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File No.: NB102-181/10-A.01
Cont. No.: NB07-00915

October 24, 2007

Mr. Derek Chubb
Vice President, Sustainable Development
Baffinland Iron Mines Corporation
1016 - 120 Adelaide Street West
Toronto, Ontario
Canada, M5H 1T1

Dear Derek:

Re: Bulk Sampling Management Plan

The following Bulk Sampling Management Plan addresses Acid Rock Drainage (ARD) and Metal Leaching (ML) potential for the Bulk Sampling Program for Baffinland's Mary River Project (Figure 1) as required in the Nunavut Water Board (NWB) licence 2BB-MRY0710, Part D, Item No. 20.

General

Approximately 250,000 t of bulk sample will be extracted from 2 small and shallow (15 m deep) hematite and magnetite pits (approximate locations shown on Figure 2) by blasting with explosives and then excavating. A stockpile of weathered ore from the surface of the pits may be created and located on Deposit No. 1 (Figure 2) to enable the extraction of fresh mineralized ore. The final location of the small bulk sample pits may change but the change in locations should be relatively insignificant.

The ore will be transported from the bulk sample pits to the ore crushing area at Mary River (Figure 2) where it will be crushed using a portable crusher. There will be two temporary crusher feed stockpiles created, one for the hematite and one for the magnetite, as well as temporary lump ore and temporary fines stockpiles next to the crusher and at Milne Inlet (Figure 3). The 250,000 t bulk sample should be shipped to Europe from Milne Inlet for processing from August to October 2008.

General Waste Characterization

Geochemical characterization for the Mary River Project was initiated in 2006 to assess the acid rock drainage (ARD) potential and metal leaching (ML) capabilities of the waste rock and iron oxides (magnetite and hematite ore). The static and kinetic testing programs were carried out to support the future full-scale mining proposal but also support the much smaller Bulk Sample Program. Results from the 2006 static testing are reported in Knight Piésold Ltd. letter Ref. No. NB07-00481, attached. An additional 45 rock samples were collected for characterization during the summer of 2007 and sent for laboratory analysis. Final results for these 45 samples are pending and should be available by the end of the year (December 31, 2007).

On-site Kinetic Testing

On-site kinetic testing was initiated in the summer of 2007 to assess the reaction rates and the potential for ARD and ML of the waste rock under actual site conditions. Rock samples were placed into two plastic drums which were equipped with a drain on the bottom. Precipitation was allowed to percolate through the waste rock where it was collected in a sample bottle and then sent for laboratory analysis. Final results from the kinetic testing are pending. Preliminary results indicate negligible risk for metal leaching.

Influences of Site Conditions

The cold and dry environmental conditions at the Mary River site will slow the onset of any potential ARD and ML as both cold and dry weather climates reduce reaction rates (MEND, 2006). The on-site kinetic testing should confirm the effects of the local environment on the risk of potential ML and ARD generation from the local rock.

Specific to the Bulk Sample Program, it is very unlikely that significant runoff will occur at the location and elevations of the planned sample pits and the oxidized ore stockpile because the temperatures near the top of Deposit No. 1, where the pits and stockpile will be located, are several degrees cooler than the Mary River camp site. Also, groundwater seepage into the pits will be negligible to nil due to permafrost and the shallow depth of the small pits.

The shallow bulk sample pits have also been exposed to both natural air and water weathering processes. Therefore, due to this exposure, the rock from the bulk sample pits are very unlikely to generate ARD or ML as they have historically already reacted with the environment. The sulphur content from channel rock samples collected in 2006 from the locations of the hematite and magnetite bulk sample pits was 0.007% and 0.024%, respectively, which indicates a very low risk for ARD.

Water quality data collected over the past few years downstream of the No. 1 deposit does not show any indication that acid rock drainage is naturally occurring from the deposit. Surface water quality downstream of the deposit exhibits generally neutral pH conditions and sulphate concentrations in the surface water downstream are very low. In addition, no visual evidence of ARD such as iron staining (orange/red staining) was noted at the No. 1 deposit.

The small and shallow bulk sample hematite and magnetite pits are designed to be naturally free draining similar to side hill cuts. Water will drain from the pits immediately reducing the reaction time of the pit walls and not allowing the accumulation of ARD or metals in the runoff if reactions were to take place.

Monitoring and Reporting

Representative water samples of the runoff/seepage from both bulk sample pits, the oxidized ore stockpile and the ore stockpiles at Mary River and Milne Inlet will be monitored monthly for evidence of ARD and ML. Monitoring will include measuring field parameters (pH and conductivity) and sampling for metals including Sulphate, Iron, Copper, Calcium, Magnesium, Sodium, Potassium, Aluminum, Arsenic, Boron, Barium, Cadmium, Chromium, Cobalt, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Strontium, Vanadium, Zinc, Tin, Alkalinity as $CaCO_3$, TDS (COND-CALC),TSS, Turbidity, Phenols, N-NH_3, Chloride, Bromide, N-NO_2, N-NO_3, NO_2 + NO_3 as N, Mercury, Hardness as $CaCO_3$, TOC and DOC.

Surface water samples will be collected at the monitoring stations specified in the NWB license:

- Monitoring stations MRY-8 and MRY-9 will assess runoff from the hematite and magnetite bulk sample pits, respectively
- Monitoring station MRY-10 will assess runoff/seepage from the weathered ore stockpile (which may or may not be generated as an outcome of the bulk sampling program)

- Monitoring stations MRY-12 and MRY-13 will assess runoff/seepage from the ore stockpiles at Mary River and Milne Inlet, respectively

The discharge from the two bulk sample open pits at monitoring stations MRY-8 and MRY-9 will not exceed the following limits as indicated in the NWB licence:

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	0.5	1.00
Total Suspended Solids (TSS)	15.0	50.0
Oil and Grease	No visible sheen	n/a
Waste discharged will have a pH between 6.0 – 9.5		

Snowfall monitoring will also be conducted both in the vicinity of open pit activities as well as near the crusher at Mary River and stockpiles at Milne Inlet. This is not a water license requirement but was a commitment made during environmental screening, as it is expected to generate useful information regarding dust generation and waste characteristics. The objective of the snowfall monitoring is to understand what issues, if any, exist with the crushing of the ore. The proposed sampling program is intended to help answer how much dust is created by the activities, and what is the physical nature of the crushed ore.

A monthly report will be submitted to the NWB for the preceding month by the end of the following month (i.e., the August monthly report is due by September 30). In addition an annual report will be prepared summarizing all monitoring conducted throughout a calendar year.

<u>Possible Mitigation Measures</u>

The risk of ARD and ML is considered to be very unlikely for the Bulk Sampling Program. However, if poor quality run-off is identified and there is a resultant potential for impacts to the downstream environment due to the Bulk Sampling Program, the following mitigating measures will be implemented as follows:

- Confirm up-gradient surface runoff is routed around the two pits, the weathered ore stockpile and the ore stockpiles
- Readily available neutralizing material will be placed within the pits and mixed with the weathered ore stockpile to effectively neutralize any acidity that might be present. Nearby Cambrian-Ordovician dolostone and limestone south of the deposit or local acid buffering overburden material would be used as the neutralizing agent if needed. The exact quantity of material to be added would ensure that the total neutralizing capacity is at a 2:1 ratio to the acid generating capacity.

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- Readily available neutralizing material will be placed at the discharge points of runoff/seepage from the ore stockpiles to effectively neutralize any acidity that might be present.

Yours very truly,
KNIGHT PIÉSOLD LTD.

Richard Cook

for Steve Aiken, P.Eng.
Manager Environmental Services

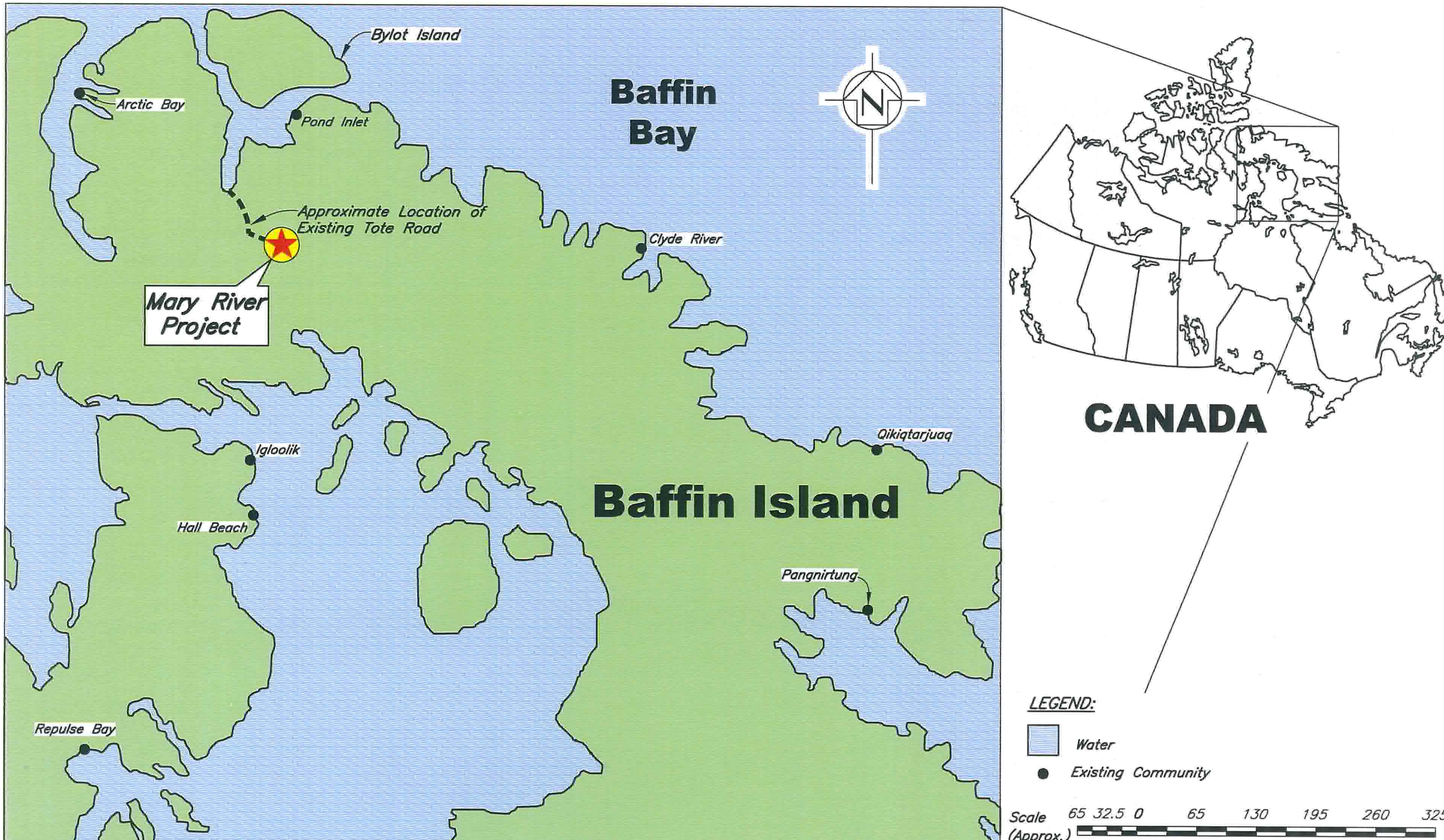
Ken D. Embree, P.Eng.
Managing Director

Attachments:

- Figure 1 – Project Location Map (1 page)
- Figure 2 – Mary River Area (1 page)
- Figure 3 – Milne Inlet Area (1 page)
- Letter NB07-00481

SRA/rc

XREF FILE(S): Routes_Settlements IMAGE FILE(S): 136-Jan12 137-Jan12 4 Baffinland logo-big corp Baffinland logo_new



Baffinland

MARY RIVER PROJECT

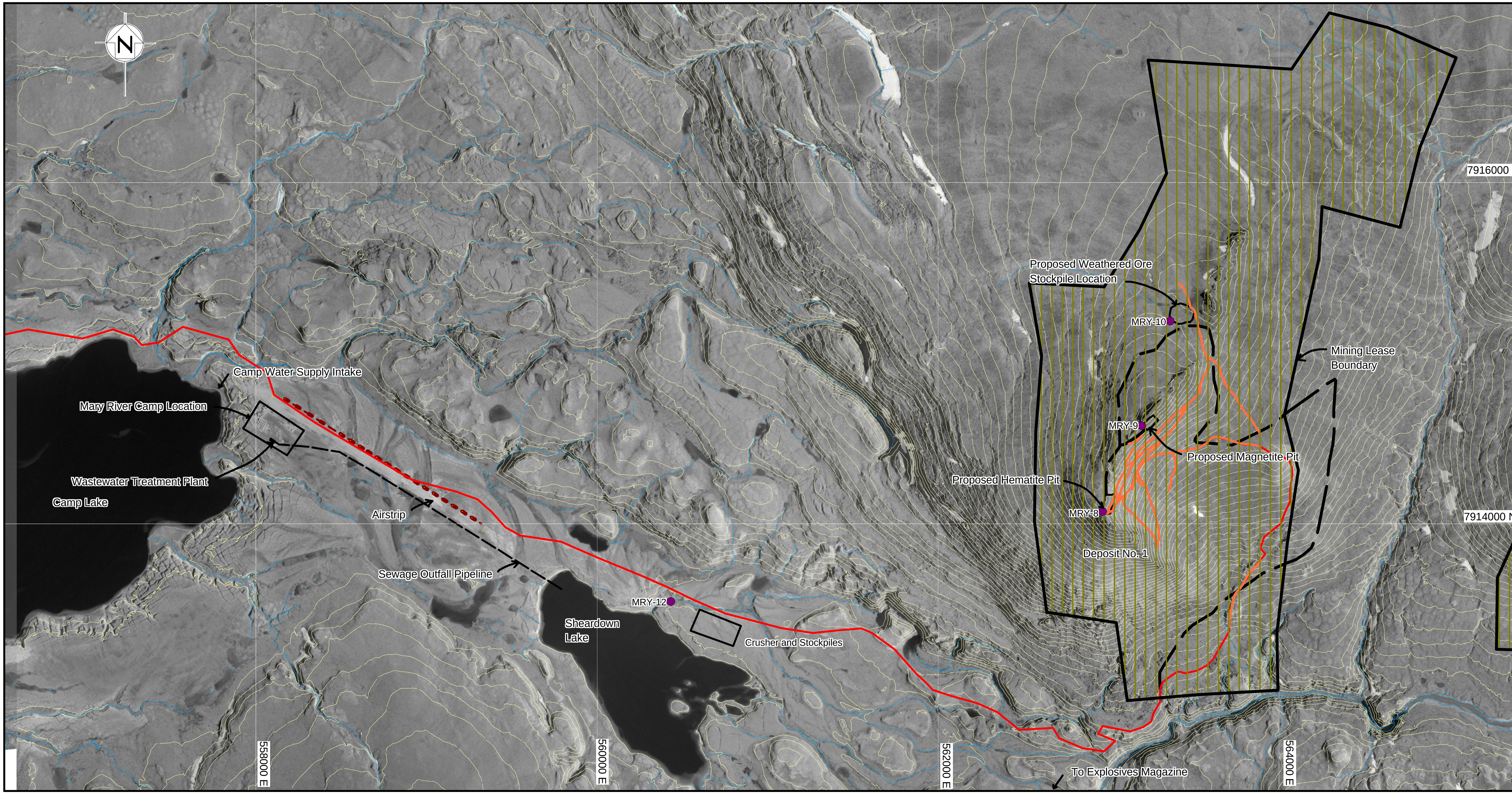
PROJECT LOCATION MAP

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/10	NB07-00915	0

FIGURE 1

NORTH BAY ON. CREATED BY: mdemera SAVED: I:\102-00181-10\Assignment\Acad\Fig\A5R0, 10/26/2007 10:42:00 AM PRINTED: 10/26/2007 10:42:29 AM, Layout1, rjohnson



LEGEND:

- *Existing Tote Road*
- *Existing Trails for Drills*
- *Proposed Pit / Stockpile Road*
- *Mining Lease Boundary*
- *Proposed Water Quality Monitoring Locations for Bulk Sampling Program*

NOTES:

1. *Air photos and topography provided by Eagle Mapping (2005).*
2. *Contour interval is 10 metres and was provided by Eagle Mapping.*
3. *Coordinate grid is shown in UTM (NAD83) Zone 17 and is in metres.*
4. *Mining lease boundaries from Indian and Northern Affairs (2006).*

Scale 0 500 1,000 Metres

Baffinland Iron Mines Corporation

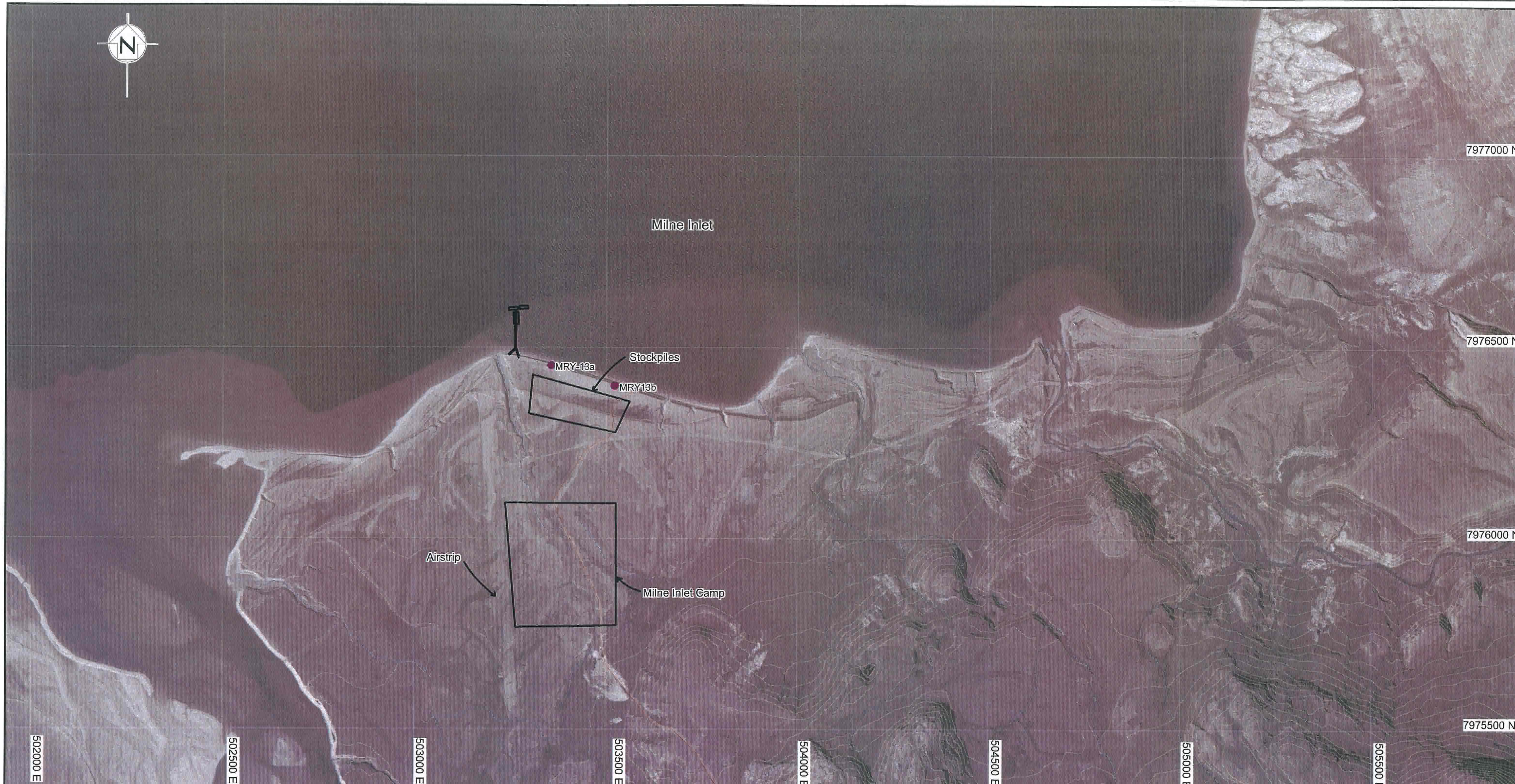
MARY RIVER PROJECT

MARY RIVER AREA

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/10	NB07-00915	0

FIGURE 2



LEGEND:

● Proposed Water Quality Monitoring Locations for Bulk Sampling Program

NOTES:

1. Air photos provided by Eagle Mapping (2005).
2. Infrastructure provided by B.H. Martin Consultants Ltd.
3. Contour interval is 5 metres and was provided by Eagle Mapping.
4. Coordinate grid is shown in UTM (NAD83) Zone 17 and is in metres.

Scale 0 250 500 Metres

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MILNE INLET AREA

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/10	NB07-00915	0

FIGURE 3

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File No.: NB102-181/10-A.01
Cont. No.: NB07-00481

June 11, 2007

Mr. Derek Chubb
Vice President, Sustainable Development
Baffinland Iron Mines Corporation
1016 - 120 Adelaide Street West
Toronto, Ontario
Canada, M5H 1T1

Dear Derek:

Re: Evaluation of Geochemical Characterization Data Related to the Bulk Sampling Program

General

Geochemical characterization for the Mary River Project was initiated in 2006 to assess the acid rock drainage (ARD) potential and metal leaching (ML) capabilities of the waste rock and iron oxides (magnetite and hematite ore). Results from this preliminary testing to date are reported in Knight Piésold Ltd. letters (Ref. No. NB07-00232 and NB07-00447), attached. The testing conducted was carried out in support of a future full-scale mining proposal. The results obtained thus far provide the information necessary in the planning of the much smaller Bulk Sample Program.

Laboratory Testing

The preliminary results discussed in the above letters are based on a series of static tests carried out within a laboratory environment. Testing in a laboratory environment provides an optimal setting for the generation of ARD and ML. A laboratory setting does not reflect the local environmental setting which will be less optimal for ARD and ML.

In addition, the tests in the laboratory are carried out on crushed samples. Crushed samples provide significantly more surface area to react with air and water compared to the field where much larger rock would be produced (i.e. the waste rock in the field will be large size likely averaging greater than 0.3 m diameter with relatively little surface area exposed to react with air and water compared to the rock samples tested in the laboratory that were crushed to well less than 1.0 cm diameter).

Influences of Site Conditions

The cold and dry environmental conditions at the Mary River site will slow the onset of any potential ARD and metal leaching. Cold and dry weather climates reduce reaction rates (MEND, 2006). On-site field kinetic testing will be conducted this summer (2007) to confirm these effects of the local environment on the risk of potential ML and ARD generation from the iron oxides and waste rock samples for the proposed full-scale mining project.

Specific to the Bulk Sample Program, it is very unlikely that significant runoff will occur at the location and elevations of the planned sample pits and the oxidized ore stockpile because the temperatures near the top of Deposit No. 1, where the pits and stockpile will be located, are several degrees cooler than the

Mary River camp site. This is supported by observations from the past few years. Also, groundwater seepage into the pits will be minimal to nil due to permafrost and the shallow depth of the small pits.

The rock samples that were tested are not from the immediate area or depth of the smaller bulk sample pits but rather from the ultimate pit for the proposed full-scale project. Whereas the core samples for the current round of testing were collected from deeper iron oxides and waste rock with inherently higher risk for potential ARD and ML due its fresh (un-oxidized) state, the bulk sample will be collected from two very shallow pits (side-hill cuts) of about 15 m deep, each. These pits have been exposed to both natural air and water weathering processes. Therefore, due to this exposure, the rock from the bulk sample pits will likely not generate ARD or ML as they have historically already reacted with the environment. The sulphur content from shallow channel rock samples collected in 2006 from the locations of the hematite and magnetite bulk sample pits was 0.007% and 0.024%, respectively, which indicates a low risk for ARD. Water quality data collected over the past few years downstream of the No. 1 deposit does not show any indication that acid rock drainage is occurring from the deposit. Surface water quality downstream of the deposit exhibits generally neutral pH conditions and sulphate concentrations in the surface water downstream are very low. In addition, no visual evidence of ARD such as iron staining (orange/red staining) was noted at the No. 1 deposit.

The small and shallow bulk sample hematite and magnetite pits will be designed to be naturally free draining similar to side hill cuts. Water will drain from the pits immediately reducing the reaction time of the pit walls and not allowing the accumulation of ARD or metals in the runoff if reactions were to take place.

The Bulk Sampling Program also involves the upgrading of an existing tote road from the deposit to Milne Inlet. The overburden and quarry materials that will be used for road construction have been shown in test work completed to date to not be acid generating. Laboratory results show that major components of the overburden are reactive neutralizing carbonates such as calcite and dolomite.

Monitoring and Reporting

As an element of the Bulk Sample Program, representative water samples of the runoff from the oxidized ore stockpile and from both bulk sample pits will be regularly monitored for ARD and ML. Monitoring will include measuring field parameters (pH and conductivity) and sampling for metals including Sulphate, Iron, Copper, Calcium, Magnesium, Sodium, Potassium, Aluminium, Arsenic, Boron, Barium, Cadmium, Chromium, Cobalt, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Strontium, Vanadium, Zinc, Tin, Alkalinity as $CaCO_3$, TDS (COND-CALC), Turbidity, Phenols, N-NH_3, Chloride, Bromide, N-NO_2, N-NO_3, NO_2 + NO_3 as N, Mercury, Hardness as $CaCO_3$, TOC and DOC.

A weekly report will be compiled for distribution by Baffinland summarizing the results of the weekly monitoring program. The report will include the following:

- A comparison of the sampling results to the Canadian Council of Ministers for the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Aquatic Life
- A summary of any notes and observations made during the monitoring program.

The weekly report will be circulated to the appropriate supervisory staff of Baffinland and Knight Piésold Ltd. It will be available through Baffinland site management to responsible authorities upon request. Any issues of non-compliance with regulatory permits or exceedances of CCME guidelines will be reported upon identification to the regulatory authorities as may be appropriate.

The Comprehensive Environmental Monitoring Program currently under development for the overall Bulk Sampling Program will reflect the contents of this monitoring program

Possible Mitigation Measures

The risk of ARD and ML is considered to be low for the Bulk Sampling Program. However, if poor quality run-off is identified and there is a resultant potential for impacts to the downstream environment due to the two small bulk sample pits and/or the small oxidized ore stockpile, the following mitigating measures will be implemented as follows:

- Confirm up-gradient surface runoff is routed around the two pits and the stockpile
- Readily available neutralizing material will be placed within the pits and mixed with the oxidized ore stockpile to effectively neutralize any acidity that might be present. Nearby Cambrian-Ordovician dolostone and limestone south of the deposit or local acid buffering overburden material would be used as the neutralizing agent if needed. The exact quantity of material to be added would ensure that the total neutralizing capacity is at a 2:1 ratio to the acid generating capacity.

If there are any questions or you require additional information please contact the undersigned.

Yours very truly,
KNIGHT PIÉSOLD LTD.

Steven Aiken, P.Eng.
Manager Environmental Services

Ken D. Embree, P.Eng.
Managing Director

Attachments:

- Knight Piésold Ltd. Letter NB07-00232
- Knight Piésold Ltd. Letter NB07-00447

/sra

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File No.: NB102-181/7-A.01
Cont. No.: NB07-00447

June 11, 2007

Mr. Rodney (Rod) Cooper
Vice President Operations & Chief Operating Officer
Baffinland Iron Mines Corporation
1016 - 120 Adelaide Street West
Toronto, Ontario
Canada, M5H 1T1

Dear Rodney (Rod):

Re: Phase I Geochemical Characterization Program
Addendum Letter No.1 (Ref. No. NB07-00232) - Results of Additional Waste Rock and Iron Oxide Sample Testing

INTRODUCTION

Baffinland Iron Mines Corporation is currently carrying out a Definitive Feasibility Study (DFS) on the Mary River iron ore project located on Baffin Island, Nunavut. As part of the DFS, Knight Piésold has initiated a preliminary phase I geochemical characterization test work program to assess the acid generating and metal leaching capacities of mined rock, borrow materials and overburden samples at the Mary River site ('the site').

In 2006, 78 waste rock samples were collected from existing drill core from Deposit No. 1 (from the 2004-2006 drill programs). The samples were selected in an effort to best represent the overall rock mass. Core from the hematite and magnetite iron oxides was unavailable to sample from the 2004-2005 core as it had already been cut and sampled for assay and so it was sampled from the 2006 drill program. Sample locations are shown on Figure 1.

In March 2007, Knight Piésold issued a letter on the results of the initial preliminary static testwork carried out on 24 waste rock, 7 overburden and 6 ballast samples collected from the site (Knight Piésold, 2007). At that time, the results of testing on 7 magnetite and mixed iron oxide samples and 18 additional waste rock samples were unavailable.

The conclusions from the initial preliminary testing of 24 waste rock, 7 overburden and 6 ballast samples reported by Knight Piésold in March, 2007 are summarized below.

Waste Rock

1. Waste rock elemental composition was generally consistent with the predicted mineralogy.

2. Based on the Price guidelines, the initial Acid-Base Accounting (ABA) test results indicated that all waste rock samples, with the exception of schist sample ARD19, were considered to be non-acid generating, due to low sulphide content. However, it was also noted that the hangingwall is predominately composed of quartz, mica and chlorite minerals that have low capacities to neutralize

acidity if minor sulphide oxidation were to occur. Hangingwall acid generating and neutralizing capabilities will be evaluated further once additional laboratory results become available.

3. Schist sample ARD19 from the hangingwall had a sulphide content of 1.45 wt% and was predicted to be likely acid generating. The acid generating characteristics of hangingwall waste rock will require further confirmation.

4. The leach test results indicated that the waste rock may be prone to leaching of a number of major metals and trace metals under moderately acidic conditions, if this condition were to occur.

5. The waste rock samples were capable of neutralizing acidity (under extreme conditions of the Synthetic Precipitation Leaching Procedure (SPLP) 1312 analysis), although long-term acid neutralizing capacities are expected to be low.

Overburden and Ballast

1. Ballast elemental compositions were generally consistent with the predicted mineralogy.

2. The ABA test results indicate that overburden and ballast samples are considered to be non-acid generating due to low sulphide content and readily reactive carbonate neutralizing potential (Ca-NP).

3. The leach test results indicated that the overburden and ballast samples may be prone to leaching of a number of major metals and trace metals under moderately acidic conditions, if this condition were to occur.

This addendum report summarises the results from the testing of 7 iron oxide samples and 18 additional waste rock samples. For details on testwork methods, site conditions and deposit geology please refer to the earlier letter (Ref No. NB07-00232).

METHODS

Sample Selection

Waste Rock Samples

A total of eighteen (18) additional waste rock samples representing the hangingwall rock including tuff (8 samples), amphibolite (1 sample) and schist (2 samples) and footwall gneiss (7 samples) were submitted for a range of static geochemical tests. Samples were selected from drill core from various drill holes from the 2004-2006 drill programs. Sample locations are shown on Figure 2.

Iron Oxide Samples

Seven (7) iron oxide samples consisting of 6 magnetite samples and 1 mixed magnetite / hematite sample were selected from drill core from various 2006 drill holes. Samples locations are also shown on Figure 2.

RESULTS

The results of the additional testing of 18 waste rock samples and 7 iron oxide samples are discussed below. The lab results for the remaining 25 waste rock and iron oxide samples will be reported when the laboratory data becomes available.

Acid-Base Accounting

The preliminary ABA results for the waste rock and iron oxide samples can be found on Table 1 and on Figures 3 to 5. The samples were divided into five main lithological units: gneiss, amphibolite, tuff, schist and iron oxide.

Waste Rock Samples

The 6 tuff samples all had sulphide concentrations below the 0.3 wt% Price threshold and had paste pH values above 5.5, which is consistent with the ABA results for the 2 samples tested previously.

The single amphibolite sample had a sulphide concentration below detection limits at less than 0.01 wt%. and a neutral paste pH. These results are consistent with the ABA results for 7 amphibolite samples tested previously. From these previously tested samples, there were two mixed amphibolite/tuff samples, one of which was classified as possibly acid generating (ARD10).

The 2 schist samples had sulphide concentrations below the 0.3 wt% Price threshold and alkaline paste pH values. These compare to the results for the 2 schist samples tested previously, where only one of the samples was predicted to be likely acid generating.

Two of the 7 samples from the footwall gneiss had sulphide concentrations above the 0.3 wt% Price threshold value. These were sample UCS10 (sulphide at 2.65 wt%) and sample UCS13 (sulphide at 0.67 wt%). It is noted that both samples are from the footwall of the North Limb extension on the other side of a saddle structure defined by an inferred fault zone. Rock characteristics in this area may be different from the main deposit structure. The remaining 5 gneiss samples had sulphide concentrations below the 0.3 wt% Price threshold and alkaline paste pH values. This is consistent with the 10 gneiss samples tested previously.

Figure 4 shows a plot of NP versus Ca-NP. Inspection of Figure 4 shows that for all samples, more than 50% of the NP is composed of less reactive non-carbonate minerals (e.g. silicates), which is consistent with the results from the previous testing.

Iron Oxide Samples

All samples from the iron oxide (7 samples) contained sulphide concentrations below the 0.3 wt% Price threshold, with the exception of sulphide bearing mixed iron oxide sample UCS43 (0.68 wt%) and sulphide bearing magnetite iron oxide sample UCS46 (1.37 wt%). Both of these samples also had an neutralizing potential / acid potential (NP/AP) ratio of less than 1. Sulphide concentrations in the remaining 5 iron oxide samples ranged from below detection limits at less than 0.01 wt% to 0.13 wt% however, paste pH in all but one of these samples was less than 5.5.

Whole Rock

The preliminary results for the Whole Rock analysis testing are shown on Table 2.

Waste Rock Samples

Samples from the hangingwall including schist, amphibolite and tuff units show compositions that are consistent with the expected mineralogy. The footwall gneiss samples are primarily composed of silicon and also contain smaller amounts of aluminium and iron and trace amounts of magnesium and titanium.

Iron Oxide Samples

As expected, the iron oxide samples were rich in iron. Lesser amounts of silicon, aluminium, magnesium, calcium, phosphorus and manganese were also present. It should be noted that whole rock analysis results are reported as oxide equivalents and that the data would have to be converted to an elemental concentration.

Total Elements

Preliminary results for the inductively coupled plasma (ICP) elemental analysis are presented in Table 3.

Waste Rock Samples

Major elements (e.g. iron, aluminium and magnesium) were present at relatively elevated concentrations as seen with the whole rock data. In general, the elemental analysis results were consistent with those from the whole rock analysis as well as the earlier set of waste rock samples.

Iron Oxide Samples

As expected, iron was present at elevated concentrations within the iron oxide samples, which is consistent with the whole rock analytical results. Other minor elements present include magnesium, calcium, manganese and aluminium.

X-ray Diffraction

Preliminary X-ray Diffraction (XRD) results are presented on Table 4.

Waste Rock Samples

The samples from the hangingwall (tuff, amphibolite and schist) generally contain varying amounts of chlorite, amphibole and quartz as their main components with moderate amounts of mica and feldspars. This is generally consistent with the initial test results that were reported earlier. Minor amounts of carbonates (calcite, dolomite and ankerite) and iron oxides and trace amounts of gypsum, carbonates, fluorapatite, fervanite, talc, titanium oxides, and serpentine were also present. Sample UCS15 (tuff) also contained trace amounts of pyrite.

Similar to previous results, the gneiss samples were mainly composed of quartz and mica with smaller amounts of feldspars and chlorite. There were also minor to trace amounts of iron oxides, feldspars, serpentine, carbonates, amphibole, jarosite and titanium oxides present.

Iron Oxide Samples

The main constituent within the iron oxide samples was determined to be magnetite and also a moderate amount of hematite, which is expected, since the samples were taken from rock logged as magnetite. Minor amounts of goethite, chlor- and fluorapatite, quartz and chlorite were detected as well as minor amounts of siderite ($FeCO_3$) and trace amounts of rhodochrosite ($MnCO_3$) which were present in both UCS43 and UCS46. When Fe and Mn carbonates weather, the initial dissolution of the carbonates provide neutralization of any acid that may be present. This is however counteracted by the hydrolysis of the iron and manganese which generates more hydrogen ions and thus more acidity. Unlike most carbonates, iron and manganese carbonates contribute more to acid generation than overall neutralization. Other trace minerals present in the iron oxide sampleswere carbonates including calcite and dolomite, sulphates (gypsum, jarosite and plumbojarosite), pyrite in UCS46, mica, talc, ilmenite, rutile and serpentine.

Synthetic Precipitation Leaching Procedure (SPLP) 1312

The preliminary SPLP 1312 results are shown on Table 5 and 6.

<u>Waste Rock Samples</u>

SPLP 1312 (pH 4.2, 20:1 liquid:solid ratio by wt.)

Results from tuff, amphibolite and schist (hangingwall) samples showed that aluminium, iron, manganese and barium may be prone to leaching from the waste rock. Leachate from all hangingwall samples had an alkaline pH, with the exception of sample UCS2 (tuff) which had a leachate pH of 5.5.

The leach test results for footwall gneiss samples indicated that the footwall may be prone to leaching of aluminium, iron, manganese and to a lesser extent, barium. Leachate pH remained alkaline (8.1 to 9.2) except for samples UCS10 and UCS12 which had leachate pH's of 5.8 and 6.6, respectively.

The above preliminary results indicate that in general, the waste rock samples contained sufficient reactive NP to neutralize the acidic leaching agent. The above results are generally consistent with those observed with the earlier set of samples.

Modified SPLP (pH 5.5, 3:1 liquid:solid ratio by wt.)

A second set of modified SPLP tests were carried out to simulate rainwater leaching. A reduced liquid to solid ratio was used as waste rock located in waste rock piles may not be prone to complete flushing by rainwater.

The preliminary results for the modified SPLP tests indicated that generally, leaching of iron, aluminium and barium from tuff, amphibolite and schist (hangingwall) samples was less pronounced than that observed with the standard SPLP test. This pattern was also observed for the gneiss (footwall) samples. It was however noted that leaching of manganese from gneiss sample UCS10 was more pronounced with the modified SPLP test (10.4 mg/L vs. 1 mg/L). This anomalous result could be due to minor mineralogical differences between the samples used for each test.

In general, the difference (i.e. higher concentrations of leached metals) between the results for the standard and the modified SPLP tests likely reflects the more acidic pH at which the standard SPLP test is carried out.

<u>Iron Oxide Samples</u>

SPLP 1312 (pH 4.2, 20:1 liquid:solid ratio by wt.)

Preliminary test results show that iron, aluminium, manganese and zinc may be prone to leaching from the iron oxide under acidic conditions, if this were to occur. Leachate from all samples was acidic, with pH ranging from 3.6 to 5.7. Iron oxide sample UCS46 was the exception with a pH value of 7.6.

Modified SPLP (pH 5.5, 3:1 liquid:solid ratio by wt.)

Iron leaching from the iron oxide samples was elevated, but showed variability, with concentrations ranging from below detection limits at less than 0.01 mg/L (sample UCS41) up to 1,890 mg/L (sample UCS5). Manganese leaching was also pronounced, with concentrations ranging from 0.6 to 178 mg/L. Leaching of aluminium, boron and zinc was also observed.

Leachate pH values for iron oxide samples UCS1, UCS4, UCS5 and UCS7 were below the leaching agent pH of 4.2, which indicates that these samples contained inherent acidity prior to testing. Iron oxide samples UCS41 and UCS46 had neutral to alkaline pH values.

Toxicity Characteristic Leaching Procedure (TCLP) 1311

The preliminary results of the TCLP testing are presented on Table 7.

The test results for both waste rock and iron oxide samples were generally comparable to the SPLP results and were consistent with the TCLP results obtained from the previous round of testing for the waste rock.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations from the preliminary Phase I test work results received to date are discussed below.

Conclusions

Waste Rock

1. The ABA results were generally comparable to those from the initial round of testing.
   i. From the hangingwall rock samples, tuff and amphibolite are expected to be non-acid generating due to low sulphide content and neutral to alkaline paste pH, however it is noted that there is some variability within the hangingwall unit as a whole. Of the 4 schist sample data reviewed to date, one sample was predicted to be likely acid generating, one had a sulphide concentration of 0.27 wt% (i.e. only marginally below the Price threshold limit) and the remaining two were classified as likely non-acid generating due to low sulphide content. Based upon only four samples, schist remains questionable in terms of its acid generating properties.
   ii. Of the results received so far for the 17 footwall gneiss samples, the data indicates that 15 samples are likely non-acid generating (due to low sulphide content), with 2 samples from the very edge of the North Limb of Deposit No. 1 predicted to be likely acid generating.

2. The results from this round of testing tend to confirm the earlier results, in that while sulphide concentrations are generally low, it is also true that the majority of the footwall and hangingwall rock units do not contain abundant carbonate neutralization potential.

3. Waste rock elemental composition was generally consistent with the predicted mineralogy, as was found with the previous set of results.

4. XRD data confirmed that the rock unit mineralogy is consistent with the rock descriptions.

5. Waste rock may be prone to leaching a number of major elements and certain trace elements under moderately acidic and mildly acidic conditions, if these conditions were to occur. These results are comparable to the results from the previous round of testing.

6. Overall, most waste rock samples were capable of neutralizing acidity (under extreme conditions of the SPLP test), although long-term acid neutralizing capacities are expected to be low.

Magnetite Iron Oxide Samples

1. Iron oxide samples containing sulphides are predicted to be possibly acid generating to acid generating.

2. Iron oxide sample elemental composition confirmed the elevated iron content of the samples.

3. XRD data confirmed that the iron oxide samples were comprised primarily of magnetite and some hematite.

4. The iron oxide sample leach test results indicated that leaching of iron and manganese may take place under slightly acidic conditions (e.g. at the pH of typical rainwater). The results also indicate that some leaching of aluminium, boron, manganese and zinc may also occur. The leach test results also indicated that some of the iron oxide samples that contain sulphur already contained inherent acidity prior to testing.

Recommendations

Recommendations arising out of the review of the second set of preliminary testwork results are:

1. Further TCLP testing of samples should be discontinued, as the results were comparable to the SPLP results.

2. Variability in ABA and metal leaching potentials encountered so far should be further reviewed once the results for the remaining 25 samples are received. Once the results from all samples are received:
   i. The spatial distribution of the samples should be reviewed to assess spatial representation of samples across deposit No.1; and
   i. The number of samples collected to date should be reviewed with respect to the general requirements for minimum sample numbers presented in Price, 1997.

3. It is recommended that future testwork include both the standard SPLP 1312 test as well as the modified SPLP test so as to give a better indication of the potential for metal leaching under a range of environmental conditions.

Recommendations that arose out of the previous round of testing (and which remain unchanged) were:

1. Additional ballast samples should be tested to confirm the materials environmental reactivity.

2. As the geochemical characterization program proceeds, the requirement to model potential water quality impacts arising from acid rock drainage and metal leaching (ARD and ML) from the waste rock dumps should be reviewed.

As additional sampling of waste rock and iron oxide is likely required to further assess ARD and metal leaching properties, a new sampling program has been scheduled to be completed during the 2007 field season. The new sampling program will encompass all lithologies within the Deposit No. 1 area and will be designed based upon the knowledge gained so far from the testing of the initial set of samples. This additional sampling will in part focus on characterizing waste rock units located within the expected bench height, as composite sampling across bench height gives an indication of how the materials will behave geochemically when placed in the waste rock dumps. The area of sampling will also be increased to include all areas of the deposit spatially so that a representative model can be attained (the 2006 sampling sites were concentrated generally at the ends of the North and South Limbs of the deposit (Figure 2)). It is important to note that the sample results to date are preliminary and definitive conclusions have not yet been made.

Average temperature at site is approximately -15°C and the mean annual precipitation at the nearby community of Pond Inlet is only 190.8 mm (Environment Canada, 2004). These site conditions are likely to slow the onset of any ARD and metal leaching. It is important to note that the use of laboratory tests to predict acid generation and metal leaching properties is conservative since cold weather climates reduce reaction rates (MEND, 2006). On-site field kinetic testing is recommended to evaluate the effects of the local environment on metal leaching and ARD production from the iron oxide and waste rock samples. Plans have been prepared to begin the field testing later this summer (2007).

REFERENCES

Environment Canada. Climate Normals (1971-2000), Pond Inlet. 25 Feb. 2004. <http://www.climate.weatheroffice.ec.gc.ca/climate_normals/results_e.html

Knight Piésold. Preliminary Results of Phase I Geochemical Characterization Program. Ref. No. NB07-00232, March 16, 2007.

Mine Environment Neutral Drainage Program (MEND) Update on Cold Temperature Effects on Geochemical Weathering. MEND Report 1.61.6, October 2006.

Price, W.A. Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia; Price, W.A., Energy and Minerals Division, Ministry of Employment and Investment, BC. 1997.

Yours very truly,
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Attachments:

Table 1 – Acid-Base Accounting Results
Table 2 – Whole Rock Analysis Results
Table 3 – Total Elements Results
Table 4 – X-Ray Diffraction Results
Table 5 – SPLP 1312 Results
Table 6 – Modified SPLP 1312 Results
Table 7 – TCLP 1311 Results

Figure 1 – Phase I Geochemical Characterization Program – Deposit No. 1 Bedrock Geology – Plan View
Figure 2 – Phase I Geochemical Characterization Program – Sample Locations
Figure 3 – ABA Data – Sulphide Sulphur vs. Total Sulphur
Figure 4 – ABA Data – NP vs. Ca-NP
Figure 5 – ABA Data – AP vs. NP

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TABLE 1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM

ACID-BASE ACCOUNTING RESULTS

Parameter	Units	UCS1	UCS4	UCS5	UCS7	UCS41	UCS43	UCS46	UCS2	UCS15	UCS16	UCS17	UCS18
		Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mixed Iron Oxide	Mag. Iron Oxide	Tuff	Tuff	Tuff	Tuff	Tuff
Drill Hole I.D.	---	MR1-06-81	MR1-06-81	MR1-06-81	MR1-06-81	MR1-06-105	MR1-06-105	MR1-06-105	MR1-06-81	MR1-05-77	MR1-06-86	MR1-06-86	MR1-06-86
Sample Depth	m	25.0	46.6	49.6	65.7	136.5	145.2	180.0	33.8	69.0	22.0	41.6	65.6
Paste pH	units	4.24	4.37	3.4	4.47	8.34	5.42	8.47	6.26	9.89	9.03	10.16	9.64
Fizz Rate	---	1	1	1	1	1	1	1	1	2	1	1	2
Sample	weight(g)	2	2	2	2	2	2	2	2	2	2	2	2
HCl added	mL	20	20	20	20	20	20	26.1	28.4	29.6	36.7	42.25	26.8
HCl	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH to	pH=8.3 mL	19.9	19.65	23.95	21.25	19	15.25	13.9	23.6	22	29.6	31.95	20.65
Final pH	units	1.18	1.46	1.31	1.68	1.28	1.64	1.61	1.7	1.84	1.66	1.78	1.61
NP	t CaCO3/1000t	0.3	0.9	-9.6	-3.2	2.6	12.1	30.5	12	19.4	17.3	25.1	15.4
AP	t CaCO3/1000 t	19.2	10.5	23.1	26.5	0.72	32.5	42.4	4.9	5.35	1.57	0.69	8.34
Net NP	t CaCO3/1000 t	-18.92	-9.6	-32.67	-29.7	1.88	-20.4	-11.9	7.1	14	15.7	24.4	7.06
NP/AP	ratio	< 0.1	< 0.1	< 0.1	< 0.1	3.59	0.37	0.72	2.45	3.62	11	36.3	1.85
Total Sulphur	%	0.615	0.336	0.738	0.847	0.023	1.04	1.36	0.157	0.171	0.05	0.022	0.267
Sulphate	%	0.49	0.34	0.72	0.72	< 0.01	0.36	< 0.01	0.16	0.04	< 0.01	0.02	0.05
Sulphide	%	0.12	< 0.01	0.02	0.13	0.02	0.68	1.37	< 0.01	0.13	0.05	< 0.01	0.21
C	%	0.104	0.287	0.452	0.052	0.01	0.986	3.05	0.012	0.138	0.026	0.039	0.086
Carbonate	%	0.349	1.33	2.04	0.195	0.025	1.89	5.47	0.014	0.412	0.055	0.171	0.25
Carb-NP	t CaCO3/1000 t	8.66	23.91	37.65	4.33	0.83	82.13	254.07	1.00	11.50	2.17	3.25	7.16
Carb-NP/NP	%	2887.73	2656.34	0.00	0.00	32.04	678.79	833.00	8.33	59.25	12.52	12.94	46.52

Parameter	Units	UCS20	UCS25	UCS29	UCS9	UCS14	UCS27	UCS10	UCS12	UCS13	UCS23	UCS24	UCS49	UCS51
		Tuff	Tuff	Tuff	Amphibolite	Schist	Schist	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss
Drill Hole I.D.	---	MR1-06-86	MR1-06-81	MR1-06-86	MR1-06-81	MR1-04-38	MR1-06-81	MR1-06-81	MR1-06-81	MR1-06-81	MR1-06-81	MR1-06-81	MR1-06-105	MR1-06-105
Sample Depth	m	115.0	216.2	171.8	70.5	24.0	244.4	82.2	99.0	116.8	156.8	188.0	193.2	212.0
Paste pH	units	9.14	9.66	9.72	7.14	8.7	9.11	6.48	9.51	9.55	10.05	9.69	9.91	9.57
Fizz Rate	---	3	1	1	1	1	1	1	1	1	1	1	1	1
Sample	weight(g)	2	2	2.01	2	2	2	2	2	2	2	2	2	2
HCl added	mL	44.4	41.5	20	38.3	28.3	28.6	27.9	20	28.5	20	20	20	20
HCl	Normality	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
NaOH	Normality	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
NaOH to	pH=8.3 mL	20.1	28.05	14.6	32.9	23.25	19.2	22.3	17.5	22.9	16.35	17.2	16.9	16.6
Final pH	units	1.88	1.78	1.73	1.63	1.99	1.85	1.69	1.44	1.55	1.73	1.43	1.77	1.57
NP	t CaCO3/1000t	59.3	33.3	13.4	13.2	12.6	24	14	6.2	13.9	9.1	6.8	7.8	8.5
AP	t CaCO3/1000 t	2.93	4.88	5.14	0.7	11.8	0.63	103	0.62	23	1.7	5.72	7.72	0.51
Net NP	t CaCO3/1000 t	56.4	28.4	8.26	12.5	0.85	23.4	-88.6	5.58	-9.07	7.4	1.08	0.08	7.99
NP/AP	ratio	20.2	6.82	2.61	18.9	1.07	38.2	0.14	9.92	0.61	5.35	1.19	1.01	16.7
Total Sulphur	%	0.094	0.156	0.165	0.022	0.376	0.02	3.28	0.02	0.735	0.054	0.183	0.247	0.016
Sulphate	%	< 0.01	< 0.01	0.02	0.02	0.11	0.02	0.63	0.02	0.06	0.01	0.04	< 0.01	< 0.01
Sulphide	%	0.09	0.15	0.14	< 0.01	0.27	< 0.01	2.65	< 0.01	0.67	0.04	0.14	0.26	0.01
C	%	0.496	0.014	0.021	0.019	0.1	0.016	< 0.005	0.026	0.029	0.007	0.09	0.012	0.03
Carbonate	%	2.22	0.052	0.022	0.039	0.028	0.024	0.02	0.028	0.062	0.02	0.097	0.06	0.027
Carb-NP	t CaCO3/1000 t	41.32	1.17	1.75	1.58	8.33	1.33	0.42	2.17	2.42	0.58	7.50	1.00	2.50
Carb-NP/NP	%	69.67	3.50	13.05	11.99	66.11	5.55	2.98	34.93	17.38	6.41	110.25	12.82	29.40

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]ABA Table 1
11-Jun-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Total sulphur "S" and carbon "C" values may be slightly higher than their compounds as the elemental values were determined with a separate sample and may not contain exactly the same amount. The elemental analysis is also slightly more accurate than their compound analysis, accounting for a potentially higher value.
3. If the sulphide content used in calculating the Acid Potential (AP) was less than the detection limit of 0.31 t CaCO3/1000 t, the detection limit (< 0.31 t CaCO3/1000 t) was used to indicate the uncertainty of the result.
4. Ca-NP (Carbonate Neutralization Potential) was calculated using the formula from Price, 1997: Ca-NP (as t CaCO3/1000 t) = (%C)*(100.09/12.01)*(10)
5. Negative NP values indicate that the sample actually contributed acidity to the acid solution (added during test) rather than consume it.

TABLE 2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM

WHOLE ROCK ANALYSIS RESULTS

Parameter	Units	UCS1	UCS4	UCS5	UCS7	UCS41	UCS43	UCS46	UCS2	UCS15	UCS16	UCS17	UCS18	UCS20	UCS25	UCS29	UCS9	UCS14	UCS27	UCS10	UCS12	UCS13	UCS23	UCS24	UCS49	UCS51
		Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mixed Iron Oxide	Mag. Iron Oxide	Tuff	Tuff	Tuff	Tuff	Tuff	Tuff	Tuff	Tuff	Amphibolite	Schist	Schist	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss
SiO_2	%	0.4	1.39	1.86	10.3	0.45	0.6	3.87	25.5	45.7	47.7	51.9	40.6	48.8	50.2	41.2	30.5	28.1	31.3	35	74.6	63.2	68	75.8	68.9	64.8
Al_2O_3	%	0.31	0.58	0.29	5.75	0.32	0.43	0.54	18.6	15.2	17	18.9	18.9	14.3	12.7	16.4	24.4	19.9	17.8	22.7	12.8	14.3	13.6	12.5	13.5	16
Fe_2O_3	%	96.2	95.3	92.6	70.8	102	91.2	75	27.3	13.7	17.4	6	13.3	10.9	13.2	17.1	32.7	26.7	14.7	22.2	3.73	8.83	8.71	1.77	7.1	6.45
MgO	%	0.14	0.45	0.28	4.17	0.25	0.83	4.4	14.5	5.18	7.82	5.85	6.44	8.42	13.6	7.46	7.5	15.1	23.8	5.34	1.33	2.85	2.83	0.68	2.32	3.08
CaO	%	0.99	0.6	0.59	0.71	0.01	0.26	2.82	1.18	14.1	0.8	8.04	13.6	6.32	1.04	10.5	0.47	0.13	1.03	0.87	0.13	0.5	0.2	0.2	0.21	0.25
Na_2O	%	< .01	< .01	< .01	< .01	< .01	< .01	0.02	< .01	0.94	0.07	0.33	0.51	0.17	0.04	0.51	0.02	< .01	0.04	0.04	0.11	0.13	0.12	0.29	0.2	0.23
K_2O	%	< .01	< .01	0.01	0.01	< .01	0.01	0.02	0.01	0.95	1.32	3.4	1.16	3.3	1.15	1.71	0.02	0.03	0.21	4.59	4.31	4.42	3.78	6.18	4.4	4.45
TiO_2	%	0.01	0.02	0.01	0.53	< .01	0.02	0.03	1	1.1	1.27	1.07	1.06	1.06	1.06	1.15	1.11	0.84	1.01	1.84	0.26	1.06	0.61	0.17	0.67	0.74
P_2O_5	%	0.75	0.42	0.51	0.35	< .01	0.02	1.95	0.97	0.09	0.53	0.08	0.08	0.08	0.74	0.08	0.25	0.07	0.7	0.7	0.08	0.32	0.15	0.04	0.17	0.19
MnO	%	0.3	0.34	0.36	1.04	0.15	1.36	3.3	0.22	0.51	0.36	0.31	0.6	0.43	0.13	0.59	0.31	0.29	0.21	0.09	0.04	0.08	0.12	0.01	0.07	0.06
Cr_2O_3	%	< .01	< .01	< .01	0.02	< .01	< .01	< .01	0.24	0.04	0.05	0.08	0.07	0.04	0.15	0.05	0.05	0.05	0.21	0.01	0.02	0.02	0.01	0.02	0.02	0.02
V_2O_5	%	< .01	< .01	< .01	0.02	< .01	< .01	< .01	0.05	0.07	0.08	0.06	0.07	0.05	0.04	0.07	0.03	0.06	0.03	0.02	0.01	< .01	< .01	< .01	0.01	0.02
LOI	%	-0.06	-0.2	2.89	6.08	-2.65	5.09	7.51	10.1	1.49	4.38	3.07	2.83	5.63	5.46	2.46	3.48	8.69	9.19	5.8	1.97	3	1.26	1.75	2.17	3.19
Sum	%	99	98.9	99.4	99.8	100.3	99.9	99.5	99.7	99.1	98.8	99.1	99.2	99.4	99.5	99.3	100.8	99.9	100.1	99.3	99.4	98.7	99.4	99.4	99.7	99.5

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]Whole Rock Table 2
11-Jun-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the percentage of a species is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Results are reported as oxides to permit a mass balance assessment against the component of a sample that is amenable to oxidization (loss on ignition).

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TABLE 3

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM

TOTAL ELEMENTS ANALYSIS RESULTS

Parameter	Units	UCS1	UCS4	UCS5	UCS7	UCS41	UCS43	UCS46	UCS2	UCS15	UCS16	UCS17
		Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mixed Iron Oxide	Mag. Iron Oxide	Tuff	Tuff	Tuff	Tuff
Ag	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Al	µg/g	1300	2800	1600	29000	1400	2000	2500	96000	82000	87000	99000
As	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Ba	µg/g	4	5	6	6	4	4	6	15	85	180	270
Be	µg/g	0.059	0.12	0.18	0.46	0.08	0.42	0.72	0.85	0.059	0.081	0.14
Bi	µg/g	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34
Ca	µg/g	5500	3200	3300	3900	67	1500	20000	7300	97000	4800	55000
Cd	µg/g	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Co	µg/g	< 8	< 8	< 8	< 8	< 8	< 8	< 8	72	53	64	46
Cr	µg/g	25	16	17	92	11	36	17	1500	270	300	410
Cu	µg/g	3.5	5.5	14	57	1.8	17	80	8.9	110	300	140
Fe	µg/g	610000	650000	680000	510000	720000	650000	540000	190000	100000	120000	44000
K	µg/g	49	65	90	76	33	120	110	160	8000	11000	28000
Li	µg/g	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	4	58	7
Mg	µg/g	600	2100	1500	26000	1100	4100	28000	89000	33000	49000	36000
Mn	µg/g	2000	2300	2400	6600	930	11400	28600	1500	3700	2000	2300
Mo	µg/g	< 2	< 2	< 2	4	< 2	10	< 2	< 2	< 2	< 2	< 2
Ni	µg/g	8	< 1	2	8	14	27	16	450	170	180	170
Pb	µg/g	75	28	32	50	27	31	28	14	8	9	6
Sb	µg/g	20	22	21	14	19	18	16	21	6	8	5
Se	µg/g	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Sn	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr	µg/g	17	9.2	6.4	5.1	0.2	0.3	33	20	72	20	92
Ti	µg/g	52	18	33	1900	58	58	100	1600	5700	2900	5900
Tl	µg/g	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
U	µg/g	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
V	µg/g	10	5.7	9.2	71	8.5	12	10	290	340	360	340
Y	µg/g	4	1.5	1.4	5.5	0.8	2.7	27	11	25	16	14
Zn	µg/g	220	16	29	52	28	36	34	110	130	99	75

Parameter	UCS18	UCS20	UCS25	UCS29	UCS9	UCS14	UCS27	UCS10	UCS12	UCS13	UCS23	UCS24	UCS49	UCS51
	Tuff	Tuff	Tuff	Tuff	Amphibolite	Schist	Schist	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss
Ag	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Al	98000	77000	62000	87000	90000	100000	93000	73000	60000	70000	52000	61000	70000	81000
As	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	7	< 6	< 6	< 6	< 6
Ba	180	180	150	220	7	7	38	750	1800	2400	1400	3000	1000	1400
Be	0.16	0.2	1.4	0.1	0.56	0.061	1.1	1.1	1.6	2.1	0.2	1.3	1	1.6
Bi	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34	< 34
Ca	91000	44000	6200	72000	2600	800	6000	5400	760	3100	1200	1200	1400	1600
Cd	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Co	46	43	45	53	20	57	56	29	< 8	14	< 8	< 8	13	12
Cr	460	240	940	280	260	330	1400	72	140	120	140	110	130	120
Cu	140	170	84	180	3.6	220	12	150	3.9	72	15	19	78	4.2
Fe	94000	81000	85000	120000	190000	190000	100000	160000	27000	61000	55000	12000	52000	47000
K	9500	27000	9300	13000	120	230	1900	38000	30000	34000	31000	45000	34000	36000
Li	4	64	6	14	< 3	< 3	12	14	< 3	< 3	5	< 3	4	7
Mg	40000	54000	79000	48000	43000	95000	147000	34000	7400	17000	17000	3900	15000	19000
Mn	3900	3200	840	3800	1800	2000	1300	570	300	590	550	140	500	430
Mo	< 2	< 2	< 2	< 2	< 2	< 2	< 2	4	< 2	4	< 2	< 2	< 2	< 2
Ni	190	130	420	160	84	240	370	15	12	19	14	18	12	30
Pb	10	6	28	13	410	15	200	43	30	48	23	250	36	13
Sb	10	5	11	5	9	9	17	5	2	3	3	< 2	3	< 2
Se	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Sn	< 6	< 6	< 6	< 6	10	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr	100	58	11	66	3.5	1.5	13	16	21	28	11	160	17	22
Ti	4500	3200	3500	4900	1300	1800	1700	5600	1600	3200	3100	1000	3400	2500
Tl	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
U	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
V	350	320	180	360	140	310	190	78	23	46	37	4.8	45	76
Y	25	23	15	31	15	0.9	16	13	10	22	11	7.6	9.6	12
Zn	250	70	160	160	140	100	140	37	43	80	16	87	65	54

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]Total Elements Table 3
11-Jun-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Dash indicates there were no available results.
3. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

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TABLE 4

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM

X-RAY DIFFRACTION RESULTS

Sample I.D.	Crystalline Mineral Assemblage (relative proportions based on peak height)			
	Major	Moderate	Minor	Trace
UCS1 Mag. Iron Oxide	magnetite	hematite		*fluorapatite, *chlorite, *mica, *calcite, *dolomite
UCS4 Mag. Iron Oxide	magnetite		hematite, chlorite	*quartz, *mica, *fluorapatite, *gypsum, *calcite, *dolomite, *rhodochrosite,
UCS5 Mag. Iron Oxide	magnetite	hematite	quartz, goethite	*jarosite, *gypsum, *fluorapatite, *ilmenite, *rozenite,
UCS7 Mag. Iron Oxide	magnetite	chlorite	hematite, goethite	*gypsum, *quartz, *dolomite, *calcite, *ilmenite, *gypsum, *plumbojarosite, *pyrolusite, *nahcolite
UCS41 Mag. Iron Oxide	magnetite	hematite		
UCS43 Mixed Iron Oxide	magnetite	hematite	siderite, goethite	*rhodochrosite
UCS46 Mag. Iron Oxide	magnetite		siderite, talc, chlorapatite, fluorapatite	*rhodochrosite *pyrochroite, *serpentine, *pyrite, *nacrite, *quartz
UCS2 Tuff	chlorite		quartz	*rutile,*gypsum, *fluorapatite, *pyrophyllite, *talc
UCS15 Tuff	amphibole	plagioclase	pyroxene, quartz, chlorite, mica	*rutile, *pyrite
UCS16 Tuff	quartz	chlorite, mica	amphibole	*ilmenite, *talc, *phrophyllite, *gypsum, *calcite
UCS17 Tuff	quartz	mica	amphibole, plagioclase	*dolomite
UCS18 Tuff	amphibole	chlorite	mica, dolomite, ankerite, quartz, plagioclase	*calcite, *anatase
UCS20 Tuff	amphibole	quartz, chlorite, mica	calcite, dolomite,	*serpentine, *anatase, *rutile
UCS25 Tuff	quartz, chlorite	mica		*calcite, *dolomite, *ilmenite, *amphibole *potassium-feldspar,
UCS29 Tuff	amphibole		chlorite, mica, potassium-feldspar, quartz	*brookite, *pyroxene, *serpentine
UCS9 Amphibolite	chlorite	almandine	magnetite, hematite, quartz	*goethite, *ilmenite, *calcite
UCS14 Schist	chlorite		quartz	*rutile, *talc, *gypsum, *fluorapatite, *pyrophyllite
UCS27 Schist	chlorite		amphibole, mica	*anatase, *fervanite, *potassium-feldspar,
UCS10 Gneiss	mica	chlorite, quartz	maghemite, andalusite	*hematite, *magnetite, *bassanite, *jarosite, *anatase, *serpentine, *potassium-feldspar,
UCS12 Gneiss	quartz	mica		*potassium-feldspar
UCS13 Gneiss	quartz	mica	chlorite,	*potassium-feldspar, *pyrophyllite, *anatase, *hematite, *magnetite, *goethite
UCS23 Gneiss	quartz	mica		*calcite, *ankerite, *ilmenite, *chlorite, *amphibole, *maghemite
UCS24 Gneiss	quartz	potassium-feldspar, mica	plagioclase	
UCS49 Gneiss	quartz	mica	maghemite	*chlorite
UCS51 Gneiss	quartz		mica, chlorite, potassium-feldspar	*brookite

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]XRD Results Table 4
11-Jun-07

Notes:
1. Laboratory results provided by SGS Mineral Services in Lakefield, ON.
2. * Tentative identification due to low concentrations, diffraction line overlap or poor crystallinity.
3. Mineral proportions are based on relative peak heights and may be strongly influenced by crystallinity, structural group or preferred orientations.

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TABLE 5

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM

SYNTHETIC PRECIPITATION LEACHING PROCEDURE (SPLP 1312) RESULTS

Parameter	Units	UCS1 Mag. Iron Oxide	UCS4 Mag. Iron Oxide	UCS5 Mag. Iron Oxide	UCS7 Mag. Iron Oxide	UCS41 Mag. Iron Oxide	UCS43 Mixed Iron Oxide	UCS46 Mag. Iron Oxide	UCS2 Tuff	UCS15 Tuff	UCS16 Tuff
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	3.97	3.84	3.58	4.03	5.72	5.51	7.59	5.45	9.66	8.82
Al	mg/L	0.41	0.85	0.95	1.96	0.16	0.02	0.16	0.07	3.8	4.27
As	mg/L	0.0003	0.0002	0.0003	< 0.0002	< 0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002
Ag	mg/L	0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.272	0.215	0.152	0.12	0.37	0.182	0.469	0.246	0.815	0.954
Be	mg/L	< 0.0004	< 0.0004	< 0.0004	0.0008	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	mg/L	0.831	0.691	0.848	0.67	0.325	0.385	0.377	0.34	0.394	0.492
Bi	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	mg/L	229	189	204	179	1.02	30.5	8.52	67.5	9.32	0.89
Cd	mg/L	0.00015	0.00013	0.0002	0.00054	< 0.00006	0.00035	< 0.00006	0.00008	< 0.00006	< 0.00006
Co	mg/L	0.00647	0.00396	0.029	0.0449	0.000417	0.00777	< 0.000007	0.0192	0.00277	0.00392
Cr	mg/L	0.0004	0.0004	0.0004	< 0.0003	0.0004	< 0.0003	0.0004	< 0.0003	0.01	0.0139
Cu	mg/L	0.012	0.0167	0.147	0.0117	0.0007	0.0017	0.0014	0.0022	0.006	0.0137
Fe	mg/L	44.3	6.61	381	25.1	0.08	4.4	0.09	0.21	3.6	5.6
K	mg/L	1.05	1	1.71	0.98	0.27	0.76	0.32	0.3	0.71	1.5
Li	mg/L	0.003	< 0.002	0.003	0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	2.89	10.5	36.7	90.8	2.89	53.4	5.41	26.8	1.56	2.7
Mn	mg/L	0.819	2.04	7.98	33.6	0.174	21	0.64	3.7	0.141	0.0278
Mo	mg/L	0.00006	< 0.00005	< 0.00005	0.00006	0.00007	< 0.00005	0.00014	0.00005	0.00017	0.00008
Na	mg/L	13.9	11.1	11.8	11.4	5.78	7.64	5.84	6.25	6.8	7.2
Ni	mg/L	0.0088	0.0174	0.0701	0.118	0.004	0.0098	0.0008	0.0897	0.0081	0.0103
P	mg/L	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	0.03	0.05
Pb	mg/L	0.00111	0.00047	0.00053	0.00039	0.00034	0.00026	0.0007	0.00054	0.00064	0.00036
Sb	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0006	< 0.0002
Se	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Sn	mg/L	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sr	mg/L	0.163	0.0369	0.0968	0.0128	0.0139	0.01	0.0198	0.0186	0.0308	0.0257
Ti	mg/L	0.0011	0.0011	0.0013	0.0017	0.0013	0.0013	0.0013	0.001	0.182	0.144
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001
U	mg/L	0.00043	0.00071	0.00109	0.00167	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
V	mg/L	0.00007	0.00012	0.00014	0.00018	0.00008	0.00009	0.00011	0.00009	0.0182	0.024
W	mg/L	0.00029	0.0001	0.00025	< 0.00007	0.00018	0.00014	0.00023	0.00013	0.00029	< 0.00007
Y	mg/L	0.0252	0.0114	0.024	0.00548	0.000024	0.000269	0.000033	0.000016	0.000969	0.000269
Zn	mg/L	1.02	0.659	1.27	0.76	0.151	0.421	0.188	0.185	0.244	0.331

Parameter	Units	UCS17 Tuff	UCS18 Tuff	UCS20 Tuff	UCS25 Tuff	UCS29 Tuff	UCS9 Amphibolite	UCS14 Schist	UCS27 Schist	UCS10 Gneiss	UCS12 Gneiss	UCS13 Gneiss	UCS23 Gneiss	UCS24 Gneiss	UCS49 Gneiss	UCS51 Gneiss
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	9.76	9.6	9.55	9.32	9.37	8.04	8.54	9.24	5.82	6.59	8.89	8.19	9.24	8.09	8.11
Al	mg/L	5.61	3.71	0.68	2	8.4	0.19	0.62	1.16	0.02	2.78	0.44	6.6	2.03	5.47	3.85
As	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0002	0.0006	0.0003	0.0003	< 0.0002	< 0.0002
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.967	0.776	0.715	0.849	1.08	0.51	0.708	0.787	0.199	0.954	0.546	1.09	0.712	1.09	1.01
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	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	mg/L	0.409	0.372	0.333	0.378	0.483	0.375	0.419	0.379	0.269	0.55	0.377	0.453	0.328	0.432	0.493
Bi	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.0005	< 0.00002	< 0.00002	< 0.00002	0.00002	< 0.00002	0.00003	< 0.00002
Ca	mg/L	6.51	10.4	7.79	1.59	7.24	0.92	0.98	1.62	10.3	0.97	5.8	1.17	8.44	0.9	1.53
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.00222	< 0.00006	< 0.00006
Co	mg/L	0.00404	0.00143	0.0002	0.00115	0.0057	0.000095	0.000377	0.000637	0.00563	0.00101	0.00016	0.00152	0.000121	0.00162	0.00119
Cr	mg/L	0.0326	0.012	0.002	0.0258	0.0237	0.003	0.002	0.0153	< 0.0003	0.0011	0.0004	0.0018	0.0006	0.0014	0.0022
Cu	mg/L	0.0048	0.0067	0.0071	0.0037	0.0154	0.0007	0.0022	0.0016	0.0012	0.0015	0.0017	0.0038	0.0044	0.0047	0.0013
Fe	mg/L	2.62	2.64	0.61	2.4	10.7	0.09	0.66	1.48	0.02	2.22	0.31	9.76	0.51	7.23	4.32
K	mg/L	4.35	0.8	1.87	2.87	2.49	0.24	0.28	0.9	6.43	2.29	2.69	6.32	2.32	4.84	2.67
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	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	2.38	1.8	1.52	2.68	4.59	1.73	1.61	2.27	11.6	1.68	2.64	3.47	1.73	2.22	2.31
Mn	mg/L	0.0965	0.0916	0.016	0.016	0.226	0.00646	0.0139	0.0134	1.02	0.035	0.00348	0.0818	0.011	0.0628	0.046
Mo	mg/L	0.00013	0.00026	0.00011	0.00012	0.00018	0.00052	0.00018	0.00008	< 0.00005	0.00018	0.00344	0.00024	0.00022	0.00089	0.00089
Na	mg/L	8.43	7.94	7.81	7.48	10.4	4.18	4.74	7.06	9.69	7.66	6.79	9.23	7.54	8.61	9.62
Ni	mg/L	0.0143	0.0054	0.0012	0.0114	0.0173	< 0.0007	0.0018	0.0043	0.0037	0.0024	< 0.0007	0.004	0.0017	0.0024	0.0037
P	mg/L	0.02	0.01	< 0.01	0.04	0.05	0.02	< 0.01	0.03	< 0.01	0.02	0.01	0.06	< 0.01	0.06	0.06
Pb	mg/L	0.00074	0.00042	0.00041	0.00298	0.0009	0.00033	0.00039	0.0168	0.00034	0.00221	0.00053	0.00365	0.0471	0.00274	0.00101
Sb	mg/L	0.0005	0.0043	< 0.0002	0.0003	0.0006	< 0.0002	< 0.0002	0.0002	< 0.0002	< 0.0002	0.0005	0.0006	0.0004	< 0.0002	< 0.0002
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	< 0.001	< 0.001	< 0.001
Sn	mg/L	< 0.0003	< 0.0003	< 0.0003	0.0005	0.0003	< 0.0003	< 0.0003	0.0004	< 0.0003	< 0.0003	< 0.0003	0.0013	0.0006	< 0.0003	< 0.0003
Sr	mg/L	0.0369	0.0337	0.0322	0.024	0.0351	0.0157	0.02	0.026	0.0119	0.0229	0.0199	0.0228	0.0318	0.0218	0.0253
Ti	mg/L	0.544	0.0892	0.0186	0.0578	0.81	0.002	0.0054	0.0156	0.001	0.117	0.0178	0.48	0.0308	0.33	0.0974
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	< 0.00002	< 0.00002	< 0.00002	0.00049	0.00006	< 0.00002	< 0.00002	0.00028	< 0.00002	0.00207	0.00016	0.00363	0.0021	0.00078	0.00105
V	mg/L	0.0339	0.0146	0.0287	0.00608	0.0297	0.00019	0.00244	0.00315	0.00011	0.00113	0.00054	0.00552	0.0003	0.00424	0.00426
W	mg/L	0.00012	0.00117	0.00011	0.00047	0.00038	0.00008	0.00009	0.00035	< 0.00007	0.00038	0.00026	0.00109	0.00059	0.00015	0.00016
Y	mg/L	0.000407	0.000618	0.000181	0.000882	0.00143	0.000033	0.000057	0.000931	< 0.000005	0.00127	0.000087	0.00121	0.00108	0.000908	0.00156
Zn	mg/L	0.219	0.199	0.133	0.27	0.324	0.222	0.284	0.238	0.0418	0.36	0.198	0.26	0.179	0.22	0.242

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]SPLP 1312 Table 5
11-Jun-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Test carried out using a weak acid leaching agent with pH 4.2 and a 20:1 liquid to solid ratio (by wt.).

TABLE 6

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PHASE 1 GEOCHEMICAL CHARACTERIZATION PROGRAM

MODIFIED SYNTHETIC PRECIPITATION LEACHING PRODCEDURE (MOD-SPLP 1312) RESULTS

Parameter	Units	UCS1 Mag. Iron Oxide	UCS4 Mag. Iron Oxide	UCS5 Mag. Iron Oxide	UCS7 Mag. Iron Oxide	UCS41 Mag. Iron Oxide	UCS43 Mixed Iron Oxide	UCS46 Mag. Iron Oxide	UCS2 Tuff	UCS15 Tuff	UCS16 Tuff	UCS17 Tuff
Moisture	%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample	weight(g)	300	300	300	300	300	300	300	300	300	300	300
Volume mL	D.I. H2O	900	900	900	900	900	900	900	900	900	900	900
InitialpH	units	3.6	3.5	3.5	3.9	6.1	5.4	8.5	5.1	9.8	9.1	10
Final pH	units	4.07	3.84	3.49	3.97	7.01	5.7	8	5.78	9.99	9.19	10.2
Al	mg/L	3.52	9.65	7.49	15.9	< 0.01	< 0.01	< 0.01	0.05	0.89	0.56	1.6
As	mg/L	< 0.0002	< 0.0002	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.0403	0.0304	0.0561	0.0244	0.0331	0.0282	0.0441	0.0044	0.329	0.338	0.355
Be	mg/L	0.0006	0.001	0.0022	0.0032	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	mg/L	0.565	0.375	1.1	0.42	0.093	0.173	0.222	0.009	0.262	0.323	0.343
Bi	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	mg/L	543	559	467	489	2.82	165	33	281	7.41	1.06	2.79
Cd	mg/L	0.00079	0.00088	0.00111	0.0028	< 0.00006	0.00239	< 0.00006	0.00048	< 0.00006	< 0.00006	< 0.00006
Co	mg/L	0.0415	0.0262	0.158	0.227	0.000403	0.0643	0.000084	0.055	0.000239	0.000245	0.000563
Cr	mg/L	0.0005	0.0013	0.0044	< 0.0003	< 0.0003	0.0005	0.0003	< 0.0003	0.0009	0.0012	0.0055
Cu	mg/L	0.0406	0.113	0.819	0.048	0.0003	0.0006	0.0005	0.0011	0.001	0.0013	0.001
Cu	mg/L	0.042	0.118	0.919	0.051	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	< 0.001
Fe	mg/L	284	74.6	1890	95.1	< 0.01	13.1	0.01	1.26	0.32	0.35	0.41
K	mg/L	1.37	1.19	5.81	1.16	0.9	5.45	0.88	1	2.09	4.92	10.8
Li	mg/L	0.003	0.002	0.005	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	21.9	62.6	195	398	15.9	329	18.6	153	0.674	1.04	0.446
Mn	mg/L	6.01	15.5	47.5	178	0.631	147	0.807	24.8	0.0139	0.00238	0.0121
Mo	mg/L	0.00012	< 0.00005	0.00008	< 0.00005	< 0.00005	< 0.00005	0.00058	0.00009	0.00062	0.00028	0.00029
Na	mg/L	13.8	8.93	13.9	8.69	2.61	5.03	3.27	5.57	8.3	8.83	11.8
Ni	mg/L	0.0541	0.121	0.387	0.645	0.0073	0.0963	0.0013	0.454	0.0016	0.0009	0.0019
P	mg/L	0.09	0.02	0.11	0.04	< 0.01	< 0.01	0.03	0.03	0.02	0.02	0.04
Pb	mg/L	0.00021	< 0.00002	0.00015	0.00094	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00004
Sb	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002	0.0063	< 0.0002	0.0023
Se	mg/L	0.009	0.002	0.001	0.004	< 0.001	0.002	< 0.001	0.002	0.001	< 0.001	< 0.001
Sn	mg/L	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0003	0.0005
Sr	mg/L	0.524	0.141	0.261	0.0212	0.0055	0.0211	0.0173	0.0453	0.0271	0.0196	0.0192
Ti	mg/L	0.0029	0.007	0.0051	0.0116	0.0012	0.0058	0.0016	0.0051	0.0127	0.0088	0.047
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00104	0.00295	0.0062	0.0064	0.00003	0.00009	0.00065	< 0.00002	< 0.00002	< 0.00002	< 0.00002
V	mg/L	0.00038	0.00066	0.0011	0.00085	0.00024	0.00071	0.00056	0.00062	0.0216	0.00285	0.0409
W	mg/L	0.00013	< 0.00007	0.00007	< 0.00007	0.00015	0.00012	0.00025	< 0.00007	0.00057	0.00014	0.00049
Y	mg/L	0.152	0.0803	0.117	0.0423	0.000007	0.00173	0.000011	0.00106	0.000062	0.000021	0.000039
Zn	mg/L	0.84	0.536	1.67	0.709	0.0014	0.312	0.0014	0.004	0.0038	0.0136	0.0054

Parameter	UCS18 Tuff	UCS20 Tuff	UCS25 Tuff	UCS29 Tuff	UCS9 Amphibolite	UCS14 Schist	UCS27 Schist	UCS10 Gneiss	UCS12 Gneiss	UCS13 Gneiss	UCS23 Gneiss	UCS24 Gneiss	UCS49 Gneiss	UCS51 Gneiss
Moisture	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample	300	300	300	300	300	300	300	300	300	300	300	300	300	300
Volume mL	900	900	900	900	900	900	900	900	900	900	900	900	900	900
InitialpH	9.7	9.5	9.4	9.4	7.2	8.8	9.6	5.2	7.4	9.6	9	9.2	9	8.9
Final pH	9.74	9.4	9.55	10.03	8.47	8.89	8.95	5.94	8.33	8.57	9.21	9.58	9.51	9.31
Al	4.23	0.18	0.43	1.12	0.41	0.32	0.14	0.01	0.66	0.1	0.75	0.47	1.91	0.89
As	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Ag	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	0.279	0.529	0.0111	0.365	0.00055	0.3	0.00967	0.0344	0.223	0.108	0.312	0.0162	0.422	0.336
Be	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	0.234	0.304	0.016	0.521	0.019	0.287	0.032	0.048	0.447	0.169	0.422	0.02	0.604	0.6
Bi	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	11.8	10.4	2.05	1.81	1.75	2.29	3.29	60.2	2.62	21.3	2.73	23.3	0.73	1.88
Cd	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.00057	< 0.00006	< 0.00006	< 0.00006	0.00076	< 0.00006	< 0.00006
Co	0.00208	0.000031	< 0.000007	0.000602	0.000049	< 0.000007	< 0.000007	0.0269	0.000231	0.000048	0.000158	0.000031	0.000689	0.000225
Cr	0.0106	0.0006	0.0004	0.0034	< 0.0003	0.0008	< 0.0003	< 0.0003	0.0008	0.0003	0.0008	0.0004	0.0018	0.001
Cu	0.0112	0.0005	0.0003	0.001	0.001	0.0008	0.0005	0.0013	0.0016	0.0012	0.0014	0.0012	0.0015	0.0013
Cu	0.011	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Fe	3.11	0.05	< 0.01	0.9	0.07	0.01	< 0.01	0.23	0.29	< 0.01	0.83	< 0.01	2.22	0.51
K	2.92	8.3	15.6	5.94	0.9	0.32	6.9	49.9	9.03	19.6	13.9	14.9	5.89	6.77
Li	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	2.18	1.83	0.741	0.544	7.08	2.42	1.07	80.4	6.46	14.9	2.04	7.17	0.776	0.706
Mn	0.104	0.00316	0.00037	0.0185	0.0395	0.00204	0.00033	10.4	0.0532	0.0103	0.0076	0.0055	0.0237	0.0101
Mo	0.00026	0.00048	0.00029	0.00019	0.00293	0.00153	0.00012	0.0001	0.00093	0.01927	0.00074	0.00057	0.00585	0.00497
Na	8.22	7.55	1.96	11.4	0.39	7.44	1.62	2.33	14.5	7.6	13.2	2.1	16.3	15.7
Ni	0.0106	< 0.0007	< 0.0007	0.0023	< 0.0007	< 0.0007	< 0.0007	0.0267	< 0.0007	0.0007	< 0.0007	0.0012	0.001	0.0008
P	0.07	0.01	< 0.01	0.03	0.02	0.01	< 0.01	< 0.01	0.03	0.02	0.04	0.02	0.08	0.06
Pb	0.00042	< 0.00002	0.00002	0.00009	< 0.00002	< 0.00002	0.00043	< 0.00002	0.00024	< 0.00002	0.00034	0.00081	0.00136	0.00153
Sb	0.0072	0.0009	0.0004	0.0013	< 0.0002	< 0.0002	0.0003	< 0.0002	< 0.0002	0.003	0.0003	0.0005	0.0003	0.0002
Se	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	< 0.001	0.005	0.003	0.003	< 0.001	< 0.001	< 0.001	< 0.001
Sn	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0004	0.0003	< 0.0003	0.0005
Sr	0.066	0.0355	0.0079	0.0189	0.0061	0.0154	0.0235	0.0049	0.02	0.0234	0.018	0.0336	0.0127	0.0177
Ti	0.0397	0.002	0.0011	0.0628	0.0003	0.0005	< 0.0002	0.0049	0.013	0.0015	0.0422	0.0012	0.0921	0.0122
Tl	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00003	0.0002	0.00113	0.0005	0.00526	0.00041	0.00031
V	0.0189	0.0572	0.00159	0.0178	0.00067	0.00163	0.00167	0.00056	0.00081	0.00079	0.00187	0.00047	0.00456	0.0033
W	0.00039	0.00047	0.00108	0.00039	< 0.00007	0.00018	0.00061	< 0.00007	0.00038	0.00103	0.00945	0.00138	0.0006	0.00077
Y	0.000542	0.000027	0.000011	0.000082	0.00002	0.000014	0.000011	0.000668	0.000148	0.00001	0.0001	0.000018	0.000251	0.00034
Zn	0.0111	0.0059	0.0004	0.0143	0.0013	0.0092	0.0007	0.0023	0.0106	0.0023	0.0105	0.0004	0.0202	0.0088

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]Modified SPLP 1312 Table 6
11-Jun-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Test carried out using a distilled water leaching agent with pH 5.5 (approx.) and a 3:1 liquid to solid ratio (by wt.).

TABLE 7

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM

TOXIC CHARACTERISTIC LEACHING PROCEDURE (TCLP 1311) RESULTS

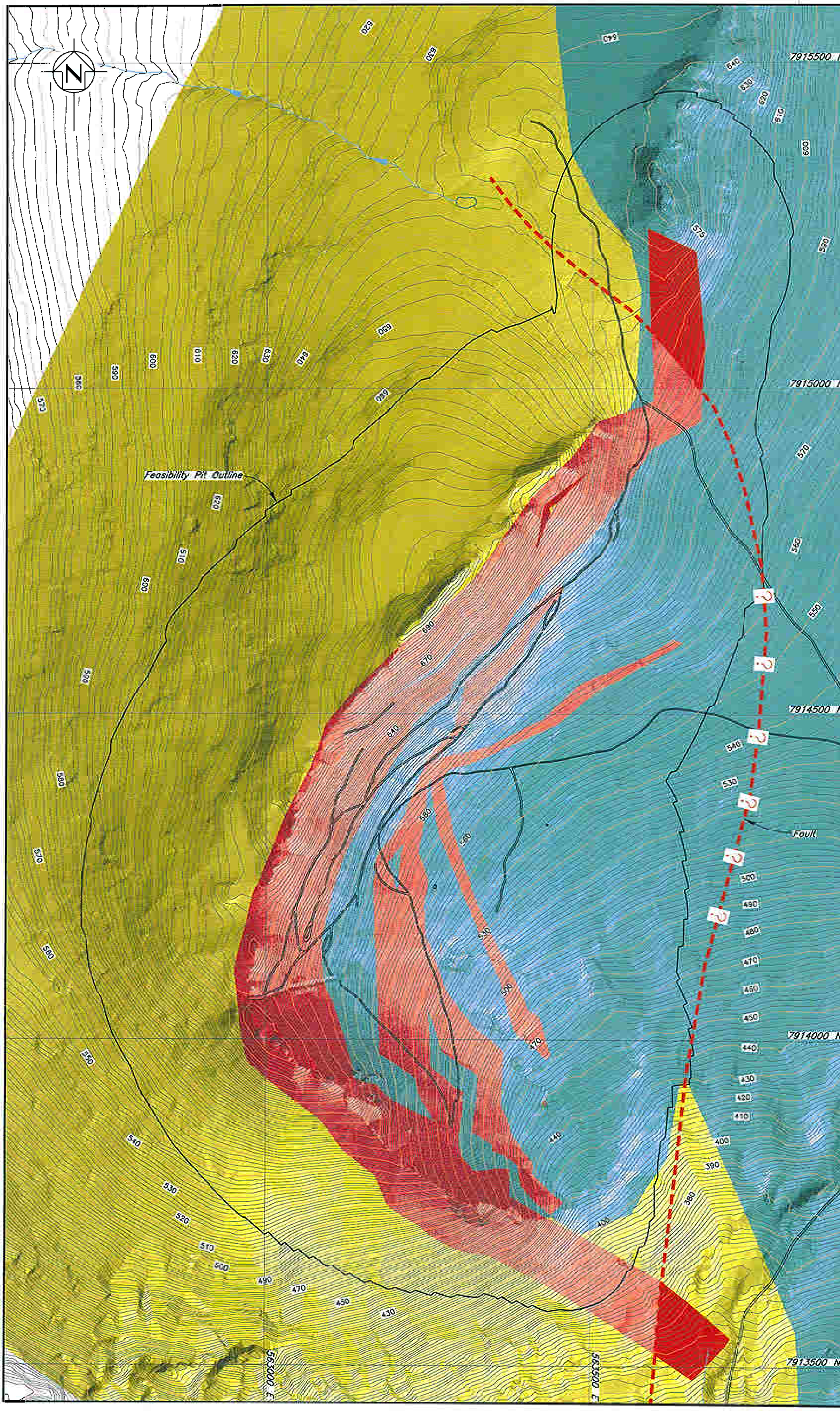
Parameter	Units	UCS1	UCS4	UCS5	UCS7	UCS41	UCS43	UCS46	UCS2	UCS15	UCS16	UCS17
		Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mag. Iron Oxide	Mixed Iron Oxide	Mag. Iron Oxide	Tuff	Tuff	Tuff	Tuff
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	mL	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
InitialpH	units	4.93	4.93	4.92	4.91	4.97	4.96	4.96	4.96	4.97	4.96	4.96
Final pH	units	4.88	4.89	4.83	4.83	4.93	4.95	4.99	4.92	5.05	4.96	5.01
Al	mg/L	0.31	0.54	0.26	1.92	0.1	< 0.01	0.14	0.92	0.52	0.75	0.42
As	mg/L	0.0007	0.0007	< 0.0002	0.0002	0.0003	0.0003	0.0005	0.0004	0.0005	0.0003	0.0004
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.161	0.176	0.107	0.135	1.48	0.223	1.06	0.284	2.53	2.73	2.68
Be	mg/L	< 0.0004	< 0.0004	< 0.0004	0.0005	0.0012	0.0006	0.0012	< 0.0004	< 0.0004	< 0.0004	< 0.0004
B	mg/L	0.857	0.844	0.752	0.815	1.09	0.981	0.947	0.78	0.753	0.869	0.836
Bi	mg/L	0.00006	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	mg/L	247	202	216	191	1.75	34.9	15.2	54.4	84.8	3.89	52.3
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	0.00027	< 0.00006	0.00063	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Co	mg/L	0.00679	0.00407	0.032	0.0474	0.0012	0.0156	0.000731	0.0331	0.00347	0.0058	0.0059
Cr	mg/L	0.0025	0.0026	0.0015	0.0019	0.0011	0.0007	0.0009	0.0116	0.0052	0.0067	0.0151
Cu	mg/L	0.0106	0.017	0.0054	0.0112	0.0071	0.0031	0.0406	0.0041	0.0032	0.0148	0.0035
Cu	mg/L	0.009	0.015	0.002	0.009	0.005	< 0.001	0.041	0.002	< 0.001	0.012	< 0.001
Fe	mg/L	35.1	5.66	353	15.1	1.05	15.2	5.04	4.82	3.26	6.68	3.29
K	mg/L	5.18	4.63	5.49	4.53	5.03	6.41	4.86	4.43	7.95	25.3	34.8
Li	mg/L	0.002	< 0.002	0.003	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.006	< 0.002
Mg	mg/L	3.18	9.72	36.1	92.4	4.09	60.5	18.6	31	1.71	7.41	4.7
Mn	mg/L	0.694	1.9	8.42	39.9	0.593	39.2	17.9	5.18	1.32	0.0901	0.142
Mo	mg/L	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.00034	< 0.00005	0.0001
Na	mg/L	1240	1330	1240	1240	1210	1240	1250	1230	1210	1200	1270
Ni	mg/L	0.0107	0.0193	0.0772	0.125	0.0066	0.0184	0.0066	0.149	0.0141	0.012	0.0191
P	mg/L	0.02	< 0.01	0.01	0.02	< 0.01	< 0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.00064	0.00025	0.0001	0.00022	0.00034	0.00011	0.00024	0.00017	0.00035	0.00055	0.00039
Sb	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0002	< 0.0002	< 0.0002
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
Sn	mg/L	0.0033	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0006	< 0.0003	< 0.0003	< 0.0003
Sr	mg/L	0.176	0.0391	0.105	0.0134	0.0244	0.0151	0.0289	0.0207	0.0561	0.102	0.0825
Ti	mg/L	0.0014	0.0013	0.0013	0.003	0.0003	0.0033	0.0004	0.0018	0.0003	0.0003	0.0005
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00181	0.00123	0.00104	0.0115	0.012	0.00093	0.00326	0.00275	0.00003	< 0.00002	0.00005
V	mg/L	0.00167	0.00182	0.00168	0.0018	0.00178	0.00179	0.00182	0.00172	0.00362	0.00215	0.00508
W	mg/L	0.00027	< 0.00007	< 0.00007	0.00011	< 0.00007	< 0.00007	< 0.00007	0.00008	0.00018	0.00014	0.00015
Y	mg/L	0.028	0.0147	0.0168	0.0069	0.00141	0.00356	0.00568	0.00151	0.00248	0.000342	0.000896
Zn	mg/L	1.54	1.4	1.34	1.33	1.68	1.55	1.48	1.32	1.31	1.5	1.45

Parameter	Units	UCS18	UCS20	UCS25	UCS29	UCS9	UCS14	UCS27	UCS10	UCS12	UCS13	UCS23	UCS24	UCS49	UCS51
		Tuff	Tuff	Tuff	Tuff	Amphibolite	Schist	Schist	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	mL	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
InitialpH	units	4.96	5.08	4.94	4.96	4.94	4.96	4.95	4.96	4.94	4.96	4.96	4.96	4.95	4.96
Final pH	units	5.06	5.79	4.96	4.96	4.94	4.95	4.95	4.93	4.93	4.97	4.94	4.96	4.94	4.94
Al	mg/L	0.79	0.03	0.52	0.37	1.72	1.34	0.38	0.37	0.34	0.44	0.22	0.3	0.28	0.55
As	mg/L	0.0004	0.0004	0.0003	0.0003	0.0006	0.0002	0.0003	0.0003	0.0004	0.0004	0.0003	0.0003	0.0003	0.0003
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	2.72	2.87	3.09	2.89	1.85	2.58	2.81	0.515	1.62	1.32	2.45	1.52	2.82	2.74
Be	mg/L	< 0.0004	< 0.0004	0.0006	< 0.0004	0.0008	0.0012	0.0006	0.0007	< 0.0004	0.0006	< 0.0004	0.0004	< 0.0004	0.0004
B	mg/L	0.791	0.503	0.933	0.969	0.857	0.927	0.942	0.803	0.795	0.926	0.875	0.95	0.95	0.94
Bi	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00104	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00003	< 0.00002
Ca	mg/L	109	495	5.68	7.87	2.08	2.63	4.4	14.4	1.82	19.5	2.67	22.2	2.22	3.73
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.00026	0.00012	0.00037	< 0.00006	0.0765	< 0.00006	< 0.00006
Co	mg/L	0.00723	0.00408	0.00478	0.00608	0.00307	0.0138	0.0039	0.0211	0.00134	0.00624	0.00277	0.00161	0.00277	0.00186
Cr	mg/L	0.0082	0.001	0.0239	0.0076	0.0051	0.009	0.0224	0.0013	0.0058	0.0021	0.0026	0.0031	0.0021	0.0025
Cu	mg/L	0.0112	0.004	0.0044	0.0031	0.0027	0.015	0.0028	0.0461	0.0025	0.0051	0.0032	0.0205	0.0033	0.0028
Cu	mg/L	0.009	< 0.001	0.001	< 0.001	< 0.001	0.014	< 0.001	0.048	< 0.001	0.003	< 0.001	0.019	0.001	< 0.001
Fe	mg/L	2.9	0.76	5.18	7.83	8.57	4.81	2.55	4.08	1.86	3.51	3.44	0.76	4	4.16
K	mg/L	7.93	24.9	31.2	32.2	5.08	5.15	17.4	46.4	21.3	31.8	31.6	14.9	29.3	16.9
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	< 0.002	< 0.002	< 0.002
Mg	mg/L	4.8	20.4	6.63	4.45	5.32	5.14	6.14	21.6	3.16	12.9	2.41	4.05	1.64	2.98
Mn	mg/L	2.7	18.2	0.2	0.557	0.535	0.548	0.178	2.67	0.135	0.337	0.0644	0.65	0.0822	0.128
Mo	mg/L	0.00005	0.0002	0.00006	0.0001	0.00011	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.00012	< 0.00005	< 0.00005	0.00058	0.00027
Na	mg/L	1260	1230	1180	1220	1220	1260	1240	1260	1230	1200	1280	1250	1200	1250
Ni	mg/L	0.0321	0.0175	0.0711	0.0215	0.0102	0.0817	0.013	0.0124	0.0042	0.0074	0.0071	0.0065	0.0034	0.0041
P	mg/L	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01	0.02	< 0.01	0.02	< 0.01	< 0.01
Pb	mg/L	0.00044	0.00034	0.0652	0.00047	0.00036	0.00184	0.107	0.00083	0.00516	0.00817	0.00811	1.04	0.0158	0.00202
Sb	mg/L	0.0002	< 0.0002	< 0.0002	0.0002	0.0005	< 0.0002	< 0.0002	0.0003	< 0.0002	0.0005	< 0.0002	< 0.0002	< 0.0002	< 0.0002
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	< 0.001	< 0.001
Sn	mg/L	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0009	< 0.0003	< 0.0003	0.0005	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sr	mg/L	0.0908	0.319	0.0496	0.0644	0.0268	0.0337	0.0562	0.0126	0.0258	0.034	0.0306	0.0576	0.038	0.0441
Ti	mg/L	0.0002	0.0002	0.0003	0.0003	0.0005	0.0002	< 0.0002	0.0009	0.0003	0.0004	0.0003	0.0003	< 0.0002	< 0.0002
Tl	mg/L	< 0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	< 0.00002	< 0.00002	0.00597	0.00039	0.00688	0.00004	0.00384	0.0061	0.0363	0.0226	0.0236	0.0728	0.00721	0.0127
V	mg/L	0.00188	0.00476	0.00207	0.00314	0.00185	0.00187	0.00195	0.00177	0.00165	0.00174	0.0023	0.00177	0.00239	0.00254
W	mg/L	0.00013	0.00014	0.0002	0.00007	0.00072	0.00022	0.00007	0.00034	0.00025	0.0002	0.00015	0.00013	< 0.00007	< 0.00007
Y	mg/L	0.0114	0.0895	0.00231	0.000671	0.0016	0.00162	0.00116	0.000871	0.00161	0.0016	0.000657	0.0177	0.000904	0.00572
Zn	mg/L	1.37	0.885	1.61	1.53	1.5	1.62	1.56	1.33	1.36	1.6	1.49	2.01	1.59	1.61

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]TCLP 1311 Table 7
11-Jun-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Zinc and Lead levels are possibly over-represented as they are more readily extractable with the acetic acid solution than most other elements.
4. TCLP test carried out using an acetic acid leaching agent to simulate co-disposal of mining wastes with municipal refuse.

XREF FILE(S): TOPO_NO_IMAGE IMAGE FILE(S): Baffinland logo-big corp geology_topo100



GEOLOGY LEGEND:

- Footwall (Gneiss)
- Ore Zone (High Grade Hematite, High Grade Magnetite, Banded Iron Formation, Mixed High Grade)
- Hangingwall (Schist, Amphibolite, Mafic Tuff)

LEGEND:

- Stream
- Road
- Inferred Fault Zone

NOTES:

1. Contours are in metres. Contour interval for topography is 2 metres. Contour interval for feasibility pit is 10 metres.
2. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.

Scale 60 30 0 60 120 180 240 300 Metres

Baffinland

MARY RIVER PROJECT

PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM
DEPOSIT No. 1 BEDROCK GEOLOGY
PLAN VIEW

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/7	NB07-00447	0

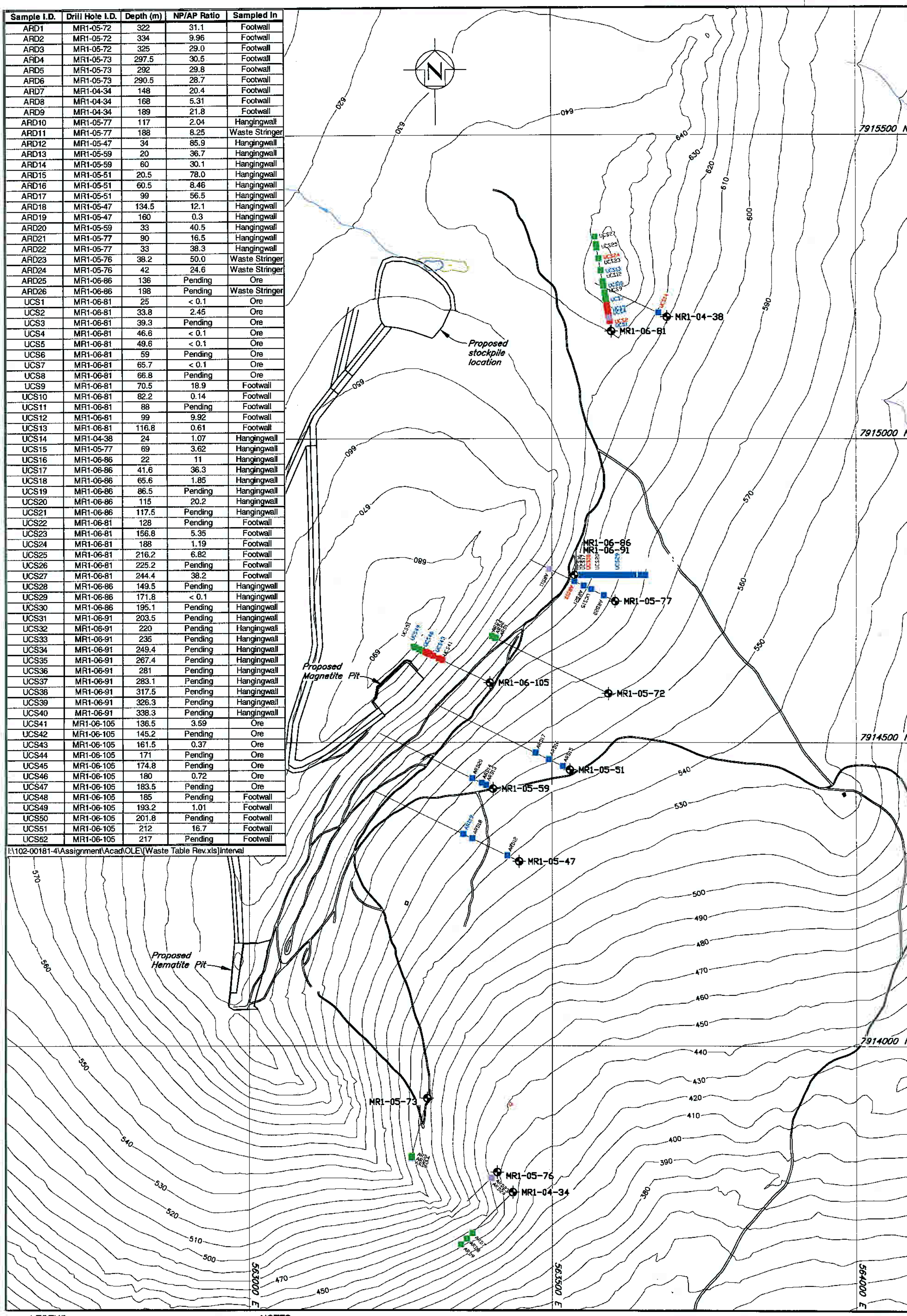
FIGURE 1

NORTH BAY ON. CREATED BY: arichard SAVED: I:\102-00181-7\Assignment\Acad\Fig\B08, 5/18/2007 2:08:49 PM PRINTED: 5/18/2007 2:09:01 PM, Layout1, arichard

XREF FILE(S): TOPO_PIT; DH_ALL_FROM_RQD_DATABASE; WASTE_CHARACTERIZATION; WASTE_CHARACTERIZATION_ADD; Bulk_Pit IMAGE FILE(S): Baffinland logo-big corp

Sample I.D.	Drill Hole I.D.	Depth (m)	NP/AP Ratio	Sampled In
ARD1	MR1-05-72	322	31.1	Footwall
ARD2	MR1-05-72	334	9.96	Footwall
ARD3	MR1-05-72	325	29.0	Footwall
ARD4	MR1-05-73	297.5	30.5	Footwall
ARD5	MR1-05-73	292	29.8	Footwall
ARD6	MR1-05-73	290.5	28.7	Footwall
ARD7	MR1-04-34	148	20.4	Footwall
ARD8	MR1-04-34	168	5.31	Footwall
ARD9	MR1-04-34	189	21.8	Footwall
ARD10	MR1-05-77	117	2.04	Hangingwall
ARD11	MR1-05-77	188	8.25	Waste Stringer
ARD12	MR1-05-47	34	85.9	Hangingwall
ARD13	MR1-05-59	20	36.7	Hangingwall
ARD14	MR1-05-59	60	30.1	Hangingwall
ARD15	MR1-05-51	20.5	78.0	Hangingwall
ARD16	MR1-05-51	60.5	8.46	Hangingwall
ARD17	MR1-05-51	99	56.5	Hangingwall
ARD18	MR1-05-47	134.5	12.1	Hangingwall
ARD19	MR1-05-47	160	0.3	Hangingwall
ARD20	MR1-05-59	33	40.5	Hangingwall
ARD21	MR1-05-77	90	16.5	Hangingwall
ARD22	MR1-05-77	33	38.3	Hangingwall
ARD23	MR1-05-76	38.2	50.0	Waste Stringer
ARD24	MR1-05-76	42	24.6	Waste Stringer
ARD25	MR1-06-86	136	Pending	Ore
ARD26	MR1-06-86	198	Pending	Waste Stringer
UCS1	MR1-06-81	25	< 0.1	Ore
UCS2	MR1-06-81	33.8	2.45	Ore
UCS3	MR1-06-81	39.3	Pending	Ore
UCS4	MR1-06-81	46.6	< 0.1	Ore
UCS5	MR1-06-81	49.6	< 0.1	Ore
UCS6	MR1-06-81	59	Pending	Ore
UCS7	MR1-06-81	65.7	< 0.1	Ore
UCS8	MR1-06-81	66.8	Pending	Ore
UCS9	MR1-06-81	70.5	18.9	Footwall
UCS10	MR1-06-81	82.2	0.14	Footwall
UCS11	MR1-06-81	88	Pending	Footwall
UCS12	MR1-06-81	99	9.92	Footwall
UCS13	MR1-06-81	116.8	0.61	Footwall
UCS14	MR1-04-38	24	1.07	Hangingwall
UCS15	MR1-05-77	69	3.62	Hangingwall
UCS16	MR1-06-86	22	11	Hangingwall
UCS17	MR1-06-86	41.6	36.3	Hangingwall
UCS18	MR1-06-86	65.6	1.85	Hangingwall
UCS19	MR1-06-86	86.5	Pending	Hangingwall
UCS20	MR1-06-86	115	20.2	Hangingwall
UCS21	MR1-06-86	117.5	Pending	Hangingwall
UCS22	MR1-06-81	128	Pending	Footwall
UCS23	MR1-06-81	156.8	5.35	Footwall
UCS24	MR1-06-81	188	1.19	Footwall
UCS25	MR1-06-81	216.2	6.82	Footwall
UCS26	MR1-06-81	225.2	Pending	Footwall
UCS27	MR1-06-81	244.4	38.2	Footwall
UCS28	MR1-06-86	149.5	Pending	Hangingwall
UCS29	MR1-06-86	171.8	< 0.1	Hangingwall
UCS30	MR1-06-86	195.1	Pending	Hangingwall
UCS31	MR1-06-91	203.5	Pending	Hangingwall
UCS32	MR1-06-91	220	Pending	Hangingwall
UCS33	MR1-06-91	235	Pending	Hangingwall
UCS34	MR1-06-91	249.4	Pending	Hangingwall
UCS35	MR1-06-91	267.4	Pending	Hangingwall
UCS36	MR1-06-91	281	Pending	Hangingwall
UCS37	MR1-06-91	283.1	Pending	Hangingwall
UCS38	MR1-06-91	317.5	Pending	Hangingwall
UCS39	MR1-06-91	326.3	Pending	Hangingwall
UCS40	MR1-06-91	338.3	Pending	Hangingwall
UCS41	MR1-06-105	136.5	3.59	Ore
UCS42	MR1-06-105	145.2	Pending	Ore
UCS43	MR1-06-105	161.5	0.37	Ore
UCS44	MR1-06-105	171	Pending	Ore
UCS45	MR1-06-105	174.8	Pending	Ore
UCS46	MR1-06-105	180	0.72	Ore
UCS47	MR1-06-105	183.5	Pending	Ore
UCS48	MR1-06-105	185	Pending	Footwall
UCS49	MR1-06-105	193.2	1.01	Footwall
UCS50	MR1-06-105	201.8	Pending	Footwall
UCS51	MR1-06-105	212	16.7	Footwall
UCS52	MR1-06-105	217	Pending	Footwall

I:\102-00181-4\Assignment\Acad\OLE\[Waste Table Rev.xls]Interval



LEGEND:

- Stream
- Drillhole
- Sampled in Hangingwall (Schist)
- Sampled in Ore
- Sampled in Waste Stringer (Schist)
- Sampled in Footwall (Gneiss)
- UCS## Likely Acid Generating
- UCS29 Possibly Acid Generating
- UCS28 Non-acid Generating

NOTES:

1. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.
2. Contours are in metres. Contour interval for topography is 10 metres.
3. MR1-05-67: MR1 represents Mary River Deposit No.1; 05 represents the year the hole was drilled; 67 represents the number of the drillhole.

Baffinland

MARY RIVER PROJECT

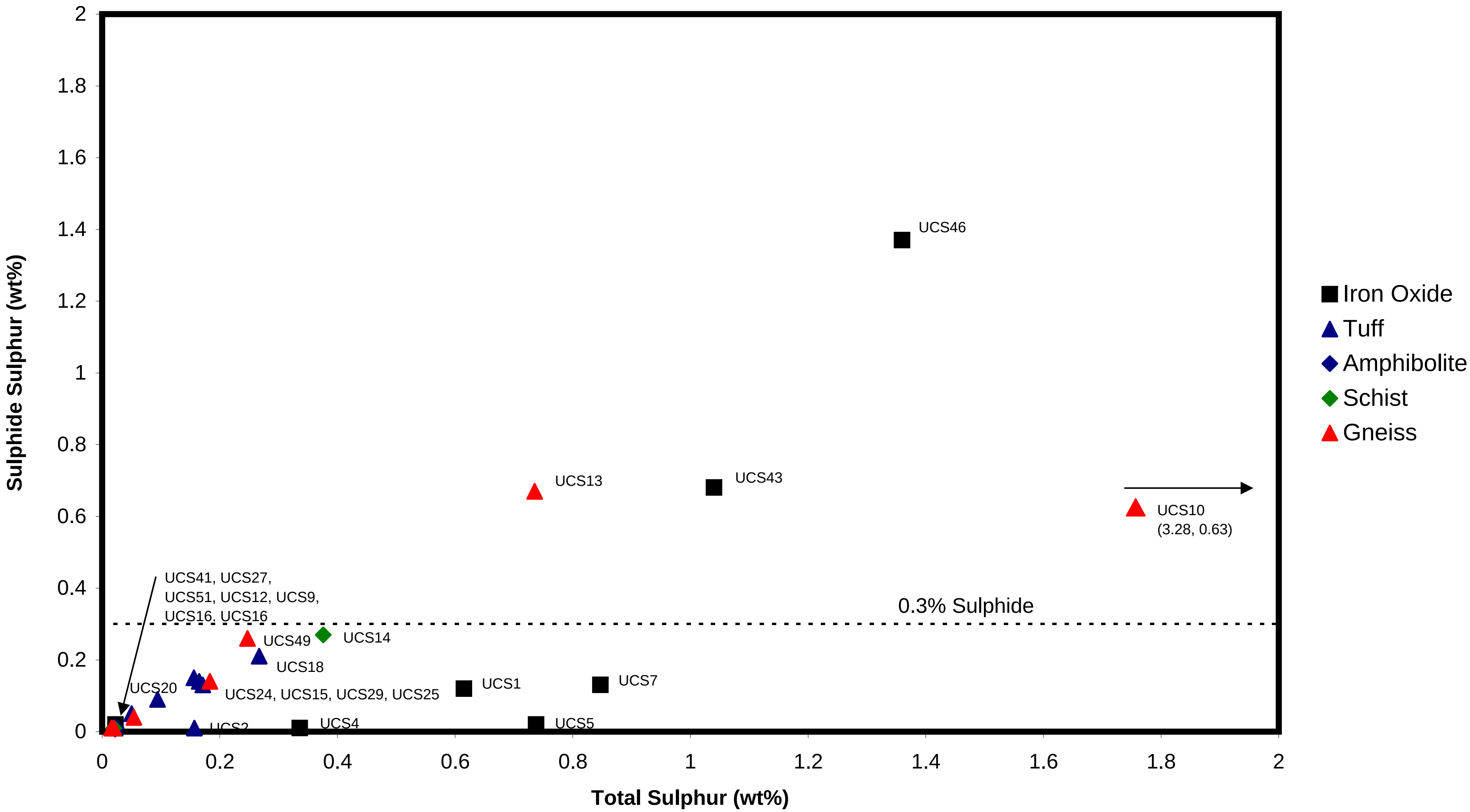
PHASE I GEOCHEMICAL CHARACTERIZATION PROGRAM SAMPLE LOCATIONS

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/7	NB07-00447	0

FIGURE 2

NORTH BAY ON. CREATED BY: srichard SAVED: I:\102-00181-7\Assignment\Acad\Fig\808, 5/16/2007 2:02:51 PM PRINTED: 5/16/2007 2:03:05 PM, Layout1, srichard



Baffinland Iron Mines Corporation

MARY RIVER PROJECT

ABA DATA
SULPHIDE-SULPHUR vs. TOTAL SULPHUR

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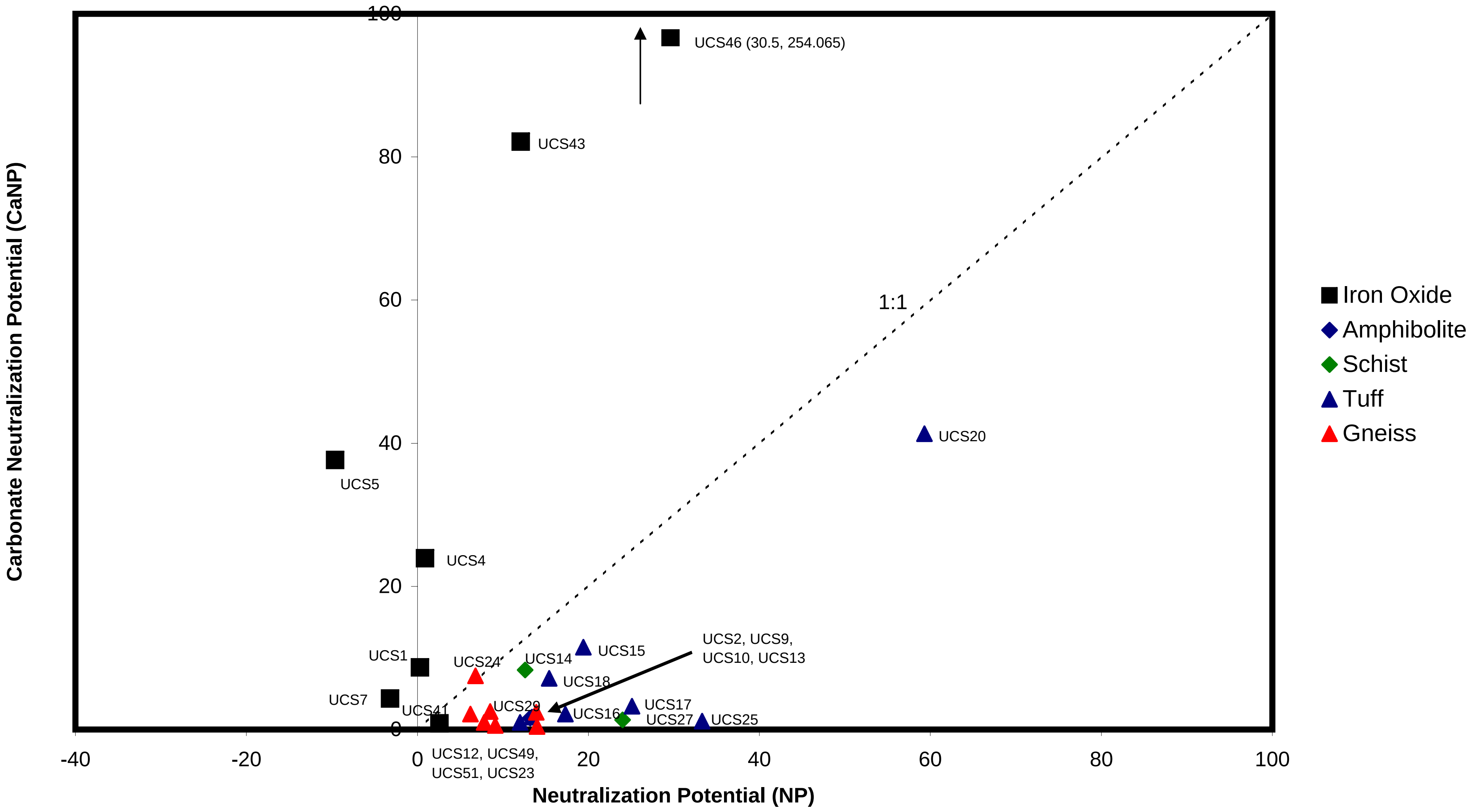
P/A NO.	REF.	REV.
NB102-00181/7	NB07-00447	0

FIGURE 3



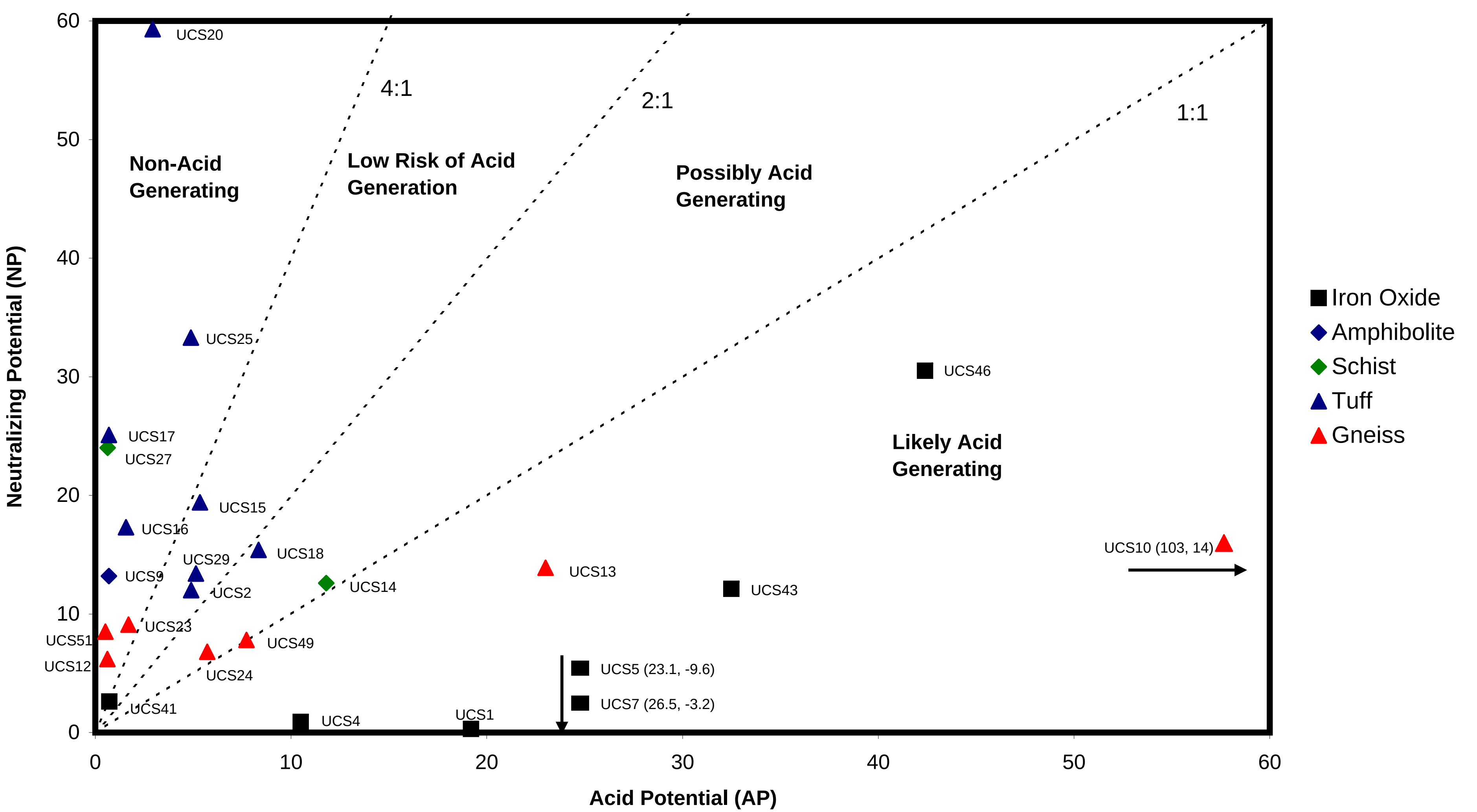
Baffinland Iron Mines Corporation

MARY RIVER PROJECT

ABA DATA
NP vs. Ca-NP

Knight Piésold CONSULTING	P/A NO. NB102-00181/7	REF. NB07-0047	REV. 0
	FIGURE 4		

I:\102-00181-4\Assignment\Data\Work Files\WF 14 - Phase II Geochemical Characterization\[Tables Figs - May 16 Edits.xls]NP vs AP (Lithology) Fig 5 Print date: 11-Jun-07



Baffinland Iron Mines Corporation

MARY RIVER PROJECT

ABA DATA
AP vs. NP

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/7	NB07-00447	0

FIGURE 5

Knight Piésold
CONSULTING

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File No.: NB102-181/4-A.01
Cont. No.: NB07-00232

March 16, 2007

Mr. Rodney (Rod) A. Cooper
Vice President Operations & Chief Operating Officer
Baffinland Iron Mines Corporation
1016 - 120 Adelaide Street West
Toronto, Ontario
Canada, M5H 1T1

Dear Rod:

Re: Preliminary Results of Phase I Geochemical Characterization Program

INTRODUCTION

Baffinland Iron Mines Corporation is currently carrying out a Definitive Feasibility Study (DFS) on the proposed Mary River iron ore project located on Baffin Island, Nunavut. As part of the DFS, Knight Piesold has initiated a phase I geochemical characterization test work program to assess the acid generating and metal leaching capacities of mined rock, borrow materials and overburden samples at the Mary River site ('the site').

Assessing the risks of acid generation and metal leaching at the site poses a unique challenge due to the semiarid conditions and the prevalence of ice and snow (i.e. the mean annual precipitation at the nearby community of Pond Inlet is only 190.8 mm, (Environment Canada, 2004)). Under these conditions the onset of natural acid rock drainage resulting in natural gossan development tends to be very slow. Nonetheless, within stored waste rock there is the potential for incremental accumulation of oxidation products (e.g. metals and acidity) throughout the year. These products can then be flushed out of the waste rock matrix during spring freshet, in areas of the waste rock pile that do not remain frozen.

Geochemical test work programs for mining projects are typically carried out using a phased approach. Phase I consists of so-called 'static' laboratory tests designed to quantify the fundamental geochemical characteristics of the materials. Based on the results of this test work program, the need for carrying out phase II 'kinetic' testing to assess geochemical reaction rates will be determined.

For maximum cost-effectiveness and to optimize the quality of the resulting data, it is considered best practice to proceed with geochemical testing in an iterative manner i.e. the requirement for, and design of, subsequent test work programs (if required) will be based upon the results of previous rounds of testing.

This report summarizes the initial results of phase I geochemical characterization test work carried out on samples of waste rock, overburden and railroad construction rock (i.e. ballast) collected at the site.

The methodology used in the phase I test work program generally follows the recommended methods outlined in Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia (Price, 1997). The Price guidelines are recognized as representing best practice for assessing the risk of metal leaching and acid generation at mine sites and have been widely adopted by practitioners and regulators in Canada and worldwide.

Local Geology

The No. 1 Iron Deposit is located in the Mary River area (Figure 1) and outcrops along the crest of Nuluujaak Mountain. Deposit No. 1 is the largest of the five deposits with a total strike length of 3,800 m. The high-grade iron forms a 2,500 m long curved ridge of Nuluujaak Mountain (698 m elevation) and magnetic surveys suggest an additional 550 m extension to the south and 750 m to the north (Aker Kvaerner, 2006). The iron formation is found within a complexly folded, north-easterly plunging syncline that can be divided into North and South Limbs. The North Limb strikes at approximately 210° and dips at about 75° to the southeast, and the South Limb strikes at approximately 315° and dips at about 80° to the northeast (Watts, Griffis & McOuat, 1964)

The iron formation at Deposit No. 1 includes banded oxide and silicate facies iron formation and high grade iron formation, including hematite, magnetite, specularite and mixed varieties of the iron oxides (Jackson, 2000). The No. 1 iron deposit is predominately magnetite at its north and south ends and in the vicinity of Mary River, where it then becomes truncated by an inferred fault zone. The extent of hematization is most notably observed along the fold axis and along the South Limb of the deposit.

The iron formation at Deposit No. 1 is stratigraphically underlain to the west by quartz-feldspar-mica augen gneiss with interlayered bands of chlorite-amphibole schist and quartzite (herein referred to as the footwall of Deposit No. 1). To the east, it is stratigraphically overlain by chlorite-amphibole schist, mafic volcanic tuff and garnetiferous amphibolite (herein referred to as the hangingwall). Biotite is generally more abundant than muscovite, and microcline and albite are the predominant feldspars within the footwall gneiss (Jackson, 2000). There are also minor amounts of iron oxides, garnet, chlorite, cordierite, sillimanite, andalusite, spinel, amphibole and pyroxene present. The hangingwall mineralogy typically includes chlorite, mica, quartz, amphibole, feldspar and garnet, with minor amounts of pyroxene, andalusite, hematite and magnetite, pyrite and pyrrhotite (Jackson, 2000).

Drill core from recent programs have revealed visible deleterious minerals such as iron sulphides (including pyrite and pyrrhotite). Thus far, they have primarily been observed as disseminated or as small vein-like occurrences within some of the deposit rocks. They are thought to be predominately associated with magnetite-rich oxides (Aker Kvaerner, 2006) although it is not known whether the sulphide occurrence is lithologically controlled. The extent and total distribution of the sulphides is not known but they appear discontinuous. Recent observation from the available drill core suggests that the majority of the recovered material has no to only trace amounts of visible sulphides.

METHODS

Sample Selection

Waste Rock Samples

In 2006, 78 waste rock samples were collected from existing drill core from Deposit No. 1 from the 2004-2006 drill programs. The samples were selected in an effort to best represent the overall rock mass. Ore was unavailable to sample from the 2004-2005 core as it had already been cut and sampled for assay and so ore was sampled from the 2006 drill program Twenty-four (24) of the waste rock samples were sent to SGS Lakefield Research Limited in Lakefield, Ontario and results are discussed in this letter. An additional 25 waste rock and ore samples have been recently sent for test work and results are anticipated within approximately 6 weeks. The sample locations are shown on Figure 2.

Overburden and Ballast Samples

Seven (7) overburden samples and 6 ballast samples were collected from Northern Baffin Island around the Mary River Project area. The overburden samples were duplicates taken from various potential borrow sites for possible bulk sample road construction material. The ballast samples were collected from potential borrow sources for railroad ballast. The sites for the overburden and ballast samples are shown on Figure 3. The samples were sent to SGS Lakefield for acid rock drainage (ARD) and metal leaching (ML) characterization and were analysed using the same set of tests as the waste rock samples.

Laboratory Test Work

It should be noted that no single laboratory test can adequately characterize a sample. Rather, the geochemical properties are interpreted based on an overall assessment of the results from several different types of tests, as described below.

Acid Base Accounting

Acid Base Accounting (ABA) was carried out using Modified ABA methodology. ABA testing is designed to assess the risk of acid generation resulting from the oxidation of sulphide minerals. When exposed to air and water, sulphide minerals undergo oxidation resulting in the generation of sulphuric acid and leaching of metals, which are commonly referred to as acid rock drainage.

ABA testing quantifies the acid generating potential (AP) and the acid neutralizing potential (NP) of a sample. If NP exceeds AP, then the sample is less likely to generate ARD. These determinations are based on both measured and calculated data and hence, interpretation of ABA results should be done cautiously. ABA testing does not evaluate the rates of acid neutralization vs. acid generation reactions (i.e. if the minerals providing the bulk of the AP are relatively unreactive, even though AP may exceed NP, the material may not be ARD generating).

The ABA screening criteria used to evaluate the ABA results were based on Price, 1997, as summarised in the following table. Although empirical in nature, these criteria have found wide acceptance within the mining industry and regulators.

ABA Screening Criteria (Based on Price (1997))

Potential for ARD	Initial Screening Criteria	Comments
Likely	NP/AP <1	Likely acid generating, unless sulphide minerals are non-reactive.
Possibly	1<NP/AP<2	Possibly acid generating if NP is insufficiently reactive or is depleted at a rate faster than sulphides.
Low	NP/AP 2-4	Not potentially acid generating unless significant preferential exposure of sulphides along fractures planes, or extremely reactive sulphides in combination with insufficiently reactive NP.
None	NP/AP >4	Not acid generating.

Samples with an NP/AP ratio of greater than 4 are considered to be non-acid generating and no further testing is required. Another general rule presented by Price is that if the sulphide concentration is less than 0.3 wt% and the rinse pH is greater than 5.5, then the sample is considered to be non-acid generating, unless the rock is comprised entirely of base-poor minerals (i.e. silicates, potassium feldspar, phyllosilicates like mica, etc.).

Whole Rock Analysis

Whole rock analysis is used to quantify the concentrations of a range of major elements. Whole rock analysis uses a more thorough sample digestion method than is typically used in inductively coupled plasma (ICP) analysis for total elements, hence elemental concentrations reported from whole rock analysis are frequently higher than those found with ICP.

It should be noted that whole rock analysis results are reported as oxide equivalents. This does not infer that those oxide concentrations are present, rather it is a data reporting convention peculiar to this type of analysis. For actual elemental concentrations, the oxide equivalent data must be converted to elemental concentration.

Total Element Analysis

Total element concentrations were measured using ICP. This analysis provides an estimate of the concentrations of a wide range of elements present in the sample. Total element analysis does not provide any information concerning the risk of metal leaching and hence it is normal practice to carry out leach tests (as described below).

X-ray Diffraction (XRD) Analysis

XRD analysis is used to provide information concerning the mineralogy of the sample. Mineralogical information is important, since it can provide supporting information to assess the environmental reactivity of the samples.

Synthetic Precipitation Leaching Procedure (SPLP) 1312 Analysis

The SPLP test was designed by the US Environmental Protection Agency (USEPA) to mimic metal leaching under acid rain conditions. The leaching reagent is a mixture of nitric and sulphuric acids adjusted to pH 4.2, with a 20:1 liquid to solid ratio (by wt.). The sample is crushed to -9.5 mm (if required) and both sample and leaching reagent are placed in a flask, which is rotated end over end over a 24hr period. The leachate is then drained, filtered and analysed.

Toxicity Characteristic Leaching Procedure (TCLP) 1311 Analysis

The TCLP test was also designed by USEPA for assessing metal leaching from mine wastes co-deposited with municipal refuse. The TCLP uses an organic acid leaching reagent (as opposed to mineral acids used in SPLP). TCLP testing has traditionally been carried out for mine rock samples, although its use has tailed off since mine wastes are rarely exposed to organic acids during normal storage conditions.

RESULTS

The results of testing of the initial 24 waste rock samples, 7 overburden samples and 6 ballast samples are discussed below. The lab results for the remaining 29 (of 78 in total) waste rock and ore samples will be come available soon after geomechanical testing has been completed on the samples. An additional 25 waste rock and ore samples have been recently sent for ARD / ML test work and results are anticipated within approximately 6 weeks. Analysis and interpretation will be carried out subsequent to receipt of the results.

Acid-Base Accounting

Waste Rock Samples

The ABA testing results for the waste rock samples can be found on Table 1 and on Figures 4 to 6. The sample results were divided into four main lithological units: gneiss, amphibolite/tuff, greywacke and schist to best represent the non-ore (waste) rock units within the deposit.

Figure 4 shows a plot of sulphide sulphur against total sulphur. Inspection of Figure 4 shows that the sulphide concentration in all samples was less than the 0.3 wt% threshold put forward by Price, with the exception of hangingwall schist sample ARD 19 that had a sulphide concentration of 1.45 wt%. The results on Table 1 also show that the paste pH for all samples ranged from pH 8.0 to 10.2. Based on the Price guidelines, these results indicate that all but one of the waste rock samples is likely to be non-acid generating. However, it is noted that most of the hangingwall is composed primarily of quartz, chlorite and mica which all have relatively poor capacities to neutralize acidity. The carbonate neutralization potential (Ca-NP) is plotted against NP on Figure 5. From this figure it can be seen that of the total NP present, only between 0.9 % and 20.5 % consisted of readily reactive Ca-NP (with the exception of sample ARD 15 whose total NP comprised 75 % Ca-NP).

Sample ARD 19 was collected from the drill core from MR1-05-47 in the hangingwall along the North Limb of Deposit No.1. The sample was taken from 160 m depth and lithologically is a biotite schist. Sample ARD 12 was also taken from the same drill hole and schist unit but contained <0.01 % sulphides. This suggests that there is variability within the hangingwall unit itself.

Sample ARD 10 is classified according to the Price guidelines as borderline, possibly acid generating as shown on Figure 6. The sample was taken from the drill core from MR1-05-77 along the North Limb within the hangingwall close to the ore contact. It was sampled from 117 m depth within the mixed amphibolite and chlorite tuff unit.

Most rock samples have been determined to be likely non-acid generating unless there is possibly a significant preferential exposure of sulphides in the open pit, or there are extremely reactive sulphides in combination with insufficiently reactive or rapid depletion of neutralizing material. However, even though there may not be a large amount of neutralizing potential within these samples, there are sources of neutralization (i.e. carbonates such as limestone and dolostone) in the local overburden as well as bedrock sources within close proximity.

Overburden and Ballast Samples

The ABA testing results for the overburden and ballast samples are presented on Table 2 and on Figures 7 to 9. All samples had a sulphide concentration of less than 0.3 wt% and a paste pH of greater than 5.5 and hence are considered to be non-acid generating as shown on Figure 9. Overburden samples SC27, SC28, SC50 and SC51 also have a strong neutralizing potential that is on the order of 30 times that of the other overburden and ballast samples. This neutralizing potential is in the range of 75 % to 100 % of readily reactive Ca-NP for all overburden samples with the exception of sample BC10. The neutralizing potential of the ballast samples contained at least 80 % to upwards of 100 % of reactive Ca-NP.

Whole Rock

Waste Rock Samples

The results for the Whole Rock analysis testing are shown on Table 3. The samples were rich in silica, aluminium, iron, magnesium and potassium. This is to be expected since the major components that make up the deposit are quartz, amphiboles, feldspar group minerals, and iron oxides.

Overburden and Ballast Samples

Both the overburden and ballast sample results for the Whole Rock analysis testing are shown on Table 4. In general, all overburden samples had similar compositions, being comprised mainly of silica, with varying amounts of aluminum, iron, potassium, calcium and magnesium.

The ballast samples were all generally comprised of mainly silica and aluminium, with lesser amounts of iron, calcium, sodium, potassium, magnesium and titanium, with the exception of sample BC9 (diabase). BC9 had comparably lower amounts of silica and aluminium and slightly higher secondary minerals percentages. The sample had a notably higher calcium concentration compared to the other samples because of the anorthitic nature of diabase.

Total Elements

Waste Rock Samples

The ICP elemental analysis results are shown on Table 5. The metals with the highest concentrations were aluminium, iron, potassium, and magnesium, all of which are largely present in the mineralogy that makes up the waste rocks. Calcium, manganese and titanium were also present but in less significant concentrations. Calcium is also present in many minerals such as plagioclase, amphiboles and pyroxenes. Manganese is present as a cation in garnets and chlorite and titanium is found in rutile and ilmenite. Barium was also slightly higher within the gneissic samples when compared to the other sampled units. It should be noted that barium can be present as a cation substitute in feldspars and micas. Again, the sample results are largely consistent with the results from the whole rock analysis and also correspond with the minerals and metals present in the deposit rocks.

Overburden and Ballast Samples

The ICP elemental analysis results are shown on Table 6. The metals with the highest concentrations in the overburden samples are aluminium, calcium, iron, potassium, and magnesium. Barium, chromium, manganese and titanium are also present but in less significant concentrations. The ballast samples are similar to the overburden samples in that the highest concentrations of metals tend to be aluminium, calcium, iron, potassium, and magnesium which are all major cations present in major mineral assemblages such as amphiboles, micas, feldspars, chlorite, pyroxenes and iron oxides.

The ICP results for all samples were largely consistent with the results from the whole rock analysis.

X-ray Diffraction

Waste Rock Samples

The XRD results are presented on Table 7 and indicate that most of the waste rock samples do not contain detectable amounts of pyrite, pyrrhotite, chalcopyrite, arsenopyrite, galena, sphalerite or siderite. The schist samples contain chlorite as their major constituent as well as mica and quartz in smaller amounts. Only sample ARD 19 (hangingwall schist) tested positive for trace amounts of pyrite.

The major assemblages within the amphibolite/tuff samples are quartz, mica and chlorite with moderate to smaller amounts of amphibole, pyroxene, iron oxides, feldspar, garnet and rutile.

The results for the gneiss samples indicate that quartz, chlorite and mica are the overall major assemblages present in the rock followed by minor to trace amounts of plagioclase and potassium feldspar, iron oxides, cordierite and andalusite. It is expected that the lack of plagioclase and potassium feldspar as a moderate to major component within the footwall samples is due to the variability within the footwall unit itself. The footwall rock varies from quartz-mica-feldspar augen gneiss to quartzite-metapelite and minor schistose lenses within.

Overburden and Ballast Samples

The XRD results are presented on Table 8 and indicate that neither the overburden nor the ballast samples contain detectable amounts of sulphides (i.e. pyrite, pyrrhotite, chalcopyrite, arsenopyrite, galena and sphalerite) which is consistent with the ABA results.

The major mineral assemblages within the overburden samples are quartz, plagioclase and potassium feldspar with more minor amounts of amphibole, mica, chlorite, pyroxene, dolomite and calcite.

The results for the ballast samples indicate that quartz, mica and plagioclase (albite and anorthite) are the overall major assemblages present in the rock, which is expected, since the rocks are generally of a granite-granodiorite to gneissic origin. Plagioclase and potassium feldspar, quartz and pyroxene also occur in moderate amounts while the minor assemblages were mica, chlorite, amphibole, iron oxides, and pyroxene.

Synthetic Precipitation Leaching Procedure (SPLP) 1312

Waste Rock Samples

The SPLP 1312 results presented on Table 9 indicate that iron, aluminum and barium, and to a lesser extent, boron and zinc may be prone to leaching from the waste rock. The results of the SPLP test should be viewed with caution, since the test methodology does not closely resemble actual site conditions. Nonetheless, the results of the SPLP test are useful in providing an indicator of which metals may be prone to leaching under acidic conditions if they were to occur.

The leachate pH ranged from 7.2 to 9.8, indicating that acid neutralizing minerals were reactive and capable of neutralizing the acidic leaching reagent.

Overburden and Ballast Samples

SPLP 1312 results for both the overburden and ballast samples are shown on Table 10. The results indicate that overburden samples were prone to minor leaching of aluminum and iron under the moderately acidic conditions of the test. The leachate pH was alkaline indicating that the overburden has some neutralizing capacity (confirmed by ABA results).

The SPLP results for ballast samples indicated that the ballast may be prone to moderate leaching of aluminum, iron and to a lesser extent boron and zinc. The leachate pH was alkaline indicating that the overburden has some neutralizing capacity (confirmed by ABA results).

Toxicity Characteristic Leaching Procedure (TCLP) 1311

Waste Rock Samples

The results for the TCLP 1311 analysis are presented on Table 11. The TCLP test was carried out using ethanoic (acetic) acid. The test results were generally comparable to the SPLP results.

Overburden and Ballast Samples

The TCLP results for overburden and ballast samples are presented on Table 12. The TCLP results for the overburden samples indicated moderate leaching of barium, boron and zinc and minor leaching of aluminum and iron. Notably high concentrations of some metals, in particular aluminium, copper and iron, could potentially be overrepresented due to certain methodologies used by the lab.

The TCLP results for the ballast samples indicated moderate leaching of barium, copper and iron and minor leaching of aluminum and zinc.

The leachate pH for all samples was also alkaline.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations from the initial phase I test work results are discussed below.

Conclusions

Based on the initial results from a limited number of samples it was concluded that:

Waste Rock

1. Waste rock elemental composition was generally consistent with the predicted mineralogy.

2. Based on the Price guidelines, the initial ABA test results indicate that almost all waste rock samples (with the exception of sample ARD 19) were considered to be non-acid generating. However, the hangingwall is predominately composed of quartz, mica and chlorite minerals that have low capacities to neutralize acidity. Hangingwall acid generating and neutralizing capabilities will be evaluated further once additional laboratory results become available.

3. Schist sample ARD 19 from the hangingwall had a sulphide content of 1.45 wt% and was predicted to be likely acid generating. This will require further confirmation.

4. The leach test results indicated that the waste rock may be prone to leaching of a number of major metals and trace metals under moderately acidic conditions, if this condition were to occur.

5. The waste rock samples were capable of neutralizing acidity (under extreme conditions of the SPLP test), although long-term acid neutralizing capacities are expected to be low.

Overburden and Ballast

1. Ballast elemental compositions were generally consistent with the predicted mineralogy.

2. The ABA test results indicate that overburden and ballast samples are considered to be non-acid generating due to low sulphide content and readily reactive carbonate NP.

3. The leach test results indicated that the overburden and ballast samples may be prone to leaching of a number of major metals and trace metals under moderately acidic conditions, if this condition were to occur.

Recommendations

Recommendations arising out of this review of the initial phase I test work results are:

1. Further TCLP testing of samples may be discontinued, as the results were comparable to the SPLP results. This depends on the pending results from the recently submitted samples.

2. Depending on the results of the additional test work (results pending), additional testing of waste rock units, and in particular hangingwall samples may be required to confirm acid generating and metal leaching capacities.

3. Selected samples should be submitted for modified SPLP testing using deionized water and a 3:1 water to solid ratio (by wt.) because:

   i. this will give a better indication of potential metal leaching due to precipitation, and

   ii. the standard SPLP test is carried out using a 20:1 liquid to solid ratio (by wt.) which can mask metal leaching through dilution (note that the modified leach test is recommended by Price).

4. Additional ballast samples should be tested to confirm the materials environmental reactivity.

5. Based on the predicted waste rock tonnage, the number of samples required for phase I testing should be reviewed with respect to sample size requirements set out in Price, 1997.

6. Samples of ore and low-grade ore have been selected for testing to assess potential metal leaching from temporary ore stockpiles. Results are pending.

7. Based on the results of the phase I static test work program, further laboratory testing and kinetic on-site testing is scheduled for the 2007 field program.

8. As the geochemical characterization program proceeds, the requirement to model potential water quality impacts arising from ARD / ML from the waste rock dumps should be reviewed.

Additional sampling of waste rock and ore samples to further assess ARD and metal leaching properties is scheduled to be completed during the 2007 field season. The new sampling program will encompass all lithologies within the Deposit No. 1 area. This additional sampling will in part focus on characterizing waste rock units located within the expected bench height, as composite sampling across bench height gives an indication of how the materials will behave geochemically when placed in the waste rock dumps. The area of sampling will also be increased to include all areas of the deposit spatially so that a representative model can be attained (the 2006 sampling sites were concentrated generally at the ends of the North and South Limbs of the deposit (Figure 2)).

REFERENCES

Aker Kvaerner. Mary River Iron Ore Project - Bulk Sample Pit Design, Revision A. Project Number 176710. Prepared for Baffinland Iron Mines Corporation. Toronto: Aker Kvaerner, June 2006.

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Environment Canada. Climate Normals (1971-2000), Pond Inlet. 25 Feb. 2004. <http://www.climate.weatheroffice.ec.gc.ca/climate_normals/results_e.html

Jackson, G.D. Geology of the Clyde-Cockburn Land Map Area, North-Central Baffin Island, Nunavut. Geological Survey of Canada Memoir 440, Natural Resources Canada, 2000.

Price, W.A. Draft Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia; Price, W.A., Energy and Minerals Division, Ministry of Employment and Investment, BC. 1997

Watts, Griffis & McOuat Limited. Engineering Report No. 2 for Baffinland Iron Mines Limited on the Mary River Iron Deposits Volume 1 Text. Watts, Griffis & McQuat, 1964.

Yours very truly,
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Attachments:

Table 1 – Acid-Base Accounting Results for Waste Rock Samples
Table 2 – Acid-Base Accounting Results for Overburden and Ballast Samples
Table 3 – Whole Rock Analysis Results for Waste Rock Samples
Table 4 – Whole Rock Analysis Results for Overburden and Ballast Samples
Table 5 – Total Elements Results for Waste Rock Samples
Table 6 – Total Elements Results for Overburden and Ballast Samples
Table 7 – X-Ray Diffraction Results for Waste Rock Samples
Table 8 – X-Ray Diffraction Results for Overburden and Ballast Samples
Table 9 – SPLP 1312 Results for Waste Rock Samples
Table 10 – SPLP 1312 Results for Overburden and Ballast Samples
Table 11 – TCLP 1311 Results for Waste Rock Samples
Table 12 – TCLP 1311 Results for Overburden and Ballast Samples

Figure 1 – Deposit No. 1 Bedrock Geology – Plan View
Figure 2 – Waste Characterization – Sample Locations
Figure 3 – Overburden and Ballast – Sample Locations
Figure 4 – ABA Data – Sulphide Sulphur vs. Total Sulphur Waste Rock Samples
Figure 5 – ABA Data – AP vs. Ca-NP Waste Rock Samples
Figure 6 – ABA Data – AP vs. NP Waste Rock Samples
Figure 7 – ABA Data – Sulphide Sulphur vs. Total Sulphur Overburden & Ballast Samples
Figure 8 – ABA Data – AP vs. Ca-NP Overburden & Ballast Samples
Figure 9 – ABA Data – AP vs. NP Overburden & Ballast Samples
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TABLE 1

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

ACID-BASE ACCOUNTING RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1	ARD 2	ARD 3	ARD 4	ARD 5	ARD 6	ARD 7	ARD 8	ARD 9	ARD 10	ARD 11	ARD 12
		Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Amphibolite/Tuff	Amphibolite/Tuff	Amphibolite
Sample Depth	m	322.0	334.0	325.0	297.5	292.0	290.5	148.0	168.0	189.0	117.0	188.0	34.0
Paste pH	units	9.78	10.03	10.15	9.93	9.75	9.58	9.67	10.07	9.98	8.33	8.04	8.24
Fizz Rate	---	1	1	1	1	1	1	1	1	1	1	1	1
Sample	weight(g)	1.97	2.03	2	1.98	2	1.97	1.98	2	2.03	2.01	1.97	2.01
HCl added	mL	20	20	20	20	20	20	20	20	20	20	20	32.5
HCl	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH to	pH=8.3 mL	16.2	16.2	16.4	16.25	16.3	16.5	17.5	17.45	17.25	17.7	16.1	21.8
Final pH	units	1.34	1.41	1.59	1.32	1.64	1.37	1.26	1.38	1.23	1.33	1.44	1.69
NP	t CaCO3/1000t	9.6	9.4	9	9.5	9.2	8.9	6.3	6.4	6.8	5.7	9.9	26.6
AP	t CaCO3/1000 t	< 0.31	0.94	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	1.2	< 0.31	2.8	1.2	< 0.31
Net NP	t CaCO3/1000 t	9.3	8.4	8.7	9.2	8.9	8.6	6	5.2	6.5	2.9	8.7	26.3
NP/AP	ratio	31.1	9.96	29	30.5	29.8	28.7	20.4	5.31	21.8	2.04	8.25	85.9
Total Sulphur	%	0.006	< 0.005	0.042	< 0.005	0.008	< 0.005	< 0.005	0.035	< 0.005	0.11	0.072	0.007
Sulphate	%	0.016	< 0.01	0.042	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.017	0.032	0.057
Sulphide	%	< 0.01	0.03	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.04	< 0.01	0.09	0.04	< 0.01
C	%	0.012	0.011	0.01	0.016	0.01	0.015	0.01	0.01	0.013	0.011	0.01	0.016
Carbonate	%	< 0.005	0.015	0.015	0.025	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.015
Ca-NP	t CaCO3/1000 t	1.00	0.92	0.83	1.33	0.83	1.25	0.83	0.83	1.08	0.92	0.83	1.33
Ca-NP/NP	%	10.41	9.75	9.26	14.03	9.05	14.04	13.22	13.02	15.93	16.08	8.41	5.01

Parameter	Units	ARD 13	ARD 14	ARD 15	ARD 16	ARD 17	ARD 18	ARD 19	ARD 20	ARD 21	ARD 22	ARD 23	ARD 24
		Greywacke	Amphibolite	Amphibolite	Amphibolite	Amphibolite	Schist	Schist	Tuff	Gneiss	Tuff	Amphibolite	Amphibolite
Sample Depth	m	20.0	60.0	20.5	60.5	99.0	134.5	160.0	33.0	90.0	33.0	38.2	42.0
Paste pH	units	8.3	8.1	9.46	8.65	8.48	8.45	8.49	8.45	9.77	9.43	9.05	8.96
Fizz Rate	---	1	1	3	1	1	1	1	1	1	1	1	1
Sample	weight(g)	1.98	1.97	2.02	1.97	1.97	2.02	1.99	1.95	1.96	1.98	2.05	2
HCl added	mL	20	20	20	20	27.9	20	20	25.3	20	20	25.7	20
HCl	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH	Normality	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NaOH to	pH=8.3 mL	15.5	16.3	10.15	16	21	15.4	14.5	20.4	15.95	15.3	19.35	16.95
Final pH	units	2.04	1.59	1.51	1.48	1.54	1.59	1.82	1.75	1.82	1.69	1.72	1.44
NP	t CaCO3/1000t	11.4	9.4	24.4	10.2	17.5	11.4	13.8	12.6	10.3	11.9	15.5	7.6
AP	t CaCO3/1000 t	< 0.31	< 0.31	< 0.31	1.2	< 0.31	0.94	45.3	< 0.31	0.62	< 0.31	< 0.31	< 0.31
Net NP	t CaCO3/1000 t	11.1	9.1	24.1	9	17.2	10.4	-31.5	12.3	9.7	11.6	15.2	7.3
NP/AP	ratio	36.7	30.1	78	8.46	56.5	12.1	0.3	40.5	16.5	38.3	50	24.6
Total Sulphur	%	0.035	0.014	0.054	0.12	0.009	0.3	1.47	0.048	0.05	0.03	0.019	0.014
Sulphate	%	0.035	< 0.01	0.044	0.084	0.039	0.271	0.024	0.048	0.03	0.03	0.049	0.014
Sulphide	%	< 0.01	0.01	0.01	0.04	< 0.01	0.03	1.45	< 0.01	0.02	< 0.01	< 0.01	< 0.01
C	%	0.028	0.019	0.22	0.015	0.014	0.022	0.014	0.023	0.012	0.027	0.014	0.009
Carbonate	%	< 0.005	< 0.005	0.849	< 0.005	< 0.005	< 0.005	0.02	0.025	0.015	0.04	0.015	< 0.005
Ca-NP	t CaCO3/1000 t	2.33	1.58	18.33	1.25	1.17	1.83	1.17	1.92	1.00	2.25	1.17	0.75
Ca-NP/NP	%	20.46	16.84	75.11	12.25	6.66	16.08	8.45	15.21	9.70	18.90	7.52	9.86

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]ABA Table 1
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Total sulphur "S" and carbon "C" values may be slightly higher than their compounds as the elemental values were determined with a separate sample and may not contain exactly the same amount. The elemental analysis is also slightly more accurate than their compound analysis, accounting for a potentially higher value.
3. If the sulphide content used in calculating the Acid Potential (AP) was less than the detection limit of 0.31 t CaCO3/1000 t, the detection limit (< 0.31 t CaCO3/1000 t) was used to indicate the uncertainty of the result.
4. Ca-NP (Carbonate Neutralization Potential) was calculated using the formula from Price, 1997: Ca-NP (as t CaCO3/1000 t) = (%C)*(100.09/12.01)*(10)

TABLE 2

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

ACID-BASE ACCOUNTING RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Paste pH	units	8.83	8.93	9.1	9.2	9.05	9.51	9.36	10.02	9.19	9.05	9.5	9.98	9.69
Fizz Rate	---	1	1	1	4	4	4	4	1	1	1	1	1	1
Sample	weight(g)	1.97	2.02	2	2.01	2	2.02	2.02	1.95	1.96	2.02	2.01	2.02	1.98
HCl added	mL	20	20	20	168.75	196.6	134.1	106.5	20	20	20	20	20	20
HCl	Normality	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
NaOH	Normality	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
NaOH to	pH=8.3 mL	18	18.5	16.5	41.6	51.35	44.3	36.9	16.3	16.6	14.2	16.7	16.8	16.7
Final pH	units	1.09	1.08	1.12	1.7	1.61	1.53	1.48	1.13	0.98	1.76	0.93	0.96	0.96
NP	t CaCO3/1000t	5.1	3.7	8.8	316	363	222	172	9.5	8.7	14	8.2	7.9	8.3
AP	t CaCO3/1000 t	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31	< 0.31
Net NP	t CaCO3/1000 t	4.8	3.4	8.5	316	363	222	172	9.2	8.4	13.7	7.9	7.6	8
NP/AP	ratio	16.4	11.9	28.4	1020	1170	716	555	30.6	28.1	45.2	26.5	25.5	26.8
Total Sulphur	%	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.014	0.015	0.026	0.007	< 0.005	0.028
Sulphate	%	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.03	0.01	< 0.01	0.03
Sulphide	%	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
C	%	0.019	0.035	0.096	3.82	4.55	2.62	2.11	0.11	0.11	0.18	0.058	0.087	0.08
Carbonate	%	0.02	0.055	0.25	16.2	19	11.8	9.25	0.14	0.015	0.1	0.08	0.05	0.05
Ca-NP	t CaCO3/1000 t	1.58	2.92	8.00	318.21	379.02	218.25	175.76	9.16	9.16	14.99	4.83	7.25	6.66
Ca-NP/NP	%	31.03	78.80	90.87	100.70	104.41	98.31	102.19	96.45	105.32	107.10	58.92	91.74	80.29

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]ABA Results 2
16-Mar-07

Notes:

1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Total sulphur "S" and carbon "C" values may be slightly higher than their compounds as the elemental values were determined with a separate sample and may not contain exactly the same amount. The elemental analysis is also slightly more accurate than their compound analysis, accounting for a potentially higher value.
3. If the sulphide content used in calculating the Acid Potential (AP) was less than the detection limit of 0.31 t CaCO3/1000 t, the detection limit (< 0.31 t CaCO3/1000 t) was used to indicate the uncertainty of the result.
4. Ca-NP (Carbonate Neutralization Potential) was calculated using the formula from Price, 1997: Ca-NP (as t CaCO3/1000 t) = (%C)*(100.09/12.01)*(10)

TABLE 3

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

WHOLE ROCK ANALYSIS RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1	ARD 2	ARD 3	ARD 4	ARD 5	ARD 6	ARD 7	ARD 8	ARD 9	ARD 10	ARD 11	ARD 12
		Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Amphibolite/Tuff	Amphibolite/Tuff	Amphibolite
SiO2	%	67.1	64.8	70.7	66.8	67.4	69	71.1	72.9	71.5	47.8	54.5	30.6
Al2O3	%	16	16.7	15	15.5	15	14.7	14.6	13.8	14	18	13.7	17.5
Fe2O3	%	6.99	5.89	5.19	5.5	6.15	5.86	4.7	4.26	4.5	20.6	11.9	16.3
MgO	%	2.8	2.35	1.91	2.77	2.78	2.7	1.69	1.74	2.02	6.75	12	19.6
CaO	%	0.26	2.57	0.21	0.42	0.31	0.26	0.13	0.14	0.13	0.03	0.03	0.21
Na2O	%	0.07	2.8	< 0.05	0.14	0.14	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
K2O	%	4.13	3.28	4.02	5.23	4.39	4.08	3.97	4.62	4.58	0.64	0.36	0.49
TiO2	%	0.79	0.57	0.65	0.83	0.81	0.77	0.51	0.47	0.44	1.05	0.98	1.23
P2O5	%	0.2	0.09	0.17	0.19	0.19	0.2	0.11	0.11	0.1	0.01	0.03	0.09
MnO	%	0.1	0.11	0.04	0.08	0.09	0.07	0.05	0.05	0.07	0.1	0.1	0.48
Cr2O3	%	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.09	0.07	0.05
V2O5	%	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.06	0.05	0.06
LOI	%	1.93	1.09	1.72	2.1	2.84	2.3	2.76	2.1	2.2	5.37	6.19	13.2
Sum	%	100.3	100.3	99.7	99.6	100.1	100	99.6	100.1	99.5	100.5	99.9	99.7

Parameter	Units	ARD 13	ARD 14	ARD 15	ARD 16	ARD 17	ARD 18	ARD 19	ARD 20	ARD 21	ARD 22	ARD 23	ARD 24
		Greywacke	Amphibolite	Amphibolite	Amphibolite	Amphibolite	Schist	Schist	Tuff	Gneiss	Tuff	Amphibolite	Amphibolite
SiO2	%	63.9	65.9	57.4	52	30.3	30.3	31.7	29.7	57.6	48.6	62.9	65.6
Al2O3	%	11.6	12.5	15.9	15	23.4	16.9	20.6	16.6	21.3	15.8	14.4	16.1
Fe2O3	%	10.8	7.62	7.14	20.6	14.7	17	16.9	29.5	10.5	13.4	6.92	9.06
MgO	%	6.08	5.83	3	6.22	17	22.3	15.7	13.4	4.43	9.85	7.95	2.86
CaO	%	0.11	0.17	10.1	1.37	0.24	0.2	0.23	0.31	0.28	5.65	0.12	0.08
Na2O	%	< 0.05	< 0.05	3.04	0.43	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	< 0.05	< 0.05
K2O	%	1.92	2.17	0.64	0.26	0.73	0.14	2.11	0.03	2.23	1.1	2.73	3.37
TiO2	%	0.51	0.52	0.91	1.17	1.57	0.73	0.95	0.91	1.59	0.95	0.16	0.17
P2O5	%	0.1	0.11	0.07	0.09	0.1	0.09	0.13	0.22	0.2	0.08	0.04	0.06
MnO	%	0.28	0.16	0.3	0.9	0.31	1.14	0.87	0.43	0.18	0.29	0.13	0.06
Cr2O3	%	0.02	0.16	0.05	0.03	0.07	0.22	0.29	0.08	0.05	0.03	< 0.01	< 0.01
V2O5	%	0.02	0.01	0.03	0.06	0.09	0.03	0.04	0.04	0.08	0.06	< 0.01	0.01
LOI	%	4.56	4.46	1.05	2.17	11.4	10.6	9.67	9.07	1.2	2.64	4.53	3.22
Sum	%	99.8	99.6	99.6	100.3	99.8	99.7	99.2	100.2	99.8	100	99.8	100.6

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Whole Rock Table 3
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the percentage of a species is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

TABLE 4

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

WHOLE ROCK ANALYSIS RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
SiO2	%	70.7	90.9	94.5	60	52.6	67.3	69.3	72.8	63.1	48.9	72.7	71.8	70.2
Al2O3	%	14.1	3.02	1.75	3.49	3.97	5.45	6.47	13.6	16.7	16.8	14.1	15	14.5
Fe2O3	%	2.33	1.38	0.83	1.67	3.4	1.01	1.55	1.95	6.15	13.5	1.55	2.13	2.75
MgO	%	0.6	0.38	0.39	4.49	6.49	3.13	2.07	0.35	3.91	4.46	0.38	0.68	0.78
CaO	%	1.45	0.44	0.4	12.8	13.2	8.95	7.88	1.54	0.19	9.93	1.77	2.6	1.74
Na2O	%	3.36	0.79	0.1	0.29	0.47	0.67	0.99	4.05	< .05	2.23	3.93	4.77	3.36
K2O	%	5.12	0.89	0.62	1.5	1.28	2.66	2.87	3.61	6.17	1.2	3.27	1.96	5.06
TiO2	%	0.26	0.07	0.03	0.08	0.13	0.07	0.13	0.14	0.6	1.59	0.12	0.17	0.24
P2O5	%	0.08	0.03	0.02	0.02	0.04	0.04	0.05	0.04	0.13	0.14	0.02	0.04	0.13
MnO	%	0.03	0.01	< .01	< .01	0.02	0.01	0.02	0.05	0.07	0.19	0.03	0.04	0.03
Cr2O3	%	0.02	0.06	0.06	0.04	0.03	0.04	0.03	< .01	< .01	< .01	< .01	0.02	< .01
V2O5	%	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	< .01	0.06	< .01	< .01	< .01
LOI	%	0.55	0.26	0.35	14.6	17.2	9.97	8.15	0.53	2.2	1.12	0.39	0.48	0.52
Sum	%	98.6	98.2	99.1	99	98.9	99.3	99.5	98.6	99.2	100.1	98.2	99.7	99.4

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Whole Rock Results 4
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.

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TABLE 5

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

TOTAL ELEMENTS ANALYSIS RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1 Gneiss	ARD 2 Gneiss	ARD 3 Gneiss	ARD 4 Gneiss	ARD 5 Gneiss	ARD 6 Gneiss	ARD 7 Gneiss	ARD 8 Gneiss	ARD 9 Gneiss	ARD 10 Amphibolite/Tuff	ARD 11 Amphibolite/Tuff	ARD 12 Amphibolite
Ag	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Al	µg/g	120000	85000	58000	76000	74000	50000	57000	71000	72000	80000	73000	92000
As	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Ba	µg/g	2200	490	1700	1700	1500	1200	1400	2000	2100	30	12	200
Be	µg/g	5.2	1	4.9	0.48	0.56	0.52	1.1	0.9	1	0.77	19	5.1
Bi	µg/g	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Ca	µg/g	1700	15000	1400	2600	1900	1300	720	930	860	270	250	1300
Cd	µg/g	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	1.1	0.5	1
Co	µg/g	7.1	12	6.4	8.3	9.6	8.8	5.5	6	5	56	43	51
Cr	µg/g	12	8	12	12	12	12	8	10	9	360	250	370
Cu	µg/g	22	6.3	37	5.5	14	10	2.8	15	21	62	16	41
Fe	µg/g	89000	44000	34000	42000	48000	43000	35000	29000	31000	120000	55000	110000
K	µg/g	65000	25000	31000	45000	36000	33000	32000	35000	34000	6100	3500	4900
Li	µg/g	5	10	< 3	11	5	4	< 3	< 3	< 3	130	27	30
Mg	µg/g	14000	12000	10000	14000	14000	12000	8400	10000	12000	42000	74000	120000
Mn	µg/g	440	780	260	550	610	370	350	420	560	680	680	3400
Mo	µg/g	5	4	8	< 2	2	3	4	4	43	< 2	4	< 2
Ni	µg/g	7	22	9	9	15	11	6	7	7	290	130	210
Pb	µg/g	34	25	26	22	17	14	15	16	20	18	14	11
Sb	µg/g	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Se	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sn	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr	µg/g	13	170	15	31	21	13	15	23	16	5.2	1.7	4.5
Ti	µg/g	2700	3100	2800	3200	2100	1900	1300	2500	2200	780	1000	1300
Tl	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
U	µg/g	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75
V	µg/g	47	76	31	57	54	50	28	26	27	200	83	330
Y	µg/g	10	6.3	8.4	16	12	10	6.5	9.6	10	1.9	10	5.5
Zn	µg/g	16	53	14	61	66	29	38	37	41	109	90	95

Parameter	ARD 13 Greywacke	ARD 14 Amphibolite	ARD 15 Amphibolite	ARD 16 Amphibolite	ARD 17 Amphibolite	ARD 18 Schist	ARD 19 Schist	ARD 20 Tuff	ARD 21 Gneiss	ARD 22 Tuff	ARD 23 Amphibolite	ARD 24 Amphibolite
Ag	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Al	59000	63000	83000	76000	130000	90000	110000	87000	68000	87000	72000	72000
As	7	78	30	< 6	< 6	< 6	11	< 6	< 6	< 6	< 6	< 6
Ba	340	250	170	31	30	15	340	5	200	90	590	300
Be	1.6	1.3	0.12	0.099	2.1	3.9	3.1	0.5	0.34	0.1	2.6	1.3
Bi	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3	< 3	< 3	< 3	< 3
Ca	750	1200	65000	7900	1500	1300	1500	1900	1800	37000	750	570
Cd	0.8	2	4.9	1.4	1	1	1.1	2.1	0.7	1.1	0.5	0.4
Co	21	49	59	49	85	37	45	48	56	55	4.4	8.2
Cr	54	950	260	170	350	1300	1700	440	200	230	13	8
Cu	12	180	96	130	120	8.7	130	170	90	120	4.1	1.6
Fe	74000	52000	49000	130000	100000	120000	120000	200000	65000	91000	47000	56000
K	14000	16000	7000	2700	7900	1400	15000	200	16000	7800	21000	25000
Li	< 3	12	< 3	7	33	< 3	6	6	17	18	13	8
Mg	37000	35000	18000	36000	110000	140000	96000	82000	27000	61000	48000	17000
Mn	2000	1100	2200	6400	2300	8500	6700	3000	1100	2000	860	420
Mo	2	29	< 2	7	3	< 2	2	< 2	3	3	2	9
Ni	48	370	180	130	240	140	180	170	210	140	13	12
Pb	29	230	68	9	12	16	25	12	8	10	25	17
Sb	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25
Se	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sn	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Sr	12	5.2	140	10	5.8	4.5	9.9	8.6	16	74	35	28
Ti	2000	2400	5300	4500	1300	2000	2300	520	4200	3200	900	900
Tl	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
U	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75	< 75
V	57	69	270	320	460	150	190	250	370	300	15	13
Y	9.8	6.4	17	31	4	11	9.1	13	3.2	17	1.8	1.1
Zn	60	260	490	120	100	180	190	180	41	150	39	15

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Bulk Metal Table 5
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Dash indicates there were no available results.
3. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

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TABLE 6

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

TOTAL ELEMENTS ANALYSIS RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Ag	µg/g	0.7	0.7	< 0.6	1.1	0.7	0.9	1.3	< 5	< 5	4	< 5	< 5	< 5
Al	µg/g	70000	16000	8800	18000	20000	27000	32000	69000	72000	83000	68000	78000	76000
As	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Ba	µg/g	950	190	120	220	150	470	500	880	1200	93	570	750	890
Be	µg/g	1.5	0.36	0.18	0.38	0.4	0.48	0.58	1.6	0.88	0.3	0.78	0.86	1.3
Bi	µg/g	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 3	< 3	< 2	< 3	< 3	< 3
Ca	µg/g	8900	3000	2700	84000	88000	58000	51000	10000	1200	56000	9700	15000	11000
Cd	µg/g	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.6	< 0.1	< 0.1	< 0.1
Co	µg/g	4.4	3	1.5	2.4	3.9	1.5	2.2	2.3	7.9	34	1.9	3.2	3.8
Cr	µg/g	89	160	160	190	190	130	170	42	9	39	12	18	13
Cu	µg/g	7.8	5.7	5.1	7.2	5.6	6.6	6.7	690	62	300	74	41	13
Fe	µg/g	16000	8800	5500	11000	21000	6400	9600	13000	44000	90000	11000	15000	20000
K	µg/g	40000	6500	5200	11000	8600	19000	21000	27000	39000	12000	24000	19000	38000
Li	µg/g	5	< 3	< 3	7	5	< 3	< 3	25	10	5	5	6	7
Mg	µg/g	3900	2400	1700	27000	39000	18000	12000	2300	22000	23000	1900	4000	4500
Mn	µg/g	180	110	67	140	240	110	150	350	440	1100	160	240	250
Mo	µg/g	< 2	< 2	2	< 2	< 2	< 2	< 2	28	15	2	3	4	6
Na	µg/g	-	-	-	-	-	-	-	-	-	-	-	-	-
Ni	µg/g	8	19	11	12	13	8	8	19	8	43	4	8	8
Pb	µg/g	30	8	6	9	9	15	18	76	35	10	29	25	36
Sb	µg/g	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	3	< 2	< 2	< 2
Se	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 6	< 6	< 5	< 6	< 6	< 6
Sn	µg/g	< 6	< 6	< 6	< 6	< 6	< 6	< 6	19	7	< 6	< 6	< 6	< 6
Sr	µg/g	230	61	34	93	91	120	140	250	21	210	200	320	280
Ti	µg/g	900	310	170	390	550	300	520	720	2900	5500	570	970	1290
Tl	µg/g	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
U	µg/g	< 40	< 40	< 40	< 40	< 40	< 40	< 40	< 55	< 42	< 50	< 58	< 58	< 42
V	µg/g	24	13	6	14	30	8.3	14	9.3	29	280	11	16	26
Y	µg/g	9.3	2.7	2	3.4	4.3	3.2	3.9	5.6	12	22	3	1.5	9.2
Zn	µg/g	27	12	7	10	17	11	16	210	190	100	33	39	34

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Bulk Metal Results 6
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. Dash indicates no available results for that element.

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TABLE 7

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

X-RAY DIFFRACTION RESULTS FOR WASTE ROCK SAMPLES

Sample I.D.	Crystalline Mineral Assemblage (relative proportions based on peak height)			
	Major	Moderate	Minor	Trace
ARD 1 Gneiss	quartz mica		chlorite	* hematite
ARD 2 Gneiss	quartz mica	plagioclase		*maghemite * chlorite, * magnetite
ARD 3 Gneiss	quartz mica			* chlorite, * hematite * potassium-feldspar
ARD 4 Gneiss	quartz mica			* chlorite, * maghetite * potassium-feldspar
ARD 5 Gneiss	quartz	mica, chlorite		* potassium-feldspar
ARD 6 Gneiss	quartz	mica, chlorite		* potassium-feldspar
ARD 7 Gneiss	quartz	mica, chlorite		* potassium - feldspar
ARD 8 Gneiss	quartz	mica		* chlorite * potassium-feldspar
ARD 9 Gneiss	quartz	mica		
ARD 10 Amphibolite/Tuff		chlorite quartz		* amphibole, * potassium-feldspar
ARD 11 Amphibolite/Tuff	chlorite, quartz			* mica, * hematite * goethite, * magnetite
ARD 12 Amphibolite	chlorite		mica, rutile	
ARD 13 Greywacke	quartz	chlorite, mica		
ARD 14 Amphibolite	quartz	mica, chlorite		* ilmenite * maghemite
ARD 15 Amphibolite		plagioclase amphibole, quartz		* mica, * pyroxene
ARD 16 Amphibolite	quartz, chlorite		garnet, plagioclase	* pyroxene
ARD 17 Amphibolite	chlorite		mica	
ARD 18 Schist	chlorite			
ARD 19 Schist	chlorite	mica		* pyrite
ARD 20 Tuff	chlorite		quartz	* garnet
ARD 21 Gneiss	quartz	mica, cordierite, andalusite	chlorite	
ARD 22 Tuff	amphibole	chlorite, plagioclase	quartz, mica	
ARD 23 Amphibolite	quartz	mica	chlorite	
ARD 24 Amphibolite	quartz	mica	chlorite	

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]XRD Results Table 7
16-Mar-07

Notes:
1. Laboratory results provided by SGS Mineral Services in Lakefield, ON.
2. * Tentative identification due to low concentrations, diffraction line overlap or poor crystallinity.
3. Mineral proportions are based on relative peak heights and may be strongly influenced by crystallinity, structural group or preferred

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TABLE 8

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

X-RAY DIFFRACTION RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Sample I.D.	Crystalline Mineral Assemblage (relative proportions based on peak height)			
	Major	Moderate	Minor	Trace
SA1	quartz	plagioclase, potassium-feldspar, chlorite	mica, amphibole	* pyroxene
SC2	quartz		plagioclase, potassium-feldspar	* amphibole
SC4	quartz		plagioclase, potassium-feldspar	* dolomite * mica, * amphibole
SC27	quartz		plagioclase, potassium-feldspar dolomite, calcite	* amphibole
SC28	dolomite	quartz	potassium-feldspar plagioclase,	* calcite
SC50	quartz	potassium-feldspar	dolomite, calcite plagioclase,	* mica, * chlorite * amphibole
SC51	quartz	potassium-feldspar	dolomite, calcite plagioclase,	* mica, * chlorite * amphibole
BC1	quartz	plagioclase, potassium-feldspar	mica	* chlorite
BC8	mica, quartz		chlorite	
BC9	anorthite	pyroxene, quartz	chlorite, mica, amphibole, magnetite, potassium-feldspar	* goethite, * ilmenite
BC10	quartz, albite	potassium-feldspar	pyroxene, mica	
BC11	albite, quartz		mica, chlorite, potassium-feldspar	
BC12		albite, quartz, potassium-feldspar	pyroxene, mica	* chlorite, * magnetite

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]XRD Results Table 8
16-Mar-07

Notes:
1. Laboratory results provided by SGS Mineral Services in Lakefield, ON.
2. * Tentative identification due to low concentrations, diffraction line overlap or poor crystallinity.
3. Mineral proportions are based on relative peak heights and may be strongly influenced by crystallinity, structural group or preferred orientations.

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TABLE 9

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

SPLP 1312 RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1	ARD 2	ARD 3	ARD 4	ARD 5	ARD 6	ARD 7	ARD 8	ARD 9	ARD 10	ARD 11	ARD 12
		Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Gneiss	Amphibolite/Tuff	Amphibolite/Tuff	Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	8.14	8.52	7.51	8.75	8.17	7.8	7.6	7.17	7.39	8.3	8.49	8.6
Al	mg/L	9.04	8.03	8.18	9.03	5.41	7.2	6.64	7.79	7.34	7.43	1.89	13.2
As	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Ag	mg/L	0.0001	0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	1.43	1.28	1.37	1.44	1.21	1.51	1.35	1.64	1.45	0.952	0.809	1.3
Be	mg/L	0.0005	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0007	0.0006
B	mg/L	0.672	0.635	0.709	0.67	0.588	0.795	0.834	0.845	0.763	0.693	0.598	1.1
Bi	mg/L	0.00036	0.00013	0.00012	0.00007	0.00007	0.00005	0.0001	0.00006	0.00003	0.00003	< 0.00002	< 0.00002
Ca	mg/L	1.06	2.08	1.02	1.71	1.25	1.27	0.9	0.96	0.94	1.23	1.01	1.7
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Co	mg/L	0.0018	0.00269	0.00161	0.00151	0.00141	0.00172	0.00144	0.00177	0.00128	0.00285	0.000565	0.00479
Cr	mg/L	0.0036	0.0015	0.0017	0.0017	0.0015	0.0016	0.0016	0.0015	0.0018	0.0074	0.004	0.0153
Cu	mg/L	0.0021	0.0014	0.0035	0.0012	0.0098	0.0044	0.0021	0.0041	0.0038	0.0029	0.0009	0.0099
Fe	mg/L	8.21	7.46	6.18	5.9	5.52	6.54	6.1	5.89	5.87	3.47	0.85	14.3
K	mg/L	5.57	5.18	5.37	5.68	2.86	4.45	2.76	5.44	4.5	1.27	0.58	0.96
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	< 0.002
Mg	mg/L	3.2	2.78	2.36	3.08	2.84	3.13	2.22	2.36	2.69	3.59	1.98	18.1
Mn	mg/L	0.0654	0.137	0.0354	0.0517	0.0563	0.0559	0.0662	0.0823	0.0959	0.041	0.0101	0.35
Mo	mg/L	0.00079	0.00047	0.00034	0.00037	0.0003	0.00106	0.00049	0.00068	0.00049	0.00035	0.00065	0.00016
Na	mg/L	11.2	10.7	10.6	11	9.79	11.1	11.1	11.5	11.2	11	8.78	15.4
Ni	mg/L	0.002	0.0042	0.0013	0.0013	0.0012	0.0025	0.0014	0.0014	0.0012	0.0102	0.0008	0.0114
P	mg/L	0.1	0.04	0.07	0.04	0.03	0.05	0.04	0.06	0.05	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.0038	0.0031	0.00403	0.00238	0.00143	0.00173	0.00165	0.00301	0.00461	0.00872	0.00114	0.00119
Sb	mg/L	0.0008	0.0006	0.0005	0.0003	0.0024	0.0021	0.0013	0.0012	0.0013	0.0017	0.0007	0.0006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	0.0051	0.0034	0.0025	0.0019	0.0013	0.0013	0.0009	0.0009	0.0008	0.0007	0.0008	0.0007
Sr	mg/L	0.0107	0.0176	0.0109	0.013	0.011	0.0118	0.0095	0.011	0.0099	0.0112	0.009	0.0136
Ti	mg/L	0.324	0.635	0.313	0.284	0.111	0.177	0.0751	0.28	0.241	0.0209	0.0217	0.0327
Tl	mg/L	0.0004	0.0003	0.0002	0.0002	< 0.0001	0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00112	0.00053	0.00111	0.00056	0.00034	0.00083	0.00073	0.00131	0.00215	0.00006	0.00096	0.00004
V	mg/L	0.006	0.0136	0.00398	0.00589	0.0045	0.00529	0.00264	0.00265	0.00268	0.00278	0.00126	0.014
W	mg/L	0.00021	0.00138	0.00103	0.00074	0.00044	0.00041	0.00031	0.00028	0.00028	0.00019	0.00014	< 0.00007
Y	mg/L	0.0015	0.00187	0.00155	0.00277	0.00183	0.00266	0.000959	0.00353	0.0044	0.000194	0.000929	0.000547
Zn	mg/L	0.326	0.358	0.323	0.347	0.273	0.447	0.446	0.474	0.397	0.316	0.279	0.603

Parameter	Units	ARD 13	ARD 14	ARD 15	ARD 16	ARD 17	ARD 18	ARD 19	ARD 20	ARD 21	ARD 22	ARD 23	ARD 24
		Greywacke	Amphibolite	Amphibolite	Amphibolite	Amphibolite	Schist	Schist	Tuff	Gneiss	Tuff	Amphibolite	Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	8.06	8.35	9.77	7.53	8.55	8.49	8.44	8.46	8.88	9.62	9.28	8.81
Al	mg/L	4.29	3.68	2.26	0.44	7.9	3.12	1.29	3.67	8.18	2.92	2.79	4.74
As	mg/L	< 0.005	< 0.005	0.007	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.978	0.964	0.723	0.531	0.975	0.551	0.519	0.875	1.32	0.691	0.779	1.01
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	< 0.0004
B	mg/L	0.833	0.726	0.473	0.468	0.807	0.383	0.442	0.726	0.526	0.332	0.393	0.472
Bi	mg/L	< 0.00002	0.00011	0.00008	0.00029	0.00012	< 0.00002	< 0.00002	0.00008	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	mg/L	1.25	1.56	9.48	3.45	2.48	2.22	3.14	1.08	1.02	5.79	1.27	0.8
Cd	mg/L	< 0.00006	0.0001	0.00027	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006
Co	mg/L	0.00232	0.00248	0.00125	0.000728	0.00272	0.00112	0.00045	0.00257	0.00834	0.00098	0.00036	0.00117
Cr	mg/L	0.0048	0.0332	0.0055	0.001	0.0072	0.0447	0.0176	0.0152	0.031	0.0048	0.001	0.0012
Cu	mg/L	0.0037	0.0195	0.0044	0.0034	0.0069	0.0013	0.0016	0.0131	0.0107	0.0035	0.001	0.0008
Fe	mg/L	7.7	2.25	1.22	0.32	5.82	3.45	1.4	8.74	10.7	1.84	2.71	5.97
K	mg/L	1.21	1.8	0.59	0.8	0.78	0.3	0.42	0.57	3.96	0.79	1.45	1.88
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	< 0.002
Mg	mg/L	5.3	3.17	0.961	2.61	8.61	6.54	3.47	4.66	4.19	1.74	3.75	2.19
Mn	mg/L	0.199	0.0457	0.0406	0.0108	0.178	0.199	0.0851	0.134	0.0843	0.0223	0.0497	0.0471
Mo	mg/L	0.00103	0.00458	0.00062	0.00387	0.00067	0.00763	0.00132	0.00107	0.00042	0.00012	0.00032	0.00062
Na	mg/L	12.9	11.6	9.31	6.62	13.2	6.5	6.44	11.4	8.06	7.64	7.22	8.22
Ni	mg/L	0.0047	0.0148	0.0082	0.0039	0.0059	0.0059	0.0034	0.0082	0.0342	0.0026	0.0009	0.0018
P	mg/L	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	0.06	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.00185	0.0113	0.0158	0.00094	0.00073	0.0012	0.0008	0.0007	0.0034	0.0019	0.0035	0.0019
Sb	mg/L	0.0008	0.0027	0.0046	0.0004	0.0003	0.0014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	0.0007	0.0006	0.0007	0.0047	0.0033	0.0003	< 0.0003	0.0026	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sr	mg/L	0.0108	0.012	0.0176	0.0106	0.0155	0.0177	0.024	0.0102	0.0121	0.0133	0.0106	0.0098
Ti	mg/L	0.0663	0.049	0.065	0.0178	0.009	0.0098	0.0063	0.0109	0.345	0.0582	0.0256	0.0592
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	0.0003	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00017	0.00011	0.00002	0.00021	0.00007	0.00011	0.00004	0.00004	< 0.00002	< 0.00002	< 0.00002	< 0.00002
V	mg/L	0.00329	0.00221	0.0138	0.00228	0.00799	0.0045	0.0023	0.0056	0.0575	0.0099	0.0023	0.0012
W	mg/L	0.00024	0.00034	0.00123	0.0001	0.00093	< 0.00007	< 0.00007	0.0004	< 0.00007	< 0.00007	< 0.00007	< 0.00007
Y	mg/L	0.000494	0.000327	0.000274	0.000077	0.000203	0.00032	0.00011	0.00023	0.00045	0.00042	0.00009	0.00013
Zn	mg/L	0.366	0.331	0.219	0.22	0.396	0.183	0.213	0.33	0.31	0.14	0.188	0.239

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]SPLP 1312 Table 9
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Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

NB102-00181/4
Revision 0
March 16, 2007

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TABLE 10

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

SPLP 1312 RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	8.1	7.74	8.88	9.53	9.55	9.7	9.62	9.42	7.72	9.24	9.29	9.25	8.91
Al	mg/L	0.739	0.373	0.39	0.143	0.106	0.143	0.203	6.64	4.05	3.51	2.65	2.94	3.3
As	mg/L	0.0026	0.0012	0.0016	0.0016	0.001	0.0009	0.0006	< 0.005	< 0.005	0.0006	< 0.005	< 0.005	< 0.005
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0003	0.0003	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	0.264	0.251	0.209	0.318	0.364	0.284	0.303	0.434	0.44	0.359	0.313	0.347	0.313
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	< 0.0004	< 0.0004
B	mg/L	0.033	0.049	0.012	0.022	0.027	0.012	0.018	0.051	0.484	0.599	0.42	0.458	0.48
Bi	mg/L	< 0.00002	0.00009	0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00006	0.0012	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Ca	mg/L	0.81	1.11	2.34	8.36	10.4	7.83	8.51	7.2	1.33	5.62	4.5	3.05	2.82
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.00017	< 0.0003	< 0.00006	< 0.00006	< 0.00006	< 0.0003
Co	mg/L	0.00038	0.000324	0.00021	0.00006	0.00006	0.000021	0.000072	0.0012	0.00157	0.00382	0.00067	0.00087	0.00079
Cr	mg/L	0.0008	0.0013	0.001	0.0004	< 0.0003	< 0.0003	0.0003	0.0015	0.0033	0.0031	0.0031	0.0042	0.0031
Cu	mg/L	0.0024	0.001	0.0009	0.0004	0.0006	0.0004	0.0008	0.701	0.0517	0.0479	0.0419	0.0338	0.0115
Fe	mg/L	0.79	0.5	0.44	0.09	0.14	< 0.01	0.15	3.17	4.28	5.7	1.51	2.02	1.84
K	mg/L	0.34	0.31	0.28	0.08	0.09	0.02	0.1	3.62	3.4	1.4	1.3	1.54	2.26
Li	mg/L	0.0009	< 0.0007	< 0.0007	< 0.0007	0.001	< 0.0007	< 0.0007	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	0.575	0.705	1.35	1.28	2.78	1.3	1.35	1.51	2.68	1.87	0.698	1.47	1.28
Mn	mg/L	0.0123	0.0107	0.00792	0.00167	0.00253	0.00014	0.00379	0.188	0.0485	0.0771	0.0349	0.0569	0.0595
Mo	mg/L	0.00043	0.00008	0.00007	0.00005	0.00009	0.00007	0.00007	0.00435	0.00905	0.00226	0.00081	0.00115	0.00502
Na	mg/L	1.45	1.02	0.65	0.72	1.1	0.87	1.03	5.85	21.1	23.2	20.3	21.1	24.2
Ni	mg/L	< 0.0007	0.0015	0.0011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.002	0.0011	0.0029	< 0.0007	0.0017	0.0021
P	mg/L	0.05	0.11	0.09	0.03	0.02	0.01	0.04	0.05	0.1	0.11	0.04	0.04	0.07
Pb	mg/L	0.00104	0.00051	0.00051	0.00005	< 0.00002	< 0.00002	0.0005	0.0596	0.0117	0.00035	0.002	0.0011	0.0051
Sb	mg/L	0.001	0.0003	0.0004	0.0007	0.0005	0.0003	0.0004	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	0.0003	0.0003	0.0005	0.0004	0.0007	< 0.0003	0.0003	0.0105	0.0011	0.0009	0.001	0.001	0.0007
Sr	mg/L	0.0064	0.0028	0.0027	0.0076	0.0088	0.0086	0.006	0.107	0.016	0.0295	0.0193	0.02	0.0239
Ti	mg/L	0.0424	0.0137	0.0136	0.0029	0.0042	0.0003	0.0048	0.267	0.203	0.0558	0.135	0.222	0.193
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	0.0002	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00021	0.00013	0.00007	0.00003	0.00005	0.00004	0.00008	0.00305	0.00089	0.00003	0.00021	0.00007	0.00084
V	mg/L	0.00156	0.00166	0.00159	0.00097	0.00109	0.00078	0.00127	0.0022	0.0023	0.00593	0.0024	0.003	0.0037
W	mg/L	0.00007	0.00011	0.0001	0.00007	< 0.00007	< 0.00007	< 0.00007	0.00023	0.00026	< 0.00007	< 0.00007	< 0.00007	0.00015
Y	mg/L	0.000774	0.00036	0.000318	0.000057	0.000065	0.000009	0.000125	0.00162	0.00493	0.00113	0.00077	0.0003	0.00104
Zn	mg/L	0.0235	0.0324	0.0045	0.0074	0.0117	0.0018	0.0036	0.36	0.205	0.175	0.169	0.203	0.15

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16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.

Knight Piésold
CONSULTING

TABLE 11

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

TCLP 1311 RESULTS FOR WASTE ROCK SAMPLES

Parameter	Units	ARD 1 Gneiss	ARD 2 Gneiss	ARD 3 Gneiss	ARD 4 Gneiss	ARD 5 Gneiss	ARD 6 Gneiss	ARD 7 Gneiss	ARD 8 Gneiss	ARD 9 Gneiss	ARD 10 Amphibolite/Tuff	ARD 11 Amphibolite/Tuff	ARD 12 Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
pH	units	4.94	4.9	4.91	4.93	4.93	4.93	4.93	4.93	4.94	4.94	4.91	4.96
Al	mg/L	0.238	0.214	0.213	0.396	0.473	0.332	0.517	0.286	0.223	0.42	0.337	0.07
As	mg/L	0.0015	0.0007	0.0012	0.001	0.0011	0.0012	0.0016	0.0013	0.0032	0.0121	0.0043	0.0012
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	3.03	2.84	3.3	3.07	3.07	2.61	2.73	3.09	3.01	2.71	2.67	2.97
Be	mg/L	0.0007	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0004	< 0.0004	< 0.0004	< 0.0004	0.0004	0.0057	< 0.0004
B	mg/L	0.842	0.759	0.829	0.855	0.784	0.813	0.784	0.806	0.89	0.88	0.865	0.755
Bi	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Ca	mg/L	2.39	4.52	2.17	5.46	3.27	2.69	1.29	1.48	1.76	5.21	3.52	9.1
Cd	mg/L	0.00009	< 0.00006	0.00021	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	0.0012	< 0.00006	< 0.00006
Co	mg/L	0.000951	0.000917	0.00122	0.00104	0.00107	0.00154	0.00258	0.0054	0.00128	0.00446	0.00512	0.000647
Cr	mg/L	0.0045	0.0031	0.0032	0.0031	0.0035	0.0034	0.0047	0.0052	0.0027	0.0051	0.0057	0.0014
Cu	mg/L	0.0004	0.0005	0.0002	0.0003	0.001	0.0001	0.0008	0.0004	0.0001	0.001	0.0007	0.0006
Fe	mg/L	3.24	2.47	2.05	2.56	3.36	2.92	2.73	2.23	1.95	2.49	1.53	0.17
K	mg/L	20.7	21.9	19.9	19.3	13.5	17.1	10.5	19.2	18.4	13	6.9	13.3
Li	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01	< 0.002	< 0.002
Mg	mg/L	1.71	1.13	0.966	2.07	2.35	1.84	1.67	1.14	1.34	9.41	6.07	44.4
Mn	mg/L	0.0705	0.0746	0.029	0.0828	0.083	0.0583	0.0886	0.104	0.0717	0.195	0.145	0.348
Mo	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0011	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Na	mg/L	1100	1100	1170	1070	1140	1030	1100	1100	1110	1030	1060	980
Ni	mg/L	0.0049	0.0032	0.0031	0.004	0.0039	0.0062	0.0077	0.0117	0.0038	0.0133	0.008	0.0045
P	mg/L	0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.00401	0.00255	0.00424	0.00138	0.00078	0.00131	0.00111	0.00324	0.00656	0.0475	0.00648	0.00008
Sb	mg/L	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sr	mg/L	0.0233	0.0315	0.0196	0.031	0.027	0.0201	0.015	0.0172	0.0169	0.0606	0.0252	0.0728
Ti	mg/L	0.0004	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0002	< 0.0002	< 0.0002	0.0005	< 0.0002
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0002	< 0.0001	< 0.0001
U	mg/L	0.00543	0.00346	0.00558	0.00349	0.00172	0.00379	0.00566	0.00345	0.00524	0.00023	0.0215	0.00038
V	mg/L	0.0008	0.00225	0.00091	0.00115	0.00074	0.00101	0.00074	0.00101	0.00111	0.00052	0.00074	0.00056
W	mg/L	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	0.0011	0.0007	0.0003
Y	mg/L	0.00118	0.00131	0.00077	0.00467	0.00642	0.00256	0.00154	0.0031	0.00228	0.000991	0.0054	0.000731
Zn	mg/L	1.66	1.53	1.72	1.66	1.54	1.68	1.67	1.58	1.84	1.96	1.85	1.58

Parameter	Units	ARD 13 Greywacke	ARD 14 Amphibolite	ARD 15 Amphibolite	ARD 16 Amphibolite	ARD 17 Amphibolite	ARD 18 Schist	ARD 19 Schist	ARD 20 Tuff	ARD 21 Gneiss	ARD 22 Tuff	ARD 23 Amphibolite	ARD 24 Amphibolite
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
pH	units	4.94	4.93	5.14	4.88	4.92	4.91	4.91	4.93	4.9	4.92	4.91	4.9
Al	mg/L	0.148	0.0802	0.304	0.603	0.3	0.613	0.627	0.403	0.611	0.938	0.529	0.807
As	mg/L	0.0031	0.0127	0.0502	0.0016	0.0009	0.0009	0.001	0.0066	0.001	0.0019	0.0022	0.001
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	2.68	3.19	2.81	1.68	2.65	2.71	1.94	2.87	3.09	3.46	2.83	3.28
Be	mg/L	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0004	0.0006	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0006	0.0004
B	mg/L	0.875	0.88	0.664	0.936	0.811	1.04	0.935	0.875	0.929	1.06	0.922	0.927
Bi	mg/L	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Ca	mg/L	5.19	8.08	211	7.72	16.4	12.9	12.3	6.66	3.71	18.5	4.26	2.99
Cd	mg/L	0.00041	0.00338	0.00223	< 0.00006	< 0.00006	0.00007	< 0.00006	< 0.00006	< 0.00006	0.00018	< 0.00006	< 0.00006
Co	mg/L	0.01186	0.05152	0.00398	0.0771	0.0016	0.0313	0.0207	0.00824	0.00547	0.00835	0.00158	0.00517
Cr	mg/L	0.0028	0.007	0.0044	0.005	0.0036	0.0237	0.032	0.0062	0.0098	0.0099	0.008	0.0053
Cu	mg/L	0.0007	0.0181	0.0028	0.0449	0.0083	0.0454	0.0687	0.0246	0.0067	0.0134	0.001	0.0002
Fe	mg/L	1.16	0.46	3.13	2.97	0.91	3.86	2.67	3.97	5.4	3.86	4.99	7.67
K	mg/L	18.6	25.4	6.92	9.51	8.26	7.95	9.08	8.01	39.3	12.8	22.6	27.3
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	< 0.002
Mg	mg/L	19.9	19.1	2.28	5.76	19.3	15.7	11.1	28.9	3.61	4.76	14.6	5.44
Mn	mg/L	1.84	0.76	1.92	0.238	0.103	0.496	0.461	0.935	0.11	0.238	0.298	0.146
Mo	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
Na	mg/L	1120	1070	1170	1190	1170	1160	1170	1110	1200	1180	1140	1170
Ni	mg/L	0.0142	0.0351	0.0358	0.183	0.0066	0.0183	0.0299	0.0235	0.0256	0.0152	0.0078	0.0186
P	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01
Pb	mg/L	0.00207	0.13	0.124	0.00063	0.00038	0.0704	0.0101	0.00024	0.00134	0.241	0.00703	0.00499
Sb	mg/L	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Sn	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Sr	mg/L	0.0545	0.0647	0.0681	0.0347	0.0783	0.143	0.126	0.0584	0.0441	0.0378	0.0385	0.0332
Ti	mg/L	< 0.0002	0.0003	0.0004	0.0005	0.0002	0.0003	< 0.0002	0.0004	0.0007	0.0003	< 0.0002	0.0004
Tl	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00073	0.0006	0.00006	0.00017	0.00007	0.00277	0.00276	0.00018	0.00003	0.00007	0.00021	0.00013
V	mg/L	0.00059	0.00062	0.00282	0.00106	0.00066	0.001	0.00028	0.00056	0.00365	0.00134	0.00061	0.00098
W	mg/L	0.0004	< 0.0003	0.0004	0.0004	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Y	mg/L	0.000697	0.000318	0.00378	0.00122	0.00156	0.00147	0.00228	0.00112	0.000431	0.00157	0.000567	0.000363
Zn	mg/L	1.79	1.97	1.76	2.07	1.68	4.97	2.01	1.77	1.97	2.15	1.79	1.94

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]TCLP 1311 Table 11
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Zinc and Lead levels are possibly overrepresented as they are more readily extractable with the acetic acid solution than most other elements.

Knight Piésold
CONSULTING

TABLE 12

BAFFINLAND IRON MINES CORPORATION
MARY RIVER PROJECT

PRELIMINARY GEOCHEMICAL CHARACTERIZATION

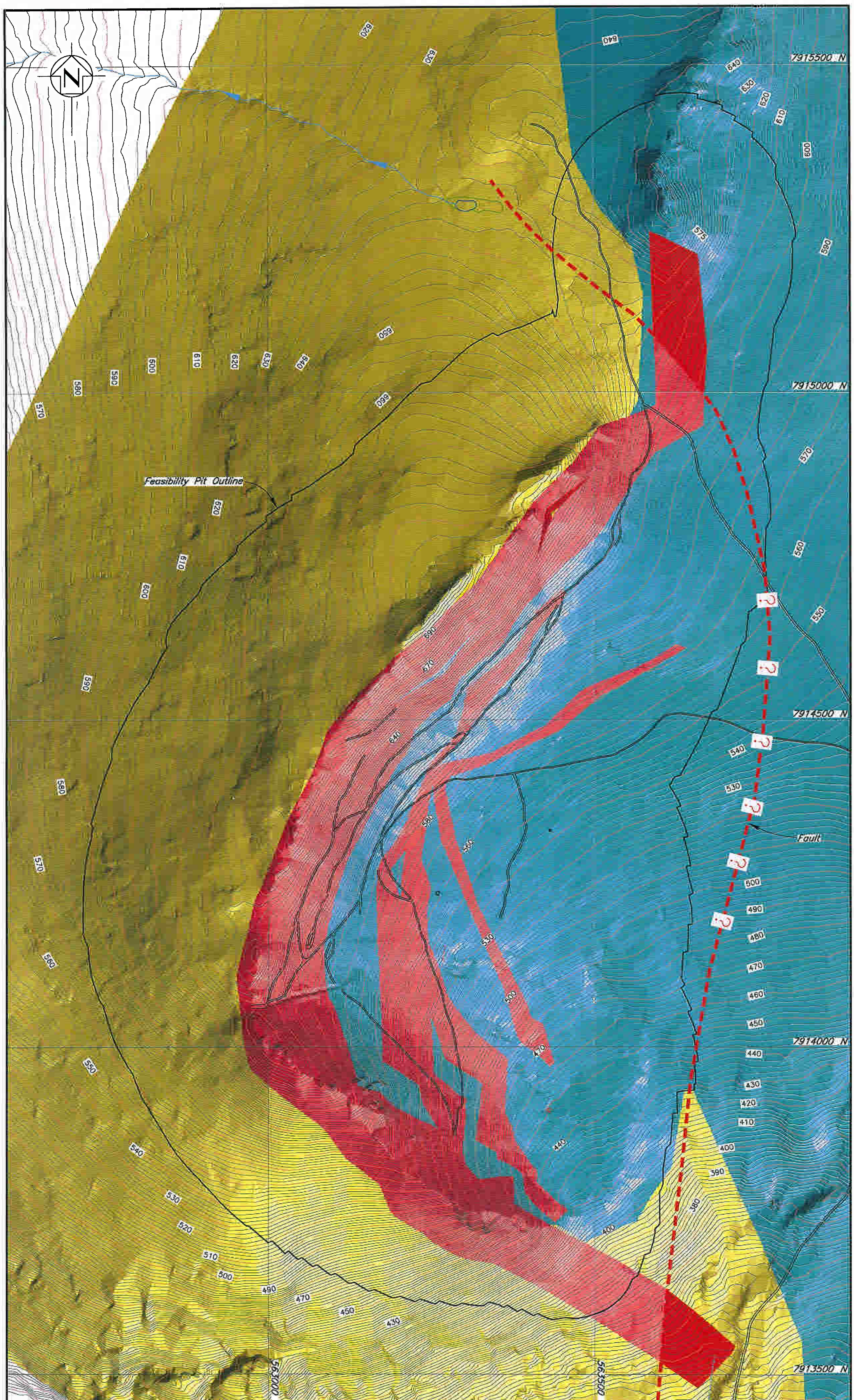
TCLP 1311 RESULTS FOR OVERBURDEN AND BALLAST SAMPLES

Parameter	Units	SA1	SC2	SC4	SC27	SC28	SC50	SC51	BC1	BC8	BC9	BC10	BC11	BC12
Sample	weight(g)	100	100	100	100	100	100	100	100	100	100	100	100	100
Ext.Fluid	#1 or #2	1	1	1	1	1	1	1	1	1	1	1	1	1
ExtVolume	ml	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Final pH	units	4.87	4.86	4.98	6.22	5.97	6.19	5.81	5.05	4.89	5	4.97	4.93	4.91
Al	mg/L	0.27	0.89	0.14	0.07	0.08	0.06	0.08	0.93	0.23	0.35	0.26	0.3	0.37
As	mg/L	0.0014	0.0017	0.0012	0.0017	0.0013	0.0009	0.0007	0.0008	0.001	0.0024	< 0.0005	0.0007	0.0007
Ag	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Ba	mg/L	2.43	2.34	2.71	2.62	1.53	2.68	1.89	1.11	1.06	1.03	0.925	1.06	1.15
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	< 0.0004	< 0.0004
B	mg/L	1.01	1.14	0.888	0.573	0.548	0.41	0.603	0.126	0.152	0.61	0.132	0.139	0.183
Bi	mg/L	< 0.00002	0.00003	< 0.00002	0.00002	0.00002	0.00003	0.00003	< 0.00008	< 0.00008	< 0.00002	< 0.00008	< 0.00008	< 0.00008
Ca	mg/L	4.23	6.48	55.2	758	566	742	634	77.7	7.19	46	44.5	16.5	14.8
Cd	mg/L	< 0.00006	< 0.00006	< 0.00006	< 0.00006	< 0.00006	7	< 0.00006	0.00178	0.00058	0.00007	0.00006	< 0.00006	< 0.00006
Co	mg/L	0.0023	0.00216	0.00293	0.000994	0.00163	0.00323	0.00226	0.01139	0.0137	0.0383	0.00717	0.00309	0.00338
Cr	mg/L	0.0019	0.0047	0.0026	0.0014	0.0011	0.0012	0.0013	0.136	0.0301	0.0496	0.0198	0.0613	0.031
Cu	mg/L	0.0042	0.0025	0.0029	0.0013	0.0012	0.0015	0.0014	16	0.487	0.767	1.26	0.488	0.094
Fe	mg/L	0.27	0.81	0.34	< 0.01	0.02	< 0.01	0.01	21	6.21	19.4	4.29	11.4	4.21
K	mg/L	8.6	6.81	5.07	6.2	5.62	5.25	5.73	11.8	13.1	8.7	6.33	9.15	8.78
Li	mg/L	< 0.002	< 0.002	0.002	0.004	0.003	0.004	0.004	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Mg	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.89	3.48	6.65	1.56	3.3	2.02
Mn	mg/L	0.847	2.16	32.6	26.4	117	21.9	36.2	2.78	0.863	2.62	0.896	1.72	1.24
Mo	mg/L	0.052	0.097	0.26	0.265	0.518	0.344	0.343	0.153	0.012	0.0039	0.0035	0.0195	0.0075
Na	mg/L	1370	1370	1280	1280	1370	1280	1420	1290	750	778	750	760	720
Ni	mg/L	0.0012	0.0095	0.0067	0.0033	0.004	0.0043	0.0037	0.0206	0.0126	0.0291	0.0091	0.0143	0.0374
P	mg/L	0.05	0.43	0.16	0.05	0.05	0.05	0.05	0.02	0.04	0.03	0.02	0.02	0.02
Pb	mg/L	0.0025	0.00143	0.00123	0.00016	0.00009	0.00031	0.00025	0.602	0.0173	0.00048	0.0023	0.0016	0.0059
Sb	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.006	< 0.006	0.0003	< 0.006	< 0.006	< 0.006
Se	mg/L	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.011	0.012	0.008	0.008	0.009
Sn	mg/L	< 0.0003	0.0004	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.002	< 0.002	< 0.0003	< 0.002	< 0.002	< 0.002
Sr	mg/L	0.0454	0.0235	0.0398	0.626	0.247	0.449	0.301	0.384	0.0804	0.146	0.0829	0.057	0.112
Ti	mg/L	0.0008	0.0353	0.0005	0.0009	0.0009	0.0005	0.0006	0.0014	0.0025	0.002	0.0014	0.0016	0.003
Tl	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0002	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
U	mg/L	0.00143	0.0003	0.00019	0.0006	0.00028	0.00103	0.00158	0.0051	0.001	0.0002	0.0004	0.0003	0.0028
V	mg/L	0.00064	0.00301	0.00173	0.0018	0.00168	0.0016	0.00137	< 0.00006	0.0019	0.00158	0.00202	0.00184	0.00182
W	mg/L	0.00008	0.00012	< 0.00007	0.0001	0.00012	0.0001	0.00011	0.0082	< 0.0003	< 0.00007	< 0.0003	< 0.0003	< 0.0003
Y	mg/L	0.00692	0.00123	0.00332	0.000827	0.000541	0.00233	0.00096	0.00572	0.00264	0.00376	0.0023	0.00053	0.00188
Zn	mg/L	1.2	1.42	1.13	0.745	0.695	0.513	0.745	5.2	0.69	0.89	0.74	0.61	0.57

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]TCLP 1311 Results 12
16-Mar-07

Notes:
1. Laboratory results provided by SGS Lakefield in Lakefield, ON.
2. If the concentration of an element is less than the method detection limit, the detection limit (< #) was used to indicate the uncertainty of the result.
3. Zinc and Lead levels are possibly overrepresented as they are more readily extractable with the acetic acid solution than most other elements.

XREF FILE(S): TOPO_NO_IMAGE IMAGE FILE(S): Baffinland logo-big corp geology_topo100



GEOLOGY LEGEND:

- Footwall (Gneiss)
- Ore Zone (High Grade Hematite, High Grade Magnetite, Banded Iron Formation, Mixed High Grade)
- Hangingwall (Schist, Amphibolite, Mafic Tuff)

LEGEND:

- Stream
- Road
- Inferred Fault Zone

NOTES:

1. Contours are in metres. Contour interval for topography is 2 metres. Contour interval for feasibility pit is 10 metres.
2. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.

Scale 60 30 0 60 120 180 240 300 Metres

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

DEPOSIT No. 1
BEDROCK GEOLOGY
PLAN VIEW

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 1

NORTH BAY ON. CREATED BY: erichard SAVED: I:\102-00181-4\Assignment\Acad\Fig\B46, 3/12/2007 4:22:55 PM PRINTED: 3/12/2007 4:23:10 PM, Layout1, erichard

XREF FILE(S): TOPO_PIT; DH_ALL_FROM_RQD_DATABASE; WASTE_CHARACTERIZATION IMAGE FILE(S): Baffinland logo-big corp Baffinland logo-big corp

Sample I.D.	Drill Hole I.D.	Depth (m)	NP/AP Ratio	Sampled In
ARD1	MR1-05-72	322	31.1	Footwall
ARD2	MR1-05-72	334	9.96	Footwall
ARD3	MR1-05-72	325	29.0	Footwall
ARD4	MR1-05-73	297.5	30.5	Footwall
ARD5	MR1-05-73	292	29.8	Footwall
ARD6	MR1-05-73	290.5	28.7	Footwall
ARD7	MR1-04-34	148	20.4	Footwall
ARD8	MR1-04-34	168	5.31	Footwall
ARD9	MR1-04-34	189	21.8	Footwall
ARD10	MR1-05-77	117	2.04	Hangingwall
ARD11	MR1-05-77	188	8.25	Waste Stringer
ARD12	MR1-05-47	34	85.9	Hangingwall
ARD13	MR1-05-59	20	36.7	Hangingwall
ARD14	MR1-05-59	60	30.1	Hangingwall
ARD15	MR1-05-51	20.5	78.0	Hangingwall
ARD16	MR1-05-51	60.5	8.46	Hangingwall
ARD17	MR1-05-51	99	56.5	Hangingwall
ARD18	MR1-05-47	134.5	12.1	Hangingwall
ARD19	MR1-05-47	160	0.3	Hangingwall
ARD20	MR1-05-59	33	40.5	Hangingwall
ARD21	MR1-05-77	90	16.5	Hangingwall
ARD22	MR1-05-77	33	38.3	Hangingwall
ARD23	MR1-05-76	38.2	50.0	Waste Stringer
ARD24	MR1-05-76	42	24.6	Waste Stringer
ARD25	MR1-06-86	136	Pending	Ore
ARD26	MR1-06-86	198	Pending	Waste Stringer
UCS1	MR1-06-81	25	Pending	Ore
UCS2	MR1-06-81	33.8	Pending	Ore
UCS3	MR1-06-81	39.3	Pending	Ore
UCS4	MR1-06-81	46.6	Pending	Ore
UCS5	MR1-06-81	49.6	Pending	Ore
UCS6	MR1-06-81	59	Pending	Ore
UCS7	MR1-06-81	65.7	Pending	Ore
UCS8	MR1-06-81	66.8	Pending	Ore
UCS9	MR1-06-81	70.5	Pending	Footwall
UCS10	MR1-06-81	82.2	Pending	Footwall
UCS11	MR1-06-81	88	Pending	Footwall
UCS12	MR1-06-81	99	Pending	Footwall
UCS13	MR1-06-81	116.8	Pending	Footwall
UCS14	MR1-04-38	24	Pending	Hangingwall
UCS15	MR1-05-77	69	Pending	Hangingwall
UCS16	MR1-06-86	22	Pending	Hangingwall
UCS17	MR1-06-86	41.6	Pending	Hangingwall
UCS18	MR1-06-86	65.6	Pending	Hangingwall
UCS19	MR1-06-86	86.5	Pending	Hangingwall
UCS20	MR1-06-86	115	Pending	Hangingwall
UCS21	MR1-06-86	117.5	Pending	Hangingwall
UCS22	MR1-06-81	128	Pending	Footwall
UCS23	MR1-06-81	156.8	Pending	Footwall
UCS24	MR1-06-81	188	Pending	Footwall
UCS25	MR1-06-81	216.2	Pending	Footwall
UCS26	MR1-06-81	225.2	Pending	Footwall
UCS27	MR1-06-81	244.4	Pending	Footwall
UCS28	MR1-06-86	149.5	Pending	Hangingwall
UCS29	MR1-06-86	171.8	Pending	Hangingwall
UCS30	MR1-06-86	195.1	Pending	Hangingwall
UCS31	MR1-06-91	203.5	Pending	Hangingwall
UCS32	MR1-06-91	220	Pending	Hangingwall
UCS33	MR1-06-91	235	Pending	Hangingwall
UCS34	MR1-06-91	249.4	Pending	Hangingwall
UCS35	MR1-06-91	267.4	Pending	Hangingwall
UCS36	MR1-06-91	281	Pending	Hangingwall
UCS37	MR1-06-91	283.1	Pending	Hangingwall
UCS38	MR1-06-91	317.5	Pending	Hangingwall
UCS39	MR1-06-91	326.3	Pending	Hangingwall
UCS40	MR1-06-91	338.3	Pending	Hangingwall
UCS41	MR1-06-105	136.5	Pending	Ore
UCS42	MR1-06-105	145.2	Pending	Ore
UCS43	MR1-06-105	161.5	Pending	Ore
UCS44	MR1-06-105	171	Pending	Ore
UCS45	MR1-06-105	174.8	Pending	Ore
UCS46	MR1-06-105	180	Pending	Ore
UCS47	MR1-06-105	183.5	Pending	Ore
UCS48	MR1-06-105	185	Pending	Footwall
UCS49	MR1-06-105	193.2	Pending	Footwall
UCS50	MR1-06-105	201.8	Pending	Footwall
UCS51	MR1-06-105	212	Pending	Footwall
UCS52	MR1-06-105	217	Pending	Footwall

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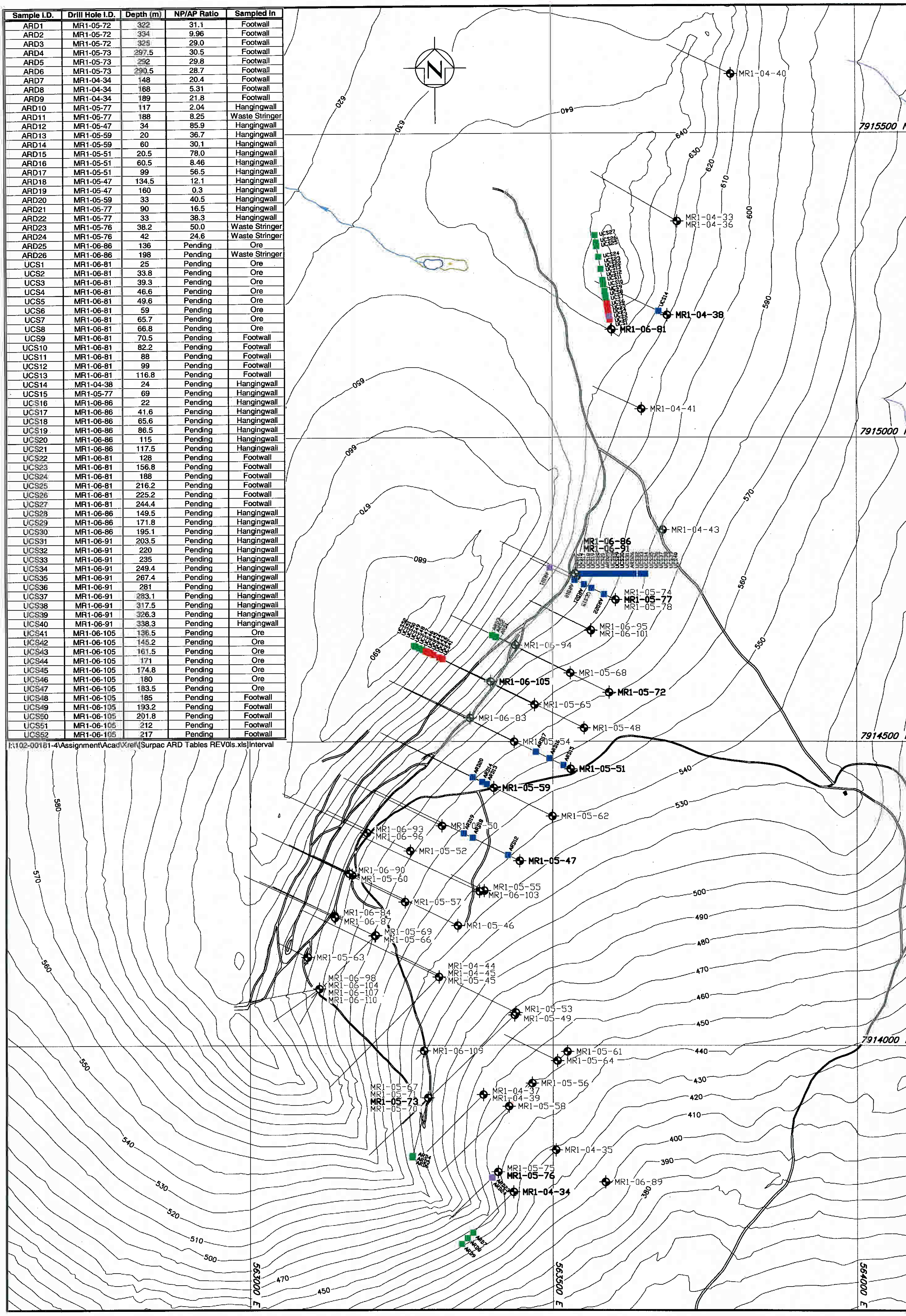

LEGEND:

- Stream
- Drillhole
- Sampled in Hangingwall (Schist)
- Sampled in Ore
- Sampled in Waste Stringer (Schist)
- Sampled in Footwall (Gneiss)

NOTES:

1. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.
2. Contours are in metres. Contour interval for topography is 10 metres.
3. MR1-05-67: MR1 represents Mary River Deposit No.1; 05 represents the year the hole was drilled; 67 represents the number of the drillhole.

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

WASTE CHARACTERIZATION SAMPLE LOCATIONS

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 2

NORTH BAY ON. CREATED BY: erichard SAVED: I:\102-00181-4\Assignment\Acad\Fig\B44, 3/12/2007 4:55:25 PM PRINTED: 3/12/2007 4:55:52 PM, Layout1, erichard

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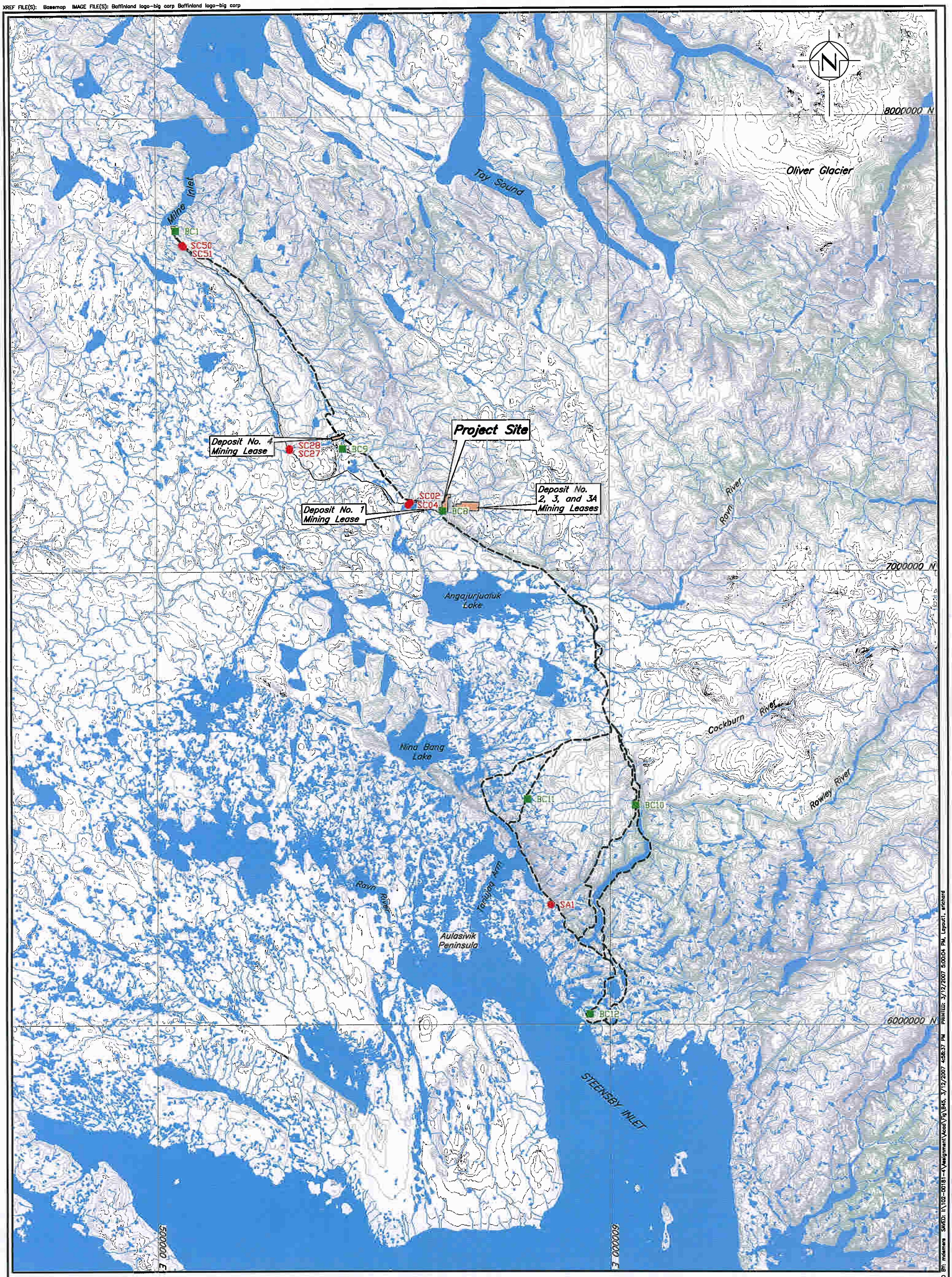

LEGEND:

- Water
- River
- Proposed Transportation Routes
- Overburden Sample Site
- Ballast Sample Site

NOTES:

1. Mapping is from Natural Resources Canada National Topographic Data Base 1:250000. Proposed Access Routes and mapping were provided by Baffinland Iron Mines Corporation.
2. Coordinate grid is shown in UTM (NAD 83) Zone 17 and is in metres.

Scale 8 4 0 10 20 30 40 Km

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MARY RIVER PROJECT

OVERBURDEN AND BALLAST SAMPLE LOCATIONS

Knight Piésold CONSULTING

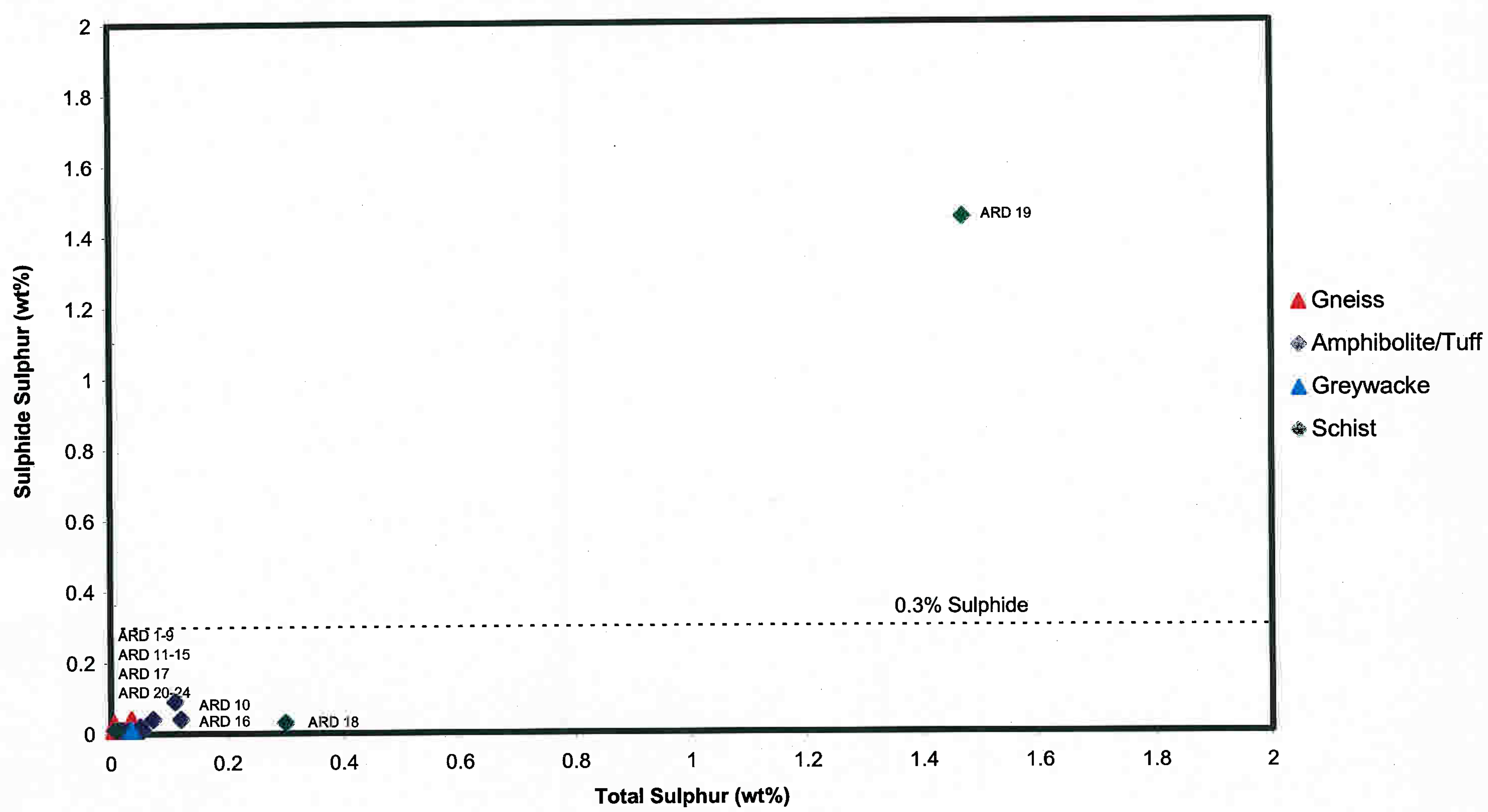
P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 3

NORTH BAY ON. CREATED BY: mdemers SAVED: E:\102-00181-4\Assignment\Acad\Fig\B45, 3/12/2007 4:58:37 PM PRINTED: 3/12/2007 5:00:04 PM, Layout1, ehichord

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Tot S vs S= (Lith) Fig 4

Print date: 16-Mar-07



Baffinland Iron Mines Corporation

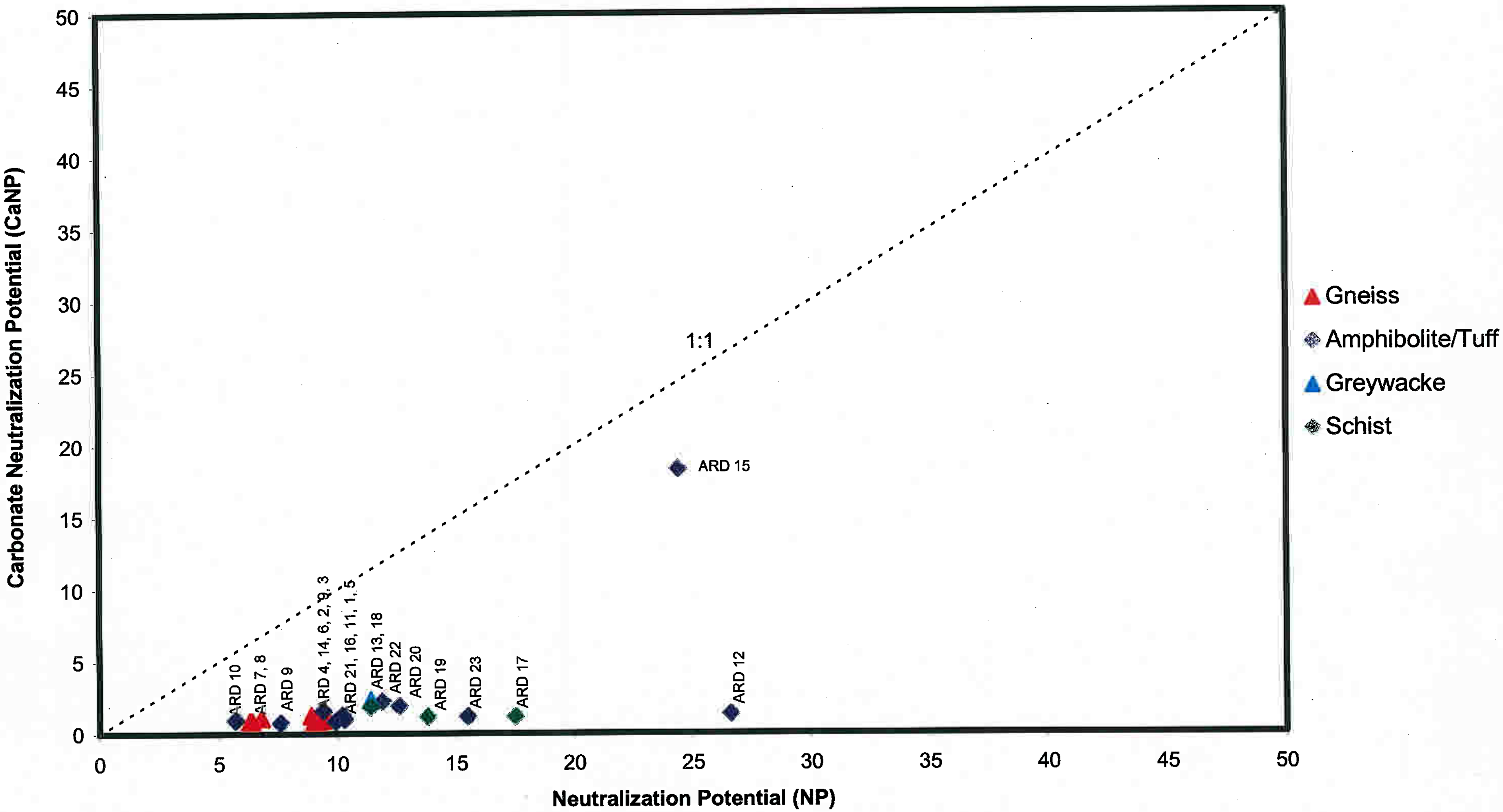
MARY RIVER PROJECT

ABA DATA
SULPHIDE-SULPHUR vs. TOTAL SULPHUR
WASTE ROCK SAMPLES

Knight Piésold CONSULTING	P/A NO. NB102-00181/4	REF. NB07-00232	REV. 0
	FIGURE 4		

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]NP vs CaNP (Lith) Fig 5

Print date: 16-Mar-07



Baffinland Iron Mines Corporation		
MARY RIVER PROJECT		
ABA DATA **NP vs. Ca-NP** **WASTE ROCK SAMPLES**		
Knight Piésold CONSULTING	P/A NO. NB102-00181/4	REF. NB07-00232	REV. 0
	FIGURE 5		

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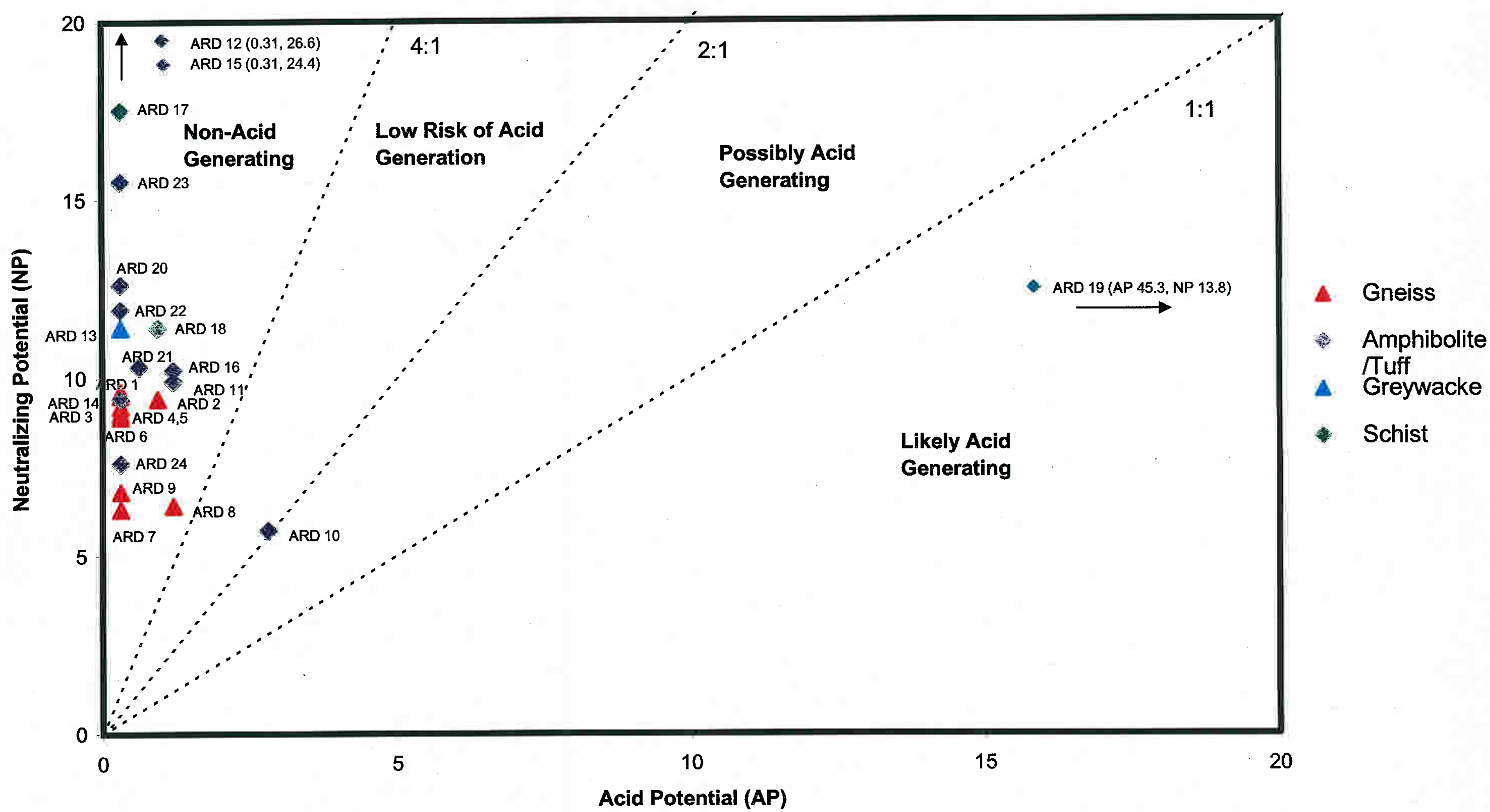
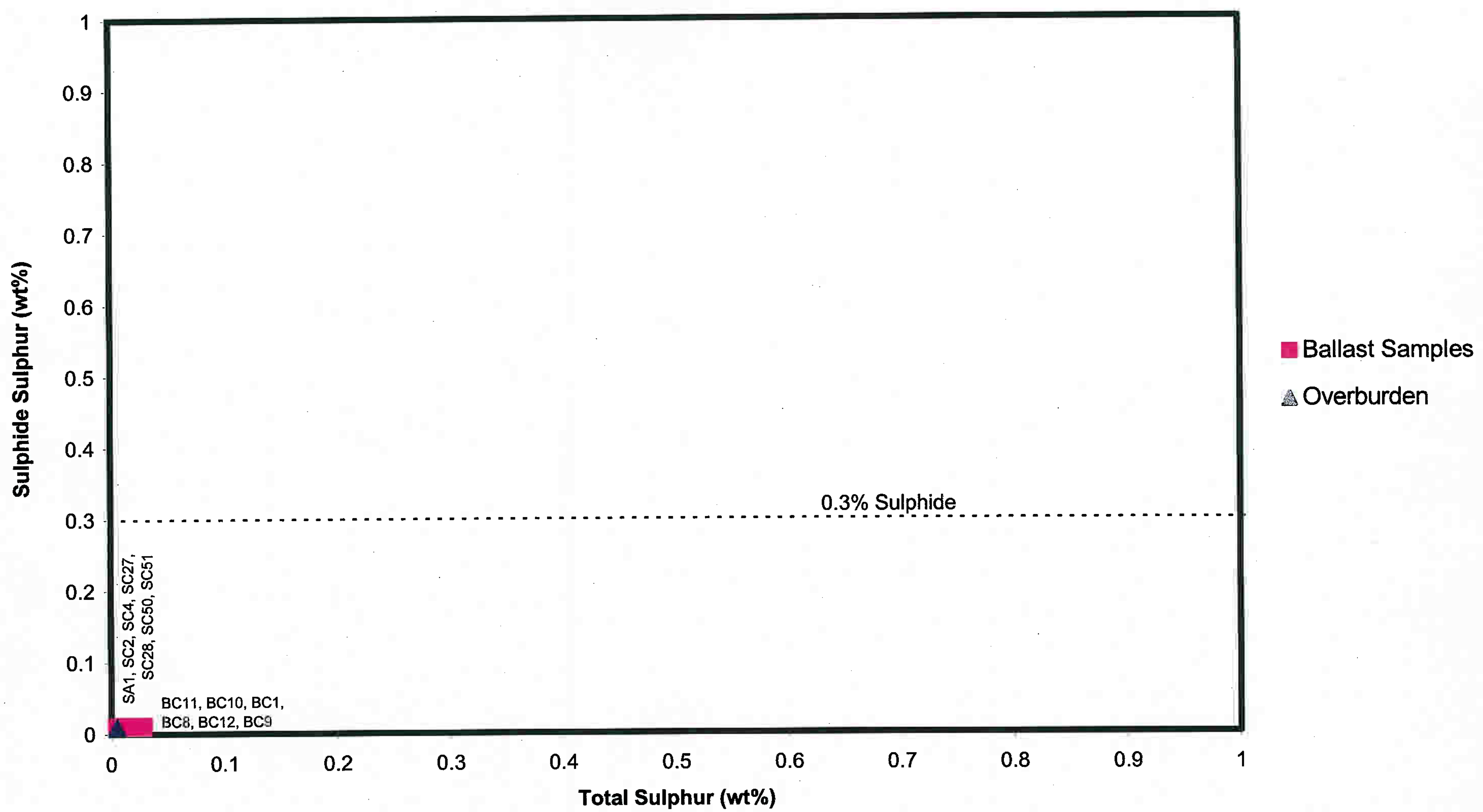
Print date: 16-Mar-07



Baffinland Iron Mines Corporation			
MARY RIVER PROJECT			
ABA DATA AP vs. NP WASTE ROCK SAMPLES			
Knight Piésold CONSULTING	P/A NO. NB102-00181/4	REF. NB07-00232	REV. 0
	FIGURE 6		

I:\102-00181-4\Assignment\Data\Work Files\WF 09 - Waste Characterization\[Tables 1-12 and Figs 3-8.xls]Tot S vs S Fig 7

Print date: 16-Mar-07



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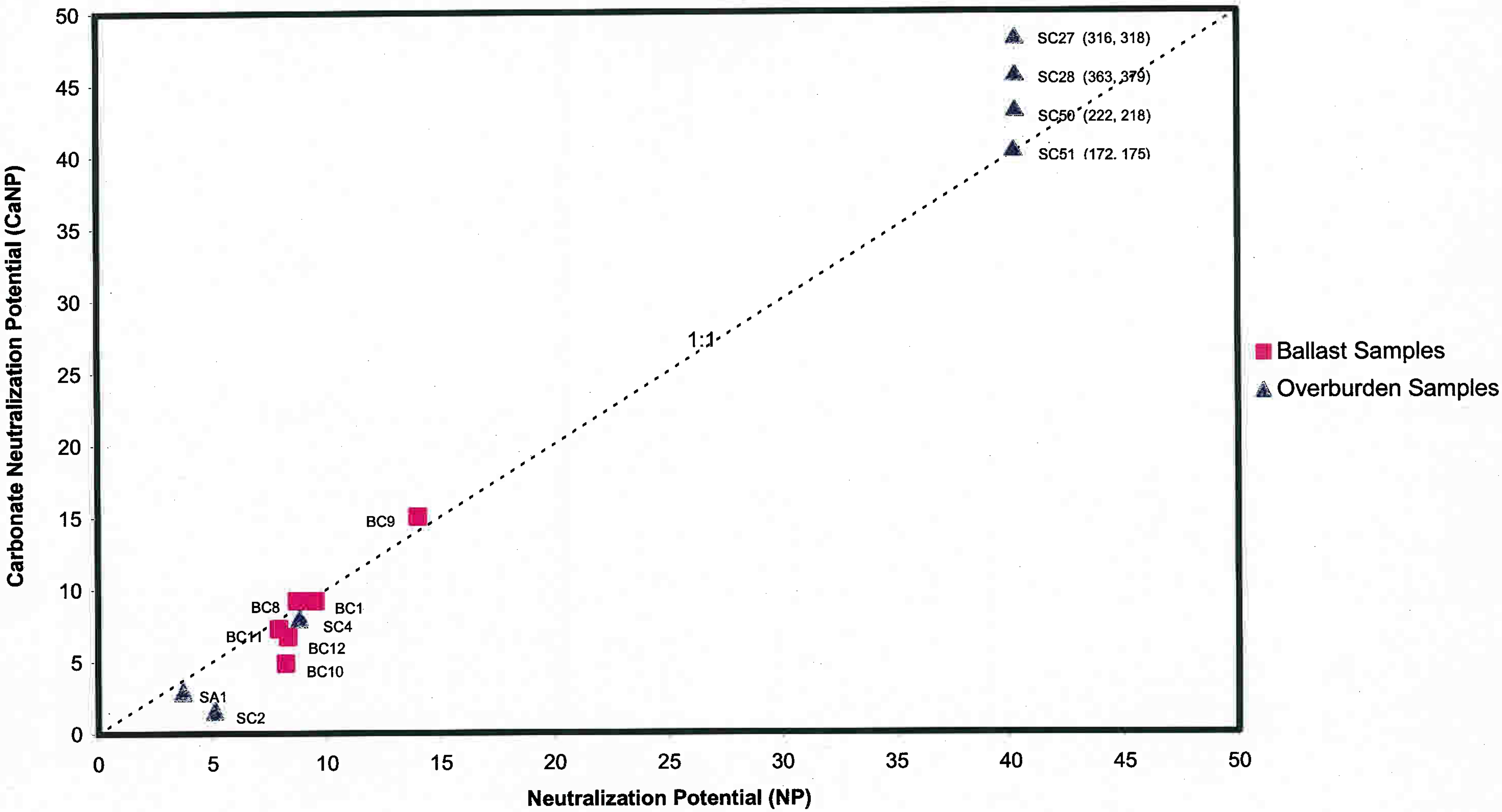
MARY RIVER PROJECT

ABA DATA
SULPHIDE-SULPHUR vs. TOTAL SULPHUR
OVERBURDEN & BALLAST SAMPLES

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 7



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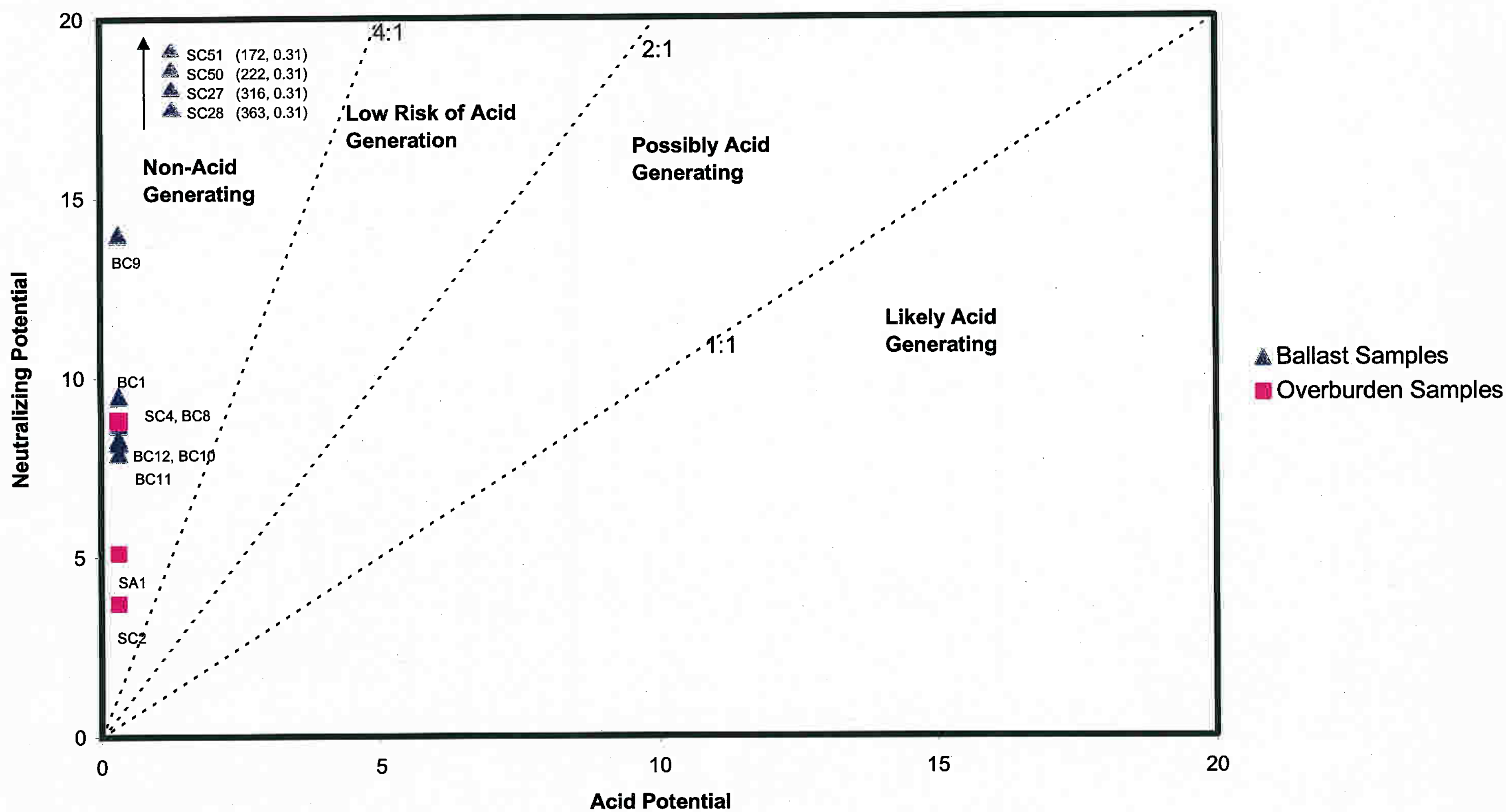
MARY RIVER PROJECT

ABA DATA
NP vs. Ca-NP
OVERBURDEN & BALLAST SAMPLES

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 8



Baffinland Iron Mines Corporation

MARY RIVER PROJECT

ABA DATA
AP vs. NP
OVERBURDEN & BALLAST SAMPLES

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB102-00181/4	NB07-00232	0

FIGURE 9