Baffinland Iron Mines Corporation
Mary River Project

2013 Work Plan Marginal Closure Cost Summary

2013-04-04	C	Client Review	A. Grzegorczyk	T. Mackay	S. Perry	N/A
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Date	**Rev.**	**Status**	**Prepared By**	**Checked By**	**Approved By**	**Approved By**

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1. Purpose

The purpose of this document is to provide a summary of the closure and reclamation costs required to meet the reclamation objectives for the Mary River Project in 2013 and determine the reclamation deposit to be lodged with the regulators before the 2013 field work starts. The cost was developed taking into consideration current site conditions as well as a cost consideration for Baffinland Iron Mine Corporation's 2013 Work Plan (February, 2013).

2. Context

An abandonment and reclamation closure cost estimate has been developed and submitted to the NWB on March 31, 2013. This A&R estimate reflects closure cost estimate for the site as is (before any additional works occurs on the site in 2013). This document is entitled: "The 2013 Abandonment and Reclamation Plan for Advanced Exploration Activities (AMEC, 2013)". An annotated version of this cost estimate is attached in Appendix I.

On February 13, 2013, Baffinland submitted its 2013 Work Plan to NWB and to the Qikiqtani Inuit Association (QIA). In order to proceed with the execution of this work plan, the NWB has informed Baffinland that the Company must obtain a new Type B Water Licence. This application was submitted and the review is in progress.

The year 2013 is a thus regulatory transition year that will see the granting of a new Type B Water Licence (likely early May) to allow for the site preparation that will include the construction of limited infrastructure prior to the anticipated receipt of the Type A Water Licence (likely late June or early July).

In consideration of the additional infrastructure to be constructed at the site during 2013, a 2013 Marginal Cost estimate was developed to estimate the closure cost associated with this additional work that is not captured in the Abandonment and Reclamation (A&R) cost estimates for the project already developed by AMEC.

2.1 2013 Marginal Closure Cost Revisions

An initial marginal closure cost estimate was developed and presented to Aboriginal Affairs and Northern Development Canada (AANDC) and the Nunavut Water Board (NWB) on March 13, 2013 to represent the cost required to reclaim project components not already captured in the current Type B Water Licence. It was highlighted in this meeting that at the present time the estimate was very conservative and efficiencies may still be found knowing that the previous A&R Cost estimate has already been done and double counting was possible. Subsequent to that meeting, an in-depth analysis of the 2013 Abandonment and Reclamation Plan for Advanced Exploration Activities (AMEC, 2013) was conducted to determine specifically what was accounted for in that estimate to ensure no 'double counting' of reclamation costs with the 2013 Marginal Closure Cost estimate. Based on this analysis, efficiencies were found (mainly in mobilization costs) that allowed for a revised cost estimate to be developed while still meeting all reclamation objectives stated for the Project. A revised

A&R cost estimate was then developed, submitted and presented to the QIA on March 25, 2013 incorporating found efficiencies and eliminating double counting. Based on feedback from the QIA, adherence to QIA A&R policy as the landowner (see Appendix B for QIA A&R policy concordance), adherence to Mine Site Reclamation Policy for Nunavut (INAC, 2002), and further analysis and revision of the closure cost estimate, a final revision of the closure estimate is presented in this document. This estimate represents the current understanding of the project and stakeholder concerns.

Note that the estimate of closure costs will be an iterative process that will be reviewed and re-evaluated as annually to allow for project changes and updated costs. The next revision is expected in Q1 2014 before the start of 2014 field operations that will capture all project components expected on-site in 2014 as well as any redefined costs.

3. Approach

The closure cost estimate presented herein spans the applicability of the existing Type B Water Licence, proposed revised Type B Water Licence, as well as the incorporation of the anticipated Type A Water Licence.

The proposed closure security currently allocated under the Type B Water Licence, as described in the 2013 Abandonment and Reclamation Plan for Advanced Exploration Activities (AMEC, 2013), has been split to allow for security to be carried out of the Type B Water Licence and into the Type A Water Licence. Since all cost required to reclaim the site based on current site conditions are captured in the 2013 Abandonment and Reclamation Plan for Advanced Exploration Activities (AMEC, 2013) which is available on the NWB Public Registry (http://www.nunavutwaterboard.org/en/public_registry), only a marginal cost was developed taking into consideration additional activities or components in the 2013 Work Plan not already captured in the Abandonment and Reclamation Plan for Advanced Exploration Activities Plan (AMEC, 2013). Based on this approach, three (3) closure costs were developed. These are:

- Marginal Closure Cost Estimate for the proposed 2013 Work Plan for activities conducted in 2013 not accounted for in 2013 Abandonment and Reclamation Plan for Advanced Exploration Activities (AMEC, 2013)
- Revised Type B Closure Cost Estimate (after removal of items that carry over to the Type A Water Licence)
- Closure Cost Estimate associated with activities that carry over from the Type B Water Licence to the Type ‘A’ Water Licence

Only the 2013 Work Plan Marginal Closure Cost was developed using solely the RECLAIM methodology (development sponsored by AANDC), the Remaining Type ‘B’ Cost and Type ‘A’ Carry Over Cost were both calculated using a hybrid system of RECLAIM and AMEC Assessment Methodology

AMEC Assessment Methodology is based on project components and a cost estimate for each activity that is required to reclaim each project component to meet reclamation objectives. For each activity required for each project component, a cost is developed based on the number of person-days and equipment hours estimated to complete that activity. A contingency is then applied based on the confidence in the time based estimate (high contingency, lower confidence). The sum of the costs for completing each activity to reclaim that project component represents the reclamation cost for that component

RECLAIM methodology considers each project component as well and reclamation cost is based on a functional unit for that project component (e.g. m2 for building foot print, m3 for earthworks, etc.). Then based on experience/data available to the developers or the users a unit cost is assigned for reclaiming that functional unit. Unit cost is inclusive of fuel/labour/equipment. A global contingency is applied based on user experience (e.g. Hatch) and the level of confidence the user has in the accuracy the representative costs for reclamation of the project. In this case, a contingency of 10% for all activities was chosen by Hatch based on the type of activities being carried out to meet reclamation objectives.

A hybrid method was used in the ‘Remaining Type B’ Closure Cost estimate and the ‘Carry Over to Type A’ estimate by taking the total man-hour and equipment hour cost (in dollars) developed in the AMEC Assessment Methodology for each activity and/or component and then carrying that cost over into RECLAIM at identical values. For example, if the cost to reclaim a quarry was estimated as $20,000 in the AMEC Assessment Methodology, then it was assigned 20,000 units @ $1 in the RECLAIM model. The contingency values were not carried over from the AMEC Assessment Methodology, because RECLAIM methodology applies contingency at global estimate level.

In addition to the 10% global contingency applied to all closure estimates using the RECLAIM model, Hatch also included a 5% of capital costs allowance for Project Management. This was deemed to be sufficient to cover anticipated Project Management costs. Hatch also included a 1% of capital cost allowance for bonding, a 1% of capital costs allowance for insurance and a 5% of capital cost allowance for engineering in the ‘Carry Over to Type A’ estimate. Hatch is in the position that these total additional allowances area reasonable allocation of costs based on the level of required work.

Based on calculations of the RECLAIM Model, the cost of reclamation of the Mary River Project is presented in Table 4-1.

3.1 Closure Scenario

The Marginal Closure Cost estimate is based on a scenario that assumes all planned activities for 2013 have taken place on site. See Appendix D for full list of assumptions of the closure scenario for the 2013 Marginal Closure Cost. The closure scenario is specifically critical in relation to fuel as fuel inventory fluctuates throughout 2013. As per QIA A&R Policy, it is assumed all fuel on site will not be available at time of reclamation (see Appendix B for QIA A&R Policy concordance). Therefore to be conservative, the 2013 Work Plan Marginal Closure Cost estimate considers the worst case scenario with fuel and includes a cost allocation for fuel removal after fuel tanks are full after the 2013 sealift, i.e., highest quantity of fuel on site after commencement of 2013 Work Plan.

4. Closure Cost Summary

Table 4-1 and Table 4-2 represent a summary of the closure cost estimate for the Mary River Project to meet the reclamation objectives outlined in section 5 and in the "2013 Abandonment and Reclamation Plan for Advanced Exploration Activities" (AMEC, 2013) document. The estimated closure and reclamation cost required project wide is calculated by breaking down project components and required reclamation activities by area and by assumed land and water liability.

Table 4-1: Closure and Reclamation Cost Total Summary

Liability Allocation	Revised Type B Closure Cost Estimate	Carry-over to Type A Closure Cost Estimate from Type B Estimate	2013 Work Plan Marginal Closure Estimate	TOTAL Security for Type A Water License in 2013	TOTAL 2013 Closure Estimate for Mary River Project
Total	$1,247,000	$23,651,000	$12,343,000	**$35,995,000**	**$37,241,000**
Land	$1,229,000	$21,547,000	$12,294,000	$33,840,000	$35,069,000
Water	$18,000	$2,105,000	$50,000	$2,154,000	$2,172,000
Land	98.6%	91.1%	99.6%	94.0%	94.2%
Water	1.4%	8.9%	0.4%	6.0%	5.8%

**All figures rounded to the nearest 000's*

Table 4-2: 2013 Closure Cost Estimate Detailed Summary

Closure Component	A Revised Type B Closure Cost Estimate	B Carry-over to Type A Closure Cost Estimate from Type B Estimate	C 2013 Work Plan Marginal Closure Estimate	D TOTAL Security for Type A Water License in 2013 (B + C)	E TOTAL 2013 Closure Estimate for Mary River Project (A + D)
Direct Costs					
Project Area					
Milne Port	$0	$6,452,520	$2,621,753	$9,074,273	$9,074,273
Tote Road	$0	$1,938,492	$63,737	$2,002,229	$2,002,229
Mary River Mine Site	$0	$3,237,514	$1,334,514	$4,572,028	$4,572,028
Remote Sites/Rail Camps	$238,960	$0	$0	$0	$238,960
Steensby Camp	$699,141	$0	$0	$0	$699,141
Mineral Exploration Areas	$68,915	$0	$0	$0	$68,915
General Site Area	$0	$2,686,739	$0	$2,686,739	$2,686,739
Subtotal	*$1,007,016*	*$14,315,265*	*$4,020,004*	*$18,335,269*	*$19,342,285*
Additional Reclamation Activities					
Chemicals, Fuel and Soil Management	$0	$90,000	$5,046,215	$5,136,215	$5,136,215
Water management	$14,808	$0	$43,175	$43,175	$57,983
Post-closure monitoring and maintenance	$0	$1,654,952	$457,971	$2,112,923	$2,112,923
Mobilization	$0	$4,057,700	$1,340,873	$5,398,573	$5,398,573
Subtotal	*$14,808*	*$5,802,652*	*$6,888,233*	*$12,690,885*	*$12,705,693*
Sub-Total of Direct Costs	***$1,021,824***	***$20,117,917***	***$10,908,237***	***$31,026,154***	***$32,047,978***
Indirect Costs					
Project management	$51,091	$803,011	$478,368	$1,281,379	$1,332,470
Bonding	$10,218	$160,602	$0	$160,602	$170,820
Insurance	$10,218	$160,602	$0	$160,602	$170,820
Engineering	$51,091	$803,011	$0	$803,011	$854,102
Contingency	$102,182	$1,606,022	$956,736	$2,562,758	$2,664,941
Sub-total of Indirect Costs	***$224,801***	***$3,533,248***	***$1,435,105***	***$4,968,352***	***$5,193,154***
TOTAL COSTS	**$1,246,625**	**$23,651,165**	**$12,343,342**	**$35,994,507**	**$37,241,132**
Liability Breakdown					
Land	$1,228,560	$21,546,546	$12,293,691	$33,840,237	$35,068,797
Water	$18,066	$2,104,618	$49,651	$2,154,269	$2,172,335
Land	98.6%	91.1%	99.6%	94.0%	94.2%
Water	1.4%	8.9%	0.4%	6.0%	5.8%

All costs in Canadian Dollars (CAD).

5. Closure and Reclamation Objectives

An Interim Mine Closure and Reclamation Plan will be prepared before mining commences to address mine closure. This interim plan will incorporate progressive rehabilitation during the course of the Project to limit the work required after cessation of operations and to limit the environmental effects during the Project life. It will address temporary and long-term closure as well as final cessation of operations. Public health and safety will be considered throughout all stages of progressive rehabilitation, closure and post-closure.

For final closure, materials and equipment will either be removed from site or disposed of in on site landfills, and all hazardous materials and wastes will be removed from site to licensed disposal facilities. The open pit, waste rock stockpiles and quarries will be inspected for physical and chemical stability. Roads (with the exception of the public Milne Inlet Tote Road), airstrips and development areas will be re-contoured as required to provide long-term stability and reduce the potential for erosion. The closure phase is expected to be four years, followed by a minimum of five years of post-closure safety and environmental monitoring and treatment, as and if required.

The Plan is a “living” document. It will be reviewed and revised during water licensing, and regularly updated throughout the operation phase to reflect the progress of the Project as well as changes in technology and/or standards or legislation. The Plan is subject to review and approval by the Nunavut Water Board. Future revisions will also consider input from consultations with communities and other stakeholders on methods to be used, and potential uses for project infrastructure.

The main objectives of closure activities are to:

- Adhere to QIA A&R Policy and Mine Site Reclamation Policy for Nunavut (INAC, 2002).A concordance table of 2013 closure assumptions with the QIA reclamation policy is presented in Appendix B
- Return the Project affected sites to “wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and human activities” (Mine Site Reclamation Policy for Nunavut, 2002)
- Where practicable, undertake progressive reclamation to reduce the environmental risk once the mine ceases operation (INAC, 2002; INAC, 2002a; Northwest Territories Water Board, 1990; and QIA, 2009)
- Provide for the reclamation of affected sites and areas to a stable and safe condition. Where practical, affected areas will be returned to a state compatible with the original undisturbed area (Territorial Land Use Regulations)
- Reduce the need for long-term monitoring and maintenance by designing for closure and instituting progressive reclamation, whenever possible

- Provide for mine closure using the current available proven technologies in a manner consistent with sustainable development
- Return altered water courses to their original alignment and cross-section (Territorial Land Use Regulations)

6. Supporting Documents

In addition to information presented within this document, please refer to the following appendices for supporting information:

- Refer to Appendix A for site drawings representing current and intended development at Milne Port and the Mine Site.
- Refer to Appendix B for the 2013 Marginal Closure Cost estimate concordance with QIA Abandonment and Reclamation (A&R) Policy.
- Refer to Appendix C for full screenshots of the 2013 Marginal Closure Cost Mining RECLAIM model and a please refer to respectively.
- Refer to Appendix D for the 2013 Marginal Closure Cost Mining RECLAIM model list of assumptions.
- Refer to Appendix E for full screenshots of the Remaining Type ‘B’ Closure Cost Mining RECLAIM model.
- Refer to Appendix F for the Remaining Type ‘B’ Closure Cost Mining RECLAIM model list of assumptions.
- Refer to Appendix G for full screenshots of the Type ‘A’ Carry Over Closure Cost Mining RECLAIM Model
- Refer to Appendix H for Type ‘A’ Carry Over Closure Cost Mining RECLAIM Model list of assumptions
- Refer to Appendix I for an annotated 2013 Abandonment and Reclamation Plan for Advanced Exploration Activities – Appendix G.3 Cost Estimation Details for Closure (AMEC, 2013) to use for cross referencing Remaining Type ‘B’ Closure Cost Mining and Type ‘A’ Carry Over Closure Cost

AG:s

Appendix A

Mary River Project Drawings

A.1	**Milne Port – Site Layout**	**H349000-2000-00-015-0002**
A.2	**Mine Site – Site Layout**	**H349000-4000-00-015-0002**
A.3	**Mine Site – Enhanced Layout**	**H349000-4000-00-015-0003**

H349000-2000-00-015-0002

MILNE INLET

EFFLUENT DISCHARGE LOCATION
TO RECEIVING ENVIRONMENT
N:7976482.047
E:503211.450

LAYDOWN A1
EARTHWORKS
CONTRACTOR YARD

10 ML
P-50 DIESEL

5 ML
P-50 DIESEL

FUEL TANK FARM

RAMP TO BEACH

SEALIFT BARGE
LANDING AREA

DRAINAGE DIVERSION
DITCH

EXISTING HTO CABIN

LAYDOWN B1

LAYDOWN A1
AREA

EXISTING POLISHING
WASTE STABILIZATION
POND

INCINERATOR

EXISTING
BLADDER FARM

LINED STORAGE
AREA

LINED STORAGE

LAYDOWN
AREA

AIRSTRIP

EXISTING
WASTE WATER
TREATMENT
FACILITY

EXISTING TRAILER
CAMP

TENT CAMP

POWER
GENERATORS

POLISHING
WASTE STABILIZATION
POND

HAZARDOUS WASTE
BERM

750,000L
JET A FUEL

SERVICES AREA PAD B3
SITE FACILITIES, INCLUDING:

- MAINTENANCE/WAREHOUSE BUILDING
  OILY WATER TREATMENT PLANT
- WELDING SHOP BUILDING
- WORKSHOP OFFICE BUILDING

CAMP INFRASTRUCTURE PAD B2
SITE FACILITIES, INCLUDING:

- ACCOMMODATION COMPLEX
- EMERGENCY RESPONSE OFFICE
- EMERGENCY RESPONSE
  GARAGE
- SEWAGE TREATMENT
  PLANT
- POTABLE WATER
  TREATMENT PLANT
- WASTE MANAGEMENT FACILITY

WASTE DISPOSAL
LAND FARM

ROCK QUARRY NO.1

PROJECT
DEVELOPMENT
AREA

EXISTING
LAND LEASE
BOUNDARY

POTABLE
WATER SUPPLY

CONSTRUCTION PAD C
CONCRETE BATCH PLANT

TOTE ROAD

PROPOSED EXTENT OF
QUARRY

PERMITTED OPEN BURN PIT AREA

BORROW PITS

BORROW SOURCE NO.1

MILNE INLET TOTE ROAD

BORROW PITS

PHILLIPS CREEK

0 50 100 150 200 250
SCALE IN METERS

MILNE
PORT

MINE SITE

KEYPLAN

NOTES:

1. TOPOGRAPHY PROVIDED BY TERRAPOINT CANADA INC.
2. COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
3. CONTOURS ARE IN METRES. CONTOUR INTERVAL IS 1.5 METRES.
4. AS-CONSTRUCTED INFORMATION PROVIDED BY GENIVAR IN 2008.

LEGEND:

- WATER
- PROPOSED QUARRY
- LAYDOWN AREA (CONSTRUCTION PHASE)
- ADVANCED EXPLORATION UNDER EXISTING TYPE 'B' WATER LICENSE
- EARLY WORKS (MAY TO JULY 2013) UNDER NEW TYPE 'B' WATER LICENSE (IN PROCESS)
- CONSTRUCTION PHASE UNDER FUTURE TYPE 'A' WATER LICENSE (JULY TO DECEMBER 2013)
- EXISTING BORROW AREA (IOL COMMERCIAL LEASE)
- EXISTING ROCK QUARRY (IOL COMMERCIAL LEASE)
- RIVER/STREAM/DRAINAGE
- PROJECT DEVELOPMENT AREA
- BAFFINLAND'S COMMERCIAL LEASE ON INUIT OWNED LAND
- ROAD

Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MILNE PORT

SITE LAYOUT

SCALE	DWG. NO.	REV.
1:5000 OR AS NOTED	H349000-2000-00-015-0002	A

DWG. NO. H349000-4000-00-015-0002

TOM RIVER

CAMP LAKE

SHEARDOWN NW LAKE

MARY RIVER

WASTE ROCK DUMP BOUNDARY AT THE END OF OPERATION

PROJECT DEVELOPMENT AREA

DEPOSIT NO.1 MINING LEASE 2484

PROPOSED OPEN PIT OUTLINE

NEW HAUL ROAD

EXISTING WEATHERED ORE AND WASTE ROCK STOCKPILE

2008 BULK SAMPLE PIT

OPEN PIT DEVELOPMENT

EXISTING HAUL ROAD

BORROW PIT #3

BORROW PIT •2

BORROW PIT •1

BORROW PIT •5

BORROW PIT •4

STORAGE AREA

INCINERATOR

HAZARDOUS WASTE CONTAINMENT BERM

BARRELED FUEL LINED CONTAINMENT

POTABLE WATER PUMP HOUSE

SEALIFT LAYDOWN AREA

EXISTING LAYDOWN AREA

LAYDOWN AREA

BULK FUEL STORAGE FACILITY

NEW AERODROME APRON

QUARRY QMR2

RAW WATER INTAKE

CRUSHER AND STOCKPILE PAD

CONSTRUCTION LAYDOWN AREA

CAMP INFRASTRUCTURE
- ACCOMMODATION COMPLEX
- EMERGENCY RESPONSE
- MEDICAL CENTRE
- SEWAGE TREATMENT PLANT & OFF-SPEC POND
- POTABLE WATER TREATMENT PLANT

ORIGINAL CAMP

EXISTING CAMP FACILITIES

WASTE WATER TREATMENT FACILITY

HELIPAD

EXISTING POLISHING WASTE STABILIZATION PONDS (PWSPs)

EXISTING AERODROME

AERODROME RUNWAY AND APRON

PIT 1 HAUL ROAD

RAIL PHASE PRIMARY AND SECONDARY CRUSHING

EXISTING HAUL ROAD

ROCK QUARRY NO.2

EXISTING SEWAGE DISCHARGE PIPELINE

SITE SERVICE FACILITIES, INCLUDING:
- POWER PLANT
- MINE TANK FARM & DYKE
- MAINTENANCE BUILDING
- WAREHOUSE
- TRUCK WASH FACILITY

EXISTING EXPLOSIVES MAGAZINES

UTILITY BERM

ORE CRUSHING AND LOADING

RAIL PHASE STOCKPILE AND INFRASTRUCTURE

EXISTING LAND ROAD

EXISTING LANDFILL

EXPLOSIVES PADS
EXPLOSIVES MAGAZINE
EMULSION PLANT

TREATED EFFLUENT POND

EXISTING HAUL ROAD

0 200 400 600 800 1000
SCALE IN METRES

MILNE PORT

MINE SITE

KEYPLAN

LEGEND:

- WATER
- PROPOSED QUARRY
- LAYDOWN AREA (CONSTRUCTION PHASE)
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Baffinland Iron Mines Corporation

MARY RIVER PROJECT

MINE SITE

SITE LAYOUT

SCALE	DWG. NO.	REV.
1:15000 OR AS NOTED	H349000-4000-00-015-0002	A

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