theta/theta, in the Department of Material Science and Engineering at Michigan Technological University. Samples were loaded in a holder by the side drift method. Scans were collected from 5º to 45º 2θ, 0.02º step size, 2 second dwell time, at 35 mA, and 45 kV. The scans were processed by Rod Johnson & Associates, Inc. Background was removed and phases matched using Match! software (Crystal Impact) and the American Mineralogist Crystal Structure Database (R.T. Downes and M. Hall-Wallace, 2003). XRD can identify most minerals at concentrations greater than about 2 wt.% however, some minerals, like pyroxenes, have low relative intensity ratios that result in their detection limit being much higher, about 5-7 wt.%. The abundance of minerals identified by XRD was determined by Rietveld analysis using Siroquant software and is summarized in Appendix A. In this study Rietveld analysis provided reasonable estimates of the abundances of minerals present. However, the relative error of Rietveld analysis increases at concentrations below 6 wt% (Raudsepp, M. and Pani, E, 2003).

Major element chemistries of the major and minor mineral phases of interest were collected to provide background data on mineral chemistry. Major element mineral chemistries were determined by energy dispersive spectroscopy (EDS). EDS analyses are standardless qualitative analyses and have a detections limit of 0.1wt% (Goldstein, J.I., et.al., 2003). EDS was performed on the polished mounts that were prepared for optical microscopy. The spectra were collected from the centers of mineral grains. When multiple analyses of a particular mineral were collected the average of the analyses are reported. Major element chemistry of minerals was determined at Rod Johnson & Associates, Inc. using a JEOL JXA-840 SEM, Thermo Scientific UltraDry SDD detector, and Thermo Scientific System Seven digital processor. The polished mounts were coated with carbon using a Spectrum Probe, Inc. carbon evaporator. EDS analyses were collected at a working distance of 39mm, 20kV and counts were collected until 5,000 counts were accumulated. Major element mineral analyses are included in Appendix A with the sample descriptions.

Results

Twenty samples of drill core were analyzed in this study. The samples contain mineral assemblages typical of rocks metamorphosed to at least amphibolite grade. The samples also contain trace amounts of accessory minerals including: apatite, zircon, and monazite . Trace accessory minerals were not determined in a quantitative manner and are not included in descriptions. The mineralogy of the samples studied is summarized in Table 2. The minerals have been subdivided into silicate, sulfides, and oxides and will be presented in that order. The physical characteristics of the rocks will also be presented.

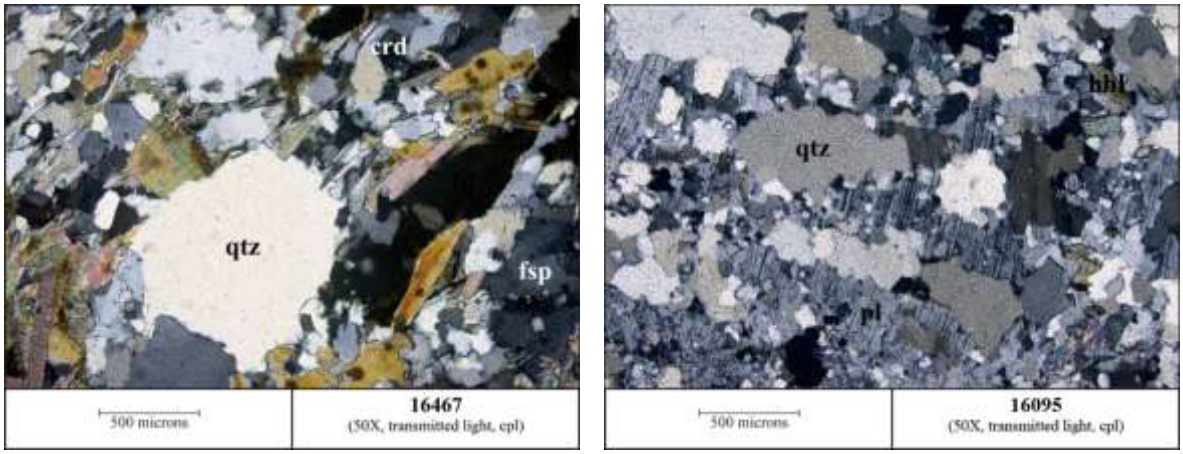
Table 2. Summary of minerals identified in this study. Major and minor phases are indicated with an X and trace phases are indicated with an x. Some trace accessory minerals including apatite, monazite, e.g. are not included in this table.

	Silicates												Sulfides						Oxides				
	Quartz	Plagioclase	K-feldspar	Cummingtonite	Hornblende	Biotite	Muscovite	Chlorite	Garnet	Epidote	Staurolite	Cordierite	Pyrite	Pyrrhotite	Marcasite	Chalcopyrite	Sphalerite	Pentlandite	Magnetite	Hematite	Goethite	Ilmenite	Chromite
16095	**X**	**X**			**X**	**X**							x			x	x					x	
16099	**X**	**X**				**X**							x			x	x						
16137	**X**	**X**				**X**																	
16147	**X**		**X**		**X**	**X**				x			x									x	
16151	**X**	**X**	x			**X**							x	x		x							
16175				**X**				**X**	**X**				**X**			x			**X**				
16195	**X**	**X**			**X**	**X**		**X**					x	x		x		x				x	
16241	**X**	**X**		**X**	**X**			**X**	**X**					x		x		x				x	
16281	**X**			**X**				**X**					x	x		x			**X**				
16299								**X**								x							
16355	**X**					**X**	**X**	**X**			x											x	
16393	**X**	**X**				**X**	**X**	**X**					x			x			x				
16397	**X**							**X**														x	
16415								**X**					x										x
16441				x				**X**					x			x			**X**	**x**			
16467	**X**					**X**		**X**				**X**											
16667	**X**	**X**			**X**	**X**							x	x		x		x					
16729								**X**	**X**				x									x	
16739	**X**							**X**	**X**				x								x		
16745	**X**							**X**	**X**						x	x						x	

Silicates

The following silicates were identified in this study: quartz, plagioclase, k-feldspar, cummingtonite, hornblende, biotite, muscovite, chlorite, garnet, epidote, staurolite and cordierite. Quartz, feldspars, cummingtonite, hornblende, biotite, muscovite, and chlorite are the major silicate rock forming minerals in this study.

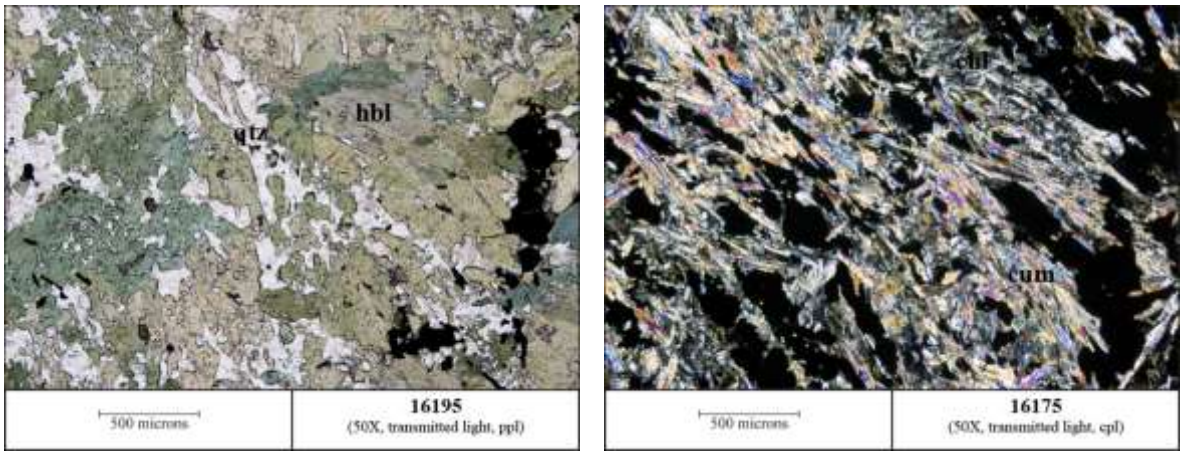
Quartz occurs as granoblastic aggregates with or without feldspar (Figure 1a and 1b). Feldspar occurs as porphyroblasts and in the matrix with quartz in granoblastic aggregates. The plagioclase minerals albite, oligoclase, andesine, and anorthite were identified in the course of this study.



a) b)

Figure 1. Photomicrographs illustrating the occurrence of quartz and feldspar. a) Photomicrograph of relatively coarse quartz grains in a matrix of granoblastic quartz and cordierite with decussate biotite. b) Photomicrographs of plagioclase porphyroblasts in a matrix of granoblastic quartz and feldspar with disseminated hornblende.

The amphiboles cummingtonite and hornblende typically occur in decussate aggregates and aligned with the foliation when present (Figure 2a and 2b). Although cummingtonite in some instances had high aspect ratios, no asbestiform cummingtonite was observed.

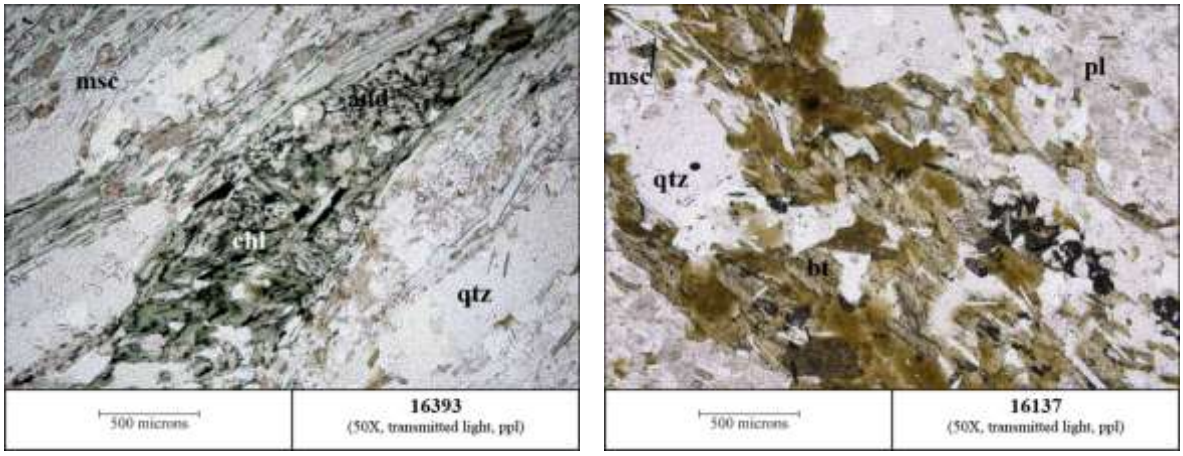


a) b)

Figure 2. Photomicrographs illustrating the occurrence of amphiboles. a) Photomicrograph of decussate hornblende in a matrix of granoblastic plagioclase and quartz. b) Photomicrographs of foliated to decussate cummingtonite and magnetite (opaque).

The platy silicates biotite, muscovite and chlorite typically occur as disseminated flakes or aligned with foliation (Figure 3a and 3b). Chlorite occurs as either a high iron (possibly

chamosite) or high magnesium (possibly clinochlore) variety. In some cases the high-Mg and high-Fe varieties occur together.



a) b)

Figure 3. Photomicrographs illustrating the occurrence of platy minerals. a) Photomicrograph of asymmetric pod composed of chlorite quartz and andalusite and bands of foliated muscovite. b) Photomicrographs of band composed of foliated biotite with granoblastic quartz and feldspar.

Other silicate minerals occurred in minor to trace amounts including garnet, epidote, staurolite, cordierite, and andalusite. Garnet occurred in several samples, often as conspicuous porphyroblasts.

Sulfides

A variety of sulfides were identified in the rocks studied. Pyrite, chalcopyrite, pyrrhotite, and sphalerite are common accessory minerals and were identified in many of the rock types studied. Marcasite was identified in one sample and pentlandite was identified in three samples. Only sample, 16175 contained measurable amounts (1.8 wt.%, by Rietveld analysis) of pyrite (Figure 4a and 4b). No sulfides were identified in four of the samples: 16137, 16355, 16397, and 16467. All other samples contained sulfide in trace amounts. In most cases the sulfides were disseminated and fresh without oxidized shells.

Pyrite is the most common sulfide mineral and typically occurs as disseminated anhedral to euhedral grains. EDS analysis of pyrite grains did not identify arsenic or mercury above detection limits. Chalcopyrite is the next most commonly occurring sulfide. Sphalerite does contain measurable levels of cadmium (up to 1.6 wt.% average in 16095). The sulfide assemblage pyrrhotite, chalcopyrite, and pentlandite was identified in three samples, 16195, 16241, and 16667. The pentlandite in samples 16195 and 16241 contain elevated cobalt. Marcasite was identified in sample 16745. Marcasite contains measureable amounts of nickel and copper.

Oxides

Magnetite, hematite, goethite, ilmenite and chromite were identified in the rocks studied. Iron formation samples contained granular magnetite.

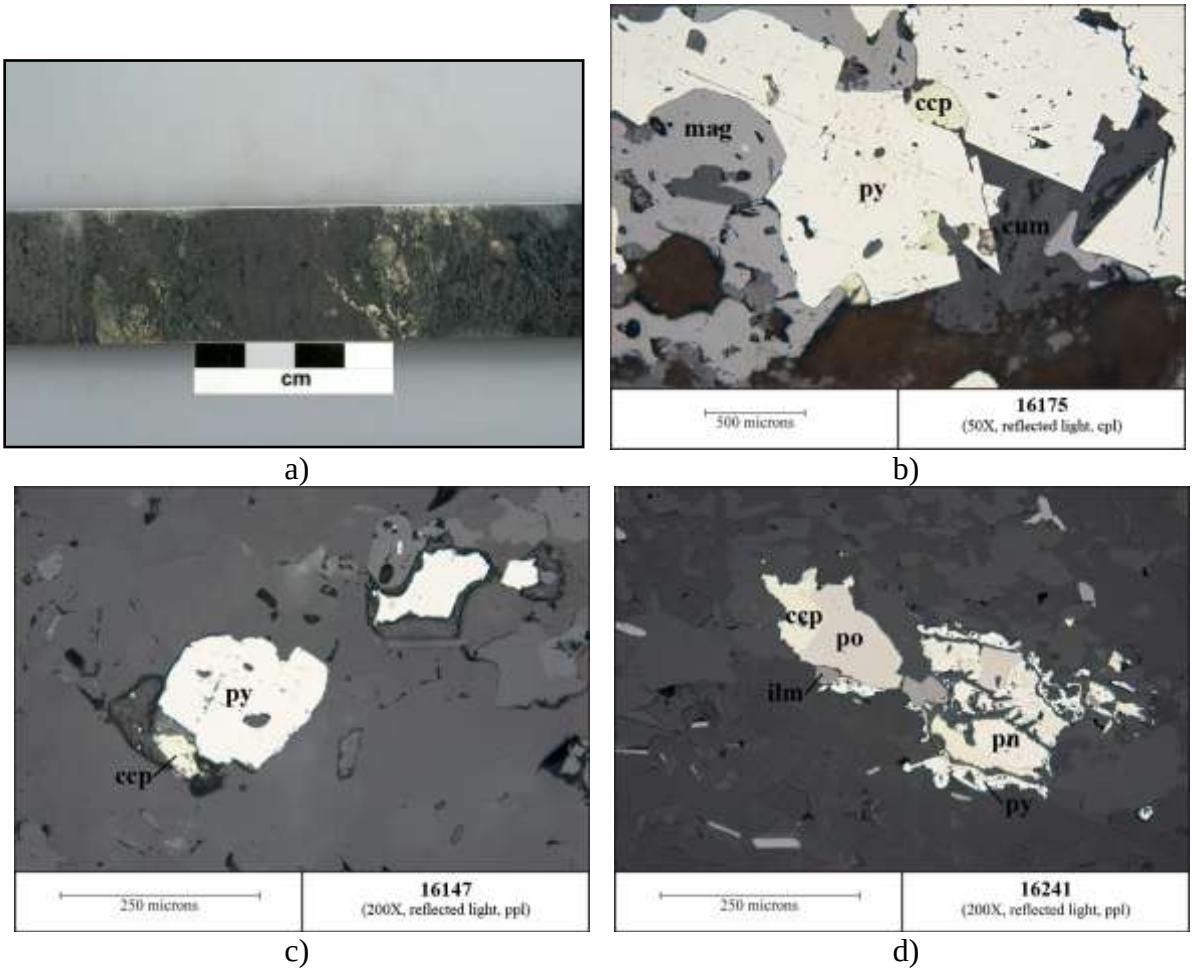


Figure 4. Photomicrographs illustrating the occurrence of sulfide minerals. a) Photograph of sample 16175 with bands containing pyrite and chalcopyrite. b) Photomicrograph of pyrite intergrown with magnetite. Note pyrite contains inclusions of chalcopyrite. Note also that the sulfides are unaltered. c) Photomicrograph of disseminated pyrite and chalcopyrite grains. d) Photomicrograph of irregular grain composed of pyrite, pyrrhotite, chalcopyrite, and pentlandite.

Physical Characteristics

The twenty samples of drill core in this study contain textures and fabrics typical of metamorphosed and deformed rocks. Most of the core samples are banded, gneissic, or foliated to some degree. The development of planar fabrics as seen in schist and gneiss are in

part controlled by the abundance and distribution of platy minerals. The platy minerals, biotite, muscovite, and chlorite, occur as disseminated flakes, decussate aggregates and networks, and along foliation planes (cleavage e.g.). Gneiss and schist contain bands rich in platy minerals Figures 5a and 5b). Platy minerals in some instances heal fractures in the rock (Figure 5c and 5d). The non-platy minerals, such as quartz and feldspar, typically occur in either granoblastic assemblages or as porphyroblasts (Figure 5b and 5d).

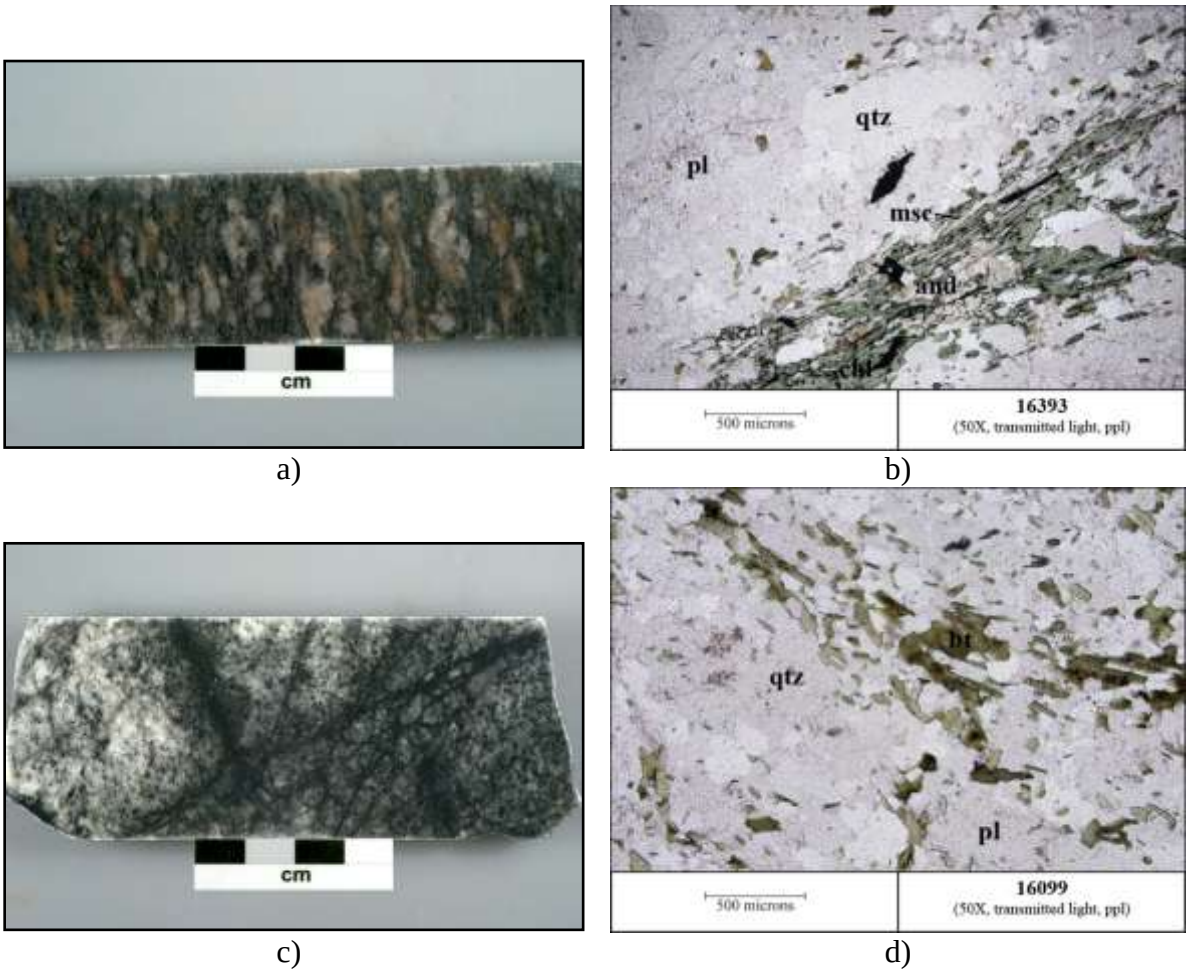


Figure 5. Photomicrographs illustrating the physical characteristics. a) Photograph of a gneiss, sample 16393. b) Photomicrograph of band composed of foliated muscovite and chlorite. c) Photograph of sample 16099 containing fractures healed by biotite. d) Photomicrograph of biotite occurring along fractures.

Some drill core samples show evidence of permeability. Iron formation sample 16441 contains a reddish band (Figure 6a) that has magnetite grains with partially oxidized margins (Figure 6b). The age of the oxidation of the magnetite is equivocal. However, the surficial oxidation of magnetite is similar to the oxidation of magnetite observed in weathering profiles of iron formation in Minnesota and Brazil. Garnet schist sample 16739 has a bleached appearance (Figure 6c) and contains fractures stained by iron oxides (Figure 6d). The secondary iron oxides along the fractures are likely the result of weathering of iron-rich

silicates adjacent to the fractures. Pyrite grains in sample 16739 are pervasively replaced by goethite. The oxidation of pyrite to goethite is often associated with surface weathering.

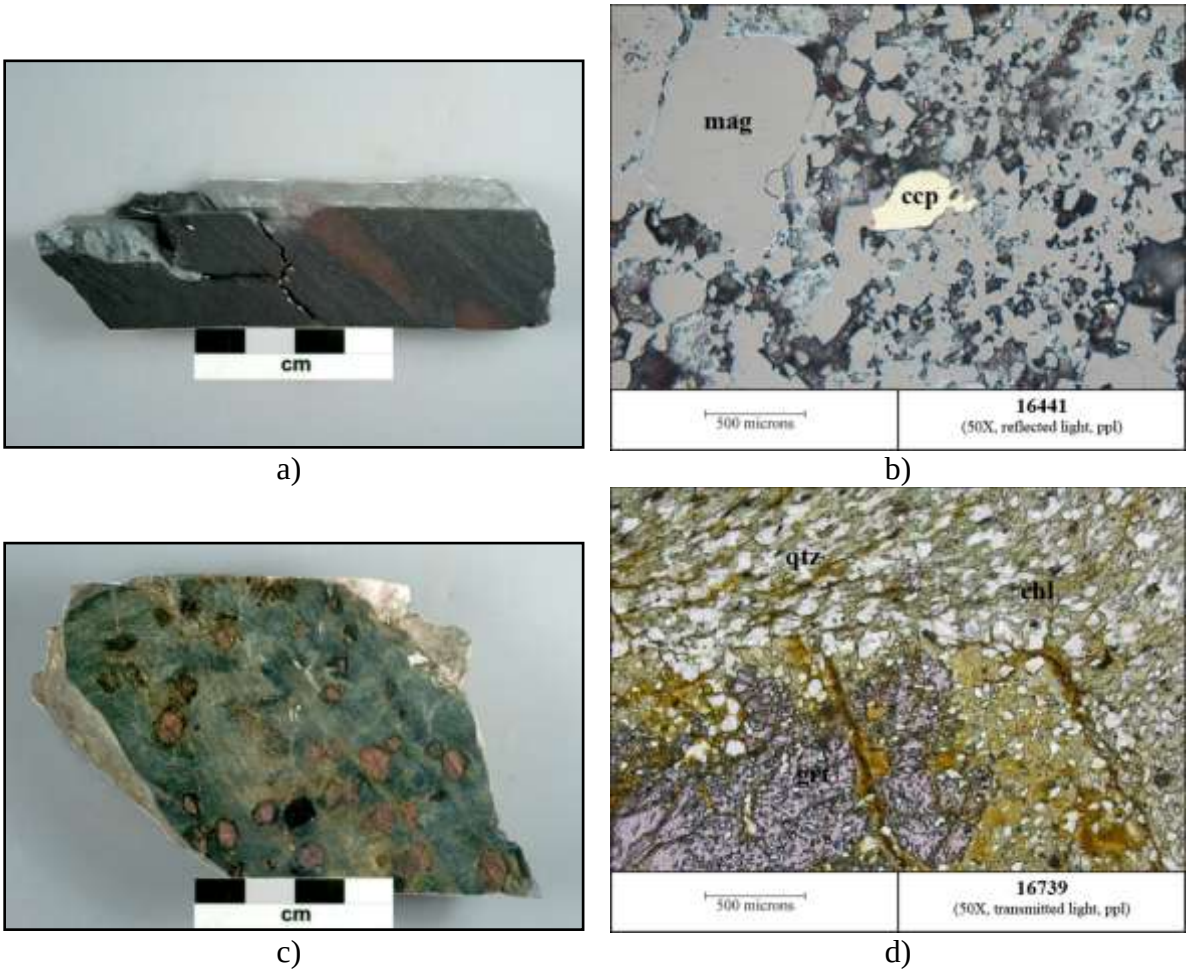


Figure 6. Photographs and photomicrographs illustrating permeability. a) Photograph of iron formation sample with red hematite bed. b) Photomicrograph of granular magnetite grains partially oxidized to hematite (white) along grain rims. c) Photograph of garnet schist sample 16739 with bleached zones and veinlets. d) Photomicrograph of iron-stained fractures cross-cutting sample 16739.

Discussion

Twenty samples of drill core were analyzed in this study. The samples contain mineral assemblages typical of at least amphibolite grade. Sixteen of the twenty samples contain sulfides. Only one sample, 16175, contained enough sulfide minerals such that their abundance could be determined by Rietveld analysis. The remaining sulfide bearing samples

contained sulfides at trace levels. No carbonate minerals were identified in samples in this study.

The major rock forming silicate minerals observed in this study include quartz, feldspar (plagioclase and alkali feldspar), amphibole (cummingtonite and hornblende), biotite, muscovite, and chlorite. The other major rock forming mineral is the oxide magnetite, which occurs in iron formation. The rocks observed in this study can be subdivided into five groups based on the relative abundance of the major rock forming minerals: quartz-feldspar rich, amphibolite (composed dominantly of amphibole and plagioclase), magnetite-rich, mica-rich (biotite and/or muscovite), and chlorite-rich (Table 3).

Table 3. Summary of rocks observed in this study by major rock forming minerals.

Quartz-feldspar-rich	Amphibolite	Mica-rich	Chlorite-rich	Iron formation
16095	16195	16137	16299	16175
16099	16241	16147	16397	16281
16151	16667	16355	16415	16441
		16393	16729	
		16467	16739	
			16745	

The minor silicate minerals observed in this study include: garnet (almandine), cordierite, staurolite, and epidote.

The combination of mineralogy and rock fabrics and textures will play a role in determining the size of rock fragments produced by blasting, handling, and weathering. Some of the sulfides not enclosed by resistant minerals (quartz and feldspar e.g.) will be more readily exposed. However, the same process will result in greater surface area and expose silicates with potential neutralization capacity.

While no carbonate minerals were identified in this study it does not mean that carbonate minerals are not present. This study used thin sections and polished mounts to identify minerals and it is likely that the areas selected for thin sections and polished mounts may not have contained carbonate minerals that may have been present in other parts of the same drill core sample. Carbonate minerals commonly form along fractures and joints. Rocks with carbonate cemented joints and fractures tend to break along these surfaces. Samples that have chemical analyses that indicate the presence of carbonate minerals could be re-examined both macroscopically and microscopically for the presence of carbonate minerals.

No asbestos was identified in the rocks studied. However, the metamorphic and structural conditions necessary for the growth of asbestiform amphiboles are present. Special attention should be given to logging with careful attention to the presence of fibrous amphiboles. If fibrous amphiboles are identified in the field or in core, samples should be collected and sent to a lab where they can be determined to be either asbestos or fibrous amphiboles. This

determination can be done with a combination of polarized light microscopy and scanning electron microscopy.

Respectfully Submitted,

Rodney C. Johnson, Ph.D.
Rod Johnson & Associates, Inc.

References

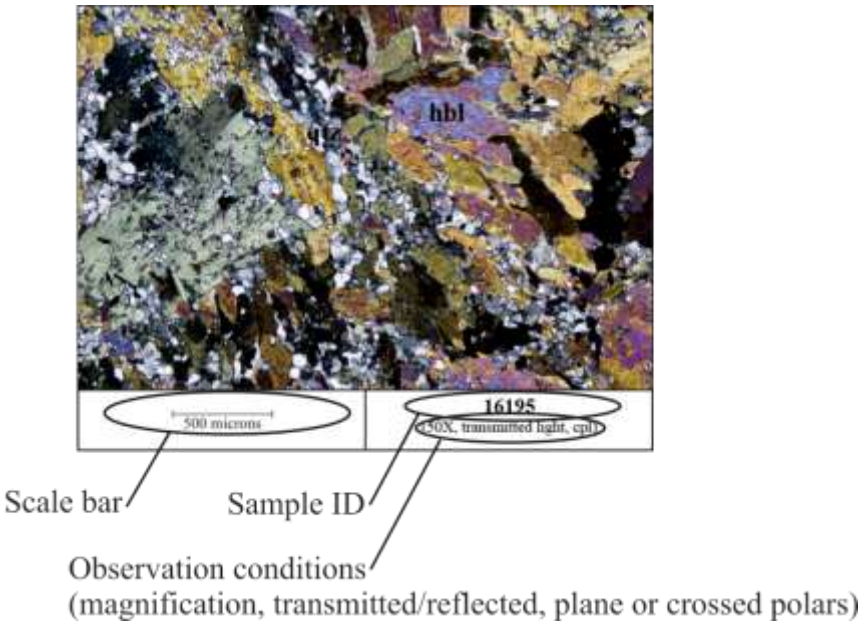
Downs, R.T. and Hall-Wallace, M. (2003), The American Mineralogist Crystal Structure Database. American Mineralogist 88, 247-250.

Goldstein, J.I., et.al., 2003, Scanning Electron Microscopy and X-ray Microanalysis, Third Edition: Springer, 690 p.

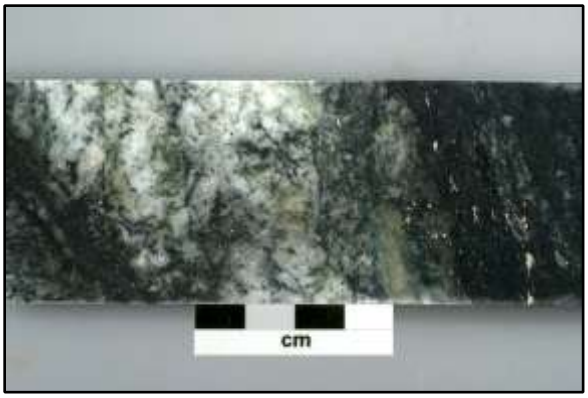
Match!, Version 1.10, CRYSTAL IMPACT, Rauthausgasse 30, 5311 Bonn, Germany.

Raudsepp. M. and Pani, E. (2003): Application of Rietveld Analysis to Environmental Mineralogy. Mineralogical Association of Canada, Short Course 31, Chapter 8, 165-180.

Appendix A. Descriptions of Samples from Mary River

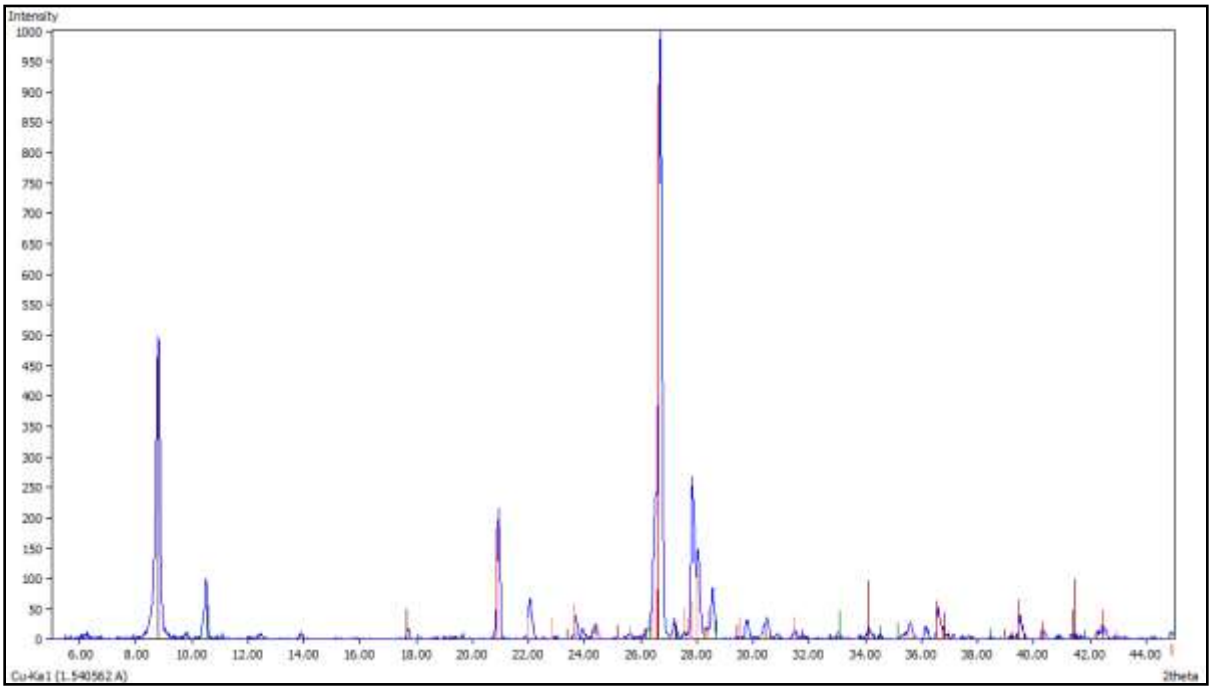


Sample: 16095
Baffinland Iron Mines Field Identification: Greywacke
Classification: Meta Feld spathic-wacke



Photograph of sample 16095. Note the massive white quartz-feldspar layer in biotite-hornblende schist with disseminated sulfides.

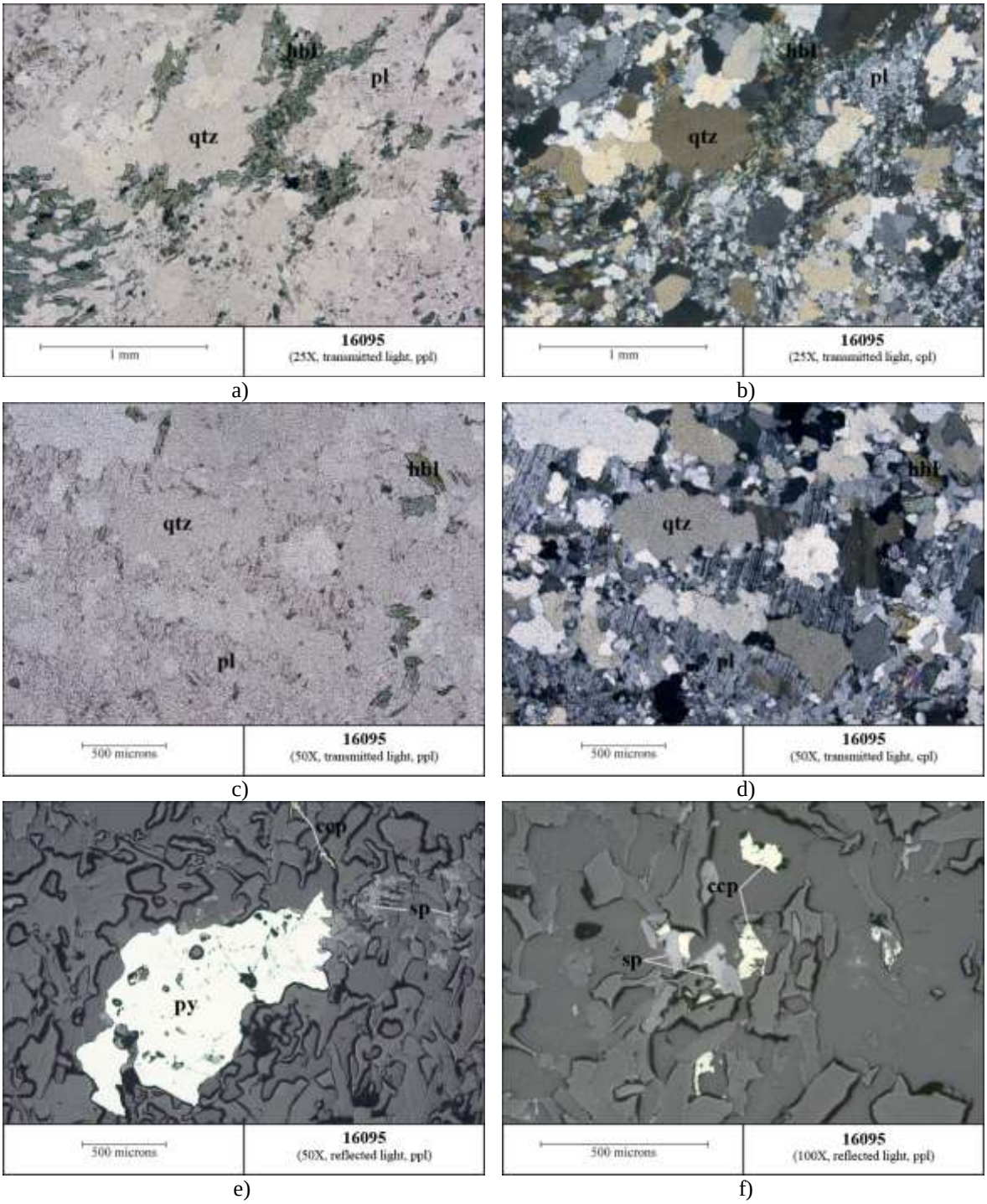
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Quartz	40.3
Andesine	30.3
Biotite	22.1
Hornblende	7.3

Optical Microscopy:



Photomicrographs of sample 16095. a) and b) Photomicrographs of granoblastic quartz, plagioclase porphyroblasts (cloudy grains), and irregular branching masses of decussate hornblende. c) and d) Photomicrographs of granoblastic quartz, plagioclase porphyroblasts, and disseminated hornblende. e) Photomicrograph of pyrite porphyroblast and disseminated sphalerite. f) Photomicrograph of disseminated chalcopyrite and sphalerite. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	Na2O	Al2O3	SiO2	K2O	CaO	n
Andesine	8.23	24.31	60.30	0.31	6.80	15

	Na2O	Al2O3	SiO2	K2O	TiO2	MnO	FeO	n
Biotite	12.29	16.03	39.48	10.86	2.38	0.25	18.72	15

	Al2O3	SiO2	S	CaO	FeO	Zn	Cd	n
Pyrite	0.2	0.2	55.1	0.0	44.5	0.0	0.0	3
Sphalerite	0.8	0.4	32.2	0.1	2.1	62.6	1.9	3

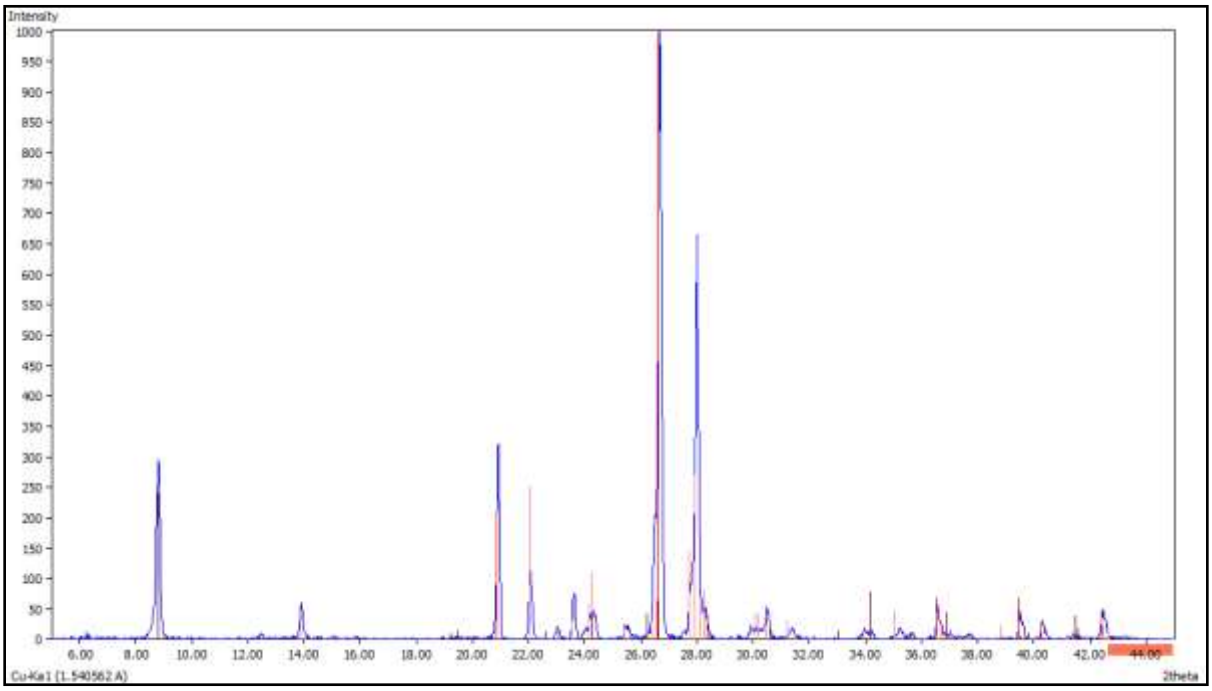
Description:

Granular, composed of granoblastic quartz, plagioclase (andesine) porphyroblasts, and decussate hornblende and biotite. The sulfides pyrite, chalcopyrite, and sphalerite occur in trace amounts as disseminated grains. Trace accessory minerals include sphene and zircon. Quartz occurs in pods and lenses of granoblastic aggregates in a matrix of granoblastic quartz and plagioclase. Plagioclase occurs as porphyroblasts and in the matrix. Hornblende occurs as idioblastic grains in decussate aggregates and as disseminated grains. Pyrite occurs in trace amounts as disseminated xenoblastic porphyroblasts. Sphalerite and chalcopyrite occur as disseminated grains. No carbonate minerals were identified in this sample.

Sample: 16099
Baffinland Iron Mines Field Identification: Mica amphibole chlorite schist
Classification: Meta feldspathic-arenite

Photograph of sample 16099. Note the network of fractures healed by biotite.

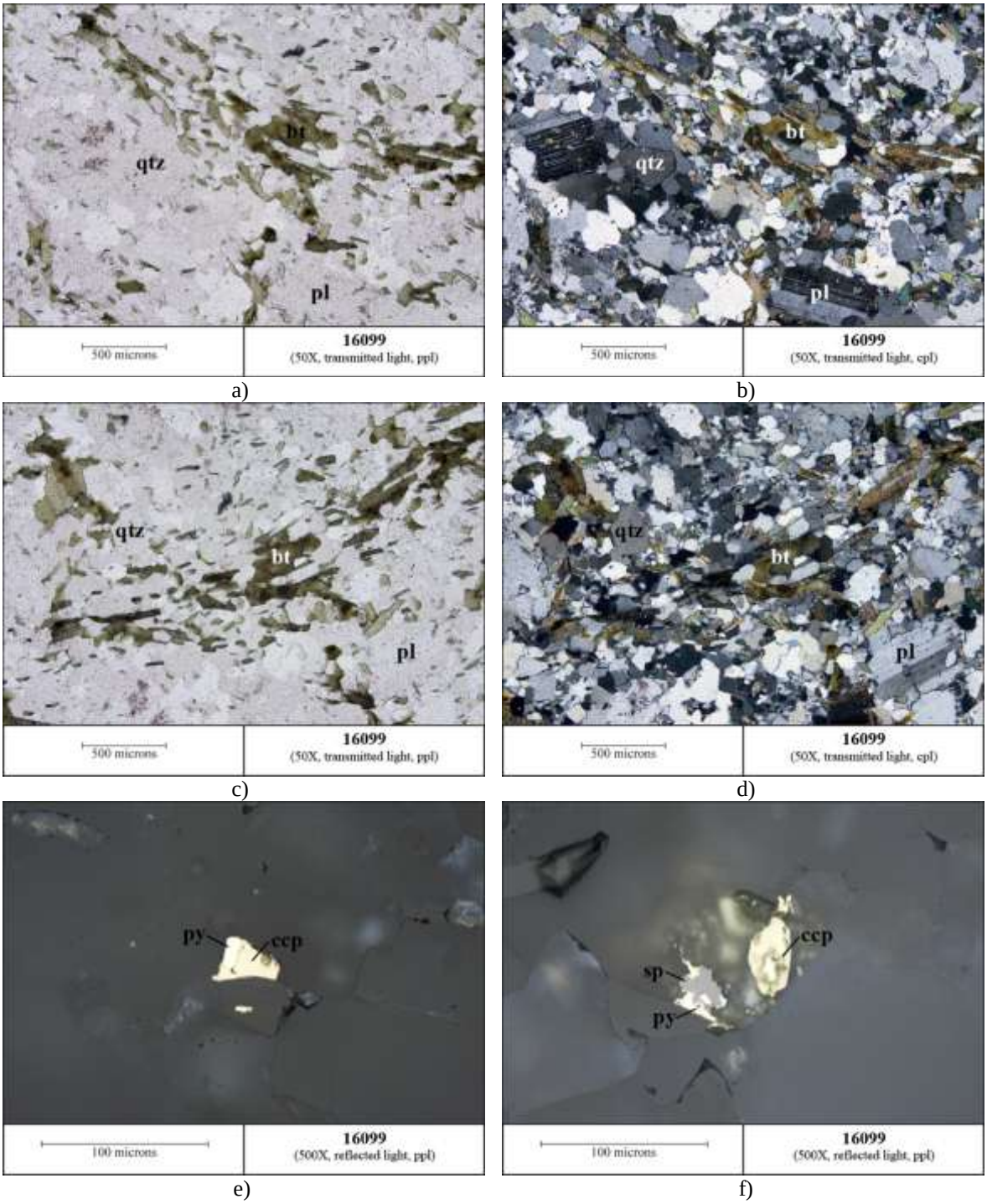
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Albite	51.2
Quartz	33.9
Biotite	14.9

Optical Microscopy:



Photomicrographs of sample 16099. a) and b) Photomicrographs of granoblastic quartz and plagioclase with disseminated flakes of biotite. c) and d) Photomicrographs of granoblastic quartz and plagioclase with disseminated flakes of biotite. e) Photomicrograph of grain composed of pyrite and chalcopyrite. f) Photomicrograph of chalcopyrite grain adjacent to grain composed of pyrite and sphalerite. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	Na2O	Al2O3	SiO2	CaO	FeO	n
Albite	10.4	22.1	63.6	3.7	0.2	3

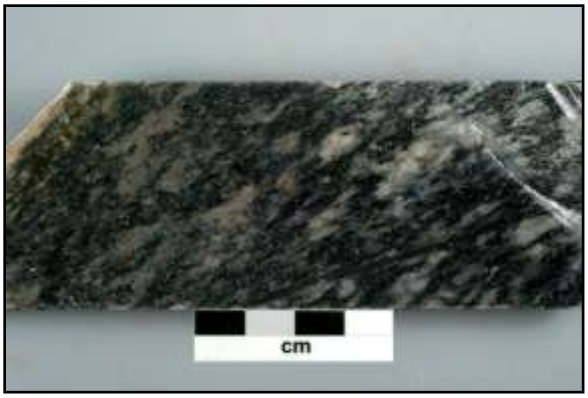
	MgO	Al2O3	SiO2	K2O	TiO2	FeO	n
Biotite	11.5	18.4	39.0	11.2	1.2	18.7	6

	MgO	Al2O3	SiO2	S	K2O	CaO	Fe	Cu	Zn	Cd	n
Pyrite	0.0	0.5	0.2	55.5	0.0	0.0	43.8	0.0	0.0	0.0	2
Chalcopyrite	0.0	2.6	4.6	34.4	1.0	0.3	27.2	29.7	0.0	0.0	6
Sphalerite	0.1	2.9	5.0	33.6	1.0	0.3	22.4	24.4	9.7	0.6	2

Description:

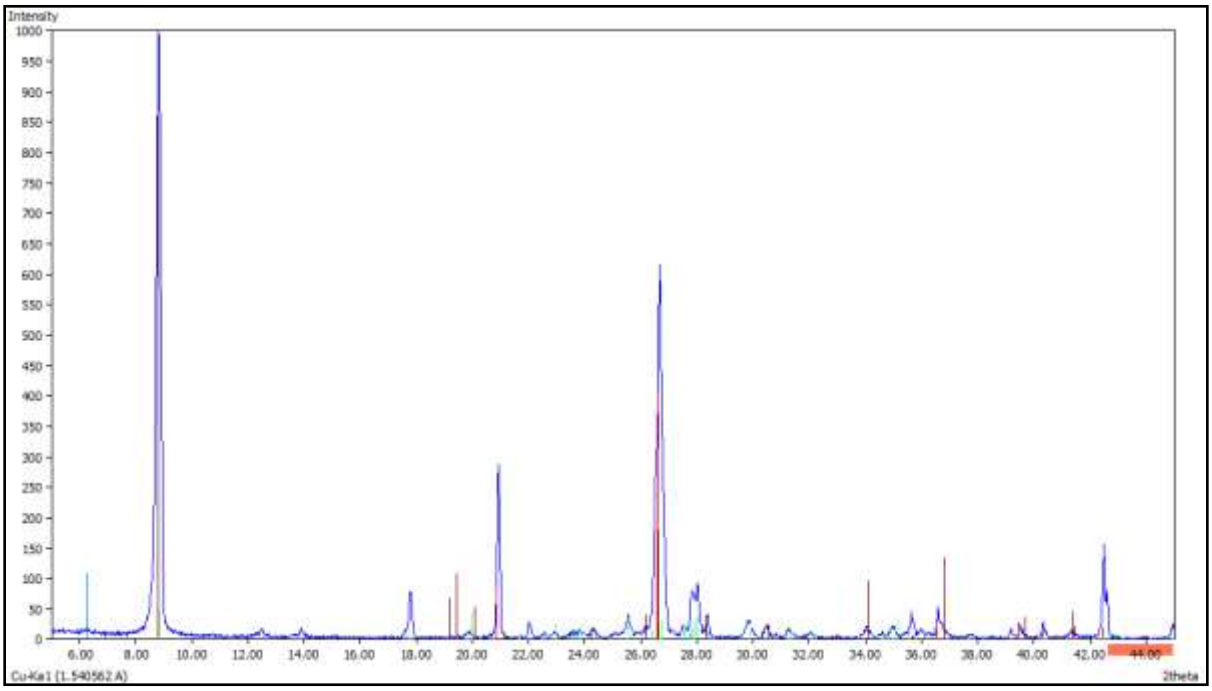
Granoblastic, with healed fractures, composed of granoblastic quartz and plagioclase (albite), and disseminated biotite flakes. The sulfides pyrite, chalcopyrite, and sphalerite occur in trace amounts as disseminated grains. Quartz and plagioclase occur as a granoblastic matrix. Biotite occurs as disseminated flakes and as fracture filling. Pyrite, sphalerite, and chalcopyrite occur in trace amounts as disseminated grains. No carbonate minerals were identified in this sample.

Sample: 16137
Baffinland Iron Mines Field Identification: Ab_QF gneiss
Classification: Biotite-quartz-feldspar gneiss



Photograph of sample 16137.

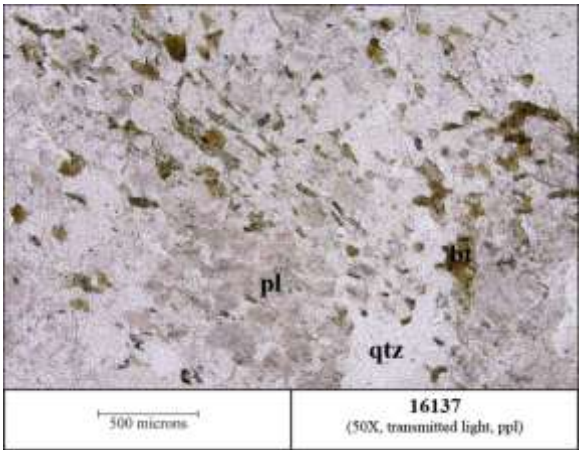
X-ray Diffraction



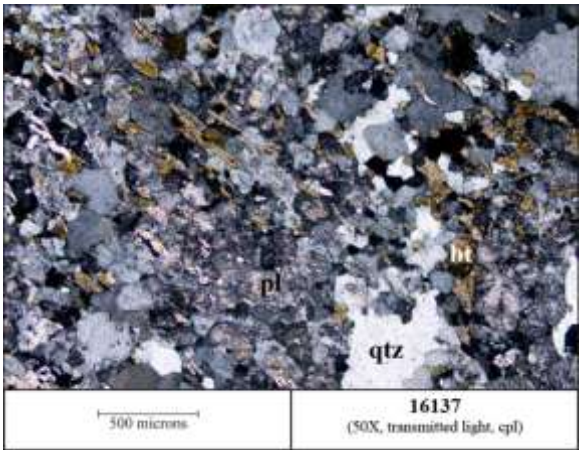
Rietveld analysis

Phase	Weight%
Biotite	67.3
Quartz	26.6
Andesine	6.1

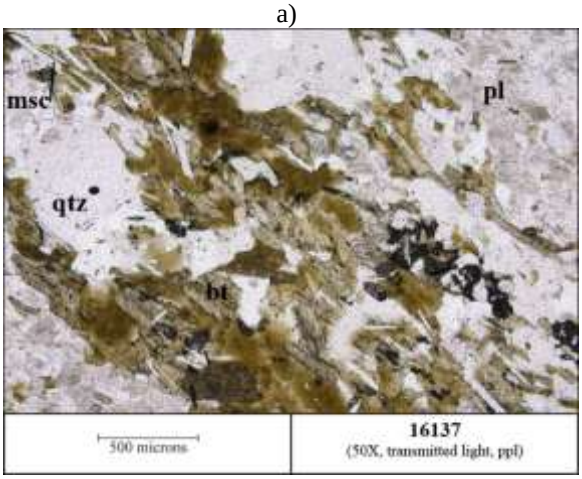
Optical Microscopy:



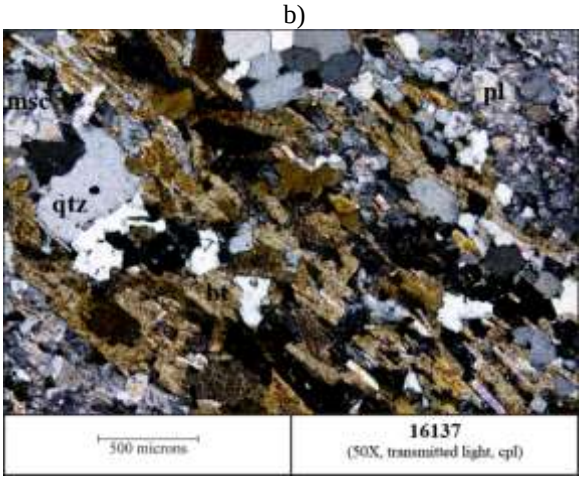
a)



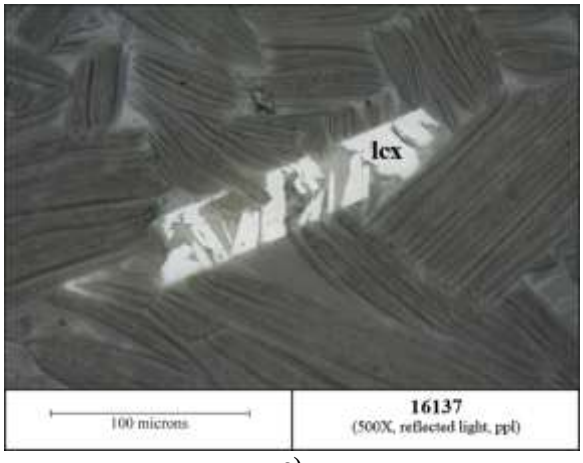
b)



c)



d)



e)

Photomicrographs of sample 16137. a) and b) Photomicrographs band composed of granoblastic quartz and feldspar with disseminated biotite. c) and d) Photomicrographs of band composed of foliated biotite with granoblastic quartz and feldspar. e) Photomicrograph of ilmenite lath replaced by leucoxene.

EDS Analyses

	Na2O	MgO	Al2O3	SiO2	K2O	CaO	TiO2	MnO	FeO	Ba	n
K-feldspar 1	1.0	0.0	18.4	63.8	15.3	0.0	0.0	0.0	0.0	1.5	3
K-feldspar 2	5.2	0.2	28.9	57.6	7.1	0.0	0.2	0.1	0.7	0.0	4
Andesine	9.0	0.0	24.0	60.3	0.0	6.7	0.0	0.0	0.0	0.0	4

	Na2O	MgO	Al2O3	SiO2	K2O	CaO	TiO2	MnO	FeO	n
Muscovite	0.1	5.5	28.5	48.5	8.5	1.3	1.9	0.0	5.6	6
Biotite	0.0	6.9	17.2	36.0	10.2	0.0	3.6	0.3	25.8	9

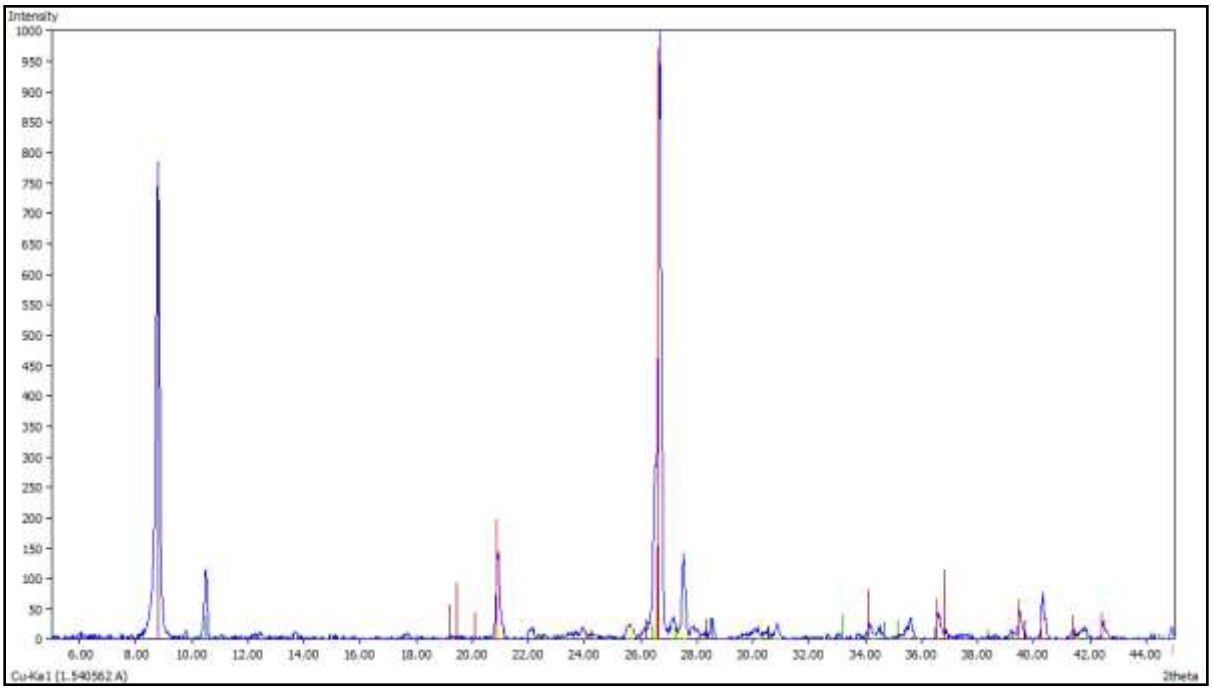
Description:

Foliated, composed of alternating bands of granoblastic quartz and feldspar and bands of biotite, quartz and feldspar. Quartz occurs in a granoblastic matrix with plagioclase (andesine) and disseminated biotite flakes. Plagioclase and minor k-feldspar occur in the granoblastic matrix. Biotite occurs as in foliated bands with quartz and feldspar and as disseminated flakes. Leucoxene occurs in trace amounts of disseminated leucoxene laths after ilmenite. No sulfide or carbonate minerals were identified in this sample.

Sample: 16147
Baffinland Iron Mines Field Identification: Ab_QF gneiss
Classification: Biotite-quartz-feldspar gneiss

Photograph of sample 16147.

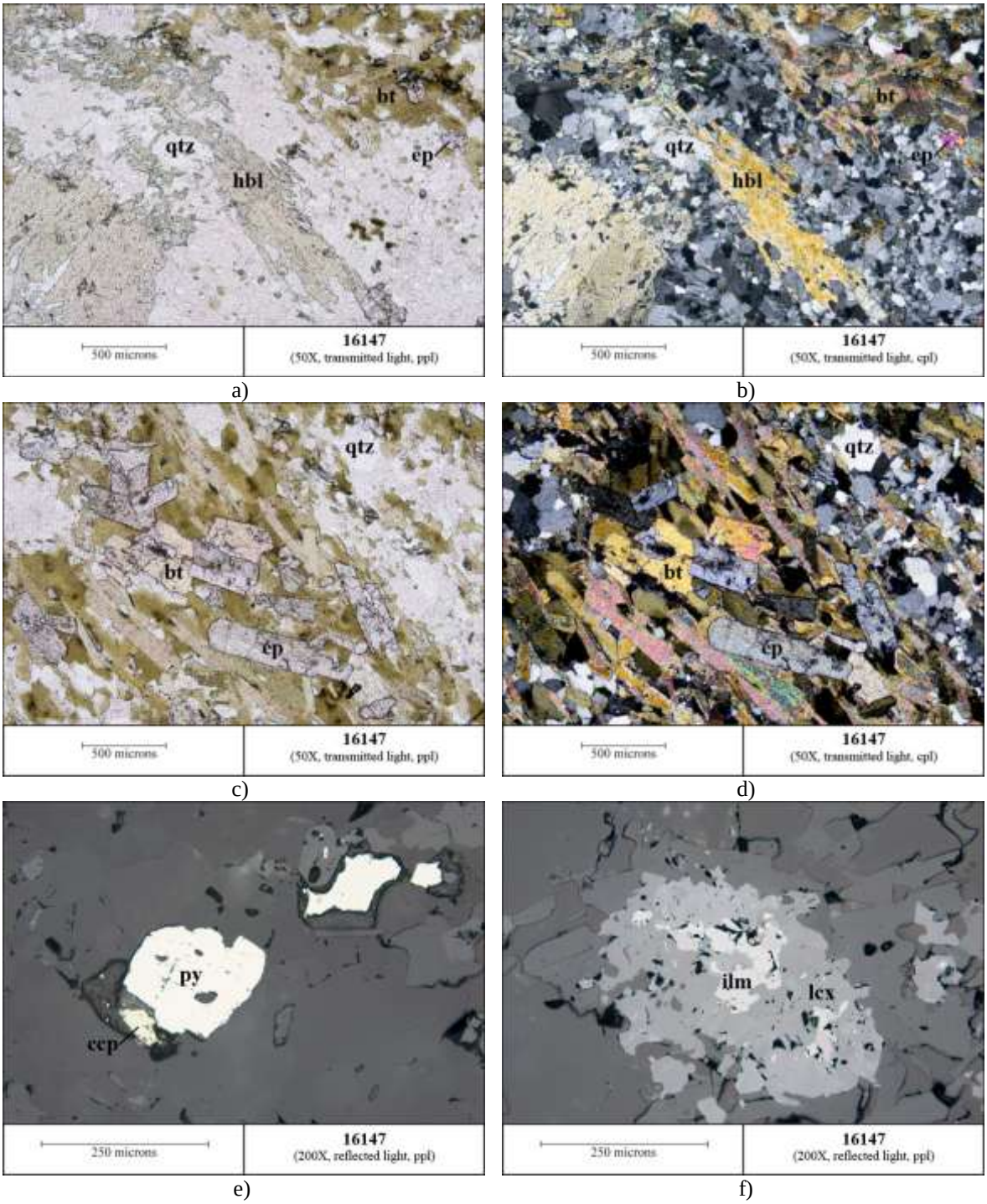
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Biotite	49.9
Quartz	32.9
Microcline	10.5
Hornblende	6.7

Optical Microscopy:



Photomicrographs of sample 16147. a) and b) Photomicrographs hornblende porphyroblasts and decussate biotite in a matrix of granoblastic quartz and k-feldspar. c) and d) Photomicrographs of band composed of foliated biotite and oriented epidote laths in a matrix granoblastic quartz and feldspar. e) Photomicrograph of disseminated pyrite and chalcopyrite grains. d) Photomicrograph of disseminated ilmenite grain with shell of leucoxene. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	Na2O	Al2O3	SiO2	K2O	CaO	Ba	n
k-feldspar	0.8	18.2	64.4	16.2	0.0	0.5	10
Andesine	8.1	25.0	58.9	0.1	7.9	0.0	8

	MgO	Al2O3	SiO2	K2O	CaO	TiO2	MnO	FeO	n
Biotite	13.0	15.3	39.2	9.3	0.1	1.8	0.8	20.5	7
Hornblende	0.0	18.9	35.8	0.0	27.0	8.7	0.2	9.4	9

	Al2O3	S	Fe	Cu	n
Pyrite	0.4	55.8	43.8	0.0	10
Chalcopyrite	0.7	37.7	31.2	30.4	8

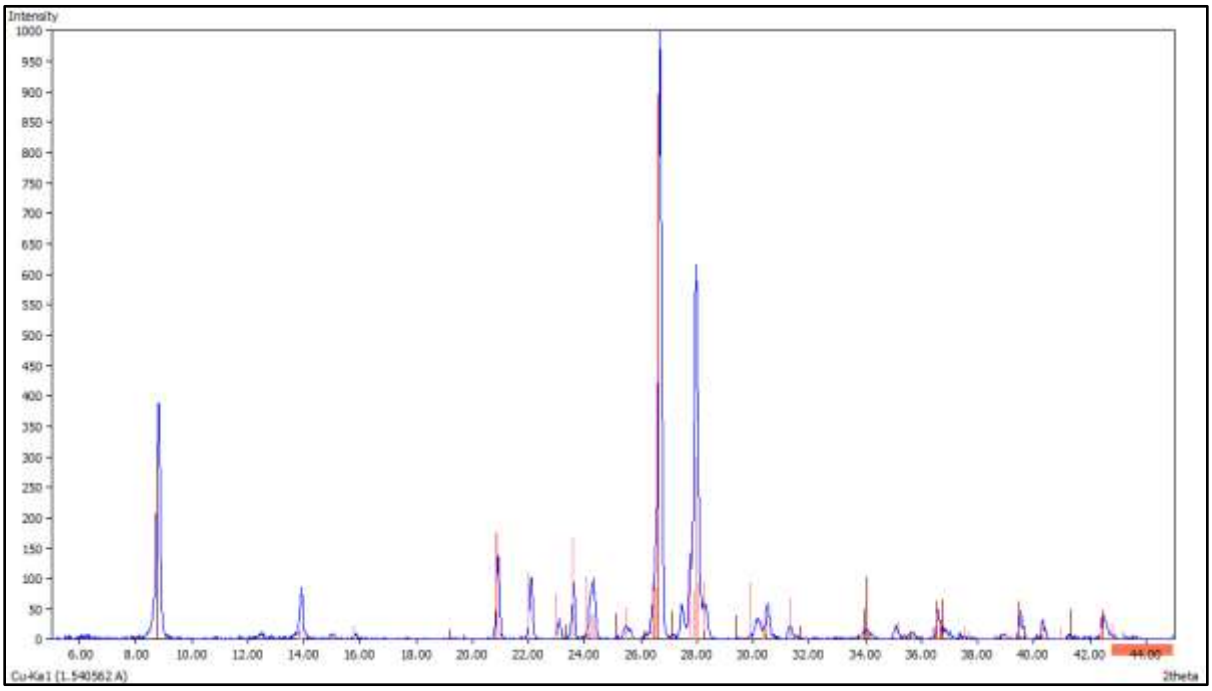
Description:

Foliated, composed of alternating bands of biotite, quartz and feldspar and bands composed of granoblastic quartz and feldspar. Biotite occurs in foliated bands with granoblastic quartz and feldspar (k-feldspar). Quartz occurs in a granoblastic matrix with k-feldspar and minor plagioclase (andesine). Epidote occurs in trace amounts as laths with foliated biotite. Trace amounts of pyrite and chalcopyrite occur as disseminated grains. Ilmenite occurs as disseminated grains with shells of leucoxene. No carbonate minerals were identified in this sample.

Sample: 16151
Baffinland Iron Mines Field Identification: Greywacke
Classification: Meta feldspathic-wacke

Photograph of sample 16151. Note the granular texture.

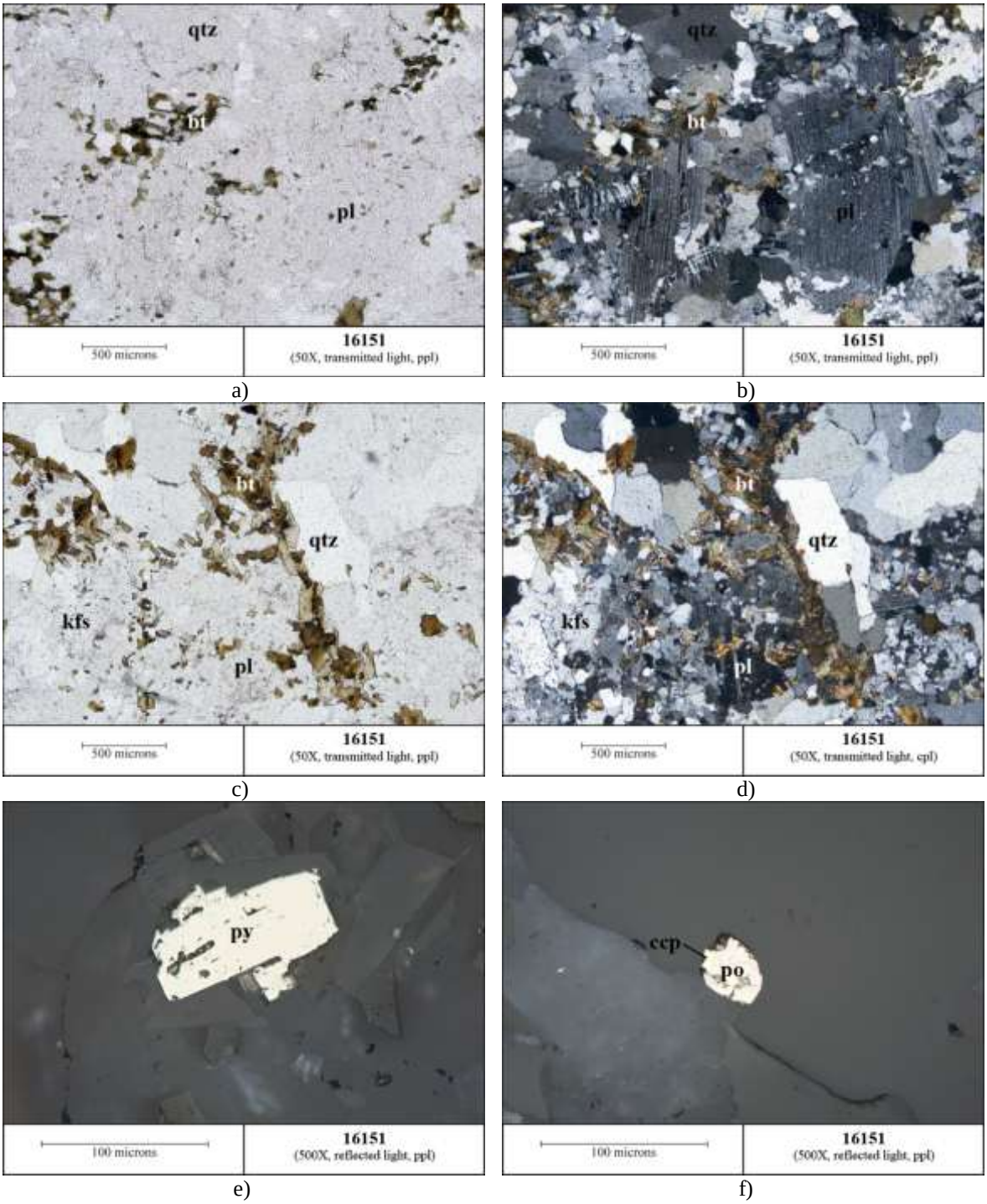
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Oligoclase	56.6
Quartz	28.0
Biotite	15.4

Optical Microscopy:



Photomicrographs of sample 16151. a) and b)Photomicrograph of plagioclase and quartz phenocrysts in a matrix of granoblastic plagioclase and quartz.. c) and d) Photomicrograph of granoblastic quartz aggregates in a matrix of granoblastic quartz and feldspar. e) Photomicrograph idioblastic pyrite. f) Photomicrograph rounded pyrrhotite grain with minor chalcopyrite. Note that the sulfides are unaltered and are enclosed in silicate minerals**.**

EDS Analyses

	Na2O	Al2O3	SiO2	K2O	CaO	n
Oligoclase	11.1	21.1	65.1	0.1	2.6	7

	MgO	Al2O3	SiO2	K2O	TiO2	MnO	FeO	n
Biotite	11.4	17.1	39.1	10.6	3.2	0.2	18.5	11

	Al2O3	SiO2	S	Fe	n
Pyrite	0.3	0.1	55.5	44.2	5

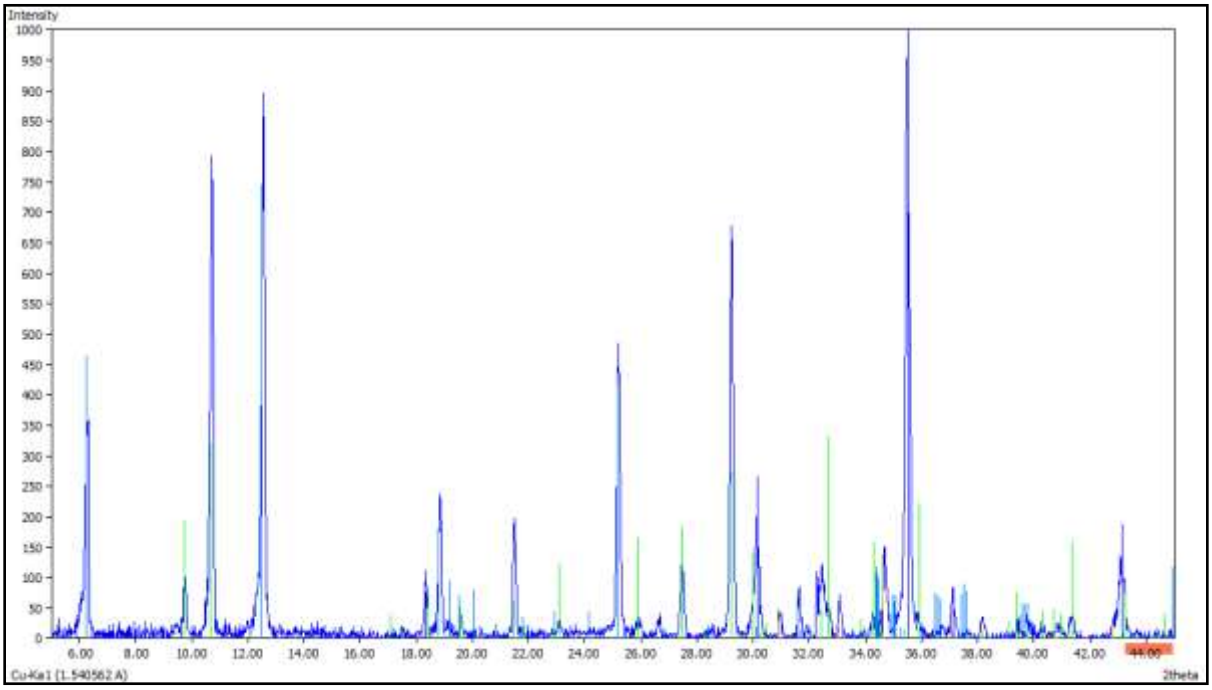
Description:

Granular, composed of plagioclase and granoblastic quartz phenocrysts in a matrix of granoblastic quartz and feldspar with disseminated and irregular decussate aggregates of biotite. Plagioclase (oligoclase) occurs as relatively coarse phenocrysts with irregular grain margins and in a granoblastic matrix with quartz and minor k-feldspar. Biotite occurs as disseminated flakes and in irregular decussate aggregates. Pyrite, pyrrhotite, and sphalerite occur in trace amounts as disseminated grains. No carbonate minerals were identified in this sample.

Sample: 16175
Baffinland Iron Mines Field Identification: HG_IF 60-72.36% Fe 60-100% mag\
Classification: Cummingtonite-magnetite-chlorite iron formation

Photograph of sample 16175. Note the irregular lenses containing sulfides.

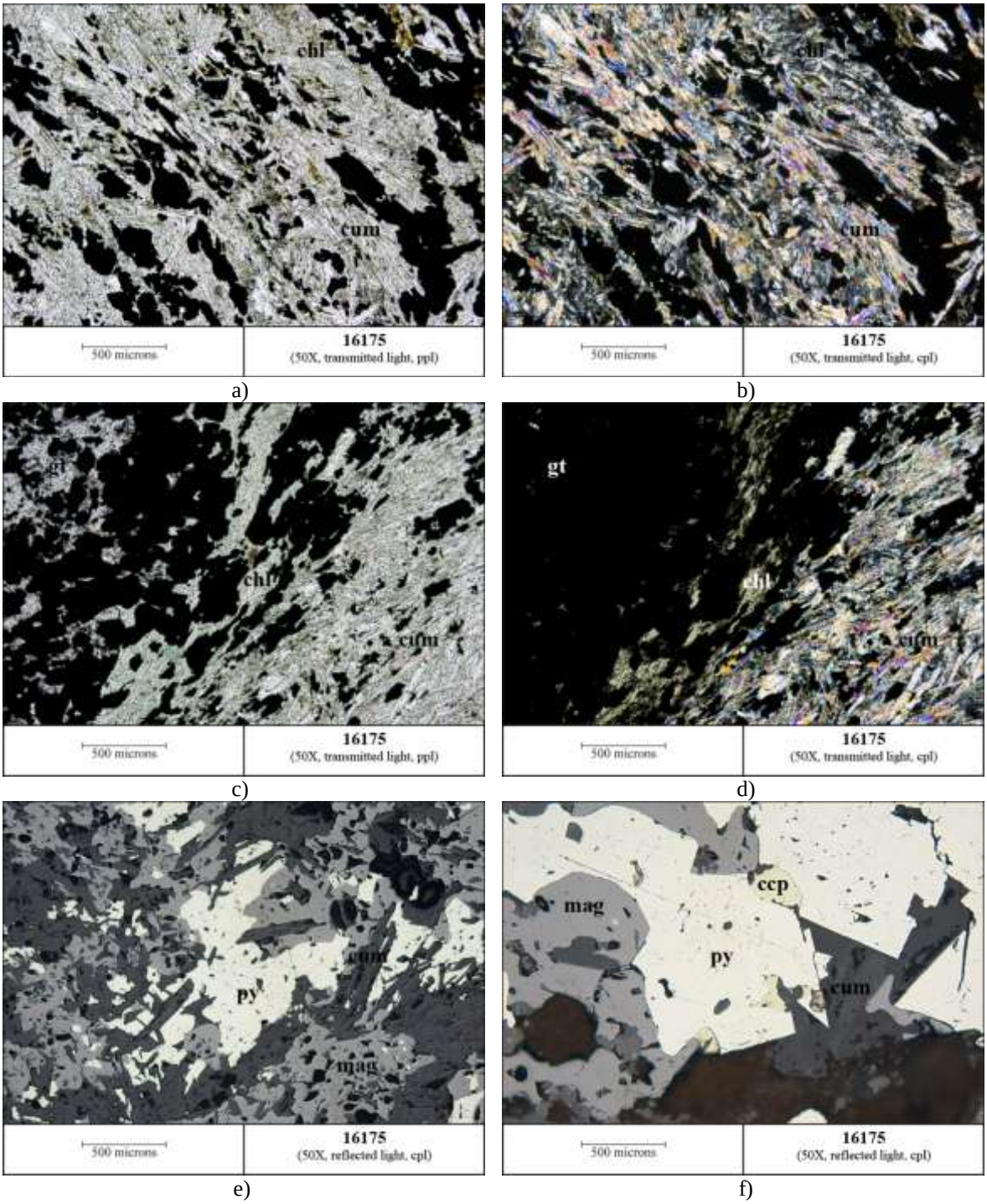
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Cummingtonite	35.3
Magnetite	33.2
Chlorite	25.9
Almandine	3.8
Pyrite	1.8

Optical Microscopy:



Photomicrographs of sample 16175. a) and b) Photomicrographs of foliated to decussate cummingtonite and magnetite (opaque). c) and d) Photomicrograph of foliated to decussate cummingtonite, chlorite, magnetite (opaque), and garnet porphyroblast. e) Photomicrograph of magnetite intergrown with pyrite. f) Photomicrograph of pyrite intergrown with magnetite. Note pyrite contains inclusions of chalcopyrite. Note that the sulfides are unaltered.

EDS Analyses

	MgO	Al2O3	SiO2	S	CaO	MnO	FeO	N
Cummingtonite	14.10	0.55	54.95	0.03	0.03	2.98	27.36	8
Chlorite	13.88	22.35	31.57	0.00	0.27	3.17	28.77	4

	Al2O3	SiO2	S	Fe	Cu	n
Pyrite	0.4	0.1	52.5	47.0	0.0	6
Chalcopyrite	0.6	0.0	36.7	30.7	32.0	2

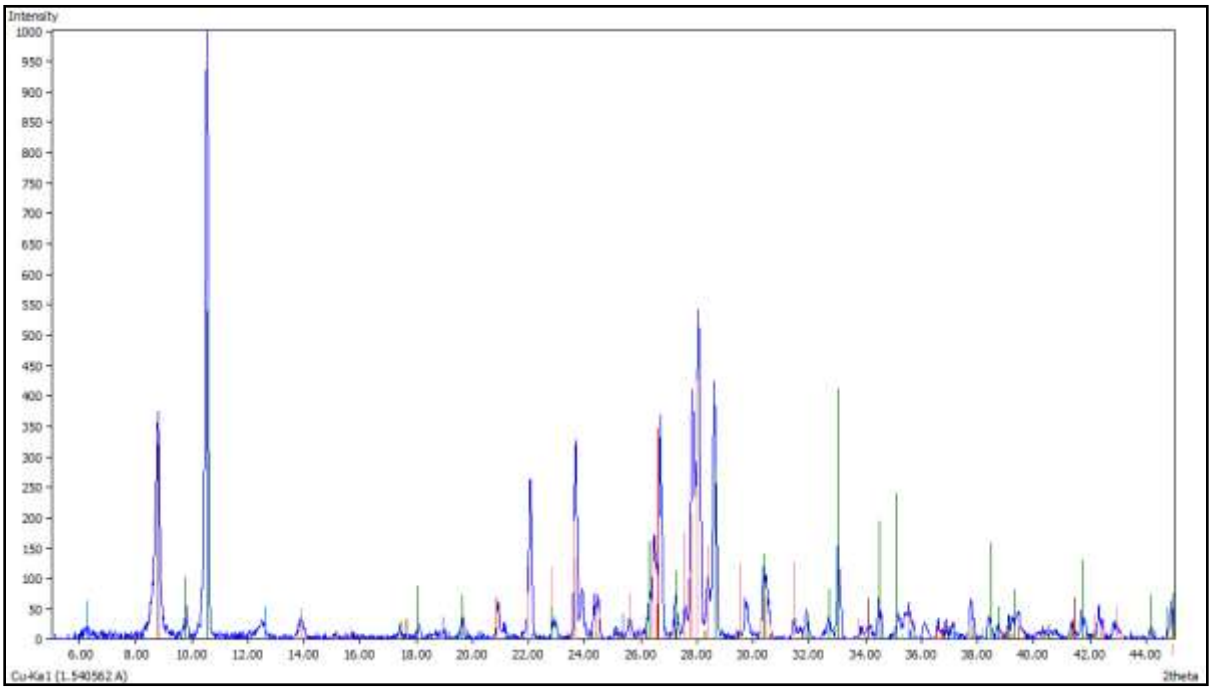
Description:

Massive to banded, foliated to decussate cummingtonite and chlorite, granular magnetite, and minor garnet porphyroblasts. Cummingtonite occurs as foliated to decussate aggregates in bands and between magnetite grains. Magnetite is granular and occurs in massive aggregates and as disseminated grains. Chlorite occurs as foliated to decussate aggregates in bands and between magnetite grains. Garnet (almandine) occurs as disseminated porphyroblasts. Garnet porphyroblasts commonly contain magnetite inclusions. Pyrite occurs in minor amounts as irregular aggregates and as disseminated grains. Chalcopyrite occurs in trace amounts as disseminated grains or as inclusions in pyrite. No carbonate minerals were identified in this sample.

Sample: 16195
Baffinland Iron Mines Field Identification: Greywacke
Classification: Biotite amphibolite

Photograph of sample 16195.

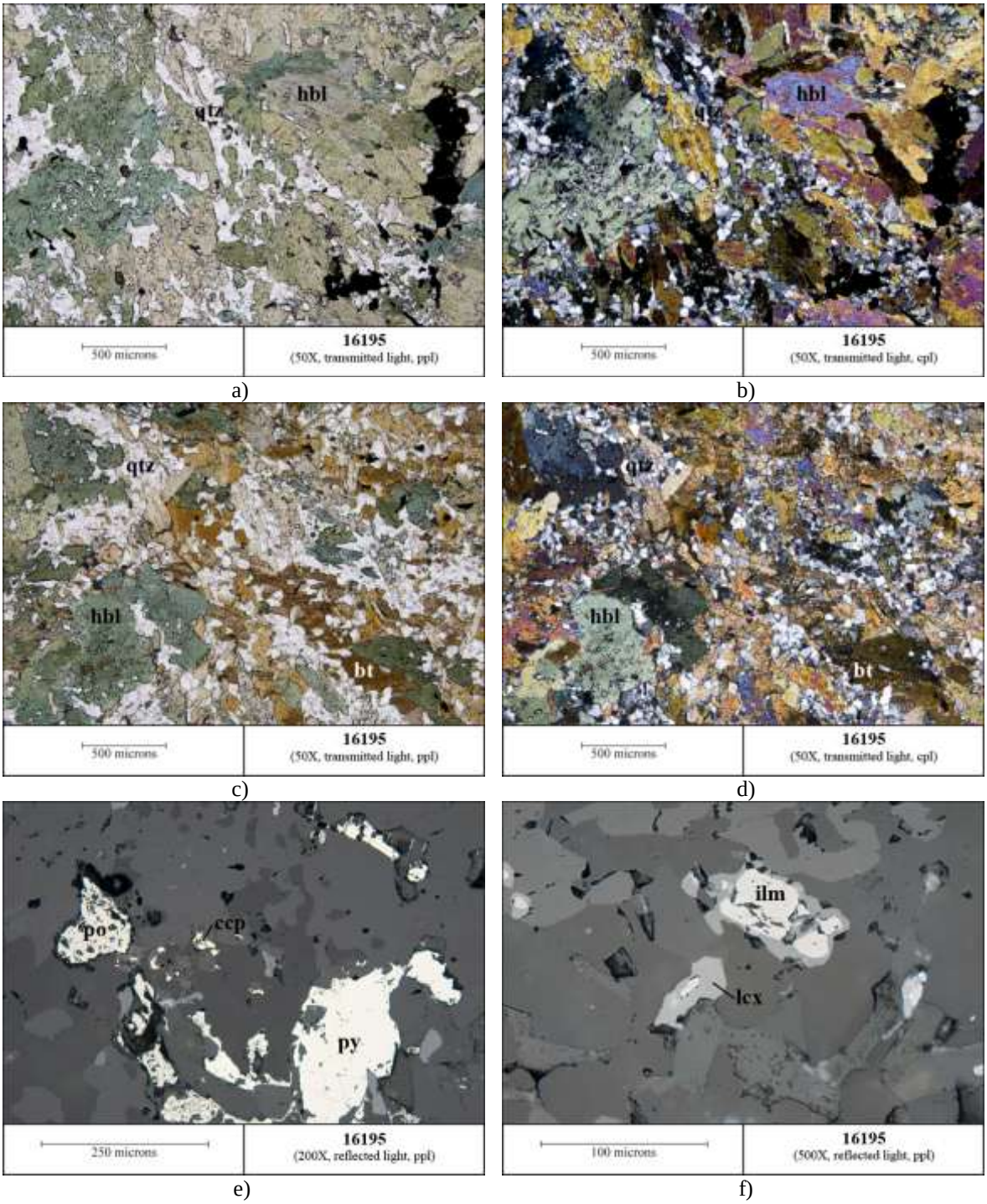
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Hornblende	49.5
Labradorite	34.9
Biotite	10.9
Quartz	4.6
Chlorite	0.2

Optical Microscopy:



Photomicrographs of sample 16195. a) and b) Photomicrographs of decussate hornblende in a matrix of granoblastic plagioclase and quartz. c) and d) Photomicrographs hornblende porphyroblasts in a matrix of granoblastic biotite, plagioclase and quartz. e) Photomicrograph of disseminated anhedral grains of pyrite, pyrrhotite and chalcopyrite. f) Photomicrograph of disseminated ilmenite grains with .rims of leucoxene. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	Na2O	Al2O3	SiO2	CaO	n
Labradorite	7.8	25.6	57.9	8.6	7

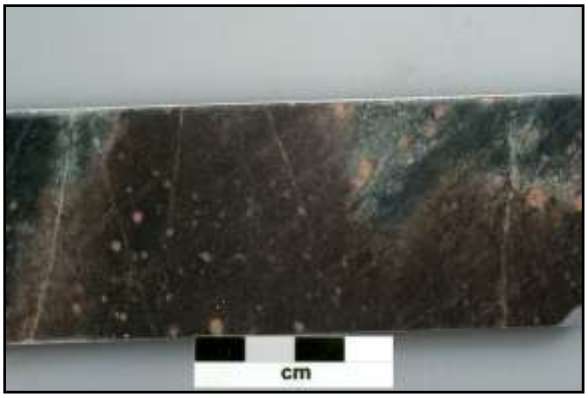
	Na2O	MgO	Al2O3	SiO2	K2O	CaO	TiO2	Cr	MnO	FeO	n
Hornblende	1.4	8.8	11.8	44.7	0.5	13.2	0.5	0.0	0.9	18.2	**7**
Biotite	0.1	11.3	16.7	37.8	9.6	0.0	3.0	0.0	0.3	21.1	**7**

	MgO	Al2O3	SiO2	S	Fe	Co	Ni	Cu	n
Pyrite	0.0	0.2	0.0	55.1	44.6	0.0	0.0	0.0	**2**
Pentlandite	0.2	1.5	0.4	36.3	25.9	0.0	35.7	0.0	**3**
Co-Pentlandite	0.0	0.5	0.0	39.0	18.9	10.2	31.4	0.0	**1**
Chalcopyrite	0.0	1.0	0.0	37.8	30.2	0.0	0.0	31.0	**1**

Description:

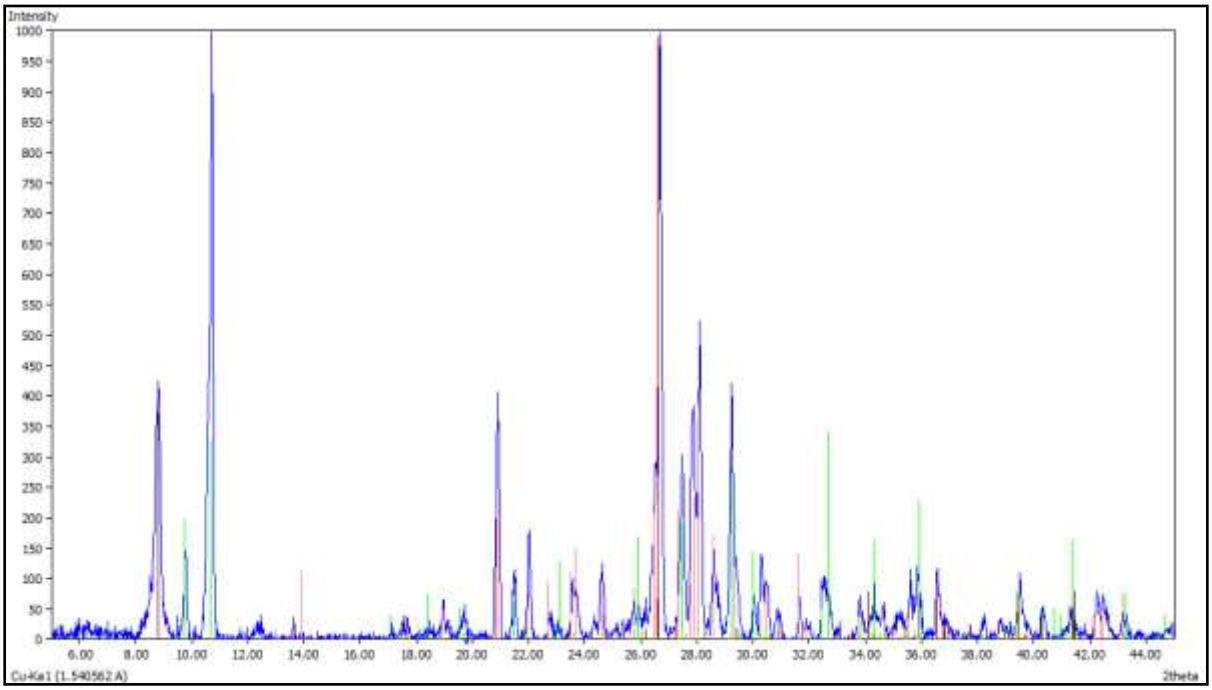
Granoblastic, composed of hornblende porphyroblasts in a matrix of granoblastic plagioclase, biotite and quartz. Hornblende occurs as decussate porphyroblasts. Plagioclase occurs in the matrix as a granoblastic intergrowth with biotite and quartz. Quartz occurs in the granoblastic matrix with plagioclase and biotite. Biotite occurs as flakes in the granoblastic matrix with plagioclase and quartz and as decussate aggregates. Sulfides occur as disseminate grains of pyrite, pyrrhotite, and chalcopyrite. No carbonate minerals were identified in this sample.

Sample: 16241
Baffinland Iron Mines Field Identification: Amphibolite
Classification: Biotite-quartz-garnet amphibolite



Photograph of sample 16241. Note the irregular brown and green areas. Green areas are biotite-rich green areas are chlorite-rich.

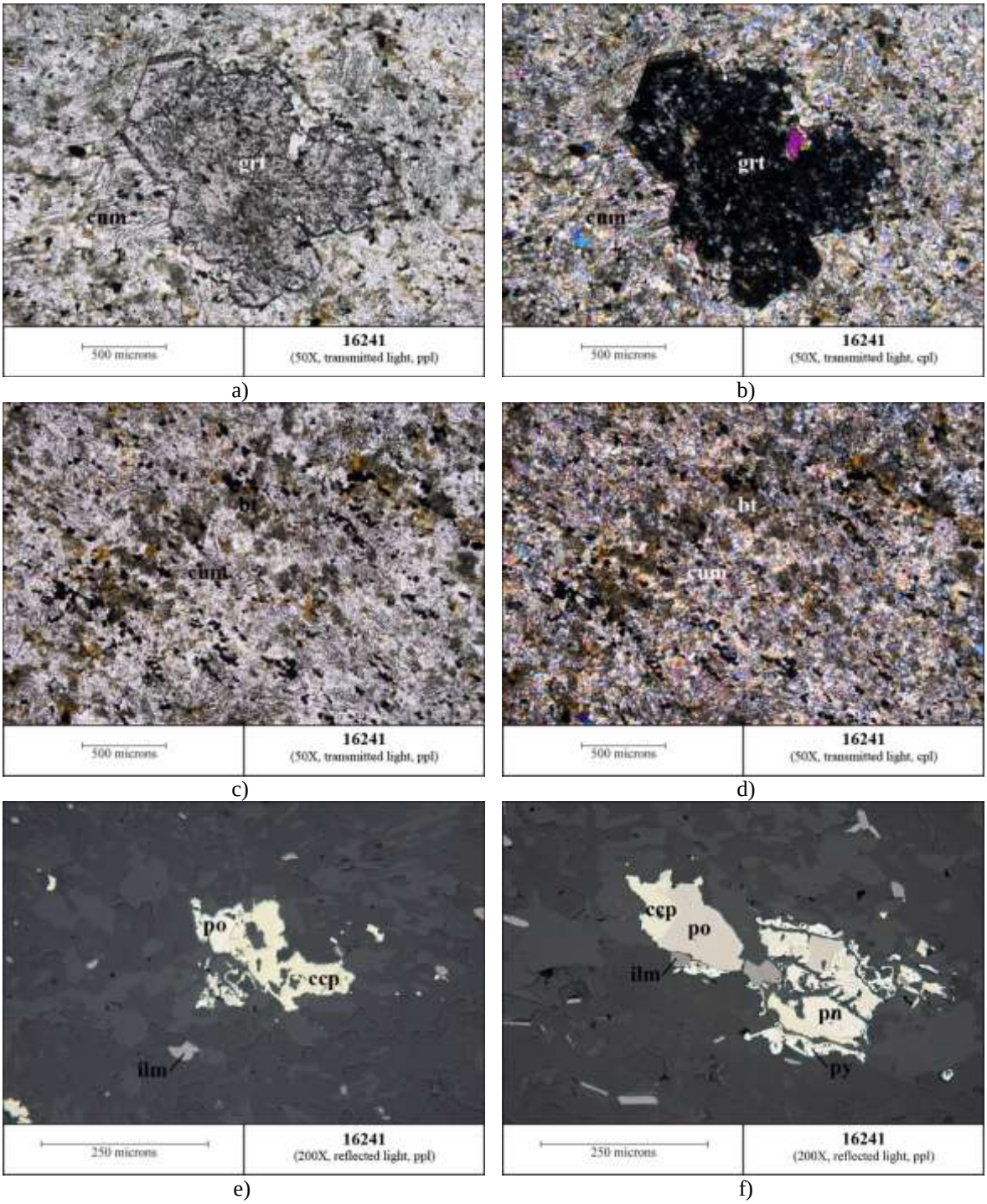
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Anorthite	33.8
Cummingtonite	31.7
Biotite	17.2
Quartz	13.6
Chlorite	1.7
Almandine	2.0

Optical Microscopy:



Photomicrographs of sample 16241. a) and b) Photomicrographs of garnet porphyroblast in a matrix of granoblastic cummingtonite, plagioclase, and chlorite. c) and d) Photomicrographs of granoblastic cummingtonite, plagioclase, biotite, and chlorite. e) Photomicrograph of irregular grain of pyrrhotite and chalcopyrite. f) Photomicrograph of irregular grain composed of pyrite, pyrrhotite, chalcopyrite, and pentlandite. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	Na2O	Al2O3	SiO2	CaO	n
Anorthite	1.4	33.8	44.9	19.8	14.0

	MgO	Al2O3	SiO2	CaO	MnO	FeO	n
Cummingtonite	**14.6**	**1.3**	**55.1**	**1.0**	**1.6**	**26.2**	**14**
Mn-Chlorite	**2.5**	**20.1**	**36.5**	**3.7**	**7.6**	**29.7**	**3**

	Al2O3	SiO2	S	CaO	FeO	Co	Ni	Cu	n
Pentlandite	0.7	0.1	36.3	0.0	22.1	4.8	36.0	0.0	6
Chalcopyrite	0.8	0.0	37.2	0.4	30.4	0.0	0.0	31.1	1

Description:

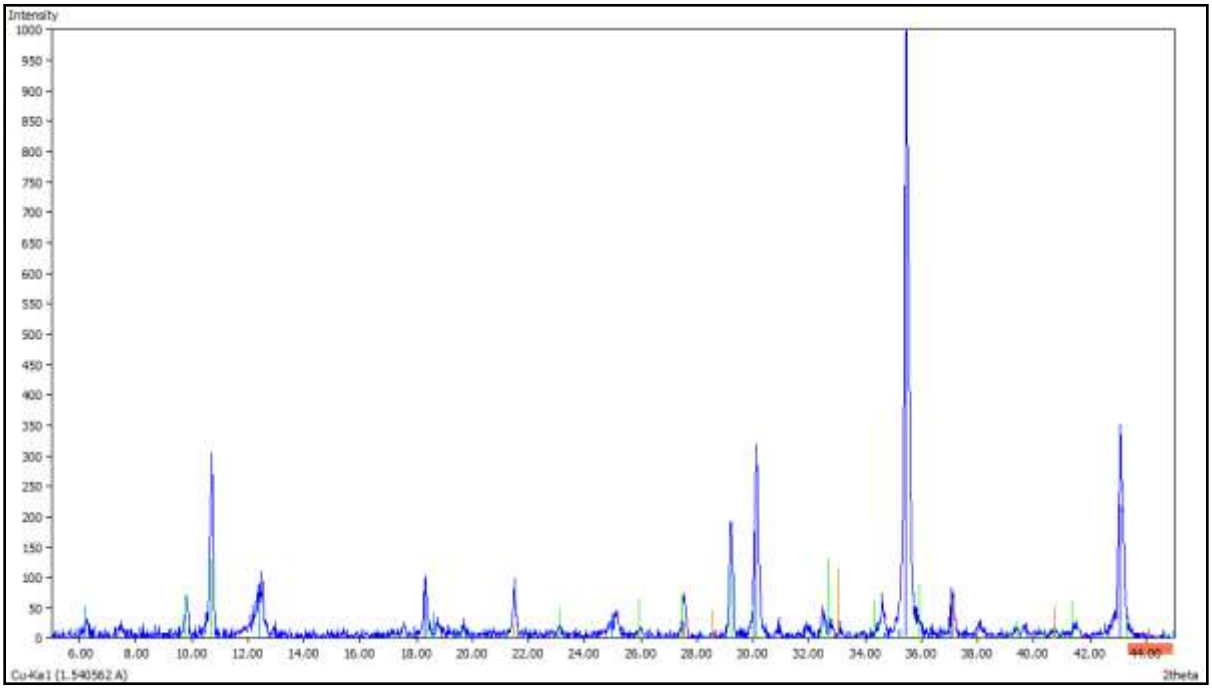
Granoblastic, irregularly banded, composed of garnet (almandine) porphyroblasts in a matrix of granoblastic plagioclase (anorthite), cummingtonite, biotite, quartz, and chlorite. Garnet occurs as idioblastic phorphyroblasts. Sulfide occurs in trace amounts as disseminated pyrite, pyrrhotite, chalcopyrite, and pentlandite. Ilmenite occurs as disseminated tabular grains. No carbonate minerals were identified in this sample**.**

Note the irregular banding is probably caused by variations in the abundance of biotite (brown areas) and chlorite (green areas).

Sample: 16281
Baffinland Iron Mines Field Identification: Banded_IF 60-72.36% Fe 0-25% mag
Classification: Magnetite-cummingtonite iron formation

Photograph of sample 16281. Note the thin banding and thin sulfide beds.

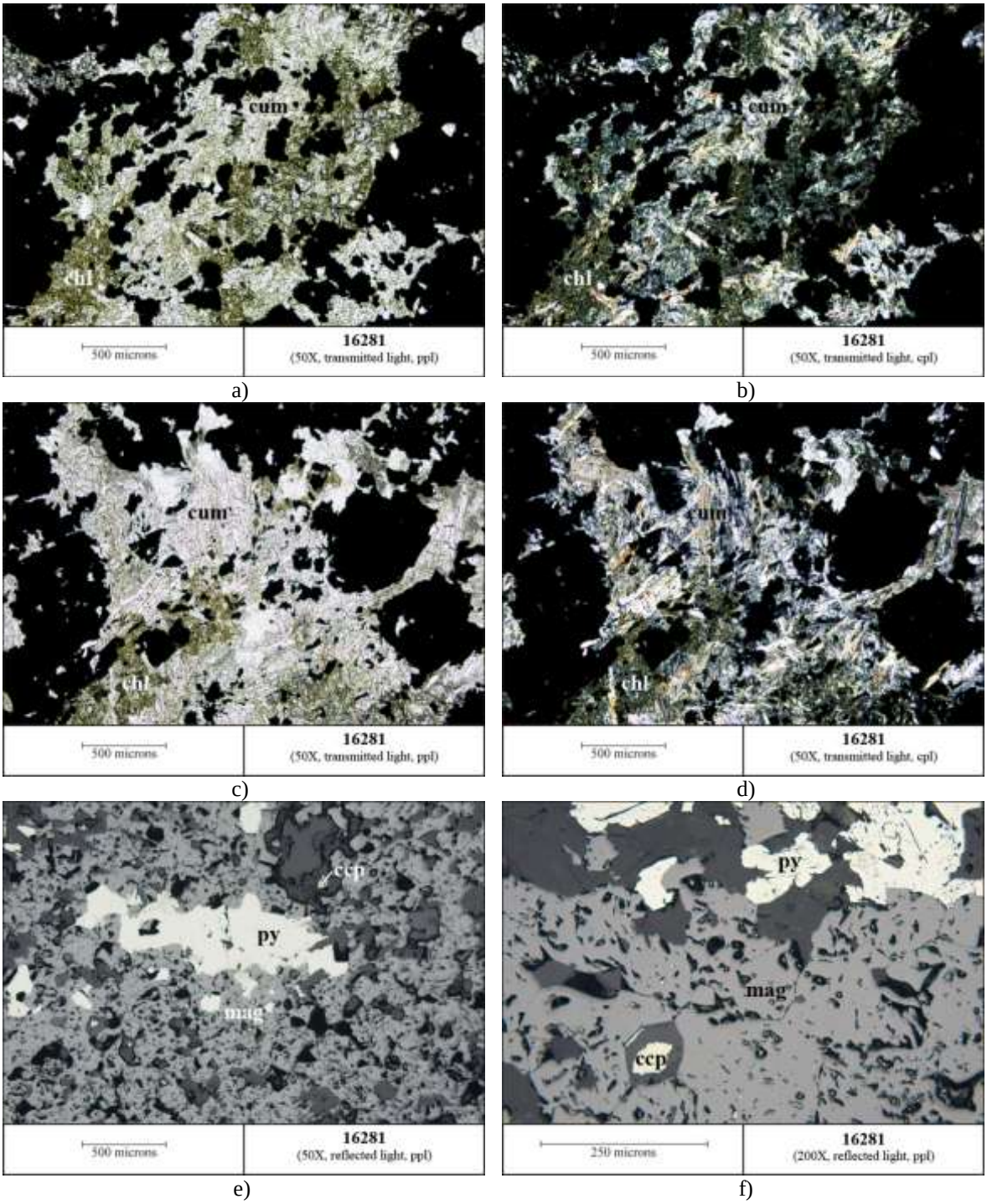
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Magnetite	68.2
Cummingtonite	20.8
Chlorite	7.6
Quartz	3.4

Optical Microscopy:



Photomicrographs of sample 16281. a) and b) Photomicrographs of decussate chlorite and cummingtonite between magnetite grains (opaque). c) and d) Photomicrographs of decussate cummingtonite and chlorite with granoblastic quartz between magnetite grains (opaque). e) Photomicrograph of irregular pyrite grains in granular magnetite. f) Photomicrograph of irregular pyrite and chalcopyrite intergrown with granular magnetite. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	MgO	Al2O3	SiO2	S	Cl	CaO	MnO	FeO	n
Cummingtonite	18.3	0.5	57.0	0.0	0.0	0.4	8.6	15.1	8
Chlorite	7.7	9.5	35.1	0.0	0.3	0.1	1.0	46.4	8

	Al2O3	SiO2	S	Fe	n
Pyrite	0.3	0.1	55.1	44.6	4

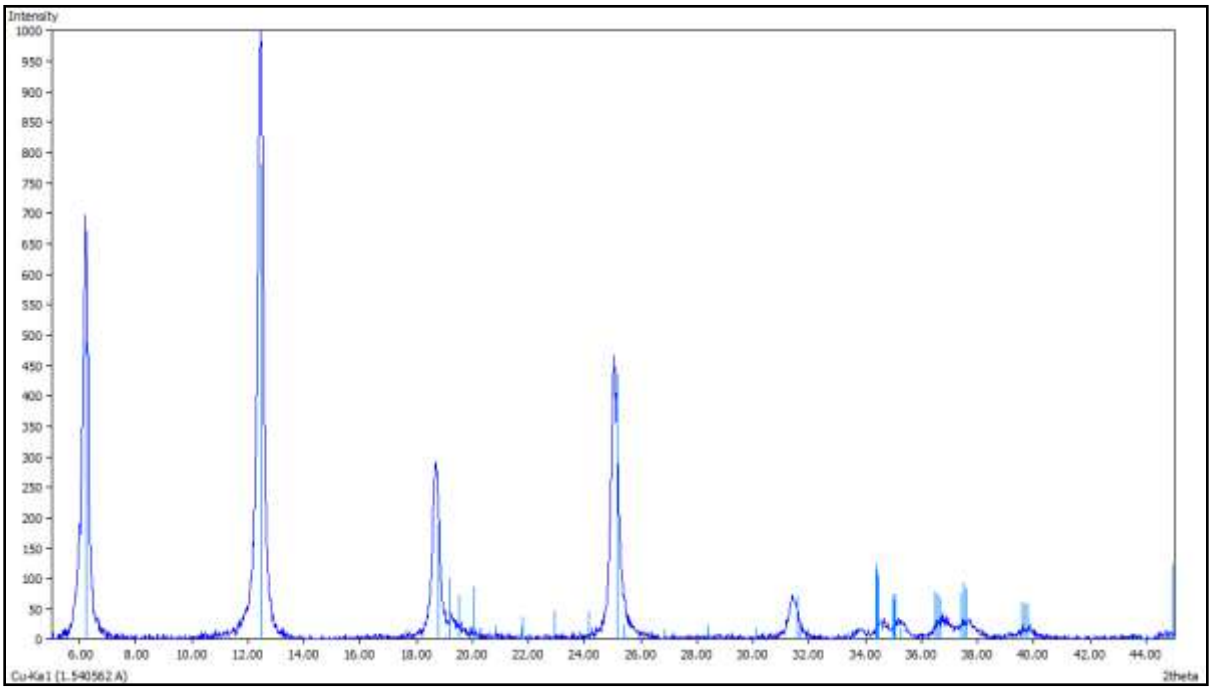
Description:

Thinly banded, composed of alternating bands of massive granular magnetite and bands of foliated to granoblastic cummingtonite, chlorite, magnetite. Less common are thin conspicuous bands of pyrite. Pyrite and chalcopyrite occur as disseminated grains. No carbonate minerals were identified in this sample.

Sample: 16299
Baffinland Iron Mines Field Identification: Greywacke
Classification: Meta argillite

Photograph of sample 16299. Note the indistinct bands.

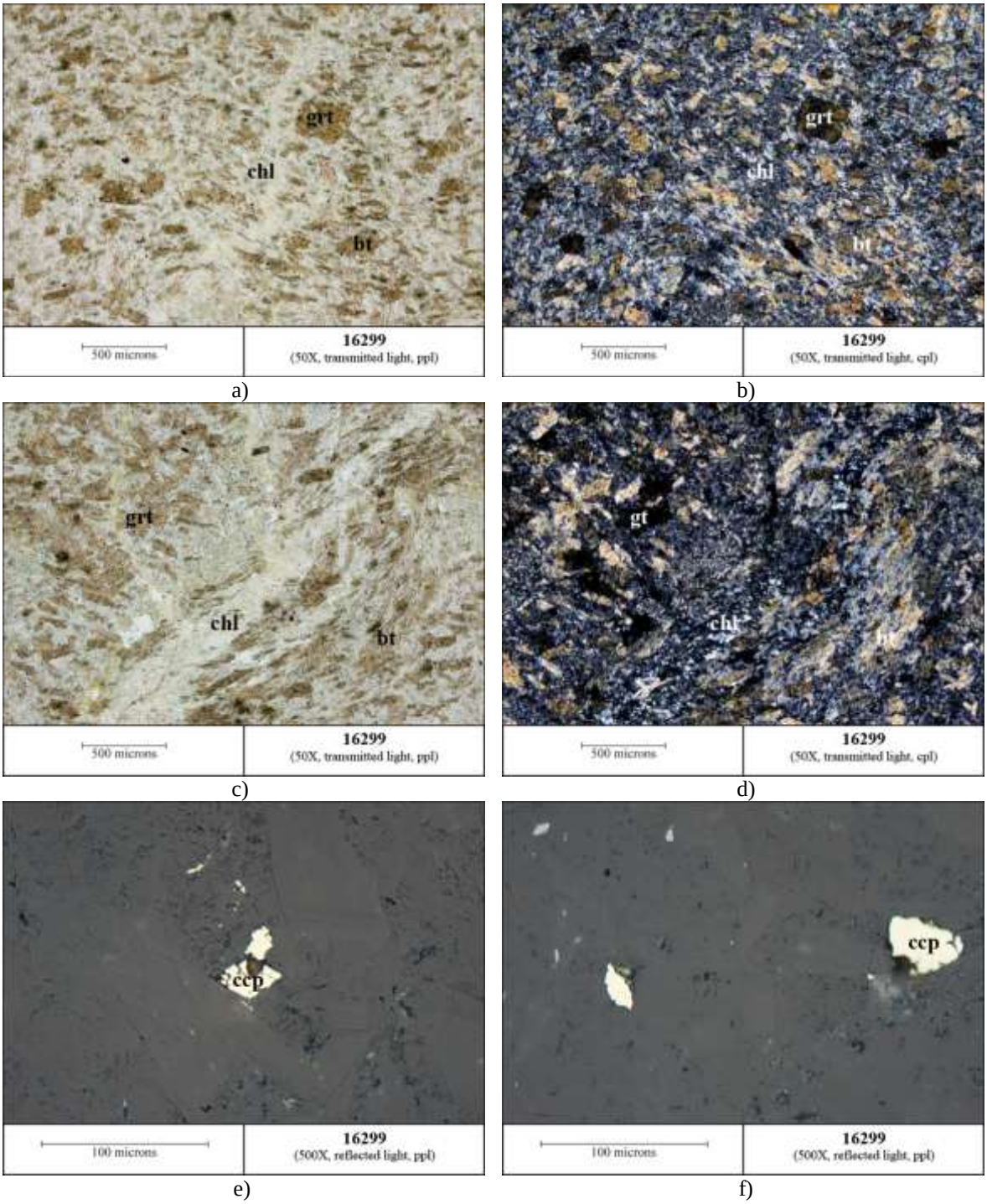
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Chlorite	100.0

Optical Microscopy:



Photomicrographs of sample 16299. a) and b) Photomicrographs of relict garnet and biotite porphyroblasts in a matrix of foliated chlorite. c) and d) Photomicrographs of relict garnet and biotite porphyroblasts in a matrix of foliated chlorite. e) and f) Photomicrographs disseminated chalcopyrite grains. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	MgO	Al2O3	SiO2	K2O	TiO2	MnO	FeO	n
Chlorite	18.7	21.4	35.3	0.9	0.8	1.1	21.8	7

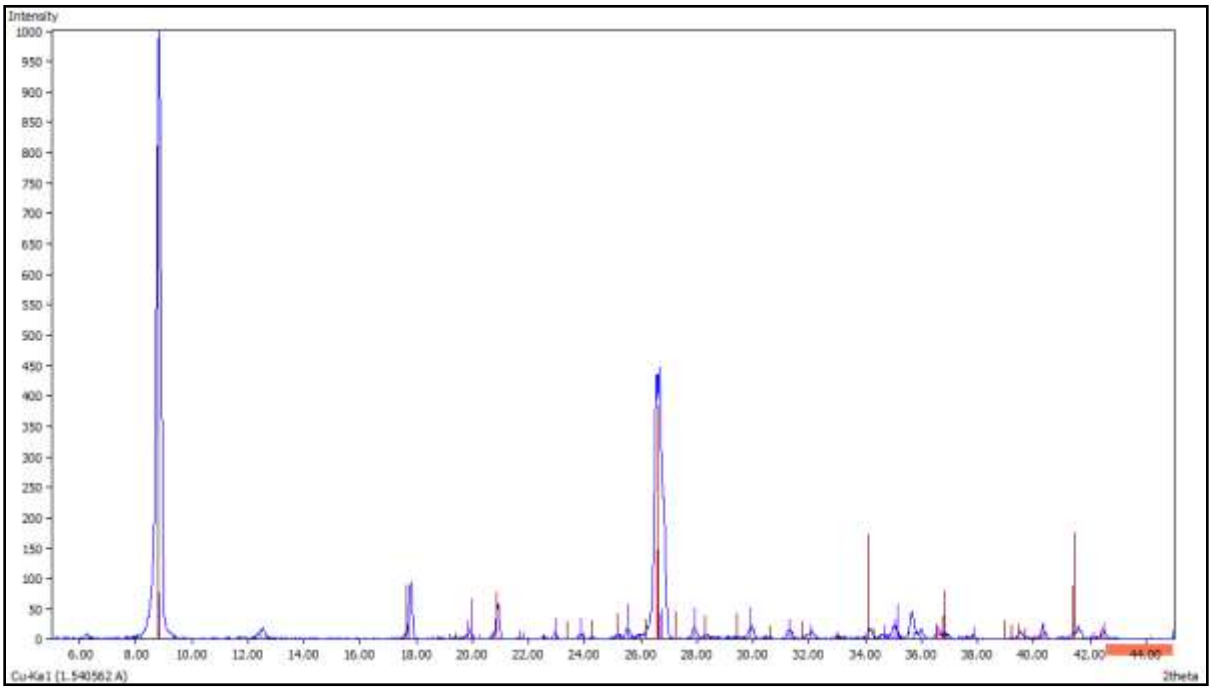
Description:

Foliated and banded, composed of foliated chlorite with relict garnet and biotite porphyroblasts. Chalcopyrite occurs in trace amounts as disseminated grains. No carbonate minerals were identified in this sample.

Sample: 16355
Baffinland Iron Mines Field Identification: QFm gneiss
Classification: Biotite-muscovite-quartz paragranofels

Photograph of sample 16355. Note the staurolite porphyroblasts.

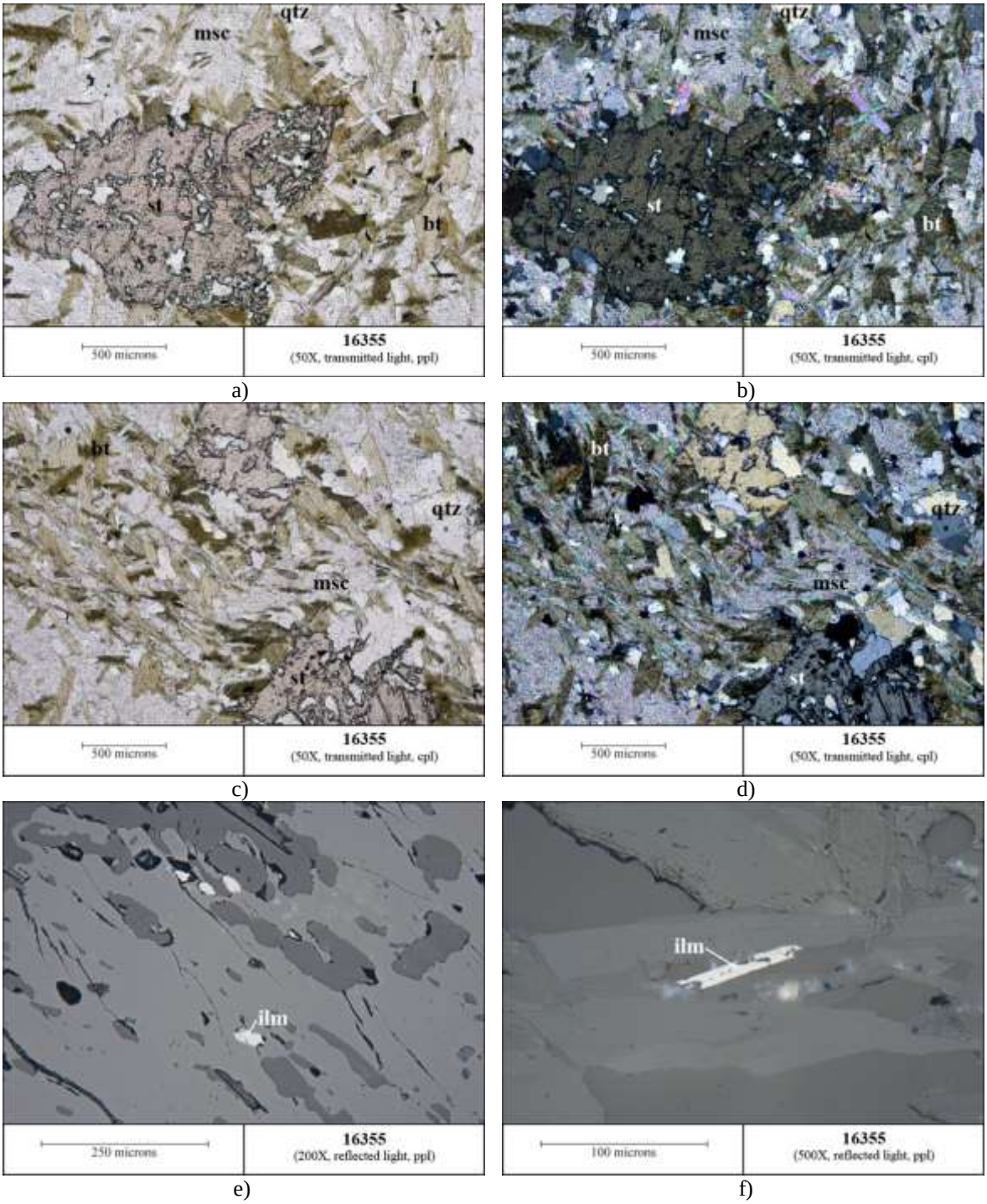
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Biotite	54.3
Muscovite	34.5
Quartz	9.6
Chlorite	1.6

Optical Microscopy:



Photomicrographs of sample 16355. a) and b) Photomicrographs of staurolite porphyroblasts in a matrix of granoblastic biotite, muscovite, quartz, and chlorite. c) and d) Photomicrographs of staurolite porphyroblasts in a matrix of granoblastic biotite, muscovite, quartz, and chlorite. e) and f) Photomicrographs of disseminated rounded and lobate ilmenite grains.

EDS Analyses

	F	Na2O	MgO	Al2O3	SiO2	K2O	TiO2	FeO	Ba	n
Muscovite	0.1	0.7	0.6	36.1	48.2	11.7	0.7	1.9	0.1	5
Biotite	0.0	0.0	9.8	19.5	38.0	10.4	2.1	20.3	0.0	6

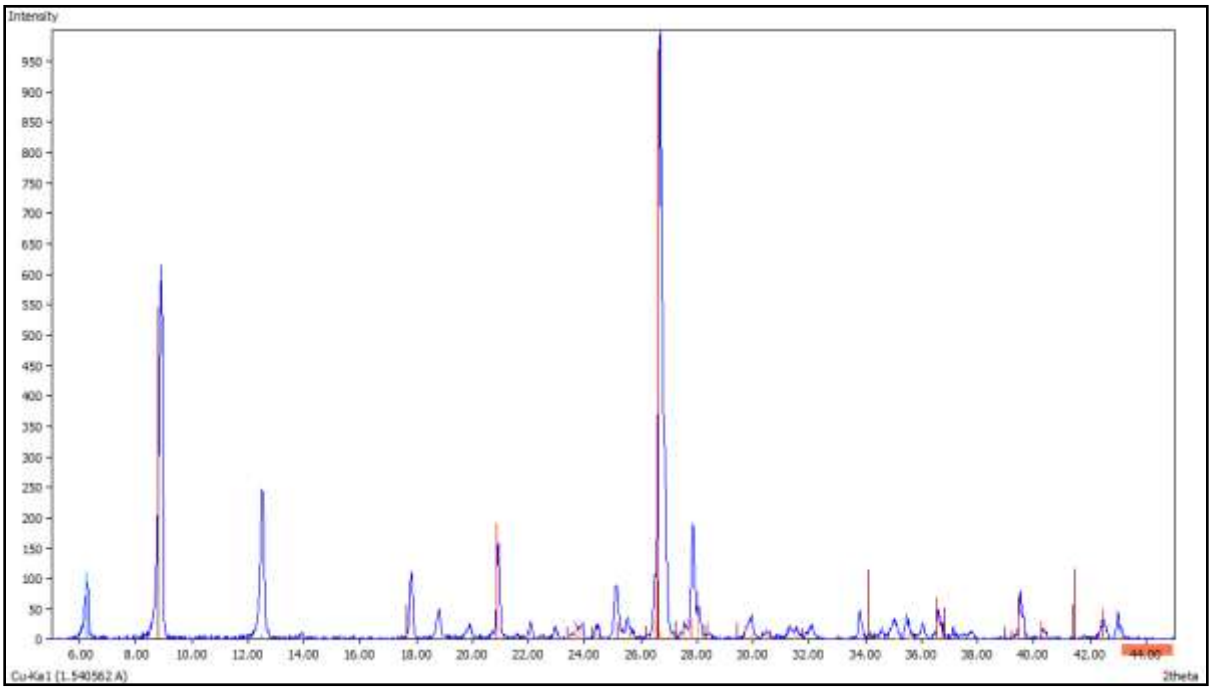
Description:

Granoblastic, massive, composed of xenoblastic staurolite porphyroblasts in a matrix of granoblastic biotite, muscovite, quartz, and chlorite. Ilmenite occurs in trace amounts as disseminated equant and lobate grains. No sulfide or carbonate minerals were identified in this sample.

Sample: 16393
Baffinland Iron Mines Field Identification: QFm gneiss
Classification: Quartz-biotite-muscovite-chlorite-feldspar gneiss

Photograph of sample 16393.

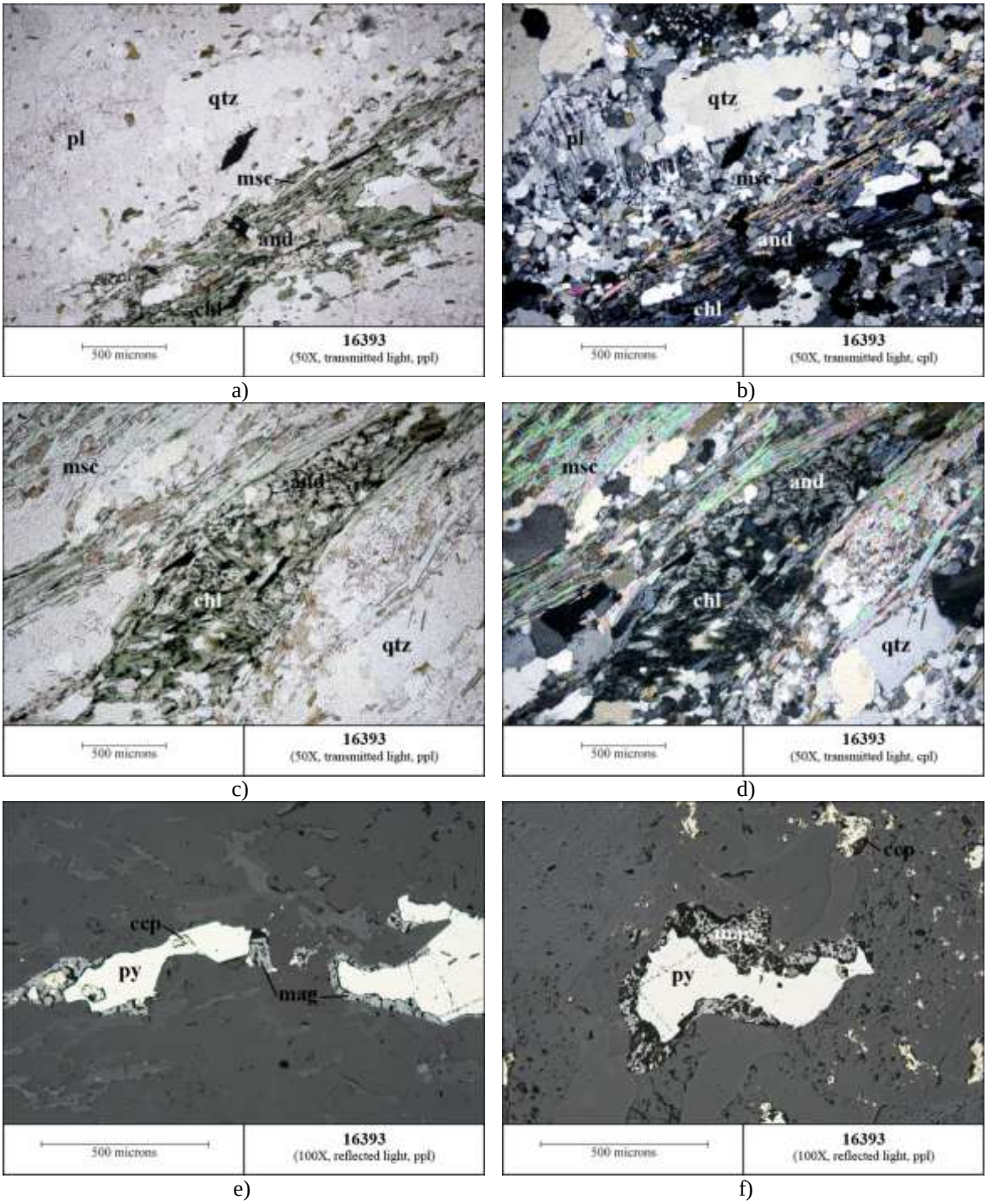
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Quartz	29.3
Biotite	27.1
Muscovite	20.3
Chlorite	12.7
Labradorite	10.6

Optical Microscopy:



Photomicrographs of sample 1693. a) and b) Photomicrographs relatively coarse quartz and plagioclase grains in a matrix of granoblastic quartz and feldspar cross-cut by bands of foliated chlorite and muscovite with andalusite porphyroblasts. c) and d) Photomicrographs of asymmetric pod composed of chlorite quartz and andalusite. e) and f) Photomicrograph of irregular pyrite grains with chalcopyrite inclusions and partially rimmed by magnetite. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	Na2O	Al2O3	SiO2	S	K2O	CaO	TiO2	FeO	n
k-feldspar	0.0	17.6	63.9	0.1	17.3	0.0	0.6	0.7	5
Labradorite	7.7	25.2	58.5	0.0	0.5	8.1	0.0	0.0	8

	MgO	Al2O3	SiO2	K2O	TiO2	MnO	FeO	n
Biotite	10.1	18.7	35.9	8.0	2.2	0.7	24.4	8
Chlorite	15.0	18.6	31.6	0.0	0.0	0.8	34.0	5

	Al2O3	S	Fe	Cu	Ta	n
Pyrite	0.3	48.3	51.1	0.0	0.3	4
Chalcopyrite	1.2	38.6	32.8	27.4	0.0	1

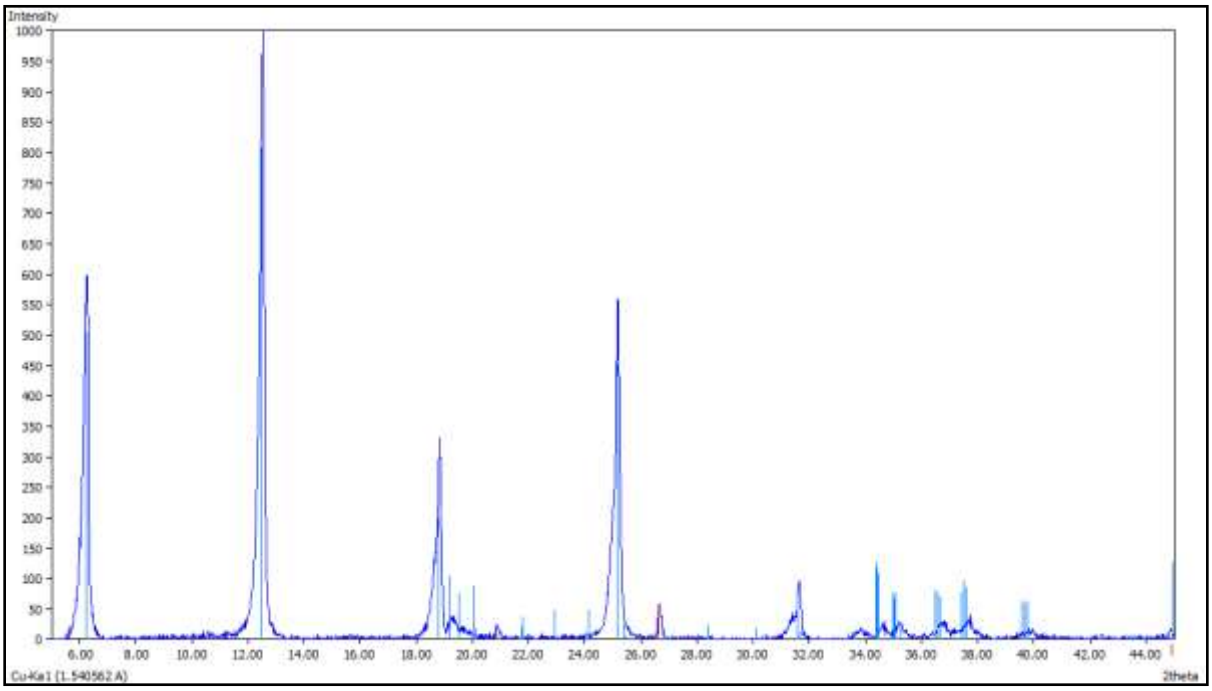
Description:

Gneissic, composed of pods and eyes of granoblastic quartz and feldspar in a matrix of granoblastic quartz and feldspar with bands of foliated muscovite and chlorite. Pods and lenses are composed of granoblastic quartz or feldspar. The matrix is composed of granoblastic quartz, feldspar, muscovite and biotite. Foliated bands are composed of muscovite, biotite and chlorite. In some instances, foliated bands contain asymmetric andalusite porphyroblasts. Pyrite occurs as irregularly shaped disseminated grains that are partially rimmed by magnetite. Chalcopyrite occurs as disseminated grains. No carbonate minerals were identified in this sample.

Sample: 16397
Baffinland Iron Mines Field Identification: Amphibolite
Classification: Meta argillite

Photograph of sample 16397. Note the anastomosing clay veinlets.

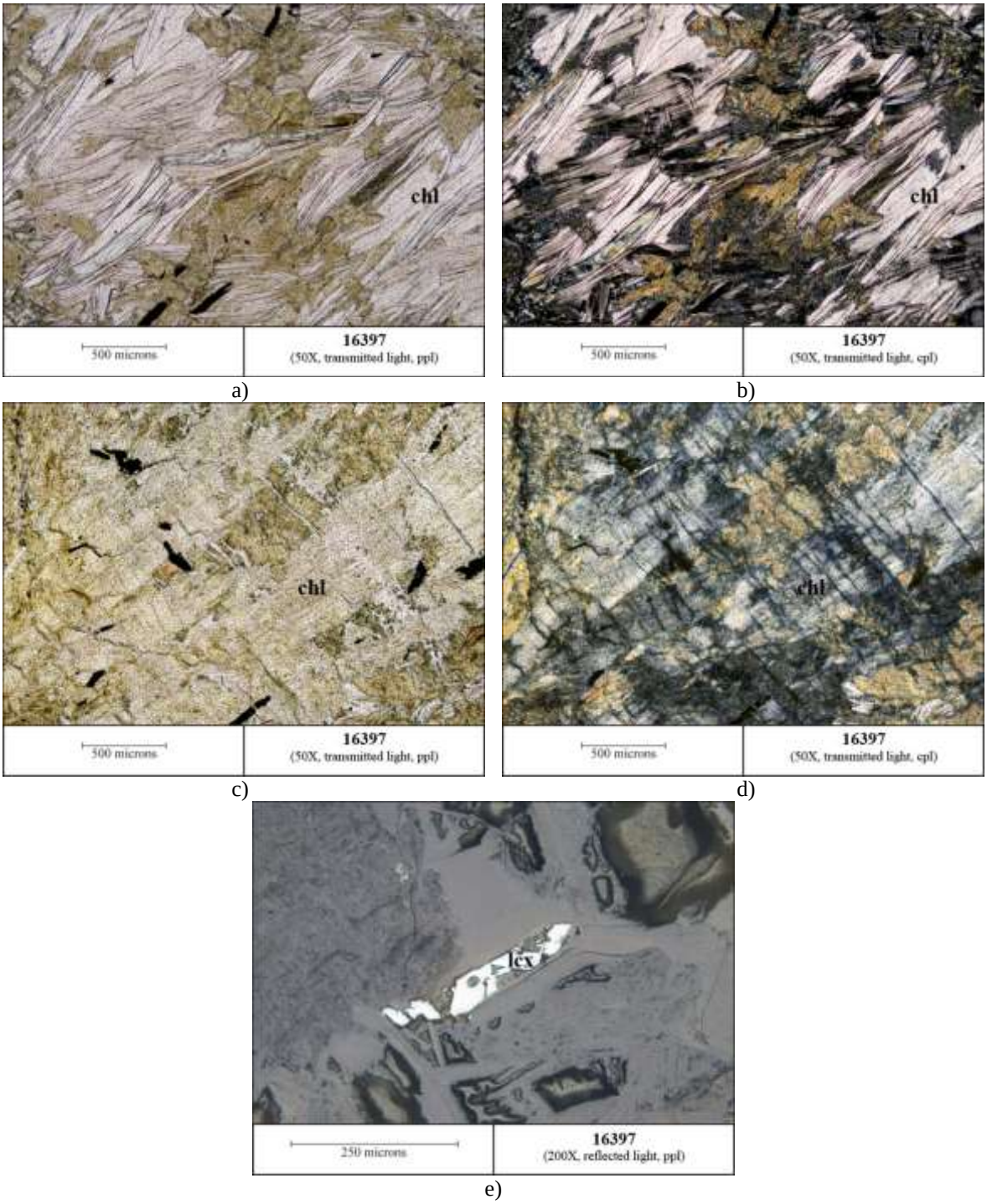
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Chlorite	98.2
Quartz	1.8

Optical Microscopy:



Photomicrographs of sample 16397. a) and b) Photomicrographs of chlorite grains possibly replacing biotite. c) and d) Photomicrographs of relict grains, possibly hornblende, pervasively replaced by chlorite. e) Photomicrograph of lobate ilmenite grain replaced by leucoxene.

EDS Analyses

	F	MgO	Al2O3	SiO2	S	Cl	CaO	TiO2	MnO	FeO	n
Chlorite	0.4	20.5	19.4	37.7	0.5	0.1	0.6	0.1	1.6	19.2	15

Description:

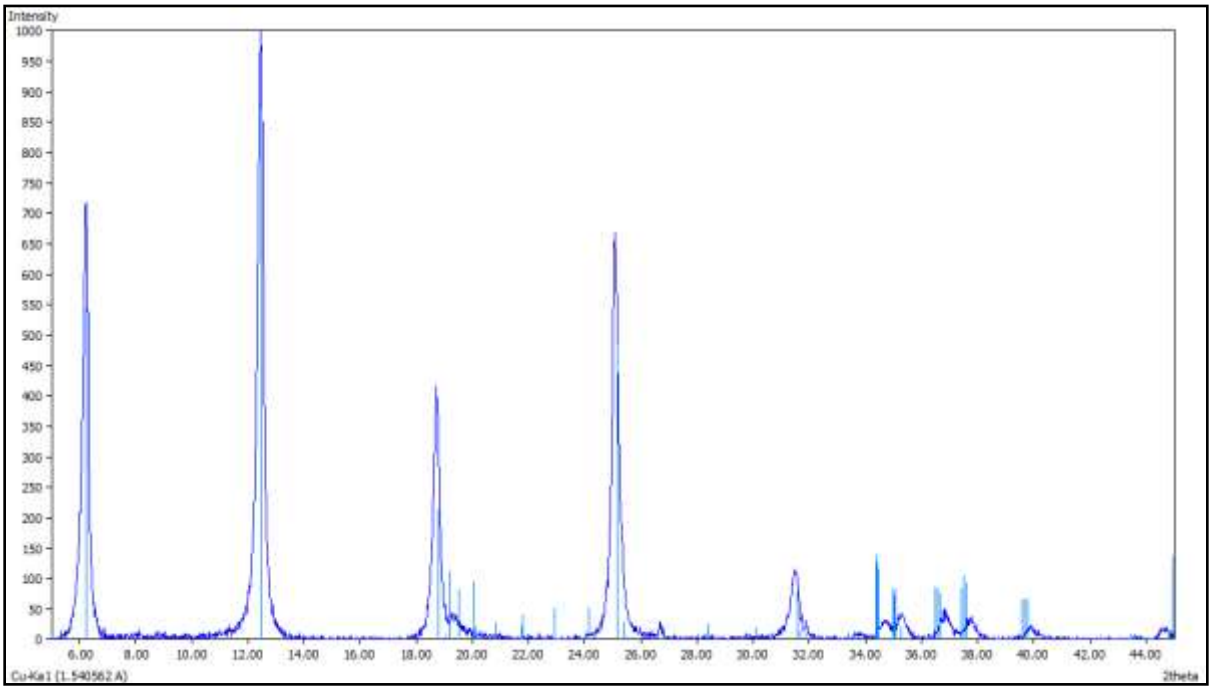
Foliated to massive, composed of chlorite. Relict grain shapes suggest hornblende and biotite were pervasively replaced by chlorite. Garnet occurs in trace amounts as disseminated porphyroblasts. Ilmenite occurs as disseminated lobate grains pervasively replaced by leucoxene. No sulfide or carbonate minerals were identified in this sample. The rock contains anastomosing clay veinlets.

Sample: 16415
Baffinland Iron Mines Field Identification: Mica amphibole schist
Classification: Chlorite schist

a) b)

Photographs of sample 16415.

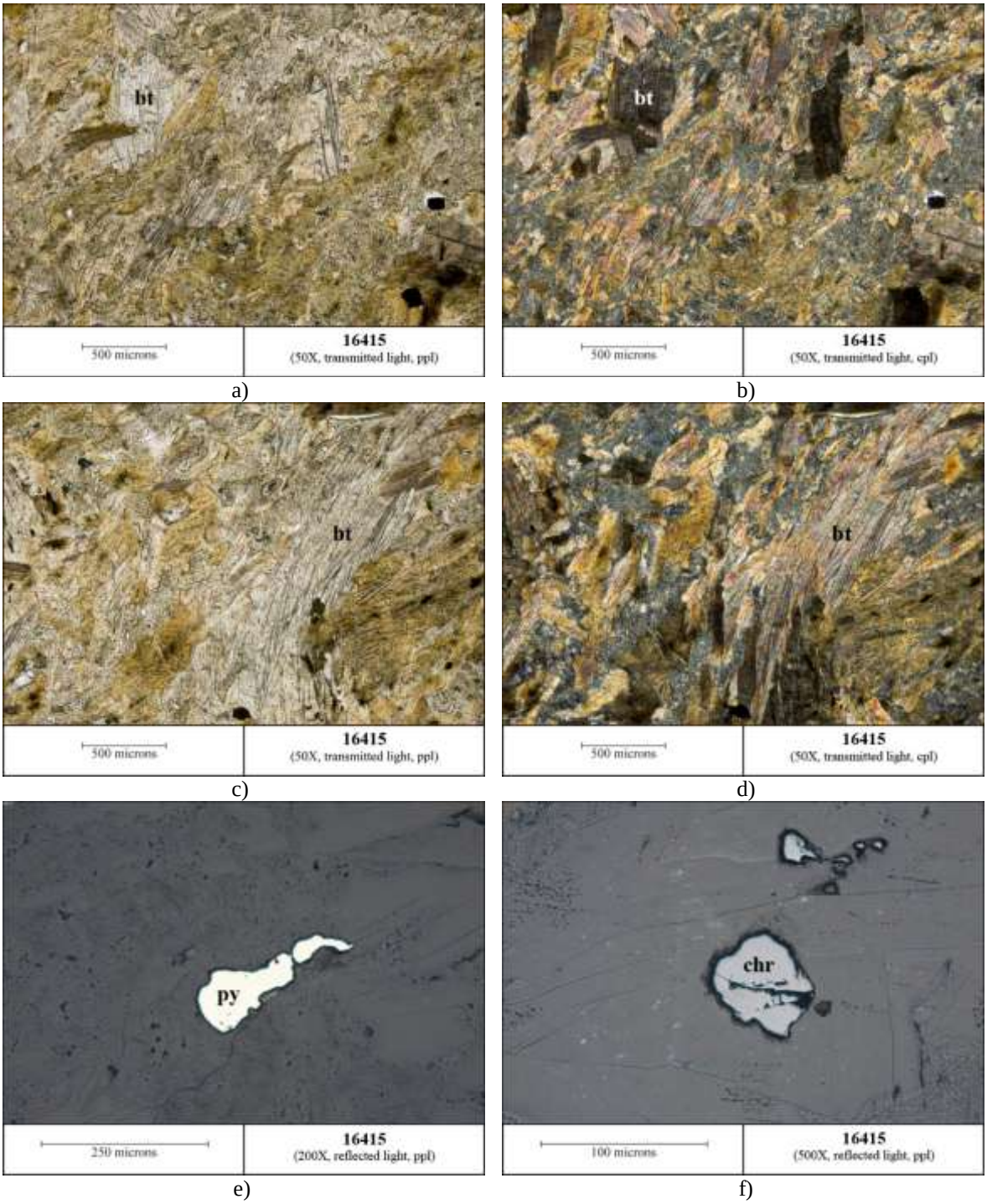
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Chlorite	100.0

Optical Microscopy:



Photomicrographs of sample 16415. a) and b) Photomicrographs of decussate biotite pervasively replaced by chlorite. c) and d) Photomicrographs of decussate biotite flakes pervasively replaced by chlorite with interstitial chlorite and clay. e) Photomicrograph of pyrite grain. f) Photomicrograph of equant chromite grain.

EDS Analyses

	MgO	Al2O3	SiO2	K2O	TiO2	Cr	MnO	FeO	n
Chlorite 1	24.4	23.1	37.9	0.0	0.0	0.2	1.6	12.7	6
Chlorite 2	18.5	20.0	35.5	1.4	1.7	0.5	1.8	20.7	6

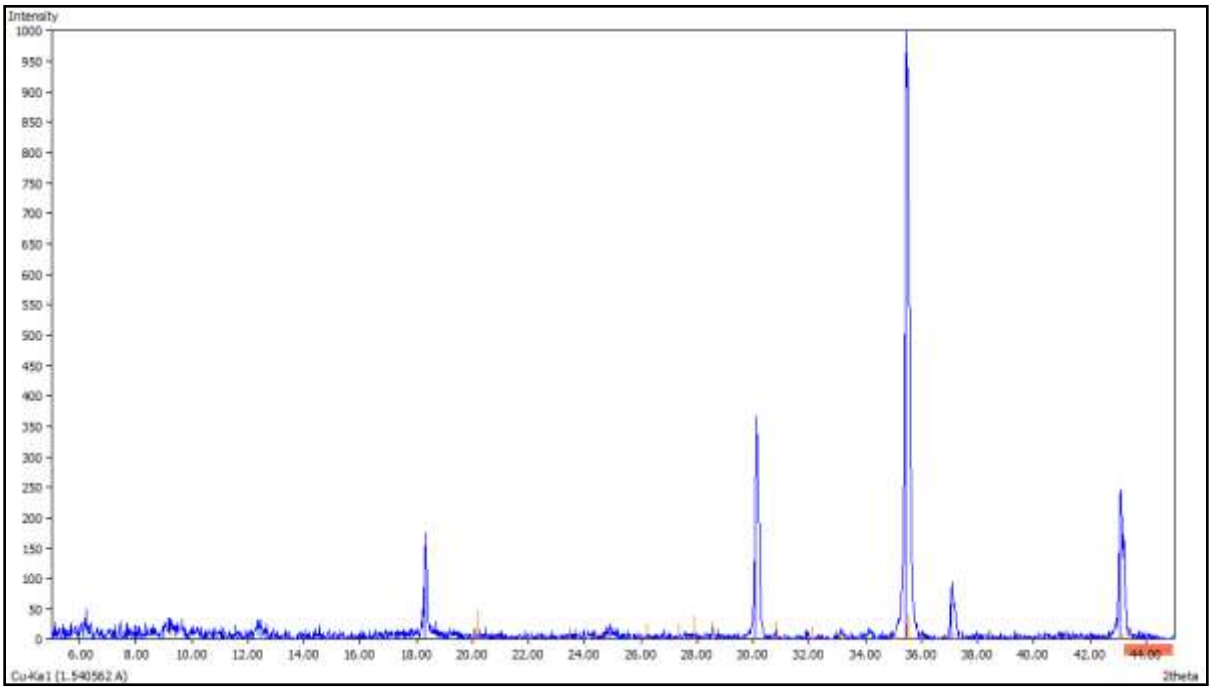
Description:

Massive to weakly foliated, composed of decussate chlorite. Biotite is pervasively replaced by chlorite. Pyrite occurs in trace amounts as disseminated grains. Chromite occurs in trace amounts as disseminated anhedral grains. No carbonate minerals were identified in this sample.

Sample: 16441
Baffinland Iron Mines Field Identification: HG_IF 60-72.36% Fe 60-100% mag
Classification: Magnetite iron formation

Photograph sample 16441. Note the reddish bed.

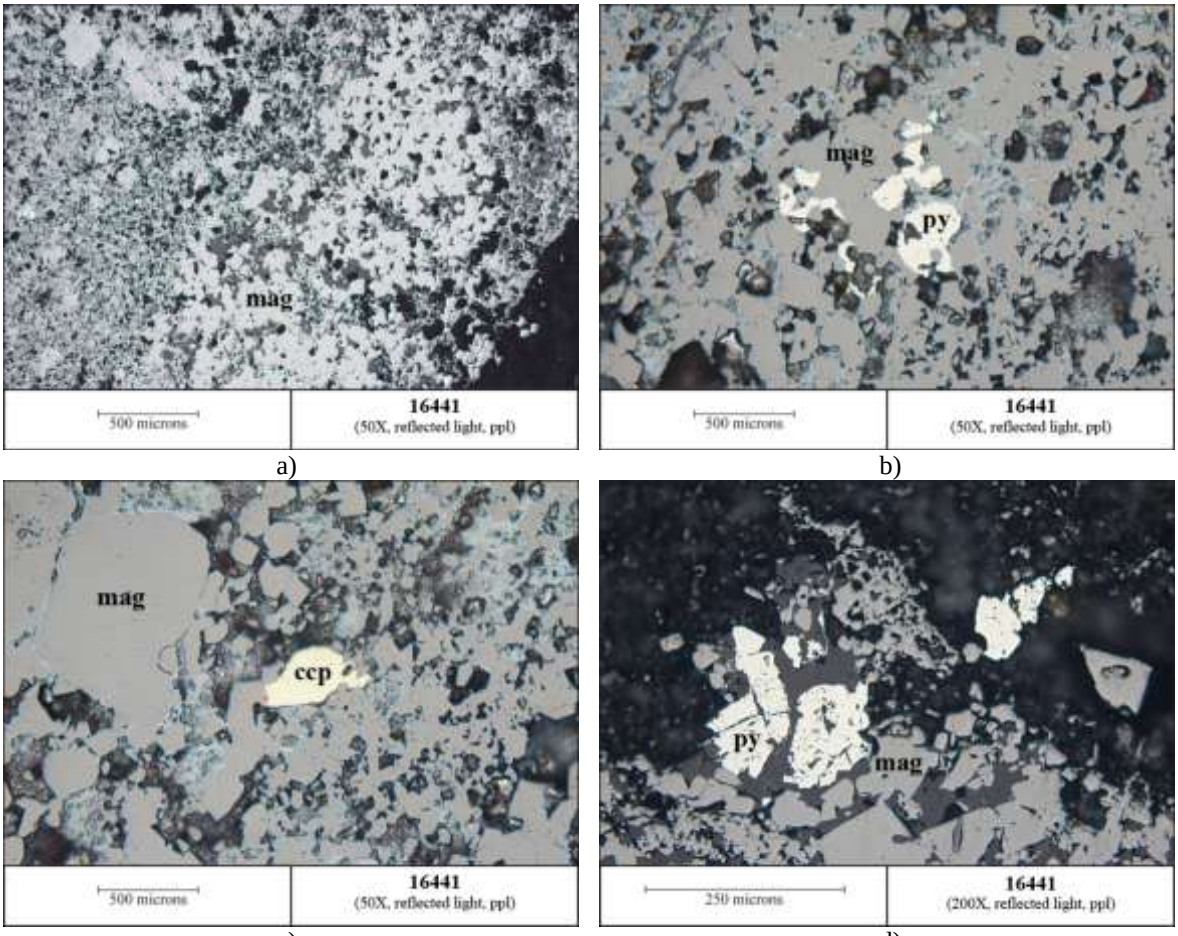
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Magnetite	97.0
Chlorite	3.0

Optical Microscopy:



Photomicrographs of sample 16441. a) Photomicrograph of granular magnetite. b) Photomicrograph of granular magnetite with irregular shaped pyrite grains. c) Photomicrograph of granular magnetite with equant chalcopyrite grain. d) Photomicrograph of granular magnetite with irregular pyrite grains. Note that some of the magnetite grains have poorly developed hematite (white) along their margins.

EDS Analyses

	Na2O	MgO	Al2O3	SiO2	CaO	MnO	FeO	n
Amphibole	0.3	18.7	10.3	39.8	0.4	0.2	30.2	5

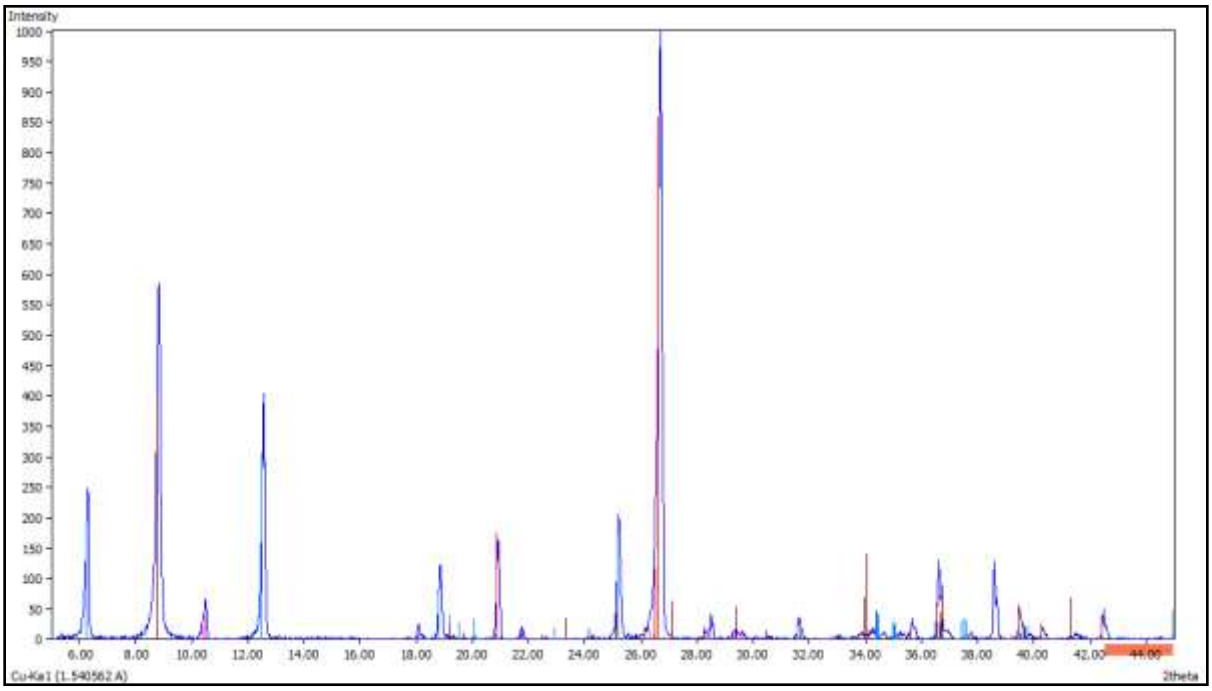
Description:

Thinly banded or bedded, composed of granular magnetite with interstitial chlorite, amphibole, and quartz. The red bands are due to the partial oxidation of magnetite to hematite along grain boundaries. Pyrite and chalcopyrite occur as disseminated grains. No carbonate minerals were identified in this sample.

Sample: 16467
Baffinland Iron Mines Field Identification: Chlorite schist
Classification: Quartz-chlorite-biotite schist

Photograph of sample 16467.

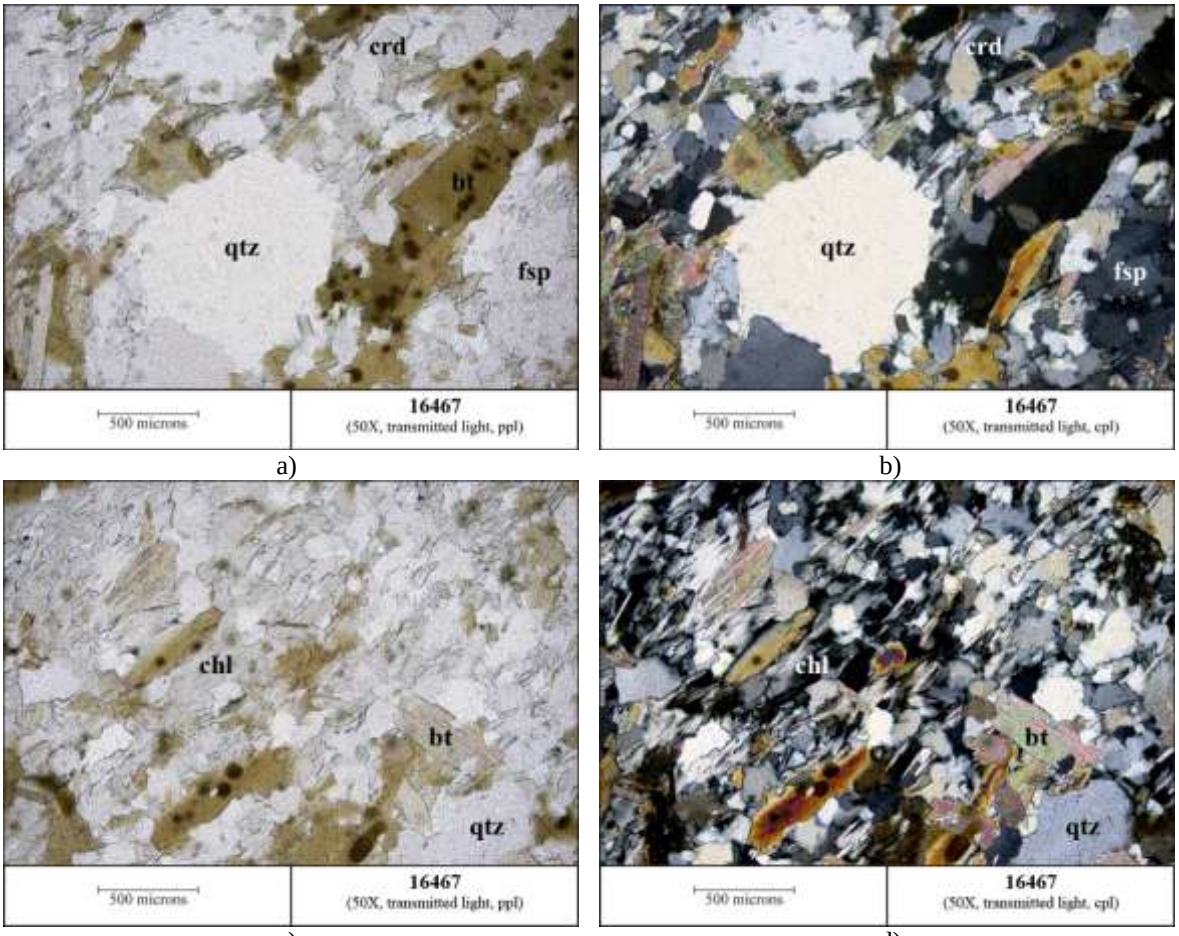
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Quartz	56.8
Chlorite	20.4
Biotite	16.3
Cordierite	6.5

Optical Microscopy:



Photomicrographs of sample 16467. a) and b) Photomicrographs of relatively coarse quartz grains in a matrix of granoblastic quartz and cordierite with decussate biotite. c) and d) Photomicrograph of granoblastic quartz and cordierite (cloudy grains with inclusions) and decussate biotite. Note the abundance of dark spots, haloes around zircons, in the biotite grains.

EDS Analyses

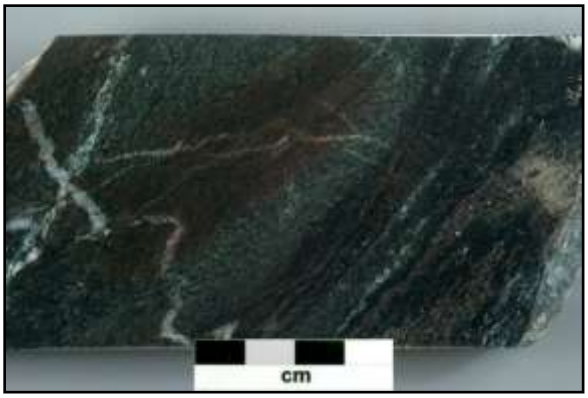
	MgO	Al2O3	SiO2	K2O	MnO	FeO	n
Cordierite	9.0	33.7	51.0	0.2	0.1	6.0	6

	Na2O	MgO	Al2O3	SiO2	Cl	K2O	TiO2	FeO	n
Biotite	0.1	12.5	20.0	39.7	0.0	10.3	1.6	15.8	6

Description:

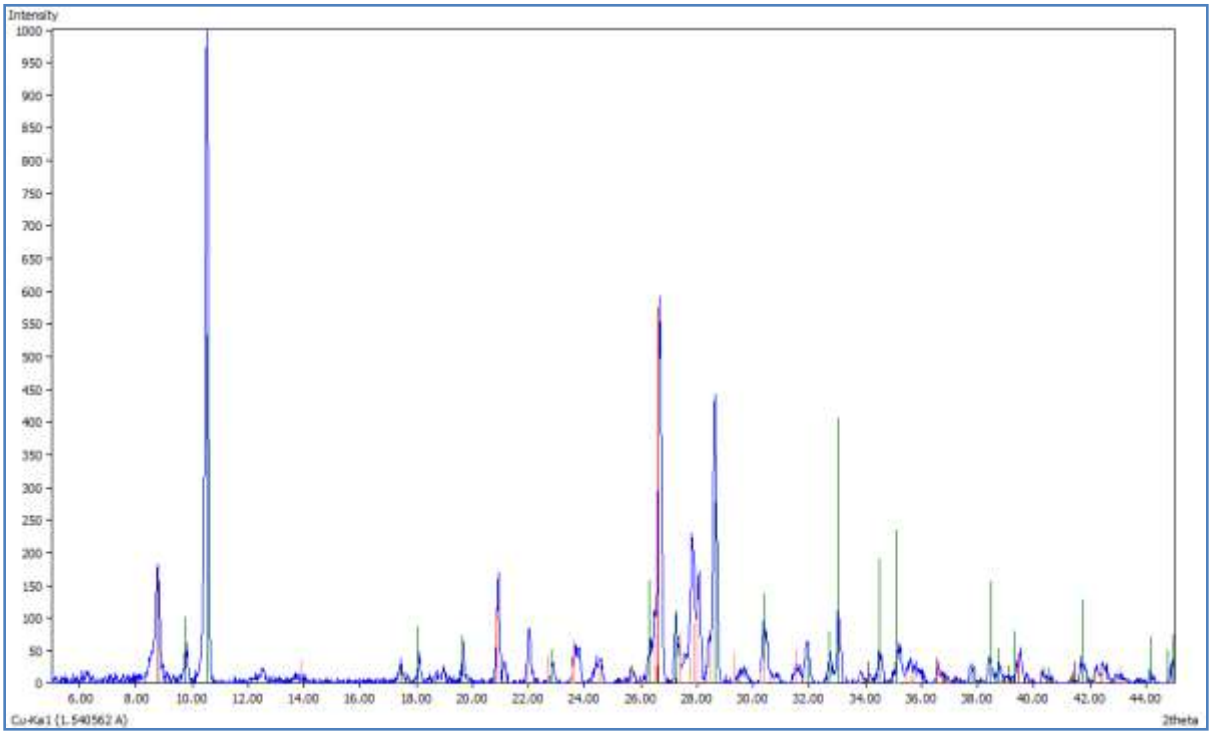
Granoblastic to weakly foliated, composed of relatively coarse quartz grains in a matrix composed of granoblastic quartz, cordierite, and decussate biotite and chlorite. Biotite contains abundant zircons with "burn" haloes. No sulfide or carbonate minerals were identified in this sample.

Sample: 16667
Baffinland Iron Mines Field Identification: Volcanic tuff (massive)
Classification: Amphibolite



Photograph of sample 16667. Note the veinlets. Veinlets are filled with metamorphic minerals.

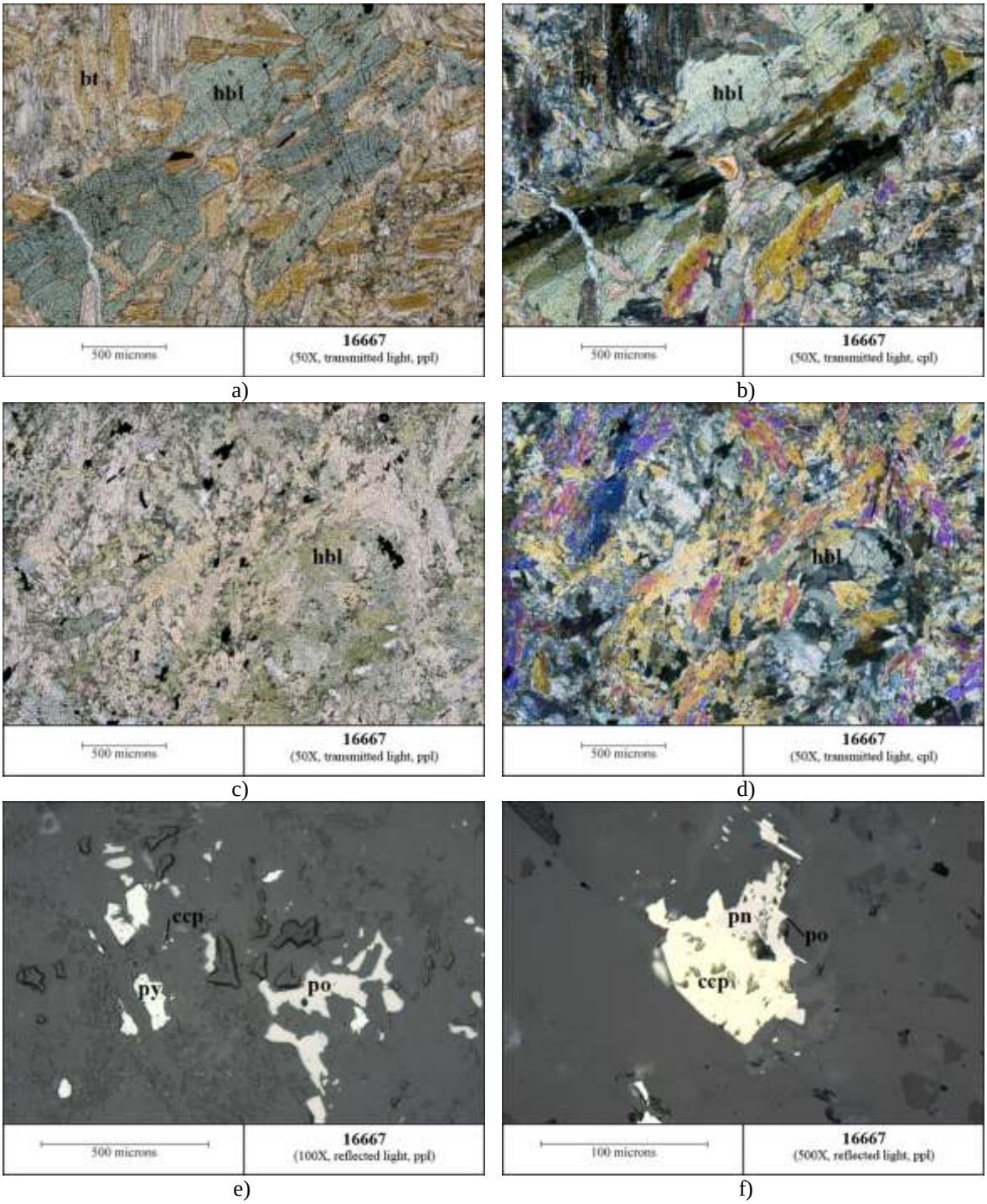
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Hornblende	64.6
Anorthite	20.9
Quartz	10.1
Biotite	4.4

Optical Microscopy:



Photomicrographs of sample 16667. a) and b) Photomicrographs of decussate hornblende and biotite. c) and d) Photomicrograph of decussate hornblende with interstitial plagioclase. e) Photomicrograph of disseminated pyrrhotite, pyrite and chalcopyrite. f) Photomicrograph of sulfide grain composed of chalcopyrite and pentlandite. Note that the sulfides are unaltered and are enclosed in silicate minerals.

EDS Analyses

	Na2O	Al2O3	SiO2	K2O	CaO	FeO	n
Albite	12.4	19.1	68.4	0.0	0.2	0.0	5
k-feldspar	0.0	18.1	64.7	17.1	0.0	0.2	3
Anorthite	0.6	29.6	46.1	3.1	20.1	0.3	13

	MgO	Al2O3	SiO2	K2O	CaO	FeO	n
Muscovite	0.1	37.6	48.5	12.5	0.4	0.9	12

	Na2O	MgO	Al2O3	SiO2	K2O	CaO	TiO2	MnO	FeO	n
Hornblende	1.1	11.0	11.9	45.2	1.6	11.4	0.6	0.5	16.7	11

	Al2O3	SiO2	S	Fe	Ni	Cu	n
Pyrite	0.4	0.1	55.4	44.1	0.0	0.0	8
Pyrrhotite	0.5	0.1	43.2	55.6	0.7	0.0	12
Pentlandite	0.7	0.0	44.4	34.3	20.7	0.0	1
Chalcopyrite	0.4	0.0	37.5	30.2	0.0	31.9	2

Description:

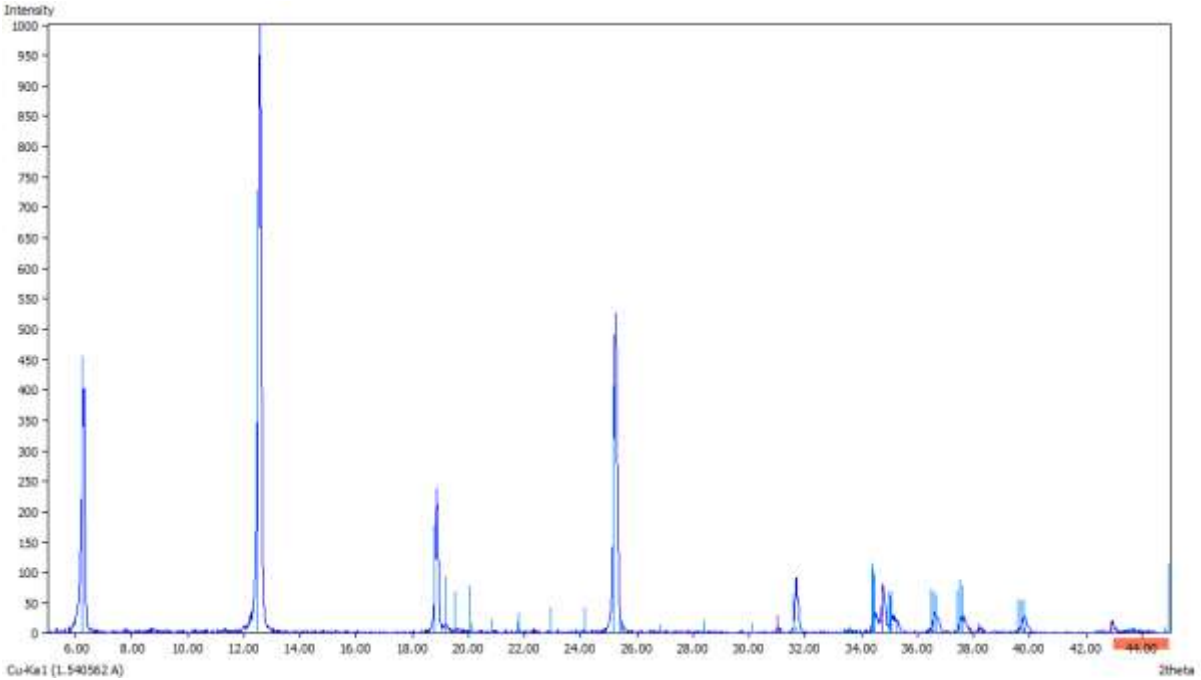
Banded, composed of decussate hornblende and biotite with interstitial plagioclase (anorthite) and quartz. Sulfides, pyrite, pyrrhotite, pentlandite, and chalcopyrite, occur in trace amounts as disseminated grains. No carbonate minerals were identified in this sample. Cross-cutting veinlets are filled with quartz, feldspar, mica, and amphibole.

Note that there are two plagioclase anorthite and albite present. The distinction in the two plagioclase feldspars was made with EDS. The occurrence of anorthite and albite together probably result from the breakdown of an intermediate plagioclase feldspar in to the two components.

Sample: 16729
Baffinland Iron Mines Field Identification: Chlorite schist
Classification: Chlorite-garnet paragranofels

Photograph of 16729. Note the garnet porphyroblasts.

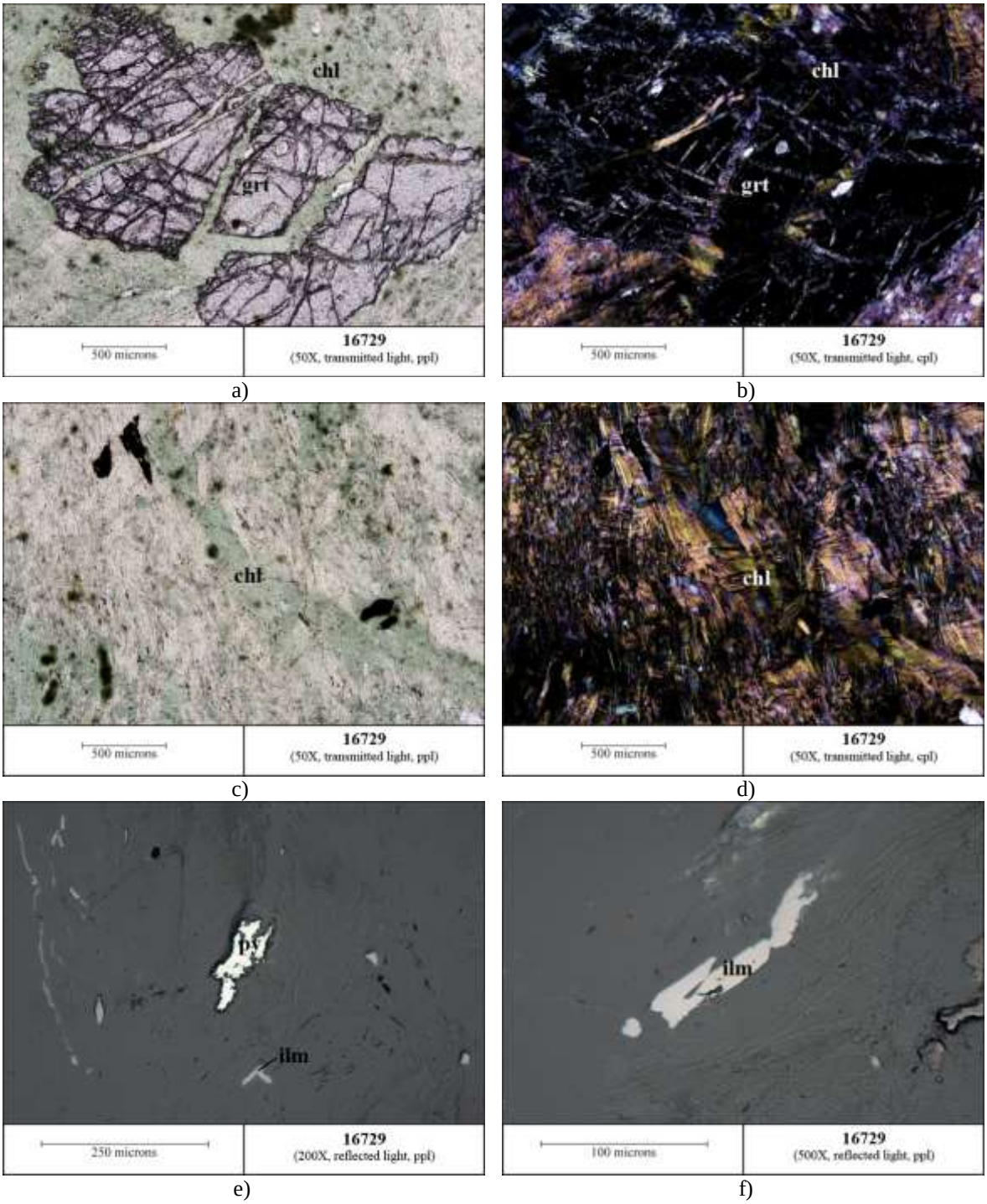
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Chlorite	94.6
Almandine	5.4

Optical Microscopy:



Photomicrographs of sample 16729. a) and b) Photomicrographs of fractured garnet porphyroblast in a matrix of chlorite. c) and d) Photomicrographs chlorite. Variations I color probably reflect variations in composition of the chlorite. e) Photomicrograph of xenoblastic pyrite gran and tabular ilmenite. f) Photomicrograph of tabular ilmenite grain.

EDS Analyses

	MgO	Al2O3	SiO2	K2O	CaO	MnO	FeO	n
Almandine	2.7	20.2	36.0	0.0	0.6	1.0	39.4	3
Chlorite	12.8	25.5	27.3	0.0	0.1	0.0	34.2	7

	Al2O3	S	Fe	Zn	n
Sphalerite	1.0	33.9	3.4	61.7	4

Description:

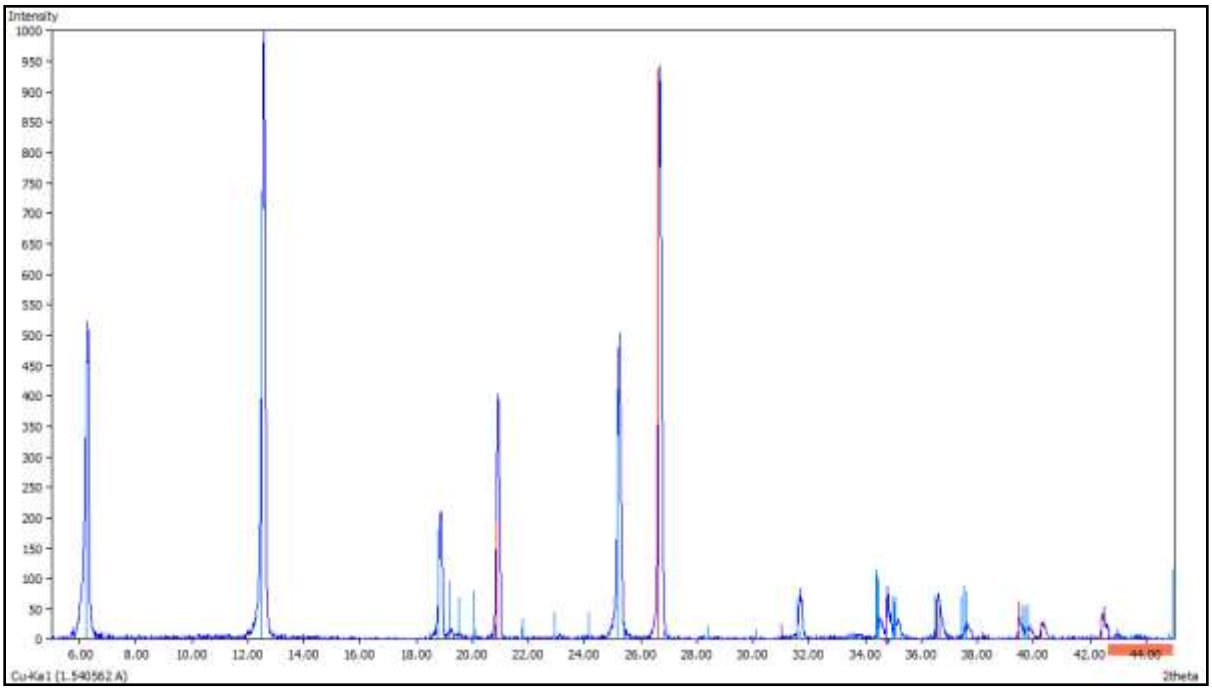
Massive, porphyroblastic, composed of massive chlorite with garnet (almandine) porphyroblasts. Sulfide occurs in trace amounts as disseminated pyrite and sphalerite grains. Ilmenite occurs in trace amounts as disseminated tabular grains. No carbonate minerals were identified in this sample

Rod Johnson & Associates, Inc.
1550 Baldwin Avenue
Negaunee, MI 49866

Sample: 16739
Baffinland Iron Mines Field Identification: Chlorite schist
Classification: Chlorite-garnet schist

Photograph of sample 16739. Note the yellowish bleached area and the network of fine cross-cutting veinlets.

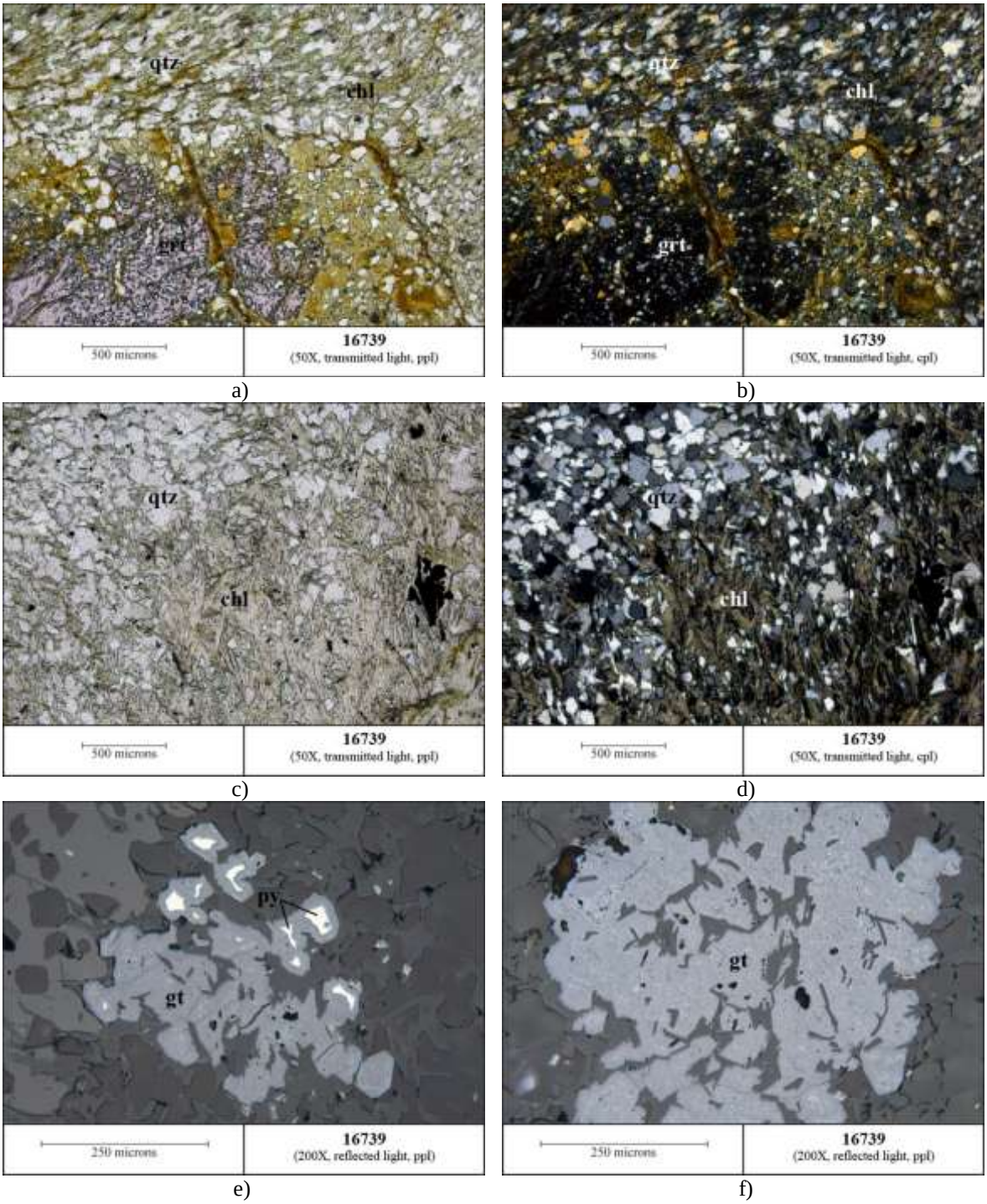
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Chlorite	66.9
Quartz	31.2
Almandine	1.9

Optical Microscopy:



Photomicrographs of sample16739. a) and b) Photomicrograph of garnet porphyroblast in a matrix of quartz grains supported in chlorite. c) and d) Photomicrograph of matrix composed of decussate chlorite and matrix supported quartz grains. e) Photomicrograph of pyrite porphyroblast partially replaced by goethite. f) Photomicrograph of pyrite porphyroblast pervasively replaced by goethite.

EDS Analyses

	MgO	Al2O3	SiO2	CaO	FeO	n
Almandine	2.6	20.0	36.4	0.3	40.6	6
Chamosite	15.4	25.0	28.7	0.0	30.9	9

	Al2O3	S	Fe	n
Pyrite	0.3	55.3	44.4	8

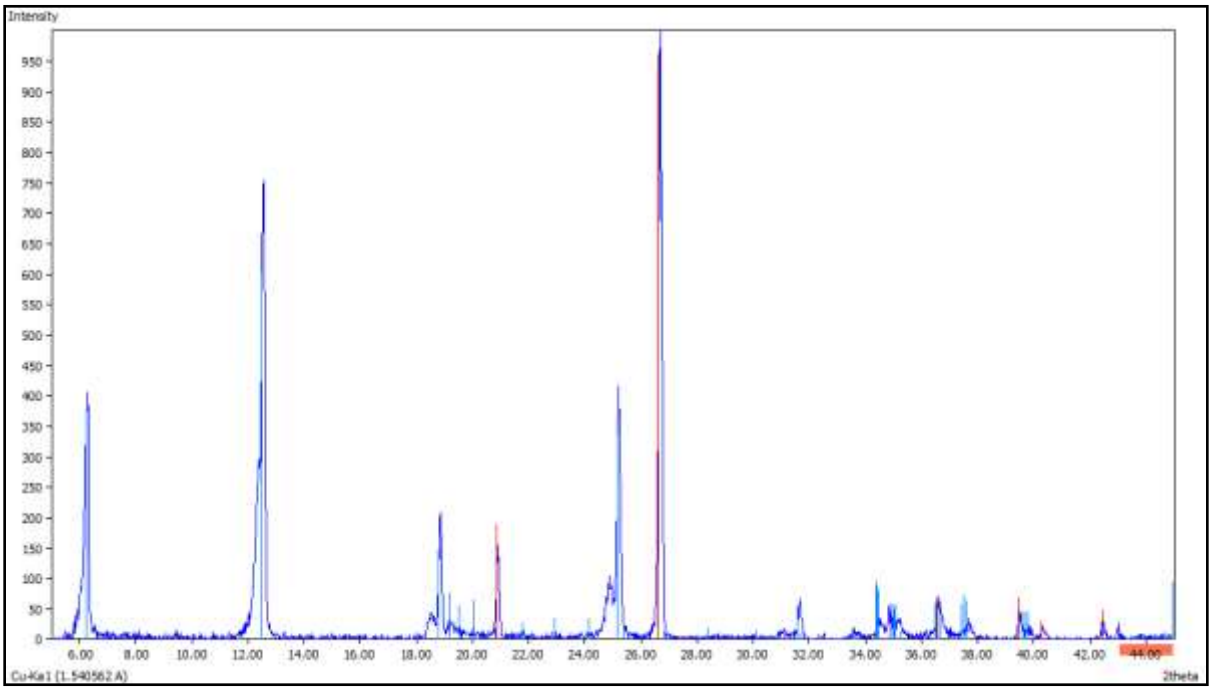
Description:

Massive to weakly foliated, composed of garnet (almandine) porphyroblasts in a matrix composed of decussate chlorite and chlorite supported quartz grains. Pyrite occurs in trace amounts as disseminated xenoblastic porphyroblasts that are pervasively replaced by goethite. No carbonate minerals were identified in this sample. A network of thin anastomosing veinlets are filled with or stained by iron oxides (hematite, goethite, and/or limonite).

Sample: 16745
Baffinland Iron Mines Field Identification: Volcanic tuff (layered)
Classification: Chlorite-quartz-garnet schist

Photograph of sample 16745.

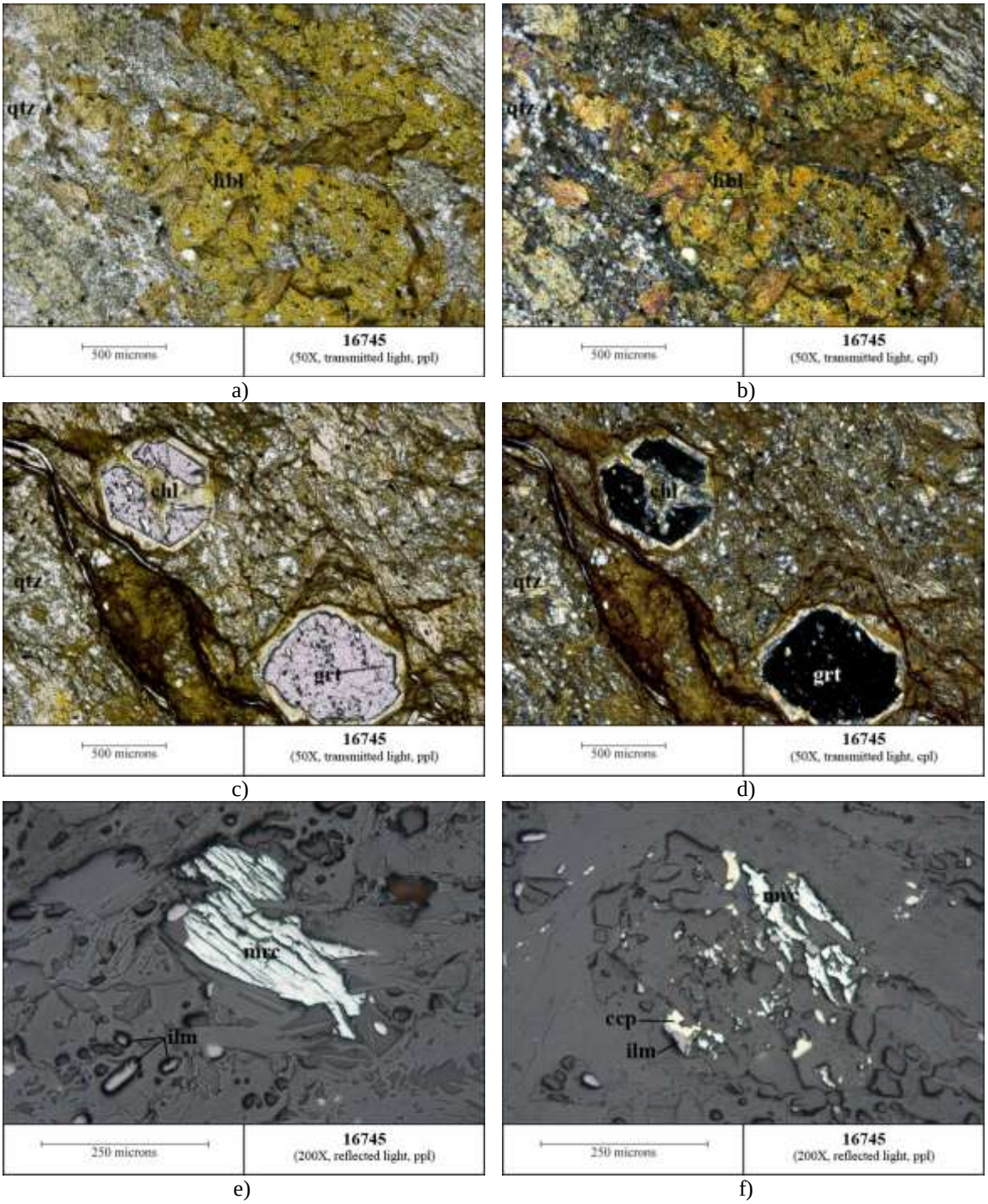
X-ray Diffraction



Rietveld analysis

Phase	Weight%
Chlorite	63.7
Quartz	32.7
Almandine	3.6

Optical Microscopy:



Photomicrographs of sample 16745. a) and b) Photomicrographs of relict hornblende replaced by chlorite in a matrix of chlorite and granoblastic quartz. c) and d) Photomicrograph of garnet porphyroblasts partially replaced by chlorite in a matrix composed of chlorite and granoblastic quartz. e) Photomicrograph of marcasite grain. f) Photomicrograph of disseminated marcasite, chalcopyrite and ilmenite grains.

EDS Analyses

	MgO	Al2O3	SiO2	CaO	MnO	FeO	n
Garnet	3.1	20.2	36.5	0.1	1.1	39.0	3

	MgO	Al2O3	SiO2	S	Fe	Ni	Cu	n
Marcasite	0.1	0.6	0.6	53.9	41.4	1.8	1.6	8

Description:

Foliated, composed of relict hornblende and garnet porphyroblasts in a matrix of chlorite and chlorite supported quartz grains. Hornblende porphyroblasts have been pervasively replaced by chlorite. The matrix is composed of quartz grains supported by chlorite. Garnet occurs as disseminated grains that are partially replaced by chlorite. Marcasite occurs in trace amounts as disseminated laminated grains. Chalcopyrite and ilmenite occur in trace amounts as disseminated grains. No carbonate minerals were identified in this sample.

APPENDIX D

HUMIDITY CELL RESULTS (2010 SAMPLE SET)

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D-2 Results of Waste Rock Humidity Cells HC 2- Footwall - Gneiss (MRARD10-030)
D-3 Results of Waste Rock Humidity Cells HC 3- Footwall - Gneiss (MRARD10-055)
D-4 Results of Waste Rock Humidity Cells HC 4- Footwall - Gneiss (MRARD10-074)
D-5 Results of Waste Rock Humidity Cells HC 5- Footwall - Schist (5178)
D-6 Results of Waste Rock Humidity Cells HC 6- Hanging wall - Schist (MRARD10-092)
D-7 Results of Waste Rock Humidity Cells HC 7- Hanging wall - Schist (MRARD10-105)
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D-6 Antimony Loads - Waste Rock Humidity Cells (2010 ABA Data Set)
D-7 Arsenic Loads - Waste Rock Humidity Cells (2010 ABA Data Set)
D-8 Cadmium Loads - Waste Rock Humidity Cells (2010 ABA Data Set)
D-9 Cobalt Loads - Waste Rock Humidity Cells (2010 ABA Data Set)
D-10 Copper Loads - Waste Rock Humidity Cells (2010 ABA Data Set)
D-11 Iron Loads - Waste Rock Humidity Cells (2010 ABA Data Set)
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D-18 Tin Loads - Waste Rock Humidity Cells (2010 ABA Data Set)
D-19 Zinc Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Table D-1. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (5171)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO_4	Ca	Hg	Al	Sb	As
		ml	ml	units	µS/cm	mg/L (as $CaCO_3$)	mg/L (as $CaCO_3$)	(mg/L)	mg/L	ug/L	mg/L	mg/L	mg/L
8-Jun-11	0	1000	623	7.95	40	2	11	5	2.8		0.02000	0.00	0.0002
15-Jun-11	1	1000	937	7.26	49	2	9	9	4.0		0.03	0.00	0.0003
22-Jun-11	2	1000	985	7.22	39	2	10	6.4	3.51		0.01	4E-04	0.0003
29-Jun-11	3	1000	971	7.25	40	2	9	4.2	3.21		0.03	4E-04	0.0003
6-Jul-11	4	1000	985	7.27	28	2	9	3.3	3.52		0.01	5E-04	0.0002
13-Jul-11	5	1000	987	6.92	25	2	8	2.9	3.53		0.01	6E-04	0.0004
20-Jul-11	6	1000	987	6.97	26	2	8	2.5	---		---	---	---
27-Jul-11	7	1000	996	7.08	27	2	8	2.5	3.1		0.03	2E-04	0.0002
3-Aug-11	8	1000	977	7.17	22	2	7	2.2	---		---	---	---
10-Aug-11	9	1000	986	7.24	24	2	8	2.3	3.32		0.03	2E-04	0.0002
17-Aug-11	10	1000	990	7.21	23	2	8	2.1	---		---	---	---
24-Aug-11	11	1000	993	7.09	21	2	7	2	3.08		0.04	2E-04	0.0002
31-Aug-11	12	1000	974	7.22	25	2	8	2	---		---	---	---
7-Sep-11	13	1000	989	7.32	22	2	8	2	2.98		0.03	2E-04	0.0002
14-Sep-11	14	1000	992	6.99	23	2	9	1.9	---		---	---	---
21-Sep-11	15	1000	989	6.7	22	2	7	1.8	3.12		0.03	3E-04	0.0002
28-Sep-11	16	1000	986	7.10	17	2	7	1.7	---		---	---	---
5-Oct-11	17	1000	994	7.1	17	2	7	1.6	3		0.03	2E-04	0.0002
12-Oct-11	18	1000	989	7.07	22	2	14	1.7	---		---	---	---
19-Oct-11	19	1000	985	6.94	21	2	8	1.7	3.12		0.02	2E-04	0.0006
26-Oct-11	20	1000	984	7.07	25	2	8	1.7	---		---	---	---
2-Nov-11	21	1000	987	6.72	22	2	7	1.7	3.29		0.04	2E-04	0.0002

Table D-1. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (5171)

Date	Cycle No.	Ba	Be	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
8-Jun-11	0	0.0006	0.00002	0.0000	0.00610	0.000018	0.000500	0.000092	0.0005	0.00	0.00	0.001	0.2	0.0098	0.0012
15-Jun-11	1	0.00095	0.00002	0.0000	0.0158	0.000006	0.000500	0.00009	0.0006	0.00	0.00	0.003	0.3	0.0115	0.0022
22-Jun-11	2	0.00116	0.00002	0.00001	0.027	0.000003	0.0005	0.000057	0.0005	0.002	7E-05	0.003	0.26	0.0108	0.00163
29-Jun-11	3	0.00074	0.00002	0.00001	0.0088	0.000009	0.0005	0.000104	0.0005	0.002	0.0001	0.002	0.219	0.01654	0.00079
6-Jul-11	4	0.00077	0.00002	0.00001	0.0071	0.000003	0.0005	0.000062	0.0005	0.002	2E-05	0.002	0.228	0.00913	0.00065
13-Jul-11	5	0.00075	0.00002	0.00001	0.008	0.000003	0.0005	0.000065	0.0005	0.002	3E-05	0.002	0.214	0.00984	0.00046
20-Jul-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Jul-11	7	0.00071	0.00002	0.00001	0.0035	0.000003	0.0005	0.000033	0.0005	0.002	2E-05	0.001	0.178	0.0104	0.00067
3-Aug-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10-Aug-11	9	0.00171	0.00002	0.00001	0.0039	0.000003	0.0005	0.000031	0.0005	0.002	7E-05	0.001	0.172	0.01	0.00024
17-Aug-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Aug-11	11	0.00069	0.00002	0.00001	0.0027	0.000027	0.0005	0.000046	0.0005	0.002	7E-05	0.001	0.147	0.00814	0.00023
31-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Sep-11	13	0.00072	0.00002	0.00001	0.0019	0.000003	0.0005	0.000017	0.0005	0.002	8E-05	0.001	0.134	0.00904	0.00367
14-Sep-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-Sep-11	15	0.00079	0.00002	0.00001	0.0018	0.000003	0.0005	0.000029	0.0005	0.002	0.0002	0.001	0.192	0.0104	0.00012
28-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Oct-11	17	0.00072	0.00002	0.00001	0.0015	0.000003	0.0005	0.000019	0.0005	0.002	3E-05	0.001	0.112	0.00802	0.00004
12-Oct-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Oct-11	19	0.00089	0.00002	0.00001	0.0011	0.000004	0.0005	0.000044	0.0005	0.003	3E-05	0.001	0.106	0.00922	0.00214
26-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Nov-11	21	0.00075	0.00002	0.00001	0.0014	0.000003	0.0005	0.000013	0.0005	0.003	2E-05	0.001	0.104	0.00855	0.00008

Table D-1. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (5171)

Date	Cycle No.	Ni	P	K	Se	Si	Ag	Na	Sr	Tl	Sn	Ti	U	V	W
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
8-Jun-11	0	1E-04	0.00900	1.58	0.00100	0.4500	4E-05	2.21	0.01230	0.0000	0.0004	0.00020	0.00198	0.00025	0.0004
15-Jun-11	1	4E-04	0.00900	2.21	0.00100	0.660	1E-05	3.27	0.02280	0.0000	0.00057	0.00010	0.06610	0.0003	0.0012
22-Jun-11	2	1E-04	0.009	1.91	0.001	0.62	1E-05	2.03	0.0192	0.00002	0.00042	0.0001	0.0594	0.00035	0.0011
29-Jun-11	3	2E-04	0.009	1.55	0.001	0.56	1E-05	1.18	0.0164	0.00002	0.00041	0.0001	0.047114	0.0003	0.0009
6-Jul-11	4	2E-04	0.009	1.64	0.001	0.61	1E-05	0.83	0.0177	0.00002	0.0004	0.0001	0.0425	0.0003	0.0007
13-Jul-11	5	1E-04	0.011	1.45	0.001	0.61	1E-05	0.6	0.0167	0.00002	0.00047	0.0001	0.0412	0.00027	0.0005
20-Jul-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---
27-Jul-11	7	1E-04	0.009	1.25	0.001	0.51	1E-05	0.33	0.014	0.00002	0.00065	0.0001	0.0356	0.00026	0.0002
3-Aug-11	8	---	---	---	---	---		---	---	---	---	---	---	---	---
10-Aug-11	9	1E-04	0.009	1.15	0.001	0.47	1E-05	0.24	0.0145	0.00002	0.00049	0.0001	0.0308	0.00023	5E-05
17-Aug-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---
24-Aug-11	11	1E-04	0.009	1.13	0.001	0.44	1E-05	0.19	0.013	0.00002	0.00066	0.0001	0.0246	0.00025	9E-05
31-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-Sep-11	13	1E-04	0.009	1.03	0.001	0.44	1E-05	0.15	0.0121	0.00002	0.0007	0.0001	0.0207	0.00022	5E-05
14-Sep-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21-Sep-11	15	2E-04	0.009	1.02	0.001	0.45	1E-05	0.13	0.0116	0.00002	0.00071	0.0001	0.0184	0.00023	8E-05
28-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---
5-Oct-11	17	1E-04	0.009	0.936	0.001	0.39	1E-05	0.11	0.0112	0.00002	0.00064	0.0001	0.015	0.00019	3E-05
12-Oct-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19-Oct-11	19	2E-04	0.009	0.908	0.001	0.41	1E-05	0.1	0.0115	0.00002	0.00075	0.0001	0.0166	0.00019	4E-05
26-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-Nov-11	21	2E-04	0.009	0.929	0.001	0.43	1E-05	0.1	0.0116	0.00002	0.00071	0.0001	0.0152	0.00018	3E-05

Table D-1. Results of Waste Rock Humidity Cells - HC 1
Footwall - Gneiss (5171)

Date	Cycle No.	Y	Zn
		mg/L	mg/L
8-Jun-11	0	0.000119	0.002
15-Jun-11	1	0.000252	0.002
22-Jun-11	2	0.000113	0.002
29-Jun-11	3	0.000044	0.002
6-Jul-11	4	0.000027	0.002
13-Jul-11	5	0.000019	0.002
20-Jul-11	6	---	---
27-Jul-11	7	0.000016	0.002
3-Aug-11	8	---	---
10-Aug-11	9	0.000018	0.002
17-Aug-11	10	---	---
24-Aug-11	11	0.000012	0.002
31-Aug-11	12	---	---
7-Sep-11	13	0.000012	0.002
14-Sep-11	14	---	---
21-Sep-11	15	0.000012	0.002
28-Sep-11	16	---	---
5-Oct-11	17	0.000013	0.002
12-Oct-11	18	---	---
19-Oct-11	19	0.000014	0.002
26-Oct-11	20	---	---
2-Nov-11	21	0.00001	0.002

Table D-2. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss (MRARD10-030)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO_4	Ca	Hg	Al	Sb	As	Ba	Be
		ml	ml	units	µS/cm	mg/L (as $CaCO_3$)	mg/L (as $CaCO_3$)	(mg/L)	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	1000	779	6.77	117	2	3	33	4.4		0.01000	0.00	0.0002	0.0073	0.00002
25-May-11	1	1000	993	6.03	149	5	2	55	5.6		0.01	0.00	0.0002	0.00746	0.00002
1-Jun-11	2	1000	992	7.01	93	2	5	27	3.08		0.01	0.0005	0.0002	0.00522	0.00002
8-Jun-11	3	1000	884	6.80	27	2	4	6	0.7		0.01000	0.00	0.0002	0.0028	0.00002
15-Jun-11	4	1000	993	6.62	58	2	5	16	1.6		0.01	0.00	0.0002	0.00409	0.00002
22-Jun-11	5	1000	1001	6.81	36	2	4	9.5	1.05		0.01	0.0003	0.0002	0.0034	0.00002
29-Jun-11	6	1000	992	6.80	26	2	4	6	---		---	---	---	---	---
6-Jul-11	7	1000	989	6.75	21	2	4	4	0.6		0.01	0.00	0.0002	0.00261	0.00002
13-Jul-11	8	1000	981	6.9	18	2	4	3.9	---		---	---	---	---	---
20-Jul-11	9	1000	990	6.52	17	2	3	3	0.4		0.01000	0.00	0.0002	0.0021	0.00002
27-Jul-11	10	1000	982	6.76	17	2	3	3	---		---	---	---	---	---
3-Aug-11	11	1000	989	6.69	15	2	3	3	0.33		0.01	0.0003	0.0004	0.00188	0.00002
10-Aug-11	12	1000	981	6.74	14	2	3	3	---		---	---	---	---	---
17-Aug-11	13	1000	990	6.80	13	2	3	3	0.3		0.01	0.00	0.0002	0.00185	0.00002
24-Aug-11	14	1000	984	6.61	13	2	2	2.7	---		---	---	---	---	---
31-Aug-11	15	1000	985	6.19	15	2	3	3	0.3		0.01000	0.00	0.0004	0.0018	0.00002
7-Sep-11	16	1000	987	6.64	13	2	2	3	---		---	---	---	---	---
14-Sep-11	17	1000	989	6.43	13	2	3	2.6	0.26		0.01	0.0003	0.0002	0.0017	0.00002
21-Sep-11	18	1000	990	6.48	3	2	2	2	---		---	---	---	---	---
28-Sep-11	19	1000	996	6.57	3	2	2	2	0.3		0.01	0.00	0.0002	0.00158	0.00002
5-Oct-11	20	1000	985	6.77	4	2	2	2.3	---		---	---	---	---	---
12-Oct-11	21	1000	995	6.56	11	2	2	2	0.2		0.01000	0.00	0.0002	0.0016	0.00002
19-Oct-11	22	1000	996	6.30	12	2	2	3	---		---	---	---	---	---
26-Oct-11	23	1000	989	6.44	7	2	2	2.4	0.22		0.01	0.0003	0.0002	0.00167	0.00002
2-Nov-11	24	1000	988	6.23	13	2	2	3	---		---	---	---	---	---

Table D-2. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss (MRARD10-030)

Date	Cycle No.	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	P	K
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	0.0000	0.00520	0.000011	0.000500	0.00104	0.0005	0.00	0.00	0.003	7.5	0.0280	0.0019	0.003	0.00900	0.83
25-May-11	1	0.0000	0.0183	0.000003	0.000500	0.000625	0.0005	0.00	0.00	0.004	11.9	0.0495	0.0023	0.002	0.01700	1.27
1-Jun-11	2	0.00001	0.011	0.000003	0.0005	0.000468	0.0005	0.005	0.00002	0.003	6.78	0.0295	0.00161	0.001	0.009	0.76
8-Jun-11	3	0.0000	0.00620	0.000003	0.000500	0.000201	0.0005	0.00	0.00	0.001	1.6	0.0112	0.0008	3E-04	0.01000	0.18
15-Jun-11	4	0.0000	0.0091	0.000007	0.000500	0.000308	0.0005	0.00	0.00	0.002	3.6	0.0201	0.0012	9E-04	0.00900	0.41
22-Jun-11	5	0.00001	0.0066	0.000003	0.0005	0.00024	0.0005	0.005	0.00002	0.002	2.31	0.0148	0.00091	6E-04	0.01	0.26
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	0.0000	0.0051	0.000003	0.000500	0.000186	0.0005	0.01	0.00	0.001	1.3	0.0095	0.0007	9E-04	0.00900	0.11
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	0.0000	0.00360	0.000003	0.000500	0.000155	0.0005	0.00	0.00	0.001	1.0	0.0086	0.0007	0.002	0.01300	0.07
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	0.00001	0.0025	0.000003	0.0005	0.000176	0.0005	0.002	0.00002	0.001	0.782	0.00798	0.00045	0.002	0.009	0.03
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	0.0000	0.0026	0.000003	0.000500	0.000154	0.0005	0.00	0.00	0.001	0.8	0.0074	0.0004	0.002	0.00900	1.44
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	0.0000	0.00220	0.000003	0.000500	0.000155	0.0005	0.00	0.00	0.001	0.7	0.0076	0.0003	0.002	0.00900	1.2
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	0.00001	0.0022	0.000003	0.0005	0.000189	0.0005	0.002	0.00002	0.001	0.631	0.00813	0.00033	0.003	0.009	1.21
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	0.0000	0.0014	0.000003	0.000500	0.000215	0.0005	0.00	0.00	0.001	0.6	0.0074	0.0003	0.003	0.00900	1.07
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	0.0000	0.00160	0.000003	0.000500	0.000144	0.0005	0.00	0.00	0.001	0.6	0.0075	0.0002	3E-04	0.00900	1.04
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	0.00001	0.0014	0.000003	0.0005	0.00026	0.0005	0.003	0.00002	0.001	0.594	0.008	0.00021	0.004	0.009	1.07
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-2. Results of Waste Rock Humidity Cells - HC 2
Footwall - Gneiss (MRARD10-030)

Date	Cycle No.	Se	Si	Ag	Na	Sr	Tl	Sn	Ti	U	V	W	Y	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	0.00100	0.3300	1E-05	0.83	0.03270	0.0002	0.0010	0.00010	0.00003	0.00005	0.0005	0.000007	0.002
25-May-11	1	0.00100	0.580	1E-05	1.27	0.04280	0.0001	0.00096	0.00070	0.00029	0.00016	0.0006	0.00001	0.002
1-Jun-11	2	0.001	0.57	1E-05	0.76	0.0244	0.00004	0.00045	0.0001	0.000153	0.00009	0.0004	0.000006	0.002
8-Jun-11	3	0.00100	0.5000	1E-05	0.18	0.00620	0.0000	0.0001	0.00010	0.00005	0.00007	0.0002	0.000001	0.002
15-Jun-11	4	0.00100	0.570	1E-05	0.41	0.01360	0.0000	0.00029	0.00010	0.00009	0.00003	0.0003	0.000004	0.002
22-Jun-11	5	0.001	0.54	1E-05	0.26	0.0091	0.00002	0.00018	0.0002	0.000075	0.00006	0.0002	0.000002	0.002
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	0.00100	0.590	1E-05	0.11	0.00510	0.0000	0.00015	0.00010	0.00005	0.00003	0.0002	0.000001	0.002
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	0.00100	0.5700	1E-05	0.07	0.00380	0.0000	0.0001	0.00010	0.00005	0.00003	0.0002	0.000001	0.002
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	0.001	0.52	1E-05	0.03	0.0032	0.00004	0.0001	0.0002	0.000043	0.00005	0.0002	0.000002	0.002
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	0.00100	0.540	1E-05	0.05	0.00320	0.0000	0.00008	0.00010	0.00004	0.00004	0.0001	0.000002	0.002
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	0.00100	0.4900	1E-05	0.04	0.00250	0.0000	0.0001	0.00010	0.00004	0.00003	9E-05	0.000001	0.002
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	0.001	0.47	1E-05	0.02	0.0023	0.00002	0.00006	0.0001	0.000043	0.00003	0.0001	0.00001	0.002
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	0.00100	0.410	1E-05	0.03	0.00210	0.0000	0.00003	0.00010	0.00004	0.00003	0.0001	0.000006	0.002
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	0.00100	0.4000	1E-05	0.02	0.00190	0.0000	0.0001	0.00010	0.00004	0.00003	7E-05	0.000006	0.002
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	0.001	0.42	1E-05	0.03	0.002	0.00002	0.00003	0.0001	0.000029	0.00003	5E-05	0.000015	0.002
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-3. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (MRARD10-055)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO_4	Ca	Hg	Al	Sb	As	Ba	Be
		ml	ml	units	µS/cm	mg/L (as $CaCO_3$)	mg/L (as $CaCO_3$)	(mg/L)	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	1000	785	6.52	94	<2	<2	17	6.61		0.01	0.0006	0.001	0.0028	<0.00002
25-May-11	1	1000	919	6.96	131	<2	5	36	13.7		<0.01	0.0005	0.0016	0.00593	<0.00002
1-Jun-11	2	1000	960	6.24	118	<2	<2	23	9.26		<0.01	0.0004	0.0013	0.00478	<0.00002
8-Jun-11	3	1000	875	6.69	54	4	2	13	3.20		<0.01	0.0003	0.0007	0.00229	<0.00002
15-Jun-11	4	1000	937	5.93	92	5	<2	19	6.10		0.01	0.0003	0.0010	0.00355	<0.00002
22-Jun-11	5	1000	877	6.25	122	9	<2	28	8.91		<0.01	<0.0002	0.0007	0.00469	<0.00002
29-Jun-11	6	1000	868	6.12	35	4	<2	8.3	---		---	---	---	---	---
6-Jul-11	7	1000	891	6.05	21	3	<2	5.6	1.23		<0.01	0.0004	0.0002	0.00106	<0.00002
13-Jul-11	8	1000	876	5.97	24	3	<2	7.5	---		---	---	---	---	---
20-Jul-11	9	1000	857	6.06	20	3	<2	5.2	1.12		0.01	0.0003	0.0003	0.00106	<0.00002
27-Jul-11	10	1000	861	6.07	22	4	<2	4.6	---		---	---	---	---	---
3-Aug-11	11	1000	877	5.84	18	3	<2	4.9	0.91		0.01	0.0003	0.0005	0.00093	<0.00002
10-Aug-11	12	1000	864	6.22	19	3	<2	4.8	---		---	---	---	---	---
17-Aug-11	13	1000	880	6.26	16	3	<2	4.2	0.81		<0.01	0.0003	0.0004	0.00085	<0.00002
24-Aug-11	14	1000	870	5.94	16	3	<2	4.4	---		---	---	---	---	---
31-Aug-11	15	1000	855	6.05	16	3	<2	4.0	0.72		<0.01	0.0004	0.0004	0.00076	<0.00002
7-Sep-11	16	1000	888	5.96	15	2	<2	4.4	---		---	---	---	---	---
14-Sep-11	17	1000	993	6.17	24	129	<2	7.3	1.49		<0.01	0.0003	0.0004	0.00148	<0.00002
21-Sep-11	18	1000	987	6.22	4	4	<2	5.2	---		---	---	---	---	---
28-Sep-11	19	1000	973	6.39	13	<2	<2	3.7	0.81		<0.01	<0.0002	<0.0002	0.00101	<0.00002
5-Oct-11	20	1000	1009	5.95	13	2	<2	3.4	---		---	---	---	---	---
12-Oct-11	21	1000	991	5.79	16	5	<2	4.0	0.66		<0.01	0.0004	0.0002	0.00132	<0.00002
19-Oct-11	22	1000	990	6.32	14	3	<2	3.5	---		---	---	---	---	---
26-Oct-11	23	1000	995	5.92	<7	3	<2	3.6	0.53		<0.01	0.0003	<0.0002	0.00143	<0.00002
2-Nov-11	24	1000	985	5.93	4	4	<2	3.7	---		---	---	---	---	---

Table D-3. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (MRARD10-055)

Date	Cycle No.	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	P	K
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.00001	0.0028	0.000199	<0.0005	0.018	<0.0005	0.005	0.0001	0.005	2.03	0.0467	0.187	0.14	<0.009	7.3
25-May-11	1	<0.00001	0.0087	0.000270	<0.0005	0.0152	<0.0005	<0.002	0.00005	0.007	4.89	0.0975	0.268	0.120	<0.009	10.6
1-Jun-11	2	<0.00001	0.0051	0.000456	<0.0005	0.0275	<0.0005	0.004	0.00006	0.006	3.19	0.0870	0.241	0.152	<0.009	8.86
8-Jun-11	3	<0.00001	0.0046	0.000278	<0.0005	0.0330	<0.0005	0.002	0.00006	0.005	1.25	0.0570	0.205	0.124	<0.009	4.06
15-Jun-11	4	<0.00001	0.0051	0.000644	<0.0005	0.0358	<0.0005	<0.002	0.00004	0.006	2.38	0.0886	0.190	0.176	<0.009	6.46
22-Jun-11	5	<0.00001	0.0054	0.000784	<0.0005	0.0630	<0.0005	0.004	0.00004	0.006	3.63	0.144	0.185	0.286	<0.009	7.65
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.00001	0.0031	0.000201	<0.0005	0.0213	<0.0005	0.006	0.00004	0.003	0.462	0.0263	0.115	0.0671	<0.009	2.16
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.00001	0.0016	0.00029	<0.0005	0.032	<0.0005	0.006	0.00006	0.002	0.427	0.0326	0.082	0.0875	<0.009	1.75
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.00001	0.0012	0.000417	<0.0005	0.0427	<0.0005	0.007	0.00005	0.002	0.396	0.0337	0.0624	0.111	<0.009	1.66
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.00001	0.0012	0.000493	<0.0005	0.0439	<0.0005	0.004	0.00009	0.002	0.37	0.032	0.0555	0.106	<0.009	1.5
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.00001	0.001	0.000725	<0.0005	0.0511	<0.0005	0.003	0.00011	0.001	0.334	0.0348	0.04	0.114	<0.009	1.19
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.00001	0.0021	0.00156	<0.0005	0.0837	0.0008	<0.002	0.00004	0.002	0.427	0.0542	0.0402	0.176	<0.009	1.21
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.00001	0.0012	0.00126	<0.0005	0.0598	0.0008	<0.002	0.00006	0.001	0.332	0.0347	0.0343	0.117	0.014	1.09
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.00001	0.0013	0.00171	<0.0005	0.0739	0.0011	<0.002	0.00003	0.001	0.351	0.0389	0.0267	0.144	<0.009	1.03
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.00001	0.0008	0.00181	<0.0005	0.0705	0.0014	<0.003	0.00004	<0.001	0.315	0.0361	0.0232	0.137	<0.009	0.825
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-3. Results of Waste Rock Humidity Cells - HC 3
Footwall - Gneiss (MRARD10-055)

Date	Cycle No.	Se	Si	Ag	Na	Sr	Tl	Sn	Ti	U	V	W	Y	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.001	0.3	<0.00001	0.41	0.0489	0.0005	0.00156	0.0003	0.000165	0.00012	0.00012	0.000007	0.014
25-May-11	1	<0.001	0.38	<0.00001	0.83	0.108	0.00062	0.00102	0.0006	0.000189	0.00038	0.00019	0.000011	0.008
1-Jun-11	2	<0.001	0.50	<0.00001	0.60	0.0735	0.00067	0.00074	0.0002	0.000173	0.00024	0.00018	0.000007	0.013
8-Jun-11	3	<0.001	0.35	<0.00001	0.19	0.0276	0.00033	0.00025	0.0007	0.000111	0.00008	<0.00003	0.000014	0.020
15-Jun-11	4	<0.001	0.53	<0.00001	0.39	0.0506	0.00057	0.00048	0.0002	0.000141	0.00022	<0.00003	0.000010	0.018
22-Jun-11	5	<0.001	0.36	<0.00001	0.54	0.0759	0.00052	0.00029	0.0002	0.000159	0.00018	0.00004	0.000015	0.039
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.001	0.48	<0.00001	0.05	0.0112	0.00022	0.00025	0.0009	0.000092	0.00005	0.00004	0.000004	0.022
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.001	0.34	<0.00001	0.03	0.011	0.00022	0.00021	0.0006	0.00012	0.00004	<0.00003	0.000006	0.042
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.001	0.42	<0.00001	0.01	0.0099	0.00019	0.00013	0.0007	0.000112	<0.00003	<0.00003	0.000008	0.068
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.001	0.39	<0.00001	0.03	0.0094	0.00018	0.00018	0.0004	0.000139	<0.00003	<0.00003	0.000004	0.094
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.001	0.36	<0.00001	0.02	0.0083	0.00016	0.00015	0.0001	0.000157	<0.00003	<0.00003	0.000005	0.125
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.001	1.08	<0.00001	<0.01	0.0164	0.00022	0.00035	0.0001	0.000221	0.00004	<0.00003	0.000007	0.255
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.001	1.24	<0.00001	0.03	0.0104	0.0002	0.00012	<0.0001	0.000228	0.00005	0.00004	0.000002	0.264
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.001	1.22	<0.00001	0.02	0.0102	0.0002	0.00014	0.0001	0.000343	<0.00003	0.00004	0.000004	0.34
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.001	0.96	<0.00001	0.02	0.0087	0.00017	0.00012	<0.0001	0.000331	<0.00003	<0.00003	0.000005	0.364
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-4. Results of Waste Rock Humidity Cells - HC 4
Footwall - Gneiss (MRARD10-074)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO_4	Ca	Hg	Al	Sb	As	Ba	Be
		ml	ml	units	µS/cm	mg/L (as $CaCO_3$)	mg/L (as $CaCO_3$)	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	1000	746	6.27	493	2	<2	150	26.5		<0.01	0.0004	0.0007	0.0199	<0.00002
25-May-11	1	1000	969	6.26	618	7	<2	280	47.6		<0.01	<0.0002	0.0013	0.0135	<0.00002
1-Jun-11	2	1000	964	6.14	604	<2	<2	210	39.2		<0.01	<0.0002	0.0009	0.00959	<0.00002
8-Jun-11	3	1000	972	6.04	317	4	<2	120	19.9		<0.01	0.0002	0.0004	0.00589	<0.00002
15-Jun-11	4	1000	944	6.02	547	6	<2	210	33.5		<0.01	<0.0002	0.0008	0.00733	<0.00002
22-Jun-11	5	1000	993	6.01	425	5	<2	170	28.5		<0.01	<0.0002	0.0004	0.00767	<0.00002
29-Jun-11	6	1000	964	6.13	274	4	<2	110	---		---	---	---	---	---
6-Jul-11	7	1000	970	6.15	242	3	<2	95	16.4		<0.01	0.0003	<0.0002	0.00521	<0.00002
13-Jul-11	8	1000	956	6.01	177	3	<2	78	---		---	---	---	---	---
20-Jul-11	9	1000	981	5.98	193	4	<2	71	12.6		<0.01	0.0002	<0.0002	0.00498	<0.00002
27-Jul-11	10	1000	944	6.01	144	2	<2	53	---		---	---	---	---	---
3-Aug-11	11	1000	959	6.3	124	<2	<2	47	8.35		<0.01	<0.0002	0.0002	0.00469	<0.00002
10-Aug-11	12	1000	960	5.95	80	3	<2	34	---		---	---	---	---	---
17-Aug-11	13	1000	938	5.8	77	2	<2	28	4.87		<0.01	<0.0002	<0.0002	0.00422	<0.00002
24-Aug-11	14	1000	953	5.82	57	3	<2	24	---		---	---	---	---	---
31-Aug-11	15	1000	948	5.92	66	<2	<2	23	3.76		0.01	0.0002	<0.0002	0.00453	<0.00002
7-Sep-11	16	1000	958	5.89	58	<2	<2	19	---		---	---	---	---	---
14-Sep-11	17	1000	943	5.98	51	79	2	16	2.67		0.01	0.0002	<0.0002	0.00402	<0.00002
21-Sep-11	18	1000	960	5.93	41	<2	<2	18	---		---	---	---	---	---
28-Sep-11	19	1000	950	6.04	40	4	<2	17	3.14		<0.01	<0.0002	<0.0002	0.00441	<0.00002
5-Oct-11	20	1000	993	6.97	48	<2	4	19	---		---	---	---	---	---
12-Oct-11	21	1000	961	5.8	41	<2	<2	15.0	2.45		<0.01	<0.0002	<0.0002	0.00442	<0.00002
19-Oct-11	22	1000	973	5.87	42	2	<2	15.0	---		---	---	---	---	---
26-Oct-11	23	1000	970	5.88	32	<2	<2	14.0	2.31		<0.01	0.0003	<0.0002	0.00431	<0.00002
2-Nov-11	24	1000	951	5.57	43	4	<2	14	---		---	---	---	---	---

Table D-4. Results of Waste Rock Humidity Cells - HC 4
Footwall - Gneiss (MRARD10-074)

Date	Cycle No.	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	P	K
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.00001	0.0101	0.000021	<0.0005	0.00983	0.0064	0.011	<0.00002	0.012	37.2	1.44	0.0064	0.0085	<0.009	6.02
25-May-11	1	<0.00001	0.0180	0.000035	<0.0005	0.00985	0.0022	0.002	<0.00002	0.016	63.7	3.00	0.00982	0.0098	0.061	8.21
1-Jun-11	2	<0.00001	0.0132	0.000029	<0.0005	0.00904	0.0019	0.007	<0.00002	0.013	49.4	2.31	0.00724	0.0076	0.026	7.13
8-Jun-11	3	<0.00001	0.0112	0.000013	<0.0005	0.00535	0.0013	<0.002	<0.00002	0.008	22.1	1.24	0.00437	0.0043	<0.009	4.43
15-Jun-11	4	<0.00001	0.0144	0.000038	<0.0005	0.00786	0.0015	0.004	<0.00002	0.012	39.7	2.06	0.00707	0.0073	<0.009	6.56
22-Jun-11	5	<0.00001	0.0122	0.000016	<0.0005	0.00613	0.0015	0.003	<0.00002	0.010	31.0	1.64	0.00518	0.0062	<0.009	5.52
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.00001	0.0106	0.00001	<0.0005	0.00397	0.0013	0.003	<0.00002	0.007	16.2	0.925	0.00417	0.0041	<0.009	3.92
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.00001	0.0098	0.000007	<0.0005	0.00356	0.001	0.004	<0.00002	0.006	11.6	0.688	0.0024	0.0037	0.014	3.23
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.00001	0.0082	0.000004	<0.0005	0.00289	0.001	<0.002	<0.00002	0.005	6.88	0.459	0.00298	0.0035	0.011	2.9
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.00001	0.0076	<0.000003	<0.0005	0.002	0.0008	<0.002	0.00006	0.004	4.28	0.261	0.00183	0.0024	<0.009	2.59
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.00001	0.0069	0.000003	<0.0005	0.002	0.0007	0.002	0.00009	0.004	3.01	0.233	0.0015	0.0026	<0.009	2.06
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.00001	0.0061	0.000009	<0.0005	0.00208	0.0007	<0.002	<0.00002	0.004	2.17	0.19	0.00199	0.0029	<0.009	1.86
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.00001	0.006	0.000007	<0.0005	0.00207	0.0009	0.002	<0.00002	0.004	2.33	0.184	0.00246	0.0027	<0.009	1.92
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.00001	0.006	<0.000003	<0.0005	0.00184	0.0008	0.002	<0.00002	0.004	1.87	0.172	0.00283	0.0024	<0.009	1.74
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.00001	0.0053	0.000007	<0.0005	0.00222	0.0009	<0.003	<0.00002	0.004	1.76	0.165	0.00027	0.0032	<0.009	1.63
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-4. Results of Waste Rock Humidity Cells - HC 4
Footwall - Gneiss (MRARD10-074)

Date	Cycle No.	Se	Si	Ag	Na	Sr	Tl	Sn	Ti	U	V	W	Y	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	0.003	0.43	<0.00001	1.03	0.16	<0.0002	0.00051	<0.0001	0.00003	<0.00003	<0.00003	0.000045	0.002
25-May-11	1	0.008	0.57	<0.00001	1.60	0.258	0.00008	0.00060	<0.0001	0.000033	0.00088	0.00007	0.000058	<0.002
1-Jun-11	2	0.004	0.55	<0.00001	1.17	0.198	0.00007	0.00030	<0.0001	0.000027	0.00055	0.00011	0.000053	<0.002
8-Jun-11	3	0.002	0.48	<0.00001	0.40	0.0929	0.00005	0.00011	0.0001	0.000026	0.00007	<0.00003	0.000028	<0.002
15-Jun-11	4	0.003	0.63	<0.00001	0.85	0.162	0.00006	0.00022	0.0001	0.000021	0.00055	<0.00003	0.000040	<0.002
22-Jun-11	5	0.002	0.56	<0.00001	0.61	0.137	0.00005	0.00016	<0.0001	0.000018	0.00022	<0.00003	0.000035	<0.002
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.001	0.54	<0.00001	0.26	0.0732	0.00006	0.00012	0.0007	0.000027	<0.00003	<0.00003	0.000022	<0.002
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.001	0.6	<0.00001	0.18	0.0533	0.00005	0.00008	<0.0001	0.000018	<0.00003	<0.00003	0.000015	<0.002
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.001	0.63	<0.00001	0.1	0.0346	0.00005	0.00007	0.0002	0.000018	<0.00003	<0.00003	0.000012	0.003
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.001	0.61	<0.00001	0.1	0.022	0.00003	0.00004	<0.0001	0.000016	<0.00003	<0.00003	0.000005	<0.002
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.001	0.6	<0.00001	0.06	0.0163	0.00004	0.00002	<0.0001	0.000018	<0.00003	<0.00003	0.000003	<0.002
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.001	0.53	<0.00001	0.04	0.0125	0.00003	0.00006	0.0002	0.000027	<0.00003	<0.00003	0.000002	<0.002
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.001	0.65	<0.00001	0.05	0.0137	0.00003	0.00003	<0.0001	0.000039	<0.00003	<0.00003	0.000003	<0.002
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.001	0.65	<0.00001	0.04	0.0115	0.00003	0.00003	<0.0001	0.000032	<0.00003	<0.00003	0.000006	<0.002
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.001	0.63	<0.00001	0.04	0.0109	0.00002	< 0.00001	<0.0001	0.00002	<0.00003	<0.00003	<0.000001	<0.002
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table D-5. Results of Waste Rock Humidity Cells - HC 5
Footwall - Schist (5178)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO_4	Ca	Hg	Al	Sb	As	Ba	Be
		ml	ml	units	µS/cm	mg/L (as $CaCO_3$)	mg/L (as $CaCO_3$)	(mg/L)	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	1000	771	6.26	110	<2	<2	42	2.07		<0.01	0.0006	<0.0002	0.00086	<0.00002
25-May-11	1	1000	958	6.03	149	5	<2	80	3.81		<0.01	0.0006	<0.0002	0.00126	<0.00002
1-Jun-11	2	1000	949	5.97	120	<2	<2	48	2.50		<0.01	0.0005	<0.0002	0.00180	<0.00002
8-Jun-11	3	1000	941	5.95	88	3	<2	33	1.58		<0.01	0.0002	0.0002	0.00067	<0.00002
15-Jun-11	4	1000	990	5.82	69	3	<2	25	1.23		<0.01	0.0002	<0.0002	0.00060	<0.00002
22-Jun-11	5	1000	961	5.59	59	3	<2	21	1.03		<0.01	0.0006	<0.0002	0.00074	<0.00002
29-Jun-11	6	1000	959	6.63	59	2	<2	21	---		---	---	---	---	---
6-Jul-11	7	1000	952	5.86	55	2	<2	20	0.97		<0.01	0.0005	<0.0002	0.00053	<0.00002
13-Jul-11	8	1000	957	5.75	48	2	<2	18	---		---	---	---	---	---
20-Jul-11	9	1000	961	5.9	49	3	<2	17	0.9		<0.01	0.0003	<0.0002	0.00066	<0.00002
27-Jul-11	10	1000	957	5.72	48	3	<2	16	---		---	---	---	---	---
3-Aug-11	11	1000	961	5.64	41	3	<2	15	0.64		<0.01	0.0003	0.0003	0.00055	0.00002
10-Aug-11	12	1000	953	5.67	41	2	<2	15	---		---	---	---	---	---
17-Aug-11	13	1000	949	5.98	39	3	<2	15	0.67		<0.01	0.0003	<0.0002	0.00051	<0.00002
24-Aug-11	14	1000	955	5.57	39	3	<2	14	---		---	---	---	---	---
31-Aug-11	15	1000	953	5.96	43	<2	<2	14	0.6		0.01	0.0006	0.0016	0.00055	<0.00002
7-Sep-11	16	1000	959	5.65	40	2	<2	14	---		---	---	---	---	---
14-Sep-11	17	1000	948	5.67	40	3	<2	14	0.63		0.01	0.0003	<0.0002	0.00054	<0.00002
21-Sep-11	18	1000	954	5.85	33	2	<2	14	---		---	---	---	---	---
28-Sep-11	19	1000	951	5.7	33	3	<2	14	0.6		0.01	0.0002	<0.0002	0.00057	0.00003
5-Oct-11	20	1000	965	6.25	33	<2	<2	14	---		---	---	---	---	---
12-Oct-11	21	1000	947	5.46	38	2	<2	14.0	0.53		0.02	0.0004	<0.0002	0.0007	0.00003
19-Oct-11	22	1000	954	5.22	44	5	<2	15.0	---		---	---	---	---	---
26-Oct-11	23	1000	950	5.43	33	3	<2	14.0	0.54		0.02	0.0003	<0.0002	0.00066	0.00003
2-Nov-11	24	1000	951	5.35	46	4	<2	15	---		---	---	---	---	---

Table D-5. Results of Waste Rock Humidity Cells - HC 5
Footwall - Schist (5178)

Date	Cycle No.	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	P	K
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.00001	0.0048	0.000003	<0.0005	0.00634	0.0005	0.031	3E-05	<0.001	9	0.0169	0.0005	0.156	<0.009	1.89
25-May-11	1	<0.00001	0.0174	0.000004	<0.0005	0.00215	<0.0005	<0.002	#####	<0.001	16.7	0.0246	0.00030	#####	<0.009	3.25
1-Jun-11	2	<0.00001	0.0099	0.000003	<0.0005	0.00202	<0.0005	0.006	#####	<0.001	11.1	0.0190	0.00022	#####	0.015	2.47
8-Jun-11	3	<0.00001	0.0080	0.000006	<0.0005	0.00197	<0.0005	0.002	#####	<0.001	7.04	0.0172	0.00019	#####	<0.009	1.77
15-Jun-11	4	<0.00001	0.0072	<0.000003	<0.0005	0.00219	<0.0005	0.004	#####	<0.001	5.62	0.0177	0.00003	0.106	<0.009	1.54
22-Jun-11	5	<0.00001	0.0066	<0.000003	<0.0005	0.00256	<0.0005	<0.002	#####	<0.001	4.67	0.0177	0.00007	0.118	0.011	1.34
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.00001	0.0054	0.000006	<0.0005	0.00339	0.0006	0.005	1E-04	<0.001	4.58	0.022	8E-05	0.172	<0.009	1.2
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.00001	0.0037	0.000006	<0.0005	0.00466	0.0009	0.138	1E-04	<0.001	3.87	0.0276	0.0005	0.228	0.011	0.952
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.00001	0.0024	0.000019	<0.0005	0.00615	0.0014	<0.002	2E-04	<0.001	3.22	0.0298	0.0001	0.279	<0.009	0.801
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.00001	0.0027	0.000005	<0.0005	0.00841	0.0022	<0.002	3E-04	<0.001	3.4	0.0384	0.0002	0.357	<0.009	0.758
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.00001	0.002	0.000011	<0.0005	0.0114	0.0039	<0.002	5E-04	<0.001	3.1	0.0481	0.0001	0.442	<0.009	0.672
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.00001	0.0019	0.00002	<0.0005	0.0155	0.0048	0.003	3E-04	<0.001	3.03	0.0578	0.0001	0.555	<0.009	0.644
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.00001	0.0014	0.000022	<0.0005	0.0188	0.0069	0.006	4E-04	<0.001	3.14	0.0597	0.0002	0.586	<0.009	0.608
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.00001	0.0016	0.000027	<0.0005	0.0246	0.0098	0.006	3E-04	0.001	2.94	0.0667	0.0001	0.686	<0.009	0.589
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.00001	0.0016	0.000029	<0.0005	0.0297	0.0129	0.003	4E-04	<0.001	2.93	0.071	######	0.722	<0.009	0.538
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-5. Results of Waste Rock Humidity Cells - HC 5
Footwall - Schist (5178)

Date	Cycle No.	Se	Si	Ag	Na	Sr	Tl	Sn	Ti	U	V	W	Y	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.001	0.27	<0.00001	0.3	0.0163	0.0005	0.00173	<0.0001	0.000073	0.00013	0.00016	0.000046	<0.002
25-May-11	1	<0.001	0.60	<0.00001	0.47	0.0303	0.00047	0.00067	0.0009	0.000048	0.00014	0.00032	0.000040	<0.002
1-Jun-11	2	<0.001	0.58	<0.00001	0.28	0.0193	0.00046	0.00028	<0.0001	0.000039	0.00009	0.00015	0.000032	<0.002
8-Jun-11	3	<0.001	0.56	<0.00001	0.16	0.0124	0.00036	0.00018	0.0001	0.000047	0.00004	<0.00003	0.000034	<0.002
15-Jun-11	4	<0.001	0.73	<0.00001	0.11	0.0098	0.00032	0.00026	<0.0001	0.000044	0.00007	<0.00003	0.000036	<0.002
22-Jun-11	5	<0.001	0.61	<0.00001	0.08	0.0081	0.00031	0.00013	0.0001	0.000052	0.00007	<0.00003	0.000042	0.002
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.001	0.71	<0.00001	0.05	0.0079	0.00033	0.00016	0.0002	0.000074	0.00005	0.00006	0.000058	<0.002
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.001	0.78	<0.00001	0.04	0.0071	0.00032	0.00011	<0.0001	0.000101	0.00004	<0.00003	0.000079	0.003
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.001	0.71	<0.00001	<0.01	0.0054	0.00029	0.00007	0.0001	0.00011	<0.00003	<0.00003	0.000085	0.004
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.001	0.72	<0.00001	0.02	0.0055	0.00029	0.00006	<0.0001	0.000162	<0.00003	<0.00003	0.000127	<0.002
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.001	0.7	<0.00001	0.02	0.0048	0.00028	0.00005	<0.0001	0.000194	<0.00003	<0.00003	0.000144	0.002
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.001	0.59	<0.00001	<0.01	0.0047	0.00034	0.00008	0.0001	0.000211	0.00003	<0.00003	0.000151	<0.002
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.001	0.6	<0.00001	0.02	0.0044	0.00035	0.00006	<0.0001	0.000267	0.00004	0.00007	0.000185	0.002
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.001	0.61	<0.00001	0.01	0.0041	0.00035	0.00004	<0.0001	0.000324	<0.00003	0.00003	0.000238	<0.002
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.001	0.55	<0.00001	0.01	0.0038	0.00038	0.00002	<0.0001	0.000408	<0.00003	<0.00003	0.000362	0.003
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-6. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Schist (MRARD10-092)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO_4	Ca	Hg	Al	Sb	As	Ba	Be
		ml	ml	units	µS/cm	mg/L (as $CaCO_3$)	mg/L (as $CaCO_3$)	(mg/L)	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	1000	759	6.29	1250	<2	<2	540	64.8		<0.01	0.0005	<0.0002	0.0012	<0.00002
25-May-11	1	1000	956	6.14	873	3	<2	520	48.2		<0.01	0.0003	0.0004	0.00126	<0.00002
1-Jun-11	2	1000	927	6.26	814	<2	<2	390	43.0		<0.01	0.0003	0.0002	0.00099	<0.00002
8-Jun-11	3	1000	995	6.13	339	<2	<2	150	19.8		<0.01	<0.0002	0.0002	0.00038	<0.00002
15-Jun-11	4	1000	981	6.22	663	<2	<2	340	37.3		<0.01	<0.0002	<0.0002	0.00072	<0.00002
22-Jun-11	5	1000	967	6.15	492	2	<2	230	28.7		<0.01	<0.0002	<0.0002	0.00061	<0.00002
29-Jun-11	6	1000	989	6.27	232	<2	<2	94	---		---	---	---	---	---
6-Jul-11	7	1000	955	6.46	139	<2	<2	51	7.86		<0.01	0.0003	<0.0002	0.00016	<0.00002
13-Jul-11	8	1000	962	6.13	87	3	<2	33	---		---	---	---	---	---
20-Jul-11	9	1000	956	6.39	69	<2	<2	23	3.47		<0.01	0.0002	<0.0002	0.00012	<0.00002
27-Jul-11	10	1000	949	6.36	56	<2	<2	18	---		---	---	---	---	---
3-Aug-11	11	1000	951	6.34	41	<2	<2	13	2.02		<0.01	0.0003	0.0002	0.00006	<0.00002
10-Aug-11	12	1000	950	6.4	32	<2	<2	10	---		---	---	---	---	---
17-Aug-11	13	1000	970	6.32	31	<2	<2	8.6	1.54		<0.01	0.0003	<0.0002	0.00008	<0.00002
24-Aug-11	14	1000	970	6.43	26	<2	<2	7.5	---		---	---	---	---	---
31-Aug-11	15	1000	971	6.47	26	<2	2	6.2	1.22		<0.01	0.0004	<0.0002	0.00008	<0.00002
7-Sep-11	16	1000	987	6.4	23	<2	<2	5.5	---		---	---	---	---	---
14-Sep-11	17	1000	982	6.34	22	<2	3	5.4	1.02		<0.01	0.0002	<0.0002	0.00004	<0.00002
21-Sep-11	18	1000	978	6.48	4	<2	2	4.7	---		---	---	---	---	---
28-Sep-11	19	1000	991	6.4	22	<2	<2	4.1	0.96		<0.01	<0.0002	<0.0002	0.00004	<0.00002
5-Oct-11	20	1000	988	6.42	4	<2	<2	3.8	---		---	---	---	---	---
12-Oct-11	21	1000	993	6.47	16	<2	<2	3.5	0.79		<0.01	0.0003	<0.0002	0.00004	<0.00002
19-Oct-11	22	1000	987	6.04	17	2	<2	3.2	---		---	---	---	---	---
26-Oct-11	23	1000	988	6.53	13	<2	<2	3.0	0.76		<0.01	0.0003	<0.0002	0.00003	<0.00002
2-Nov-11	24	1000	997	6.28	15	<2	2	2.6	---		---	---	---	---	---

Table D-6. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Schist (MRARD10-092)

Date	Cycle No.	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	P	K
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.00001	0.0202	0.000029	<0.0005	0.00262	<0.0005	0.004	<0.00002	0.002	126	0.135	0.00093	0.0016	0.017	2.84
25-May-11	1	<0.00001	0.0292	0.000021	<0.0005	0.00221	<0.0005	0.002	<0.00002	0.001	129	0.143	0.00116	0.0032	0.085	2.48
1-Jun-11	2	<0.00001	0.0235	0.000010	<0.0005	0.00191	<0.0005	<0.002	<0.00002	0.001	83.8	0.106	0.00101	0.0015	0.024	2.10
8-Jun-11	3	<0.00001	0.0152	<0.000003	<0.0005	0.000747	<0.0005	<0.002	<0.00002	<0.001	27.0	0.0359	0.00072	0.0007	0.035	1.15
15-Jun-11	4	<0.00001	0.0216	0.000024	<0.0005	0.00151	<0.0005	0.002	0.00003	0.001	61.3	0.0819	0.00098	0.0010	0.011	1.77
22-Jun-11	5	<0.00001	0.0167	0.000005	<0.0005	0.000940	<0.0005	<0.002	<0.00002	<0.001	43.0	0.0550	0.00075	0.0017	0.027	1.44
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.00001	0.0104	<0.000003	<0.0005	0.000276	<0.0005	<0.002	<0.00002	<0.001	10.9	0.0131	0.00067	0.0004	0.015	0.74
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.00001	0.0082	<0.000003	<0.0005	0.000175	<0.0005	0.007	0.00003	<0.001	4.65	0.00673	0.00049	<0.0001	0.025	0.482
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.00001	0.0056	<0.000003	<0.0005	0.000126	<0.0005	0.006	<0.00002	<0.001	2.71	0.00428	0.00065	<0.0001	0.019	0.396
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.00001	0.0063	<0.000003	<0.0005	0.000093	<0.0005	<0.002	0.00005	<0.001	2.05	0.00329	0.00057	<0.0001	0.024	0.343
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.00001	0.0052	<0.000003	<0.0005	0.000065	<0.0005	0.003	0.00008	<0.001	1.6	0.00267	0.00036	<0.0001	0.023	0.291
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.00001	0.0052	<0.000003	<0.0005	0.000079	<0.0005	<0.002	<0.00002	<0.001	1.35	0.00274	0.00057	<0.0001	0.012	0.272
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.00001	0.0044	<0.000003	<0.0005	0.000069	<0.0005	<0.002	<0.00002	<0.001	1.24	0.00233	0.00059	<0.0001	0.032	0.247
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.00001	0.0044	<0.000003	<0.0005	0.000083	<0.0005	<0.002	<0.00002	<0.001	1.06	0.00206	0.00094	<0.0001	<0.009	0.222
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.00001	0.0037	<0.000003	<0.0005	0.00007	<0.0005	<0.003	<0.00002	<0.001	1.02	0.00232	0.0004	0.0001	0.024	0.205
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-6. Results of Waste Rock Humidity Cells - HC 6
Hanging wall - Schist (MRARD10-092)

Date	Cycle No.	Se	Si	Ag	Na	Sr	Tl	Sn	Ti	U	V	W	Y	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	0.016	0.41	<0.00001	5.5	0.0374	<0.0002	0.00125	0.0001	<0.000001	0.00011	<0.00003	0.000031	<0.002
25-May-11	1	0.018	0.49	<0.00001	4.18	0.0305	0.00004	0.00128	0.0001	0.000002	0.00071	<0.00003	0.000027	<0.002
1-Jun-11	2	0.009	0.44	<0.00001	2.55	0.0237	0.00002	0.00073	<0.0001	<0.000001	0.00039	0.00008	0.000027	<0.002
8-Jun-11	3	0.002	0.39	<0.00001	0.47	0.0087	<0.00002	0.00026	0.0001	<0.000001	0.00012	<0.00003	0.000006	<0.002
15-Jun-11	4	0.006	0.48	<0.00001	1.47	0.0179	0.00002	0.00051	0.0001	0.000003	0.00025	<0.00003	0.000017	<0.002
22-Jun-11	5	0.003	0.42	<0.00001	0.85	0.0136	<0.00002	0.00029	<0.0001	<0.000001	0.00013	<0.00003	0.000015	<0.002
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.001	0.35	<0.00001	0.19	0.0034	<0.00002	0.00023	0.0004	0.000003	0.00011	<0.00003	0.000003	<0.002
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.001	0.34	<0.00001	0.1	0.0015	<0.00002	0.00017	<0.0001	<0.000001	0.00012	<0.00003	<0.000001	<0.002
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.001	0.35	<0.00001	0.05	0.001	<0.00002	0.00015	0.0001	<0.000001	0.00015	<0.00003	<0.000001	<0.002
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.001	0.31	<0.00001	0.04	0.0006	<0.00002	0.00012	<0.0001	<0.000001	0.00013	<0.00003	0.000002	<0.002
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.001	0.32	<0.00001	0.03	0.0005	<0.00002	0.00013	<0.0001	<0.000001	0.00014	<0.00003	<0.000001	<0.002
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.001	0.32	<0.00001	0.02	0.0004	<0.00002	0.00013	<0.0001	0.000001	0.00016	<0.00003	<0.000001	<0.002
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.001	0.32	<0.00001	0.02	0.0002	<0.00002	0.00012	<0.0001	0.000002	0.00017	<0.00003	0.000001	<0.002
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.001	0.32	<0.00001	0.02	0.0002	<0.00002	0.00016	0.0001	0.000003	0.00014	<0.00003	0.000001	<0.002
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.001	0.3	<0.00001	0.02	0.0001	<0.00002	0.0001	<0.0001	<0.000001	0.00014	<0.00003	<0.000001	<0.002
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---

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Table D-8. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (MRARD10-120)

Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO_4	Ca	Hg	Al	Sb	As	Ba	Be
		ml	ml	units	µS/cm	mg/L (as $CaCO_3$)	mg/L (as $CaCO_3$)	(mg/L)	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	1000	846	6.33	174	<2	<2	57	11.0		<0.01	0.0003	<0.0002	0.0007	<0.00002
25-May-11	1	1000	1000	6.69	327	3	2	170	28.6		<0.01	0.0002	0.0005	0.00231	<0.00002
1-Jun-11	2	1000	980	6.54	257	<2	<2	100	20.7		<0.01	<0.0002	<0.0002	0.00144	<0.00002
8-Jun-11	3	1000	989	6.42	96	4	<2	34	8.00		<0.01	0.0002	0.0002	0.00069	<0.00002
15-Jun-11	4	1000	988	6.79	204	<2	4	73	16.0		<0.01	<0.0002	0.0003	0.00128	<0.00002
22-Jun-11	5	1000	994	6.43	138	4	<2	53	11.7		0.01	<0.0002	<0.0002	0.00083	<0.00002
29-Jun-11	6	1000	978	6.49	70	3	2	24	---		---	---	---	---	---
6-Jul-11	7	1000	995	6.56	49	<2	<2	16	4.26		<0.01	0.0003	<0.0002	0.00042	<0.00002
13-Jul-11	8	1000	978	6.43	32	<2	<2	11	---		---	---	---	---	---
20-Jul-11	9	1000	997	6.32	31	3	<2	9.3	2.40		<0.01	<0.0002	<0.0002	0.00031	<0.00002
27-Jul-11	10	1000	982	6.51	28	<2	3	9.5	---		---	---	---	---	---
3-Aug-11	11	1000	990	6.45	22	<2	2	6.7	1.71		<0.01	<0.0002	<0.0002	0.00025	<0.00002
10-Aug-11	12	1000	989	6.43	21	<2	<2	6.7	---		---	---	---	---	---
17-Aug-11	13	1000	984	6.33	20	<2	<2	6.2	1.64		<0.01	<0.0002	<0.0002	0.00028	<0.00002
24-Aug-11	14	1000	996	6.56	20	<2	<2	6.4	---		---	---	---	---	---
31-Aug-11	15	1000	988	6.4	21	<2	<2	4.2	1.28		<0.01	0.0002	<0.0002	0.0003	<0.00002
7-Sep-11	16	1000	985	6.34	19	<2	<2	5.4	---		---	---	---	---	---
14-Sep-11	17	1000	992	6.43	17	<2	<2	5.2	1.15		<0.01	0.0002	<0.0002	0.00026	<0.00002
21-Sep-11	18	1000	983	6.4	4	<2	<2	5.8	---		---	---	---	---	---
28-Sep-11	19	1000	996	6.32	4	<2	<2	4.9	1.21		<0.01	<0.0002	<0.0002	0.00024	<0.00002
5-Oct-11	20	1000	991	6.6	4	<2	2	4.4	---		---	---	---	---	---
12-Oct-11	21	992	991	6.46	16	<2	<2	4.6	1.00		<0.01	0.0003	<0.0002	0.00023	<0.00002
19-Oct-11	22	1000	991	6.13	18	3	<2	4.4	---		---	---	---	---	---
26-Oct-11	23	1000	991	6.41	13	<2	<2	4.4	0.94		<0.01	0.0002	<0.0002	0.00029	<0.00002
2-Nov-11	24	1000	984	6.14	18	4	<2	2.6	---		---	---	---	---	---

Table D-8. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (MRARD10-120)

Date	Cycle No.	Bi	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	P	K
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.00001	0.0057	0.000009	<0.0005	0.000884	<0.0005	<0.002	<0.00002	0.002	11.0	0.369	0.00054	0.0002	<0.009	0.677
25-May-11	1	<0.00001	0.0193	0.000017	<0.0005	0.00181	<0.0005	<0.002	<0.00002	0.003	30.2	1.66	0.00073	0.0021	0.032	1.42
1-Jun-11	2	<0.00001	0.0120	0.000005	<0.0005	0.00138	<0.0005	<0.002	<0.00002	0.002	16.8	1.24	0.00054	0.0002	0.030	1.07
8-Jun-11	3	<0.00001	0.0077	<0.000003	<0.0005	0.000752	<0.0005	<0.002	<0.00002	0.001	4.28	0.734	0.00040	0.0002	<0.009	0.533
15-Jun-11	4	<0.00001	0.0108	0.000017	<0.0005	0.00115	<0.0005	<0.002	<0.00002	0.002	10.9	1.10	0.00054	0.0001	<0.009	0.824
22-Jun-11	5	<0.00001	0.0083	<0.000003	<0.0005	0.000835	<0.0005	<0.002	<0.00002	0.001	6.85	0.884	0.00043	0.0006	0.011	0.653
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.00001	0.0062	<0.000003	<0.0005	0.000529	<0.0005	<0.002	<0.00002	<0.001	2.25	0.534	0.00034	0.0003	<0.009	0.394
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.00001	0.0046	<0.000003	<0.0005	0.000463	<0.0005	<0.002	<0.00002	<0.001	1.3	0.453	0.00024	<0.0001	0.01	0.285
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.00001	0.0031	<0.000003	<0.0005	0.000416	<0.0005	<0.002	<0.00002	<0.001	0.951	0.41	0.0003	<0.0001	<0.009	0.257
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.00001	0.0033	<0.000003	<0.0005	0.000385	<0.0005	<0.002	0.00006	<0.001	0.934	0.388	0.00023	<0.0001	<0.009	0.235
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.00001	0.0028	<0.000003	<0.0005	0.000434	<0.0005	<0.002	0.00007	<0.001	0.741	0.45	0.00016	<0.0001	<0.009	0.218
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.00001	0.0025	<0.000003	<0.0005	0.000493	<0.0005	<0.002	<0.00002	<0.001	0.677	0.484	0.00022	<0.0001	<0.009	0.208
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.00001	0.0022	<0.000003	<0.0005	0.000498	<0.0005	<0.002	<0.00002	<0.001	0.722	0.509	0.00019	0.0003	<0.009	0.214
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.00001	0.0021	<0.000003	<0.0005	0.000516	<0.0005	<0.002	<0.00002	<0.001	0.617	0.532	0.00043	<0.0001	0.01	0.181
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.00001	0.0018	<0.000003	<0.0005	0.000523	<0.0005	<0.003	<0.00002	<0.001	0.58	0.541	0.00008	<0.0001	<0.009	0.172
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-8. Results of Waste Rock Humidity Cells - HC 8
Hanging wall - Schist (MRARD10-120)

Date	Cycle No.	Se	Si	Ag	Na	Sr	Tl	Sn	Ti	U	V	W	Y	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	0.002	0.12	<0.00001	0.23	0.0382	<0.0002	0.00071	<0.0001	<0.000001	<0.00003	<0.00003	0.000066	<0.002
25-May-11	1	0.009	0.34	<0.00001	0.55	0.0945	<0.00002	0.00090	<0.0001	0.000017	0.00027	0.00005	0.000116	<0.002
1-Jun-11	2	0.005	0.26	<0.00001	0.26	0.0582	<0.00002	0.00048	<0.0001	0.000012	0.00011	0.00008	0.000072	<0.002
8-Jun-11	3	0.001	0.18	<0.00001	0.06	0.0163	<0.00002	0.00014	<0.0001	0.000005	0.00003	<0.00003	0.000029	<0.002
15-Jun-11	4	0.004	0.24	<0.00001	0.14	0.0389	<0.00002	0.00027	<0.0001	0.000011	0.00005	<0.00003	0.000048	<0.002
22-Jun-11	5	0.002	0.21	<0.00001	0.09	0.0257	<0.00002	0.00018	<0.0001	0.000003	0.00004	<0.00003	0.000042	<0.002
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.001	0.19	<0.00001	0.03	0.0086	<0.00002	0.0002	0.0001	0.000007	<0.00003	<0.00003	0.000013	0.002
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.001	0.14	<0.00001	0.02	0.0049	<0.00002	0.00023	<0.0001	0.000002	<0.00003	<0.00003	0.000009	0.002
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.001	0.17	<0.00001	<0.01	0.0037	<0.00002	0.00018	<0.0001	0.000003	<0.00003	<0.00003	0.000006	0.002
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.001	0.17	<0.00001	0.01	0.0034	<0.00002	0.00016	<0.0001	0.000001	<0.00003	<0.00003	0.000007	<0.002
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.001	0.14	<0.00001	0.01	0.0027	<0.00002	0.00026	<0.0001	0.000003	<0.00003	<0.00003	0.000007	<0.002
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.001	0.14	<0.00001	<0.01	0.0025	<0.00002	0.00013	<0.0001	0.000006	<0.00003	<0.00003	0.000005	<0.002
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.001	0.16	<0.00001	0.02	0.0025	<0.00002	0.00011	<0.0001	0.000004	<0.00003	<0.00003	0.000006	<0.002
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.001	0.14	<0.00001	<0.01	0.002	<0.00002	0.0001	<0.0001	0.000004	<0.00003	<0.00003	0.000005	<0.002
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.001	0.13	<0.00001	<0.01	0.0019	<0.00002	0.00009	<0.0001	< 0.000001	<0.00003	<0.00003	0.000003	<0.002
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-9. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff (MRARD10-080)

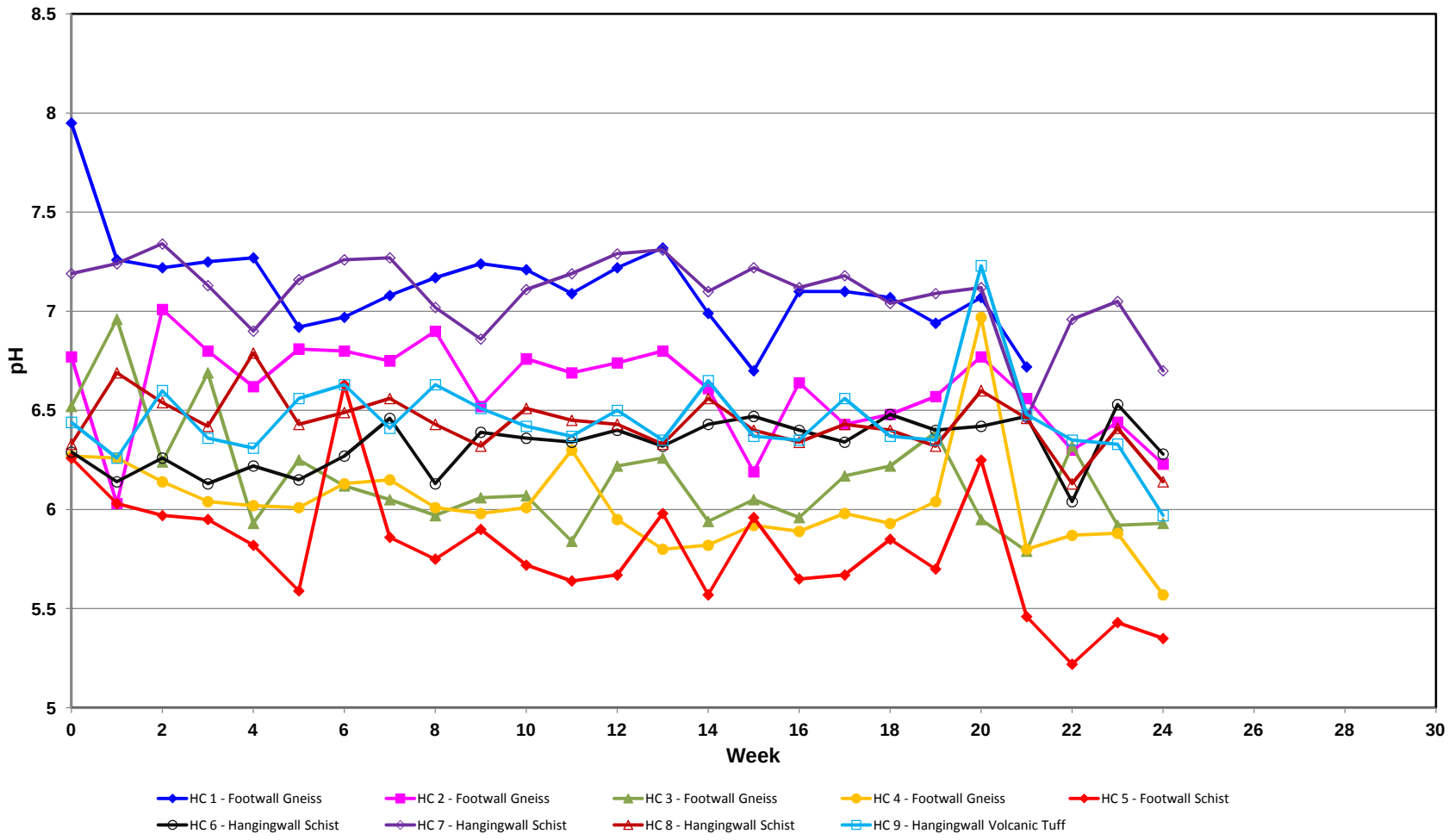
Date	Cycle No.	Volume Added	Volume Recovered	pH	Conductivity	Acidity	Alkalinity	SO4	Ca	Hg	Al	Sb	As	Ba	Be	Bi
		ml	ml	units	µS/cm	mg/L (as CaCO3)	mg/L (as CaCO3)	(mg/L)	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	1000	780	6.44	1210	3	2	590	34.5		<0.01	0.0005	0.0014	0.00091	<0.00002	<0.00001
25-May-11	1	1000	987	6.26	618	7	<2	830	47.2		<0.01	0.0002	0.0025	0.00090	<0.00002	<0.00001
1-Jun-11	2	1000	970	6.60	986	<2	2	510	38.1		<0.01	0.0003	0.0016	0.00061	<0.00002	<0.00001
8-Jun-11	3	1000	992	6.36	342	5	2	150	14.9		<0.01	0.0002	0.0005	0.00035	<0.00002	<0.00001
15-Jun-11	4	1000	916	6.31	794	6	2	400	31.4		<0.01	<0.0002	0.0009	0.00047	<0.00002	<0.00001
22-Jun-11	5	1000	993	6.56	482	6	2	230	21.0		<0.01	<0.0002	0.0004	0.00027	<0.00002	<0.00001
29-Jun-11	6	1000	988	6.63	254	4	2	110	---		---	---	---	---	---	---
6-Jul-11	7	1000	992	6.41	204	5	2	81	9.57		<0.01	0.0003	<0.0002	0.00021	<0.00002	<0.00001
13-Jul-11	8	1000	990	6.63	142	3	2	61	---		---	---	---	---	---	---
20-Jul-11	9	1000	983	6.51	140	3	3	50	6.15		<0.01	<0.0002	0.0003	0.00012	<0.00002	<0.00001
27-Jul-11	10	1000	982	6.42	68	5	<2	53	---		---	---	---	---	---	---
3-Aug-11	11	1000	989	6.37	106	3	<2	39	4.74		<0.01	0.0002	0.0002	0.00013	<0.00002	<0.00001
10-Aug-11	12	1000	989	6.5	83	3	<2	34	---		---	---	---	---	---	---
17-Aug-11	13	1000	983	6.35	88	3	<2	32	3.86		<0.01	0.0002	0.0003	0.00013	<0.00002	<0.00001
24-Aug-11	14	1000	985	6.65	78	<2	2	29	---		---	---	---	---	---	---
31-Aug-11	15	1000	992	6.37	77	3	<2	27	2.98		0.01	0.0003	0.0004	0.00012	<0.00002	<0.00001
7-Sep-11	16	1000	987	6.35	72	4	<2	26	---		---	---	---	---	---	---
14-Sep-11	17	1000	998	6.56	74	3	4	24	2.91		<0.01	0.0002	0.0003	0.00011	<0.00002	<0.00001
21-Sep-11	18	1000	988	6.37	52	<2	<2	24	---		---	---	---	---	---	---
28-Sep-11	19	1000	989	6.35	8	3	<2	22	2.66		<0.01	<0.0002	0.0002	0.00009	<0.00002	<0.00001
5-Oct-11	20	1000	993	7.23	55	<2	6	22	---		---	---	---	---	---	---
12-Oct-11	21	1000	984	6.48	62	<2	<2	21	2.57		<0.01	0.0003	0.0002	0.00008	<0.00002	<0.00001
19-Oct-11	22	1000	996	6.35	59	2	<2	21	---	---	---	---	---	---	---	---
26-Oct-11	23	1000	985	6.33	46	2	<2	20	2.43		<0.01	0.0002	0.0002	0.00009	<0.00002	<0.00001
2-Nov-11	24	1000	992	5.97	69	4	<2	22	---	---	---	---	---	---	---	---

Table D-9. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff (MRARD10-080)

Date	Cycle No.	B	Cd	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Mo	Ni	P	K	Se	Si
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	0.0502	0.000015	<0.0005	0.0058	<0.0005	0.009	0.00002	0.008	141	0.146	0.00375	0.0076	0.025	2.86	0.054	0.76
25-May-11	1	0.0742	0.000009	<0.0005	0.00374	<0.0005	0.003	<0.00002	0.007	199	0.216	0.00478	0.0063	0.033	2.73	0.075	1.01
1-Jun-11	2	0.0572	0.000010	<0.0005	0.00262	<0.0005	0.002	<0.00002	0.005	117	0.134	0.00375	0.0029	0.015	2.09	0.031	0.93
8-Jun-11	3	0.0371	<0.000003	<0.0005	0.000933	<0.0005	0.003	<0.00002	0.003	30.5	0.0376	0.00226	0.0011	0.016	1.08	0.006	0.78
15-Jun-11	4	0.0563	0.000024	<0.0005	0.00196	<0.0005	<0.002	<0.00002	0.005	78.7	0.104	0.00377	0.0024	<0.009	1.78	0.019	1.03
22-Jun-11	5	0.0398	<0.000003	<0.0005	0.00112	<0.0005	0.005	<0.00002	0.003	46.8	0.0545	0.00264	0.0022	0.014	1.31	0.009	0.82
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	0.0285	0.000005	<0.0005	0.000587	<0.0005	0.008	<0.00002	0.002	18	0.0246	0.0019	0.0011	<0.009	0.855	0.004	0.81
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	0.0218	<0.000003	<0.0005	0.000416	<0.0005	0.013	<0.00002	0.002	11.5	0.0174	0.00134	0.0006	0.028	0.624	0.002	0.75
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	0.0174	<0.000003	<0.0005	0.000357	<0.0005	0.018	<0.00002	0.002	8.53	0.0141	0.00163	0.0004	<0.009	0.568	0.002	0.72
10-Aug-11	12		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	0.0168	<0.000003	<0.0005	0.00027	<0.0005	0.005	0.00008	0.001	6.86	0.0105	0.00148	0.0003	<0.009	0.52	0.002	0.72
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	0.0133	<0.000003	<0.0005	0.000257	0.0027	0.006	0.00072	0.001	5.23	0.00982	0.00098	0.0004	0.01	0.414	0.002	0.57
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	0.0126	<0.000003	<0.0005	0.000285	<0.0005	0.003	<0.00002	0.001	5.1	0.00991	0.00094	0.0005	<0.009	0.416	0.002	0.57
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	0.0105	<0.000003	<0.0005	0.000229	<0.0005	0.004	<0.00002	0.001	4.69	0.00906	0.00112	0.0003	0.012	0.378	0.002	0.53
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	0.0109	<0.000003	<0.0005	0.000218	<0.0005	0.007	<0.00002	0.001	4.54	0.00826	0.00153	0.0004	<0.009	0.378	0.002	0.56
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	0.0092	<0.000003	<0.0005	0.000242	<0.0005	<0.003	<0.00002	0.001	4.25	0.00847	0.00051	0.0005	<0.009	0.342	0.002	0.51
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table D-9. Results of Waste Rock Humidity Cells - HC 9
Hanging wall - Volcanic tuff (MRARD10-080)

Date	Cycle No.	Ag	Na	Sr	Tl	Sn	Ti	U	V	W	Y	Zn
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-May-11	0	<0.00001	1.99	0.134	<0.0002	0.00158	0.0001	<0.000001	0.00006	<0.00003	0.000036	<0.002
25-May-11	1	<0.00001	2.10	0.173	0.00011	0.00121	0.0002	0.000004	0.00060	0.00006	0.000016	<0.002
1-Jun-11	2	<0.00001	1.29	0.118	0.00009	0.00077	0.0002	0.000001	0.00025	0.00011	0.000009	<0.002
8-Jun-11	3	<0.00001	0.31	0.0318	0.00006	0.00027	0.0001	0.000013	0.00005	<0.00003	0.000003	<0.002
15-Jun-11	4	<0.00001	0.85	0.0827	0.00008	0.00053	0.0003	0.000003	0.00014	<0.00003	0.000007	<0.002
22-Jun-11	5	<0.00001	0.47	0.0491	0.00006	0.00035	0.0001	0.000011	0.00005	<0.00003	0.000005	<0.002
29-Jun-11	6	---	---	---	---	---	---	---	---	---	---	---
6-Jul-11	7	<0.00001	0.2	0.019	0.00005	0.00028	0.0007	0.000002	<0.00003	<0.00003	0.000006	<0.002
13-Jul-11	8	---	---	---	---	---	---	---	---	---	---	---
20-Jul-11	9	<0.00001	0.13	0.0116	0.00004	0.00018	<0.0001	<0.000001	<0.00003	<0.00003	<0.000001	<0.002
27-Jul-11	10	---	---	---	---	---	---	---	---	---	---	---
3-Aug-11	11	<0.00001	0.08	0.0089	0.00004	0.00015	0.0002	0.000002	<0.00003	<0.00003	0.000001	<0.002
10-Aug-11	12	---	---	---	---	---	---	---	---	---	---	---
17-Aug-11	13	<0.00001	0.08	0.0073	0.00004	0.00015	0.0001	<0.000001	<0.00003	<0.00003	0.000002	<0.002
24-Aug-11	14	---	---	---	---	---	---	---	---	---	---	---
31-Aug-11	15	<0.00001	0.06	0.0053	0.00003	0.00018	<0.0001	0.000001	<0.00003	<0.00003	<0.000001	0.002
7-Sep-11	16	---	---	---	---	---	---	---	---	---	---	---
14-Sep-11	17	<0.00001	0.04	0.0053	0.00003	0.00011	<0.0001	0.000004	<0.00003	<0.00003	<0.000001	<0.002
21-Sep-11	18	---	---	---	---	---	---	---	---	---	---	---
28-Sep-11	19	<0.00001	0.05	0.0046	0.00003	0.00008	0.0001	0.000005	<0.00003	<0.00003	0.000002	<0.002
5-Oct-11	20	---	---	---	---	---	---	---	---	---	---	---
12-Oct-11	21	<0.00001	0.04	0.0045	0.00003	0.0001	<0.0001	0.000004	<0.00003	0.00003	0.000001	<0.002
19-Oct-11	22	---	---	---	---	---	---	---	---	---	---	---
26-Oct-11	23	<0.00001	0.04	0.0042	0.00002	0.00007	0.0001	<0.000001	<0.00003	<0.00003	<0.000001	<0.002
2-Nov-11	24	---	---	---	---	---	---	---	---	---	---	---



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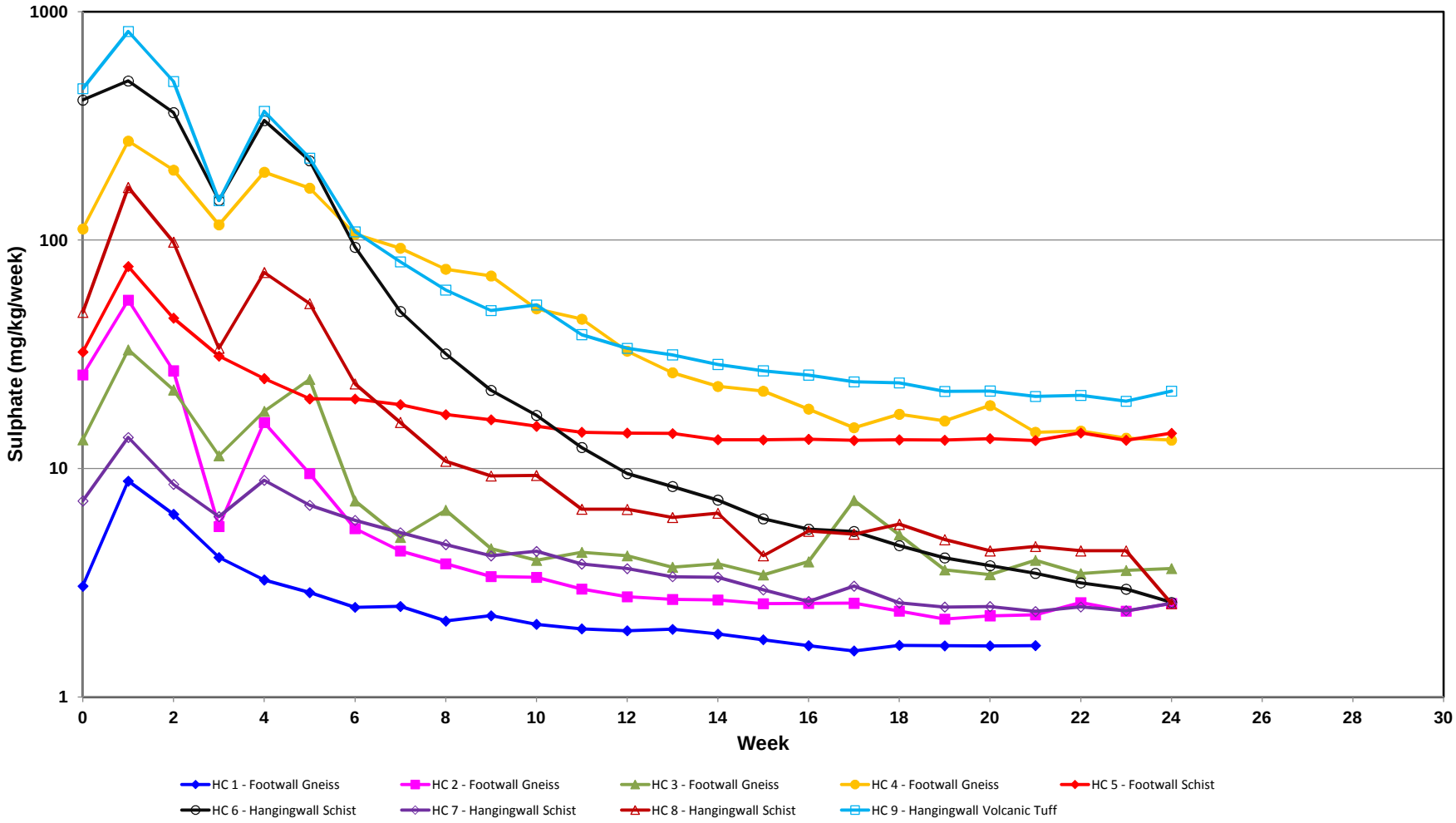
Mary River Project

pH - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-1



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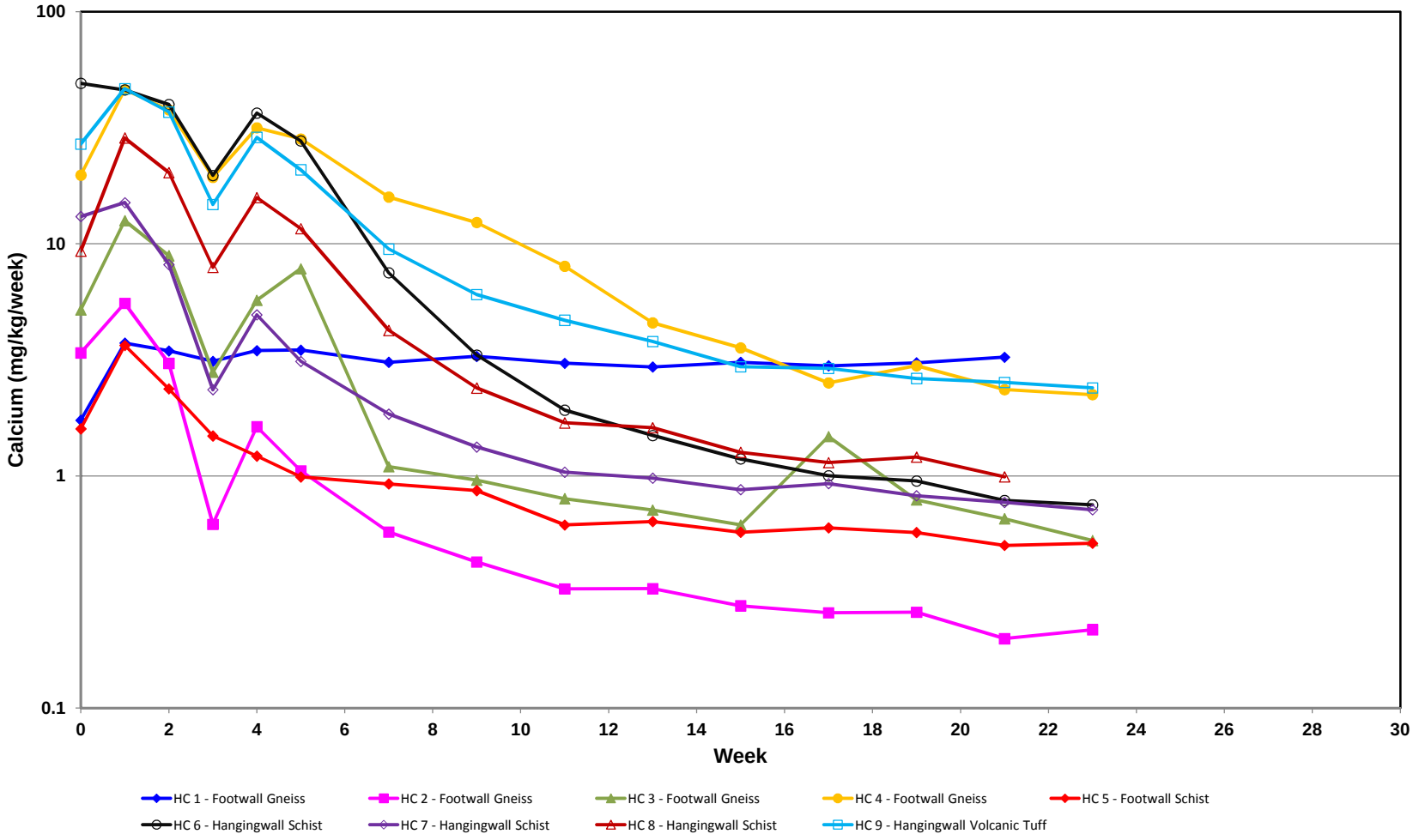
Mary River Project

Sulphate Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-2



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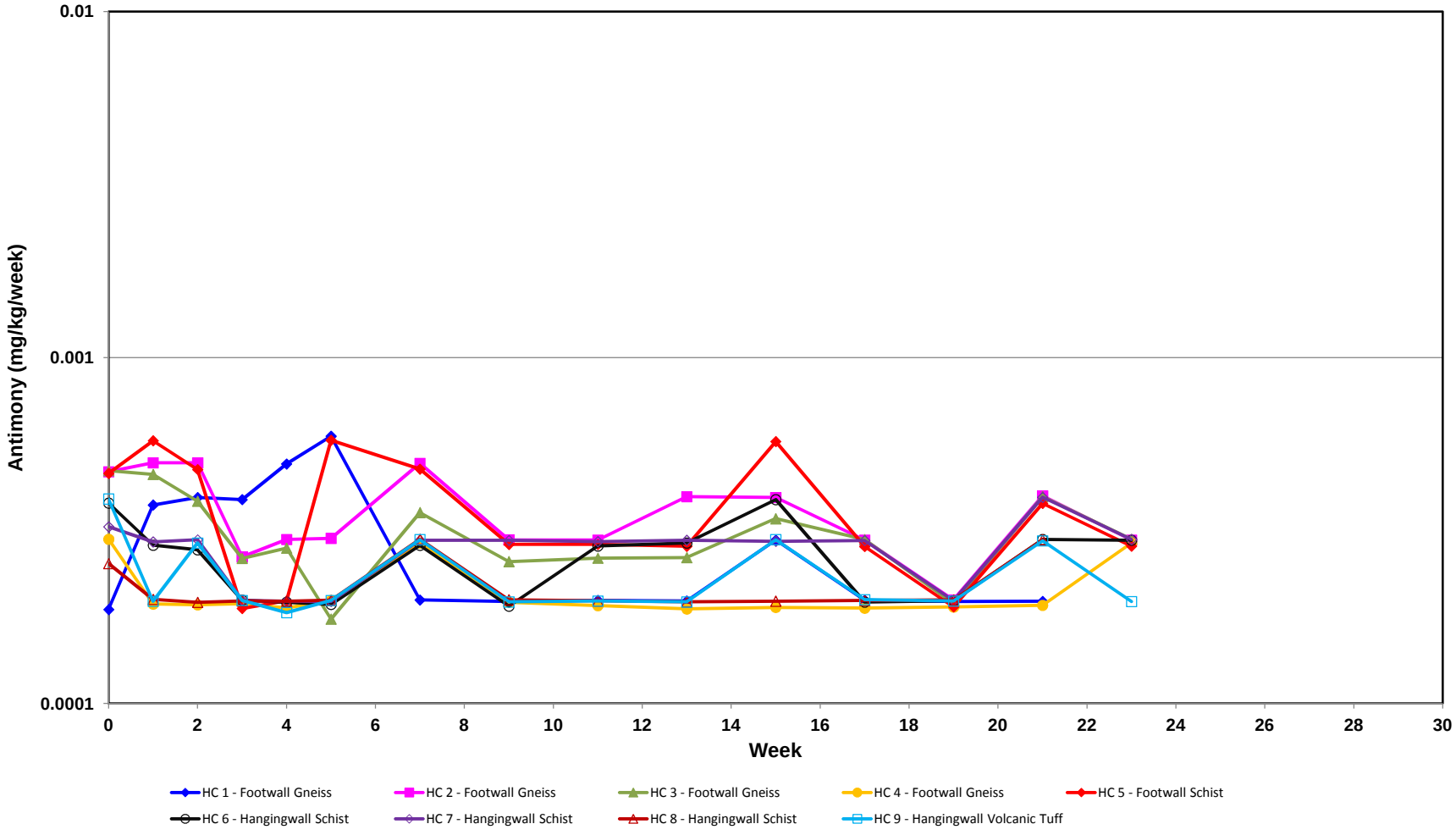
Mary River Project

Calcium Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-3



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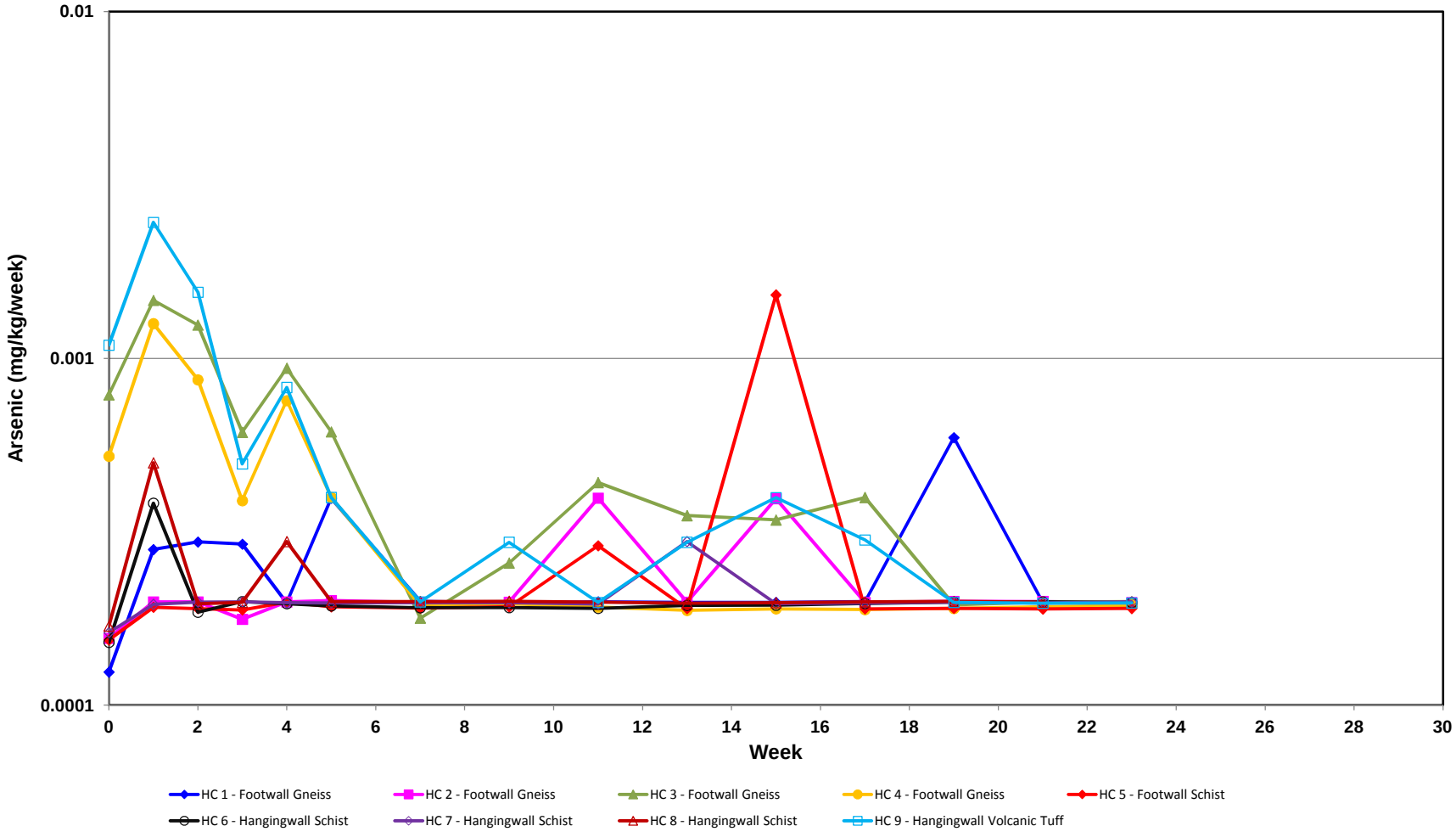
Mary River Project

Antimony Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-6



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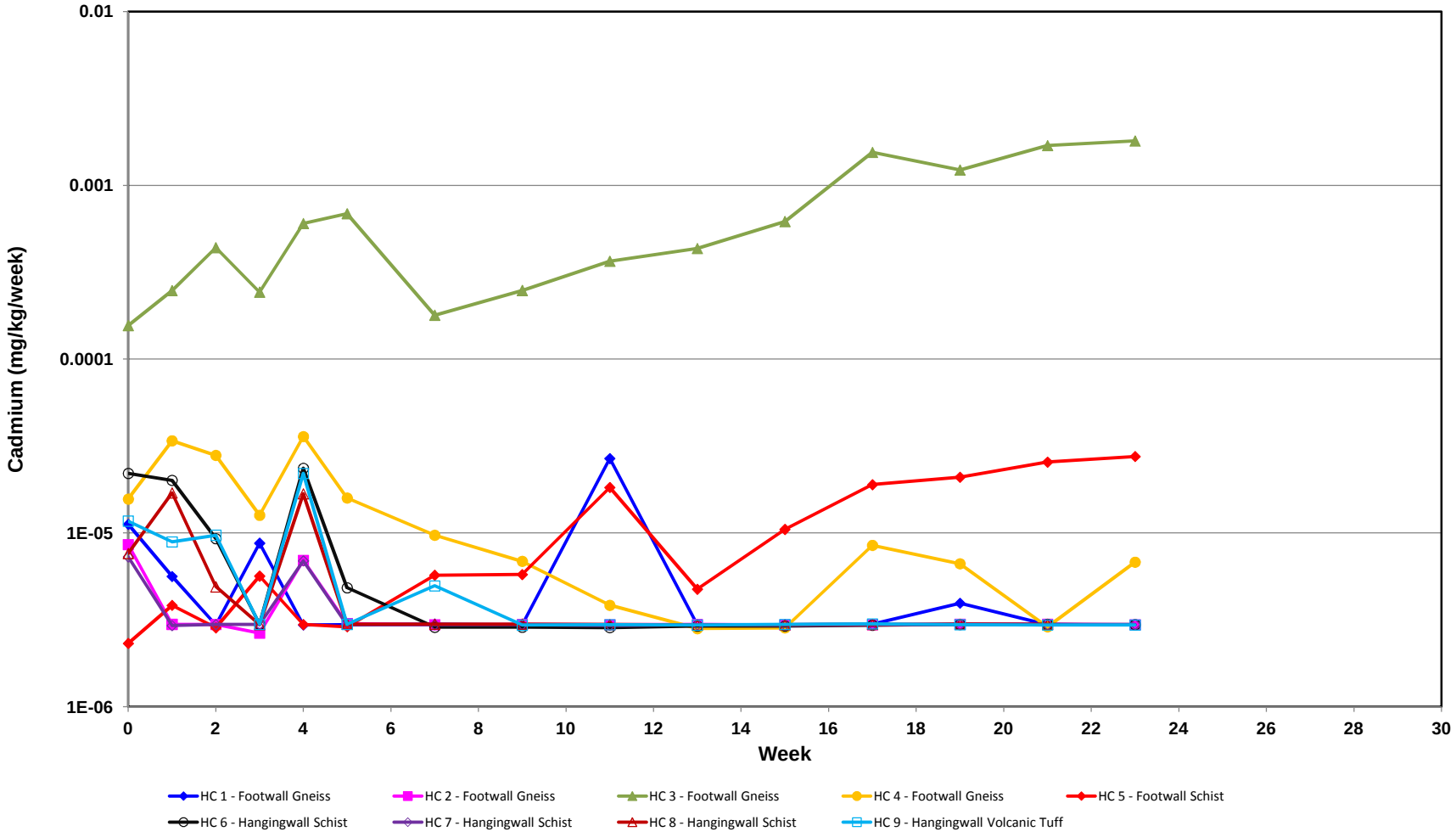
Mary River Project

Arsenic Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-7



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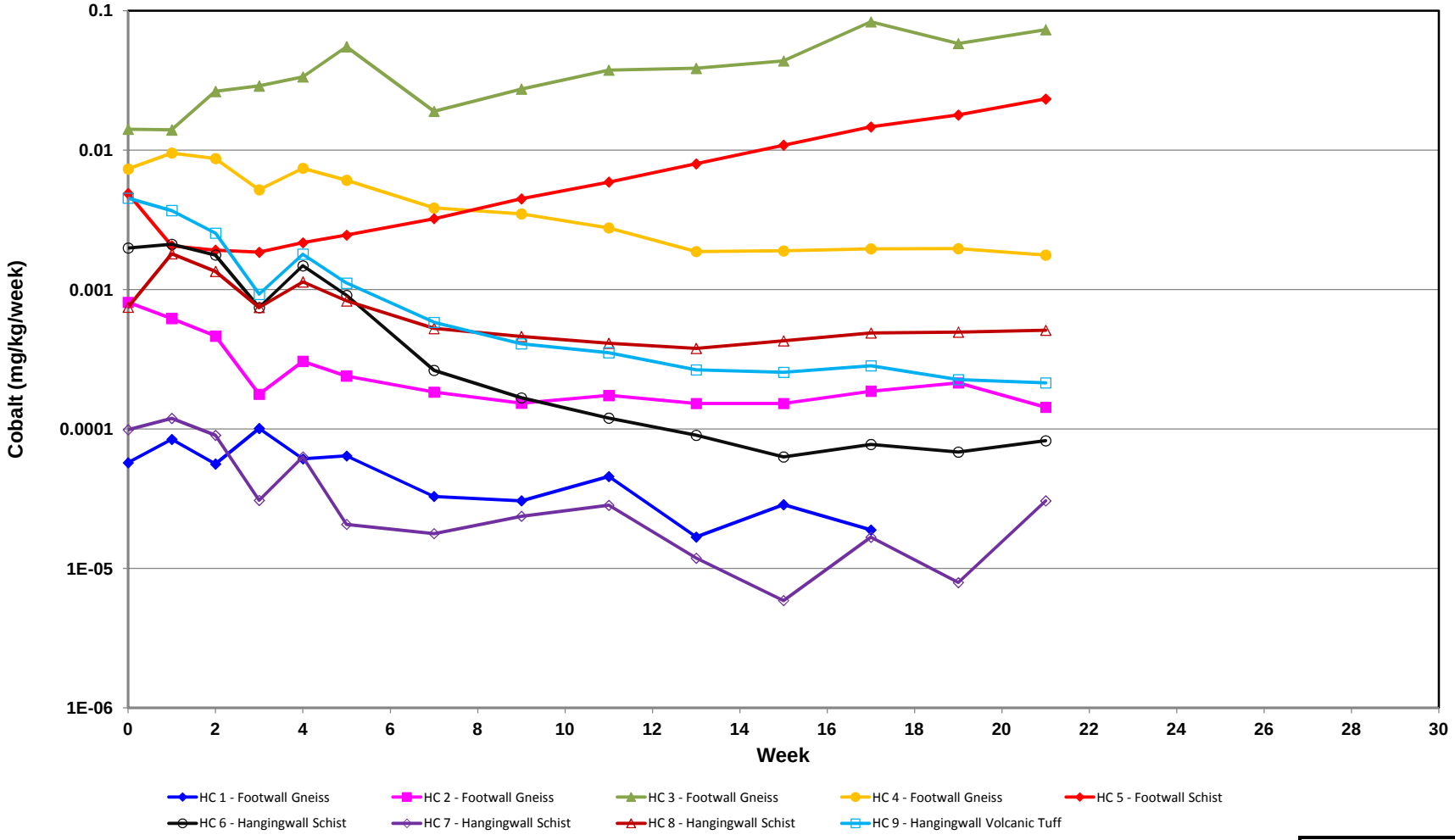
Mary River Project

Cadmium Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-8



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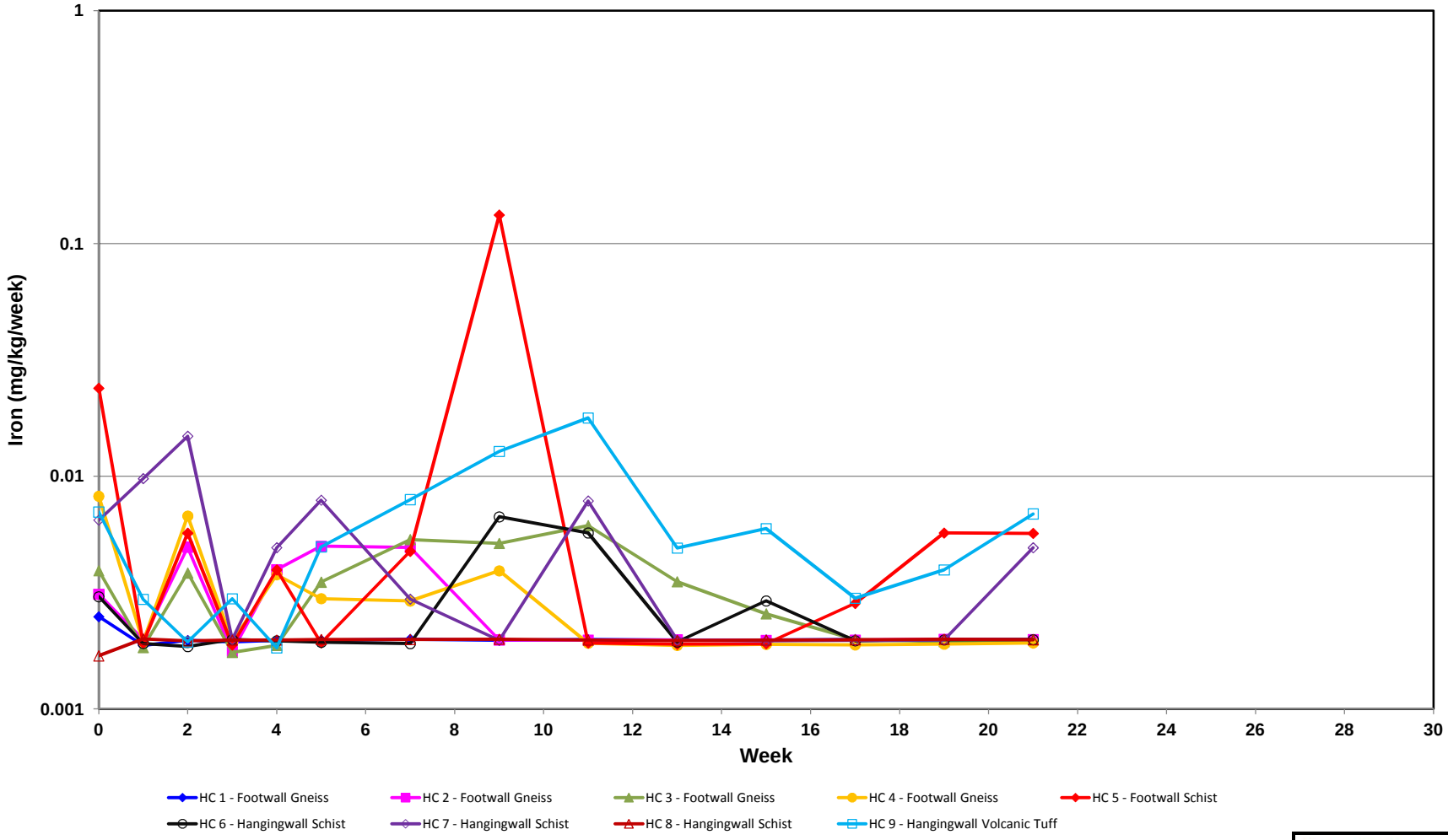
Mary River Project

Cobalt Loads - Waste Rock Humidity Cells
(2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-9



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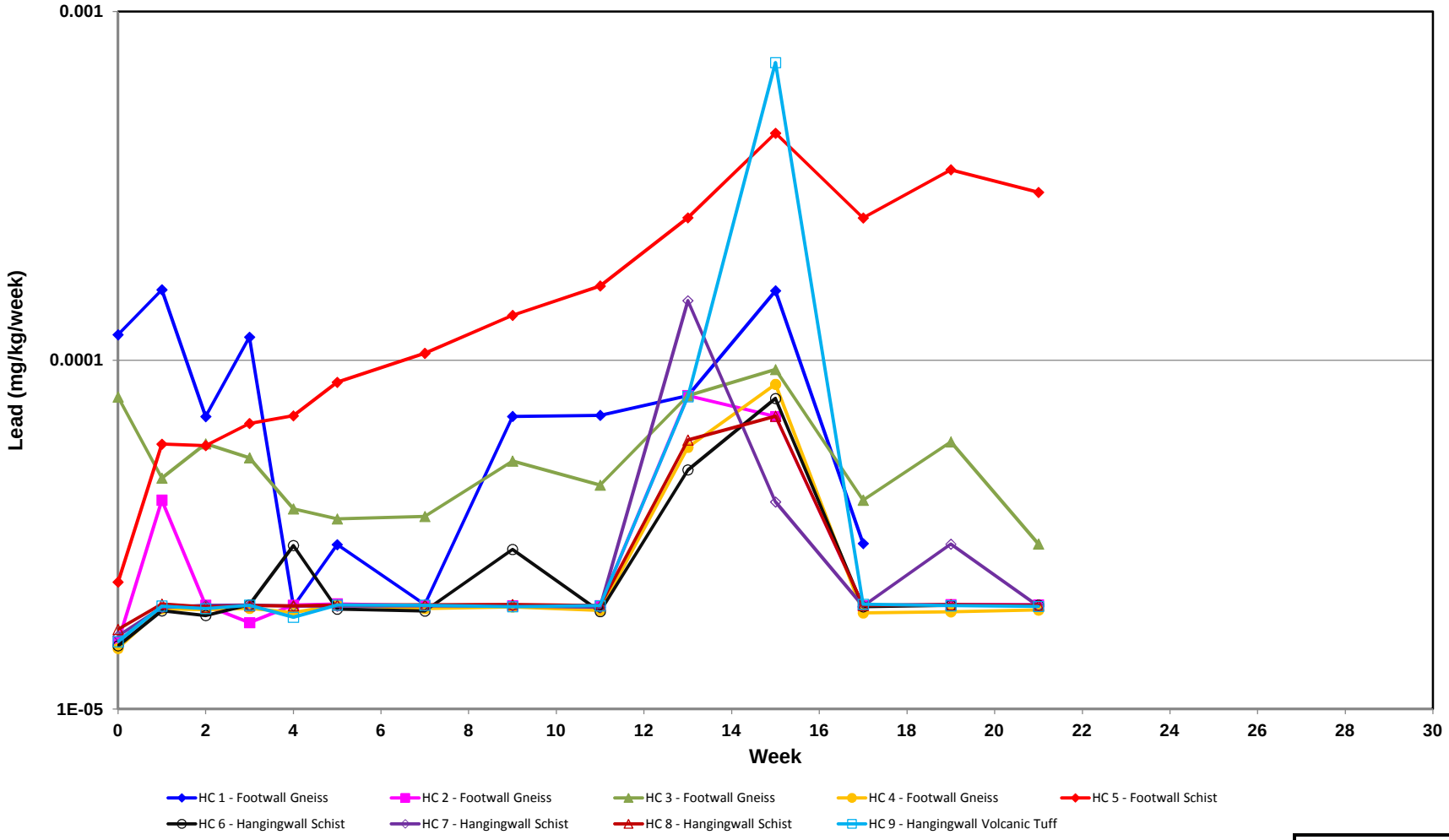
Mary River Project

Iron Loads - Waste Rock Humidity Cells
(2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-11



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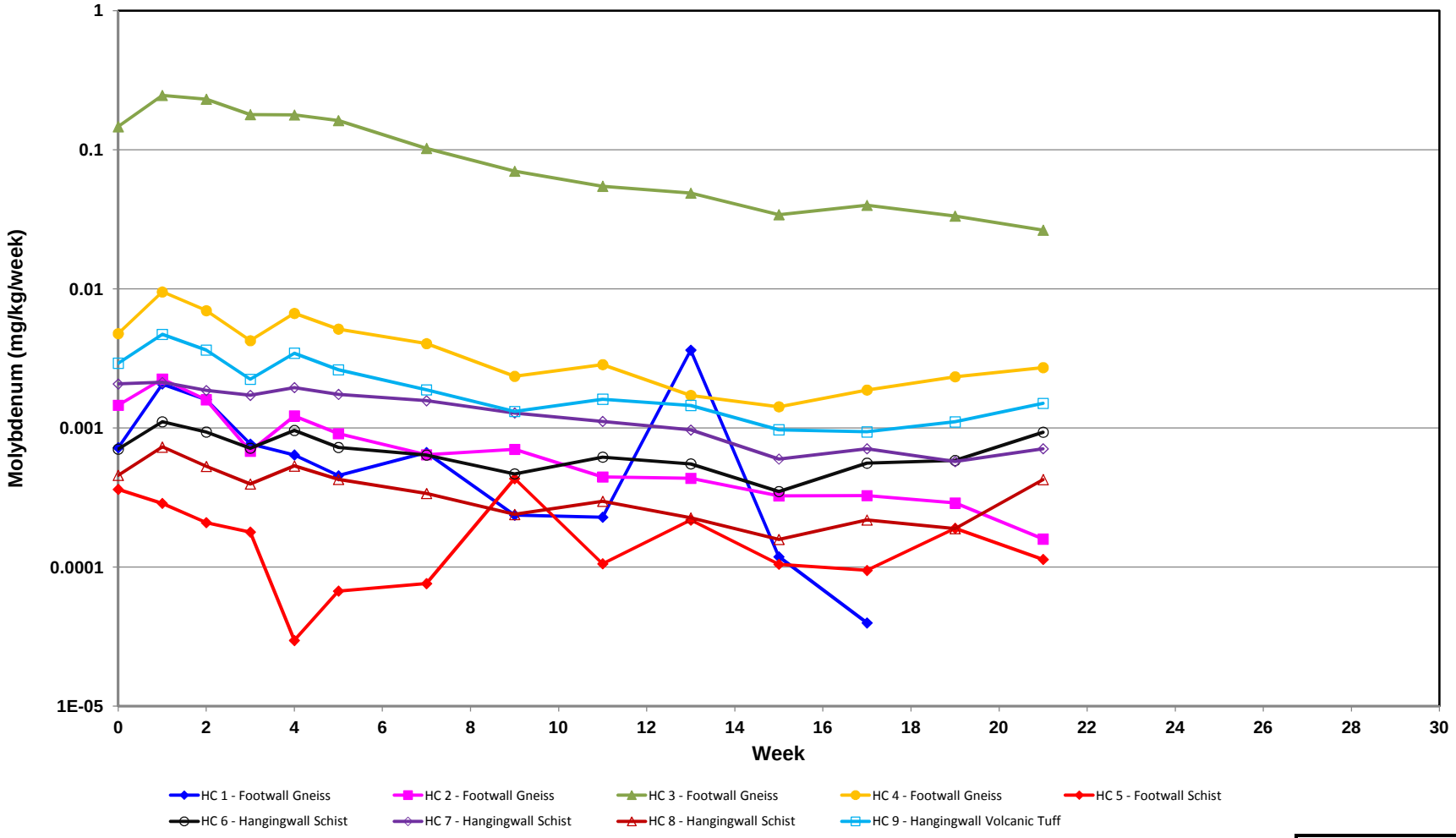
Mary River Project

Lead Loads - Waste Rock Humidity Cells
(2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-12



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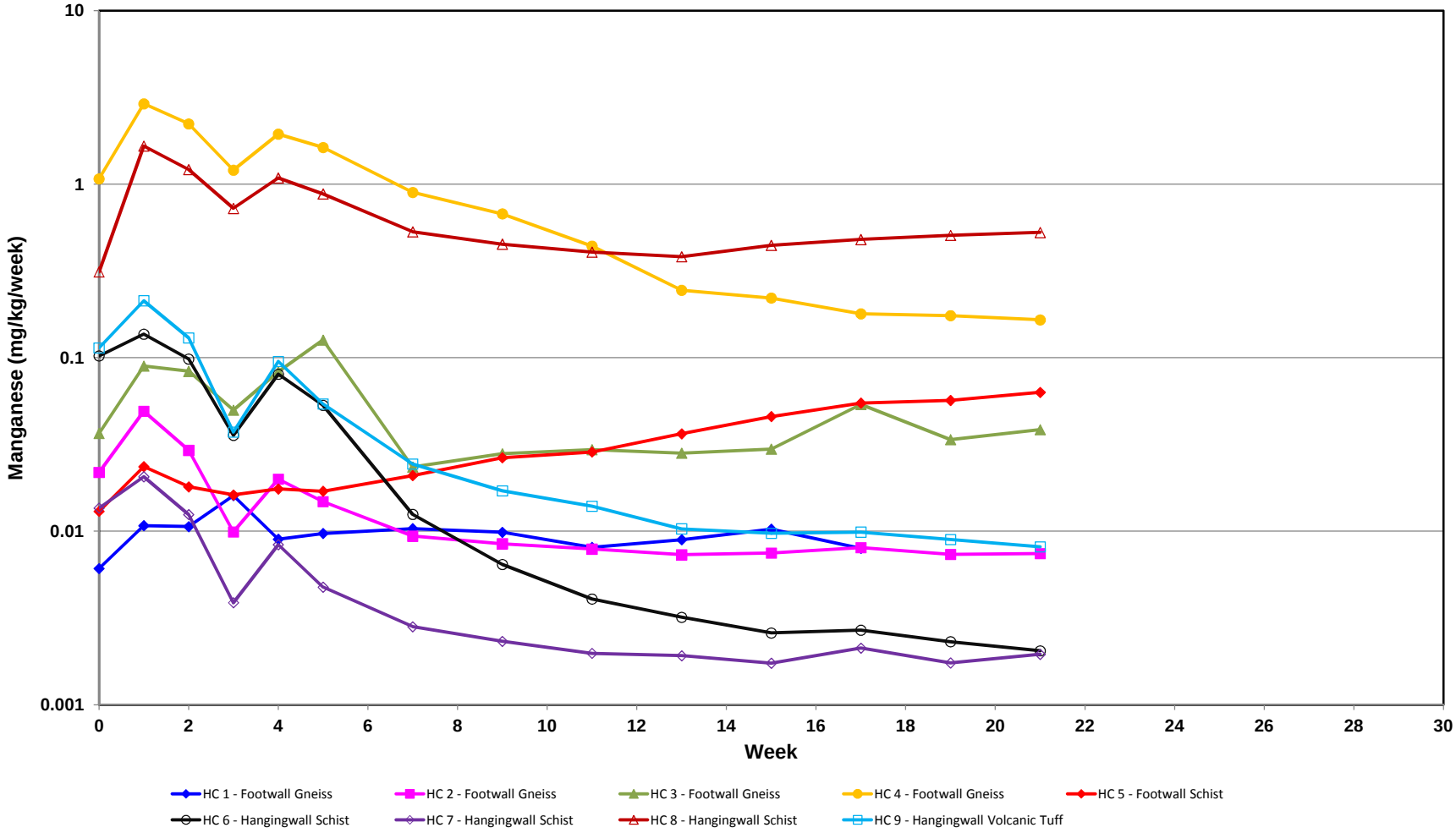
Mary River Project

Molybdenum Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-13



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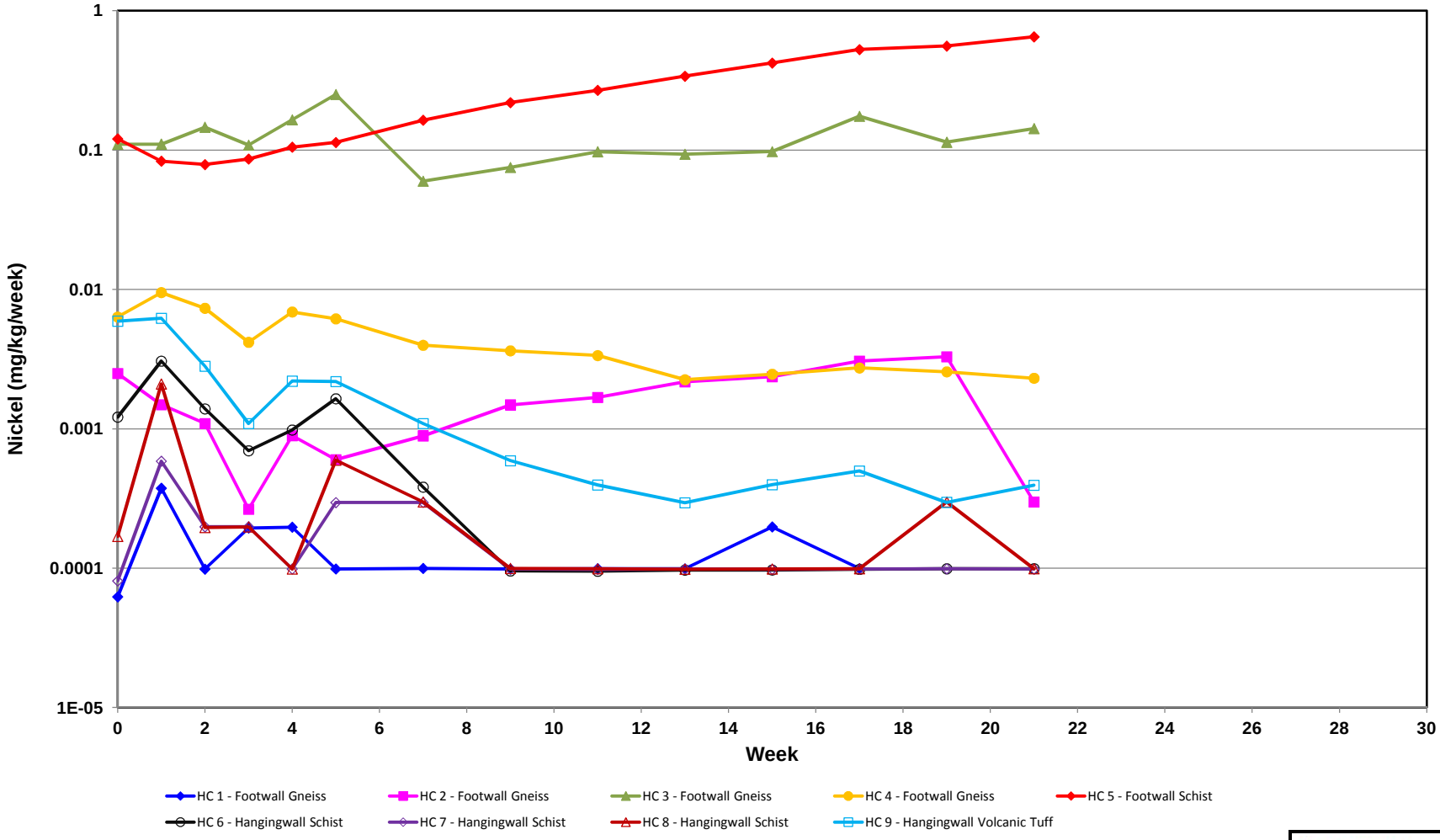
Mary River Project

Manganese Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-14



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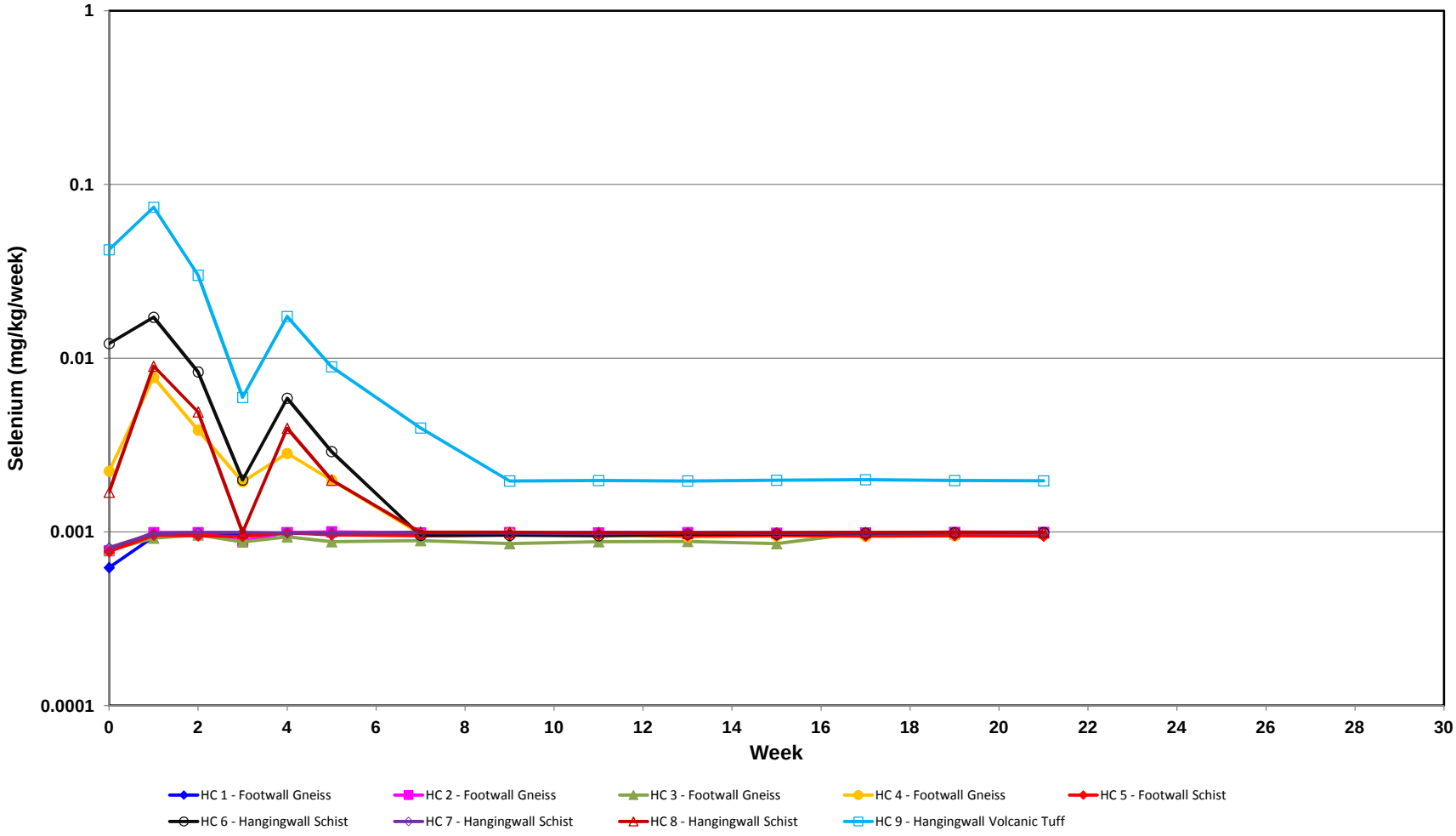
Mary River Project

Nickel Loads - Waste Rock Humidity Cells
(2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-15



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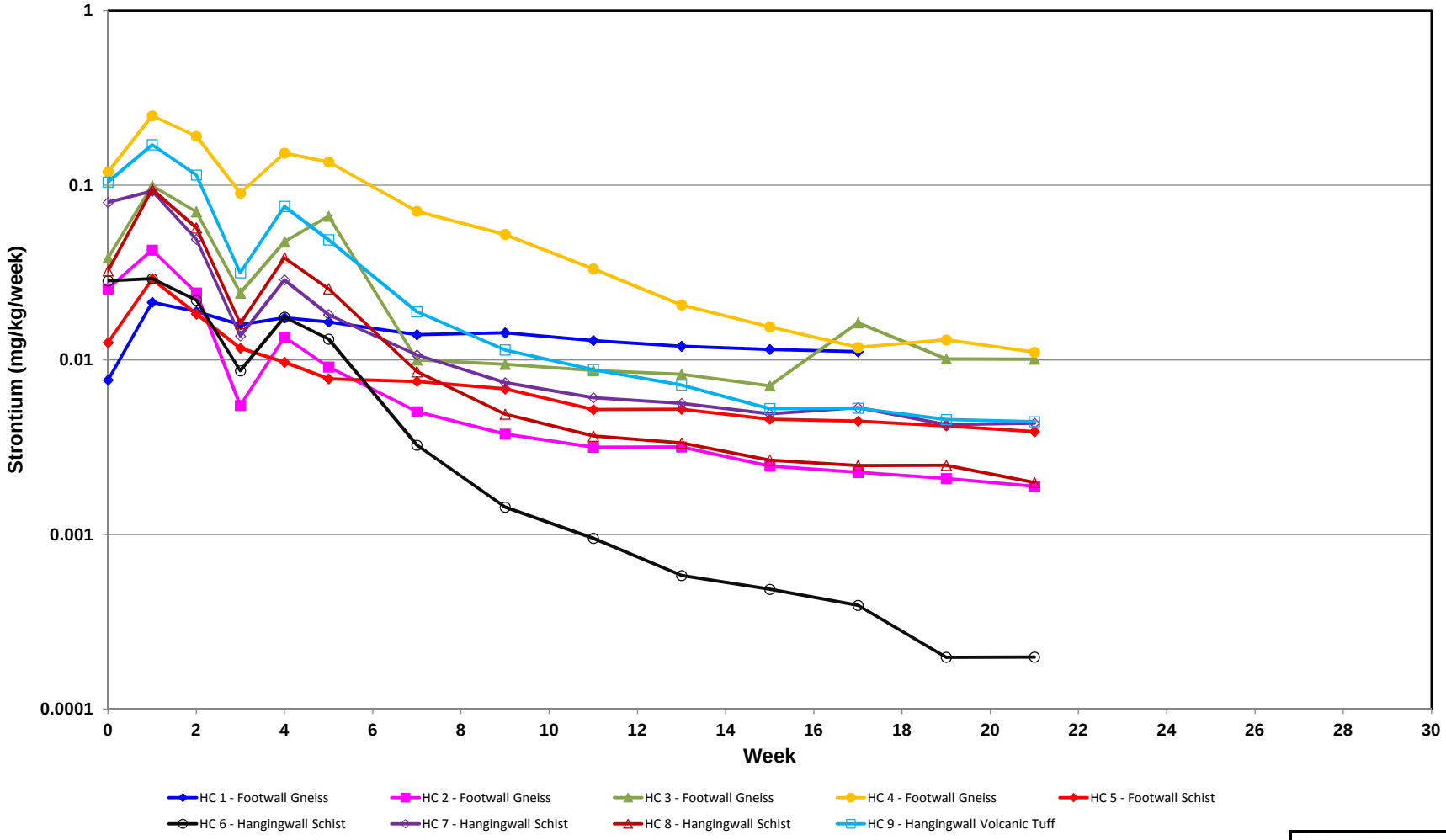
Mary River Project

Selenium Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-16



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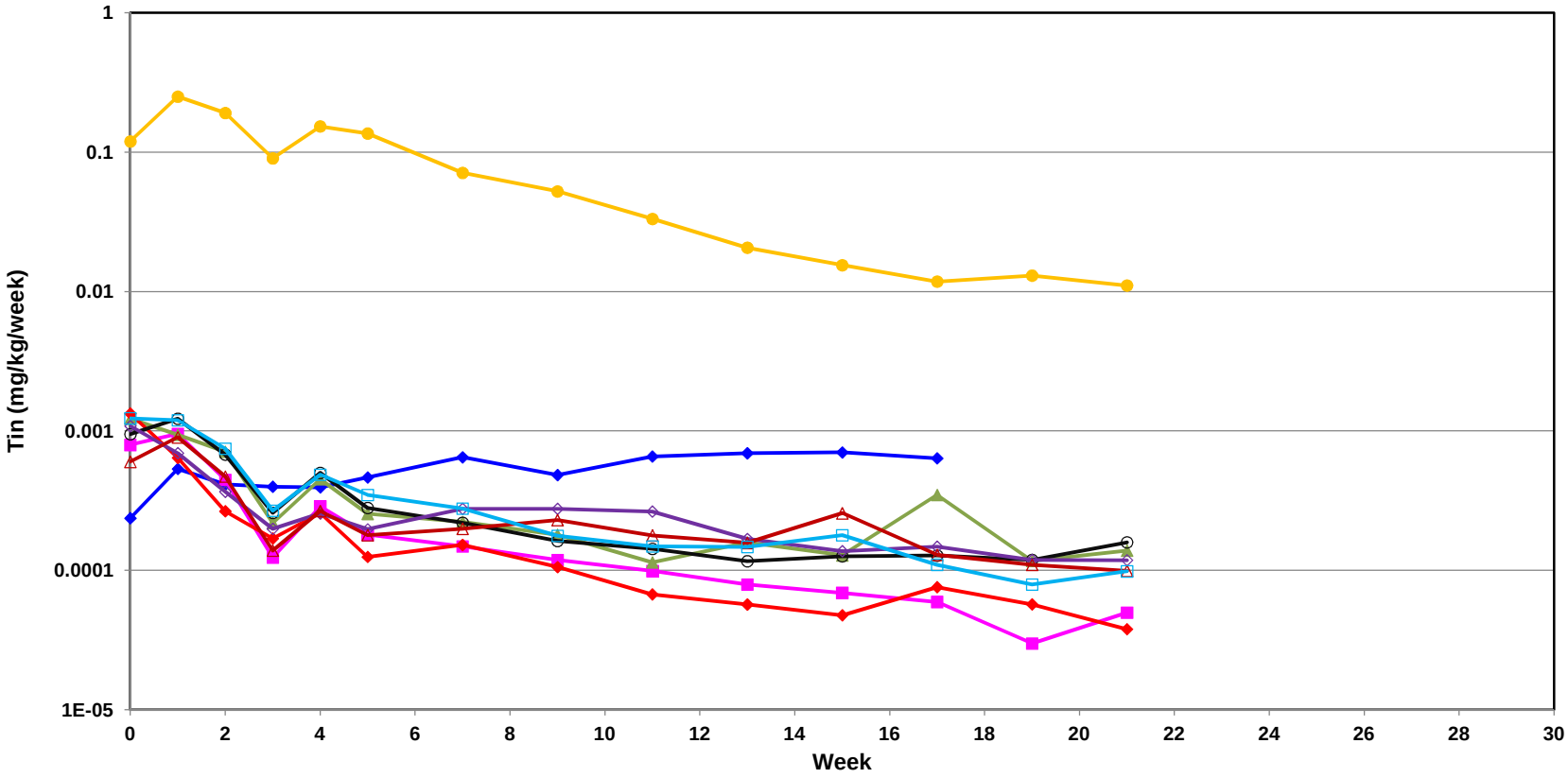
Mary River Project

Strontium Loads - Waste Rock Humidity Cells (2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-17



Baffinland Iron Mines Corporation

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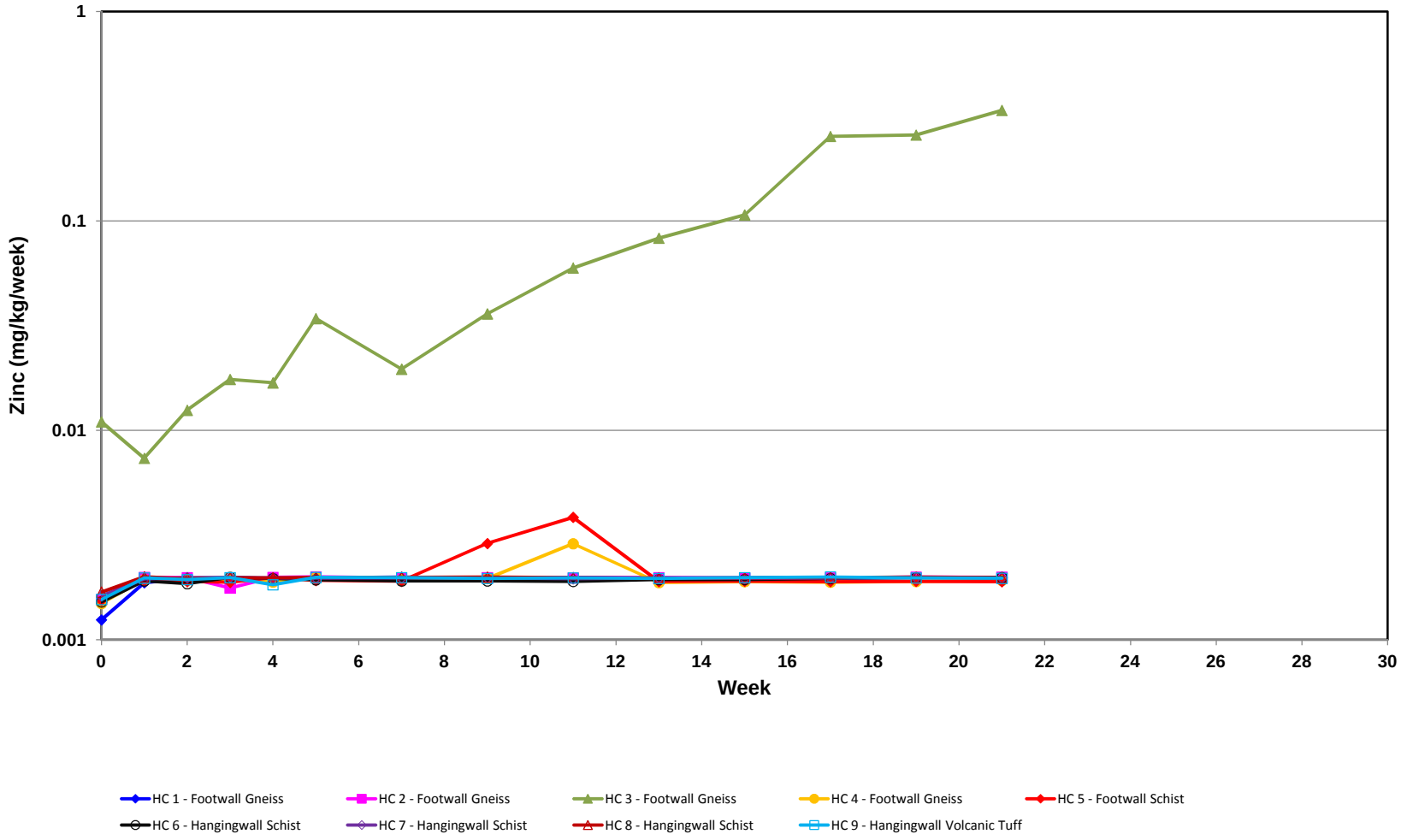
Mary River Project

Tin Loads - Waste Rock Humidity Cells
(2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-18



Baffinland Iron Mines Corporation

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Mary River Project

Zinc Loads - Waste Rock Humidity Cells
(2010 ABA Data Set)

Drawn by: JA	Checked by: SW	Date: January 2012
Project: TC111523		FIGURE D-19

APPENDIX E

BAFFINLAND SITE DRAINAGE RESULTS

LIST OF TABLES

E-1 Weathered Ore and Waste Rock Stockpile Drainage Data Near Bulk Sample Pit (MRY-10)
E-2 Ore Stockpile Drainage Data at Crusher Site (MRY-11 - Test Pits)
E-3 Ore Stock-pile Drainage Data at Milne Inlet (MRY-12 - Drive Points)
E-4 Bulk Sample Pit Seepage Data (MRY-9)

Table E-1. Weathered Ore and Waste Rock Drainage Data Near Bulk Sample Pit (MRY-10)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	652435	652435	726623	737178	821636	827284	827277	892834	892842
						2008-08-16	2008-08-16	2009-06-29	2009-06-29	2010-08-13	2010-09-07	2010-09-07	2011-06-27	2011-06-24
						MRY-10	MRY-10	MRY-10	MRY-10	MRY-10	MRY-10	MRY-10	MRY-10	MRY-10
						Dissolved	Total	Dissolved	Total	Total	Dissolved	Total	Dissolved	Total
Alkalinity as CaCO3	mg/L								13			37		18
Chemical Oxygen Demand	mg/L													
Chloride	mg/L		230	<250					<1			2		<1
Conductivity	uS/cm								25			173		45
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]				0.09					1.25		
N-NO3 (Nitrate)	mg/L		13	10					<0.10			9.94		0.10
NO2 + NO3 as N	mg/L								<0.10			9.94		0.10
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5		7.65		7.23			7.68		6.70
Sulphate	mg/L			<500[c]					<1			5		5
Total Dissolved Solids (COND - CALC	mg/L								16			112		29
Total Kjeldahl Nitrogen	mg/L						<0.10		0.12			2.07		0.22
Total Phosphorus	mg/L						0.004		0.01			0.024		0.009
Total Suspended Solids	mg/L	15	5		120		7		8			3		<2
Turbidity	NTU								1.6			7.5		0.8
CO3 as CaCO3	mg/L													
Hardness as CaCO3 (Dissolved)	mg/L							12	12	191	70.6	38.6	19.0	18.4
HCO3 as CaCO3	mg/L							13			37			18
Calcium	mg/L					7	8	2.29	2.27	38.4	14	14.2	3.62	3.54
Magnesium	mg/L					5	5	1.44	1.58	23	8.67	8.89	2.41	2.33
Potassium	mg/L					0.47	0.44	0.163	0.263	3.82	0.576	0.748	0.270	0.308
Sodium	mg/L					0.45	0.44	0.122	0.152	5.34	1.51	1.7	0.345	0.375
Aluminum	mg/L	-	0.005-0.1[a]	-		<0.01	0.05	0.0041	0.226	2.16	0.0073	0.367	0.0121	0.0501
Antimony	mg/L	-		0.006				<0.0001	<0.0001	0.00017	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		<0.001	<0.001	<0.0001	<0.0001	0.00032	<0.0001	<0.0001	<0.0001	<0.0001
Barium	mg/L	-	-	1		<0.01	<0.01	0.00114	0.00217	0.0556	0.0104	0.0127	0.00272	0.00305
Beryllium	mg/L	-	-	-				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth	mg/L	-	-	-				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L					<0.01	<0.01	<0.01	<0.01	0.079	0.015	0.019	<0.01	<0.01
Cadmium	mg/L	-	0.000017	0.005		<0.0001	<0.0001	<0.00001	<0.00001	0.000012	<0.00001	<0.00001	<0.00001	<0.00001
Chromium	mg/L	-	0.001	0.051		<0.001	<0.001	<0.0005	0.00097	0.00715	<0.0005	0.00135	<0.0005	<0.0005
Cobalt	mg/L	-	-	-		<0.0002	<0.0002	<0.0001	0.00018	0.00211	0.00019	0.00051	<0.0001	<0.0001
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0[3]		<0.001	<0.001	0.00078	<0.0005	0.00475	0.00068	0.00154	<0.0005	0.00053
Iron	mg/L	-	0.3	<0.3[3]		<0.03	0.07	<0.03	0.237	3.07	<0.03	0.505	<0.03	0.05
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.001	<0.001	<0.00005	0.00016	0.00581	<0.00005	0.00067	<0.00005	0.00012
Lithium	mg/L	-	-	-				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese	mg/L	-	-	≤0.05		<0.01	<0.01	0.000703	0.00576	0.106	0.00743	0.016	0.00164	0.00291
Mercury	mg/L	-	0.026	0.001				<0.00001	<0.00001	<0.00001	0.000014	0.000018	<0.00001	<0.00001
Molybdenum	mg/L	-	0.073	-		<0.005	<0.005	<0.00005	<0.00005	0.000341	0.000192	0.00028	<0.00005	0.000071
Nickel	mg/L	0.5	0.025-0.15[b]	-		<0.005	<0.005	<0.0005	<0.0008	0.00742	<0.0005	0.00146	<0.0005	0.00052
Selenium	mg/L	-	0.001	-		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon	mg/L							0.24	0.535	5.29	0.552	1.23	0.37	0.45
Silver	mg/L					<0.0001		<0.00001	<0.00001	0.000032	<0.00001	<0.00001	<0.000001	0.00001
Strontium	mg/L	-		-		0.005	0.005	0.00111	0.00146	0.0299	0.00845	0.00911	0.00239	0.0026
Thallium	mg/L	-		-		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin	mg/L	-		-		<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L	-		-				<0.01	<0.01	0.105	<0.01	0.02	<0.01	<0.01
Uranium	mg/L	-		-				0.000023	0.000062	0.000726	0.000118	0.000166	0.000027	0.000044
Vanadium	mg/L	-		-		<0.001	<0.001	<0.001	<0.001	0.0042	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		<0.01	<0.01	<0.001	0.0019	0.0059	<0.001	0.003	0.0053	<0.003

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
CDWQ = Health Canada - Canadian Drinking Water Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).
NWB = Nunavut Water Board Wastewater Criteria
a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature
Minimum and maximum values are the summary data of all monitoring locations

Table E-2. Ore Stockpile Drainage Data at Crusher Site (MRY-11 - Test Pits)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	827285	827278	821633	821634	821635	827286	827279	892835	892843	892836	892844	892837	892845	892838	892846	896378	896810	896379	896811	896380
						2010-09-07	2010-09-07	2010-08-13	2010-08-13	2010-08-13	2010-09-07	2010-09-07	2011-06-24	2011-06-24	2011-06-24	2011-06-24	2011-06-24	2011-06-24	2011-06-24	2011-06-24	2011-07-14	2011-07-14	2011-07-14	2011-07-14	2011-07-14
						MRY-TP1	MRY-11-TP1	MRY-11-TP2	MRY-11-TP3	MRY-11-TP4	MRY-11-TP4	MRY-11-TP4	MRY-11-TP1	MRY-11-TP2	MRY-11-TP2	MRY-11-TP2	MRY-11-TP3	MRY-11-TP3	MRY-11-TP4	MRY-11-TP4	MRY -11-TP1	MRY-11-TP1	MRY -11-TP2	MRY-11-TP2	MRY -11-TP3
						Dissolved	Total	Total	Total	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Alkalinity as CaCO3	mg/L					31					109			60		38		48		54		114		84	
Chemical Oxygen Demand	mg/L																								
Chloride	mg/L		230	<250			1					3		2		1		1		2		3		2	
Conductivity	uS/cm						95					293		157		90		100		140		386		294	
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]				<0.02					<0.02													
N-NO3 (Nitrate)	mg/L		13	10			<0.10					2.13		0.59		0.47		0.27		1.56		1.17		2.8	
NO2 + NO3 as N	mg/L						<0.10					2.13		0.59		0.47		0.27		1.56		1.17		2.8	
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5		7.58					7.99		7.36		6.98		7.14		7.22		8.2		7.74	
Sulphate	mg/L			<500[c]			16					32		16		7		5		12		77		52	
Total Dissolved Solids (COND - CALC)	mg/L						62					190		102		58		65		91		251		191	
Total Kjeldahl Nitrogen	mg/L						0.23					0.13		0.26		0.16		0.26		0.17		0.25		0.26	
Total Phosphorus	mg/L						0.032					0.044		0.48		0.037		0.011		0.037		0.012		<0.003	
Total Suspended Solids	mg/L	15	5		120		5					15		**163**		6		<2		5		<2		<2	
Turbidity	NTU					42.4					27.4			**>100**		27.4		5.5		31.4		4.7		3.6	
CO3 as CaCO3	mg/L					N/A-PH					N/A-PH		N/A-PH	N/A-PH		N/A-PH		N/A-PH		N/A-PH		N/A-PH		N/A-PH	
Hardness as CaCO3 (Dissolved)	mg/L					44.1	35.3	521	259	385	225	77.5	68.1	96.0	43.0	41.7	50.2	52.7	61.6	61.8	185	184	139	137	79.5
HCO3 as CaCO3	mg/L					31					109			60		38		48		54		114		84	
Calcium	mg/L					12.1	11.8	101	50.5	75.8	45.2	28.6	14.6	17.8	8.87	8.47	9.79	9.98	12.8	12.9	38.1	37.3	27	26.3	15.3
Magnesium	mg/L					3.39	3.61	65.2	32.3	47.4	27.2	17.2	7.68	12.5	5.07	4.99	6.25	6.75	7.18	7.18	21.9	22	17.4	17.4	10
Potassium	mg/L					1.28	1.4	4.04	1.78	2.31	1.63	1.46	2.32	8.22	0.503	0.911	0.638	1.05	0.859	1.17	5.8	6.26	1.57	1.76	0.644
Sodium	mg/L					0.496	0.516	17.6	12.9	8.39	2.02	1.35	2.34	2.92	0.898	0.971	0.951	1.03	3.81	4.16	6.15	6.89	4.67	5.25	1.64
Aluminum	mg/L	-	0.005-0.1[a]	-		0.0104	0.387	0.0904	0.0482	0.0629	0.0061	0.58	0.0124	**8.47**	0.0139	0.613	0.051	0.819	0.0188	0.53	0.0212	0.119	0.0153	0.0754	0.0322
Antimony	mg/L	-		0.006		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	0.00012	0.00015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00018	0.00026	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		<0.0001	<0.0001	0.00025	<0.0001	0.00015	<0.0001	0.00012	0.00011	0.00105	<0.0001	<0.0001	<0.0001	0.00013	<0.0001	0.00014	0.00018	0.00021	<0.0001	<0.0001	<0.0001
Barium	mg/L	-	-	1		0.00486	0.00664	0.0389	0.0157	0.041	0.0194	0.0162	0.00882	0.0535	0.0032	0.00612	0.00296	0.0103	0.00447	0.00805	0.0428	0.0254	0.035	0.0113	0.0356
Beryllium	mg/L	-	-	-		<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth	mg/L	-	-	-		<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L					<0.01	0.015	0.058	0.038	0.016	<0.01	<0.01	0.01	0.032	<0.01	0.016	<0.01	0.011	<0.01	<0.01	0.024	0.021	0.051	0.046	0.014
Cadmium	mg/L	-	0.000017	0.005		<0.00001	0.000015	0.000021	<0.00001	0.000011	<0.00001	0.000019	0.000013	0.000061	<0.00001	0.000013	<0.00001	0.000023	<0.00001	0.000016	0.000023	0.000028	<0.00001	0.000012	<0.00001
Chromium	mg/L	-	0.001	0.051		<0.0005	0.00141	<0.001	0.00076	0.00078	<0.0005	0.00147	<0.0005	0.0227	<0.0005	0.00147	<0.0005	0.0022	<0.0005	0.00136	<0.0005	0.00082	<0.0005	0.0006	<0.0005
Cobalt	mg/L	-	-	-		<0.0001	0.00052	0.00094	0.0003	0.00023	0.00011	0.00071	0.00024	0.0059	<0.0001	0.00047	<0.0001	0.00066	<0.0001	0.00057	0.00013	0.00022	0.00014	0.0002	<0.0001
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0[b]		0.00026	0.00151	0.00259	0.00141	0.00201	0.00101	0.00213	0.00073	0.0136	0.00072	0.00166	0.00078	0.00198	0.00091	0.00208	0.00139	0.00188	0.00106	0.00112	0.00092
Iron	mg/L	-	0.3	<0.3[b]		<0.03	0.746	0.134	0.044	0.076	<0.03	0.874	<0.03	**7.19**	<0.03	0.77	0.05	1.06	<0.03	0.71	<0.03	0.09	<0.03	0.07	<0.03
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.00005	0.00129	0.0002	0.00008	0.00013	<0.00005	0.00089	<0.00005	0.00635	<0.00005	0.00084	0.00006	0.00115	<0.00005	0.00066	<0.00005	0.0001	<0.00005	0.00008	<0.00005
Lithium	mg/L	-	-	-		<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	0.0126	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0068	0.0074	<0.005	<0.005	<0.005
Manganese	mg/L	-	-	≤0.05		0.00891	0.028	0.0151	0.00821	0.0668	0.0237	0.0779	0.0208	0.146	0.000458	0.0238	0.00957	0.0749	0.00126	0.023	0.00567	0.0177	0.00221	0.00555	0.000896
Mercury	mg/L	-	0.026	0.001		<0.00001	<0.00001	0.000018	0.000017	<0.00001	<0.00001	0.000035	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	-	0.073	-		0.00153	0.00128	0.00042	0.000288	0.000453	0.000632	0.000525	0.00291	0.0031	0.000387	0.000385	0.000291	0.00035	0.00106	0.00105	0.00433	0.00486	0.000883	0.000967	0.000333
Nickel	mg/L	0.5	0.025-0.15[b]	-		<0.0005	0.00196	0.0033	0.0011	0.00457	0.00116	0.00263	0.00192	0.0253	<0.0005	0.00177	0.00057	0.00241	0.00054	0.00192	0.00116	0.00169	0.00072	0.00094	<0.0005
Selenium	mg/L	-	0.001	-		<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon	mg/L					0.264	1.02	2.2	1.43	2.22	1.29	1.93	0.7	**17.3**	0.32	1.58	0.34	1.68	0.37	1.38	0.5	0.7	0.7	0.8	0.51
Silver	mg/L					<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	0.000011	<0.000001	0.000119	<0.000001	0.000017	<0.000001	0.000017	<0.000001	0.00002	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001
Strontium	mg/L	-		-		0.00995	0.0101	0.0562	0.0235	0.0341	0.0195	0.0131	0.0126	0.0235	0.00519	0.00588	0.00524	0.00624	0.00683	0.00787	0.0243	0.0274	0.0158	0.0174	0.00732
Thallium	mg/L	-		-		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00014	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin	mg/L	-		-		<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00036	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L	-		-		<0.01	0.018	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.29	<0.01	0.02	<0.01	0.04	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	mg/L	-		-		0.00273	0.00323	0.0045	0.00231	0.00237	0.00138	0.00101	0.00187	0.00331	0.000252	0.000376	0.000786	0.00149	0.000771	0.00097	0.00625	0.00755	0.00103	0.00132	0.000832
Vanadium	mg/L	-		-		<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	0.0012	<0.001	0.0152	<0.001	0.0011	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		<0.001	0.0029	0.0275	0.0032	0.0162	<0.001	0.0035	<0.003	0.018	<0.003	<0.003	<0.003	0.0043	<0.003	0.0032	0.0136	<0.003	0.0171	<0.003	0.0163

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWQG (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
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CWQG (PAL) and CDWQ guidelines shown for reference purposes only (see text).
NWB = Nunavut Water Board Wastewater Criteria
a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

Table E-2. Ore Stockpile Drainage Data at Crusher Site (MRY-11 - Test Pits)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	896812	896381	896813	904565	905646	904566	905647	904567	905648	904568	905649
						2011-07-14	2011-07-14	2011-07-14	2011-08-16	2011-08-16	2011-08-16	2011-08-16	2011-08-16	2011-08-16	2011-08-16	2011-08-16
						MRY-11-TP3	MRY -11-TP4	MRY-11-TP4	MRY-11-TP1	MRY-11-TP1	MRY-11-TP2	MRY-11-TP2	MRY-11-TP3	MRY-11-TP3	MRY-11-TP4	MRY-11-TP4
						Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Alkalinity as CaCO3	mg/L					81		135		57		141		141		200
Chemical Oxygen Demand	mg/L															
Chloride	mg/L		230	<250		1		3		<1		6		4		3
Conductivity	uS/cm					158		332		144		677		354		467
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]													
N-NO3 (Nitrate)	mg/L		13	10		0.35		3.24		<0.10		5.25		2.74		2.64
NO2 + NO3 as N	mg/L					0.35		3.24		<0.10		5.25		2.74		2.64
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5	7.6		8.08		6.99		7.54		7.79		8.03
Sulphate	mg/L			<500[c]		5		28		21		181		36		46
Total Dissolved Solids (COND - CALC)	mg/L					103		216		94		440		230		304
Total Kjeldahl Nitrogen	mg/L					<0.10		0.4		0.56		0.59		0.46		0.36
Total Phosphorus	mg/L					0.004		0.003		0.81		0.007		0.032		0.017
Total Suspended Solids	mg/L	15	5		120	<2		<2		**911**		3		2		4
Turbidity	NTU					1.4		1.8		**> 100**		3.7		1.1		7.3
CO3 as CaCO3	mg/L					N/A-PH		N/A-PH		N/A-PH		N/A-PH		N/A-PH		N/A-PH
Hardness as CaCO3 (Dissolved)	mg/L					78.9	159	160	67.7	89.1	379	353	183	189	262	260
HCO3 as CaCO3	mg/L					81		135		57		141		141		200
Calcium	mg/L					15.1	32.3	32.3	15.5	17.7	73.9	68.2	35.7	37.2	51.3	50.6
Magnesium	mg/L					10	18.9	19.3	7.06	10.9	47.2	44.4	22.8	23.4	32.4	32.5
Potassium	mg/L					0.769	1.73	1.89	2.52	5.04	3.24	3	1.31	1.3	1.98	1.9
Sodium	mg/L					1.74	7.76	9.2	1.63	2.05	13.2	13.1	7.05	7.47	5.94	6.24
Aluminum	mg/L	-	0.005-0.1[a]	-		0.0689	0.0096	0.0391	0.0452	**4.76**	0.006	0.0477	0.01	0.0344	0.0051	0.0471
Antimony	mg/L	-		0.006		<0.0001	<0.0001	<0.0001	<0.0001	0.00018	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		<0.0001	<0.0001	<0.0001	0.00011	0.00082	0.00012	0.00012	<0.0001	<0.0001	<0.0001	<0.0001
Barium	mg/L	-	-	1		0.0047	0.039	0.0124	0.00833	0.0343	0.0294	0.0267	0.0118	0.0117	0.0244	0.0239
Beryllium	mg/L	-	-	-		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth	mg/L	-	-	-		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L					0.013	0.01	0.011	0.014	0.022	0.068	0.071	0.023	0.028	<0.01	0.011
Cadmium	mg/L	-	0.000017	0.005		<0.00001	<0.00001	0.000013	<0.00001	0.00005	0.000011	0.000017	<0.00001	<0.00001	<0.00001	<0.00001
Chromium	mg/L	-	0.001	0.051		0.00057	<0.0005	0.00059	0.00054	0.0125	<0.0005	0.00055	<0.0005	<0.0005	<0.0005	<0.0005
Cobalt	mg/L	-	-	-		<0.0001	<0.0001	0.00011	<0.0001	0.0043	0.00047	0.00049	0.00015	0.00017	0.00011	0.00017
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0[c]		0.00095	0.00152	0.00155	0.00128	0.0109	0.00129	0.00171	0.00193	0.00131	0.00125	0.0016
Iron	mg/L	-	0.3	<0.3[c]		<0.03	<0.03	0.04	<0.03	**5.77**	<0.03	0.08	<0.03	0.04	<0.03	0.08
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.00005	<0.00005	<0.00005	<0.00005	0.00602	<0.00005	0.0001	<0.00005	0.00006	<0.00005	0.00011
Lithium	mg/L	-	-	-		<0.005	<0.005	<0.005	<0.005	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese	mg/L	-	-	≤0.05		0.00463	0.00357	0.0138	0.00156	0.12	0.0138	0.016	0.00498	0.00656	0.0299	0.0379
Mercury	mg/L	-	0.026	0.001		<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	-	0.073	-		0.00039	0.00136	0.00148	0.0034	0.00218	0.000473	0.000498	0.000316	0.000318	0.000854	0.000888
Nickel	mg/L	0.5	0.025-0.15[b]	-		0.00059	0.00087	0.00114	0.00064	0.0203	0.00147	0.00155	0.00059	0.00071	0.00108	0.00126
Selenium	mg/L	-	0.001	-		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon	mg/L					0.55	0.9	0.94	0.27	**10.2**	1.32	1.31	1	1.07	1.52	1.6
Silver	mg/L					<0.000001	<0.000001	<0.000001	<0.000001	0.000047	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001	<0.000001
Strontium	mg/L	-		-		0.00777	0.0152	0.0166	0.0106	0.0169	0.0389	0.0362	0.0156	0.0166	0.0223	0.0226
Thallium	mg/L	-		-		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin	mg/L	-		-		<0.0001	<0.0001	<0.0001	<0.0001	0.00031	<0.0001	<0.0001	0.00166	<0.0001	<0.0001	<0.0001
Titanium	mg/L	-		-		<0.01	<0.01	<0.01	<0.01	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	mg/L	-		-		0.00104	0.00153	0.00195	0.0032	0.00484	0.00296	0.00278	0.00165	0.00178	0.00193	0.00209
Vanadium	mg/L	-		-		<0.001	<0.001	<0.001	<0.001	0.0081	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		<0.003	0.0164	<0.003	<0.003	0.0151	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the
CDWQ = Health Canada - Canadian Drinking Water Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).
NWB = Nunavut Water Board Wastewater Criteria
a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

Table E-3. Ore Stock-pile Drainage Data at Milne Inlet (MRY-12 - Drive Points)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	828062	828058	828063	828059	828064	828064	828065	828061
						2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09	2010-09-09
						MRY-12-DP1	MRY-12-DP1	MRY-12-DP101	MRY-12-DP101	MRY-12-DP2	MRY-12-DP2	MRY-12-DP3	MRY-12-DP3
						Dissolved	Total *	Dissolved	Total *	Dissolved	Total *	Dissolved	Total *
Alkalinity as CaCO3	mg/L						125		124		208		107
Chemical Oxygen Demand	mg/L												
Chloride	mg/L		230	<250			199		188		272		120
Conductivity	uS/cm						1760		1710		1570		852
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]				<0.02		<0.02		0.24		<0.02
N-NO3 (Nitrate)	mg/L		13	10			4.47		4.62		2.16		15.2
NO2 + NO3 as N	mg/L						4.47		4.62		2.16		15.2
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5		8.07		8.07		8.15		7.64
Sulphate	mg/L			<500[c]			457		434		123		48
Total Dissolved Solids (COND - CAL	mg/L						1230		1200		1020		554
Total Kjeldahl Nitrogen	mg/L						0.37		0.45		0.69		0.19
Total Phosphorus	mg/L						0.052		0.039		0.03		0.02
Total Suspended Solids	mg/L	15	5		120		**11900**		**4170**		**230**		**417**
Turbidity	NTU						>100		>100		87.5		71.4
CO3 as CaCO3	mg/L												
Hardness as CaCO3 (Dissolved)	mg/L					528	1590	530	1350	375	671	187	367
HCO3 as CaCO3	mg/L					125		124		208		107	
Calcium	mg/L					98.2	351	94.3	295	63.6	133	41.3	80.5
Magnesium	mg/L					68.5	173	71.6	150	52.5	82.2	20.5	40.3
Potassium	mg/L					19.1	27	19.1	24.8	15.6	22.3	4.22	6.3
Sodium	mg/L					160	155	151	150	166	182	87.5	95.3
Aluminum	mg/L	-	0.005-0.1[a]	-		0.0034	12	0.003	8.39	0.0035	7.77	0.0032	2.35
Antimony	mg/L	-		0.006		<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Arsenic	mg/L	0.5	0.005	0.005		<0.0014	0.0541	<0.0016	0.0343	<0.0018	<0.006	0.00048	0.00095
Barium	mg/L	-	-	1		0.00246	0.0768	0.00271	0.0541	0.00646	0.0329	0.00654	0.0165
Beryllium	mg/L	-	-	-		<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.001	<0.001	<0.001
Bismuth	mg/L	-	-	-		<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.001	<0.001	<0.001
Boron	mg/L					0.535	0.63	0.536	0.614	0.554	0.677	0.197	0.241
Cadmium	mg/L	-	0.000017	0.005		<0.00002	0.000141	0.00002	0.000115	<0.00002	0.000056	<0.00002	0.000023
Chromium	mg/L	-	0.001	0.051		<0.001	0.102	<0.001	0.0602	<0.006	0.148	0.0016	0.0597
Cobalt	mg/L	-	-	-		0.00094	0.00917	0.00092	0.00665	0.00036	0.00473	<0.0002	0.00171
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0[3]		<0.004	0.0457	<0.004	0.031	0.00237	0.0215	0.00249	0.0139
Iron	mg/L	-	0.3	<0.3[3]		<0.03	45.4	<0.03	30.1	0.036	7.96	<0.03	2.86
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.0001	0.0162	<0.0001	0.0107	<0.0001	0.0053	<0.0001	0.0015
Lithium	mg/L	-	-	-		0.018	0.062	0.018	0.052	0.012	0.046	<0.01	0.015
Manganese	mg/L	-	-	≤0.05		0.0509	0.726	0.0479	0.497	0.0378	0.177	0.00453	0.0817
Mercury	mg/L	-	0.026	0.001		0.000015	0.000013	0.000015	0.00003	<0.00001	0.000058	<0.00001	<0.00001
Molybdenum	mg/L	-	0.073	-		0.00551	0.00903	0.00537	0.00754	0.00412	0.00539	0.00342	0.00359
Nickel	mg/L	0.5	0.025-0.15[b]	-		0.0056	0.0595	0.0035	0.04	0.0102	0.0764	0.0031	0.029
Selenium	mg/L	-	0.001	-		<0.008	<0.005	<0.008	<0.005	<0.006	<0.008	<0.002	<0.002
Silicon	mg/L					0.674	28	0.707	22	0.983	21.5	0.871	6.75
Silver	mg/L					<0.00002	0.000102	<0.00002	0.000081	<0.00002	0.000043	<0.00002	<0.00002
Strontium	mg/L	-		-		0.552	0.754	0.54	0.686	0.264	0.331	0.0884	0.112
Thallium	mg/L	-		-		<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Tin	mg/L	-		-		<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.00021	<0.0002	<0.0002
Titanium	mg/L	-		-		<0.01	0.453	<0.01	0.348	<0.01	0.292	<0.01	0.128
Uranium	mg/L	-		-		0.00238	0.00477	0.00238	0.00378	0.00243	0.00325	0.0017	0.00204
Vanadium	mg/L	-		-		<0.002	0.0602	<0.002	0.0397	<0.002	<0.02	<0.002	0.0064
Zinc	mg/L	0.5	0.03	≤5.0		<0.002	0.0352	<0.002	0.0275	0.0039	0.0217	0.0025	0.0118

Note:

* Elevated suspended solids due to silting of drive points during sampling. Total metals may not be representative and are not included in Max and Min statistics reported in Table 8.

Bold value indicates exceedance of MMER limit

MMER = Metal Mining Effluent Regulation

CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life

CDWQ = Health Canada - Canadian Drinking Water Guideline

CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).

NWB = Nunavut Water Board Wastewater Criteria

a) varies with pH

b) varies with hardness

c) aesthetic objective

d) varies with pH and temperature

Table E-4. Bulk Sample Pit Seepage Data (MRY-9)

PARAMETER	UNITS	MMER	CWQG (PAL)	CDWQ	NWB	645773	645776	827283	827276	892839	892847	896364	896814
						2008-07-25	2008-07-25	2010-09-07	2010-09-07	2011-06-24	2011-06-24	2011-07-13	2011-07-13
						MRY-9	MRY-9	MRY-9	MRY-9	MRY-9	MRY- 9	MRY-9	MRY-9
						Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total
Alkalinity as CaCO3	mg/L								32		<5		25
Chemical Oxygen Demand	mg/L												
Chloride	mg/L		230	<250					3		<1		10
Conductivity	uS/cm								184		19		141
N-NH3 (Ammonia)	mg/L		1.73-38.6[d]				0.07		<0.02				
N-NO3 (Nitrate)	mg/L		13	10					0.82		0.63		0.69
NO2 + NO3 as N	mg/L								0.82		0.63		0.69
pH		6.0 - 9.5	6.5 - 9.0	6.5 - 8.5	6.0 - 9.5		7.31		7.57		**4.92**		6.6
Sulphate	mg/L			<500[c]					48		3		26
Total Dissolved Solids (COND - CALC	mg/L								120		12		92
Total Kjeldahl Nitrogen	mg/L						0.27		0.17		<0.10		0.12
Total Phosphorus	mg/L						0.013		0.043		0.087		0.005
Total Suspended Solids	mg/L	15	5		120		15		23		**30**		<2
Turbidity	NTU								10.4		76.3		4.6
CO3 as CaCO3	mg/L										N/A-PH		N/A-PH
Hardness as CaCO3 (Dissolved)	mg/L								57.2	1.4	1.5	56.3	
HCO3 as CaCO3	mg/L										<1		25
Calcium	mg/L					19	19	22	21.7	0.206	0.180	13.2	12.7
Magnesium	mg/L					18	18	7.68	7.88	0.22	0.26	5.65	5.52
Potassium	mg/L					0.57	0.68	0.571	0.711	<0.050	0.096	0.605	0.775
Sodium	mg/L					0.98	0.96	2.24	2.4	0.0670	0.0680	3.94	3.48
Aluminum	mg/L	-	0.005-0.1[a]	-		<0.01	0.67	0.0058	0.287	0.0779	**0.5420**	0.0117	0.101
Antimony	mg/L	-		0.006				<0.0001	<0.0001	<0.0001	0.00014	<0.0001	<0.0001
Arsenic	mg/L	0.5	0.005	0.005		<0.001	<0.001	<0.0001	<0.0001	<0.0001	0.00012	<0.0001	<0.0001
Barium	mg/L	-	-	1		0.01	0.02	0.00522	0.00679	0.000955	0.0017	0.0629	0.00378
Beryllium	mg/L	-	-	-				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth	mg/L	-	-	-				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L					<0.01	<0.01	<0.01	0.013	<0.01	<0.01	0.029	0.014
Cadmium	mg/L	-	0.000017	0.005		<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00001
Chromium	mg/L	-	0.001	0.051		<0.001	0.003	<0.0005	0.00106	<0.0005	0.00217	<0.0005	0.00071
Cobalt	mg/L	-	-	-		0.0015	0.0030	0.00024	0.0005	0.00143	0.00161	0.00011	0.00017
Copper	mg/L	0.3	0.002-0.004[b]	≤1.0		<0.001	0.005	0.00032	0.00083	0.00154	0.00169	0.00079	0.00112
Iron	mg/L	-	0.3	<0.3		<0.03	1.11	<0.03	0.382	0.2	**3.59**	<0.03	0.16
Lead	mg/L	0.2	0.001-0.007[b]	0.01		<0.001	0.016	<0.00005	0.00033	0.00019	0.00145	<0.00005	0.0001
Lithium	mg/L	-	-	-				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Manganese	mg/L	-	-	≤0.05		0.32	0.40	0.00134	0.0136	0.117	0.103	0.123	0.131
Mercury	mg/L	-	0.026	0.001				0.000013	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	-	0.073	-		<0.005	<0.005	0.000102	0.000164	<0.00005	0.00011	0.000469	0.000512
Nickel	mg/L	0.5	0.025-0.15[b]	-		<0.005	<0.005	<0.0005	0.00101	0.00225	0.00348	<0.0005	<0.0005
Selenium	mg/L	-	0.001	-		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon	mg/L							0.522	1.08	<0.05	0.6	0.38	0.49
Silver	mg/L					<0.0001	<0.0001	0.000018	<0.00001	<0.00001	0.000037	0.000035	0.000044
Strontium	mg/L	-		-		0.016	0.015	0.0382	0.0393	0.00023	0.0004	0.0171	0.0191
Thallium	mg/L	-		-		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin	mg/L	-		-		<0.01	<0.01	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L	-		-				<0.01	0.017	<0.01	0.01	<0.01	<0.01
Uranium	mg/L	-		-				0.000078	0.000111	0.000031	0.000086	0.000051	0.000078
Vanadium	mg/L	-		-		<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.5	0.03	≤5.0		<0.01	<0.01	<0.001	0.0014	0.0041	0.0045	0.0291	0.0053

Note:
Bold value indicates exceedance of MMER limit
MMER = Metal Mining Effluent Regulation
CWGQ (PAL) = Canadian Council of Minister of the Environment (CCME) Canadian Water Quality Guideline for the protection of Aquatic Life
CDWQ = Health Canada - Canadian Drinking Water Guideline
CWGQ (PAL) and CDWQ guidelines shown for reference purposes only (see text).
NWB = Nunavut Water Board Wastewater Criteria
a) varies with pH
b) varies with hardness
c) aesthetic objective
d) varies with pH and temperature

APPENDIX F

LABORATORY CERTIFICATES OF ANALYSIS

LIST OF LABORATORY CERTIFICATES OF ANALYSIS

F-1 Acid Base Accounting
F-2 Net Acid Generation Test
F-3 Metals by Aqua-regia Extraction
F-4 NAG Leachate Results

APPENDIX F-1

ACID BASE ACCOUNTING

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Saturday, November 05, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 25 October 2011
LR Report: **CA10407-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	05-Nov-11	05-Nov-11	05-Nov-11	05-Nov-11	05-Nov-11	05-Nov-11	05-Nov-11	05-Nov-11
4: Analysis Approval Time	13:48	13:48	13:48	13:48	13:48	13:48	13:48	13:48
5: 16002	7.37	1	1.96	20.00	0.10	0.10	18.37	1.18
6: 16004	7.78	1	1.97	20.00	0.10	0.10	17.73	1.17
7: 16006	8.04	1	1.97	20.00	0.10	0.10	18.11	1.10
8: 16008	6.89	1	1.96	20.00	0.10	0.10	18.23	1.22
9: 16010	7.40	1	2.03	20.00	0.10	0.10	17.30	1.43
10: 16012	6.56	1	2.01	20.00	0.10	0.10	16.17	1.07
11: 16014	7.89	1	1.98	20.00	0.10	0.10	15.96	1.76
12: 16016	7.41	1	2.00	20.00	0.10	0.10	18.36	1.05
13: 16018	8.30	1	1.97	20.00	0.10	0.10	17.28	1.27
14: 16020	6.38	1	1.96	20.00	0.10	0.10	18.65	1.01
15: 16022	7.77	1	2.03	20.00	0.10	0.10	17.17	1.45
16: 16024	8.16	1	1.98	27.00	0.10	0.10	21.69	1.54
17: 16026	8.43	1	2.04	25.80	0.10	0.10	20.36	1.62
18: 16028	8.02	1	2.05	20.00	0.10	0.10	16.32	1.49
19: 16030	6.81	1	2.03	20.00	0.10	0.10	17.74	1.02
20: 16032	7.90	1	2.04	20.00	0.10	0.10	16.50	1.43

OnLine LIMS

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Modified ABA (Price 1997)

LR Report : **CA10407-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
21: 16034	7.94	1	1.96	20.00	0.10	0.10	16.32	1.68
22: 16036	7.19	1	1.96	20.00	0.10	0.10	17.34	1.25
23: 16038	9.40	1	1.98	24.40	0.10	0.10	19.32	1.57
24: 16040	7.15	1	1.99	20.00	0.10	0.10	15.80	1.56
25: 16042	7.82	1	1.98	20.00	0.10	0.10	16.29	1.39
26: 16044	8.38	1	2.00	20.00	0.10	0.10	15.88	1.23
27: 16046	7.64	1	1.96	20.00	0.10	0.10	16.00	1.70
28: 16050	6.07	1	2.02	20.00	0.10	0.10	16.85	1.38
29: 16048	8.02	1	2.05	20.00	0.10	0.10	18.53	1.04
30: 16052	7.74	1	2.00	20.00	0.10	0.10	16.74	1.21
31: 16054	8.30	1	1.99	20.00	0.10	0.10	16.94	1.13
32: 16056	8.44	1	2.00	20.00	0.10	0.10	11.79	1.31
33: 16058	8.35	1	1.96	20.00	0.10	0.10	9.57	1.89
34: 16060	8.20	1	1.96	27.80	0.10	0.10	17.60	1.80
35: 16062	8.85	1	1.96	20.00	0.10	0.10	15.70	1.63
36: 16064	9.80	1	2.05	20.00	0.10	0.10	17.36	1.18
37: 16066	9.93	1	1.99	20.00	0.10	0.10	16.94	1.17
38: 16068	3.77	1	2.05	20.00	0.10	0.10	22.33	1.03
39: 16070	7.20	1	1.97	26.90	0.10	0.10	14.62	1.73
40: 16072	7.92	2	2.05	47.60	0.10	0.10	23.36	1.62
41: 16074	8.31	1	1.97	20.00	0.10	0.10	11.49	1.84
42: 16076	7.66	1	2.03	20.00	0.10	0.10	9.17	1.73
43: 16078	9.05	1	2.04	20.00	0.10	0.10	15.61	1.73
44: 16080	9.11	1	2.01	20.00	0.10	0.10	15.66	1.71
45: 16082	9.54	1	1.99	20.00	0.10	0.10	16.89	1.22
46: 16084	9.45	1	2.00	20.00	0.10	0.10	16.91	1.16
47: 16086	9.93	1	2.05	20.00	0.10	0.10	14.74	1.77
48: 16088	10.08	1	1.95	20.00	0.10	0.10	15.49	1.59
49: 16090	10.12	1	2.04	20.00	0.10	0.10	16.08	1.34
50: 16092	9.77	1	1.99	32.60	0.10	0.10	23.02	1.62
51: 16094	10.02	1	2.04	20.00	0.10	0.10	16.72	1.14
52: 16096	10.12	1	1.99	20.00	0.10	0.10	15.30	1.20

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Modified ABA (Price 1997)

LR Report : **CA10407-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
53: 16098	9.61	1	1.96	20.00	0.10	0.10	14.82	1.28
54: 16100	9.87	1	2.02	20.00	0.10	0.10	15.70	1.27

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Project Specialist
Environmental Services, Analytical

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Modified ABA (Price 1997)

Saturday, November 05, 2011

Date Rec. : 25 October 2011
LR Report: **CA10407-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
3: Analysis Approval Date	05-Nov-11	04-Nov-11	05-Nov-11	05-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	03-Nov-11
4: Analysis Approval Time	13:48	17:57	13:50	13:50	11:02	11:03	11:03	11:03	13:45
5: 16002	4.2	0.31	3.9	13.5	0.025	< 0.01	0.01	0.022	< 0.005
6: 16004	5.8	0.31	5.5	18.7	< 0.005	<0.01	< 0.01	0.054	0.152
7: 16006	4.8	0.31	4.5	15.5	0.012	< 0.01	< 0.01	0.009	< 0.005
8: 16008	4.5	0.31	4.2	14.5	< 0.005	<0.01	< 0.01	0.044	0.130
9: 16010	6.7	0.31	6.4	21.6	< 0.005	<0.01	< 0.01	0.140	0.613
10: 16012	9.5	118	-109	0.08	5.65	1.86	3.79	0.556	2.50
11: 16014	10.2	2.08	8.1	4.91	0.124	0.06	0.07	0.011	< 0.005
12: 16016	4.1	45.2	-41.1	0.09	1.99	0.54	1.45	1.43	6.83
13: 16018	6.9	0.31	6.6	22.3	< 0.005	<0.01	< 0.01	0.013	0.023
14: 16020	3.4	17.9	-14.5	0.19	1.04	0.47	0.57	2.32	10.9
15: 16022	7.0	0.31	6.7	22.6	< 0.005	<0.01	< 0.01	0.014	0.008
16: 16024	13.4	1.02	12.4	13.2	0.072	0.04	0.03	0.008	< 0.005
17: 16026	13.3	0.31	13.0	42.9	0.008	< 0.01	< 0.01	0.007	< 0.005
18: 16028	9.0	7.94	1.1	1.13	0.366	0.11	0.25	0.008	< 0.005
19: 16030	5.6	0.31	5.3	18.1	0.017	0.02	< 0.01	0.014	< 0.005
20: 16032	8.6	0.31	8.3	27.7	0.043	0.04	< 0.01	0.008	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA10407-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
21: 16034	9.4	48.5	-39.1	0.19	2.14	0.59	1.55	0.009	< 0.005
22: 16036	6.8	37.0	-30.2	0.18	1.49	0.30	1.19	0.013	0.014
23: 16038	12.8	9.36	3.4	1.37	0.424	0.12	0.30	0.017	< 0.005
24: 16040	10.6	0.31	10.3	34.2	0.012	< 0.01	< 0.01	0.009	< 0.005
25: 16042	9.4	0.31	9.1	30.3	0.008	< 0.01	< 0.01	0.025	0.034
26: 16044	10.3	0.31	10.0	33.2	< 0.005	<0.01	< 0.01	0.016	0.020
27: 16046	10.2	382	-372	0.03	17.8	5.53	12.2	0.021	0.008
28: 16050	7.8	149	-141	0.05	5.22	0.45	4.77	0.012	< 0.005
29: 16048	3.6	5.48	-1.9	0.66	0.286	0.11	0.18	0.375	1.72
30: 16052	8.2	8.82	-0.6	0.93	0.464	0.18	0.28	0.010	< 0.005
31: 16054	7.7	12.2	-4.5	0.63	0.471	0.08	0.39	0.010	< 0.005
32: 16056	20.5	29.6	-9.1	0.69	1.42	0.47	0.95	0.662	0.243
33: 16058	26.6	47.5	-20.9	0.56	2.46	0.94	1.52	1.39	0.834
34: 16060	26.0	0.57	25.4	46.0	0.025	< 0.01	0.02	0.017	< 0.005
35: 16062	11.0	0.31	10.7	35.5	0.007	< 0.01	0.01	0.022	0.018
36: 16064	6.4	3.43	3.0	1.86	0.217	0.11	0.11	0.009	< 0.005
37: 16066	7.7	0.31	7.4	24.8	< 0.005	<0.01	< 0.01	0.011	< 0.005
38: 16068	-5.7	2.38	-8.1	-2.39	0.598	0.52	0.08	0.018	0.007
39: 16070	31.2	29.1	2.1	1.07	1.45	0.52	0.93	3.29	5.65
40: 16072	59.1	48.3	10.8	1.22	2.17	0.62	1.54	3.34	7.73
41: 16074	21.6	0.31	21.3	69.7	0.064	0.05	0.01	0.028	< 0.005
42: 16076	26.7	130	-103	0.21	5.62	1.47	4.15	1.25	0.885
43: 16078	10.8	0.31	10.5	34.8	0.011	< 0.01	< 0.01	0.009	< 0.005
44: 16080	10.8	1.72	9.1	6.28	0.066	< 0.01	0.06	0.008	< 0.005
45: 16082	7.8	0.31	7.5	25.2	< 0.005	<0.01	< 0.01	0.006	< 0.005
46: 16084	7.7	0.31	7.4	24.8	< 0.005	<0.01	< 0.01	0.012	< 0.005
47: 16086	12.8	1.66	11.1	7.70	0.148	0.09	0.05	0.021	0.019
48: 16088	11.6	0.31	11.3	37.4	0.058	0.04	0.01	0.011	< 0.005
49: 16090	9.6	0.31	9.3	31.0	< 0.005	<0.01	< 0.01	0.031	0.022
50: 16092	24.1	0.52	23.6	45.9	0.051	0.03	0.02	0.029	0.019
51: 16094	8.0	0.31	7.7	25.8	0.045	0.05	< 0.01	0.026	< 0.005
52: 16096	11.8	0.31	11.5	38.1	0.017	0.02	< 0.01	0.018	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA10407-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
53: 16098	13.2	0.31	12.9	42.6	0.024	0.02	< 0.01	0.036	< 0.005
54: 16100	10.6	0.31	10.3	34.2	0.033	0.03	< 0.01	0.026	0.019

*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

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Modified ABA (Price 1997)

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Wednesday, November 09, 2011

Date Rec. : 25 October 2011
LR Report: **CA10410-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11
4: Analysis Approval Time	14:25	14:25	14:25	14:25	14:25	14:25	14:25	14:25
5: 16102	9.33	1	2.05	27.50	0.10	0.10	25.38	1.70
6: 16104	9.88	1	2.02	20.00	0.10	0.10	13.83	1.87
7: 16106	10.07	1	2.04	20.00	0.10	0.10	16.17	1.48
8: 16108	10.05	1	2.02	20.00	0.10	0.10	16.20	1.30
9: 16110	10.20	1	1.96	20.00	0.10	0.10	14.48	1.86
10: 16112	9.43	1	2.05	20.00	0.10	0.10	16.02	1.58
11: 16114	9.37	1	1.95	20.00	0.10	0.10	16.16	1.55
12: 16116	8.91	1	1.97	45.30	0.10	0.10	30.92	1.63
13: 16118	8.20	1	1.99	34.60	0.10	0.10	25.36	1.60
14: 16120	8.86	1	2.01	20.00	0.10	0.10	14.26	1.92
15: 16122	8.76	1	2.01	24.70	0.10	0.10	18.67	1.54
16: 16124	8.63	1	2.00	26.10	0.10	0.10	19.35	1.61
17: 16126	9.58	1	2.02	32.60	0.10	0.10	25.93	1.54
18: 16128	9.63	1	2.03	27.60	0.10	0.10	20.81	1.56
19: 16130	9.48	1	2.04	30.80	0.10	0.10	24.72	1.57
20: 16132	9.58	1	2.05	26.30	0.10	0.10	20.24	1.63
21: 16134	9.99	1	1.96	20.00	0.10	0.10	15.57	1.95

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LR Report : **CA10410-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
22: 16136	9.89	1	2.03	26.10	0.10	0.10	19.84	1.59
23: 16138	9.63	1	1.99	25.40	0.10	0.10	19.98	1.61
24: 16140	10.05	1	2.01	20.00	0.10	0.10	14.75	1.66
25: 16142	10.19	1	2.01	20.00	0.10	0.10	15.58	1.53
26: 16144	10.06	1	2.02	20.00	0.10	0.10	16.24	1.44
27: 16146	9.88	1	2.00	20.00	0.10	0.10	15.84	1.56
28: 16148	9.97	3	2.00	20.00	0.10	0.10	12.09	1.36
29: 16150	9.96	2	2.02	24.60	0.10	0.10	16.72	1.56
30: 16152	10.13	1	2.01	20.00	0.10	0.10	16.08	1.26
31: 16154	9.84	1	2.05	20.00	0.10	0.10	11.55	1.77
32: 16156	9.81	3	0.99	20.00	0.10	0.10	13.87	1.49
33: 16158	9.85	3	2.00	26.90	0.10	0.10	15.08	1.56
34: 16160	8.21	1	2.04	26.40	0.10	0.10	20.80	1.66
35: 16162	8.19	1	2.01	57.20	0.10	0.10	42.36	1.67
36: 16164	8.09	3	2.02	72.00	0.10	0.10	42.13	1.69
37: 16166	8.39	3	2.05	40.60	0.10	0.10	22.82	1.62
38: 16168	8.84	1	2.04	35.50	0.10	0.10	30.23	1.54
39: 16170	8.33	1	2.00	26.60	0.10	0.10	17.08	1.60
40: 16172	8.39	1	2.01	33.40	0.10	0.10	26.84	1.65
41: 16174	7.89	1	1.99	36.00	0.10	0.10	27.77	1.62
42: 16176	8.02	1	1.98	20.00	0.10	0.10	15.30	1.33
43: 16178	9.35	1	1.97	20.00	0.10	0.10	16.26	1.82
44: 16180	9.70	1	2.04	20.00	0.10	0.10	17.11	1.35
45: 16182	8.49	1	1.98	26.10	0.10	0.10	20.98	1.96
46: 16184	8.45	3	2.02	27.70	0.10	0.10	16.54	1.69
47: 16186	8.42	3	2.01	46.10	0.10	0.10	22.88	1.73
48: 16188	9.10	4	2.03	69.70	0.10	0.10	36.92	1.57
49: 16190	9.11	3	2.00	39.90	0.10	0.10	23.40	1.58
50: 16192	9.27	3	2.03	38.60	0.10	0.10	24.28	1.59
51: 16194	8.82	3	2.03	53.60	0.10	0.10	32.23	1.55
52: 16196	9.65	3	2.03	27.70	0.10	0.10	17.45	1.53
53: 16198	9.34	3	2.01	59.70	0.10	0.10	33.82	1.59
54: 16200	9.54	1	2.01	20.00	0.10	0.10	12.33	1.87

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Modified ABA (Price 1997)

LR Report : **CA10410-OCT11**

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Modified ABA (Price 1997)

Wednesday, November 09, 2011

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Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
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Date Rec. : 25 October 2011
LR Report: **CA10410-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
3: Analysis Approval Date	09-Nov-11	07-Nov-11	09-Nov-11	09-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	09-Nov-11
4: Analysis Approval Time	14:25	15:01	14:26	14:26	15:39	15:39	15:38	15:39	14:26
5: 16102	5.2	10.4	-5.20	0.50	0.375	0.04	0.33	0.020	0.010
6: 16104	15	0.62	14.7	24.7	0.026	< 0.01	0.02	< 0.005	< 0.005
7: 16106	9.4	1.24	8.16	7.60	0.061	0.02	0.04	0.007	< 0.005
8: 16108	9.4	1.40	8.00	6.71	0.081	0.04	0.04	0.022	0.037
9: 16110	14	1.49	12.6	9.48	0.056	< 0.01	0.05	< 0.005	< 0.005
10: 16112	9.7	0.31	9.39	31.3	< 0.005	<0.01	< 0.01	< 0.005	< 0.005
11: 16114	9.9	0.31	9.59	31.9	< 0.005	<0.01	< 0.01	< 0.005	< 0.005
12: 16116	36	0.94	35.6	38.8	0.044	0.01	0.03	0.006	< 0.005
13: 16118	23	42.9	-19.72	0.54	1.77	0.39	1.37	0.009	< 0.005
14: 16120	14	0.31	14.0	46.1	0.007	< 0.01	0.01	< 0.005	< 0.005
15: 16122	15	0.61	14.4	24.6	0.006	< 0.01	0.01	< 0.005	< 0.005
16: 16124	17	0.31	16.6	54.5	< 0.005	<0.01	< 0.01	< 0.005	< 0.005
17: 16126	16	5.73	10.8	2.88	0.210	0.03	0.18	< 0.005	< 0.005
18: 16128	17	0.44	16.3	38.2	0.012	< 0.01	0.01	< 0.005	< 0.005
19: 16130	15	7.68	7.22	1.94	0.274	0.03	0.25	< 0.005	< 0.005
20: 16132	15	0.62	14.2	23.9	0.019	< 0.01	0.02	< 0.005	< 0.005
21: 16134	11	0.31	11.0	36.5	< 0.005	<0.01	< 0.01	0.020	0.031
22: 16136	15	5.93	9.47	2.60	0.228	0.04	0.19	< 0.005	0.017

OnLine LIMS

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Modified ABA (Price 1997)

LR Report : **CA10410-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
23: 16138	14	5.96	7.64	2.28	0.259	0.07	0.19	< 0.005	< 0.005
24: 16140	13	0.62	12.5	21.1	0.023	< 0.01	0.02	0.006	< 0.005
25: 16142	11	0.31	10.7	35.5	< 0.005	<0.01	< 0.01	0.010	< 0.005
26: 16144	9.3	0.31	8.99	30.0	< 0.005	<0.01	< 0.01	0.013	0.010
27: 16146	10	2.91	7.49	3.57	0.154	0.06	0.09	0.014	< 0.005
28: 16148	20	0.31	19.5	63.9	< 0.005	<0.01	< 0.01	0.131	0.460
29: 16150	20	0.31	19.2	62.9	0.027	0.03	< 0.01	0.077	0.215
30: 16152	9.8	1.17	8.63	8.39	0.224	0.19	0.04	0.038	0.070
31: 16154	21	8.96	11.6	2.30	0.376	0.09	0.29	0.026	0.047
32: 16156	31	4.76	26.2	6.52	0.208	0.06	0.15	0.107	0.315
33: 16158	30	0.31	29.3	95.5	< 0.005	<0.01	< 0.01	0.142	0.468
34: 16160	14	0.31	13.4	44.2	< 0.005	<0.01	< 0.01	0.018	< 0.005
35: 16162	37	0.31	36.6	119	0.038	0.02	0.01	0.015	0.015
36: 16164	74	2.18	71.7	33.9	0.137	0.07	0.07	4.73	9.20
37: 16166	43	2.61	40.8	16.6	0.128	0.04	0.08	3.79	8.27
38: 16168	13	0.31	12.6	41.6	< 0.005	<0.01	< 0.01	0.019	0.010
39: 16170	24	58.9	-35.07	0.40	1.86	< 0.01	1.88	1.73	3.42
40: 16172	16	2.78	13.5	5.87	0.139	0.05	0.09	0.020	0.023
41: 16174	21	4.59	16.1	4.51	0.167	0.02	0.15	0.011	< 0.005
42: 16176	12	6.59	5.31	1.81	0.282	0.07	0.21	0.010	< 0.005
43: 16178	9.5	11.0	-1.47	0.87	0.463	0.11	0.35	0.005	< 0.005
44: 16180	7.1	0.39	6.71	18.3	0.034	0.02	0.01	0.015	< 0.005
45: 16182	13	0.62	12.3	20.8	0.044	0.02	0.02	0.025	0.018
46: 16184	28	1.62	26.0	17.0	0.104	0.05	0.05	0.260	0.842
47: 16186	58	0.62	57.1	93.1	0.028	0.01	0.02	0.596	2.42
48: 16188	81	8.27	72.4	9.76	0.419	0.15	0.26	0.804	3.31
49: 16190	41	2.02	39.3	20.4	0.086	0.02	0.06	0.355	1.36
50: 16192	35	0.31	35.0	114	0.008	< 0.01	< 0.01	0.276	1.17
51: 16194	53	2.58	50.0	20.4	0.112	0.03	0.08	0.478	1.86
52: 16196	25	1.84	23.5	13.7	0.092	0.03	0.06	0.210	0.789
53: 16198	64	8.23	56.2	7.82	0.433	0.17	0.26	0.644	2.49
54: 16200	19	2.02	17.1	9.48	0.100	0.04	0.06	0.027	0.032

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*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Modified ABA (Price 1997)

Baffinland Iron Mines Corp
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Phone: 416-364-8820
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Thursday, November 17, 2011

Date Rec. : 26 October 2011
LR Report: **CA11407-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11
4: Analysis Approval Time	13:12	13:12	13:12	13:12	13:12	13:12	13:12	13:12
5: 16202	9.31	4	2.01	48.30	0.10	0.10	27.45	1.54
6: 16204	9.61	3	2.04	37.10	0.10	0.10	26.05	1.62
7: 16206	9.33	3	2.03	56.00	0.10	0.10	37.67	1.60
8: 16208	9.40	3	2.02	37.70	0.10	0.10	22.05	1.54
9: 16210	9.64	3	2.01	39.70	0.10	0.10	29.16	1.74
10: 16212	9.16	3	1.99	49.80	0.10	0.10	24.30	1.52
11: 16214	8.60	1	1.98	39.50	0.10	0.10	27.71	1.54
12: 16216	8.35	1	2.04	35.10	0.10	0.10	27.72	1.52
13: 61218	8.38	1	2.05	26.60	0.10	0.10	19.82	1.61
14: 16220	8.49	1	2.02	27.20	0.10	0.10	22.46	1.52
15: 16222	8.84	1	2.02	20.00	0.10	0.10	17.30	1.14
16: 16224	8.45	1	2.00	36.30	0.10	0.10	24.98	1.61
17: 16226	8.43	1	2.01	36.60	0.10	0.10	24.92	1.58
18: 16228	8.03	1	2.05	39.10	0.10	0.10	29.77	1.75
19: 16230	7.49	1	2.01	40.50	0.10	0.10	32.56	1.61
20: 16232	7.90	1	2.01	41.90	0.10	0.10	32.08	1.76
21: 16234	8.12	4	2.04	50.30	0.10	0.10	26.43	1.55

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Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
22: 16236	8.27	4	2.00	40.00	0.10	0.10	16.73	1.90
23: 16238	9.13	4	2.01	117.10	0.10	0.10	39.19	1.55
24: 16240	8.73	4	2.04	117.80	0.10	0.10	37.78	1.73
25: 16242	9.07	1	1.98	30.70	0.10	0.10	31.59	1.75
26: 16244	9.44	1	2.01	20.00	0.10	0.10	15.18	1.52
27: 16246	8.42	1	2.05	26.90	0.10	0.10	20.40	1.63
28: 16248	8.21	1	1.99	26.20	0.10	0.10	20.50	1.57
29: 16250	8.44	1	2.05	37.40	0.10	0.10	29.88	1.63
30: 16252	8.48	1	2.00	34.30	0.10	0.10	26.44	1.57
31: 16254	8.35	1	1.97	37.80	0.10	0.10	31.03	1.56
32: 16256	8.38	1	2.04	37.30	0.10	0.10	29.43	1.52
33: 16258	8.67	1	2.02	36.50	0.10	0.10	28.37	1.58
34: 16260	8.23	1	2.03	38.40	0.10	0.10	29.68	1.67
35: 16262	7.60	1	1.99	20.00	0.10	0.10	16.88	1.64
36: 16264	8.33	1	2.00	49.40	0.10	0.10	39.72	1.62
37: 16266	8.12	1	2.04	20.00	0.10	0.10	16.90	1.32
38: 16268	8.24	1	1.99	37.90	0.10	0.10	30.99	1.63
39: 16270	8.53	1	2.04	32.30	0.10	0.10	24.20	1.59
40: 16272	8.69	1	1.95	33.80	0.10	0.10	26.84	1.57
41: 16274	8.65	1	2.02	31.90	0.10	0.10	21.35	1.60
42: 16276	9.16	1	1.98	20.00	0.10	0.10	17.60	1.10
43: 16278	9.27	1	2.04	20.00	0.10	0.10	18.08	1.08
44: 16280	9.46	1	1.97	20.00	0.10	0.10	17.92	1.08
45: 16282	8.53	1	1.97	20.00	0.10	0.10	15.88	1.34
46: 16284	8.63	3	2.03	38.10	0.10	0.10	20.48	1.58
47: 16286	7.92	3	2.03	28.40	0.10	0.10	15.15	1.68
48: 16288	8.74	1	2.00	34.00	0.10	0.10	28.23	1.51
49: 16290	8.23	1	2.02	36.40	0.10	0.10	26.08	1.56
50: 16292	8.27	1	2.00	72.40	0.10	0.10	59.12	1.88
51: 16294	8.34	1	1.99	37.90	0.10	0.10	31.50	1.65
52: 16296	8.04	1	2.04	35.80	0.10	0.10	31.40	1.54
53: 16298	8.20	1	2.00	37.80	0.10	0.10	31.46	1.68
54: 16300	8.36	1	2.03	38.20	0.10	0.10	31.74	1.64
55: 16302	9.70	1	1.97	25.20	0.10	0.10	20.65	1.55

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Modified ABA (Price 1997)

LR Report : **CA11407-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
56: 16304	9.84	1	2.03	33.20	0.10	0.10	27.27	1.57
57: 16306	9.54	1	1.99	25.20	0.10	0.10	21.02	1.57
58: 16308	9.73	1	2.00	24.50	0.10	0.10	20.00	1.64

*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

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Environmental Services, Analytical

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Final Report

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
3: Analysis Approval Date	15-Nov-11	10-Nov-11	15-Nov-11	15-Nov-11	13-Nov-11	13-Nov-11	10-Nov-11	15-Nov-11	10-Nov-11
4: Analysis Approval Time	13:12	14:19	13:12	13:12	18:20	18:21	13:01	13:13	13:03
5: 16202	51.9	5.86	46.0	8.86	0.250	0.06	0.19	0.529	1.98
6: 16204	27.1	1.80	25.3	15.1	0.090	0.03	0.06	0.191	0.575
7: 16206	45.1	13.1	32.0	3.43	0.555	0.13	0.42	0.382	1.15
8: 16208	38.7	0.31	38.4	125	0.032	0.03	< 0.01	0.364	1.24
9: 16210	26.2	0.57	25.6	46.1	0.044	0.03	0.02	0.123	0.318
10: 16212	64.1	0.62	63.5	103	0.034	0.02	0.02	0.674	2.90
11: 16214	29.8	0.31	29.5	96.1	0.010	0.01	< 0.01	0.230	0.584
12: 16216	18.1	0.31	17.8	58.4	0.032	0.03	< 0.01	0.076	0.088
13: 61218	16.5	46.9	-30.4	0.35	1.58	0.08	1.50	0.056	0.039
14: 16220	11.7	5.10	6.60	2.29	0.224	0.06	0.16	0.017	< 0.005
15: 16222	6.7	0.31	6.39	21.6	0.013	0.01	< 0.01	0.014	< 0.005
16: 16224	28.3	0.31	28.0	91.3	0.031	0.03	< 0.01	0.045	0.016
17: 16226	29.1	0.31	28.8	93.9	0.013	0.01	< 0.01	0.042	0.104
18: 16228	22.7	0.31	22.4	73.2	0.025	0.02	< 0.01	0.043	< 0.005
19: 16230	19.8	142	-122	0.14	4.68	0.14	4.55	0.049	< 0.005
20: 16232	24.4	189	-165	0.13	6.30	0.24	6.06	0.066	0.012
21: 16234	58.5	9.98	48.5	5.86	0.358	0.04	0.32	0.592	1.92

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22: 16236	58.2	7.14	51.1	8.15	0.260	0.03	0.23	0.612	2.07
23: 16238	194	0.31	193	625	0.016	0.02	< 0.01	2.27	10.7
24: 16240	196	1.28	195	154	0.075	0.03	0.04	2.19	10.2
25: 16242	-2.200	1.41	-3.61	-1.56	0.082	0.04	0.05	0.025	0.020
26: 16244	12.0	1.13	10.9	10.6	0.051	0.02	0.04	0.041	0.046
27: 16246	15.9	0.44	15.5	36.3	0.040	0.03	0.01	0.023	0.007
28: 16248	14.3	0.31	14.0	46.1	0.023	0.02	< 0.01	0.017	0.500
29: 16250	18.3	0.31	18.0	59.0	0.014	0.01	< 0.01	0.019	< 0.005
30: 16252	19.6	0.39	19.2	50.6	0.040	0.03	0.01	0.021	< 0.005
31: 16254	17.2	0.31	16.9	55.5	0.019	0.02	< 0.01	0.018	< 0.005
32: 16256	19.3	1.49	17.8	12.9	0.122	0.07	0.05	0.018	< 0.005
33: 16258	20.1	5.73	14.4	3.51	0.291	0.11	0.18	0.016	< 0.005
34: 16260	21.5	0.50	21.0	43.3	0.063	0.05	0.02	0.022	< 0.005
35: 16262	7.8	35.6	-27.8	0.22	1.36	0.22	1.14	0.018	0.023
36: 16264	24.2	1.27	22.9	19.0	0.092	0.05	0.04	0.011	< 0.005
37: 16266	7.6	29.1	-21.5	0.26	1.29	0.35	0.93	0.009	< 0.005
38: 16268	17.4	1.57	15.8	11.1	0.131	0.08	0.05	0.012	< 0.005
39: 16270	19.9	4.73	15.2	4.21	0.174	0.02	0.15	0.014	< 0.005
40: 16272	17.9	5.80	12.1	3.08	0.386	0.20	0.19	0.010	< 0.005
41: 16274	26.1	18.7	7.36	1.39	0.879	0.28	0.60	0.017	< 0.005
42: 16276	6.1	0.59	5.51	10.3	0.030	0.01	0.02	0.025	0.021
43: 16278	4.7	0.31	4.39	15.2	0.008	< 0.01	< 0.01	0.020	< 0.005
44: 16280	5.3	0.31	5.0	17.1	0.015	< 0.01	< 0.01	0.010	< 0.005
45: 16282	10.5	0.31	10.2	33.9	1.09	1.09	< 0.01	0.147	< 0.005
46: 16284	43.4	5.49	37.9	7.90	0.187	0.01	0.18	1.05	1.07
47: 16286	32.6	15.2	17.4	2.14	0.579	0.09	0.49	1.35	1.05
48: 16288	14.4	0.62	13.8	23.2	0.021	< 0.01	0.02	0.016	< 0.005
49: 16290	25.6	0.36	25.2	71.2	0.017	< 0.01	0.01	0.025	< 0.005
50: 16292	33.2	12.9	20.3	2.58	0.501	0.09	0.41	0.024	0.013
51: 16294	16.1	7.16	8.94	2.25	0.317	0.09	0.23	0.021	< 0.005
52: 16296	10.8	39.6	-28.8	0.27	1.64	0.37	1.27	0.020	< 0.005
53: 16298	15.8	16.1	-0.30	0.98	0.592	0.08	0.52	0.021	0.012
54: 16300	15.9	1.24	14.7	12.8	0.087	0.05	0.04	0.023	< 0.005
55: 16302	11.5	1.39	10.1	8.29	0.047	< 0.01	0.04	0.021	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA11407-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
56: 16304	14.6	0.31	14.3	47.1	0.008	< 0.01	< 0.01	0.018	0.005
57: 16306	10.5	0.31	10.2	33.9	0.008	< 0.01	< 0.01	0.015	< 0.005
58: 16308	11.2	0.31	10.9	36.1	0.006	< 0.01	< 0.01	0.014	< 0.005

*NP (Neutralization Potential)

$$= 50 \times \frac{(N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Modified ABA (Price 1997)

Monday, November 14, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11410-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	13-Nov-11	13-Nov-11	13-Nov-11	13-Nov-11	13-Nov-11	13-Nov-11	13-Nov-11	13-Nov-11
4: Analysis Approval Time	09:41	09:41	09:41	09:41	09:41	09:41	09:41	09:41
5: 16310	8.53	1	2.05	20.00	0.10	0.10	16.66	1.67
6: 16312	8.63	1	1.99	20.00	0.10	0.10	16.22	1.90
7: 16314	9.30	1	2.00	20.00	0.10	0.10	15.09	1.79
8: 16316	8.16	1	1.96	57.10	0.10	0.10	42.41	1.72
9: 16318	7.88	1	2.01	58.00	0.10	0.10	43.29	1.78
10: 16320	7.40	1	1.99	59.80	0.10	0.10	44.94	1.79
11: 16322	7.77	1	2.01	44.20	0.10	0.10	33.06	1.77
12: 16324	8.60	1	1.99	20.00	0.10	0.10	15.06	0.95
13: 16326	8.86	4	1.98	261.50	0.10	0.10	68.56	1.81
14: 16328	8.18	4	1.98	50.80	0.10	0.10	26.31	1.53
15: 16330	9.02	4	2.04	52.00	0.10	0.10	29.22	1.58
16: 16332	8.78	3	2.01	26.40	0.10	0.10	10.49	1.62
17: 16334	8.46	1	2.03	20.00	0.10	0.10	14.74	1.65
18: 16336	8.51	1	1.95	33.70	0.10	0.10	25.63	1.62
19: 16338	9.08	1	2.00	26.50	0.10	0.10	17.58	1.93
20: 16364	9.23	4	1.98	40.00	0.10	0.10	29.40	1.50
21: 16366	8.53	3	2.01	38.50	0.10	0.10	23.12	1.54

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Modified ABA (Price 1997)

LR Report : **CA11410-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
22: 16368	9.26	4	2.02	52.20	0.10	0.10	35.98	1.59
23: 16370	9.30	3	1.98	32.20	0.10	0.10	22.17	1.58
24: 16372	9.74	1	1.97	32.70	0.10	0.10	22.17	1.54
25: 16374	9.76	1	2.02	26.60	0.10	0.10	19.81	1.57
26: 16376	9.73	1	2.05	26.20	0.10	0.10	19.11	1.50
27: 16340	8.19	1	2.01	33.50	0.10	0.10	27.79	1.63
28: 16378	9.71	1	2.02	20.00	0.10	0.10	13.57	1.70
29: 16380	9.78	1	1.98	20.00	0.10	0.10	14.65	1.81
30: 16342	9.11	1	2.01	20.00	0.10	0.10	16.17	1.92
31: 16344	8.53	1	2.02	29.70	0.10	0.10	24.47	1.58
32: 16346	8.44	1	2.04	31.60	0.10	0.10	25.32	1.60
33: 16348	4.76	1	2.00	28.10	0.10	0.10	21.43	1.63
34: 16350	6.82	1	2.00	32.00	0.10	0.10	26.61	1.61
35: 16352	9.06	1	1.99	20.00	0.10	0.10	16.12	1.64
36: 16354	9.92	1	2.00	20.00	0.10	0.10	16.29	1.77
37: 16356	10.07	1	2.02	20.00	0.10	0.10	15.20	1.61
38: 16358	10.14	1	2.03	24.20	0.10	0.10	18.84	1.84
39: 16360	10.05	1	2.00	20.00	0.10	0.10	15.50	1.83
40: 16362	10.10	1	2.00	23.60	0.10	0.10	18.55	1.53
41: 16382	8.75	3	1.99	26.40	0.10	0.10	13.67	1.52
42: 16384	8.78	1	2.01	20.00	0.10	0.10	15.87	1.38
43: 16386	9.66	1	2.01	25.50	0.10	0.10	21.21	1.54
44: 16388	8.62	1	2.02	43.00	0.10	0.10	36.37	1.61
45: 16390	9.74	1	2.02	20.00	0.10	0.10	15.67	1.83
46: 16392	9.73	1	1.99	20.00	0.10	0.10	15.45	1.74
47: 16394	9.52	1	2.00	20.00	0.10	0.10	15.95	1.57
48: 16396	8.59	1	1.99	43.50	0.10	0.10	34.80	1.60
49: 16398	8.43	1	2.00	25.90	0.10	0.10	19.18	1.59
50: 16400	8.51	1	2.01	33.50	0.10	0.10	25.48	1.62
51: 16402	8.74	1	2.04	33.20	0.10	0.10	25.51	1.60
52: 16404	8.34	1	1.99	33.00	0.10	0.10	24.26	1.61
53: 16406	8.16	1	2.02	25.40	0.10	0.10	19.34	1.93

*NP (Neutralization Potential)

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OnLine LIMS

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$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Modified ABA (Price 1997)

Monday, November 14, 2011

Baffinland Iron Mines Corp
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1016-120 Adelaide Street West
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Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11410-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
3: Analysis Approval Date	13-Nov-11	10-Nov-11	13-Nov-11	13-Nov-11	12-Nov-11	12-Nov-11	10-Nov-11	12-Nov-11	10-Nov-11
4: Analysis Approval Time	09:41	14:20	09:41	09:41	10:18	10:18	13:02	10:20	13:03
5: 16310	8.1	0.31	7.79	26.1	< 0.005	< 0.01	< 0.01	0.023	0.006
6: 16312	9.5	0.31	9.19	30.6	< 0.005	< 0.01	< 0.01	0.034	0.005
7: 16314	12.3	0.31	12.0	39.7	< 0.005	< 0.01	< 0.01	0.016	< 0.005
8: 16316	37.5	7.31	30.2	5.13	0.212	< 0.01	0.23	0.017	< 0.005
9: 16318	36.6	3.02	33.6	12.1	0.126	0.03	0.10	0.036	< 0.005
10: 16320	37.3	9.12	28.2	4.09	0.339	0.05	0.29	0.018	< 0.005
11: 16322	27.7	1.31	26.4	21.2	0.046	< 0.01	0.04	0.022	< 0.005
12: 16324	12.4	2.98	9.42	4.16	0.122	0.03	0.10	0.016	< 0.005
13: 16326	487	4.37	483	112	0.179	0.04	0.14	6.69	30.8
14: 16328	61.9	115	-52.9	0.54	3.88	0.20	3.67	3.17	10.7
15: 16330	55.8	7.69	48.1	7.25	0.348	0.10	0.25	2.59	5.94
16: 16332	39.6	13.6	26.0	2.92	0.548	0.11	0.43	1.09	3.42
17: 16334	12.9	22.2	-9.34	0.58	0.737	0.03	0.71	0.612	1.92
18: 16336	20.7	0.31	20.4	66.8	0.022	0.02	< 0.01	0.036	0.083
19: 16338	22.3	0.72	21.6	30.8	0.017	< 0.01	0.02	0.023	0.057
20: 16364	26.8	3.51	23.3	7.64	0.132	0.02	0.11	0.243	0.718
21: 16366	38.3	16.9	21.4	2.27	0.629	0.09	0.54	0.436	1.27

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Modified ABA (Price 1997)

LR Report : **CA11410-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
22: 16368	40.1	3.33	36.8	12.0	0.099	< 0.01	0.11	0.327	1.32
23: 16370	25.3	2.92	22.4	8.67	0.095	< 0.01	0.09	0.174	0.543
24: 16372	26.7	4.05	22.7	6.60	0.182	0.05	0.13	0.197	0.707
25: 16374	16.8	3.49	13.3	4.81	0.116	< 0.01	0.11	0.012	0.041
26: 16376	17.3	0.36	16.9	48.6	< 0.005	< 0.01	0.01	0.019	0.037
27: 16340	14.2	8.03	6.17	1.77	0.285	0.03	0.26	0.010	0.043
28: 16378	15.9	0.32	15.6	49.9	0.020	< 0.01	0.01	0.020	0.034
29: 16380	13.5	2.19	11.3	6.16	0.015	0.01	< 0.01	0.019	0.029
30: 16342	9.5	2.19	7.31	4.34	0.008	<0.01	< 0.01	0.012	0.025
31: 16344	13.0	1.26	11.7	10.3	0.012	< 0.01	0.04	0.013	0.052
32: 16346	15.4	1.77	13.6	8.69	< 0.005	< 0.01	0.06	0.014	0.032
33: 16348	16.7	25.0	-8.25	0.67	1.27	0.48	0.80	2.50	3.01
34: 16350	13.5	31.3	-17.8	0.43	1.08	0.08	1.00	0.007	0.024
35: 16352	9.7	0.31	9.39	31.3	0.018	0.02	< 0.01	0.018	< 0.005
36: 16354	9.3	0.31	8.99	30.0	0.026	0.03	< 0.01	0.020	0.011
37: 16356	11.9	0.31	11.6	38.4	< 0.005	< 0.01	< 0.01	0.016	0.017
38: 16358	13.2	0.31	12.9	42.6	< 0.005	< 0.01	< 0.01	0.020	0.237
39: 16360	11.2	1.26	9.94	8.87	0.061	0.02	0.04	0.020	< 0.005
40: 16362	12.6	0.31	12.3	40.6	< 0.005	< 0.01	< 0.01	0.018	0.012
41: 16382	32.0	8.84	23.2	3.62	0.356	0.07	0.28	2.17	7.00
42: 16384	10.3	7.53	2.77	1.37	0.324	0.08	0.24	0.977	4.15
43: 16386	10.7	0.54	10.2	19.7	0.046	0.03	0.02	0.024	0.035
44: 16388	16.4	2.12	14.3	7.72	0.140	0.07	0.07	0.013	0.027
45: 16390	10.7	0.31	10.4	34.5	0.025	0.02	< 0.01	0.017	0.017
46: 16392	11.4	0.31	11.1	36.8	< 0.005	< 0.01	< 0.01	0.017	0.015
47: 16394	10.1	0.31	9.79	32.6	0.042	0.04	< 0.01	0.022	0.035
48: 16396	21.9	0.31	21.6	70.6	0.011	0.01	< 0.01	0.019	0.034
49: 16398	16.8	0.31	16.5	54.2	0.008	< 0.01	< 0.01	0.019	0.039
50: 16400	20.0	0.31	19.7	64.5	< 0.005	< 0.01	< 0.01	0.019	0.028
51: 16402	18.9	3.17	15.7	5.96	0.176	0.07	0.10	0.018	0.010
52: 16404	22.0	0.31	21.7	71.0	0.007	< 0.01	< 0.01	0.020	0.021
53: 16406	15.0	0.31	14.7	48.4	< 0.005	< 0.01	< 0.01	0.027	0.028

*NP (Neutralization Potential)

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$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

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*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
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Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Modified ABA (Price 1997)

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Phone: 416-364-8820
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Thursday, November 17, 2011

Date Rec. : 26 October 2011
LR Report: **CA11413-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	16-Nov-11	16-Nov-11	16-Nov-11	16-Nov-11	16-Nov-11	16-Nov-11	16-Nov-11	16-Nov-11
4: Analysis Approval Time	13:21	13:21	13:21	13:21	13:21	13:21	13:21	13:21
5: 16408	9.34	1	2.02	46.20	0.10	0.10	25.77	1.59
6: 16410	9.63	1	2.02	39.90	0.10	0.10	28.64	1.67
7: 16412	8.80	1	1.96	34.30	0.10	0.10	26.38	1.56
8: 16414	8.33	1	2.03	33.60	0.10	0.10	24.76	1.63
9: 16416	8.24	1	2.05	33.90	0.10	0.10	25.01	1.62
10: 16418	8.17	1	2.00	32.70	0.10	0.10	24.89	1.64
11: 16420	7.31	1	1.99	45.00	0.10	0.10	31.72	1.55
12: 16422	8.18	1	1.99	33.00	0.10	0.10	24.54	1.59
13: 16424	8.26	1	1.96	26.00	0.10	0.10	19.49	1.55
14: 16426	8.43	1	2.01	26.70	0.10	0.10	20.41	1.57
15: 16428	8.45	1	2.01	33.80	0.10	0.10	25.63	1.58
16: 16430	8.36	1	1.99	42.40	0.10	0.10	34.54	1.64
17: 16432	8.51	3	1.99	36.50	0.10	0.10	24.83	1.62
18: 16434	8.48	1	1.97	33.80	0.10	0.10	26.45	1.55
19: 16436	8.65	3	1.98	187.30	0.10	0.10	62.76	1.64
20: 16438	8.79	1	1.98	20.00	0.10	0.10	10.69	1.90
21: 16440	8.33	1	1.99	68.10	0.10	0.10	50.93	1.93
22: 16442	8.62	1	2.04	20.00	0.10	0.10	13.97	1.46

OnLine LIMS

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P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11413-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
23: 16444	8.46	1	2.03	58.90	0.10	0.10	44.63	1.94
24: 16446	8.31	1	2.00	27.40	0.10	0.10	19.42	1.76
25: 16448	8.53	1	1.98	42.30	0.10	0.10	34.99	1.63
26: 16450	8.37	1	2.03	52.80	0.10	0.10	41.51	1.79
27: 16452	8.43	1	2.02	39.40	0.10	0.10	31.34	1.68
28: 16454	8.34	1	1.96	41.00	0.10	0.10	32.48	1.59
29: 16456	7.83	1	1.98	20.00	0.10	0.10	15.92	1.96
30: 16458	8.31	1	2.01	33.80	0.10	0.10	26.96	1.63
31: 16460	8.41	1	2.01	25.90	0.10	0.10	20.76	1.97
32: 16462	8.64	3	1.96	43.30	0.10	0.10	15.68	1.68
33: 16464	9.58	1	1.99	42.90	0.10	0.10	33.00	1.61
34: 16466	8.30	1	2.00	33.80	0.10	0.10	25.47	1.64
35: 16468	9.16	1	2.02	31.80	0.10	0.10	24.98	1.57
36: 16470	8.32	1	1.98	32.50	0.10	0.10	24.45	1.60
37: 16472	8.39	1	2.00	34.50	0.10	0.10	23.44	1.75
38: 16474	8.76	1	2.03	20.00	0.10	0.10	14.61	1.04
39: 16476	8.88	1	2.02	20.00	0.10	0.10	15.02	1.14
40: 16478	8.19	1	2.03	20.00	0.10	0.10	15.15	1.31
41: 16480	8.56	1	2.00	25.80	0.10	0.10	20.20	1.56
42: 16482	8.34	1	2.01	26.70	0.10	0.10	20.95	1.56
43: 16484	8.98	1	1.97	20.00	0.10	0.10	17.46	1.16
44: 16486	8.27	1	1.97	25.80	0.10	0.10	21.02	1.61
45: 16488	8.17	1	1.99	34.20	0.10	0.10	27.10	1.66
46: 16490	8.65	1	2.00	20.00	0.10	0.10	16.89	1.33
47: 16492	8.22	1	1.98	37.10	0.10	0.10	29.40	1.77
48: 16494	8.50	1	2.00	20.00	0.10	0.10	16.43	1.79
49: 16496	8.80	1	1.98	20.00	0.10	0.10	16.95	1.29
50: 16498	8.24	1	2.03	20.00	0.10	0.10	15.82	1.20
51: 16500	8.23	1	2.02	26.80	0.10	0.10	19.44	1.74
52: 16502	8.36	1	1.98	27.30	0.10	0.10	20.90	1.62
53: 16504	8.17	1	1.95	27.70	0.10	0.10	21.86	1.65
54: 16506	8.00	1	2.01	36.10	0.10	0.10	29.08	1.71
55: 16508	7.97	1	2.03	36.50	0.10	0.10	29.35	1.82
56: 16510	7.93	1	2.02	35.10	0.10	0.10	27.39	1.67

OnLine LIMS

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*NP (Neutralization Potential)

$$= \frac{50 \times (\text{N of HCL} \times \text{Total HCL added} - \text{N NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Modified ABA (Price 1997)

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Thursday, November 17, 2011

Date Rec. : 26 October 2011
LR Report: **CA11413-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
3: Analysis Approval Date	16-Nov-11	14-Nov-11	16-Nov-11	16-Nov-11	12-Nov-11	12-Nov-11	12-Nov-11	13-Nov-11	17-Nov-11
4: Analysis Approval Time	13:21	07:56	13:33	13:33	13:50	13:50	13:50	18:34	08:49
5: 16408	50.6	0.31	50.3	163	0.006	<0.01	< 0.01	0.047	0.130
6: 16410	27.9	0.31	27.6	90.0	< 0.005	<0.01	< 0.01	0.025	0.036
7: 16412	20.2	0.31	19.9	65.2	0.038	<0.01	< 0.01	0.026	0.011
8: 16414	21.8	0.31	21.5	70.3	0.173	0.17	< 0.01	0.034	0.029
9: 16416	21.7	0.31	21.4	70.0	0.031	0.03	< 0.01	0.024	0.016
10: 16418	19.5	16.8	2.75	1.16	1.16	0.62	0.54	0.030	0.066
11: 16420	33.4	733	-699	0.05	22.2	< 0.01	23.4	0.029	0.111
12: 16422	21.3	7.06	14.2	3.02	0.446	0.22	0.23	0.023	0.014
13: 16424	16.6	8.88	7.72	1.87	0.541	0.26	0.28	0.026	< 0.005
14: 16426	15.6	1.72	13.9	9.08	0.197	0.14	0.06	0.019	< 0.005
15: 16428	20.3	42.6	-22.3	0.48	1.85	0.49	1.36	0.026	0.016
16: 16430	19.8	3.12	16.7	6.34	0.224	0.12	0.10	0.025	0.008
17: 16432	29.3	18.4	10.9	1.59	0.662	0.07	0.59	3.40	14.0
18: 16434	18.7	0.31	18.4	60.3	0.026	0.03	< 0.01	0.027	< 0.005
19: 16436	314	27.5	287	11.4	1.07	0.19	0.88	4.31	18.6
20: 16438	23.5	13.6	9.88	1.72	0.522	0.09	0.44	0.115	0.332
21: 16440	43.1	0.62	42.5	69.0	0.076	0.06	0.02	0.037	0.009
22: 16442	14.8	3.00	11.8	4.93	0.153	0.06	0.10	0.023	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA11413-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
23: 16444	35.1	0.31	34.8	113	0.013	0.01	< 0.01	0.027	< 0.005
24: 16446	20.0	10.2	9.84	1.97	0.398	0.07	0.32	0.025	< 0.005
25: 16448	18.5	8.06	10.4	2.29	0.370	0.11	0.26	0.030	< 0.005
26: 16450	27.8	7.41	20.4	3.75	0.243	< 0.01	0.24	0.020	0.013
27: 16452	20.0	10.8	9.22	1.86	0.427	0.08	0.34	0.024	0.006
28: 16454	21.7	0.31	21.4	70.0	0.032	0.03	< 0.01	0.021	< 0.005
29: 16456	10.3	90.5	-80.2	0.11	2.72	< 0.01	2.90	0.025	0.042
30: 16458	17.0	0.31	16.7	54.8	0.017	0.02	< 0.01	0.014	< 0.005
31: 16460	12.8	0.31	12.5	41.3	0.018	0.02	< 0.01	0.014	< 0.005
32: 16462	70.5	22.3	48.2	3.16	0.798	0.08	0.72	0.946	3.20
33: 16464	24.9	0.31	24.6	80.3	< 0.005	<0.01	< 0.01	0.013	< 0.005
34: 16466	20.8	3.69	17.1	5.64	0.148	0.03	0.12	0.016	< 0.005
35: 16468	16.9	0.31	16.6	54.5	< 0.005	<0.01	< 0.01	0.024	0.038
36: 16470	20.3	0.31	20.0	65.5	< 0.005	<0.01	< 0.01	0.043	< 0.005
37: 16472	27.7	1.00	26.7	27.7	0.091	0.06	0.03	0.092	0.041
38: 16474	13.3	7.16	6.14	1.86	0.290	0.06	0.23	0.008	< 0.005
39: 16476	12.3	12.5	-0.17	0.99	0.422	0.02	0.40	0.018	< 0.005
40: 16478	12.0	17.4	-5.38	0.69	0.667	0.11	0.56	0.026	0.039
41: 16480	14.0	0.31	13.7	45.2	0.008	<0.01	< 0.01	0.021	0.045
42: 16482	14.3	35.1	-20.8	0.41	1.28	0.16	1.12	0.008	< 0.005
43: 16484	6.4	2.75	3.65	2.33	0.133	0.04	0.09	0.010	< 0.005
44: 16486	12.1	2.38	9.72	5.09	0.119	0.04	0.08	0.014	< 0.005
45: 16488	17.8	0.62	17.2	28.7	0.072	0.05	0.02	0.016	< 0.005
46: 16490	7.8	13.6	-5.76	0.58	0.528	0.09	0.43	0.007	< 0.005
47: 16492	19.5	1.62	17.9	12.0	0.086	0.03	0.05	0.012	< 0.005
48: 16494	8.9	0.31	8.59	28.7	0.016	0.02	< 0.01	0.014	< 0.005
49: 16496	7.7	2.78	4.92	2.77	0.121	0.03	0.09	0.011	< 0.005
50: 16498	10.3	52.4	-42.1	0.20	1.69	0.01	1.68	0.024	< 0.005
51: 16500	18.2	7.59	10.6	2.40	0.344	0.10	0.24	0.033	< 0.005
52: 16502	16.2	7.25	8.95	2.23	0.312	0.08	0.23	0.028	0.030
53: 16504	15.0	6.66	8.34	2.25	0.382	0.17	0.21	0.012	< 0.005
54: 16506	17.5	11.5	5.97	1.52	0.410	0.04	0.37	0.012	< 0.005
55: 16508	17.6	10.3	7.26	1.70	0.374	0.04	0.33	0.014	< 0.005
56: 16510	19.1	22.7	-3.59	0.84	0.724	< 0.01	0.73	0.010	< 0.005

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Phone: 705-652-2000 FAX: 705-652-6365

*NP (Neutralization Potential)

$$= \frac{50 \times (\text{N of HCL} \times \text{Total HCL added} - \text{N NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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SGS Canada Inc.
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Modified ABA (Price 1997)

Monday, November 21, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11416-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11
4: Analysis Approval Tim	15:29	15:29	15:29	15:29	15:29	15:29	15:29	15:29
5: 16512	8.42	1	2.00	43.60	0.10	0.10	37.61	1.60
6: 16514	8.91	3	1.98	184.00	0.10	0.10	43.15	1.89
7: 16516	8.52	1	2.01	36.10	0.10	0.10	29.60	1.68
8: 16518	9.15	1	1.99	20.00	0.10	0.10	17.14	1.62
9: 16520	9.39	1	2.02	20.00	0.10	0.10	17.12	1.57
10: 16522	8.62	1	1.99	26.20	0.10	0.10	20.64	1.61
11: 16524	8.44	1	1.99	32.60	0.10	0.10	25.30	1.60
12: 16526	8.78	1	1.99	36.10	0.10	0.10	27.80	1.64
13: 16528	8.43	1	2.00	37.40	0.10	0.10	31.06	1.64
14: 16530	8.60	1	2.02	36.00	0.10	0.10	29.70	1.55
15: 16532	9.70	1	2.00	20.00	0.10	0.10	13.74	1.49
16: 16534	8.67	1	2.00	20.00	0.10	0.10	15.48	1.91
17: 16536	8.34	1	2.00	20.00	0.10	0.10	16.41	1.70
18: 16538	8.29	1	2.01	35.50	0.10	0.10	29.49	1.64
19: 16540	9.00	1	2.05	27.20	0.10	0.10	22.85	1.57
20: 16542	8.61	1	2.03	26.50	0.10	0.10	22.81	1.60

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
21: 16544	8.28	1	2.02	42.50	0.10	0.10	34.87	1.64
22: 16546	8.35	1	2.01	32.90	0.10	0.10	24.95	1.64
23: 16548	8.27	1	2.04	33.00	0.10	0.10	17.58	1.63
24: 16550	8.41	1	1.99	47.80	0.10	0.10	39.75	1.63
25: 16552	8.62	1	2.00	48.00	0.10	0.10	40.19	1.63
26: 16554	8.61	1	2.03	35.50	0.10	0.10	29.45	1.60
27: 16556	8.94	1	2.01	36.00	0.10	0.10	26.62	1.59
28: 16558	8.88	1	2.01	20.00	0.10	0.10	14.09	1.38
29: 16560	8.69	1	2.00	47.60	0.10	0.10	36.67	1.66
30: 16562	8.72	1	2.02	20.00	0.10	0.10	16.21	1.13
31: 16564	8.91	1	2.00	20.00	0.10	0.10	15.85	1.14
32: 16566	8.85	1	1.98	20.00	0.10	0.10	15.65	0.92
33: 16568	8.65	1	2.00	35.60	0.10	0.10	29.54	1.61
34: 16570	7.85	1	2.00	57.30	0.10	0.10	47.51	1.78
35: 16572	8.47	1	2.02	39.70	0.10	0.10	32.60	1.65
36: 16574	8.44	1	2.03	40.80	0.10	0.10	33.79	1.60
37: 16576	8.85	1	1.99	26.90	0.10	0.10	21.21	1.50
38: 16578	8.95	1	2.00	20.00	0.10	0.10	16.53	1.77
39: 16580	9.64	1	2.03	20.00	0.10	0.10	16.21	1.84
40: 16582	9.45	1	2.01	20.00	0.10	0.10	15.95	1.87
41: 16584	9.08	1	2.00	28.70	0.10	0.10	23.00	1.57
42: 16586	9.22	1	1.99	25.10	0.10	0.10	19.66	1.56
43: 16588	9.16	1	2.01	24.20	0.10	0.10	20.00	1.57
44: 16590	9.27	2	2.03	24.60	0.10	0.10	17.52	1.55
45: 16592	9.45	2	2.00	40.50	0.10	0.10	29.58	1.56
46: 16594	9.26	1	2.03	34.50	0.10	0.10	26.56	1.55
47: 16596	9.20	2	1.97	35.30	0.10	0.10	24.97	1.53
48: 16598	9.33	1	2.00	29.20	0.10	0.10	23.05	1.57
49: 16600	9.01	1	1.99	39.40	0.10	0.10	32.78	1.60
50: 16602	9.65	1	2.00	35.50	0.10	0.10	28.70	1.53
51: 16604	8.86	1	2.00	37.10	0.10	0.10	30.28	1.58

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Modified ABA (Price 1997)

LR Report : **CA11416-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
52: 16606	8.84	1	1.99	36.20	0.10	0.10	30.49	1.55
53: 16608	8.54	1	2.01	28.00	0.10	0.10	21.84	1.51
54: 16610	9.24	1	2.00	20.00	0.10	0.10	17.72	1.52
55: 16612	8.79	1	2.00	20.00	0.10	0.10	16.48	1.57
56: 16614	9.29	1	1.99	27.40	0.10	0.10	18.90	1.56
57: 16616	9.47	1	2.02	20.00	0.10	0.10	16.47	1.58
58: 16618	8.16	1	2.01	56.20	0.10	0.10	43.60	1.66
59: 16620	8.18	1	1.99	55.50	0.10	0.10	43.13	1.64
60: 16622	6.32	1	1.98	20.00	0.10	0.10	18.63	0.99

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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SGS Canada Inc.
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Modified ABA (Price 1997)

Monday, November 21, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11416-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
3: Analysis Approval Date	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	13-Nov-11	21-Nov-11	21-Nov-11	13-Nov-11	14-Nov-11
4: Analysis Approval Time	15:29	14:47	15:30	15:30	18:35	12:36	12:36	18:35	15:05
5: 16512	15.0	40.2	-25.2	0.37	1.52	0.24	1.29	0.018	< 0.005
6: 16514	356	7.19	349	49.5	0.279	0.05	0.23	5.00	22.8
7: 16516	16.2	25.0	-8.80	0.65	0.837	0.04	0.80	0.126	0.436
8: 16518	7.2	0.94	6.26	7.66	0.058	0.02	0.03	0.024	< 0.005
9: 16520	7.1	0.31	6.79	22.9	< 0.005	< 0.01	< 0.01	0.012	< 0.005
10: 16522	14.0	0.31	13.7	45.2	< 0.005	< 0.01	< 0.01	0.020	< 0.005
11: 16524	18.3	0.31	18.0	59.0	< 0.005	< 0.01	< 0.01	0.018	< 0.005
12: 16526	20.9	0.31	20.6	67.4	< 0.005	< 0.01	< 0.01	0.025	< 0.005
13: 16528	15.8	0.31	15.5	51.0	< 0.005	< 0.01	< 0.01	0.024	< 0.005
14: 16530	15.6	0.31	15.3	50.3	< 0.005	< 0.01	< 0.01	0.017	< 0.005
15: 16532	15.6	0.31	15.3	50.3	0.037	0.02	0.01	0.441	1.80
16: 16534	11.3	0.31	11.0	36.5	< 0.005	< 0.01	< 0.01	0.014	< 0.005
17: 16536	9.0	0.31	8.69	29.0	< 0.005	< 0.01	< 0.01	0.009	0.009
18: 16538	15.0	3.72	11.3	4.03	0.173	0.05	0.12	0.018	0.008
19: 16540	10.6	0.94	9.66	11.3	0.049	0.02	0.03	0.010	0.007
20: 16542	9.1	0.31	8.79	29.4	0.008	< 0.01	< 0.01	0.024	0.012
21: 16544	18.9	0.76	18.1	24.9	0.045	0.02	0.02	0.018	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA11416-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
22: 16546	19.8	14.1	5.74	1.41	0.594	0.14	0.45	0.020	0.006
23: 16548	37.8	11.6	26.2	3.27	0.634	0.26	0.37	3.84	6.57
24: 16550	20.2	0.62	19.6	32.6	0.039	0.02	0.02	0.020	< 0.005
25: 16552	19.5	0.94	18.6	20.7	0.066	0.04	0.03	0.021	0.009
26: 16554	14.9	1.25	13.7	11.9	0.054	0.01	0.04	0.015	0.036
27: 16556	23.3	0.31	23.0	75.2	< 0.005	< 0.01	< 0.01	0.045	0.119
28: 16558	14.7	0.31	14.4	47.4	0.006	< 0.01	< 0.01	0.044	0.112
29: 16560	27.3	0.31	27.0	88.1	< 0.005	< 0.01	< 0.01	0.028	0.018
30: 16562	9.4	13.8	-4.43	0.68	0.600	0.16	0.44	0.019	0.022
31: 16564	10.4	2.09	8.31	4.97	0.131	0.06	0.07	0.016	0.010
32: 16566	11.0	7.66	3.34	1.44	0.406	0.16	0.25	0.014	0.006
33: 16568	15.1	1.95	13.1	7.73	0.146	0.08	0.06	0.016	0.011
34: 16570	24.5	0.94	23.6	26.1	0.097	0.07	0.03	0.017	< 0.005
35: 16572	17.6	4.21	13.4	4.18	0.277	0.14	0.13	0.018	0.030
36: 16574	17.3	26.1	-8.82	0.66	1.15	0.32	0.84	0.036	0.065
37: 16576	14.3	10.2	4.12	1.40	0.468	0.14	0.33	0.012	0.018
38: 16578	8.7	0.31	8.39	28.1	< 0.005	< 0.01	< 0.01	0.014	< 0.005
39: 16580	9.3	0.31	8.99	30.0	< 0.005	< 0.01	< 0.01	0.009	0.011
40: 16582	10.1	0.31	9.79	32.6	< 0.005	< 0.01	< 0.01	0.008	< 0.005
41: 16584	14.2	3.11	11.1	4.57	0.172	0.07	0.10	0.030	0.041
42: 16586	13.7	0.31	13.4	44.2	< 0.005	< 0.01	< 0.01	0.061	0.093
43: 16588	10.4	0.31	10.1	33.5	< 0.005	< 0.01	< 0.01	0.018	0.011
44: 16590	17.4	0.31	17.1	56.1	0.011	0.01	< 0.01	0.114	0.378
45: 16592	27.3	3.17	24.1	8.61	0.197	0.10	0.10	0.158	0.529
46: 16594	19.5	2.06	17.4	9.47	0.138	0.07	0.07	0.070	0.168
47: 16596	26.2	1.72	24.5	15.2	0.138	0.08	0.06	0.184	0.616
48: 16598	15.4	0.31	15.1	49.7	< 0.005	< 0.01	< 0.01	0.015	< 0.005
49: 16600	16.6	1.96	14.6	8.46	0.148	0.08	0.06	0.031	0.061
50: 16602	17.0	0.31	16.7	54.8	0.034	0.03	< 0.01	0.013	0.007
51: 16604	17.1	5.65	11.5	3.03	0.336	0.16	0.18	0.018	0.018
52: 16606	14.4	0.94	13.5	15.3	0.103	0.07	0.03	0.023	< 0.005
53: 16608	15.3	0.31	15.0	49.4	0.023	0.02	< 0.01	0.030	< 0.005
54: 16610	5.7	0.31	5.39	18.4	0.012	0.01	< 0.01	0.005	< 0.005
55: 16612	8.8	0.31	8.49	28.4	0.064	0.06	< 0.01	0.008	< 0.005

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Modified ABA (Price 1997)

LR Report : **CA11416-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
56: 16614	21.3	0.31	21.0	68.7	0.005	< 0.01	< 0.01	0.014	0.010
57: 16616	8.7	0.31	8.39	28.1	< 0.005	< 0.01	< 0.01	0.006	< 0.005
58: 16618	31.4	3.08	28.3	10.2	0.202	0.10	0.10	0.028	0.006
59: 16620	31.1	3.32	27.8	9.37	0.251	0.14	0.11	0.046	0.085
60: 16622	3.5	38.6	-35.1	0.09	1.45	0.21	1.24	2.34	10.6

*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Friday, November 18, 2011

Date Rec. : 26 October 2011
LR Report: **CA11419-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
3: Analysis Approval Date	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11
4: Analysis Approval Time	15:09	15:09	15:09	15:09	15:09	15:09	15:09	15:09
5: 16624	6.79	1	2.04	20.00	0.10	0.10	17.66	1.09
6: 16626	8.71	3	1.99	53.70	0.10	0.10	29.88	1.82
7: 16628	8.43	1	1.99	20.00	0.10	0.10	14.70	1.29
8: 16630	8.26	1	2.00	44.00	0.10	0.10	37.18	1.69
9: 16632	8.78	1	1.98	20.00	0.10	0.10	16.99	1.23
10: 16634	8.15	1	2.05	20.00	0.10	0.10	17.46	1.81
11: 16636	8.00	1	1.96	27.60	0.10	0.10	19.49	1.98
12: 16638	7.85	1	1.98	20.00	0.10	0.10	14.58	1.38
13: 16640	4.06	1	1.98	20.00	0.10	0.10	20.65	1.20
14: 16642	3.85	1	2.00	20.00	0.10	0.10	27.00	1.75
15: 16644	7.30	1	1.98	27.00	0.10	0.10	12.60	1.79
16: 16646	8.27	1	1.99	35.20	0.10	0.10	28.59	1.64
17: 16648	9.14	1	1.99	23.90	0.10	0.10	19.67	1.57
18: 16650	9.76	1	2.01	47.70	0.10	0.10	37.46	1.63
19: 16652	8.09	1	1.97	27.20	0.10	0.10	21.81	1.97
20: 16654	9.53	1	1.99	20.00	0.10	0.10	16.96	1.54
21: 16656	8.31	2	2.00	25.20	0.10	0.10	17.19	1.61

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Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
22: 16658	9.28	3	2.03	49.40	0.10	0.10	21.97	1.60
23: 16660	8.80	4	2.00	74.40	0.10	0.10	35.11	1.62
24: 16662	9.05	3	1.97	63.60	0.10	0.10	36.37	1.73
25: 16664	9.12	1	2.02	25.70	0.10	0.10	16.30	1.79
26: 16666	8.85	2	1.98	46.00	0.10	0.10	34.88	1.64
27: 16668	9.59	1	1.95	49.90	0.10	0.10	39.35	1.66
28: 16670	9.76	1	1.97	50.00	0.10	0.10	40.00	1.65
29: 16672	8.48	1	2.02	27.20	0.10	0.10	19.22	1.83
30: 16674	9.14	1	1.97	26.60	0.10	0.10	19.48	1.54
31: 16676	7.73	1	2.01	34.10	0.10	0.10	27.43	1.54
32: 16678	8.03	1	1.98	23.30	0.10	0.10	16.89	1.61
33: 16680	7.90	1	2.01	34.30	0.10	0.10	23.86	1.66
34: 16682	8.31	1	1.96	20.00	0.10	0.10	14.30	1.57
35: 16684	9.28	1	1.99	31.30	0.10	0.10	24.62	1.60
36: 16686	8.25	1	2.03	20.00	0.10	0.10	14.22	1.42
37: 16688	8.90	1	2.02	20.00	0.10	0.10	14.32	1.40
38: 16690	9.29	1	2.00	42.50	0.10	0.10	33.54	1.62
39: 16692	10.05	1	2.00	34.90	0.10	0.10	26.93	1.57
40: 16694	8.93	2	1.98	20.00	0.10	0.10	13.55	1.79
41: 16696	9.46	1	2.00	20.00	0.10	0.10	15.34	1.56
42: 16698	9.25	3	2.03	52.60	0.10	0.10	17.36	1.87
43: 16700	9.17	3	2.00	52.70	0.10	0.10	25.57	1.58
44: 16702	9.48	3	2.03	35.90	0.10	0.10	23.09	1.56
45: 16704	8.96	3	2.02	72.50	0.10	0.10	30.30	1.78
46: 16706	9.64	1	2.00	25.70	0.10	0.10	20.29	1.92
47: 16708	9.49	1	2.02	32.30	0.10	0.10	25.79	1.61
48: 16710	8.48	1	2.01	43.40	0.10	0.10	37.46	1.57
49: 16712	8.64	1	2.00	43.70	0.10	0.10	37.17	1.59
50: 16714	7.96	1	1.97	36.40	0.10	0.10	31.28	1.59
51: 16716	8.29	1	2.04	36.40	0.10	0.10	25.28	1.58
52: 16718	8.41	1	2.04	34.10	0.10	0.10	26.86	1.56
53: 16720	8.31	1	2.02	25.10	0.10	0.10	20.00	1.85
54: 16722	7.62	1	2.00	37.20	0.10	0.10	30.46	1.61
55: 16728	7.57	1	1.99	25.50	0.10	0.10	20.42	1.58

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Modified ABA (Price 1997)

LR Report : **CA11419-OCT11**

Sample ID	Paste pH units	Fizz Rate ---	Sample weight g	HCl added mL	HCl Normality	NaOH Normality	NaOH to pH=8.3 mL	Final pH units
56: 16730	9.51	1	2.03	37.40	0.10	0.10	29.05	1.93
57: 16732	8.17	1	1.98	20.00	0.10	0.10	14.20	1.79
58: 16738	9.71	1	2.00	24.60	0.10	0.10	20.66	1.53
59: 16740	8.42	1	1.99	35.20	0.10	0.10	29.60	1.54
60: 16742	8.38	1	2.00	32.40	0.10	0.10	26.88	1.55
61: 16744	8.25	1	2.04	34.40	0.10	0.10	28.55	1.60
62: 16746	8.32	1	2.01	53.40	0.10	0.10	43.20	1.61
63: 16748	7.83	1	1.98	20.00	0.10	0.10	16.67	1.88
64: 16750	9.30	1	2.03	24.10	0.10	0.10	20.00	1.57
65: 16752	9.27	1	2.01	27.60	0.10	0.10	21.30	1.75
66: 16724	8.07	1	2.03	35.30	0.10	0.10	25.65	1.58
67: 16726	9.05	1	1.99	25.10	0.10	0.10	20.85	1.55
68: 16734	8.30	1	2.04	20.00	0.10	0.10	16.38	1.17
69: 16736	9.54	1	2.05	50.90	0.10	0.10	42.82	1.59
70: 16754	9.38	1	2.02	43.00	0.10	0.10	34.87	1.59

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3: Analysis Approval Date	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	16-Nov-11	18-Nov-11	18-Nov-11	16-Nov-11	17-Nov-11
4: Analysis Approval Time	15:09	15:09	15:09	15:09	13:18	12:17	12:17	13:18	08:51
5: 16624	5.7	19.3	-13.6	0.30	0.660	0.04	0.62	3.33	13.2
6: 16626	59.9	8.98	50.9	6.67	0.304	0.02	0.29	5.27	5.89
7: 16628	13.3	27.6	-14.3	0.48	0.972	0.09	0.88	0.148	0.229
8: 16630	17.0	0.31	16.7	54.8	0.007	< 0.01	< 0.01	0.013	0.080
9: 16632	7.6	1.14	6.46	6.68	0.050	0.01	0.04	0.010	0.024
10: 16634	6.2	15.7	-9.51	0.39	0.532	0.03	0.50	0.007	< 0.005
11: 16636	20.7	0.31	20.4	66.8	0.018	0.02	< 0.01	0.016	0.049
12: 16638	13.7	39.2	-25.5	0.35	1.29	0.03	1.25	0.106	0.005
13: 16640	-1.6	7.95	-9.55	-0.20	0.594	0.34	0.25	0.030	< 0.005
14: 16642	-17.5	83.0	-101	-0.21	3.74	1.09	2.66	0.677	1.85
15: 16644	36.4	2.09	34.3	17.4	0.132	0.06	0.07	2.87	3.42
16: 16646	16.6	0.31	16.3	53.5	0.043	0.04	< 0.01	0.016	0.038
17: 16648	10.6	1.25	9.35	8.48	0.063	0.02	0.04	0.009	0.009
18: 16650	25.5	1.25	24.2	20.4	0.076	0.03	0.04	0.012	0.032
19: 16652	13.7	23.2	-9.48	0.59	0.745	< 0.01	0.74	0.012	0.011
20: 16654	7.6	0.62	6.98	12.3	0.047	0.03	0.02	0.010	0.011
21: 16656	20.0	0.31	19.7	64.5	0.034	0.02	0.01	0.161	0.456

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Modified ABA (Price 1997)

LR Report : **CA11419-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
22: 16658	67.6	0.31	67.3	218	0.022	< 0.01	0.01	0.775	3.34
23: 16660	98.2	1.63	96.6	60.2	0.063	0.01	0.05	1.07	4.65
24: 16662	69.1	2.46	66.6	28.1	0.116	0.04	0.08	0.715	2.97
25: 16664	23.3	0.31	23.0	75.2	0.026	0.03	< 0.01	0.180	0.630
26: 16666	28.1	31.0	-2.94	0.91	1.09	0.10	0.99	0.158	0.446
27: 16668	27.1	2.35	24.8	11.5	0.130	0.06	0.08	0.084	0.266
28: 16670	25.4	1.25	24.2	20.3	0.089	0.05	0.04	0.033	0.125
29: 16672	19.8	0.31	19.5	63.9	0.044	0.04	< 0.01	0.020	0.080
30: 16674	18.1	0.31	17.8	58.4	0.052	0.05	< 0.01	0.026	0.085
31: 16676	16.6	4.45	12.1	3.73	0.237	0.09	0.14	0.019	0.037
32: 16678	16.2	73.4	-57.2	0.22	2.49	0.14	2.35	0.019	0.021
33: 16680	26.0	4.02	22.0	6.46	0.292	0.16	0.13	0.021	0.064
34: 16682	14.6	10.7	3.88	1.36	0.389	0.05	0.34	< 0.005	0.021
35: 16684	16.8	1.25	15.6	13.4	0.074	0.03	0.04	0.142	0.037
36: 16686	14.2	24.7	-10.5	0.57	0.879	0.09	0.79	< 0.005	< 0.005
37: 16688	14.1	9.31	4.79	1.51	0.317	0.02	0.30	0.197	0.072
38: 16690	22.4	0.31	22.1	72.3	0.109	0.11	< 0.01	0.020	0.110
39: 16692	19.9	1.25	18.6	15.9	0.044	< 0.01	0.04	0.006	0.027
40: 16694	16.3	0.31	16.0	52.6	< 0.005	< 0.01	< 0.01	0.107	0.350
41: 16696	11.7	0.31	11.4	37.7	0.046	0.03	0.01	0.035	0.098
42: 16698	86.8	0.62	86.2	140	0.069	0.05	0.02	0.998	4.54
43: 16700	67.8	2.54	65.3	26.7	0.195	0.11	0.08	0.724	3.06
44: 16702	31.6	0.31	31.3	102	0.105	0.10	< 0.01	0.223	1.02
45: 16704	104	2.78	102	37.6	0.200	0.11	0.09	1.09	4.74
46: 16706	13.5	0.31	13.2	43.5	0.007	< 0.01	< 0.01	0.014	0.037
47: 16708	16.1	0.62	15.5	26.0	0.128	0.11	0.02	0.023	< 0.005
48: 16710	14.8	0.31	14.5	47.7	0.167	0.17	< 0.01	0.025	0.082
49: 16712	16.3	3.78	12.5	4.32	0.186	0.07	0.12	0.013	0.040
50: 16714	13.0	3.09	9.91	4.21	0.212	0.11	0.10	0.015	0.019
51: 16716	27.2	10.7	16.5	2.54	0.419	0.08	0.34	0.022	0.069
52: 16718	17.8	3.70	14.1	4.81	0.205	0.09	0.12	0.017	0.013
53: 16720	12.6	4.97	7.63	2.53	0.265	0.11	0.16	0.013	0.019
54: 16722	16.9	55.3	-38.4	0.31	2.02	0.25	1.77	0.014	0.064
55: 16728	12.8	127	-114	0.10	4.37	0.32	4.05	0.023	< 0.005

OnLine LIMS

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SGS Canada Inc.
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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Modified ABA (Price 1997)

LR Report : **CA11419-OCT11**

Sample ID	NP t CaCO3/1000 t	AP t CaCO3/1000 t	Net NP t CaCO3/1000 t	NP/AP ratio	Sulphur (total) %	Acid Leachable SO4-S %	Sulphide %	Carbon (total) %	Carbonate %
56: 16730	20.6	17.3	3.31	1.19	0.713	0.16	0.55	0.010	0.011
57: 16732	14.6	21.1	-6.48	0.69	0.807	0.13	0.67	0.041	0.013
58: 16738	9.9	6.70	3.20	1.48	0.412	0.20	0.21	0.012	< 0.005
59: 16740	14.1	0.31	13.8	45.5	0.090	0.09	< 0.01	0.023	0.038
60: 16742	13.8	2.32	11.5	5.96	0.188	0.11	0.07	0.019	< 0.005
61: 16744	14.3	0.31	14.0	46.1	0.112	0.11	< 0.01	0.027	0.093
62: 16746	25.4	0.62	24.8	41.0	0.155	0.14	0.02	0.021	0.009
63: 16748	8.4	0.31	8.09	27.1	0.125	0.13	< 0.01	0.020	0.033
64: 16750	10.1	0.31	9.79	32.6	0.058	0.06	< 0.01	0.014	< 0.005
65: 16752	15.7	0.31	15.4	50.6	0.086	0.09	< 0.01	0.017	0.008
66: 16724	23.8	0.31	23.5	76.8	0.199	0.20	< 0.01	1.45	6.47
67: 16726	10.7	0.31	10.4	34.5	0.090	0.09	< 0.01	0.015	0.005
68: 16734	8.9	6.20	2.70	1.44	0.332	0.13	0.20	0.012	< 0.005
69: 16736	19.7	14.5	5.20	1.36	0.604	0.14	0.46	0.015	< 0.005
70: 16754	20.1	0.31	19.8	64.8	0.084	0.08	< 0.01	0.015	0.036

OnLine LIMS

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*NP (Neutralization Potential)

$$= \frac{50 \times (N \text{ of HCL} \times \text{Total HCL added} - N \text{ NaOH} \times \text{NaOH added})}{\text{Weight of Sample}}$$

*AP (Acid Potential) = % Sulphide Sulphur x 31.25
*Net NP (Net Neutralization Potential) = NP-AP
NP/AP Ratio = NP/AP
*Results expressed as tonnes CaCO3 equivalent/1000 tonnes of material
Samples with a % Sulphide value of <0.01 will be calculated using a 0.01 value.

Sulphur analysis performed following BC ARD Guidelines (Price 1997)

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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APPENDIX F-2

NET ACID GENERATION TEST

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Monday, November 07, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 25 October 2011
LR Report: **CA10408-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date	06-Nov-11	06-Nov-11	06-Nov-11	06-Nov-11	06-Nov-11	06-Nov-11	06-Nov-11	06-Nov-11
4: Analysis Approval Time	15:57	15:57	15:57	15:57	15:57	15:57	15:57	15:57
5: 16002	1.5	150	6.08	0.10	0.00	0.12	0.0	0.4
6: 16004	1.6	150	6.86	0.10	0.00	0.05	0.0	0.2
7: 16006	1.5	150	6.61	0.10	0.00	0.05	0.0	0.2
8: 16008	1.5	150	6.70	0.10	0.00	0.07	0.0	0.2
9: 16010	1.5	150	6.89	0.10	0.00	0.05	0.0	0.2
10: 16012	1.5	150	1.93	0.50	5.90	6.50	96	106
11: 16014	1.5	150	4.28	0.10	0.07	0.48	0.2	1.5
12: 16016	1.5	150	2.28	0.10	11.04	13.05	37	44
13: 16018	1.5	150	7.40	0.10	0.00	0.00	0.0	0.0
14: 16020	1.5	150	2.43	0.10	7.44	8.38	25	28
15: 16022	1.5	150	7.68	0.10	0.00	0.00	0.0	0.0
16: 16024	1.4	150	6.84	0.10	0.00	0.05	0.0	0.2
17: 16026	1.5	150	7.82	0.10	0.00	0.00	0.0	0.0
18: 16028	1.5	150	3.53	0.10	0.68	1.50	2.2	4.8
19: 16030	1.5	150	6.07	0.10	0.00	0.11	0.0	0.4

OnLine LIMS

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA10408-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
20: 16032	1.5	150	7.14	0.10	0.00	0.00	0.0	0.0
21: 16034	1.5	150	2.57	0.10	7.50	12.56	25	41
22: 16036	1.5	150	2.58	0.10	6.83	10.46	23	35
23: 16038	1.5	150	3.47	0.10	0.80	2.02	2.6	6.6
24: 16040	1.5	150	7.12	0.10	0.00	0.00	0.0	0.0
25: 16042	1.5	150	7.67	0.10	0.00	0.00	0.0	0.0
26: 16044	1.5	150	7.38	0.10	0.00	0.00	0.0	0.0
27: 16046	1.5	150	2.15	0.10	22.95	43.82	74	142
28: 16050	1.5	150	2.24	0.10	16.97	25.41	55	83
29: 16048	1.5	150	2.98	0.10	1.95	2.38	6.5	8.0
30: 16052	1.5	150	3.01	0.10	2.02	2.91	6.4	9.3
31: 16054	1.5	150	3.20	0.10	1.25	2.37	4.2	8.0
32: 16056	1.5	150	4.51	0.10	0.00	0.56	0.0	1.8
33: 16058	1.6	150	4.59	0.10	0.00	1.01	0.0	3.2
34: 16060	1.5	150	8.28	0.10	0.00	0.00	0.0	0.0
35: 16062	1.5	150	7.80	0.10	0.00	0.00	0.0	0.0
36: 16064	1.5	150	3.43	0.10	0.72	1.22	2.4	4.0
37: 16066	1.5	150	7.06	0.10	0.00	0.00	0.0	0.0
38: 16068	1.6	150	2.73	0.10	2.65	3.34	8.4	11
39: 16070	1.5	150	7.08	0.10	0.00	0.00	0.0	0.0
40: 16072	1.5	150	7.06	0.10	0.00	0.00	0.0	0.0
41: 16074	1.5	150	7.58	0.10	0.00	0.00	0.0	0.0
42: 16076	1.5	150	3.42	0.10	1.24	10.76	4.0	35
43: 16078	1.5	150	7.62	0.10	0.00	0.00	0.0	0.0
44: 16080	1.5	150	6.36	0.10	0.00	0.10	0.0	0.3
45: 16082	1.5	150	7.06	0.10	0.00	0.00	0.0	0.0
46: 16084	1.5	150	6.98	0.10	0.00	0.05	0.0	0.2
47: 16086	1.5	150	6.68	0.10	0.00	0.08	0.0	0.3
48: 16088	1.5	150	7.28	0.10	0.00	0.00	0.0	0.0
49: 16090	1.5	150	7.44	0.10	0.00	0.00	0.0	0.0

OnLine LIMS

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA10408-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
50: 16092	1.5	150	8.06	0.10	0.00	0.00	0.0	0.0
51: 16094	1.5	150	6.40	0.10	0.00	0.22	0.0	0.7
52: 16096	1.5	150	6.92	0.10	0.00	0.08	0.0	0.3
53: 16098	1.5	150	7.81	0.10	0.00	0.00	0.0	0.0
54: 16100	1.5	150	7.42	0.10	0.00	0.00	0.0	0.0

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Wednesday, November 09, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA10411-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11	09-Nov-11
4: Analysis Approval Time	14:59	14:59	14:59	14:59	14:59	14:59	14:59	14:59
5: 16102	1.50	150	5.67	0.10	0.00	0.43	0.0	1.4
6: 16104	1.48	150	7.63	0.10	0.00	0.00	0.0	0.0
7: 16106	1.54	150	7.27	0.10	0.00	0.00	0.0	0.0
8: 16108	1.49	150	7.27	0.10	0.00	0.00	0.0	0.0
9: 16110	1.49	150	7.42	0.10	0.00	0.00	0.0	0.0
10: 16112	1.47	150	7.75	0.10	0.00	0.00	0.0	0.0
11: 16114	1.48	150	7.25	0.10	0.00	0.00	0.0	0.0
12: 16116	1.46	150	8.88	0.10	0.00	0.00	0.0	0.0
13: 16118	1.52	150	2.85	0.10	4.60	9.34	14.8	30.0
14: 16120	1.51	150	7.84	0.10	0.00	0.00	0.0	0.0
15: 16122	1.52	150	7.93	0.10	0.00	0.00	0.0	0.0
16: 16124	1.48	150	8.14	0.10	0.00	0.00	0.0	0.0
17: 16126	1.52	150	7.17	0.10	0.00	0.00	0.0	0.0
18: 16128	1.54	150	8.17	0.10	0.00	0.00	0.0	0.0
19: 16130	1.53	150	5.87	0.10	0.00	0.39	0.0	1.2
20: 16132	1.46	150	7.78	0.10	0.00	0.00	0.0	0.0
21: 16134	1.47	150	7.72	0.10	0.00	0.00	0.0	0.0
22: 16136	1.52	150	5.42	0.10	0.00	0.30	0.0	1.0
23: 16138	1.52	150	4.90	0.10	0.00	0.42	0.0	1.4
24: 16140	1.48	150	7.68	0.10	0.00	0.00	0.0	0.0
25: 16142	1.50	150	7.61	0.10	0.00	0.00	0.0	0.0
26: 16144	1.48	150	7.32	0.10	0.00	0.00	0.0	0.0
27: 16146	1.49	150	6.31	0.10	0.00	0.08	0.0	0.3
28: 16148	1.49	150	10.25	0.10	0.00	0.00	0.0	0.0
29: 16150	1.50	150	8.38	0.10	0.00	0.00	0.0	0.0
30: 16152	1.53	150	5.43	0.10	0.00	0.32	0.0	1.0
31: 16154	1.48	150	4.95	0.10	0.00	0.58	0.0	1.9
32: 16156	1.46	150	7.74	0.10	0.00	0.00	0.0	0.0
33: 16158	1.49	150	9.09	0.10	0.00	0.00	0.0	0.0
34: 16160	1.51	150	7.47	0.10	0.00	0.00	0.0	0.0
35: 16162	1.55	150	7.72	0.10	0.00	0.00	0.0	0.0
36: 16164	1.50	150	7.86	0.10	0.00	0.00	0.0	0.0

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA10411-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
37: 16166	1.49	150	8.23	0.10	0.00	0.00	0.0	0.0
38: 16168	1.48	150	7.87	0.10	0.00	0.00	0.0	0.0
39: 16170	1.49	150	7.26	0.10	0.56	3.69	1.8	12
40: 16172	1.49	150	7.51	0.10	0.00	0.00	0.0	0.0
41: 16174	1.46	150	7.38	0.10	0.00	0.00	0.0	0.0
42: 16176	1.50	150	3.30	0.10	0.95	1.75	3.1	5.7
43: 16178	1.51	150	3.48	0.10	1.10	2.72	3.6	8.8
44: 16180	1.49	150	7.53	0.10	0.00	0.00	0.0	0.0
45: 16182	1.47	150	7.72	0.10	0.00	0.00	0.0	0.0
46: 16184	1.46	150	10.23	0.10	0.00	0.00	0.0	0.0
47: 16186	1.46	150	10.67	0.10	0.00	0.00	0.0	0.0
48: 16188	1.48	150	10.87	0.10	0.00	0.00	0.0	0.0
49: 16190	1.47	150	10.75	0.10	0.00	0.00	0.0	0.0
50: 16192	1.48	150	10.63	0.10	0.00	0.00	0.0	0.0
51: 16194	1.52	150	10.71	0.10	0.00	0.00	0.0	0.0
52: 16196	1.46	150	10.18	0.10	0.00	0.00	0.0	0.0
53: 16198	1.49	150	10.93	0.10	0.00	0.00	0.0	0.0
54: 16200	1.51	150	7.24	0.10	0.00	0.00	0.0	0.0

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Tuesday, November 15, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11408-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11	15-Nov-11
4: Analysis Approval Time	14:47	14:47	14:47	14:47	14:47	14:47	14:47	14:47
5: 16202	1.50	150	11.15	0.10	0.00	0.00	0.0	0.0
6: 16204	1.53	150	10.48	0.10	0.00	0.00	0.0	0.0
7: 16206	1.49	150	10.49	0.10	0.00	0.00	0.0	0.0
8: 16208	1.48	150	10.82	0.10	0.00	0.00	0.0	0.0
9: 16210	1.48	150	10.30	0.10	0.00	0.00	0.0	0.0
10: 16212	1.51	150	11.17	0.10	0.00	0.00	0.0	0.0
11: 16214	1.51	150	9.97	0.10	0.00	0.00	0.0	0.0
12: 16216	1.50	150	7.88	0.10	0.00	0.00	0.0	0.0
13: 61218	1.50	150	2.68	0.10	6.75	10.39	22.0	33.9
14: 16220	1.48	150	6.79	0.10	0.00	0.13	0.0	0.4
15: 16222	1.50	150	7.40	0.10	0.00	0.00	0.0	0.0
16: 16224	1.48	150	8.43	0.10	0.00	0.00	0.0	0.0
17: 16226	1.46	150	8.50	0.10	0.00	0.00	0.0	0.0
18: 16228	1.50	150	7.78	0.10	0.00	0.00	0.0	0.0
19: 16230	1.51	150	2.70	0.10	10.61	22.76	34.4	73.9
20: 16232	1.49	150	2.73	0.10	9.96	26.19	32.8	86.1
21: 16234	1.48	150	10.96	0.10	0.00	0.00	0.0	0.0
22: 16236	1.53	150	10.96	0.10	0.00	0.00	0.0	0.0
23: 16238	1.46	150	11.14	0.10	0.00	0.00	0.0	0.0
24: 16240	1.47	150	11.12	0.10	0.00	0.00	0.0	0.0
25: 16242	1.48	150	7.71	0.10	0.00	0.00	0.0	0.0
26: 16244	1.50	150	8.00	0.10	0.00	0.00	0.0	0.0
27: 16246	1.48	150	7.64	0.10	0.00	0.00	0.0	0.0
28: 16248	1.48	150	7.88	0.10	0.00	0.00	0.0	0.0
29: 16250	1.49	150	8.49	0.10	0.00	0.00	0.0	0.0
30: 16252	1.55	150	8.08	0.10	0.00	0.00	0.0	0.0
31: 16254	1.50	150	7.66	0.10	0.00	0.00	0.0	0.0
32: 16256	1.51	150	7.26	0.10	0.00	0.00	0.0	0.0
33: 16258	1.52	150	6.77	0.10	0.00	0.08	0.0	0.3
34: 16260	1.49	150	7.58	0.10	0.00	0.00	0.0	0.0
35: 16262	1.49	150	2.62	0.10	5.65	10.21	18.6	33.6
36: 16264	1.49	150	7.38	0.10	0.00	0.00	0.0	0.0

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11408-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
37: 16266	1.49	150	2.39	0.10	7.25	9.59	23.8	31.5
38: 16268	1.49	150	7.56	0.10	0.00	0.00	0.0	0.0
39: 16270	1.53	150	7.48	0.10	0.00	0.00	0.0	0.0
40: 16272	1.55	150	5.30	0.10	0.00	0.47	0.0	1.5
41: 16274	1.54	150	3.48	0.10	1.08	2.63	3.4	8.4
42: 16276	1.54	150	7.21	0.10	0.00	0.00	0.0	0.0
43: 16278	1.49	150	7.37	0.10	0.00	0.00	0.0	0.0
44: 16280	1.50	150	7.38	0.10	0.00	0.00	0.0	0.0
45: 16282	1.52	150	2.55	0.10	5.31	7.04	17.1	22.7
46: 16284	1.46	150	8.30	0.10	0.00	0.00	0.0	0.0
47: 16286	1.54	150	7.20	0.10	0.00	0.00	0.0	0.0
48: 16288	1.48	150	7.91	0.10	0.00	0.00	0.0	0.0
49: 16290	1.49	150	8.00	0.10	0.00	0.00	0.0	0.0
50: 16292	1.48	150	7.06	0.10	0.00	0.00	0.0	0.0
51: 16294	1.48	150	6.34	0.10	0.00	0.08	0.0	0.3
52: 16296	1.50	150	2.68	0.10	5.96	10.38	19.5	33.9
53: 16298	1.51	150	4.19	0.10	0.13	1.48	0.4	4.8
54: 16300	1.49	150	7.32	0.10	0.00	0.00	0.0	0.0
55: 16302	1.49	150	7.55	0.10	0.00	0.00	0.0	0.0
56: 16304	1.50	150	8.04	0.10	0.00	0.00	0.0	0.0
57: 16306	1.51	150	7.85	0.10	0.00	0.00	0.0	0.0
58: 16308	1.53	150	7.87	0.10	0.00	0.00	0.0	0.0

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
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Monday, November 14, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11411-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date	11-Nov-11	11-Nov-11	11-Nov-11	11-Nov-11	11-Nov-11	11-Nov-11	11-Nov-11	11-Nov-11
4: Analysis Approval Time	15:37	15:37	15:37	15:37	15:37	15:37	15:37	15:37
5: 16310	1.47	150	7.49	0.10	0.00	0.00	0.0	0.0
6: 16312	1.53	150	7.87	0.10	0.00	0.00	0.0	0.0
7: 16314	1.48	150	7.75	0.10	0.00	0.00	0.0	0.0
8: 16316	1.55	150	7.46	0.10	0.00	0.00	0.0	0.0
9: 16318	1.46	150	7.37	0.10	0.00	0.00	0.0	0.0
10: 16320	1.55	150	7.21	0.10	0.00	0.00	0.0	0.0
11: 16322	1.47	150	7.51	0.10	0.00	0.00	0.0	0.0
12: 16324	1.47	150	6.87	0.10	0.00	0.10	0.0	0.3
13: 16326	1.54	150	9.03	0.10	0.00	0.00	0.0	0.0
14: 16328	1.53	150	2.33	0.10	11.99	19.34	38.4	61.9
15: 16330	1.47	150	8.34	0.10	0.00	0.00	0.0	0.0
16: 16332	1.48	150	9.02	0.10	0.00	0.00	0.0	0.0
17: 16334	1.51	150	3.31	0.10	1.08	3.32	3.5	10.8
18: 16336	1.49	150	7.77	0.10	0.00	0.00	0.0	0.0
19: 16338	1.51	150	7.47	0.10	0.00	0.00	0.0	0.0
20: 16364	1.49	150	10.60	0.10	0.00	0.00	0.0	0.0
21: 16366	1.48	150	10.30	0.10	0.00	0.00	0.0	0.0
22: 16368	1.53	150	10.74	0.10	0.00	0.00	0.0	0.0
23: 16370	1.51	150	10.34	0.10	0.00	0.00	0.0	0.0
24: 16372	1.52	150	10.46	0.10	0.00	0.00	0.0	0.0
25: 16374	1.50	150	6.94	0.10	0.00	0.07	0.0	0.2
26: 16376	1.51	150	8.04	0.10	0.00	0.00	0.0	0.0
27: 16340	1.48	150	5.24	0.10	0.00	0.52	0.0	1.7
28: 16378	1.51	150	8.08	0.10	0.00	0.00	0.0	0.0
29: 16380	1.46	150	8.14	0.10	0.00	0.00	0.0	0.0
30: 16342	1.48	150	7.86	0.10	0.00	0.00	0.0	0.0
31: 16344	1.48	150	7.98	0.10	0.00	0.00	0.0	0.0
32: 16346	1.48	150	7.81	0.10	0.00	0.00	0.0	0.0
33: 16348	1.50	150	6.58	0.10	0.00	0.28	0.0	0.9
34: 16350	1.50	150	2.69	0.10	4.83	7.58	15.8	24.8
35: 16352	1.49	150	7.39	0.10	0.00	0.00	0.0	0.0
36: 16354	1.54	150	7.44	0.10	0.00	0.00	0.0	0.0

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11411-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
37: 16356	1.48	150	7.51	0.10	0.00	0.00	0.0	0.0
38: 16358	1.52	150	7.33	0.10	0.00	0.00	0.0	0.0
39: 16360	1.48	150	7.64	0.10	0.00	0.00	0.0	0.0
40: 16362	1.47	150	7.81	0.10	0.00	0.00	0.0	0.0
41: 16382	1.54	150	8.69	0.10	0.00	0.00	0.0	0.0
42: 16384	1.49	150	3.65	0.10	0.41	1.14	1.3	3.7
43: 16386	1.48	150	7.38	0.10	0.00	0.00	0.0	0.0
44: 16388	1.50	150	7.14	0.10	0.00	0.00	0.0	0.0
45: 16390	1.48	150	7.90	0.10	0.00	0.00	0.0	0.0
46: 16392	1.49	150	7.59	0.10	0.00	0.00	0.0	0.0
47: 16394	1.49	150	7.34	0.10	0.00	0.00	0.0	0.0
48: 16396	1.52	150	8.32	0.10	0.00	0.00	0.0	0.0
49: 16398	1.48	150	7.79	0.10	0.00	0.00	0.0	0.0
50: 16400	1.49	150	7.75	0.10	0.00	0.00	0.0	0.0
51: 16402	1.50	150	7.12	0.10	0.00	0.00	0.0	0.0
52: 16404	1.51	150	7.98	0.10	0.00	0.00	0.0	0.0
53: 16406	1.50	150	7.84	0.10	0.00	0.00	0.0	0.0

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Sunday, November 27, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11417-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date	27-Nov-11	27-Nov-11	27-Nov-11	27-Nov-11	27-Nov-11	27-Nov-11	27-Nov-11	27-Nov-11
4: Analysis Approval Time	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00
5: 16512	1.48	150	2.96	0.10	3.82	6.77	13	22
6: 16514	1.47	150	8.93	0.10	0.00	0.00	0.0	0.0
7: 16516	1.46	150	3.32	0.10	1.51	3.20	5.1	11
8: 16518	1.47	150	7.13	0.10	0.00	0.00	0.0	0.0
9: 16520	1.49	150	7.46	0.10	0.00	0.00	0.0	0.0
10: 16522	1.47	150	8.36	0.10	0.00	0.00	0.0	0.0
11: 16524	1.48	150	8.53	0.10	0.00	0.00	0.0	0.0
12: 16526	1.53	150	8.49	0.10	0.00	0.00	0.0	0.0
13: 16528	1.49	150	8.60	0.10	0.00	0.00	0.0	0.0
14: 16530	1.54	150	8.50	0.10	0.00	0.00	0.0	0.0
15: 16532	1.50	150	8.86	0.10	0.00	0.00	0.0	0.0
16: 16534	1.51	150	8.09	0.10	0.00	0.00	0.0	0.0
17: 16536	1.46	150	7.55	0.10	0.00	0.00	0.0	0.0
18: 16538	1.47	150	7.29	0.10	0.00	0.00	0.0	0.0
19: 16540	1.50	150	7.38	0.10	0.00	0.00	0.0	0.0
20: 16542	1.48	150	7.85	0.10	0.00	0.00	0.0	0.0
21: 16544	1.45	150	7.66	0.10	0.00	0.00	0.0	0.0
22: 16546	1.49	150	4.55	0.10	0.00	1.00	0.0	3.3
23: 16548	1.54	150	8.01	0.10	0.00	0.00	0.0	0.0
24: 16550	1.49	150	7.64	0.10	0.00	0.00	0.0	0.0
25: 16552	1.48	150	7.56	0.10	0.00	0.00	0.0	0.0
26: 16554	1.47	150	7.61	0.10	0.00	0.00	0.0	0.0
27: 16556	1.49	150	7.85	0.10	0.00	0.00	0.0	0.0
28: 16558	1.47	150	6.90	0.10	0.00	0.06	0.0	0.2
29: 16560	1.54	150	7.99	0.10	0.00	0.00	0.0	0.0
30: 16562	1.49	150	2.80	0.10	3.22	4.82	11	16
31: 16564	1.48	150	7.49	0.10	0.00	0.00	0.0	0.0
32: 16566	1.51	150	3.09	0.10	1.48	2.69	4.8	8.7
33: 16568	1.52	150	6.82	0.10	0.00	0.90	0.0	2.9
34: 16570	1.48	150	7.34	0.10	0.00	0.00	0.0	0.0

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Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA11417-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
35: 16572	1.48	150	6.71	0.10	0.00	0.14	0.0	0.5
36: 16574	1.49	150	3.52	0.10	1.01	3.47	3.3	11
37: 16576	1.49	150	3.84	0.10	0.39	2.43	1.3	8.0
38: 16578	1.49	150	7.39	0.10	0.00	0.00	0.0	0.0
39: 16580	1.48	150	7.34	0.10	0.00	0.00	0.0	0.0
40: 16582	1.51	150	7.44	0.10	0.00	0.00	0.0	0.0
41: 16584	1.51	150	6.86	0.10	0.00	0.11	0.0	0.4
42: 16586	1.55	150	7.70	0.10	0.00	0.00	0.0	0.0
43: 16588	1.48	150	7.65	0.10	0.00	0.00	0.0	0.0
44: 16590	1.47	150	9.02	0.10	0.00	0.00	0.0	0.0
45: 16592	1.47	150	9.65	0.10	0.00	0.00	0.0	0.0
46: 16594	1.48	150	7.85	0.10	0.00	0.00	0.0	0.0
47: 16596	1.48	150	9.99	0.10	0.00	0.00	0.0	0.0
48: 16598	1.50	150	7.58	0.10	0.00	0.00	0.0	0.0
49: 16600	1.51	150	6.89	0.10	0.00	0.60	0.0	1.9
50: 16602	1.50	150	7.56	0.10	0.00	0.00	0.0	0.0
51: 16604	1.50	150	5.42	0.10	0.00	0.36	0.0	1.2
52: 16606	1.47	150	7.19	0.10	0.00	0.00	0.0	0.0
53: 16608	1.47	150	7.88	0.10	0.00	0.00	0.0	0.0
54: 16610	1.52	150	7.32	0.10	0.00	0.00	0.0	0.0
55: 16612	1.46	150	7.47	0.10	0.00	0.00	0.0	0.0
56: 16614	1.48	150	7.92	0.10	0.00	0.00	0.0	0.0
57: 16616	1.47	150	7.54	0.10	0.00	0.00	0.0	0.0
58: 16618	1.46	150	7.53	0.10	0.00	0.00	0.0	0.0
59: 16620	1.49	150	7.07	0.10	0.00	0.00	0.0	0.0
60: 16622	1.49	150	2.25	0.10	12.18	14.30	40	47

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Tuesday, November 29, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11420-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
3: Analysis Approval Date	29-Nov-11	29-Nov-11	29-Nov-11	29-Nov-11	29-Nov-11	29-Nov-11	29-Nov-11	29-Nov-11
4: Analysis Approval Time	16:55	16:55	16:55	16:55	16:55	16:55	16:55	16:55
5: 16624	1.48	150	2.88	0.10	3.02	5.09	10.0	17
6: 16626	1.48	150	8.04	0.10	0.00	0.00	0.0	0.0
7: 16628	1.48	150	2.79	0.10	3.31	4.94	11.0	16
8: 16630	1.53	150	8.36	0.10	0.00	0.00	0.0	0.0
9: 16632	1.50	150	7.17	0.10	0.00	0.00	0.0	0.0
10: 16634	1.48	150	2.97	0.10	2.21	3.45	7.3	11
11: 16636	1.50	150	7.53	0.10	0.00	0.00	0.0	0.0
12: 16638	1.49	150	2.59	0.10	5.64	7.97	18.5	26
13: 16640	1.47	150	2.96	0.10	2.00	3.24	6.7	11
14: 16642	1.51	150	2.17	0.10	18.81	26.52	61.0	86
15: 16644	1.46	150	7.59	0.10	0.00	0.00	0.0	0.0
16: 16646	1.50	150	7.67	0.10	0.00	0.00	0.0	0.0
17: 16648	1.46	150	7.34	0.10	0.00	0.00	0.0	0.0
18: 16650	1.47	150	7.64	0.10	0.00	0.00	0.0	0.0
19: 16652	1.49	150	3.12	0.10	2.12	4.25	7.0	14
20: 16654	1.55	150	7.20	0.10	0.00	0.00	0.0	0.0

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA11420-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
21: 16656	1.48	150	9.87	0.10	0.00	0.00	0.0	0.0
22: 16658	1.47	150	10.83	0.10	0.00	0.00	0.0	0.0
23: 16660	1.53	150	10.93	0.10	0.00	0.00	0.0	0.0
24: 16662	1.52	150	11.03	0.10	0.00	0.00	0.0	0.0
25: 16664	1.51	150	10.52	0.10	0.00	0.00	0.0	0.0
26: 16666	1.50	150	3.45	0.10	1.17	2.74	3.8	9.0
27: 16668	1.50	150	9.13	0.10	0.00	0.00	0.0	0.0
28: 16670	1.51	150	8.28	0.10	0.00	0.00	0.0	0.0
29: 16672	1.53	150	7.89	0.10	0.00	0.00	0.0	0.0
30: 16674	1.47	150	8.99	0.10	0.00	0.00	0.0	0.0
31: 16676	1.50	150	7.10	0.10	0.00	0.00	0.0	0.0
32: 16678	1.47	150	2.47	0.10	8.81	13.38	29.4	45
33: 16680	1.55	150	6.96	0.10	0.00	0.08	0.0	0.3
34: 16682	1.51	150	3.28	0.10	1.10	1.79	3.6	5.8
35: 16684	1.49	150	7.34	0.10	0.00	0.00	0.0	0.0
36: 16686	1.51	150	2.68	0.10	4.59	6.30	14.9	20
37: 16688	1.49	150	6.06	0.10	0.00	0.16	0.0	0.5
38: 16690	1.50	150	8.21	0.10	0.00	0.00	0.0	0.0
39: 16692	1.52	150	7.66	0.10	0.00	0.00	0.0	0.0
40: 16694	1.53	150	9.76	0.10	0.00	0.00	0.0	0.0
41: 16696	1.50	150	7.85	0.10	0.00	0.00	0.0	0.0
42: 16698	1.50	150	11.01	0.10	0.00	0.00	0.0	0.0
43: 16700	1.49	150	10.99	0.10	0.00	0.00	0.0	0.0
44: 16702	1.48	150	10.70	0.10	0.00	0.00	0.0	0.0
45: 16704	1.52	150	10.57	0.10	0.00	0.00	0.0	0.0
46: 16706	1.51	150	8.31	0.10	0.00	0.00	0.0	0.0
47: 16708	1.47	150	7.70	0.10	0.00	0.00	0.0	0.0
48: 16710	1.49	150	7.97	0.10	0.00	0.00	0.0	0.0
49: 16712	1.48	150	7.07	0.10	0.00	0.00	0.0	0.0
50: 16714	1.50	150	6.99	0.10	0.00	0.07	0.0	0.2
51: 16716	1.49	150	6.45	0.10	0.00	0.11	0.0	0.4
52: 16718	1.47	150	7.08	0.10	0.00	0.00	0.0	0.0
53: 16720	1.48	150	6.29	0.10	0.00	0.13	0.0	0.4

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

OnLine LIMS

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

NAG Test

LR Report : **CA11420-OCT11**

Sample ID	Sample weight g	Vol H2O2 mL	Final pH units	NaOH Normality	Vol NaOH to PH 4.5 mL	Vol NaOH to PH 7.0 mL	NAG (pH 4.5) kg H2SO4/tonne	NAG (pH 7.0) kg H2SO4/tonne
54: 16722	1.49	150	2.89	0.10	5.21	9.28	17.1	30
55: 16728	1.50	150	2.34	0.10	13.70	23.53	44.8	77
56: 16730	1.48	150	3.47	0.10	1.02	2.40	3.4	7.9
57: 16732	1.50	150	3.06	0.10	2.12	3.79	6.9	12
58: 16738	1.49	150	3.72	0.10	0.62	1.61	2.0	5.3
59: 16740	1.52	150	7.42	0.10	0.00	0.00	0.0	0.0
60: 16742	1.48	150	6.97	0.10	0.00	0.05	0.0	0.2
61: 16744	1.48	150	7.71	0.10	0.00	0.00	0.0	0.0
62: 16746	1.47	150	7.59	0.10	0.00	0.00	0.0	0.0
63: 16748	1.49	150	7.64	0.10	0.00	0.00	0.0	0.0
64: 16750	1.51	150	7.69	0.10	0.00	0.00	0.0	0.0
65: 16752	1.52	150	7.92	0.10	0.00	0.00	0.0	0.0
66: 16724	1.48	150	7.82	0.10	0.00	0.00	0.0	0.0
67: 16726	1.52	150	7.46	0.10	0.00	0.00	0.0	0.0
68: 16734	1.48	150	3.11	0.10	1.81	2.08	6.0	6.9
69: 16736	1.48	150	3.99	0.10	0.20	1.19	0.7	3.9
70: 16754	1.48	150	7.99	0.10	0.00	0.00	0.0	0.0

NAG = (49 x Vol. of base x N of base)/sample weight
kg H2SO4/tonne

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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APPENDIX F-3

METALS BY AQUA-REGIA EXTRACTION

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
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Phone: 705-652-2000 FAX: 705-652-6365

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Friday, November 04, 2011

Date Rec. : 25 October 2011
LR Report: **CA10409-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
3: Analysis Approval Date	03-Nov-11	04-Nov-11	04-Nov-11	03-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	03-Nov-11	04-Nov-11	04-Nov-11
4: Analysis Approval Time	13:39	10:46	10:46	15:14	10:46	10:46	10:46	10:46	15:14	10:46	10:46
5: 16002	< 0.1	< 0.02	0.09	10000	0.8	21	0.24	0.25	390	0.17	6.4
6: 16004	< 0.1	< 0.02	0.01	52000	< 0.5	2.5	0.32	< 0.09	73	0.04	18
7: 16006	< 0.1	< 0.02	0.05	14000	< 0.5	28	0.46	0.24	84	0.07	7.4
8: 16008	< 0.1	< 0.02	< 0.01	59000	< 0.5	43	1.1	< 0.09	96	0.07	24
9: 16010	< 0.1	< 0.02	0.13	52000	13	60	2.4	0.16	210	0.10	120
10: 16012	< 0.1	< 0.02	0.44	940	76	1.5	0.06	0.53	200	0.02	130
11: 16014	< 0.1	< 0.02	0.13	63000	7.9	0.47	0.30	0.10	420	0.05	26
12: 16016	< 0.1	< 0.02	0.19	5500	21	0.38	0.07	0.13	100	< 0.02	40
13: 16018	< 0.1	< 0.02	< 0.01	55000	1.1	30	0.85	0.27	170	0.05	100
14: 16020	< 0.1	< 0.02	0.17	1400	6.8	0.71	0.11	< 0.09	98	0.27	44
15: 16022	< 0.1	< 0.02	< 0.01	44000	< 0.5	320	1.2	< 0.09	410	0.03	26
16: 16024	< 0.1	< 0.02	0.03	47000	< 0.5	180	0.39	< 0.09	310	< 0.02	27
17: 16026	< 0.1	< 0.02	0.05	36000	< 0.5	210	0.41	< 0.09	300	0.05	27
18: 16028	< 0.1	< 0.02	0.08	42000	2.1	130	0.81	< 0.09	230	0.03	57
19: 16030	< 0.1	< 0.02	0.21	700	3.3	1.7	< 0.02	0.10	67	0.03	2.6
20: 16032	< 0.1	< 0.02	0.02	37000	3.3	84	0.38	< 0.09	120	0.03	61
21: 16034	< 0.1	< 0.02	0.20	48000	1.0	300	0.65	0.21	100	0.06	64
22: 16036	< 0.1	0.04	0.44	24000	44	0.74	0.09	0.18	100	0.12	51

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA10409-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
23: 16038	< 0.1	< 0.02	0.07	36000	< 0.5	400	0.16	< 0.09	120	< 0.02	44
24: 16040	< 0.1	< 0.02	< 0.01	40000	< 0.5	14	0.88	< 0.09	160	0.02	38
25: 16042	< 0.1	< 0.02	0.04	33000	< 0.5	480	0.28	< 0.09	230	< 0.02	27
26: 16044	< 0.1	< 0.02	0.06	33000	170	79	0.32	0.22	140	0.03	48
27: 16046	< 0.1	< 0.02	0.70	25000	30	2.6	0.70	0.65	580	0.02	140
28: 16050	< 0.1	< 0.02	0.50	39000	2.1	1.4	0.60	0.40	55	0.05	21
29: 16048	< 0.1	< 0.02	0.03	2000	35	1.4	0.18	< 0.09	50	< 0.02	7.9
30: 16052	< 0.1	< 0.02	0.07	4100	1.1	2.2	0.41	< 0.09	1800	0.09	6.7
31: 16054	< 0.1	< 0.02	0.11	21000	1.9	0.37	0.85	0.24	64	0.04	39
32: 16056	< 0.1	0.02	0.47	1700	< 0.5	0.77	0.45	0.31	860	0.16	34
33: 16058	< 0.1	0.14	0.35	2400	< 0.5	0.35	0.27	0.86	1700	< 0.02	21
34: 16060	< 0.1	< 0.02	0.02	60000	< 0.5	490	6.4	0.10	6600	0.07	25
35: 16062	< 0.1	< 0.02	< 0.01	44000	< 0.5	480	0.63	< 0.09	1200	0.05	23
36: 16064	< 0.1	< 0.02	0.23	19000	< 0.5	300	0.33	0.10	820	0.03	7.2
37: 16066	< 0.1	< 0.02	0.06	19000	< 0.5	330	0.13	< 0.09	1600	0.03	9.7
38: 16068	< 0.1	< 0.02	0.25	670	0.6	5.1	0.13	0.82	40	0.04	3.4
39: 16070	< 0.1	< 0.02	0.36	3700	2.2	3.1	0.21	0.25	3600	0.38	17
40: 16072	< 0.1	< 0.02	0.41	1700	14	1.4	0.43	0.24	10000	0.14	23
41: 16074	< 0.1	< 0.02	< 0.01	41000	< 0.5	15	1.0	0.10	8100	0.11	17
42: 16076	< 0.1	0.15	1.3	11000	< 0.5	0.98	0.79	0.93	15000	0.10	19
43: 16078	< 0.1	< 0.02	0.03	50000	< 0.5	700	0.91	< 0.09	2100	0.04	11
44: 16080	< 0.1	< 0.02	0.04	26000	< 0.5	220	0.63	< 0.09	1500	0.04	9.3
45: 16082	< 0.1	< 0.02	< 0.01	27000	< 0.5	210	0.65	< 0.09	1900	0.03	17
46: 16084	< 0.1	< 0.02	< 0.01	20000	< 0.5	97	0.59	< 0.09	1700	0.05	8.1
47: 16086	< 0.1	< 0.02	0.21	24000	< 0.5	130	0.37	0.20	2900	0.28	7.5
48: 16088	< 0.1	< 0.02	0.10	23000	< 0.5	160	0.17	< 0.09	2200	0.09	10.0
49: 16090	< 0.1	< 0.02	0.16	13000	< 0.5	150	0.20	0.25	2200	0.14	3.9
50: 16092	< 0.1	< 0.02	0.04	45000	< 0.5	340	0.45	< 0.09	7600	0.09	25
51: 16094	< 0.1	< 0.02	0.12	10000	< 0.5	89	0.10	0.69	1200	0.37	6.1
52: 16096	< 0.1	< 0.02	0.15	18000	< 0.5	61	0.16	0.28	3000	0.33	15
53: 16098	< 0.1	< 0.02	0.45	30000	< 0.5	430	0.43	0.59	2500	0.32	19
54: 16100	< 0.1	< 0.02	0.78	11000	< 0.5	160	0.16	0.72	1600	3.7	5.9

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LR Report : **CA10409-OCT11**

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Friday, November 04, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 25 October 2011
LR Report: **CA10409-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
3: Analysis Approval Date	04-Nov-11	04-Nov-11	03-Nov-11	03-Nov-11	04-Nov-11	03-Nov-11	04-Nov-11	04-Nov-11	03-Nov-11	04-Nov-11	03-Nov-11
4: Analysis Approval Time	10:46	10:46	15:14	15:14	10:46	15:14	10:47	10:47	15:14	10:47	15:14
5: 16002	8.3	8.2	33000	1200	8	4400	280	100	72	32	43
6: 16004	49	4.6	140000	68	4	32000	560	2.6	30	88	27
7: 16006	21	12	30000	3900	10	7100	170	37	82	39	30
8: 16008	27	9.2	150000	2000	15	32000	490	5.7	140	110	42
9: 16010	28	5.1	130000	3700	21	27000	2400	4.6	110	220	32
10: 16012	4.4	28	440000	67	< 2	3900	1500	29	35	180	3
11: 16014	110	25	150000	42	4	44000	810	13	30	110	120
12: 16016	73	74	420000	33	< 2	5700	3900	21	44	100	< 2
13: 16018	300	1.7	96000	3400	18	39000	1000	1.4	75	130	35
14: 16020	12	23	470000	31	< 2	1000	3700	4.7	29	99	< 2
15: 16022	110	34	60000	20000	98	21000	230	0.6	350	100	34
16: 16024	160	82	82000	14000	40	30000	300	0.4	230	120	7
17: 16026	190	76	59000	11000	44	24000	220	7.2	310	130	11
18: 16028	330	100	78000	8600	33	27000	710	1.6	270	260	6
19: 16030	30	73	35000	48	< 2	75	120	19	55	12	16
20: 16032	890	23	58000	5800	12	28000	330	1.5	110	460	6
21: 16034	480	89	100000	22000	11	24000	380	1.7	290	280	16
22: 16036	550	56	220000	77	< 2	17000	780	100	50	160	13

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LR Report : **CA10409-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
23: 16038	250	67	68000	20000	17	20000	91	10	400	170	39
24: 16040	730	27	60000	690	37	34000	240	2.1	75	410	20
25: 16042	280	76	44000	14000	54	21000	240	0.9	220	140	19
26: 16044	800	31	48000	1500	7	28000	240	0.3	75	510	41
27: 16046	140	480	350000	110	3	20000	570	2.1	32	410	160
28: 16050	49	21	210000	41	< 2	29000	220	1.3	26	110	17
29: 16048	7.6	6.9	580000	40	< 2	1100	1500	0.6	32	25	< 2
30: 16052	16	9.3	550000	110	< 2	2500	520	1.4	44	25	680
31: 16054	590	100	170000	61	2	23000	300	0.2	32	210	19
32: 16056	20	85	510000	45	< 2	6800	11000	9.7	37	54	48
33: 16058	14	44	440000	36	< 2	11000	8300	1.2	44	34	120
34: 16060	390	2.4	110000	14000	13	72000	1300	1.2	130	130	2800
35: 16062	150	5.8	72000	19000	20	27000	400	1.2	410	40	410
36: 16064	31	120	31000	15000	10	12000	400	0.7	320	5.6	310
37: 16066	15	12	31000	15000	15	11000	510	0.7	480	15	430
38: 16068	18	20	530000	55	< 2	1100	4100	55	33	10	18
39: 16070	21	31	470000	150	< 2	17000	11000	13	31	43	32
40: 16072	29	72	470000	40	< 2	13000	11000	2.7	56	40	99
41: 16074	330	3.1	58000	450	4	41000	200	1.7	31	95	3400
42: 16076	36	380	400000	41	< 2	15000	9300	3.2	28	56	5400
43: 16078	12	15	92000	28000	19	23000	630	1.4	430	17	950
44: 16080	29	43	46000	15000	13	15000	600	0.8	240	14	690
45: 16082	23	5.6	44000	19000	18	16000	380	0.3	260	34	780
46: 16084	31	3.6	34000	7300	15	17000	460	0.3	170	9.2	710
47: 16086	53	27	44000	19000	32	11000	530	2.7	1400	4.8	820
48: 16088	48	32	40000	21000	30	13000	380	0.7	810	9.7	630
49: 16090	75	16	19000	10000	19	7900	460	0.7	1400	6.4	99
50: 16092	190	23	65000	35000	48	39000	990	2.3	490	64	340
51: 16094	21	28	16000	9000	13	7300	530	1.0	380	5.2	92
52: 16096	330	41	28000	18000	31	19000	490	14	280	110	890
53: 16098	110	200	48000	25000	44	32000	640	2.7	490	54	280
54: 16100	87	260	17000	9200	15	10000	320	5.8	360	21	230

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LR Report : **CA10409-OCT11**

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Friday, November 04, 2011

Date Rec. : 25 October 2011
LR Report: **CA10409-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
3: Analysis Approval Date	04-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	03-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11	04-Nov-11
4: Analysis Approval Time	10:47	10:47	10:47	10:47	10:47	15:14	10:47	10:47	10:47	10:47	10:47
5: 16002	3.4	< 0.8	< 0.7	0.6	3.7	97	0.05	2.1	< 1	3.8	15
6: 16004	1.9	< 0.8	< 0.7	1.4	1.0	170	< 0.02	1.7	25	1.8	120
7: 16006	2.8	< 0.8	< 0.7	1.1	1.7	150	0.28	3.4	2	4.5	16
8: 16008	3.7	< 0.8	< 0.7	0.9	1.5	240	0.45	4.0	10	3.5	140
9: 16010	3.5	< 0.8	< 0.7	2.2	2.4	550	0.49	2.6	13	4.0	110
10: 16012	52	1.9	1.4	2.4	2.9	19	0.04	0.35	5	3.7	12
11: 16014	2.7	< 0.8	< 0.7	1.3	1.6	210	0.03	2.3	32	5.5	92
12: 16016	7.6	< 0.8	< 0.7	1.6	1.3	430	0.03	0.36	27	0.75	15
13: 16018	2.1	< 0.8	< 0.7	1.5	1.8	570	0.17	2.0	72	3.6	110
14: 16020	4.5	< 0.8	< 0.7	0.6	1.7	25	0.28	0.29	7	0.84	83
15: 16022	6.1	< 0.8	< 0.7	1.3	9.7	1800	0.78	1.2	110	2.2	14
16: 16024	2.3	< 0.8	< 0.7	< 0.5	5.1	1400	0.41	0.066	150	0.92	44
17: 16026	1.5	< 0.8	< 0.7	0.5	6.4	1100	0.31	0.052	140	0.75	32
18: 16028	2.0	< 0.8	< 0.7	0.6	3.0	1500	0.33	0.27	180	1.5	460
19: 16030	3.3	< 0.8	2.4	< 0.5	0.92	19	< 0.02	0.022	10	0.60	11
20: 16032	2.9	< 0.8	< 0.7	< 0.5	1.6	740	0.22	0.057	79	0.63	31
21: 16034	31	< 0.8	< 0.7	1.0	2.3	2700	1.0	0.13	130	0.69	79
22: 16036	7.5	< 0.8	< 0.7	1.8	0.98	260	0.03	0.73	85	0.77	29

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LR Report : **CA10409-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
23: 16038	17	< 0.8	< 0.7	1.4	3.5	2200	0.76	0.42	110	1.2	29
24: 16040	0.69	< 0.8	< 0.7	< 0.5	2.3	160	0.02	0.61	75	1.2	45
25: 16042	5.8	< 0.8	< 0.7	0.7	7.1	1500	0.35	0.29	110	0.80	35
26: 16044	1.7	< 0.8	< 0.7	< 0.5	1.3	310	0.05	0.60	79	1.1	34
27: 16046	26	< 0.8	2.5	1.3	2.0	280	0.11	0.88	56	1.8	49
28: 16050	8.4	< 0.8	1.2	< 0.5	0.67	220	0.06	3.2	26	1.9	27
29: 16048	1.5	< 0.8	< 0.7	< 0.5	0.74	79	< 0.02	0.14	8	1.6	6.6
30: 16052	4.0	< 0.8	< 0.7	< 0.5	2.0	120	0.02	0.20	9	1.5	8.3
31: 16054	3.0	< 0.8	< 0.7	< 0.5	0.70	220	< 0.02	0.85	100	1.4	56
32: 16056	26	< 0.8	2.4	< 0.5	0.55	65	< 0.02	0.49	10	4.5	13
33: 16058	7.1	< 0.8	1.1	1.0	0.69	130	0.05	0.35	16	3.2	7.7
34: 16060	4.3	< 0.8	< 0.7	1.3	11	2000	1.00	1.7	120	6.6	61
35: 16062	9.1	< 0.8	< 0.7	0.8	7.6	2100	0.42	0.51	170	2.3	38
36: 16064	4.7	< 0.8	< 0.7	< 0.5	1.7	1700	0.56	1.9	12	3.8	28
37: 16066	3.2	< 0.8	< 0.7	1.2	3.2	2300	0.49	1.0	42	4.5	28
38: 16068	13	< 0.8	2.0	< 0.5	2.0	17	0.03	0.28	4	0.57	49
39: 16070	8.8	< 0.8	0.7	1.0	0.82	220	< 0.02	0.42	22	3.0	33
40: 16072	4.6	< 0.8	1.3	0.7	2.6	72	0.07	0.66	15	6.1	21
41: 16074	2.7	< 0.8	< 0.7	< 0.5	12	250	0.03	2.7	92	10	49
42: 16076	4.7	< 0.8	2.6	< 0.5	16	300	< 0.02	0.69	42	14	18
43: 16078	15	< 0.8	< 0.7	1.3	3.1	2900	1.1	8.4	40	9.0	18
44: 16080	4.5	< 0.8	< 0.7	0.6	2.6	2000	0.52	2.6	24	7.8	47
45: 16082	14	< 0.8	< 0.7	< 0.5	1.9	2200	0.56	1.4	53	7.3	61
46: 16084	3.2	< 0.8	< 0.7	< 0.5	2.5	850	0.22	2.4	17	8.4	46
47: 16086	32	< 0.8	< 0.7	2.4	7.0	3400	0.52	11	18	26	76
48: 16088	6.4	< 0.8	< 0.7	1.3	5.8	3800	0.59	2.0	64	9.5	70
49: 16090	62	< 0.8	< 0.7	1.9	16	1300	0.27	7.7	13	19	34
50: 16092	18	< 0.8	< 0.7	0.7	8.6	5300	0.90	0.42	210	5.4	130
51: 16094	14	< 0.8	< 0.7	3.2	7.7	930	0.29	9.4	11	17	76
52: 16096	11	< 0.8	< 0.7	9.4	6.1	2200	1.1	6.4	56	9.4	150
53: 16098	4.0	< 0.8	< 0.7	3.3	6.6	3600	1.3	2.4	120	8.3	170
54: 16100	13	< 0.8	< 0.7	3.0	5.8	670	0.37	7.0	17	11	180

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LR Report : **CA10409-OCT11**

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Thursday, November 10, 2011

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Date Rec. : 26 October 2011
LR Report: **CA10412-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
3: Analysis Approval Date	09-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11
4: Analysis Approval Time	16:25	13:17	13:17	18:21	13:17	13:17	13:18	13:18	09:41	13:18	13:18
5: 16102	< 0.1	< 0.02	0.56	58000	0.7	700	0.66	0.83	1900	3.3	27
6: 16104	< 0.1	< 0.02	0.19	26000	0.8	270	0.17	0.10	4000	0.36	10
7: 16106	< 0.1	< 0.02	0.15	16000	0.8	140	0.18	1.1	2000	0.27	5.3
8: 16108	< 0.1	< 0.02	0.17	9700	0.7	86	0.31	0.24	1400	0.80	3.0
9: 16110	< 0.1	< 0.02	0.09	22000	0.8	210	0.22	0.14	4000	0.07	8.4
10: 16112	< 0.1	< 0.02	0.12	28000	0.6	110	2.5	0.37	320	0.49	6.0
11: 16114	< 0.1	< 0.02	0.05	13000	< 0.5	110	2.2	< 0.09	210	0.21	3.3
12: 16116	< 0.1	< 0.02	0.31	68000	0.9	81	2.3	< 0.09	4200	0.38	46
13: 16118	< 0.1	< 0.02	11	53000	1.0	3.3	1.0	< 0.09	5200	30	79
14: 16120	< 0.1	< 0.02	0.02	55000	< 0.5	230	4.8	< 0.09	2400	0.11	9.4
15: 16122	< 0.1	< 0.02	0.07	53000	0.6	240	2.6	0.44	1200	0.03	5.7
16: 16124	< 0.1	< 0.02	0.02	69000	0.6	370	3.6	< 0.09	3600	< 0.02	13
17: 16126	< 0.1	< 0.02	0.22	43000	< 0.5	250	0.90	< 0.09	1600	0.25	22
18: 16128	< 0.1	< 0.02	0.37	40000	< 0.5	300	1.1	0.10	4600	0.23	21
19: 16130	< 0.1	< 0.02	0.15	32000	< 0.5	280	0.83	0.18	8600	0.04	15
20: 16132	< 0.1	< 0.02	0.04	47000	< 0.5	430	1.2	< 0.09	2900	< 0.02	20
21: 16134	< 0.1	< 0.02	0.06	35000	0.5	290	0.60	< 0.09	1200	0.04	17

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LR Report : **CA10412-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
22: 16136	< 0.1	0.03	0.25	27000	0.6	520	0.31	0.12	5000	0.09	8.4
23: 16138	< 0.1	< 0.02	0.32	30000	0.8	420	0.28	0.14	3900	0.31	9.8
24: 16140	< 0.1	< 0.02	0.09	23000	0.6	130	0.55	0.13	5200	0.09	10
25: 16142	< 0.1	< 0.02	0.08	21000	< 0.5	140	0.14	< 0.09	2400	0.22	7.9
26: 16144	< 0.1	< 0.02	0.08	15000	0.6	85	0.22	< 0.09	1900	0.05	6.2
27: 16146	< 0.1	< 0.02	0.09	23000	0.7	150	0.24	< 0.09	1600	0.25	7.7
28: 16148	< 0.1	< 0.02	0.06	5300	0.8	38	0.93	0.36	13000	0.16	1.2
29: 16150	< 0.1	< 0.02	0.06	23000	1.0	200	0.94	0.12	7300	0.09	8.0
30: 16152	< 0.1	< 0.02	0.19	9400	1.0	66	0.24	0.10	2200	0.08	3.5
31: 16154	< 0.1	< 0.02	0.23	15000	1.0	110	0.38	0.33	9400	0.42	19
32: 16156	< 0.1	< 0.02	0.70	9900	0.9	87	1.5	2.9	5900	0.23	3.2
33: 16158	< 0.1	< 0.02	0.09	17000	0.9	95	0.38	< 0.09	12000	4.2	15
34: 16160	< 0.1	< 0.02	0.02	34000	5.1	3.2	1.1	< 0.09	1700	< 0.02	25
35: 16162	< 0.1	< 0.02	0.02	46000	1.5	6.2	2.1	< 0.09	1500	< 0.02	30
36: 16164	< 0.1	< 0.02	0.06	7100	38	2.4	0.68	< 0.09	1400	0.12	7.8
37: 16166	< 0.1	< 0.02	0.06	8800	23	0.66	0.68	< 0.09	4000	0.06	4.1
38: 16168	< 0.1	< 0.02	0.02	45000	1.4	470	1.9	0.17	590	< 0.02	7.1
39: 16170	< 0.1	< 0.02	0.38	7000	1.1	340	1.3	0.61	3500	0.05	7.1
40: 16172	< 0.1	0.06	0.10	75000	1.0	130	0.78	1.1	3200	0.06	20
41: 16174	< 0.1	< 0.02	0.08	69000	0.9	12	1.1	0.27	3300	0.03	17
42: 16176	< 0.1	0.06	0.05	4200	0.8	2.8	0.41	0.20	5400	< 0.02	2.3
43: 16178	< 0.1	< 0.02	0.13	23000	< 0.5	310	0.59	0.13	2000	0.22	22
44: 16180	< 0.1	< 0.02	0.08	13000	0.6	100	0.14	< 0.09	1400	0.05	7.7
45: 16182	< 0.1	< 0.02	0.01	26000	0.8	140	0.39	< 0.09	11000	0.06	5.5
46: 16184	< 0.1	< 0.02	0.10	17000	1.1	15	0.06	< 0.09	18000	0.16	28
47: 16186	< 0.1	< 0.02	0.08	22000	0.8	19	0.04	< 0.09	22000	0.09	27
48: 16188	< 0.1	< 0.02	0.10	27000	0.6	80	0.06	< 0.09	34000	0.17	25
49: 16190	< 0.1	< 0.02	0.12	19000	0.6	78	0.03	< 0.09	16000	0.05	34
50: 16192	< 0.1	< 0.02	0.04	26000	0.6	300	0.05	< 0.09	17000	0.02	31
51: 16194	< 0.1	< 0.02	0.28	28000	0.6	120	0.07	< 0.09	25000	0.35	31
52: 16196	< 0.1	< 0.02	0.10	14000	< 0.5	220	0.04	< 0.09	14000	0.06	26
53: 16198	< 0.1	< 0.02	0.16	28000	0.5	120	0.05	0.10	41000	0.08	28

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LR Report : **CA10412-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
54: 16200	< 0.1	< 0.02	0.04	16000	0.6	350	0.35	< 0.09	12000	0.03	16
55-DUP: 16102	< 0.1	< 0.02	0.52	60000	< 0.5	590	0.46	0.72	2000	2.6	26
56-DUP: 16130	< 0.1	< 0.02	0.14	32000	0.6	260	0.68	0.18	8400	0.03	14
57-DUP: 16150	< 0.1	< 0.02	0.11	24000	0.5	210	0.83	0.11	7900	0.08	8.5
58-DUP: 16168	< 0.1	< 0.02	0.04	48000	1.3	520	1.8	0.19	650	< 0.02	7.9
59-DUP: 16180	< 0.1	< 0.02	0.09	15000	< 0.5	120	0.15	< 0.09	1500	0.08	8.3
60-DUP: 16200	< 0.1	< 0.02	0.08	17000	< 0.5	350	0.34	< 0.09	13000	0.03	15

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Environmental Services, Analytical

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Thursday, November 10, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA10412-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
3: Analysis Approval Date	10-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11
4: Analysis Approval Time	13:18	13:18	09:41	18:20	13:19	18:20	13:19	13:19	09:41	13:19	18:19
5: 16102	110	330	96000	50000	59	53000	990	4.6	640	42	390
6: 16104	83	33	43000	23000	31	13000	610	2.3	1400	9.0	1100
7: 16106	88	38	26000	14000	20	7800	460	41	1300	4.1	330
8: 16108	110	29	16000	7300	14	5700	300	3.9	1500	3.6	130
9: 16110	67	19	42000	20000	23	12000	570	7.4	1400	5.4	1100
10: 16112	96	8.5	27000	11000	26	26000	420	2.3	230	7.6	130
11: 16114	170	16	12000	7200	13	10000	270	2.6	200	6.6	71
12: 16116	1160	20	87000	34000	29	87000	520	0.8	650	310	1900
13: 16118	2080	120	78000	810	10	70000	370	4.6	74	790	2400
14: 16120	27	3.1	44000	34000	48	50000	610	0.3	580	11	1000
15: 16122	16	1.9	32000	29000	66	52000	460	0.3	520	4.5	260
16: 16124	35	35	53000	43000	69	54000	420	0.1	740	21	1200
17: 16126	42	99	60000	31000	24	29000	340	1.9	490	26	630
18: 16128	61	79	53000	28000	31	28000	440	1.0	510	25	1400
19: 16130	56	99	43000	19000	26	17000	390	0.7	600	7.4	890
20: 16132	42	18	60000	33000	28	31000	380	0.8	670	30	1000

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Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
21: 16134	91	19	44000	27000	17	24000	280	1.3	590	32	210
22: 16136	56	49	51000	24000	28	15000	870	2.3	1500	6.0	1000
23: 16138	55	48	56000	26000	30	14000	630	2.1	1400	6.7	1000
24: 16140	71	17	34000	21000	30	16000	870	1.5	1100	15	590
25: 16142	62	8.3	32000	21000	31	12000	640	0.9	1200	8.2	590
26: 16144	64	6.6	23000	15000	25	8800	410	1.2	540	6.2	640
27: 16146	75	15	40000	20000	31	12000	510	2.0	750	7.5	450
28: 16148	58	2.3	7300	2000	3	4700	410	1.1	260	2.3	380
29: 16150	57	23	36000	21000	38	19000	860	0.8	950	7.7	620
30: 16152	100	48	15000	6700	9	5900	220	2.1	1800	4.2	210
31: 16154	340	120	26000	16000	19	15000	230	2.5	600	110	2400
32: 16156	97	78	17000	7600	19	6500	420	1.7	1600	3.9	120
33: 16158	480	39	29000	17000	40	19000	340	1.7	710	92	2000
34: 16160	540	7.4	230000	410	31	39000	420	1.2	80	140	330
35: 16162	850	4.3	89000	180	42	59000	1400	1.1	120	520	470
36: 16164	49	28	410000	230	7	22000	18000	57	58	24	34
37: 16166	30	16	430000	82	3	26000	16000	5.1	73	14	430
38: 16168	86	3.3	71000	20000	14	28000	300	3.8	350	17	230
39: 16170	41	54	350000	480	6	15000	18000	3.2	89	22	1200
40: 16172	120	5.7	170000	170	4	43000	2300	5.2	68	51	1400
41: 16174	250	9.3	130000	140	2	58000	960	0.5	67	55	1400
42: 16176	35	13	470000	110	< 2	2200	1800	0.7	98	6.9	2300
43: 16178	61	30	34000	19000	8	14000	250	1.7	440	16	930
44: 16180	67	5.6	19000	11000	15	7400	380	1.2	730	17	260
45: 16182	57	11	41000	9900	27	9000	640	0.7	540	18	410
46: 16184	110	120	33000	1500	21	9500	1000	0.6	1200	89	210
47: 16186	170	130	30000	1800	47	21000	820	0.3	840	78	260
48: 16188	150	110	33000	4800	27	19000	990	0.8	1900	78	270
49: 16190	160	120	28000	4100	26	18000	580	0.4	1500	110	230
50: 16192	200	120	31000	10000	26	18000	760	0.5	1800	110	250
51: 16194	180	97	43000	8400	30	22000	1200	0.5	1400	98	250

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LR Report : **CA10412-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
52: 16196	140	61	18000	5600	13	8000	480	0.6	1700	93	320
53: 16198	120	160	31000	4200	10	7800	1100	0.6	2200	95	220
54: 16200	230	64	19000	5000	20	15000	310	0.5	820	78	1900
55-DUP: 16102	96	300	96000	46000	47	53000	840	3.7	630	40	410
56-DUP: 16130	51	94	45000	19000	23	17000	360	0.6	630	7.5	890
57-DUP: 16150	58	23	37000	20000	37	20000	860	0.9	1200	8.3	660
58-DUP: 16168	91	3.7	76000	19000	14	30000	320	4.1	370	19	260
59-DUP: 16180	71	5.6	20000	11000	17	7700	410	1.3	700	16	260
60-DUP: 16200	220	63	20000	5200	20	16000	300	0.4	1000	80	1800

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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LR Report: **CA10412-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
1: Analysis Start Date	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11	07-Nov-11
2: Analysis Start Time	17:25	17:25	17:25	17:25	17:25	16:35	17:25	17:25	17:25	17:25	17:25
3: Analysis Approval Date	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11
4: Analysis Approval Time	13:20	13:20	13:20	13:20	13:20	18:19	13:21	13:21	13:21	13:21	13:21
5: 16102	9.5	< 0.8	< 0.7	9.9	5.2	4300	1.9	2.5	140	9.0	400
6: 16104	8.0	< 0.8	< 0.7	2.9	8.9	3600	0.88	1.7	50	23	110
7: 16106	6.2	< 0.8	< 0.7	2.1	8.2	1800	0.39	1.9	23	11	70
8: 16108	17	< 0.8	< 0.7	1.9	11	780	0.33	6.0	11	11	81
9: 16110	7.8	< 0.8	< 0.7	2.3	11	3800	0.80	3.3	44	10	84
10: 16112	17	< 0.8	< 0.7	0.9	2.5	300	0.35	23	2	10	46
11: 16114	9.4	< 0.8	< 0.7	< 0.5	2.3	130	0.21	7.8	1	9.4	26
12: 16116	16	< 0.8	< 0.7	1.4	4.1	3600	1.2	1.8	89	5.0	220
13: 16118	2174	< 0.8	< 0.7	< 0.5	3.4	530	1.5	1.6	25	6.1	3280
14: 16120	16	< 0.8	< 0.7	1.5	5.6	2200	0.91	3.8	43	5.8	71
15: 16122	18	< 0.8	< 0.7	1.6	6.8	470	0.60	4.6	39	4.6	50
16: 16124	15	< 0.8	< 0.7	2.4	12	2300	0.87	3.5	86	8.0	65
17: 16126	48	< 0.8	< 0.7	1.1	2.9	3500	0.99	3.1	150	6.2	94
18: 16128	16	< 0.8	< 0.7	1.2	4.2	3700	0.87	3.2	93	10	72

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LR Report : **CA10412-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
19: 16130	8.4	< 0.8	< 0.7	0.9	10	2600	0.69	5.4	60	16	52
20: 16132	8.0	< 0.8	< 0.7	1.4	5.0	3600	0.92	3.2	170	7.9	86
21: 16134	8.3	< 0.8	< 0.7	0.7	3.1	3000	0.65	3.0	94	3.2	59
22: 16136	7.3	< 0.8	< 0.7	0.8	12	4400	0.66	3.1	15	11	89
23: 16138	13	< 0.8	< 0.7	3.6	8.2	4700	0.65	4.2	24	14	98
24: 16140	11	< 0.8	< 0.7	0.7	13	2800	0.89	2.3	56	13	70
25: 16142	10	< 0.8	< 0.7	2.7	7.0	3100	0.61	4.6	57	15	63
26: 16144	3.2	< 0.8	< 0.7	0.9	3.7	2400	0.37	2.7	36	8.9	39
27: 16146	8.7	< 0.8	< 0.7	< 0.5	3.4	2800	0.63	0.49	23	9.2	77
28: 16148	14	< 0.8	< 0.7	< 0.5	16	850	0.05	1.2	4	16	20
29: 16150	9.3	< 0.8	< 0.7	0.9	16	2700	0.72	1.5	55	15	73
30: 16152	10	< 0.8	< 0.7	1.2	22	1000	0.22	6.1	13	12	16
31: 16154	50	< 0.8	< 0.7	0.6	33	2200	0.82	3.1	52	7.7	35
32: 16156	39	< 0.8	< 0.7	1.1	33	780	0.37	7.4	11	20	26
33: 16158	7.4	< 0.8	< 0.7	0.6	29	2700	0.75	1.8	70	5.9	37
34: 16160	1.2	< 0.8	< 0.7	< 0.5	11	180	< 0.02	0.64	32	3.4	40
35: 16162	1.2	< 0.8	< 0.7	< 0.5	5.4	220	< 0.02	0.87	41	4.6	35
36: 16164	1.2	< 0.8	< 0.7	0.5	1.9	230	< 0.02	0.24	29	4.2	16
37: 16166	1.00	< 0.8	< 0.7	0.7	3.1	400	< 0.02	0.21	27	4.1	12
38: 16168	22	< 0.8	< 0.7	1.1	9.7	1600	0.52	2.5	24	4.0	13
39: 16170	9.5	< 0.8	0.8	< 0.5	6.1	390	0.36	0.43	27	6.0	17
40: 16172	5.2	< 0.8	< 0.7	< 0.5	7.7	450	< 0.02	2.9	87	4.8	90
41: 16174	2.5	< 0.8	< 0.7	< 0.5	4.8	310	0.05	1.8	95	3.0	81
42: 16176	0.97	< 0.8	< 0.7	< 0.5	7.0	280	0.27	0.16	13	4.3	8.3
43: 16178	7.6	< 0.8	< 0.7	0.6	3.5	1900	1.7	2.7	75	5.4	120
44: 16180	33	< 0.8	< 0.7	0.8	5.9	1400	0.79	1.9	22	3.7	28
45: 16182	6.2	< 0.8	< 0.7	< 0.5	10	1400	0.14	0.59	26	3.4	47
46: 16184	6.7	< 0.8	< 0.7	< 0.5	11	1100	0.04	0.049	74	4.0	41
47: 16186	4.0	< 0.8	< 0.7	< 0.5	11	1400	0.02	0.035	140	5.2	41
48: 16188	6.7	< 0.8	< 0.7	< 0.5	18	1300	0.08	0.083	110	5.8	52
49: 16190	1.3	< 0.8	< 0.7	< 0.5	9.9	1500	0.07	0.023	110	5.0	33

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LR Report : **CA10412-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
50: 16192	1.3	< 0.8	< 0.7	< 0.5	15	2400	0.17	0.022	130	3.8	29
51: 16194	11	< 0.8	< 0.7	< 0.5	16	2000	0.13	0.052	110	5.0	71
52: 16196	2.3	< 0.8	< 0.7	< 0.5	13	2100	0.11	0.10	93	4.5	38
53: 16198	4.7	< 0.8	< 0.7	< 0.5	50	1500	0.09	0.030	61	4.1	33
54: 16200	3.9	< 0.8	< 0.7	< 0.5	50	1500	0.10	1.7	29	3.8	19
55-DUP: 16102	7.9	< 0.8	< 0.7	8.6	4.6	4500	1.7	2.2	120	8.0	320
56-DUP: 16130	7.4	< 0.8	< 0.7	2.6	9.7	2600	0.67	5.2	53	16	44
57-DUP: 16150	9.3	< 0.8	< 0.7	1.0	17	2600	0.77	1.6	52	16	68
58-DUP: 16168	24	< 0.8	< 0.7	1.3	11	1700	0.59	2.9	26	4.7	12
59-DUP: 16180	36	< 0.8	< 0.7	1.1	7.5	1400	0.87	2.1	23	4.3	26
60-DUP: 16200	3.5	< 0.8	< 0.7	< 0.5	52	1500	0.10	1.7	26	3.8	17

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Thursday, November 10, 2011

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Date Rec. : 26 October 2011
LR Report: **CA11409-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
3: Analysis Approval Date	09-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	10-Nov-11
4: Analysis Approval Time	17:58	13:22	13:22	18:21	13:22	13:22	13:22	13:22	18:22	13:24	13:24
5: 16202	< 0.1	0.03	0.17	23000	2.0	230	0.08	0.22	29000	0.08	31
6: 16204	< 0.1	< 0.02	0.10	36000	1.8	76	0.05	< 0.09	26000	0.08	26
7: 16206	< 0.1	< 0.02	0.12	38000	< 0.5	150	0.06	0.11	39000	0.05	27
8: 16208	< 0.1	< 0.02	0.18	18000	0.8	170	0.04	< 0.09	22000	0.10	21
9: 16210	< 0.1	< 0.02	0.07	53000	< 0.5	140	0.15	< 0.09	36000	0.09	28
10: 16212	< 0.1	< 0.02	0.04	16000	< 0.5	1.4	0.02	< 0.09	25000	0.08	25
11: 16214	< 0.1	< 0.02	0.09	44000	< 0.5	90	0.10	< 0.09	4100	< 0.02	26
12: 16216	< 0.1	< 0.02	0.02	54000	0.6	35	0.30	< 0.09	1300	0.06	37
13: 61218	< 0.1	< 0.02	0.33	38000	< 0.5	2.4	0.62	0.50	3800	0.13	44
14: 16220	< 0.1	< 0.02	0.05	32000	< 0.5	2.6	0.62	< 0.09	150	< 0.02	11
15: 16222	< 0.1	< 0.02	< 0.01	1800	< 0.5	1.6	0.23	< 0.09	1100	< 0.02	1.3
16: 16224	< 0.1	< 0.02	0.07	57000	0.6	66	4.7	< 0.09	3700	0.03	33
17: 16226	< 0.1	< 0.02	0.11	64000	0.6	42	5.1	< 0.09	4200	0.03	30
18: 16228	< 0.1	< 0.02	0.08	74000	0.7	150	3.5	< 0.09	1900	0.03	18
19: 16230	< 0.1	0.04	0.48	60000	41	20	3.2	1.7	2000	< 0.02	38
20: 16232	< 0.1	0.07	0.49	41000	75	3.3	0.81	1.6	2500	0.03	31

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LR Report : **CA11409-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
21: 16234	< 0.1	< 0.02	0.07	16000	5.1	30	0.22	0.10	31000	0.07	22
22: 16236	< 0.1	< 0.02	0.06	16000	3.3	33	0.18	< 0.09	31000	0.06	22
23: 16238	< 0.1	< 0.02	0.06	14000	0.7	27	0.10	< 0.09	84000	0.09	9.4
24: 16240	< 0.1	0.03	0.08	21000	1.3	16	0.09	< 0.09	78000	0.08	9.8
25: 16242	< 0.1	< 0.02	0.09	57000	< 0.5	110	0.39	< 0.09	38000	0.07	25
26: 16244	< 0.1	< 0.02	0.03	11000	< 0.5	40	0.08	< 0.09	7800	< 0.02	11
27: 16246	< 0.1	< 0.02	< 0.01	72000	< 0.5	2.6	0.98	< 0.09	1800	< 0.02	38
28: 16248	< 0.1	< 0.02	< 0.01	73000	0.6	28	1.2	< 0.09	1700	< 0.02	51
29: 16250	< 0.1	< 0.02	0.04	67000	0.5	23	0.92	< 0.09	1600	< 0.02	36
30: 16252	< 0.1	< 0.02	0.08	82000	0.5	7.5	3.3	0.12	580	< 0.02	35
31: 16254	< 0.1	< 0.02	0.09	83000	< 0.5	13	2.1	< 0.09	1400	0.06	20
32: 16256	< 0.1	< 0.02	0.07	51000	0.7	2.4	0.92	0.22	1400	0.05	66
33: 16258	< 0.1	< 0.02	0.07	47000	0.5	85	1.1	0.10	3300	0.19	12
34: 16260	< 0.1	< 0.02	0.11	72000	< 0.5	15	1.8	< 0.09	2700	0.14	14
35: 16262	< 0.1	< 0.02	0.08	3000	159	1.3	0.39	< 0.09	770	< 0.02	2.3
36: 16264	< 0.1	< 0.02	0.03	73000	0.5	14	1.1	< 0.09	2400	0.02	17
37: 16266	< 0.1	< 0.02	0.03	2000	8.5	1.7	0.68	< 0.09	1000	< 0.02	1.8
38: 16268	< 0.1	< 0.02	0.04	77000	1.8	0.81	1.9	< 0.09	430	< 0.02	31
39: 16270	< 0.1	< 0.02	0.02	48000	0.7	3.9	0.89	< 0.09	970	0.05	33
40: 16272	< 0.1	< 0.02	0.04	61000	0.9	3.3	0.78	< 0.09	1600	0.02	43
41: 16274	< 0.1	0.03	0.08	30000	1.5	1.4	2.9	0.17	4000	0.03	27
42: 16276	< 0.1	< 0.02	< 0.01	1600	0.5	1.3	0.06	< 0.09	360	< 0.02	5.0
43: 16278	< 0.1	< 0.02	< 0.01	1200	0.5	2.0	0.04	< 0.09	240	< 0.02	3.4
44: 16280	< 0.1	< 0.02	< 0.01	1400	< 0.5	2.7	0.07	< 0.09	110	0.02	4.7
45: 16282	< 0.1	< 0.02	0.16	1300	2.4	0.88	0.64	< 0.09	340	< 0.02	23
46: 16284	< 0.1	0.07	0.07	820	4.6	0.46	0.12	< 0.09	3500	0.06	32
47: 16286	< 0.1	< 0.02	0.09	1100	1.6	1.0	0.24	0.12	570	0.08	48
48: 16288	< 0.1	< 0.02	0.02	37000	0.6	55	0.91	< 0.09	800	< 0.02	9.2
49: 16290	< 0.1	< 0.02	0.13	65000	3.1	4.4	0.56	0.12	15000	0.08	25
50: 16292	< 0.1	< 0.02	0.30	65000	3.3	6.9	1.7	0.12	460	< 0.02	39
51: 16294	< 0.1	< 0.02	0.16	32000	2.7	2.8	0.81	0.12	270	< 0.02	31

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P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11409-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
52: 16296	< 0.1	< 0.02	0.16	30000	3.3	0.45	0.20	0.30	93	< 0.02	26
53: 16298	< 0.1	0.03	0.16	29000	9.6	1.3	0.32	0.30	160	0.05	27
54: 16300	< 0.1	< 0.02	0.09	81000	0.9	120	3.7	0.25	620	< 0.02	21
55: 16302	< 0.1	< 0.02	0.04	29000	< 0.5	280	0.83	< 0.09	1900	0.02	9.9
56: 16304	< 0.1	< 0.02	0.02	43000	< 0.5	610	0.38	0.80	1200	< 0.02	11
57: 16306	< 0.1	< 0.02	0.03	40000	< 0.5	600	0.74	< 0.09	700	< 0.02	9.6
58: 16308	< 0.1	< 0.02	0.01	41000	< 0.5	1100	0.59	< 0.09	1900	< 0.02	8.5
59-DUP: 16202	< 0.1	< 0.02	0.16	21000	2.0	220	0.08	0.19	28000	0.08	30
60-DUP: 16220	< 0.1	< 0.02	0.05	31000	< 0.5	2.7	0.57	< 0.09	150	< 0.02	11
61-DUP: 16240	< 0.1	0.02	0.06	20000	0.7	15	0.08	< 0.09	75000	0.08	9.6
62-DUP: 16260	< 0.1	< 0.02	0.10	75000	< 0.5	15	1.7	< 0.09	2500	0.14	14
63-DUP: 16270	< 0.1	< 0.02	0.03	48000	0.7	3.9	0.91	< 0.09	960	0.04	34
64-DUP: 16280	< 0.1	< 0.02	< 0.01	1400	< 0.5	2.8	0.07	< 0.09	110	0.02	4.7
65-DUP: 16308	< 0.1	< 0.02	< 0.01	40000	< 0.5	1100	0.62	< 0.09	1800	< 0.02	8.4

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Thursday, November 10, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11409-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
3: Analysis Approval Date	10-Nov-11	10-Nov-11	09-Nov-11	09-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	09-Nov-11
4: Analysis Approval Time	13:24	13:24	18:22	18:22	13:24	18:22	13:25	13:25	18:23	13:25	18:23
5: 16202	140	110	25000	5100	19	12000	730	0.6	2000	110	250
6: 16204	200	110	27000	8700	14	12000	530	0.8	2900	89	290
7: 16206	110	110	34000	4600	9	8100	860	0.6	2300	86	260
8: 16208	150	110	15000	4700	15	9200	380	0.8	2100	74	300
9: 16210	170	200	27000	14000	16	18000	510	0.4	1100	73	230
10: 16212	570	58	22000	250	3	22000	510	0.2	99	340	190
11: 16214	84	150	48000	2800	7	51000	590	0.4	110	68	170
12: 16216	180	110	68000	380	7	54000	310	0.8	73	130	330
13: 61218	580	61	130000	100	3	33000	280	0.8	94	340	1500
14: 16220	89	21	440000	110	3	24000	360	0.5	84	27	9
15: 16222	75	2.3	410000	100	< 2	1400	290	0.9	110	5.1	420
16: 16224	880	15	150000	2100	63	93000	1600	0.4	190	280	1400
17: 16226	660	3.9	98000	2100	40	98000	2200	0.4	180	200	1600
18: 16228	53	2.7	170000	11000	29	89000	1500	1.4	270	92	510
19: 16230	62	7.7	210000	2700	35	79000	670	5.0	230	97	540
20: 16232	43	5.8	250000	150	43	75000	440	2.6	170	89	660

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LR Report : **CA11409-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
21: 16234	82	94	91000	2200	9	11000	900	1.1	930	86	1000
22: 16236	85	95	74000	2300	9	10000	940	1.0	1000	87	830
23: 16238	76	67	13000	1400	10	8600	1800	0.3	1200	33	240
24: 16240	53	82	44000	940	26	28000	2700	0.3	530	22	530
25: 16242	210	100	22000	5800	13	10000	260	0.6	2700	120	340
26: 16244	74	72	16000	1900	7	11000	450	0.8	1300	38	290
27: 16246	180	1.5	62000	690	26	81000	1600	0.1	130	130	350
28: 16248	240	110	82000	2400	17	70000	2000	0.4	140	190	380
29: 16250	190	73	130000	1500	15	64000	2800	0.4	130	88	400
30: 16252	660	28	140000	960	23	95000	2800	3.5	110	260	65
31: 16254	140	3.5	160000	1100	16	78000	3900	0.9	120	90	450
32: 16256	1200	75	95000	310	13	52000	950	1.8	180	580	560
33: 16258	51	21	86000	6900	20	42000	1400	4.3	240	21	1500
34: 16260	25	29	160000	1400	21	75000	3000	7.6	110	31	1100
35: 16262	110	12	140000	140	< 2	5400	1500	23	140	12	230
36: 16264	25	4.1	180000	970	13	76000	1800	3.2	130	32	1000
37: 16266	45	5.2	390000	1100	< 2	6700	730	6.8	110	9.1	330
38: 16268	940	16	200000	250	13	80000	2900	1.5	110	97	52
39: 16270	660	57	64000	1000	10	57000	1200	1.2	180	120	350
40: 16272	200	59	130000	2100	9	47000	1100	4.4	80	150	690
41: 16274	320	7.0	390000	240	13	40000	830	2.1	120	91	1800
42: 16276	51	5.6	550000	120	3	2000	1100	3.3	110	6.6	11
43: 16278	95	1.6	370000	100	< 2	1300	840	2.1	130	7.6	< 2
44: 16280	37	1.4	630000	73	4	1500	1300	0.6	71	8.0	3
45: 16282	35	34	520000	69	< 2	3800	4200	2.0	89	32	34
46: 16284	14	8.7	700000	62	< 2	5200	15000	2.4	65	39	3
47: 16286	15	9.8	680000	72	< 2	5000	22000	2.9	70	46	30
48: 16288	43	1.9	71000	3500	10	28000	1200	0.7	120	14	300
49: 16290	220	5.8	170000	100	29	67000	320	0.3	72	120	6900
50: 16292	650	18	250000	100	34	72000	1500	1.0	150	390	4
51: 16294	800	31	150000	150	17	28000	960	3.2	140	370	12

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LR Report : **CA11409-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
52: 16296	68	26	450000	96	4	19000	900	1.1	100	80	4
53: 16298	120	22	360000	320	10	25000	1000	1.6	77	80	9
54: 16300	84	18	170000	5300	16	89000	3600	2.2	140	53	100
55: 16302	72	17	47000	19000	8	17000	230	2.0	420	14	900
56: 16304	75	5.3	67000	31000	17	23000	180	10	860	25	560
57: 16306	72	3.5	51000	26000	25	23000	280	28	570	21	270
58: 16308	73	4.1	55000	28000	17	24000	230	1.5	640	9.7	830
59-DUP: 16202	140	110	24000	4800	19	11000	700	0.6	1700	110	240
60-DUP: 16220	87	20	430000	110	3	24000	360	0.5	81	27	9
61-DUP: 16240	53	80	43000	940	26	28000	2600	0.3	510	21	500
62-DUP: 16260	26	29	140000	1600	21	76000	3000	7.5	110	31	1000
63-DUP: 16270	660	56	64000	990	10	56000	1200	1.2	180	120	340
64-DUP: 16280	38	0.8	600000	78	4	1500	1300	0.6	69	8.0	2
65-DUP: 16308	72	5.3	54000	27000	17	23000	230	1.4	630	10	800

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Environmental Services, Analytical

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Thursday, November 10, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11409-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
3: Analysis Approval Date	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	09-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11	10-Nov-11
4: Analysis Approval Time	13:25	13:25	13:25	13:25	13:25	18:23	13:26	13:26	13:26	13:26	13:26
5: 16202	6.9	< 0.8	< 0.7	< 0.5	40	1900	0.10	0.020	74	3.9	30
6: 16204	2.2	< 0.8	< 0.7	< 0.5	44	2200	0.14	0.077	110	3.2	45
7: 16206	4.7	< 0.8	< 0.7	< 0.5	76	1600	0.11	0.078	68	4.9	34
8: 16208	2.0	< 0.8	< 0.7	< 0.5	26	2100	0.08	0.040	81	3.9	21
9: 16210	1.1	< 0.8	< 0.7	< 0.5	48	2600	0.14	0.048	130	3.0	39
10: 16212	1.2	< 0.8	< 0.7	< 0.5	9.0	280	0.04	0.13	14	0.88	18
11: 16214	1.5	< 0.8	< 0.7	< 0.5	2.6	580	0.04	0.008	110	1.2	33
12: 16216	0.45	< 0.8	< 0.7	< 0.5	1.5	380	< 0.02	0.018	130	0.90	59
13: 61218	24	< 0.8	1.5	< 0.5	3.5	280	0.10	1.0	76	3.0	61
14: 16220	1.3	< 0.8	< 0.7	< 0.5	1.0	410	0.02	0.38	57	1.6	19
15: 16222	0.26	< 0.8	< 0.7	< 0.5	1.5	45	< 0.02	0.051	3	1.3	3.7
16: 16224	1.2	< 0.8	< 0.7	1.1	12	1600	0.05	1.3	80	3.9	49
17: 16226	1.3	< 0.8	< 0.7	1.0	11	2100	0.05	1.2	96	5.4	57
18: 16228	4.5	< 0.8	< 0.7	1.3	8.4	2100	0.19	1.7	48	3.0	58
19: 16230	19	< 0.8	1.8	7.9	10	860	0.14	1.1	52	1.6	53
20: 16232	18	< 0.8	2.8	0.8	16	190	0.06	0.96	30	1.9	33

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LR Report : **CA11409-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
21: 16234	3.4	< 0.8	< 0.7	< 0.5	22	990	0.05	0.17	48	5.4	29
22: 16236	2.6	< 0.8	0.9	< 0.5	20	1100	0.05	0.14	51	5.3	29
23: 16238	1.7	< 0.8	< 0.7	< 0.5	21	970	< 0.02	0.027	51	4.7	16
24: 16240	1.8	< 0.8	< 0.7	< 0.5	15	1300	< 0.02	0.088	98	6.2	37
25: 16242	3.4	< 0.8	< 0.7	< 0.5	45	1600	0.32	0.040	150	2.3	25
26: 16244	0.63	< 0.8	0.7	< 0.5	6.4	650	0.03	0.39	26	3.6	13
27: 16246	0.30	< 0.8	< 0.7	< 0.5	3.2	29	< 0.02	0.007	150	2.4	56
28: 16248	0.27	< 0.8	< 0.7	< 0.5	4.1	590	0.05	0.018	190	2.6	52
29: 16250	0.47	< 0.8	< 0.7	< 0.5	6.3	450	0.04	0.13	200	4.4	84
30: 16252	1.4	< 0.8	< 0.7	1.6	3.2	1300	0.04	0.86	65	2.9	96
31: 16254	1.9	< 0.8	< 0.7	4.0	5.6	1400	0.04	1.5	89	4.4	120
32: 16256	2.3	< 0.8	< 0.7	1.2	3.4	620	0.10	0.14	78	1.7	53
33: 16258	4.0	< 0.8	< 0.7	2.1	6.6	1000	0.22	0.39	45	4.1	65
34: 16260	1.8	< 0.8	< 0.7	2.0	4.8	750	0.08	0.56	94	3.6	81
35: 16262	1.2	< 0.8	1.2	< 0.5	2.8	21	< 0.02	0.064	< 1	1.6	5.9
36: 16264	3.8	< 0.8	< 0.7	1.7	6.5	520	0.04	0.42	130	3.5	100
37: 16266	1.2	< 0.8	0.8	< 0.5	12	48	< 0.02	0.060	86	1.8	5.2
38: 16268	0.93	< 0.8	< 0.7	0.8	2.8	100	< 0.02	0.79	120	9.6	81
39: 16270	2.5	< 0.8	< 0.7	0.6	3.1	130	< 0.02	0.18	94	4.1	55
40: 16272	1.5	< 0.8	< 0.7	< 0.5	2.7	150	0.05	0.71	150	6.8	84
41: 16274	22	< 0.8	1.2	0.7	4.9	390	< 0.02	1.3	110	6.5	63
42: 16276	2.5	< 0.8	0.9	< 0.5	0.65	19	< 0.02	0.083	2	0.57	11
43: 16278	3.5	2.0	< 0.7	< 0.5	0.70	21	< 0.02	0.44	< 1	3.9	7.6
44: 16280	3.6	< 0.8	0.7	< 0.5	0.44	15	< 0.02	0.20	3	0.87	9.3
45: 16282	2.6	< 0.8	< 0.7	< 0.5	1.1	74	0.02	0.37	8	3.2	13
46: 16284	1.4	< 0.8	< 0.7	< 0.5	2.1	24	< 0.02	1.3	4	3.4	32
47: 16286	1.9	< 0.8	0.8	0.6	2.5	26	< 0.02	1.2	5	2.3	28
48: 16288	0.91	< 0.8	< 0.7	< 0.5	2.7	260	0.04	1.3	30	2.8	34
49: 16290	7.7	< 0.8	< 0.7	1.0	62	730	< 0.02	5.6	89	17	92
50: 16292	3.5	< 0.8	< 0.7	0.9	3.1	130	< 0.02	1.2	68	4.6	47
51: 16294	3.5	< 0.8	< 0.7	0.6	3.2	400	< 0.02	1.6	75	2.3	25

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SGS Canada Inc.
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LR Report : **CA11409-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
52: 16296	2.1	< 0.8	< 0.7	1.4	0.71	650	< 0.02	0.59	30	1.7	28
53: 16298	1.7	< 0.8	< 0.7	0.9	5.0	430	0.03	0.62	30	1.5	35
54: 16300	2.3	< 0.8	< 0.7	2.1	3.6	1600	0.14	1.2	69	2.5	59
55: 16302	7.6	< 0.8	< 0.7	1.1	26	2400	0.47	2.9	32	7.2	41
56: 16304	8.1	< 0.8	< 0.7	2.1	19	3100	0.64	1.3	50	3.7	13
57: 16306	13	< 0.8	< 0.7	2.3	12	1600	0.58	0.63	29	2.1	34
58: 16308	8.6	< 0.8	< 0.7	1.5	16	3200	0.50	2.0	41	5.1	23
59-DUP: 16202	6.8	< 0.8	< 0.7	< 0.5	39	1800	0.09	< 0.002	73	3.8	30
60-DUP: 16220	1.4	< 0.8	< 0.7	< 0.5	0.98	390	0.02	0.37	55	1.6	19
61-DUP: 16240	1.8	< 0.8	0.8	< 0.5	15	1300	< 0.02	0.067	97	6.1	36
62-DUP: 16260	2.0	< 0.8	< 0.7	2.1	4.9	780	0.09	0.59	94	3.7	84
63-DUP: 16270	2.6	< 0.8	< 0.7	0.5	3.0	110	< 0.02	0.18	94	4.1	55
64-DUP: 16280	3.5	< 0.8	< 0.7	< 0.5	0.45	16	< 0.02	0.19	3	0.85	8.2
65-DUP: 16308	8.1	< 0.8	< 0.7	1.5	16	3200	0.48	1.1	41	5.0	25

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Thursday, November 17, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11412-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
3: Analysis Approval Date	16-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11
4: Analysis Approval Time	09:15	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38
5: 16310	< 0.1	< 0.02	0.03	20000	0.7	85	0.76	< 0.09	1400	0.02	7.1
6: 16312	< 0.1	< 0.02	0.07	29000	0.6	86	0.69	< 0.09	860	< 0.02	13
7: 16314	< 0.1	< 0.02	0.06	26000	< 0.5	260	0.42	0.21	3000	0.03	12
8: 16316	< 0.1	< 0.02	0.15	40000	4.3	8.1	0.76	0.20	2000	< 0.02	18
9: 16318	< 0.1	< 0.02	0.16	61000	2.2	0.78	0.92	0.51	2500	0.02	34
10: 16320	< 0.1	< 0.02	0.21	61000	3.9	0.98	1.9	0.30	2100	0.02	37
11: 16322	< 0.1	< 0.02	0.10	73000	1.1	0.82	0.80	0.20	2400	0.03	20
12: 16324	< 0.1	< 0.02	< 0.01	1500	0.9	2.4	0.11	< 0.09	1300	< 0.02	2.5
13: 16326	< 0.1	< 0.02	0.01	1700	49	2.1	0.27	< 0.09	110000	0.13	6.2
14: 16328	< 0.1	< 0.02	0.80	4100	260	2.2	0.44	0.28	12000	0.03	51
15: 16330	< 0.1	< 0.02	0.06	1700	7.5	1.1	0.21	< 0.09	4100	0.04	18
16: 16332	< 0.1	< 0.02	0.09	1400	4.5	1.4	0.20	< 0.09	8500	< 0.02	6.6
17: 16334	< 0.1	< 0.02	0.68	8600	17	2.0	0.60	0.31	440	0.02	10
18: 16336	< 0.1	< 0.02	0.06	40000	6.0	20	1.1	0.16	2400	< 0.02	14
19: 16338	< 0.1	< 0.02	0.18	23000	< 0.5	26	0.03	0.12	4100	0.02	13
20: 16364	< 0.1	0.03	0.20	19000	< 0.5	8.6	0.05	0.17	22000	0.08	13
21: 16366	< 0.1	< 0.02	0.14	18000	< 0.5	7.8	0.03	0.16	27000	0.04	26
22: 16368	< 0.1	< 0.02	0.08	35000	< 0.5	49	0.06	< 0.09	35000	0.04	20
23: 16370	< 0.1	< 0.02	0.08	31000	< 0.5	63	0.17	0.12	17000	0.07	23

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LR Report : **CA11412-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
24: 16372	< 0.1	< 0.02	0.07	25000	< 0.5	71	0.06	< 0.09	17000	0.04	25
25: 16374	< 0.1	< 0.02	0.03	18000	< 0.5	170	0.06	< 0.09	8700	< 0.02	18
26: 16376	< 0.1	< 0.02	0.02	21000	< 0.5	180	< 0.02	< 0.09	5000	< 0.02	19
27: 16340	< 0.1	< 0.02	0.16	44000	1.4	84	0.21	< 0.09	530	< 0.02	40
28: 16378	< 0.1	< 0.02	0.25	14000	0.6	130	0.02	< 0.09	6500	0.07	13
29: 16380	< 0.1	< 0.02	0.07	17000	< 0.5	120	0.02	< 0.09	10000	0.02	13
30: 16342	< 0.1	< 0.02	0.04	32000	< 0.5	160	0.57	< 0.09	1300	0.05	16
31: 16344	< 0.1	< 0.02	0.04	64000	< 0.5	1200	1.7	< 0.09	810	0.03	32
32: 16346	< 0.1	< 0.02	< 0.01	64000	< 0.5	15	3.5	< 0.09	400	< 0.02	23
33: 16348	< 0.1	0.04	0.37	3500	0.6	3.4	0.82	0.16	2200	0.05	3.0
34: 16350	< 0.1	0.22	0.40	45000	1.3	490	1.3	0.17	2400	0.18	15
35: 16352	< 0.1	0.02	0.07	28000	< 0.5	310	1.2	< 0.09	2000	0.18	7.9
36: 16354	< 0.1	< 0.02	0.07	26000	< 0.5	450	0.56	< 0.09	1400	0.08	10
37: 16356	< 0.1	< 0.02	0.06	32000	< 0.5	280	1.4	< 0.09	1500	0.15	12
38: 16358	< 0.1	< 0.02	0.11	45000	< 0.5	540	0.21	< 0.09	1700	0.14	12
39: 16360	< 0.1	< 0.02	0.06	36000	< 0.5	290	0.52	< 0.09	1700	0.06	14
40: 16362	< 0.1	< 0.02	0.03	45000	< 0.5	850	0.36	< 0.09	1300	0.04	16
41: 16382	< 0.1	< 0.02	0.15	2200	14	2.8	0.29	0.21	4900	0.04	17
42: 16384	< 0.1	< 0.02	0.24	11000	7.5	3.4	0.56	0.30	830	0.02	13
43: 16386	< 0.1	< 0.02	0.11	29000	0.6	660	0.68	0.80	1100	< 0.02	4.3
44: 16388	< 0.1	< 0.02	0.13	73000	0.6	600	2.0	0.41	2200	< 0.02	7.0
45: 16390	< 0.1	1.4	0.57	30000	< 0.5	300	0.69	0.47	1700	< 0.02	8.3
46: 16392	< 0.1	< 0.02	0.01	23000	< 0.5	180	0.81	< 0.09	1800	< 0.02	6.6
47: 16394	< 0.1	< 0.02	0.11	13000	< 0.5	170	0.22	0.09	2700	0.02	7.2
48: 16396	< 0.1	< 0.02	0.01	76000	< 0.5	61	1.6	< 0.09	1400	< 0.02	40
49: 16398	< 0.1	< 0.02	0.02	80000	< 0.5	2.8	1.9	< 0.09	1200	< 0.02	35
50: 16400	< 0.1	< 0.02	0.22	48000	1.4	32	1.0	< 0.09	1000	0.03	41
51: 16402	< 0.1	< 0.02	0.20	35000	7.2	41	0.94	< 0.09	3200	< 0.02	41
52: 16404	< 0.1	< 0.02	0.03	81000	< 0.5	43	2.5	0.10	1300	< 0.02	38
53: 16406	< 0.1	< 0.02	0.03	70000	5.4	2.9	0.49	< 0.09	310	< 0.02	63
54-DUP: 16310	< 0.1	< 0.02	0.02	19000	< 0.5	73	0.78	< 0.09	1400	0.03	6.4
55-DUP: 16332	< 0.1	< 0.02	0.09	1500	4.1	1.6	0.38	< 0.09	9400	< 0.02	5.9
56-DUP: 16374	< 0.1	< 0.02	0.02	19000	< 0.5	170	0.06	< 0.09	9500	0.02	17
57-DUP: 16344	< 0.1	< 0.02	0.03	66000	< 0.5	1300	1.6	< 0.09	820	0.03	32
58-DUP: 16350	< 0.1	< 0.02	0.32	45000	1.0	500	1.3	0.16	2400	0.17	14
59-DUP: 16406	< 0.1	< 0.02	0.03	73000	5.3	3.1	0.50	< 0.09	310	< 0.02	65

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LR Report : **CA11412-OCT11**

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Environmental Services, Analytical

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Thursday, November 17, 2011

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Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11412-OCT11**
Reference: PO13012

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CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
3: Analysis Approval Date	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11
4: Analysis Approval Time	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38
5: 16310	110	3.7	35000	6900	12	11000	170	2.2	140	9.0	570
6: 16312	88	8.7	49000	11000	19	19000	560	1.7	240	34	210
7: 16314	130	32	41000	18000	22	17000	580	1.7	470	30	1200
8: 16316	340	21	170000	360	25	50000	820	0.8	87	140	630
9: 16318	720	51	200000	66	32	84000	1200	1.5	97	390	570
10: 16320	510	53	200000	100	37	71000	1100	0.7	130	340	490
11: 16322	430	41	190000	93	28	73000	510	2.9	110	200	660
12: 16324	22	2.3	500000	87	< 2	11000	250	0.4	87	7.4	440
13: 16326	10	3.9	360000	96	< 2	45000	7700	1.3	110	8.5	9
14: 16328	35	110	650000	100	< 2	8000	4700	20	88	88	93
15: 16330	12	9.3	640000	61	< 2	9100	12000	1.6	63	29	3
16: 16332	22	15	660000	59	< 2	4200	3600	2.5	53	16	23
17: 16334	49	51	460000	70	< 2	11000	6000	25	57	23	29
18: 16336	210	6.1	61000	880	19	39000	530	2.6	120	84	1000
19: 16338	410	50	23000	1800	16	26000	210	1.1	190	83	1800
20: 16364	70	140	11000	500	4	3000	280	0.6	2400	34	270
21: 16366	70	160	25000	1000	6	4700	510	0.9	1700	68	240
22: 16368	120	110	24000	4400	12	7800	640	0.6	2400	74	260
23: 16370	69	42	38000	12000	22	13000	1000	1.8	2000	110	380

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LR Report : **CA11412-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
24: 16372	96	140	41000	15000	14	12000	720	0.6	1400	75	300
25: 16374	31	100	30000	7800	17	11000	160	0.8	1700	15	470
26: 16376	91	17	24000	11000	27	24000	200	0.4	1100	79	120
27: 16340	310	120	79000	14000	20	25000	180	3.0	460	160	180
28: 16378	76	150	15000	4100	14	16000	130	0.3	930	63	130
29: 16380	70	120	15000	4500	13	13000	140	0.5	1900	62	95
30: 16342	84	4.2	39000	18000	43	19000	300	1.0	740	85	470
31: 16344	100	74	73000	16000	47	53000	400	0.5	580	91	290
32: 16346	100	28	85000	290	23	57000	420	0.3	74	74	150
33: 16348	32	39	620000	130	< 2	11000	18000	8.4	150	7.0	880
34: 16350	70	64	95000	21000	12	23000	320	4.4	300	16	1100
35: 16352	75	4.1	41000	20000	9	15000	230	69	290	9.3	960
36: 16354	72	6.5	42000	19000	9	13000	250	1.2	370	15	650
37: 16356	82	4.0	44000	24000	11	19000	280	1.6	520	33	680
38: 16358	66	13	66000	34000	12	25000	410	11	780	34	760
39: 16360	58	5.1	51000	27000	12	20000	280	2.2	580	32	760
40: 16362	96	4.7	61000	33000	13	27000	460	3.3	770	44	570
41: 16382	30	27	700000	190	< 2	4600	8000	1.1	98	38	< 2
42: 16384	75	50	590000	200	4	11000	2400	3.7	120	53	27
43: 16386	95	19	44000	17000	10	16000	140	2.5	470	7.3	440
44: 16388	25	45	95000	26000	39	48000	410	1.5	700	6.2	690
45: 16390	93	190	39000	19000	11	22000	230	8.7	480	8.0	740
46: 16392	77	4.1	36000	13000	11	17000	250	2.8	380	8.1	810
47: 16394	79	31	28000	3800	10	10000	430	1.4	450	7.9	770
48: 16396	170	67	92000	6400	30	72000	1100	0.3	200	140	390
49: 16398	140	34	89000	170	17	100000	1800	0.1	81	93	260
50: 16400	230	150	72000	2600	28	73000	940	0.4	150	150	220
51: 16402	220	100	39000	4000	28	41000	620	0.6	630	150	330
52: 16404	210	81	130000	2500	21	94000	2200	0.3	180	100	320
53: 16406	2400	66	90000	160	8	75000	570	0.2	130	460	23
54-DUP: 16310	100	3.5	34000	5800	12	11000	150	2.1	120	8.5	550
55-DUP: 16332	33	15	720000	68	< 2	4700	5000	2.5	54	15	24
56-DUP: 16374	30	100	31000	8000	17	12000	160	0.8	1700	15	500
57-DUP: 16344	100	75	75000	16000	46	55000	420	0.6	590	91	310
58-DUP: 16350	71	63	95000	21000	12	23000	320	4.3	300	16	1100
59-DUP: 16406	2500	66	93000	160	8	78000	580	0.2	160	460	25

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LR Report : **CA11412-OCT11**

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CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
3: Analysis Approval Date	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11
4: Analysis Approval Time	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38	11:38
5: 16310	1.7	< 0.8	< 0.7	< 0.5	4.0	640	0.13	2.1	14	5.4	12
6: 16312	1.6	< 0.8	< 0.7	< 0.5	3.9	550	0.23	2.0	20	2.2	27
7: 16314	1.9	< 0.8	< 0.7	0.6	5.4	2400	0.33	2.6	31	12	47
8: 16316	2.8	< 0.8	< 0.7	1.7	4.5	220	< 0.02	1.0	63	2.6	40
9: 16318	2.2	< 0.8	< 0.7	0.8	5.8	97	< 0.02	0.89	60	2.4	46
10: 16320	3.9	< 0.8	< 0.7	1.3	10	140	< 0.02	1.4	74	3.9	41
11: 16322	2.4	< 0.8	< 0.7	0.6	8.9	210	< 0.02	1.2	69	2.2	60
12: 16324	0.91	< 0.8	< 0.7	< 0.5	3.5	20	< 0.02	0.038	2	2.2	5.1
13: 16326	2.0	< 0.8	0.8	< 0.5	23	58	< 0.02	0.049	5	5.2	7.1
14: 16328	7.6	< 0.8	3.5	0.6	4.6	180	0.28	0.19	28	5.9	17
15: 16330	1.1	< 0.8	0.9	< 0.5	2.2	63	< 0.02	0.050	7	2.3	26
16: 16332	3.7	< 0.8	0.8	< 0.5	3.0	47	< 0.02	0.033	8	3.4	22
17: 16334	7.1	< 0.8	1.1	1.5	2.1	210	0.11	0.93	23	3.4	13
18: 16336	2.4	< 0.8	< 0.7	< 0.5	6.3	150	0.02	1.6	43	5.2	29
19: 16338	2.4	< 0.8	< 0.7	< 0.5	8.5	190	0.04	1.9	51	7.5	22
20: 16364	1.9	< 0.8	< 0.7	< 0.5	39	1200	< 0.02	0.004	27	3.9	15
21: 16366	1.2	< 0.8	2.6	< 0.5	30	760	0.04	0.003	28	4.2	14
22: 16368	1.4	< 0.8	0.8	< 0.5	23	1700	0.10	< 0.002	55	3.7	25
23: 16370	2.5	< 0.8	< 0.7	0.5	11	2300	0.19	1.1	70	4.8	54

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LR Report : **CA11412-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
24: 16372	1.1	< 0.8	< 0.7	< 0.5	10	2800	0.24	0.27	92	4.1	55
25: 16374	0.39	< 0.8	< 0.7	< 0.5	22	1900	0.26	0.015	110	5.4	24
26: 16376	2.4	< 0.8	< 0.7	< 0.5	8.4	1400	0.55	< 0.002	47	0.87	33
27: 16340	4.9	< 0.8	< 0.7	0.6	9.1	1600	0.28	0.12	140	1.4	16
28: 16378	2.4	< 0.8	< 0.7	< 0.5	9.1	850	0.14	0.008	26	0.94	16
29: 16380	2.7	< 0.8	< 0.7	< 0.5	34	790	0.10	0.010	25	1.1	16
30: 16342	5.2	< 0.8	< 0.7	0.6	7.9	1800	0.27	1.1	47	2.4	50
31: 16344	7.9	< 0.8	< 0.7	< 0.5	2.4	1600	0.41	0.039	120	1.3	52
32: 16346	0.34	< 0.8	< 0.7	< 0.5	0.94	210	< 0.02	0.008	96	0.69	38
33: 16348	8.0	< 0.8	0.8	< 0.5	4.6	59	< 0.02	0.11	6	3.7	6.4
34: 16350	26	< 0.8	< 0.7	2.2	8.0	3000	0.55	2.4	86	5.1	18
35: 16352	9.3	< 0.8	< 0.7	0.8	4.4	1900	0.50	5.3	18	9.3	26
36: 16354	9.1	< 0.8	< 0.7	0.7	3.7	2200	0.56	4.4	22	8.1	35
37: 16356	13	< 0.8	< 0.7	0.8	3.4	2600	0.45	5.9	45	7.3	14
38: 16358	17	< 0.8	< 0.7	1.5	2.6	3600	0.72	2.8	65	5.5	9.3
39: 16360	11	< 0.8	< 0.7	1.0	4.0	2900	0.64	3.1	67	5.2	9.9
40: 16362	11	< 0.8	< 0.7	1.4	3.0	3600	0.80	3.1	90	4.4	12
41: 16382	2.6	< 0.8	< 0.7	0.6	2.0	110	0.10	0.12	10	2.9	35
42: 16384	6.6	< 0.8	< 0.7	0.8	2.0	470	0.05	0.57	27	2.6	18
43: 16386	20	< 0.8	< 0.7	1.3	7.6	2000	0.38	1.5	20	4.1	7.1
44: 16388	24	< 0.8	< 0.7	1.8	13	1700	0.48	2.3	37	5.4	46
45: 16390	6.4	< 0.8	< 0.7	1.1	3.2	2200	0.37	1.1	32	4.8	41
46: 16392	4.5	< 0.8	< 0.7	0.5	3.5	1300	0.25	1.8	22	6.6	37
47: 16394	3.8	< 0.8	< 0.7	< 0.5	7.4	710	0.11	1.4	18	11	39
48: 16396	1.2	< 0.8	< 0.7	< 0.5	4.0	600	0.14	0.031	160	4.2	66
49: 16398	2.8	< 0.8	< 0.7	< 0.5	4.7	110	< 0.02	0.031	120	1.8	83
50: 16400	2.9	< 0.8	0.8	0.5	3.7	26	0.05	0.027	190	2.3	42
51: 16402	3.9	< 0.8	1.0	< 0.5	11	28	0.08	0.021	180	2.5	27
52: 16404	1.2	< 0.8	< 0.7	0.7	4.8	1000	0.05	0.051	170	2.2	85
53: 16406	0.57	< 0.8	< 0.7	< 0.5	2.4	340	< 0.02	0.052	61	0.67	51
54-DUP: 16310	1.7	< 0.8	< 0.7	< 0.5	3.9	460	0.12	2.0	13	5.4	12
55-DUP: 16332	3.9	< 0.8	< 0.7	< 0.5	3.3	50	< 0.02	0.045	9	2.8	23
56-DUP: 16374	0.65	< 0.8	1.0	< 0.5	25	2000	0.26	0.033	110	6.3	25
57-DUP: 16344	8.2	< 0.8	< 0.7	< 0.5	2.5	1700	0.42	0.035	120	1.4	53
58-DUP: 16350	26	< 0.8	< 0.7	2.2	8.3	3000	0.56	2.4	85	5.4	18
59-DUP: 16406	0.58	< 0.8	< 0.7	< 0.5	2.5	370	< 0.02	0.052	68	0.69	52

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LR Report : **CA11412-OCT11**

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Thursday, November 17, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11415-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
3: Analysis Approval Date	16-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11
4: Analysis Approval Time	09:17	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42
5: 16408	< 0.1	< 0.02	0.08	65000	1.4	0.70	0.32	< 0.09	370	< 0.02	18
6: 16410	< 0.1	< 0.02	0.07	84000	0.9	62	3.3	< 0.09	4700	0.05	26
7: 16412	< 0.1	< 0.02	0.04	40000	< 0.5	167	0.73	< 0.09	950	0.06	16
8: 16414	< 0.1	< 0.02	0.07	79000	0.7	22	1.8	< 0.09	1600	0.03	22
9: 16416	< 0.1	< 0.02	0.05	79000	0.6	115	2.6	< 0.09	1500	< 0.02	24
10: 16418	< 0.1	0.03	0.18	77000	3.0	3.0	1.6	< 0.09	1300	< 0.02	21
11: 16420	< 0.1	< 0.02	0.49	45000	130	1.5	1.5	0.90	730	0.02	92
12: 16422	< 0.1	< 0.02	0.14	81000	3.2	7.8	2.7	0.10	1200	0.04	16
13: 16424	< 0.1	< 0.02	0.22	48000	6.3	25	1.8	0.14	1500	0.11	22
14: 16426	< 0.1	< 0.02	0.26	73000	0.9	12	2.9	0.14	650	0.13	17
15: 16428	< 0.1	< 0.02	0.20	79000	12	4.3	3.1	0.35	1400	0.04	17
16: 16430	< 0.1	0.04	0.21	80000	< 0.5	6.5	2.6	0.37	910	0.08	10
17: 16432	< 0.1	< 0.02	0.06	4100	16	4.5	0.29	< 0.09	63000	< 0.02	2.8
18: 16434	< 0.1	< 0.02	0.16	72000	0.5	9.5	3.7	0.11	910	0.05	5.5
19: 16436	< 0.1	0.16	0.20	3200	13	1.8	0.23	0.33	74000	0.09	10
20: 16438	< 0.1	< 0.02	0.10	5300	4.6	8.3	0.43	0.13	4500	< 0.02	5.8
21: 16440	< 0.1	< 0.02	0.26	62000	1.2	2.5	4.7	< 0.09	6000	0.05	24
22: 16442	< 0.1	< 0.02	0.10	5700	2.2	1.7	0.60	0.22	2200	< 0.02	5.2
23: 16444	< 0.1	< 0.02	0.12	75000	0.8	1.1	2.9	< 0.09	7200	0.07	25

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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11415-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
24: 16446	< 0.1	< 0.02	0.27	14000	2.4	1.1	0.73	0.27	3500	< 0.02	8.1
25: 16448	< 0.1	0.07	0.55	53000	2.4	30	2.9	0.30	660	0.02	10
26: 16450	< 0.1	0.08	0.60	32000	3.9	0.99	1.1	0.49	490	0.06	29
27: 16452	< 0.1	< 0.02	0.48	33000	0.8	15	1.5	0.32	360	< 0.02	23
28: 16454	< 0.1	< 0.02	0.23	79000	< 0.5	5.6	1.2	0.35	430	0.09	35
29: 16456	< 0.1	< 0.02	0.57	22000	26	0.45	0.92	0.57	160	< 0.02	31
30: 16458	< 0.1	< 0.02	0.04	61000	0.8	2.6	1.4	0.14	150	< 0.02	24
31: 16460	< 0.1	< 0.02	0.06	50000	< 0.5	1.6	1.1	< 0.09	300	0.02	19
32: 16462	< 0.1	0.14	0.10	3000	0.7	1.9	0.54	1.0	16000	< 0.02	4.2
33: 16464	< 0.1	< 0.02	0.01	53000	< 0.5	1400	1.0	0.10	6300	0.12	11
34: 16466	< 0.1	< 0.02	0.07	71000	3.5	410	3.6	< 0.09	2100	< 0.02	21
35: 16468	< 0.1	< 0.02	0.06	55000	< 0.5	490	0.65	< 0.09	1100	< 0.02	5.2
36: 16470	< 0.1	< 0.02	1.3	48000	0.6	7.5	2.7	< 0.09	750	0.08	6.9
37: 16472	< 0.1	0.03	0.16	61000	140	3.8	1.6	0.35	4400	0.02	25
38: 16474	< 0.1	< 0.02	0.02	2500	0.8	1.5	0.19	< 0.09	1100	< 0.02	1.7
39: 16476	< 0.1	< 0.02	0.01	2700	2.7	2.5	0.21	< 0.09	1300	< 0.02	1.5
40: 16478	< 0.1	< 0.02	0.11	6100	1.7	1.7	0.38	0.10	1200	< 0.02	7.8
41: 16480	< 0.1	< 0.02	0.04	29000	< 0.5	2.6	0.76	< 0.09	750	< 0.02	11
42: 16482	< 0.1	< 0.02	0.22	52000	4.2	17	2.4	0.94	480	< 0.02	8.1
43: 16484	< 0.1	< 0.02	0.07	24000	0.7	28	0.83	0.31	630	< 0.02	11
44: 16486	< 0.1	< 0.02	0.17	56000	0.5	3.2	0.87	0.29	430	< 0.02	20
45: 16488	< 0.1	< 0.02	0.07	60000	0.5	39	1.6	0.10	600	< 0.02	23
46: 16490	< 0.1	< 0.02	0.13	7000	< 0.5	0.35	0.34	0.21	87	0.02	15
47: 16492	< 0.1	0.02	0.07	36000	1.0	1.7	0.84	0.09	490	0.07	75
48: 16494	< 0.1	< 0.02	0.08	49000	< 0.5	120	2.0	9.1	620	0.03	9.4
49: 16496	< 0.1	< 0.02	0.07	48000	< 0.5	100	0.95	0.57	380	0.03	14
50: 16498	< 0.1	< 0.02	0.02	3900	59	2.6	0.23	< 0.09	2400	< 0.02	2.7
51: 16500	< 0.1	< 0.02	0.16	64000	3.2	1.5	0.99	0.16	2400	< 0.02	22
52: 16502	< 0.1	< 0.02	0.12	50000	3.9	3.9	0.87	0.14	770	< 0.02	15
53: 16504	< 0.1	< 0.02	0.14	27000	2.6	16	0.94	0.14	380	< 0.02	17
54: 16506	< 0.1	< 0.02	0.13	44000	1.4	2.5	1.7	0.19	460	< 0.02	21
55: 16508	< 0.1	< 0.02	0.19	60000	2.2	1.1	0.88	0.31	810	< 0.02	33
56: 16510	< 0.1	< 0.02	0.20	31000	0.6	4.0	1.0	0.29	380	< 0.02	15
57-DUP: 16408	< 0.1	< 0.02	0.09	63000	1.3	0.70	0.32	< 0.09	370	< 0.02	19
58-DUP: 16430	< 0.1	0.06	0.20	80000	< 0.5	6.5	2.4	0.37	940	0.06	10
59-DUP: 16448	< 0.1	0.11	0.57	55000	2.6	32	3.0	0.31	700	< 0.02	11

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LR Report : **CA11415-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
60-DUP: 16470	< 0.1	< 0.02	1.2	49000	< 0.5	7.9	2.7	< 0.09	770	0.08	6.9
61-DUP: 16510	< 0.1	< 0.02	0.20	31000	0.8	3.9	1.0	0.28	360	< 0.02	14

Brian Graham B.Sc.
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Thursday, November 17, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

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Toronto, ON, M5H 1T1
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Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11415-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
3: Analysis Approval Date	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11
4: Analysis Approval Time	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42
5: 16408	260	43	160000	130	11	77000	1400	1.2	100	96	48
6: 16410	300	36	160000	3500	12	94000	3800	0.9	160	110	1900
7: 16412	620	15	68000	11000	8	43000	1200	1.8	420	91	280
8: 16414	880	29	140000	2400	12	120000	4000	0.7	160	91	440
9: 16416	1200	4.8	98000	8700	15	93000	3700	0.6	350	110	370
10: 16418	1300	51	160000	370	17	94000	3300	0.7	140	77	320
11: 16420	620	66	310000	220	11	59000	2300	2.3	150	150	120
12: 16422	630	5.4	130000	830	17	99000	4100	6.2	150	93	250
13: 16424	73	13	60000	1400	9	65000	2700	0.5	210	76	520
14: 16426	10	2.2	88000	950	15	95000	4300	0.1	170	89	81
15: 16428	170	20	140000	510	15	98000	4100	3.0	160	77	340
16: 16430	310	7.6	160000	640	21	95000	4100	15	150	62	100
17: 16432	16	6.9	430000	1600	< 2	30000	14000	2.8	270	18	1400
18: 16434	14	1.5	110000	830	15	89000	3200	2.0	140	12	210
19: 16436	12	44	460000	82	< 2	33000	8700	0.7	99	20	620
20: 16438	17	19	330000	870	3	17000	930	1.1	290	15	1000
21: 16440	330	26	180000	200	45	73000	1400	1.5	110	120	2300
22: 16442	21	17	660000	130	6	8700	450	0.5	170	11	740
23: 16444	410	1.8	180000	110	33	79000	1100	1.1	110	150	2900

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LR Report : **CA11415-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
24: 16446	59	67	590000	95	10	18000	600	0.5	130	12	1300
25: 16448	51	8.2	130000	3300	17	59000	1500	2.2	200	31	130
26: 16450	54	130	390000	110	17	37000	1200	1.5	110	74	39
27: 16452	420	50	85000	920	18	32000	600	6.8	210	190	14
28: 16454	750	46	160000	1100	13	69000	410	0.7	95	270	71
29: 16456	170	83	530000	240	< 2	17000	1400	3.8	150	67	< 2
30: 16458	510	1.2	130000	240	7	55000	320	1.9	73	160	32
31: 16460	500	18	380000	1100	2	39000	570	1.3	120	170	28
32: 16462	20	30	530000	92	< 2	12000	6200	1.5	110	7.6	140
33: 16464	68	3.3	89000	26000	13	32000	120	1.1	600	19	2900
34: 16466	180	21	99000	14000	32	65000	440	2.0	370	70	830
35: 16468	43	2.1	57000	20000	38	44000	440	2.3	570	6.4	420
36: 16470	170	3.9	78000	3800	20	69000	1100	0.6	190	48	42
37: 16472	55	6.2	160000	520	40	96000	350	1.9	220	130	960
38: 16474	17	1.2	480000	100	3	13000	330	0.5	100	3.8	300
39: 16476	18	4.3	490000	130	2	12000	380	0.4	130	3.7	410
40: 16478	7.6	8.7	470000	83	7	14000	470	0.7	64	11	210
41: 16480	170	4.5	51000	380	21	25000	460	1.2	190	72	210
42: 16482	22	22	130000	3100	16	64000	1600	1.4	110	15	57
43: 16484	56	18	42000	6800	8	17000	520	1.4	120	37	220
44: 16486	290	150	160000	290	9	56000	1300	0.4	65	160	61
45: 16488	220	14	150000	1100	14	57000	1000	0.9	66	230	64
46: 16490	390	51	47000	87	3	4500	130	1.1	99	250	7
47: 16492	600	24	110000	250	19	40000	680	4.2	72	340	11
48: 16494	53	12	54000	14000	29	38000	500	1.7	180	30	25
49: 16496	59	26	63000	16000	16	39000	380	2.9	170	38	36
50: 16498	8.2	2.3	480000	120	3	8400	160	0.8	92	5.8	870
51: 16500	460	71	190000	100	20	92000	2000	0.4	130	150	610
52: 16502	170	27	170000	100	15	63000	1700	0.3	110	57	87
53: 16504	180	41	70000	240	55	21000	330	1.5	96	120	18
54: 16506	390	21	220000	170	32	38000	940	0.4	120	180	10
55: 16508	450	40	270000	120	18	74000	1300	0.3	95	240	24
56: 16510	220	23	110000	240	23	28000	560	1.1	100	120	< 2
57-DUP: 16408	270	44	140000	130	12	75000	1400	1.2	99	97	50
58-DUP: 16430	300	7.5	160000	640	21	96000	4100	14	160	61	140
59-DUP: 16448	54	8.9	130000	3500	19	62000	1600	2.3	210	31	120

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11415-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
60-DUP: 16470	170	3.8	79000	3800	23	70000	1100	0.5	190	48	47
61-DUP: 16510	210	23	110000	240	22	28000	540	1.0	100	110	< 2

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Thursday, November 17, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11415-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
3: Analysis Approval Date	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11	17-Nov-11
4: Analysis Approval Time	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42	11:42
5: 16408	0.48	< 0.8	< 0.7	< 0.5	1.8	87	< 0.02	0.31	110	3.5	63
6: 16410	2.1	< 0.8	< 0.7	2.3	8.3	1800	0.09	0.65	110	6.4	58
7: 16412	8.1	< 0.8	< 0.7	1.2	5.4	1600	0.31	0.58	47	3.0	39
8: 16414	2.1	< 0.8	< 0.7	1.3	6.0	1100	0.06	0.43	57	2.6	62
9: 16416	3.6	< 0.8	< 0.7	1.8	6.8	2100	0.20	0.66	62	3.3	54
10: 16418	3.2	< 0.8	1.0	1.4	3.5	460	0.05	0.88	40	3.8	71
11: 16420	9.2	< 0.8	5.9	0.9	3.3	400	0.31	1.3	62	3.1	55
12: 16422	2.1	< 0.8	< 0.7	2.6	5.0	910	0.07	1.3	63	3.9	93
13: 16424	3.8	< 0.8	0.9	1.7	4.0	500	0.04	1.8	35	5.2	110
14: 16426	6.9	< 0.8	2.0	3.3	3.8	630	0.02	1.7	7	4.6	160
15: 16428	5.0	< 0.8	1.2	2.5	3.7	920	0.06	0.61	58	4.4	120
16: 16430	2.0	< 0.8	< 0.7	2.2	4.6	420	0.03	2.2	8	4.4	56
17: 16432	1.4	< 0.8	< 0.7	< 0.5	18	15	< 0.02	0.044	2	14	5.9
18: 16434	2.0	< 0.8	< 0.7	3.6	3.0	490	< 0.02	3.0	7	6.8	54
19: 16436	2.7	< 0.8	0.9	0.7	20	95	0.02	0.076	8	6.4	6.5
20: 16438	2.6	< 0.8	0.9	< 0.5	10	110	0.02	0.28	7	4.3	8.5
21: 16440	3.0	< 0.8	< 0.7	1.2	18	130	< 0.02	2.2	79	8.2	49
22: 16442	1.8	< 0.8	< 0.7	< 0.5	3.9	130	< 0.02	0.21	11	2.7	7.6
23: 16444	2.2	< 0.8	< 0.7	1.2	23	220	< 0.02	3.4	86	10	68

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LR Report : **CA11415-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
24: 16446	4.6	< 0.8	1.3	< 0.5	5.3	200	< 0.02	0.19	34	3.5	13
25: 16448	10	< 0.8	< 0.7	1.2	18	1000	0.12	1.9	19	2.8	42
26: 16450	2.9	< 0.8	1.3	1.1	5.2	290	< 0.02	1.8	55	7.8	35
27: 16452	7.4	< 0.8	0.9	0.7	5.7	420	0.03	1.2	52	3.2	31
28: 16454	2.6	< 0.8	< 0.7	0.7	7.0	470	0.03	1.7	88	2.8	100
29: 16456	7.5	< 0.8	0.8	2.0	2.9	610	0.03	0.68	55	2.1	27
30: 16458	1.5	< 0.8	< 0.7	< 0.5	2.4	290	< 0.02	1.7	78	2.8	87
31: 16460	1.3	< 0.8	< 0.7	1.5	9.6	600	< 0.02	1.4	70	3.5	80
32: 16462	4.4	< 0.8	< 0.7	1.8	5.4	110	< 0.02	1.2	6	7.6	9.0
33: 16464	26	< 0.8	< 0.7	2.0	21	3300	0.76	2.9	67	8.8	11
34: 16466	5.9	< 0.8	< 0.7	1.8	5.1	2200	0.73	0.88	110	3.3	53
35: 16468	9.2	< 0.8	< 0.7	2.0	8.4	1800	0.72	7.6	19	6.1	38
36: 16470	2.1	< 0.8	< 0.7	2.1	9.4	350	0.10	3.4	< 1	6.4	46
37: 16472	3.6	< 0.8	< 0.7	0.7	32	220	0.02	0.66	51	2.1	45
38: 16474	1.1	< 0.8	1.0	< 0.5	2.0	26	< 0.02	0.14	6	2.6	5.9
39: 16476	1.6	< 0.8	3.7	< 0.5	3.2	27	< 0.02	0.097	5	2.4	14
40: 16478	2.6	< 0.8	< 0.7	< 0.5	4.6	96	< 0.02	0.21	11	2.2	10
41: 16480	2.0	< 0.8	< 0.7	< 0.5	22	260	< 0.02	1.9	35	5.9	20
42: 16482	5.9	< 0.8	0.8	1.0	16	940	0.15	1.4	25	2.1	27
43: 16484	4.9	< 0.8	< 0.7	0.6	14	1300	0.27	1.8	37	2.4	31
44: 16486	1.9	< 0.8	< 0.7	1.0	4.9	160	< 0.02	1.1	70	2.9	51
45: 16488	3.0	< 0.8	< 0.7	1.2	9.1	320	0.03	1.2	81	3.2	57
46: 16490	2.2	< 0.8	1.3	< 0.5	1.8	210	< 0.02	0.76	58	1.0	16
47: 16492	1.6	< 0.8	< 0.7	0.6	6.6	240	< 0.02	1.4	53	3.2	65
48: 16494	5.1	< 0.8	< 0.7	1.0	14	820	0.27	1.1	35	1.7	150
49: 16496	5.9	< 0.8	0.8	1.1	10	1700	0.26	1.4	51	1.9	63
50: 16498	1.1	< 0.8	1.0	< 0.5	7.8	100	< 0.02	0.14	6	2.1	5.0
51: 16500	2.9	< 0.8	< 0.7	0.6	23	92	< 0.02	0.66	51	3.5	56
52: 16502	2.4	< 0.8	< 0.7	0.6	5.5	100	< 0.02	1.00	78	4.3	48
53: 16504	2.9	< 0.8	< 0.7	< 0.5	8.8	120	0.02	2.1	59	2.4	16
54: 16506	2.0	< 0.8	< 0.7	1.3	6.3	200	< 0.02	0.96	59	2.8	30
55: 16508	2.3	< 0.8	< 0.7	1.4	8.4	170	< 0.02	0.80	72	3.2	56
56: 16510	2.7	< 0.8	0.8	0.6	6.5	140	0.06	0.93	51	1.9	21
57-DUP: 16408	0.67	< 0.8	< 0.7	< 0.5	2.0	84	< 0.02	0.36	110	3.7	64
58-DUP: 16430	2.2	< 0.8	< 0.7	2.2	4.7	420	0.03	2.7	7	4.4	56
59-DUP: 16448	10	< 0.8	1.2	1.3	19	1100	0.12	2.4	19	2.9	44

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LR Report : **CA11415-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
60-DUP: 16470	4.1	< 0.8	< 0.7	2.1	9.6	350	0.10	4.3	< 1	6.5	47
61-DUP: 16510	2.7	< 0.8	< 0.7	0.6	6.2	160	0.05	0.99	49	1.9	20

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Thursday, November 24, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11418-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
3: Analysis Approval Date	17-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11
4: Analysis Approval Time	17:47	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41
5: 16512	< 0.1	0.05	0.30	69000	13	1.4	0.53	0.98	400	0.03	30
6: 16514	< 0.1	< 0.02	0.03	2700	5.8	0.59	0.34	< 0.09	82000	0.17	5.1
7: 16516	< 0.1	< 0.02	0.24	64000	12	0.53	0.76	0.28	410	< 0.02	34
8: 16518	< 0.1	< 0.02	0.03	19000	1.4	140	0.31	< 0.09	1000	0.03	4.4
9: 16520	< 0.1	< 0.02	0.04	15000	1.2	180	0.29	< 0.09	1200	0.03	7.9
10: 16522	< 0.1	< 0.02	0.02	44000	6.7	37	0.41	< 0.09	1600	< 0.02	34
11: 16524	< 0.1	< 0.02	0.02	52000	1.4	120	0.53	< 0.09	1300	< 0.02	40
12: 16526	< 0.1	< 0.02	0.02	38000	16	290	0.47	< 0.09	1500	< 0.02	47
13: 16528	< 0.1	< 0.02	0.04	68000	2.2	96	0.86	< 0.09	1400	< 0.02	33
14: 16530	< 0.1	< 0.02	0.03	44000	6.8	320	0.55	< 0.09	1400	< 0.02	30
15: 16532	< 0.1	< 0.02	0.07	5900	4.4	16	0.07	< 0.09	8400	0.02	5.6
16: 16534	< 0.1	< 0.02	0.04	36000	3.0	370	0.62	< 0.09	1300	0.02	35
17: 16536	< 0.1	< 0.02	0.19	33000	1.4	400	1.0	< 0.09	1500	< 0.02	39
18: 16538	< 0.1	< 0.02	0.42	84000	8.6	24	2.3	0.19	2000	0.03	40
19: 16540	< 0.1	< 0.02	0.09	34000	1.8	230	0.41	0.09	1100	0.06	15
20: 16542	< 0.1	< 0.02	0.04	39000	3.2	150	0.72	< 0.09	1100	0.09	20
21: 16544	< 0.1	< 0.02	0.30	75000	2.4	88	1.5	0.23	2100	0.19	29
22: 16546	< 0.1	< 0.02	0.17	84000	1.2	25	4.7	0.26	1600	0.05	35

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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11418-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
23: 16548	< 0.1	< 0.02	0.07	2100	36	0.60	0.30	< 0.09	3200	0.04	5.3
24: 16550	< 0.1	< 0.02	0.06	68000	1.4	1.3	0.36	< 0.09	1300	< 0.02	20
25: 16552	< 0.1	< 0.02	0.06	42000	0.7	81	2.0	0.11	890	0.03	3.9
26: 16554	< 0.1	< 0.02	0.12	47000	< 0.5	100	2.1	0.36	890	0.06	12
27: 16556	< 0.1	< 0.02	< 0.01	24000	1.1	6.3	1.6	0.10	4800	0.06	7.7
28: 16558	< 0.1	< 0.02	0.06	2600	3.7	1.2	1.9	< 0.09	1800	< 0.02	3.8
29: 16560	< 0.1	< 0.02	< 0.01	43000	< 0.5	88	3.6	< 0.09	5400	0.04	13
30: 16562	< 0.1	< 0.02	0.09	1100	9.6	1.8	1.3	0.10	1600	< 0.02	4.6
31: 16564	< 0.1	< 0.02	< 0.01	1300	2.7	3.3	0.80	< 0.09	1000	< 0.02	1.2
32: 16566	< 0.1	< 0.02	0.08	1500	9.8	3.3	0.55	< 0.09	180	< 0.02	3.2
33: 16568	< 0.1	< 0.02	0.04	29000	1.2	170	1.2	< 0.09	3100	0.03	17
34: 16570	< 0.1	< 0.02	0.07	62000	1.4	28	1.3	0.41	2000	0.03	9.7
35: 16572	< 0.1	< 0.02	0.14	31000	16	240	2.2	0.18	1600	0.04	26
36: 16574	< 0.1	< 0.02	0.46	33000	5.5	20	0.71	0.31	1300	0.20	31
37: 16576	< 0.1	< 0.02	0.19	13000	0.7	3.4	0.08	0.17	1100	0.06	27
38: 16578	< 0.1	< 0.02	0.02	22000	< 0.5	210	1.0	0.09	910	0.04	5.4
39: 16580	< 0.1	< 0.02	0.03	29000	< 0.5	270	0.64	< 0.09	1200	< 0.02	6.7
40: 16582	< 0.1	< 0.02	0.05	22000	< 0.5	310	0.34	< 0.09	1600	< 0.02	7.5
41: 16584	< 0.1	< 0.02	0.03	25000	< 0.5	200	0.11	< 0.09	15000	0.03	27
42: 16586	< 0.1	< 0.02	0.05	18000	< 0.5	17	0.07	< 0.09	14000	0.04	11
43: 16588	< 0.1	< 0.02	0.05	23000	< 0.5	16	0.07	< 0.09	11000	0.06	13
44: 16590	< 0.1	< 0.02	0.07	21000	< 0.5	15	0.07	< 0.09	17000	0.06	11
45: 16592	< 0.1	< 0.02	0.06	26000	< 0.5	53	0.06	< 0.09	22000	0.03	27
46: 16594	< 0.1	< 0.02	0.04	31000	< 0.5	31	0.08	< 0.09	24000	0.05	25
47: 16596	< 0.1	< 0.02	0.09	23000	< 0.5	33	0.07	< 0.09	25000	0.08	19
48: 16598	< 0.1	< 0.02	0.03	26000	< 0.5	17	0.07	< 0.09	24000	0.06	13
49: 16600	< 0.1	< 0.02	0.03	43000	< 0.5	200	< 0.02	< 0.09	1200	< 0.02	45
50: 16602	< 0.1	< 0.02	0.03	38000	< 0.5	240	0.24	< 0.09	2600	< 0.02	45
51: 16604	< 0.1	< 0.02	0.08	42000	1.3	260	0.16	< 0.09	1200	0.05	41
52: 16606	< 0.1	< 0.02	0.12	50000	1.1	640	0.12	< 0.09	320	0.22	50
53: 16608	< 0.1	< 0.02	0.02	36000	< 0.5	1.2	0.66	< 0.09	75	< 0.02	19
54: 16610	< 0.1	< 0.02	0.03	16000	1.7	82	0.69	1.5	290	0.02	7.9
55: 16612	< 0.1	< 0.02	0.04	23000	0.8	30	0.99	0.28	300	0.04	4.5
56: 16614	< 0.1	< 0.02	< 0.01	22000	< 0.5	380	0.53	0.16	6300	0.04	15
57: 16616	< 0.1	< 0.02	0.03	13000	< 0.5	210	0.15	0.15	2500	< 0.02	7.1

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P.O. Box 4300 - 185 Concession St.
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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11418-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
58: 16618	< 0.1	< 0.02	0.10	49000	1.6	30	2.6	0.12	1600	< 0.02	26
59: 16620	< 0.1	< 0.02	0.20	55000	1.7	12	4.2	0.22	2500	0.03	38
60: 16622	< 0.1	< 0.02	0.16	1600	94	1.3	0.42	0.10	160	0.04	18
61-DUP: 16512	< 0.1	0.05	0.25	65000	12	1.3	0.52	0.89	350	0.03	31
62-DUP: 16530	< 0.1	< 0.02	< 0.01	44000	6.9	370	0.59	< 0.09	1300	0.02	34
63-DUP: 16546	< 0.1	< 0.02	0.15	83000	1.0	23	4.5	0.24	1400	0.05	33
64-DUP: 16562	< 0.1	< 0.02	0.10	1200	9.4	1.7	1.3	0.11	1600	< 0.02	4.6
65-DUP: 16578	< 0.1	< 0.02	0.01	23000	< 0.5	220	1.1	0.09	1100	0.04	5.6
66-DUP: 16622	< 0.1	< 0.02	0.16	2100	95	1.4	0.44	0.10	190	0.05	19

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Thursday, November 24, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11418-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
3: Analysis Approval Date	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11
4: Analysis Approval Time	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41
5: 16512	300	59	160000	140	5	56000	320	3.6	120	150	37
6: 16514	17	24	420000	54	< 2	41000	10000	1.4	74	9.1	< 2
7: 16516	420	42	180000	79	4	55000	220	2.6	85	230	60
8: 16518	120	31	38000	8900	13	8600	230	2.8	220	5.3	320
9: 16520	76	4.5	24000	4200	8	9400	180	0.8	240	17	530
10: 16522	230	32	63000	3400	13	52000	1900	0.4	68	130	270
11: 16524	220	130	80000	5300	18	61000	1800	0.3	100	120	270
12: 16526	360	13	53000	7900	33	32000	540	1.4	440	390	260
13: 16528	310	5.0	110000	4200	19	75000	2500	0.2	98	130	320
14: 16530	230	42	68000	6800	23	49000	1200	0.6	190	98	350
15: 16532	61	42	8700	1000	4	3600	190	1.8	820	15	330
16: 16534	390	51	40000	12000	12	35000	1370	0.4	160	160	400
17: 16536	510	38	40000	9500	7	25000	620	2.3	290	350	540
18: 16538	310	110	150000	1100	18	89000	3200	2.9	86	180	620
19: 16540	140	58	58000	15000	5	18000	740	2.0	370	50	410
20: 16542	220	32	63000	14000	10	20000	740	2.8	300	81	360
21: 16544	300	150	130000	3300	18	75000	3000	1.3	130	170	790
22: 16546	700	100	110000	2700	20	99000	4200	1.7	120	110	450
23: 16548	26	62	650000	91	< 2	11000	35000	2.1	100	30	650

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LR Report : **CA11418-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
24: 16550	130	25	160000	930	6	63000	570	3.0	77	52	450
25: 16552	81	5.7	66000	8200	41	29000	790	8.2	270	55	220
26: 16554	280	11	56000	12000	31	32000	560	11	300	120	190
27: 16556	170	3.4	28000	760	26	21000	420	1.6	210	44	2000
28: 16558	34	36	560000	91	3	7100	5400	3.9	87	14	630
29: 16560	170	2.1	78000	3900	16	38000	800	4.7	160	30	2300
30: 16562	31	120	490000	70	< 2	5300	380	3.1	56	5.7	550
31: 16564	25	2.6	510000	120	< 2	6600	450	1.8	79	3.3	310
32: 16566	23	4.7	550000	62	< 2	8200	410	1.7	66	3.7	12
33: 16568	300	54	49000	3900	32	22000	180	2.0	270	110	1300
34: 16570	54	34	260000	1000	36	77000	1500	17	80	30	670
35: 16572	710	34	62000	5700	22	28000	420	1.6	210	320	560
36: 16574	700	120	81000	1200	26	37000	760	16	140	340	210
37: 16576	250	68	32000	290	13	12000	340	3.9	150	460	420
38: 16578	110	7.5	38000	11000	11	14000	260	11	250	8.2	390
39: 16580	94	8.2	43000	18000	12	16000	170	2.6	370	8.8	520
40: 16582	81	6.0	34000	13000	11	13000	540	3.0	290	7.8	730
41: 16584	130	110	25000	4000	26	10000	240	0.6	1800	92	240
42: 16586	78	110	11000	1500	16	7000	190	0.6	1700	31	300
43: 16588	80	110	20000	1300	22	13000	190	0.3	1200	36	160
44: 16590	59	110	19000	1700	15	11000	310	0.5	1100	30	220
45: 16592	130	130	22000	5800	22	10000	300	0.5	1900	110	300
46: 16594	89	92	25000	2300	23	12000	430	0.4	1400	84	440
47: 16596	65	110	21000	2400	10	7900	550	0.5	1400	69	240
48: 16598	60	72	14000	1700	8	6400	370	0.5	950	37	290
49: 16600	150	120	63000	13000	19	29000	260	0.8	570	100	280
50: 16602	150	73	54000	21000	9	21000	390	1.5	640	120	1100
51: 16604	210	150	58000	17000	28	27000	230	0.5	460	110	440
52: 16606	250	120	69000	25000	56	32000	330	1.5	650	140	43
53: 16608	250	13	34000	150	6	46000	360	0.3	60	110	16
54: 16610	120	14	24000	7700	11	7400	120	4.1	200	11	88
55: 16612	74	29	29000	2400	15	27000	330	2.4	190	6.8	52
56: 16614	340	5.6	25000	11000	28	30000	430	0.7	480	110	1200
57: 16616	79	16	20000	5900	10	8800	260	0.5	210	8.8	910
58: 16618	730	31	140000	1300	36	72000	1400	1.2	120	260	360
59: 16620	1000	35	190000	1800	44	89000	1600	0.5	120	530	540

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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11418-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
60: 16622	45	46	680000	70	< 2	510	1200	45	60	41	17
61-DUP: 16512	280	57	170000	100	5	53000	310	3.9	51	150	39
62-DUP: 16530	240	46	63000	6400	24	48000	1300	0.8	220	110	350
63-DUP: 16546	680	92	90000	2300	19	113000	4200	1.5	110	100	360
64-DUP: 16562	32	120	520000	71	< 2	5000	390	3.1	58	5.7	580
65-DUP: 16578	110	7.8	43000	12000	11	15000	270	11	250	8.3	480
66-DUP: 16622	47	48	690000	84	< 2	1000	1300	46	73	42	13

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Environmental Services, Analytical

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Thursday, November 24, 2011

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Canada

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Date Rec. : 26 October 2011
LR Report: **CA11418-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
3: Analysis Approval Date	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11	24-Nov-11
4: Analysis Approval Time	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41	12:41
5: 16512	3.6	< 0.8	< 0.7	< 0.5	1.6	240	0.05	3.7	66	3.0	91
6: 16514	1.8	< 0.8	0.9	0.5	24	120	< 0.02	0.22	7	5.4	8.7
7: 16516	5.2	< 0.8	< 0.7	0.6	0.86	360	0.03	2.9	76	3.7	72
8: 16518	4.3	< 0.8	< 0.7	< 0.5	1.7	1000	0.28	1.5	2	2.3	36
9: 16520	2.8	< 0.8	< 0.7	< 0.5	2.8	370	0.09	1.8	7	3.4	23
10: 16522	0.63	< 0.8	< 0.7	< 0.5	1.5	110	0.06	0.012	150	1.9	60
11: 16524	2.4	< 0.8	< 0.7	< 0.5	1.5	840	0.09	0.053	130	2.2	48
12: 16526	1.0	< 0.8	< 0.7	< 0.5	4.2	620	0.18	0.11	91	3.7	31
13: 16528	1.4	< 0.8	< 0.7	0.5	2.0	730	0.06	0.18	100	4.1	62
14: 16530	1.3	< 0.8	< 0.7	0.6	2.8	770	0.10	0.32	120	4.3	47
15: 16532	2.1	< 0.8	0.7	< 0.5	7.0	600	< 0.02	0.93	18	3.5	12
16: 16534	3.2	< 0.8	< 0.7	0.6	2.3	2000	0.27	0.23	99	4.7	43
17: 16536	3.9	< 0.8	0.8	1.3	5.4	1400	0.18	0.59	57	3.8	27
18: 16538	4.1	< 0.8	< 0.7	1.4	6.1	1000	0.03	0.22	150	3.1	105
19: 16540	11	< 0.8	< 0.7	2.0	4.1	2200	0.46	0.96	68	3.2	22
20: 16542	2.7	< 0.8	< 0.7	1.3	3.7	1800	0.41	0.90	73	3.5	37
21: 16544	2.2	< 0.8	< 0.7	1.0	6.5	960	0.07	0.93	110	3.8	84
22: 16546	3.3	< 0.8	< 0.7	1.7	4.8	2000	0.11	0.59	85	2.6	74
23: 16548	1.5	< 0.8	< 0.7	< 0.5	2.7	86	< 0.02	0.028	5	4.4	7.0

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LR Report : **CA11418-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
24: 16550	1.7	< 0.8	< 0.7	< 0.5	5.8	400	< 0.02	0.20	140	1.3	66
25: 16552	6.8	< 0.8	< 0.7	2.4	6.5	610	0.17	2.3	5	6.0	25
26: 16554	7.6	< 0.8	< 0.7	2.6	5.6	790	0.20	1.2	31	4.0	39
27: 16556	3.3	< 0.8	< 0.7	< 0.5	17	340	< 0.02	2.7	25	10	12
28: 16558	3.5	< 0.8	< 0.7	2.3	2.8	21	< 0.02	0.16	< 1	3.0	12
29: 16560	5.8	< 0.8	< 0.7	< 0.5	13	650	0.21	2.3	85	9.5	28
30: 16562	1.9	< 0.8	< 0.7	0.7	3.7	11	< 0.02	0.11	< 1	1.9	6.1
31: 16564	0.67	< 0.8	< 0.7	< 0.5	4.7	31	< 0.02	0.058	1	1.3	5.7
32: 16566	1.2	< 0.8	< 0.7	< 0.5	1.2	66	< 0.02	0.030	2	0.47	6.0
33: 16568	9.2	< 0.8	< 0.7	0.5	18	640	0.16	1.7	54	5.3	22
34: 16570	4.1	< 0.8	< 0.7	1.1	8.9	260	0.02	1.7	61	3.8	61
35: 16572	10	< 0.8	< 0.7	0.9	9.5	960	0.24	0.71	34	3.1	16
36: 16574	19	< 0.8	< 0.7	< 0.5	3.5	340	0.26	0.85	39	4.7	44
37: 16576	1.5	< 0.8	< 0.7	< 0.5	4.2	350	0.09	0.59	15	2.7	8.4
38: 16578	7.0	< 0.8	< 0.7	< 0.5	3.6	1200	0.39	1.3	11	5.3	33
39: 16580	7.9	< 0.8	< 0.7	0.7	2.9	1900	0.33	4.5	21	5.6	26
40: 16582	3.1	< 0.8	< 0.7	< 0.5	3.9	1800	0.43	1.9	17	9.5	43
41: 16584	0.62	< 0.8	< 0.7	< 0.5	19	1500	0.18	0.11	110	3.1	39
42: 16586	0.64	< 0.8	< 0.7	< 0.5	18	980	0.03	0.060	49	2.6	16
43: 16588	1.4	< 0.8	< 0.7	< 0.5	12	620	< 0.02	0.016	67	2.1	36
44: 16590	1.4	< 0.8	< 0.7	< 0.5	13	930	< 0.02	0.020	41	3.5	32
45: 16592	1.8	< 0.8	< 0.7	< 0.5	23	2200	0.21	0.021	91	3.8	32
46: 16594	2.2	< 0.8	< 0.7	< 0.5	25	1300	0.08	0.043	72	5.3	38
47: 16596	2.0	< 0.8	< 0.7	< 0.5	18	1400	0.07	0.024	52	3.6	38
48: 16598	0.93	< 0.8	< 0.7	< 0.5	21	1300	0.03	0.020	55	3.2	23
49: 16600	0.84	< 0.8	< 0.7	< 0.5	6.0	2000	0.20	0.010	190	1.4	52
50: 16602	1.3	< 0.8	< 0.7	0.7	18	2900	0.44	0.018	190	2.7	42
51: 16604	3.3	< 0.8	< 0.7	< 0.5	8.4	2000	0.27	0.012	180	1.1	46
52: 16606	18	< 0.8	< 0.7	< 0.5	10	2800	0.26	0.012	170	0.63	59
53: 16608	0.87	< 0.8	< 0.7	< 0.5	0.27	530	< 0.02	1.4	38	2.5	41
54: 16610	4.6	< 0.8	< 0.7	0.6	7.1	560	0.22	3.5	5	4.9	11
55: 16612	3.6	< 0.8	< 0.7	< 0.5	4.4	46	< 0.02	3.6	< 1	5.1	12
56: 16614	2.3	< 0.8	< 0.7	< 0.5	11	1600	0.39	1.4	38	3.5	33
57: 16616	1.1	< 0.8	< 0.7	< 0.5	2.6	910	0.10	1.5	11	12	27
58: 16618	2.2	< 0.8	< 0.7	0.8	7.2	480	< 0.02	0.59	51	2.4	39
59: 16620	3.3	< 0.8	< 0.7	1.0	3.4	560	0.03	0.57	62	3.4	45

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LR Report : **CA11418-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
60: 16622	6.0	< 0.8	1.3	0.5	2.6	50	0.02	0.13	6	3.2	13
61-DUP: 16512	3.2	< 0.8	< 0.7	< 0.5	1.3	200	0.03	3.0	63	2.7	84
62-DUP: 16530	2.3	< 0.8	< 0.7	0.7	2.9	720	0.10	0.36	120	4.3	49
63-DUP: 16546	3.7	< 0.8	< 0.7	1.6	4.5	1700	0.11	0.55	83	2.6	70
64-DUP: 16562	1.8	< 0.8	< 0.7	0.7	3.9	11	< 0.02	0.11	< 1	2.0	6.1
65-DUP: 16578	7.0	< 0.8	< 0.7	< 0.5	3.8	1300	0.40	1.3	11	5.5	34
66-DUP: 16622	6.3	< 0.8	1.2	0.5	2.7	63	< 0.02	0.14	7	3.3	13

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Monday, November 21, 2011

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Date Rec. : 26 October 2011
LR Report: **CA11421-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
3: Analysis Approval Date	17-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11
4: Analysis Approval Time	17:47	15:23	15:23	14:59	15:24	15:24	15:24	15:24	15:00	15:25	15:25
5: 16624	< 0.1	< 0.02	0.10	4400	150	6.9	1.4	0.13	640	0.32	54
6: 16626	< 0.1	< 0.02	0.03	1300	15	0.98	0.14	< 0.09	4800	0.10	4.7
7: 16628	< 0.1	0.07	0.32	3700	5.2	0.67	0.41	0.90	2200	< 0.02	6.6
8: 16630	< 0.1	< 0.02	< 0.01	54000	1.1	210	2.2	< 0.09	840	< 0.02	6.8
9: 16632	< 0.1	< 0.02	0.02	22000	1.3	120	1.0	0.10	650	< 0.02	7.4
10: 16634	< 0.1	< 0.02	0.09	2500	< 0.5	160	0.75	0.15	1300	0.03	3.3
11: 16636	< 0.1	< 0.02	< 0.01	64000	< 0.5	7.9	0.81	0.09	5200	0.05	18
12: 16638	< 0.1	< 0.02	0.21	3700	< 0.5	11	0.89	0.32	1700	< 0.02	15
13: 16640	< 0.1	< 0.02	0.11	2400	< 0.5	220	1.1	< 0.09	1300	0.04	2.6
14: 16642	< 0.1	0.03	0.65	18000	1.2	350	1.4	0.26	2800	0.10	13
15: 16644	< 0.1	< 0.02	0.03	3300	0.8	1.8	0.62	< 0.09	2300	0.12	2.1
16: 16646	< 0.1	< 0.02	0.01	50000	< 0.5	750	2.0	< 0.09	3100	0.03	11
17: 16648	< 0.1	< 0.02	0.02	34000	< 0.5	820	0.86	< 0.09	1800	0.03	15
18: 16650	< 0.1	< 0.02	0.03	65000	< 0.5	1200	1.5	0.11	6700	0.05	26
19: 16652	< 0.1	< 0.02	0.40	67000	0.8	730	2.0	0.22	2500	0.06	34
20: 16654	< 0.1	< 0.02	0.05	23000	< 0.5	140	0.78	< 0.09	1100	0.09	15
21: 16656	< 0.1	< 0.02	0.11	19000	< 0.5	43	0.07	< 0.09	12000	0.14	22
22: 16658	< 0.1	< 0.02	0.11	14000	< 0.5	83	0.04	< 0.09	33000	0.10	16
23: 16660	< 0.1	< 0.02	0.17	31000	< 0.5	77	0.08	< 0.09	48000	0.11	28

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11421-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
24: 16662	< 0.1	< 0.02	0.06	37000	0.6	27	0.07	< 0.09	49000	0.09	14
25: 16664	< 0.1	< 0.02	0.06	21000	0.5	12	0.08	< 0.09	22000	0.03	14
26: 16666	< 0.1	< 0.02	0.11	38000	< 0.5	110	0.11	< 0.09	22000	0.04	21
27: 16668	< 0.1	< 0.02	0.03	54000	< 0.5	110	0.22	< 0.09	41000	0.05	22
28: 16670	< 0.1	< 0.02	0.03	48000	< 0.5	110	0.14	< 0.09	29000	0.08	28
29: 16672	< 0.1	< 0.02	< 0.01	42000	< 0.5	0.51	0.13	< 0.09	570	< 0.02	21
30: 16674	< 0.1	< 0.02	0.07	24000	< 0.5	160	0.04	< 0.09	5200	< 0.02	19
31: 16676	< 0.1	< 0.02	0.04	46000	< 0.5	3.7	0.81	0.09	350	< 0.02	94
32: 16678	< 0.1	< 0.02	0.48	18000	< 0.5	73	0.90	0.69	3100	0.04	11
33: 16680	< 0.1	< 0.02	0.03	75000	< 0.5	59	0.76	0.12	5600	0.08	26
34: 16682	< 0.1	< 0.02	0.09	6500	< 0.5	47	0.57	0.15	3100	0.06	5.5
35: 16684	< 0.1	< 0.02	0.04	56000	< 0.5	1900	1.8	0.11	2500	0.03	18
36: 16686	< 0.1	< 0.02	0.15	5600	< 0.5	1.2	1.0	0.18	6500	0.05	4.0
37: 16688	< 0.1	< 0.02	0.04	5500	< 0.5	2.7	0.76	0.16	3600	< 0.02	2.8
38: 16690	< 0.1	< 0.02	< 0.01	61000	< 0.5	310	2.3	< 0.09	7500	0.07	11
39: 16692	< 0.1	< 0.02	0.02	59000	< 0.5	970	1.2	0.10	4600	0.04	17
40: 16694	< 0.1	< 0.02	0.07	20000	< 0.5	34	0.07	< 0.09	13000	< 0.02	25
41: 16696	< 0.1	< 0.02	0.08	14000	< 0.5	10	0.07	< 0.09	10000	0.04	12
42: 16698	< 0.1	< 0.02	0.08	13000	< 0.5	6.1	0.05	< 0.09	43000	0.06	10
43: 16700	< 0.1	< 0.02	0.07	16000	< 0.5	21	0.08	< 0.09	33000	0.16	13
44: 16702	< 0.1	< 0.02	0.11	25000	< 0.5	45	0.07	< 0.09	27000	0.09	18
45: 16704	< 0.1	< 0.02	0.06	21000	< 0.5	64	0.08	< 0.09	25000	< 0.02	18
46: 16706	< 0.1	< 0.02	1.2	41000	< 0.5	240	0.17	< 0.09	1100	< 0.02	39
47: 16708	< 0.1	< 0.02	0.17	37000	< 0.5	140	0.17	< 0.09	790	0.03	35
48: 16710	< 0.1	< 0.02	< 0.01	51000	< 0.5	660	0.37	< 0.09	2200	0.03	47
49: 16712	< 0.1	< 0.02	0.01	58000	< 0.5	600	0.44	< 0.09	1000	< 0.02	48
50: 16714	< 0.1	< 0.02	0.01	53000	< 0.5	190	0.54	< 0.09	1100	< 0.02	53
51: 16716	< 0.1	0.04	0.03	46000	< 0.5	2.1	0.38	< 0.09	5000	0.07	28
52: 16718	< 0.1	< 0.02	0.03	50000	12	2.9	0.33	0.23	1500	< 0.02	30
53: 16720	< 0.1	< 0.02	0.05	37000	2.5	120	1.7	0.37	1200	0.06	13
54: 16722	< 0.1	< 0.02	0.48	71000	0.8	6.3	1.5	0.48	390	0.33	52
55: 16728	< 0.1	0.02	1.1	18000	0.5	3.3	0.83	1.5	1900	0.04	20
56: 16730	< 0.1	0.06	0.19	68000	< 0.5	1900	1.1	0.43	2100	0.05	14
57: 16732	< 0.1	0.09	0.20	22000	3.0	3.2	0.35	0.29	3200	0.03	7.0
58: 16738	< 0.1	0.02	0.20	26000	< 0.5	450	0.64	< 0.09	1700	0.08	6.8
59: 16740	< 0.1	< 0.02	< 0.01	39000	2.1	2.6	0.23	< 0.09	710	0.14	12

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11421-OCT11**

Sample ID	Hg µg/g	Au µg/g	Ag µg/g	Al µg/g	As µg/g	Ba µg/g	Be µg/g	Bi µg/g	Ca µg/g	Cd µg/g	Co µg/g
60: 16742	< 0.1	< 0.02	0.04	35000	1.5	13	0.12	< 0.09	110	0.12	13
61: 16744	< 0.1	< 0.02	0.01	58000	0.6	1.0	0.30	< 0.09	250	0.02	29
62: 16746	< 0.1	< 0.02	0.06	40000	7.4	1.6	0.68	< 0.09	200	0.02	22
63: 16748	< 0.1	< 0.02	0.02	37000	3.8	6.1	0.91	< 0.09	140	0.04	49
64: 16750	< 0.1	< 0.02	0.03	27000	< 0.5	230	0.83	< 0.09	440	< 0.02	4.8
65: 16752	< 0.1	< 0.02	0.02	33000	< 0.5	330	0.65	< 0.09	3200	0.13	12
66: 16724	< 0.1	< 0.02	0.08	31000	2.0	3.1	0.41	0.39	1400	0.03	7.0
67: 16726	< 0.1	< 0.02	< 0.01	34000	< 0.5	360	1.2	0.10	830	< 0.02	10
68: 16734	< 0.1	0.02	0.05	3500	< 0.5	1.2	0.53	< 0.09	4000	0.02	2.2
69: 16736	< 0.1	0.03	0.13	69000	< 0.5	1200	1.0	< 0.09	2300	0.05	12
70: 16754	< 0.1	< 0.02	0.01	51000	< 0.5	780	1.5	< 0.09	3200	0.11	18
71-DUP: 16624	< 0.1	< 0.02	0.10	4700	130	7.1	1.1	< 0.09	680	0.35	51
72-DUP: 16644	< 0.1	< 0.02	0.03	3700	0.6	1.9	0.52	< 0.09	2700	0.12	2.0
73-DUP: 16660	< 0.1	< 0.02	0.18	32000	< 0.5	80	0.06	< 0.09	51000	0.11	29
74-DUP: 16680	< 0.1	< 0.02	0.05	72000	< 0.5	61	0.64	< 0.09	5700	0.08	25
75-DUP: 16704	< 0.1	< 0.02	0.08	22000	< 0.5	66	0.08	< 0.09	26000	< 0.02	18
76-DUP: 16730	< 0.1	0.04	0.18	67000	< 0.5	1900	1.0	0.37	2100	0.07	14
77-DUP: 16754	< 0.1	< 0.02	0.01	50000	< 0.5	780	1.4	< 0.09	3200	0.11	18

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
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Phone: 705-652-2000 FAX: 705-652-6365

Monday, November 21, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11421-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
1: Analysis Start Date	17-Nov-11	17-Nov-11	16-Nov-11	16-Nov-11	17-Nov-11	16-Nov-11	17-Nov-11	17-Nov-11	16-Nov-11	17-Nov-11	16-Nov-11
2: Analysis Start Time	14:37	14:37	14:00	14:00	14:37	14:00	14:37	14:37	14:00	14:37	14:00
3: Analysis Approval Date	18-Nov-11	18-Nov-11	21-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11
4: Analysis Approval Time	15:25	15:25	09:00	15:01	15:25	15:02	15:25	15:26	15:02	15:27	15:03
5: 16624	58	40	690000	100	5	2000	1400	450	87	80	83
6: 16626	14	6.3	600000	53	< 2	19000	21000	5.5	52	13	99
7: 16628	54	56	640000	47	< 2	5100	4600	7.1	36	16	120
8: 16630	68	1.8	130000	4300	30	47000	880	2.8	130	12	200
9: 16632	96	22	33000	8000	11	13000	400	6.5	170	11	260
10: 16634	32	23	300000	120	< 2	2900	610	3.7	81	6.3	500
11: 16636	400	1.1	160000	66	< 2	54000	1200	1.0	50	94	2400
12: 16638	120	73	480000	140	< 2	4100	770	4.0	83	25	680
13: 16640	54	16	460000	240	< 2	2600	3000	4.6	110	7.1	410
14: 16642	130	65	340000	460	< 2	16000	2600	6.4	82	33	1100
15: 16644	31	6.1	610000	38	< 2	20000	23000	2.8	45	5.0	470
16: 16646	110	2.5	86000	7800	10	31000	200	10	190	14	1400
17: 16648	83	12	50000	24000	9	18000	260	4.3	500	16	820
18: 16650	310	13	120000	38000	9	38000	98	2.2	790	110	3100
19: 16652	28	78	120000	37000	34	39000	350	3.3	600	29	1100
20: 16654	76	10	33000	17000	10	13000	170	5.9	310	25	530
21: 16656	150	130	25000	1900	25	15000	590	1.2	1500	80	280

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Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11421-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
22: 16658	120	93	13000	2300	11	6700	500	0.8	1500	62	220
23: 16660	180	95	22000	6900	15	11000	800	1.7	3000	110	330
24: 16662	81	120	13000	700	4	3800	520	1.0	2400	60	240
25: 16664	82	96	14000	1000	11	7600	270	2.2	1900	39	250
26: 16666	170	130	45000	11000	20	14000	650	0.7	2300	72	200
27: 16668	150	120	18000	6400	14	10000	340	1.6	2900	76	310
28: 16670	150	92	32000	14000	16	17000	550	0.7	1300	81	250
29: 16672	180	6.8	38000	51	5	51000	340	0.6	49	73	120
30: 16674	140	96	24000	5400	30	31000	310	0.2	200	81	84
31: 16676	1120	78	85000	93	9	37000	600	1.3	78	930	78
32: 16678	61	310	520000	2600	8	15000	2100	12	94	60	1300
33: 16680	440	13	150000	2400	7	69000	880	1.1	81	340	2500
34: 16682	61	36	610000	1000	7	4500	750	2.7	71	13	1300
35: 16684	35	41	85000	39000	34	31000	260	2.4	850	14	1100
36: 16686	48	59	590000	69	< 2	3500	1100	1.8	64	11	2800
37: 16688	35	14	690000	120	< 2	7600	6800	1.7	85	9.0	1400
38: 16690	50	2.5	100000	18000	13	40000	70	3.2	440	4.3	3400
39: 16692	38	13	100000	42000	10	33000	200	2.1	810	17	2100
40: 16694	170	100	13000	3300	39	11000	240	0.7	2000	68	340
41: 16696	77	94	13000	1700	24	7600	240	0.6	1600	38	280
42: 16698	51	130	12000	2000	16	7600	600	2.7	1200	38	280
43: 16700	68	42	23000	2500	24	12000	730	0.7	1000	35	280
44: 16702	73	140	22000	4100	35	14000	770	0.5	390	47	330
45: 16704	80	120	30000	3100	61	40000	1600	0.4	270	52	240
46: 16706	210	180	54000	25000	17	25000	420	1.2	520	120	370
47: 16708	370	140	54000	15000	17	24000	250	2.2	380	190	240
48: 16710	260	93	68000	20000	70	31000	360	0.8	390	150	740
49: 16712	240	91	88000	26000	48	40000	330	1.4	510	150	240
50: 16714	230	60	98000	16000	55	37000	390	0.9	280	140	320
51: 16716	290	50	86000	160	9	54000	550	1.0	76	78	2200
52: 16718	630	14	95000	160	10	44000	220	1.0	90	320	630
53: 16720	150	27	61000	8600	15	27000	850	3.1	260	51	540
54: 16722	35	13	180000	880	66	91000	410	360	360	140	45
55: 16728	70	250	400000	140	< 2	15000	2000	4.0	87	49	790
56: 16730	81	43	140000	37000	13	40000	200	3.9	590	39	960
57: 16732	44	27	410000	100	< 2	20000	1300	2.9	73	22	1300

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11421-OCT11**

Sample ID	Cr µg/g	Cu µg/g	Fe µg/g	K µg/g	Li µg/g	Mg µg/g	Mn µg/g	Mo µg/g	Na µg/g	Ni µg/g	P µg/g
58: 16738	65	15	45000	18000	8	12000	310	1.0	450	8.7	740
59: 16740	230	9.2	82000	130	12	31000	150	2.6	86	110	340
60: 16742	250	22	68000	200	8	25000	77	1.9	86	110	58
61: 16744	640	6.2	120000	82	10	55000	750	1.6	97	290	57
62: 16746	570	54	96000	110	20	43000	540	1.7	87	200	42
63: 16748	380	11	140000	2400	14	31000	160	1.9	120	390	53
64: 16750	130	13	42000	15000	16	15000	150	5.5	410	6.9	190
65: 16752	75	6.6	53000	14000	17	23000	310	140	290	7.6	1400
66: 16724	63	6.2	270000	330	7	28000	540	7.7	86	19	250
67: 16726	91	28	46000	17000	20	22000	170	3.8	430	12	390
68: 16734	43	12	640000	77	< 2	1600	950	1.2	60	8.8	1600
69: 16736	42	45	140000	39000	17	35000	230	2.0	660	10	980
70: 16754	73	3.8	84000	21000	12	30000	130	3.2	470	22	1400
71-DUP: 16624	45	38	730000	120	4	2200	1100	440	81	75	98
72-DUP: 16644	25	6.4	580000	40	< 2	23000	26000	2.5	40	4.7	540
73-DUP: 16660	170	91	24000	7100	16	11000	770	1.5	3000	110	320
74-DUP: 16680	410	12	160000	2300	7	67000	800	0.9	70	320	2500
75-DUP: 16704	77	110	32000	3300	62	42000	1600	0.4	280	51	250
76-DUP: 16730	79	42	130000	35000	12	39000	200	4.0	570	38	920
77-DUP: 16754	69	3.9	83000	21000	12	30000	130	3.1	460	22	1400

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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Monday, November 21, 2011

Baffinland Iron Mines Corp
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Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 26 October 2011
LR Report: **CA11421-OCT11**
Reference: PO13012

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
3: Analysis Approval Date	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11	18-Nov-11
4: Analysis Approval Time	15:27	15:27	15:27	15:27	15:27	15:03	15:28	15:28	15:28	15:28	15:28
5: 16624	2.6	0.9	< 0.7	< 0.5	5.9	180	0.03	0.59	38	3.7	8.4
6: 16626	1.4	< 0.8	< 0.7	< 0.5	3.0	43	< 0.02	0.051	6	3.2	14
7: 16628	6.6	< 0.8	< 0.7	< 0.5	2.4	150	0.03	0.19	7	3.4	6.2
8: 16630	3.4	< 0.8	< 0.7	< 0.5	3.6	730	0.10	2.5	24	4.0	39
9: 16632	2.3	< 0.8	< 0.7	< 0.5	6.1	930	0.22	1.6	12	3.2	17
10: 16634	1.7	< 0.8	< 0.7	< 0.5	3.8	250	< 0.02	0.24	14	1.2	7.8
11: 16636	1.5	< 0.8	< 0.7	< 0.5	9.7	310	< 0.02	1.6	130	3.2	48
12: 16638	3.0	< 0.8	0.8	1.1	4.3	180	0.06	0.30	25	1.5	8.9
13: 16640	1.6	< 0.8	< 0.7	< 0.5	3.2	230	< 0.02	0.15	12	1.9	8.1
14: 16642	4.1	< 0.8	0.8	< 0.5	5.1	400	0.04	0.91	37	1.7	15
15: 16644	0.92	< 0.8	< 0.7	< 0.5	1.8	140	< 0.02	0.43	5	5.4	9.4
16: 16646	5.5	< 0.8	< 0.7	0.7	7.4	1190	0.23	3.5	45	5.5	12
17: 16648	15	< 0.8	< 0.7	1.2	7.4	3140	0.68	1.4	100	5.8	23
18: 16650	24	< 0.8	1.3	3.8	22	4340	1.3	2.1	180	8.1	15
19: 16652	26	< 0.8	1.0	3.0	8.7	4110	1.6	2.6	150	5.3	23
20: 16654	29	< 0.8	< 0.7	< 0.5	2.7	1630	1.1	5.5	24	6.0	53
21: 16656	1.7	< 0.8	< 0.7	< 0.5	11	1430	0.03	0.072	98	6.0	30
22: 16658	1.8	< 0.8	< 0.7	< 0.5	15	1440	< 0.02	0.058	60	4.1	31
23: 16660	1.9	< 0.8	< 0.7	< 0.5	33	1770	0.09	0.036	100	4.4	29

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Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA11421-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
24: 16662	1.6	< 0.8	< 0.7	< 0.5	77	830	< 0.02	0.029	33	3.2	14
25: 16664	1.0	< 0.8	< 0.7	< 0.5	20	980	0.03	0.022	41	2.2	16
26: 16666	2.5	< 0.8	0.8	< 0.5	30	1970	0.21	0.050	95	2.6	42
27: 16668	1.2	< 0.8	< 0.7	< 0.5	89	1970	0.09	0.032	75	3.7	23
28: 16670	1.7	< 0.8	< 0.7	< 0.5	38	2910	0.14	0.060	130	3.4	47
29: 16672	0.28	< 0.8	< 0.7	< 0.5	0.34	220	< 0.02	0.003	91	1.2	26
30: 16674	2.9	< 0.8	< 0.7	< 0.5	7.0	1050	0.08	0.004	44	0.87	19
31: 16676	0.59	< 0.8	< 0.7	< 0.5	0.89	370	< 0.02	0.050	84	0.65	44
32: 16678	7.7	< 0.8	1.9	0.9	11	440	0.17	0.70	38	5.8	23
33: 16680	3.3	< 0.8	< 0.7	0.6	9.9	570	0.20	1.8	120	5.3	85
34: 16682	4.0	< 0.8	< 0.7	2.1	5.4	390	0.11	0.34	23	4.4	14
35: 16684	18	< 0.8	0.9	1.9	10	4240	1.7	1.4	130	4.4	55
36: 16686	2.5	< 0.8	< 0.7	0.8	7.7	290	< 0.02	0.28	19	6.4	7.1
37: 16688	1.9	< 0.8	< 0.7	< 0.5	1.6	200	< 0.02	0.16	9	8.7	8.8
38: 16690	19	< 0.8	< 0.7	1.7	15	2140	0.70	3.9	62	8.9	29
39: 16692	15	< 0.8	0.8	2.6	11	4830	2.2	2.5	160	7.8	21
40: 16694	0.62	< 0.8	< 0.7	< 0.5	21	1420	0.06	0.022	120	2.7	31
41: 16696	2.2	< 0.8	< 0.7	< 0.5	15	1050	0.04	0.038	43	2.4	20
42: 16698	1.4	< 0.8	< 0.7	< 0.5	27	1030	0.05	0.013	31	4.3	15
43: 16700	6.5	< 0.8	< 0.7	< 0.5	20	1070	0.03	0.024	57	4.5	45
44: 16702	0.84	< 0.8	< 0.7	< 0.5	17	1640	0.06	0.019	71	3.7	40
45: 16704	1.6	< 0.8	< 0.7	< 0.5	17	870	0.03	0.014	78	6.5	17
46: 16706	1.2	< 0.8	0.9	0.7	15	3000	0.22	0.011	170	1.4	17
47: 16708	0.90	< 0.8	< 0.7	< 0.5	6.4	1840	0.17	0.041	160	1.2	30
48: 16710	1.9	< 0.8	1.1	0.6	14	1550	0.24	0.012	170	2.9	35
49: 16712	4.5	< 0.8	1.3	< 0.5	7.9	2260	0.32	0.011	170	2.2	40
50: 16714	3.1	< 0.8	< 0.7	< 0.5	5.6	1430	0.17	0.008	160	2.8	25
51: 16716	2.2	< 0.8	< 0.7	< 0.5	10	410	< 0.02	1.6	60	2.8	47
52: 16718	3.3	< 0.8	< 0.7	< 0.5	4.3	200	< 0.02	0.58	65	1.7	49
53: 16720	10	< 0.8	< 0.7	0.7	5.3	1560	0.27	1.6	45	3.9	31
54: 16722	16	< 0.8	< 0.7	1.3	1.9	380	0.08	0.68	60	1.1	77
55: 16728	9.4	< 0.8	1.9	0.8	2.2	220	0.09	1.1	33	3.0	23
56: 16730	20	< 0.8	< 0.7	2.1	9.2	3200	1.6	4.6	60	4.6	22
57: 16732	7.1	< 0.8	< 0.7	1.8	3.3	490	0.03	1.1	30	2.6	41
58: 16738	18	< 0.8	< 0.7	0.6	4.4	2100	0.46	4.4	19	7.6	16
59: 16740	5.3	< 0.8	< 0.7	< 0.5	7.2	180	< 0.02	1.0	35	2.8	145

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LR Report : **CA11421-OCT11**

Sample ID	Pb µg/g	Sb µg/g	Se µg/g	Sn µg/g	Sr µg/g	Ti µg/g	Tl µg/g	U µg/g	V µg/g	Y µg/g	Zn µg/g
60: 16742	4.5	< 0.8	< 0.7	< 0.5	0.85	310	< 0.02	1.4	40	2.1	42
61: 16744	0.63	< 0.8	< 0.7	0.7	1.2	200	< 0.02	0.77	57	1.8	46
62: 16746	1.2	< 0.8	< 0.7	< 0.5	1.1	190	< 0.02	0.89	36	2.7	25
63: 16748	0.93	< 0.8	< 0.7	< 0.5	1.5	250	< 0.02	1.0	64	1.5	65
64: 16750	5.2	< 0.8	< 0.7	1.6	5.7	1000	0.25	6.0	5	7.9	15
65: 16752	3.9	< 0.8	< 0.7	0.6	5.1	1500	0.34	2.0	16	7.5	46
66: 16724	1.3	< 0.8	< 0.7	0.9	1.8	270	0.06	0.49	14	1.4	55
67: 16726	3.5	< 0.8	< 0.7	1.4	5.7	2300	0.33	2.2	32	3.7	26
68: 16734	3.0	< 0.8	< 0.7	2.1	3.7	190	< 0.02	0.22	7	4.4	11
69: 16736	32	< 0.8	< 0.7	2.5	5.0	4400	0.98	5.2	51	6.4	13
70: 16754	23	< 0.8	< 0.7	1.8	8.9	3100	0.65	3.5	140	7.1	17
71-DUP: 16624	2.4	< 0.8	< 0.7	< 0.5	5.7	190	0.04	0.52	33	3.7	9.4
72-DUP: 16644	0.80	< 0.8	< 0.7	< 0.5	1.8	170	< 0.02	0.44	6	5.4	9.5
73-DUP: 16660	1.8	< 0.8	< 0.7	< 0.5	34	1900	0.10	0.038	99	4.4	30
74-DUP: 16680	3.1	< 0.8	< 0.7	0.6	10	560	0.20	1.6	120	5.3	76
75-DUP: 16704	1.5	< 0.8	< 0.7	< 0.5	18	910	0.04	0.017	76	6.4	16
76-DUP: 16730	19	< 0.8	< 0.7	2.0	9.2	3100	1.5	4.1	60	4.7	21
77-DUP: 16754	23	< 0.8	< 0.7	1.8	8.8	2900	0.67	3.7	140	7.1	16

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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APPENDIX F-4

NAG LEACHATE RESULTS

SGS Canada Inc.
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Phone: 705-652-2000 FAX: 705-652-6365

November-28-11

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 07 November 2011
LR Report: **CA10290-NOV11**
Reference: PO13013

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16012	6: 16014	7: 16016	8: 16020	9: 16028	10: 16034
Sample weight [g]	23-Nov-11	18:28	2.5	2.6	2.5	2.5	2.5	2.5
Vol H2O2 [mL]	23-Nov-11	18:28	250	250	250	250	250	250
Final pH [units]	23-Nov-11	18:28	1.85	4.15	2.22	2.34	3.32	2.47
pH [no unit]	23-Nov-11	15:49	2.00	4.07	2.33	2.44	3.44	2.58
Alkalinity [mg/L as CaCO3]	23-Nov-11	15:49	< 2	< 2	< 2	< 2	< 2	< 2
Acidity [mg/L as CaCO3]	25-Nov-11	15:02	990	15	429	278	43	406
Sulphate [mg/L]	28-Nov-11	17:29	1100	97	580	280	110	580
Mercury [mg/L]	24-Nov-11	13:34	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	25-Nov-11	12:59	0.00203	0.00103	0.00174	0.00215	0.00057	0.00207
Aluminum [mg/L]	24-Nov-11	12:57	2.33	0.64	7.12	2.14	2.37	24.7
Arsenic [mg/L]	25-Nov-11	12:59	0.0059	< 0.0002	0.0006	< 0.0002	< 0.0002	0.0005
Boron [mg/L]	25-Nov-11	12:59	0.109	0.0664	0.111	0.103	0.0774	0.335
Barium [mg/L]	25-Nov-11	12:59	0.0144	0.00142	0.00295	0.00336	0.152	0.331
Beryllium [mg/L]	25-Nov-11	12:59	0.00017	0.00006	0.00013	0.00041	0.00078	0.00238
Bismuth [mg/L]	25-Nov-11	12:59	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	24-Nov-11	12:57	2.64	0.91	7.72	1.26	1.82	3.15
Cadmium [mg/L]	25-Nov-11	12:59	0.000238	0.000144	0.000113	0.00215	0.000104	0.000950
Cobalt [mg/L]	25-Nov-11	12:59	0.721	0.0790	0.349	0.297	0.248	0.600
Chromium [mg/L]	25-Nov-11	12:59	0.0062	0.0199	0.0055	0.0099	0.0361	0.0425
Copper [mg/L]	25-Nov-11	12:59	0.164	0.0292	0.695	0.132	0.369	0.967
Iron [mg/L]	24-Nov-11	12:58	86.0	0.030	12.6	3.98	0.167	46.3
Potassium [mg/L]	24-Nov-11	12:58	0.991	0.685	0.466	0.588	15.9	32.4
Lithium [mg/L]	25-Nov-11	12:59	0.009	0.003	0.001	0.002	0.058	0.040
Magnesium [mg/L]	24-Nov-11	12:58	27.9	10.9	10.5	2.70	12.2	24.4
Manganese [mg/L]	25-Nov-11	12:59	2.94	0.699	2.04	1.18	0.816	0.554
Molybdenum [mg/L]	25-Nov-11	12:59	0.00029	0.0682	0.00026	0.00010	0.00012	0.00038
Sodium [mg/L]	24-Nov-11	12:58	0.62	0.43	0.63	0.49	1.24	1.37
Nickel [mg/L]	25-Nov-11	12:59	1.06	0.153	0.859	0.662	0.809	2.39
Lead [mg/L]	25-Nov-11	12:59	0.347	0.00062	0.0464	0.0247	0.00107	0.0758
Antimony [mg/L]	25-Nov-11	12:59	0.0005	0.0004	< 0.0002	< 0.0002	< 0.0002	0.0003
Selenium [mg/L]	25-Nov-11	12:59	0.009	0.002	0.008	0.006	0.003	0.005
Tin [mg/L]	25-Nov-11	12:59	0.00010	0.00002	0.00003	0.00003	0.00001	0.00004
Strontium [mg/L]	25-Nov-11	12:59	0.0323	0.00733	0.0201	0.0174	0.0238	0.0190

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Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16012	6: 16014	7: 16016	8: 16020	9: 16028	10: 16034
Titanium [mg/L]	25-Nov-11	12:59	0.0051	0.0004	0.0017	0.0015	0.0008	0.0057
Thallium [mg/L]	25-Nov-11	12:59	0.00114	0.00025	0.00035	0.00297	0.00039	0.00085
Uranium [mg/L]	25-Nov-11	12:59	0.00160	0.00233	0.00118	0.00103	0.000590	0.000323
Vanadium [mg/L]	25-Nov-11	12:59	0.00084	0.00839	< 0.00003	< 0.00003	< 0.00003	0.00249
Zinc [mg/L]	25-Nov-11	12:59	0.026	0.016	0.036	0.195	0.299	0.203

Chris Sullivan, B.Sc., C.Chem
Project Specialist
Environmental Services, Analytical

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November-28-11

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 07 November 2011
LR Report: **CA10290-NOV11**
Reference: PO13013

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	11: 16036	12: 16046	13: 16050	14: 16048	15: 16052	16: 16054	17: 16064	18: 16068	19: 16076
Sample weight [g]	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Vol H2O2 [mL]	250	250	250	250	250	250	250	250	250
Final pH [units]	2.45	2.10	2.15	2.89	2.91	3.07	3.36	2.63	3.56
pH [no unit]	2.55	2.19	2.28	2.99	3.01	3.16	3.46	2.75	3.56
Alkalinity [mg/L as CaCO3]	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Acidity [mg/L as CaCO3]	327	162	840	71	104	81	35	176	408
Sulphate [mg/L]	370	1600	900	74	140	130	62	110	790
Mercury [mg/L]	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	0.00371	0.00068	0.00181	0.00044	0.00053	0.00112	0.00055	0.00273	0.00002
Aluminum [mg/L]	14.4	41.0	31.8	1.37	3.44	4.61	1.21	0.21	0.93
Arsenic [mg/L]	0.0055	0.0196	0.0008	0.0004	0.0002	0.0002	< 0.0002	< 0.0002	0.0008
Boron [mg/L]	0.0624	0.113	0.168	0.0253	0.287	0.279	0.161	0.146	0.153
Barium [mg/L]	0.00442	0.00961	0.00579	0.00243	0.00442	0.00252	0.193	0.00991	0.00610
Beryllium [mg/L]	0.00044	0.00499	0.00384	0.00046	0.00168	0.00232	0.00033	0.00022	0.00227
Bismuth [mg/L]	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	1.11	4.16	0.59	0.47	14.1	0.54	1.58	0.42	41.6
Cadmium [mg/L]	0.000421	0.000195	0.000199	0.000044	0.000976	0.000489	0.000417	0.000081	0.000638
Cobalt [mg/L]	0.285	0.476	0.146	0.0476	0.0588	0.445	0.0300	0.00497	0.139
Chromium [mg/L]	0.0440	0.0722	0.0463	0.0093	0.0073	0.0207	0.0067	0.0524	0.0008
Copper [mg/L]	0.554	4.13	0.187	0.0588	0.0882	1.06	0.717	0.0083	1.91
Iron [mg/L]	23.8	243	96.9	0.536	0.194	0.819	0.498	0.116	184
Potassium [mg/L]	0.799	1.27	1.42	0.518	0.939	0.715	14.2	0.857	0.663
Lithium [mg/L]	0.003	0.016	0.005	0.002	0.002	0.003	0.008	< 0.001	0.003
Magnesium [mg/L]	15.0	37.5	29.5	1.79	4.70	13.2	3.09	3.23	44.5
Manganese [mg/L]	0.923	1.27	0.645	0.151	1.31	0.236	0.253	8.87	112
Molybdenum [mg/L]	0.00123	0.00025	0.00013	0.00483	0.00027	0.00016	0.00002	0.0609	0.00011
Sodium [mg/L]	0.53	0.44	0.49	0.41	0.84	0.78	1.12	0.49	0.42
Nickel [mg/L]	0.656	1.39	0.740	0.114	0.165	1.13	0.0225	0.0137	0.368
Lead [mg/L]	0.0260	0.0837	0.0427	0.00576	0.00846	0.00800	0.00135	0.0281	0.00044
Antimony [mg/L]	0.0004	< 0.0002	< 0.0002	0.0003	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002
Selenium [mg/L]	0.005	0.009	0.011	0.002	0.003	0.008	0.003	0.004	0.012
Tin [mg/L]	0.00003	0.00024	0.00007	0.00006	< 0.00001	0.00003	0.00001	0.00007	0.00003
Strontium [mg/L]	0.00938	0.0214	0.00679	0.00538	0.0180	0.00677	0.00668	0.0101	0.0272

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LR Report : **CA10290-NOV11**

Analysis	11: 16036	12: 16046	13: 16050	14: 16048	15: 16052	16: 16054	17: 16064	18: 16068	19: 16076
Titanium [mg/L]	0.0025	0.0069	0.0065	0.0009	0.0008	0.0007	0.0009	0.0023	0.0014
Thallium [mg/L]	0.00029	0.00053	0.00050	0.00015	0.00026	0.00003	0.00016	0.00025	0.00009
Uranium [mg/L]	0.00417	0.00308	0.0185	0.000452	0.000314	0.000647	0.0102	0.000054	0.000594
Vanadium [mg/L]	0.00056	0.00293	0.00004	0.00088	< 0.00003	< 0.00003	< 0.00003	0.00142	0.00007
Zinc [mg/L]	0.033	0.096	0.039	0.011	0.027	0.074	0.019	0.028	0.041

Chris Sullivan, B.Sc., C.Chem
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
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Phone: 705-652-2000 FAX: 705-652-6365

Tuesday, November 29, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 10 November 2011
LR Report: **CA10379-NOV11**
Reference: PO 13013

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16102	6: 16118	7: 16130	8: 16136	9: 16138	10: 16152	11: 16154	12: 16176	13: 16178
Sample weight [g]	23-Nov-11	18:29	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Vol H2O2 [mL]	23-Nov-11	18:29	250	250	250	250	250	250	250	250	250
Final pH [units]	23-Nov-11	18:29	5.50	2.79	5.33	5.29	4.88	5.10	5.06	3.24	3.34
pH [no unit]	25-Nov-11	15:05	5.58	2.86	5.32	5.32	4.84	5.31	4.96	3.38	3.44
Alkalinity [mg/L as CaCO3]	25-Nov-11	15:05	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Acidity [mg/L as CaCO3]	25-Nov-11	15:05	6	266	9	8	209	252	10	45	62
Sulphate [mg/L]	29-Nov-11	09:12	150	540	92	84	83	75	140	88	160
Mercury [mg/L]	24-Nov-11	13:49	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	25-Nov-11	13:19	0.00049	0.0282	0.00013	0.00016	0.00044	0.00020	0.00029	0.00021	0.00033
Aluminum [mg/L]	24-Nov-11	13:00	0.04	14.8	0.05	0.09	0.26	0.08	0.23	2.38	6.14
Arsenic [mg/L]	25-Nov-11	13:19	0.0003	0.0008	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0005	< 0.0002	< 0.0002
Boron [mg/L]	25-Nov-11	13:19	0.159	0.0265	0.106	0.0802	0.0816	0.0648	0.136	0.0824	0.123
Barium [mg/L]	25-Nov-11	13:19	0.163	0.00111	0.0801	0.122	0.136	0.0710	0.174	0.0158	0.364
Beryllium [mg/L]	25-Nov-11	13:19	< 0.00002	0.00130	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00005	0.00130	0.00103
Bismuth [mg/L]	25-Nov-11	13:19	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	24-Nov-11	13:00	5.53	2.22	7.51	7.28	5.07	11.6	16.7	8.99	2.77
Cadmium [mg/L]	25-Nov-11	13:19	0.0104	0.296	0.000080	0.000232	0.00178	0.000419	0.00137	0.000091	0.00214
Cobalt [mg/L]	25-Nov-11	13:19	0.00793	0.592	0.000973	0.00307	0.00437	0.00391	0.0498	0.0139	0.0781

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Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16102	6: 16118	7: 16130	8: 16136	9: 16138	10: 16152	11: 16154	12: 16176	13: 16178
Chromium [mg/L]	25-Nov-11	13:19	0.0199	0.0884	0.0029	0.0041	0.0038	0.0134	0.112	0.0046	0.0074
Copper [mg/L]	25-Nov-11	13:19	0.0073	1.03	0.0010	0.0014	0.0035	0.0020	0.0154	0.100	0.0298
Iron [mg/L]	24-Nov-11	13:00	0.006	3.99	0.006	0.003	< 0.003	< 0.003	0.011	0.660	0.163
Potassium [mg/L]	24-Nov-11	13:00	49.8	6.75	26.3	25.8	26.2	14.8	30.9	1.29	43.5
Lithium [mg/L]	25-Nov-11	13:19	0.018	0.011	< 0.001	0.010	0.015	0.002	0.010	0.004	0.012
Magnesium [mg/L]	24-Nov-11	13:00	17.7	63.0	10.0	7.16	7.48	3.13	12.3	7.25	9.95
Manganese [mg/L]	25-Nov-11	13:19	0.391	0.281	0.223	0.574	0.493	0.286	0.284	1.70	0.346
Molybdenum [mg/L]	25-Nov-11	13:19	0.00099	0.00127	0.00103	0.0186	0.0172	0.00508	0.00036	0.00003	0.0146
Sodium [mg/L]	24-Nov-11	13:01	2.00	0.73	2.24	3.20	3.60	8.69	2.69	1.41	2.70
Nickel [mg/L]	25-Nov-11	13:19	0.0083	9.60	0.0017	0.0020	0.0046	0.0054	0.354	0.0462	0.115
Lead [mg/L]	25-Nov-11	13:19	< 0.00002	4.63	0.00020	0.00024	0.00047	0.00018	0.00134	0.00031	0.00268
Antimony [mg/L]	25-Nov-11	13:19	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0004	0.0004	< 0.0002
Selenium [mg/L]	25-Nov-11	13:19	0.007	0.004	0.004	0.002	0.002	0.002	0.007	0.002	< 0.001
Tin [mg/L]	25-Nov-11	13:19	< 0.00001	0.00008	0.00013	< 0.00001	< 0.00001	< 0.00001	0.00004	0.00005	0.00002
Strontium [mg/L]	25-Nov-11	13:19	0.0260	0.00614	0.0311	0.0260	0.0241	0.0818	0.109	0.0186	0.0179
Titanium [mg/L]	25-Nov-11	13:19	0.0010	0.0019	0.0058	0.0104	0.0058	0.0018	0.0010	0.0006	0.0119
Thallium [mg/L]	25-Nov-11	13:19	0.00022	0.0119	0.00009	0.00005	0.00010	0.00015	0.00036	0.00279	0.00086
Uranium [mg/L]	25-Nov-11	13:19	0.000052	0.00541	0.000134	0.000146	0.000251	0.000279	0.000071	0.000623	0.0151
Vanadium [mg/L]	25-Nov-11	13:19	0.00007	0.00027	0.0487	0.0134	0.0187	0.0113	0.00069	< 0.00003	0.0764
Zinc [mg/L]	25-Nov-11	13:23	0.020	39.9	0.002	0.004	0.013	0.003	0.013	0.030	0.219

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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November-28-11

Baffinland Iron Mines Corp
Attn : Jim Millard

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Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 14 November 2011
LR Report: **CA10409-NOV11**
Reference: PO13013

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16328	6: 16334	7: 16350	8: 16384
Sample weight [g]	23-Nov-11	18:30	2.53	2.48	2.48	2.50
Vol H2O2 [mL]	23-Nov-11	18:30	250	250	250	250
Final pH [units]	23-Nov-11	18:30	2.28	3.22	2.69	3.66
pH [no unit]	25-Nov-11	15:06	2.37	3.30	2.80	3.75
Alkalinity [mg/L as CaCO3]	25-Nov-11	15:06	< 2	< 2	< 2	< 2
Acidity [mg/L as CaCO3]	25-Nov-11	15:06	594	81	228	45
Sulphate [mg/L]	28-Nov-11	17:23	1300	250	350	110
Mercury [mg/L]	24-Nov-11	13:47	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	25-Nov-11	13:10	0.00605	0.00269	0.00234	0.00014
Aluminum [mg/L]	24-Nov-11	12:59	11.7	2.35	16.9	2.03
Arsenic [mg/L]	25-Nov-11	13:10	0.0625	0.0006	0.0004	< 0.0002
Boron [mg/L]	25-Nov-11	13:10	0.0754	0.0644	0.0526	0.0792
Barium [mg/L]	25-Nov-11	13:10	0.0163	0.00901	0.385	0.0225
Beryllium [mg/L]	25-Nov-11	13:10	0.00313	0.00189	0.00328	0.00072
Bismuth [mg/L]	25-Nov-11	13:10	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	24-Nov-11	12:59	129	3.88	9.29	6.68
Cadmium [mg/L]	25-Nov-11	13:10	0.000300	0.000196	0.00114	0.000203
Cobalt [mg/L]	25-Nov-11	13:10	0.500	0.104	0.113	0.0829
Chromium [mg/L]	25-Nov-11	13:10	0.0206	0.0049	0.0122	0.0121
Copper [mg/L]	25-Nov-11	13:10	0.851	0.375	0.334	0.152
Iron [mg/L]	24-Nov-11	12:59	82.6	11.5	2.58	0.072
Potassium [mg/L]	24-Nov-11	12:59	1.29	0.738	31.2	9.89
Lithium [mg/L]	25-Nov-11	13:10	0.010	0.004	0.032	0.006
Magnesium [mg/L]	24-Nov-11	12:59	73.9	29.9	22.2	16.7
Manganese [mg/L]	25-Nov-11	13:22	42.8	39.3	0.888	1.23
Molybdenum [mg/L]	25-Nov-11	13:10	0.00017	0.00008	0.00004	0.00097
Sodium [mg/L]	24-Nov-11	13:00	1.28	0.73	1.63	1.49
Nickel [mg/L]	25-Nov-11	13:10	0.917	0.229	0.124	0.236
Lead [mg/L]	25-Nov-11	13:10	0.0215	0.00367	0.00204	0.00898

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LR Report : **CA10409-NOV11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16328	6: 16334	7: 16350	8: 16384
Antimony [mg/L]	25-Nov-11	13:10	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Selenium [mg/L]	25-Nov-11	13:10	0.037	0.008	0.003	0.004
Tin [mg/L]	25-Nov-11	13:10	0.00002	< 0.00001	0.00006	0.00004
Strontium [mg/L]	25-Nov-11	13:10	0.0480	0.0119	0.0297	0.0127
Titanium [mg/L]	25-Nov-11	13:10	0.0022	0.0014	0.0037	0.0009
Thallium [mg/L]	25-Nov-11	13:10	0.00234	0.00098	0.00029	0.00044
Uranium [mg/L]	25-Nov-11	13:10	0.000688	0.00718	0.00991	0.00211
Vanadium [mg/L]	25-Nov-11	13:10	< 0.00003	< 0.00003	0.00022	0.00040
Zinc [mg/L]	25-Nov-11	13:10	0.074	0.089	0.078	0.058

Chris Sullivan, B.Sc., C.Chem
Project Specialist
Environmental Services, Analytical

OnLine LIMS

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Friday, November 25, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West
Toronto, ON, M5H 1T1
Canada

Phone: 416-364-8820
Fax:416-364-0193

Date Rec. : 17 November 2011
LR Report: **CA10445-NOV11**
Reference: PO13013

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16218	6: 16274	7: 16298
Sample weight [g]	23-Nov-11	18:28	2.5	2.5	2.5
Vol H2O2 [mL]	23-Nov-11	18:28	250	250	250
Final pH [units]	23-Nov-11	18:28	2.65	3.46	4.11
pH [no unit]	24-Nov-11	21:41	2.69	3.53	4.11
Alkalinity [mg/L as CaCO3]	24-Nov-11	21:41	< 2	< 2	< 2
Acidity [mg/L as CaCO3]	24-Nov-11	21:41	300	61	19
Sulphate [mg/L]	24-Nov-11	13:23	520	250	170
Mercury [mg/L]	24-Nov-11	13:34	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	25-Nov-11	13:00	0.00271	0.00039	0.00025
Aluminum [mg/L]	24-Nov-11	12:58	25.8	6.44	1.81
Arsenic [mg/L]	25-Nov-11	13:00	0.0011	0.0007	0.0003
Boron [mg/L]	25-Nov-11	13:00	0.0197	0.0464	0.0851
Barium [mg/L]	25-Nov-11	13:00	0.0129	0.00822	0.00364
Beryllium [mg/L]	25-Nov-11	13:00	0.00262	0.00564	0.00021
Bismuth [mg/L]	25-Nov-11	13:00	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	24-Nov-11	12:58	12.1	5.98	1.19
Cadmium [mg/L]	25-Nov-11	13:00	0.000576	0.000263	0.000343
Cobalt [mg/L]	25-Nov-11	13:00	0.298	0.252	0.164
Chromium [mg/L]	25-Nov-11	13:00	0.0562	0.0538	0.0059
Copper [mg/L]	25-Nov-11	13:00	0.516	0.0125	0.0203
Iron [mg/L]	24-Nov-11	12:58	4.36	0.130	0.025
Potassium [mg/L]	24-Nov-11	12:58	1.71	2.17	2.45
Lithium [mg/L]	25-Nov-11	13:00	0.005	0.016	0.014
Magnesium [mg/L]	24-Nov-11	12:58	44.2	43.1	34.6
Manganese [mg/L]	25-Nov-11	13:00	0.861	1.22	1.71
Molybdenum [mg/L]	25-Nov-11	13:00	0.00036	0.0226	0.00519
Sodium [mg/L]	24-Nov-11	12:59	1.09	1.31	0.96
Nickel [mg/L]	25-Nov-11	13:00	2.45	0.0817	0.360
Lead [mg/L]	25-Nov-11	13:00	0.0861	0.0171	0.00014
Antimony [mg/L]	25-Nov-11	13:00	< 0.0002	< 0.0002	< 0.0002
Selenium [mg/L]	25-Nov-11	13:00	0.023	0.020	0.006
Tin [mg/L]	25-Nov-11	13:00	0.00004	< 0.00001	0.00006
Strontium [mg/L]	25-Nov-11	13:00	0.0196	0.0254	0.0378

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LR Report : **CA10445-NOV11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16218	6: 16274	7: 16298
Titanium [mg/L]	25-Nov-11	13:00	0.0025	0.0022	0.0010
Thallium [mg/L]	25-Nov-11	13:00	0.00088	0.00005	0.00014
Uranium [mg/L]	25-Nov-11	13:00	0.00377	0.00258	0.000730
Vanadium [mg/L]	25-Nov-11	13:00	< 0.00003	0.0880	0.00668
Zinc [mg/L]	25-Nov-11	13:00	0.097	0.057	0.091

Brian Graham B.Sc.
Project Specialist
Environmental Services, Analytical

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NAG Leachate

Tuesday, November 29, 2011

Baffinland Iron Mines Corp
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Canada

Phone: 416-364-8820
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Date Rec. : 17 November 2011
LR Report: **CA10447-NOV11**
Reference: PO13013

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16230	6: 16232	7: 16262	8: 16266	9: 16272	10: 16282	11: 16296
Sample weight [g]	23-Nov-11	18:29	2.5	2.6	2.5	2.5	2.5	2.5	2.5
Vol H2O2 [mL]	23-Nov-11	18:29	250	250	250	250	250	250	250
Final pH [units]	23-Nov-11	18:29	2.70	2.75	2.61	2.39	5.09	2.60	2.67
pH [no unit]	25-Nov-11	15:05	2.78	2.84	2.72	2.50	5.14	2.68	2.75
Alkalinity [mg/L as CaCO3]	25-Nov-11	15:05	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Acidity [mg/L as CaCO3]	25-Nov-11	15:05	339	759	25	298	8	636	18
Sulphate [mg/L]	29-Nov-11	16:02	1200	1500	410	390	120	330	490
Mercury [mg/L]	24-Nov-11	13:49	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	25-Nov-11	13:20	0.00269	0.00192	0.00051	0.00030	0.00010	0.00136	0.00159
Aluminum [mg/L]	24-Nov-11	13:02	33.9	35.4	7.29	3.39	0.06	2.19	31.6
Arsenic [mg/L]	25-Nov-11	13:20	0.0024	0.0020	0.0018	0.0003	< 0.0002	0.0003	0.0003
Boron [mg/L]	25-Nov-11	13:20	0.0524	0.103	0.1000	0.205	0.119	0.170	0.103
Barium [mg/L]	25-Nov-11	13:20	0.0653	0.0211	0.00685	0.00604	0.00068	0.00527	0.00323
Beryllium [mg/L]	25-Nov-11	13:20	0.00517	0.00402	0.00143	0.00081	0.00004	0.00452	0.00099
Bismuth [mg/L]	25-Nov-11	13:20	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	24-Nov-11	13:02	8.66	11.0	5.91	9.15	1.71	3.44	0.63

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Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16230	6: 16232	7: 16262	8: 16266	9: 16272	10: 16282	11: 16296
Cadmium [mg/L]	25-Nov-11	13:20	0.000205	0.000249	0.000174	0.000208	0.000048	0.000138	0.000105
Cobalt [mg/L]	25-Nov-11	13:20	0.272	0.203	0.0218	0.0169	0.0108	0.186	0.272
Chromium [mg/L]	25-Nov-11	13:20	0.0146	0.0175	0.0507	0.0233	0.0424	0.0157	0.0208
Copper [mg/L]	25-Nov-11	13:20	0.0356	0.0264	0.0773	0.0397	0.0009	0.289	0.212
Iron [mg/L]	24-Nov-11	13:02	159	241	62.0	10.2	0.014	29.7	18.1
Potassium [mg/L]	24-Nov-11	13:02	12.1	1.56	1.29	10.6	5.78	0.894	0.905
Lithium [mg/L]	25-Nov-11	13:20	0.040	0.050	0.007	0.003	< 0.001	0.006	0.012
Magnesium [mg/L]	24-Nov-11	13:02	167	186	25.9	23.8	26.8	20.6	38.4
Manganese [mg/L]	25-Nov-11	13:20	1.11	2.31	7.18	3.30	0.989	23.3	1.68
Molybdenum [mg/L]	25-Nov-11	13:20	0.00010	0.00008	0.00007	0.00003	0.04603	0.00007	0.00012
Sodium [mg/L]	24-Nov-11	13:02	2.34	2.08	1.55	1.57	0.85	1.06	1.23
Nickel [mg/L]	25-Nov-11	13:20	0.434	0.379	0.103	0.0606	0.0137	0.269	0.779
Lead [mg/L]	25-Nov-11	13:20	0.0524	0.0449	0.00209	0.00440	0.00005	0.00564	0.00350
Antimony [mg/L]	25-Nov-11	13:20	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Selenium [mg/L]	25-Nov-11	13:20	0.028	0.026	0.013	0.004	0.005	0.007	0.007
Tin [mg/L]	25-Nov-11	13:20	0.00002	< 0.00001	< 0.00001	0.00002	0.00001	< 0.00001	< 0.00001
Strontium [mg/L]	25-Nov-11	13:20	0.0901	0.113	0.0260	0.0557	0.00790	0.00960	0.00612
Titanium [mg/L]	25-Nov-11	13:20	0.0032	0.0033	0.0022	0.0022	0.0008	0.0018	0.0028
Thallium [mg/L]	25-Nov-11	13:20	0.00050	0.00047	0.00012	0.00003	0.00004	0.00023	0.00023
Uranium [mg/L]	25-Nov-11	13:20	0.00435	0.00232	0.000442	0.000248	0.000010	0.00281	0.00462
Vanadium [mg/L]	25-Nov-11	13:20	0.00207	0.00162	0.00029	0.00130	0.0884	0.00013	0.00011
Zinc [mg/L]	25-Nov-11	13:20	0.130	0.154	0.037	0.024	0.002	0.056	0.104

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

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NAG Leachate

Thursday, December 01, 2011

Baffinland Iron Mines Corp
Attn : Jim Millard

1016-120 Adelaide Street West, Toronto, ON
Canada, M5H 1T1
Phone: 416-364-8820, Fax:416-364-0193

Date Rec. : 21 November 2011
LR Report: **CA10454-NOV11**
Reference: PO13013

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16422	6: 16438	7: 16442	8: 16448	9: 16452	10: 16486	11: 16496	12: 16500	13: 16502	14: 16506	15: 16508
Sample weight [g]	30-Nov-11	17:18	2.53	2.49	2.46	2.47	2.53	2.49	2.50	2.50	2.55	2.51	2.52
Vol H2O2 [mL]	30-Nov-11	17:18	250	250	250	250	250	250	250	250	250	250	250
Final pH [units]	30-Nov-11	17:18	6.24	5.60	6.58	6.38	5.69	6.74	6.00	5.43	5.16	4.76	5.91
pH [no unit]	30-Nov-11	15:30	5.97	5.73	6.26	6.09	5.39	6.15	5.76	5.25	5.14	4.90	5.75
Alkalinity [mg/L as CaCO3]	30-Nov-11	15:30	< 2	< 2	3	2	< 2	3	< 2	< 2	< 2	< 2	< 2
Acidity [mg/L as CaCO3]	30-Nov-11	15:30	4	11	6	5	7	4	8	6	6	10	5
Sulphate [mg/L]	01-Dec-11	16:03	120	170	49	120	130	41	52	110	110	130	120
Mercury [mg/L]	29-Nov-11	10:45	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Silver [mg/L]	30-Nov-11	17:18	0.00005	0.00001	0.00003	0.00007	0.00036	0.00003	0.00004	0.00057	0.00044	0.00045	0.00013
Aluminum [mg/L]	29-Nov-11	14:52	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.06	< 0.01
Arsenic [mg/L]	30-Nov-11	17:18	< 0.0002	0.0002	0.0005	0.0004	0.0002	0.0003	0.0003	0.0002	0.0002	0.0003	0.0002
Boron [mg/L]	30-Nov-11	17:18	0.0756	0.0736	0.0450	0.0456	0.0735	0.0432	0.130	0.0406	0.101	0.128	0.0887
Barium [mg/L]	30-Nov-11	17:18	0.00432	0.0104	0.00032	0.00992	0.0144	0.00057	0.00906	0.00302	0.00844	0.00396	0.00068
Beryllium [mg/L]	30-Nov-11	17:18	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00002	0.00009	< 0.00002
Bismuth [mg/L]	30-Nov-11	17:18	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium [mg/L]	29-Nov-11	14:52	4.03	19.0	2.90	2.94	2.62	1.48	1.67	6.90	5.14	3.68	5.17
Cadmium [mg/L]	30-Nov-11	17:18	< 0.000003	0.000018	< 0.000003	< 0.000003	0.000007	< 0.000003	0.000012	0.000019	0.000012	0.000005	< 0.000003
Cobalt [mg/L]	30-Nov-11	17:18	0.000547	0.00519	0.000225	0.000251	0.00670	0.000281	0.000263	0.0139	0.0183	0.0683	0.00644
Chromium [mg/L]	30-Nov-11	17:18	0.182	0.0104	0.0128	0.0099	0.216	0.0823	0.0205	0.221	0.0865	0.0333	0.157
Copper [mg/L]	30-Nov-11	17:18	< 0.0005	0.0009	< 0.0005	0.0005	0.0018	0.0015	< 0.0005	0.0028	0.0016	0.0028	0.0007
Iron [mg/L]	29-Nov-11	14:52	< 0.003	< 0.003	0.052	0.011	< 0.003	0.008	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Potassium [mg/L]	29-Nov-11	14:52	3.41	5.57	0.929	10.7	4.52	1.31	17.2	0.750	0.793	1.08	0.873
Lithium [mg/L]	30-Nov-11	17:18	0.001	0.005	0.003	0.001	0.004	0.002	< 0.001	0.004	0.004	0.017	0.002

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NAG Leachate

LR Report : **CA10454-NOV11**

Analysis	3: Analysis Approval Date	4: Analysis Approval Time	5: 16422	6: 16438	7: 16442	8: 16448	9: 16452	10: 16486	11: 16496	12: 16500	13: 16502	14: 16506	15: 16508
Magnesium [mg/L]	29-Nov-11	14:52	31.7	31.8	12.0	29.4	35.3	10.6	6.88	28.2	25.7	32.1	30.5
Manganese [mg/L]	30-Nov-11	17:18	0.510	3.13	0.0133	0.131	0.581	0.0107	0.0749	0.662	0.832	1.18	0.302
Molybdenum [mg/L]	30-Nov-11	17:18	0.0153	0.00067	0.00350	0.0101	0.00676	0.00455	0.0447	0.00033	0.00292	0.00166	0.00013
Sodium [mg/L]	29-Nov-11	14:52	1.21	3.06	1.86	1.79	1.72	0.43	0.94	0.86	0.64	0.94	0.98
Nickel [mg/L]	30-Nov-11	17:18	0.0005	0.0157	0.0003	0.0006	0.0555	0.0007	0.0004	0.0816	0.0598	0.575	0.0222
Lead [mg/L]	30-Nov-11	17:18	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00003	< 0.00002	< 0.00002	< 0.00002	0.00007	< 0.00002	0.00003
Antimony [mg/L]	30-Nov-11	17:18	0.0004	0.0004	0.0005	0.0005	0.0004	0.0006	0.0004	0.0004	0.0004	0.0004	0.0003
Selenium [mg/L]	30-Nov-11	17:18	0.006	0.006	0.008	0.015	0.008	0.008	0.007	0.007	0.005	0.005	0.005
Tin [mg/L]	30-Nov-11	17:18	0.00005	0.00002	0.00014	0.00006	0.00007	0.00002	0.00009	0.00005	0.00007	0.00010	0.00005
Strontium [mg/L]	30-Nov-11	17:18	0.0365	0.0428	0.0189	0.0390	0.0301	0.0213	0.0474	0.0901	0.0464	0.0545	0.0618
Titanium [mg/L]	30-Nov-11	17:18	0.0008	0.0014	0.0008	0.0011	0.0011	0.0003	0.0005	0.0010	0.0009	0.0011	0.0011
Thallium [mg/L]	30-Nov-11	17:18	0.00014	0.00006	< 0.00002	0.00010	0.00004	< 0.00002	0.00005	0.00005	0.00004	0.00002	< 0.00002
Uranium [mg/L]	30-Nov-11	17:18	0.000020	0.000008	0.000025	0.000020	0.000038	0.000012	0.000020	0.000036	0.000022	0.000032	0.000010
Vanadium [mg/L]	30-Nov-11	17:18	0.00003	0.00008	0.00213	< 0.00003	0.00082	0.00068	0.0126	0.00172	0.0336	0.00773	0.00009
Zinc [mg/L]	30-Nov-11	17:18	< 0.001	0.002	< 0.001	< 0.001	0.002	< 0.001	< 0.001	0.001	0.002	0.004	0.001

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