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Mary River Project
Nunavut Water Board Public Hearing
April 23-25, 2013
Pond Inlet, Nunavut

Presentation Outline

- Introduction
- List of Issues Identified by the Nunavut Water Board in the Pre-Hearing Conference Decision, January 25, 2013
- Mary River Project Overview
- Early Revenue Phase
- Type B Water Licences (List of issues - items 2 & 3)
- Type A Water Licence Application (List of issues – item 4)
- QIA and Agency Final Submissions, March 22, 2013
- Discussion of Outstanding Issues
  - (as per List of Issues Identified by the NWB)
- Conclusion

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Our Team

Baffinland Representative	Role
Erik Madsen	Vice President Sustainability, Environment, Health and Safety
Oliver Curran	Director, Sustainable Development
Jim Millard	Senior Environmental Superintendent
Joe Tigullaraq	Northern Affairs Manager
Greg Missal	Vice President Corporate Affairs
Qav Issugangituq and Joe Krimmerdjuar	Pond Inlet Community Liaison Officers
Fernand Beaulac	Senio Environmental Engineer
Richard Cook	Knight Piesold Senior Consultant
Christine Kowbel	Legal Counsel
Brad Armstrong	Legal Counsel
Christine Moore	Intrinsik Environmental, Senior Consultant

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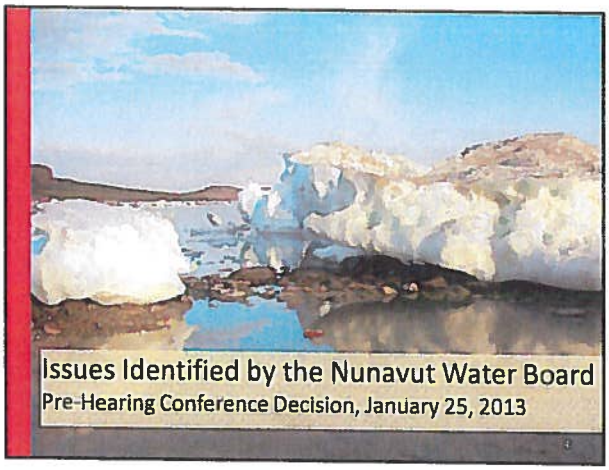

Issues Identified by the Nunavut Water Board
Pre-Hearing Conference Decision, January 25, 2013

Issues Identified by the Board

- The parties in attendance at the Technical Meeting - Pre-Hearing Conference (TM-PHC) confirmed that none of the unresolved or outstanding issues are of the type that would prevent the Board from proceeding with this Hearing
- In the TM-PHC Decision, the Board provided a list of issues to be addressed by the intervening parties in their final submissions for March 22

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Pre Hearing Conference Decision Issues

1. Identifying the terms and conditions of the Nunavut Impact Review Board Project Certificate #005 relevant to the Type "A" Water Licence Application;
2. The existing Type "B" Water Licence (scope, security, changes);
3. Potential for additional Type B Applications (e.g. in respect of the ice road, etc.);
4. Terms of the Type "A" Water Licence;
5. Type and amount of security to be held under the Type "A" Water Licence;
6. Status of water use compensation negotiations/agreements;
7. Construction of facilities and infrastructures;
8. Geotechnical and permafrost issues.

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Pre Hearing Conference Decision Issues

9. Water use;
10. Water quality;
11. Water Management;
12. Waste Management;
13. Geochemistry;
14. Management Plans;
15. Contingency Planning;
16. Monitoring;
17. Closure and Reclamation; and,
18. Other issues warranting consideration.

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PHC Decision Report – January 25th

- Follow-up items:
  1. Water Use and Compensation;
  2. Monitoring, Management Plans and Measures;
  3. Waste Management;
  4. Closure and reclamations;
  5. Security Bonding.
- Baffinland responded to these item on March 7, 2013
- Baffinland's presentation addresses each of these items as well.

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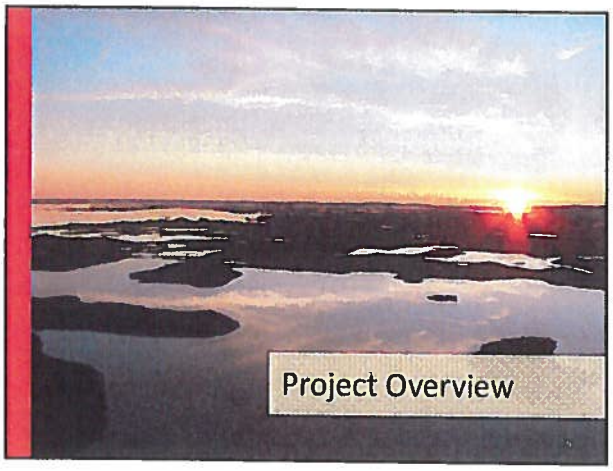
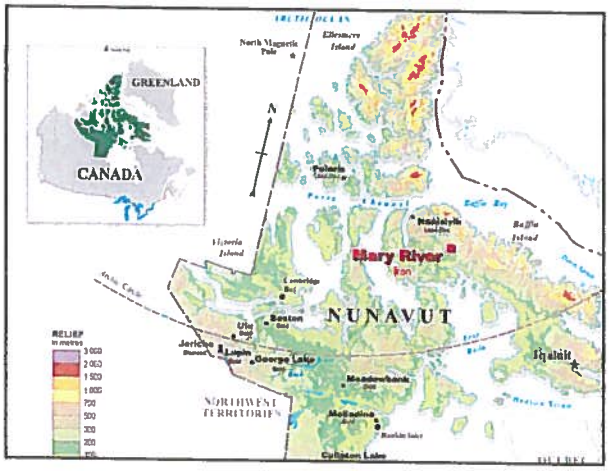
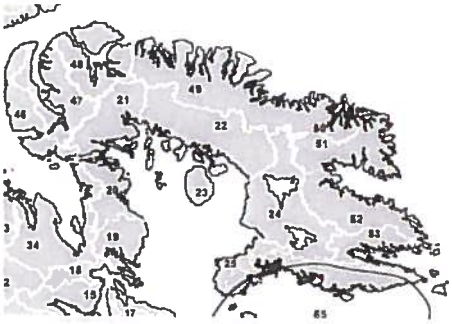




Water Management Areas



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Mary River Project – Project Certificate

- Four year construction Project
- An open pit mine with mine life of 21 years
- Operations consist of mining, ore crushing and screening, rail transport, port operations and marine shipping
- No secondary processing; no tailings produced
- An 150 km railway from mine to Steensby port

Mining | Rail Transport | Ship Transport

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Mary River Project – Project Certificate

- Steensby Port will accommodate vessels capable of year-round shipping
- Milne Port will be developed and mostly used during construction and for transportation of oversize equipment
- Tote Road will be upgraded

Mining | Rail Transport | Ship Transport

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Relevant Terms and Conditions of the NIRB Project Certificate

(List of Issues – Item 1)

AANDC	- Climate change – conditions 2, 28 - Air emissions – condition 8 - Blasting operations – condition 20 - Management plans – conditions 22, 28 and 43 - Revegetation trials – conditions 39 and 40
DFO	- Blasting management – conditions 13, 44, 48, 117 - Water crossings – conditions 16, 19, 47 - Sediment and erosion control – conditions 22, 43 - Fish and fish habitat offsetting plan – conditions 45, 115, 128
BIMC	- Closure – condition 5 - Incineration Management – conditions 11, 12 - Hydrology / Hydrogeology – conditions 16, 17, 18, 19, 20, 21, 22, 23, 24 - Landforms, Geology, Soils and Permafrost – conditions 25, 26, 28, 29, - Quarries – condition 30 - Reclamation & Revegetation – conditions 39, 40 - Freshwater – conditions 41, 42, 43, 45, 46, 47, - Blasting – condition 44, 48 - No Net Loss – condition 115, 128

Scope of the Type A Water Licence

- Scope of the Water Licence Application as submitted with the FEIS has not changed
- Design criteria and technical specifications are included in the application
- As detailed design progresses and site design is optimized, changes may be introduced to configuration of facilities, location of specific facilities
  - Drawings issued for construction submitted to NWB
- Additional changes may occur during construction
  - AANDC inspector will be informed of such changes
  - As-built drawings submitted to NWB
- All facilities will remain within the PDA (potential development area) identified in FEIS

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Detailed Design Considerations

- Milne Port
  - Number of fuel storage tanks in tank farm
- Mine Site
  - Optimization of ore loading facilities based on material movement
  - Optimization of waste rock stockpile configuration
- Steensby Port
  - Location of air strip
  - Number of tanks and location of tank farms relative to freight dock

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Detailed Design Considerations

- Railway
  - Number and specific locations of temporary construction camps based on optimized construction methodology and schedule
    - Location of temporary storage for construction material
    - Temporary water usage from river at bridge construction sites
- Quarry Sites
  - Quarry sites identified along railway corridor
  - Not all quarry sites will be exploited

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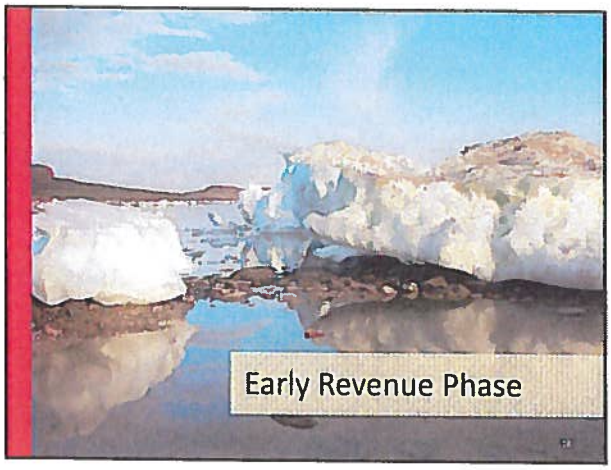

Early Revenue Phase (ERP)

- Announced in Pond Inlet on Jan 9, 2013
- ERP does not affect the scope of the Type A Water Licence Application submitted in February 2012.
- The Nunavut Impact Review Board will determine the process for the ERP, and any potential amendments to the Type A Water Licence will be sought in due course.

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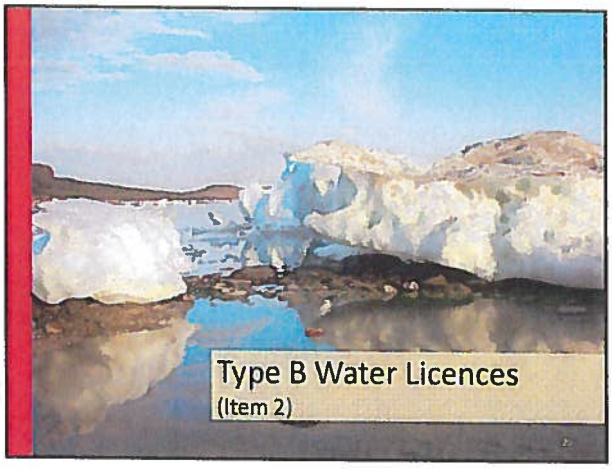

Current Type B Water Licence

(List of issues - Item 2: scope, security, changes)

- The current Type B Water Licence which expires on April 5, 2014, allows Baffinland to continue to carry out:
  - Exploration and geotechnical drilling programs;
  - Progressive reclamation programs;
  - Activities in support of scientific and engineering studies related to the advancement of the EIS;
  - A bulk sampling program (completed);
  - Ongoing maintenance and upgrades to existing project infrastructure; and
  - Other related activities.

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Current Type B Water Licence

(scope, security, changes)

- Baffinland intends to retain existing Type B for ongoing exploration activities
- List of activities/facilities to be rolled in the new Type A versus activities / facilities retained under this Type B Licence provided on October 31, 2012
- Baffinland requests that security associated with the existing Type B be reduced to $1.25 M (to be discussed later in presentation)
- Activities and infrastructures at the Milne Port, Tote Road, Mine Site and Steensby Port will be rolled into the Type A

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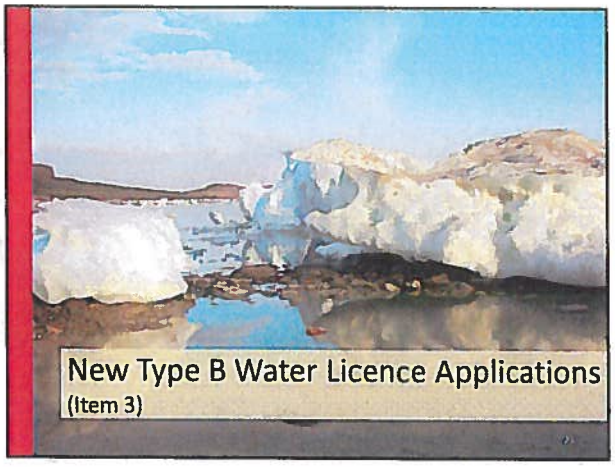

New Type B Water Licence Application

(List of issues – Item 3)

- On March 12, 2013, Baffinland filed an Application for a new Type B Water Licence. The Type B Water Licence Application was circulated to all parties by the NWB on Friday, March 15, 2013, with comments submitted on April 15, 2013.
- All technical information related to these facilities contained in this application have been assessed under the Type A and FEIS review process.
- The Application for the new Type B Water Licence was made in order to enable Baffinland to start, in May 2013, to build some of the fuel tanks, lay down areas and camp pads that will be needed for the Mary River Project.
- New Type B will be rolled into the Type A Licence.

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New & Potential Type B Water Licence Applications

- New Type B application submitted on March 12, 2013. Scope of application covers:
  - Construction of additional PWSP pond at Milne Inlet
  - Construction of 5 ML fuel tank
  - Extension of secondary containment for Milne Port fuel tank farm
- Additional Type B applications will be submitted for construction of winter roads to access railway camps when required.

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Status of Water Compensation Agreement

(List of Issues – Item 6)

- Baffinland is negotiating a Commercial Lease with the QIA which includes provisions respecting water use on Inuit owned land.
- Specific terms are confidential but the agreement addresses compensation used by the Project.
- QIA can provide a further update in their upcoming presentation.

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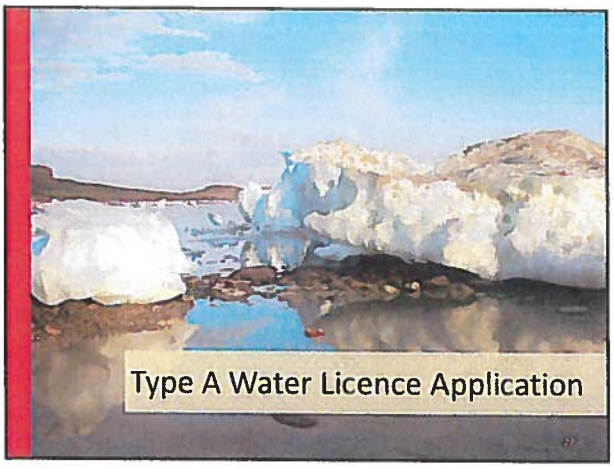

Type A Water Licence Application Process

- In accordance with the coordinated process framework between NIRB and the NWB, the Type A Water Licence was included as Appendix 3B to the FEIS as a stand-alone document, in February 2012
- The scope of the Type A application is well captured in Pre-Hearing Conference Decision – January 25, 2013
- 2013 Work Plan is the beginning of construction for the Project

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Contents of the Type A Water Licence Application

- Attachment 1 – Type A Water Licence Application
- Attachment 2 – Baffinland Commercial Documents
- Attachment 3 - Project Wide Documents
- Attachment 4 – Site Specific Documents
- Attachment 5 – Management Plans
- Attachment 6 – Quarry Documents
- Attachment 7 – Water Crossings
- Attachment 8 – Explosives
- Attachment 9 – Drawings
- Attachment 10 – Preliminary Mine Closure and Reclamation Plan
- Attachment 11 – Maps
- Attachment 12 – Correspondence with NPC

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Pre-Hearing Conference Follow-up

- The Pre-Hearing Conference decision of January 25, 2013 identified a list of commitments for response.
- Baffinland responded to the list of commitments on March 7, 2013:
  - Updated financial statements,
  - 2013 Work Plan Closure Cost Summary,
  - Notes of the February 25, 2013 meeting with NRCan and others (geochemistry and water quality modelling),
  - AEMP Framework, and,
  - Proposed terms and conditions for Type A Licence.

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Term of the Type A Licence

(List of Issues – Item 4)

- QIA suggest 5 years
- Federal agencies suggest 10 to 12 years
- Baffinland requests 25 years because:
  - Baffinland has applied for a 25 year licence to coincide with the expected life of mine and as a basis for the significant capital investment.
  - The project has incorporated "adaptive management approach" to deal with unforeseen events – the Board has the authority to revise the terms and conditions of the Licence, if required.
  - Although the scale of the development is large, the complexity is low.

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Proposed Terms and Conditions

- As addressed at the Pre-Hearing Conference and in the Pre-Hearing Conference Decision, Baffinland has prepared and circulated, as a working document, proposed terms and conditions for the Water Licence.
- This working document was developed in consultation with QIA and addresses the concerns of review agencies.
- The structure of this document follows the format of water licences granted for mining operations in Nunavut.
- The document was submitted to the NWB and circulated directly to the parties on March 7, 2013.
- The agencies have provided comments on these proposed terms and conditions in their final submissions.
- We will refer to these proposed terms and conditions throughout this presentation.

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Proposed Terms and Conditions

Part A: Scope, Definition and Enforcement
Part B General Conditions
Part C: Conditions Applying to Security
Part D: Conditions Applying to Construction
Part E: Conditions Applying to Water Use
Part F: Conditions Applying to Waste Disposal and Management
Part G: Conditions Applying to Explosives and Emulsion
Part H: Conditions Applying to Modifications
Part I: Conditions Applying to Emergency Response
Part J: Conditions Applying to Monitoring Program
Part K: Conditions Applying to Abandonment, Closure and Reclamation or Temporary Closure
Schedule A: Definitions
Schedule J: Conditions Applying to Monitoring and Reporting

- Schedule J 1: Aquatic Effect Monitoring Framework
- Schedule J 2: Content of the Annual Report

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Summary of Agencies Final Written Submissions

- Baffinland is thankful for the active participation and contributions of the agencies/parties throughout this review process and in the work shop for the development of the AEMP Framework.
- On March 22, 2013, written submissions were filed with the NWB by all parties.
- In their final submissions to the NWB, agencies commented on material received by NWB since the pre-Hearing Conference Decision, including the proposed terms and conditions for the Licence.
- Baffinland provided a written response to the written submissions on April 5, 2013.
- The next 5 slides present an overview of these submissions

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QIA – Major Themes of Final Submission – March 22, 2013

	Issue	Concern
2.1	Sewage Treatment and Transportation for Railway Camps	Size of storage ponds at railway camps
2.2	Fuel Storage Tank – hydrostatic testing	Hydrostatic testing of tanks
2.3	Water Quality related to Blasting and Blasting Management	Ammonia, nitrite and nitrate in runoff
2.4	Monitoring – AEMP Framework	Finalization of AEMP
2.5	Closure and Reclamation	Use of remediated soil from landfarm
2.6	Water quality - Use of Industrial Waste Discharge in Nunavut Guidelines (IWDNG)	Discharges of water potentially contaminated with hydrocarbon
3.1	Winter Road	Not covered under Type A
3.2	Term of Water Licence	Suggests 5 year term

AANDC – Major Themes of Final Submission – March 22, 2013		
	Issue	Concerns or Comments
1	Relevant Project Certificate Terms and Conditions	Climate change – conditions #2 and #28 Air emissions – conditions #8 Blasting operations – condition #20 Management plans – conditions #22, #28 and #43 Revegetation trials – conditions #39 and #40
2	Existing Type B	Applicability for 2nd bulk ore sampling campaign
3	Additional Type B Water Licence	Winter roads Tote Road 49 person camp for 2013 work plan
4	Term of Licence	12 years
5	Type / Amount of Security	Ensure adequate amount of security at all times for all project stages
6	Water quality	Mine pit water quality and legacy concerns
7	Waste Management	Land disposal of dredged material from Steensby Inlet
8	Management Plans	Updates and consistency of management plans
9	Monitoring	Effluent discharge to marine environment
10	Closure /Reclamation	Suggests conditions prior to creation of mine pit
11	Studies	Stratification in future pit lake
12	Other issues	AANDC provided feedback/comments on AEMP and draft Water Licence terms and conditions

Fisheries and Oceans – Major Themes of Final Submission – March 22, 2013		
	Issue	Concern
1	Relevant Project Certificate Terms and Conditions	Blasting management – conditions 13, 44, 48, 117 Water crossings – conditions 16, 19, 47 Sediment and erosion control – conditions 22, 43 Fish and fish habitat offsetting plan – conditions 45, 115, 128
2	Term of Licence	12 years
3	Type / Amount of Security	Must allow for fish and fish habitat offsetting plan
4.1	Water crossings	Proponent to provide detail designs Proponent to provide detailed post-construction monitoring
5.1	Sediment and Erosion Control–construction of water crossings	Provide details with respect to water crossings Include specific measures for erosion control at water crossings Provide detailed dewatering and fish removal plan
5.2	Blasting Management Plan	Request that the plan be submitted for review and subject to DFO approval (for construction in or near water bodies)
5.3	Fish Habitat offsetting plan (No Net Loss)	Consultation with communities Collect sufficient baseline data Detailed construction plans for offsetting measures be submitted to DFO and NWB for approval
6.1	AEMP	Target studies #1 & #2 should be incorporated in Final AEMP
7.1	Decommissioning of water crossing	Develop detailed plans for decommissioning Address sediment and erosion control, dewatering and fish salvage in removal of water crossings

Environment Canada – Major Themes of Final Submission – March 22, 2013		
	Issue	Concern
1	Compliance with Fisheries Act	Must comply with requirement Fisheries Act
2.1	Sewage discharge limits	Applicability of the new Wastewater Systems Effluent Regulation now in force south of the 60th parallel
2.2	Oily water treatment	EC agrees with discharges limits proposed by Baffinland in draft Water Licence (Table F-2)
2.4	Mine contact water discharge limits	MMER Schedule 4 discharge limits
2.10	Landfarm	Government of Nunavut's Environmental Guidelines for Site remediation - Waste management plan should specify number of soil samples to be taken to verify that treated soils comply with soil quality criteria appropriate for end use
2.13	Closure of Open Pit	Water Licence should impose conditions for closure
2.14	Nutrients	Water quality objectives that are protective of the receiving environment for nutrients Sheardown Lake - Monitor biological productivity during open water season & under ice dissolved oxygen
3.11	Incineration Management Plan	Annual reporting to NWB for incineration activities and operational data Stack emission testing
5	Term of water Licence	10 to 12 years

NRCan Final Submission

Three recommendations:

1. Continue waste rock characterization program
2. Establish field test piles on site to better assess the weathering mechanisms and rates under the actual site conditions
3. Incorporate, where possible, representative samples of the finer grained waste rock material (schist) in the field test.

- Baffinland accepts these recommendations

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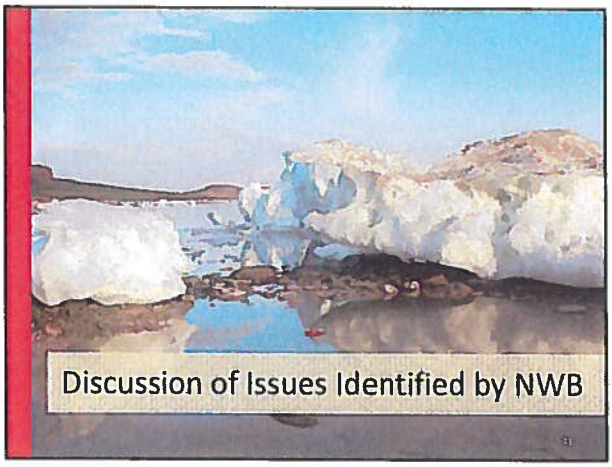

Construction of Facilities and Infrastructure

(List of Issues – Item 7)

- Three items were identified as outstanding issues for the agencies:
  - Land disposal of dredged material from Steensby Inlet
  - Airstrip along railway corridor service road
  - Construction of emergency storage ponds for railway camps sewage treatment effluent
- There are no other concerns/issues from the parties related to the construction of facilities and infrastructure

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Land Disposal of Dredged Material

- Baffinland's preferred option is for deposition of this material at sea.
- Disposal at Sea permit is required from Environment Canada.
- For the purpose of the Final Environmental Impact Statement (FEIS), a land disposal option was presented and reviewed as part of the Nunavut Impact Review Board (NIRB) process.
- The location and conceptual drawings for the disposal on land of dredged sediments from Steensby Inlet were presented in FEIS.
  - Volume 3, Appendix 3A, drawing 030 - Steensby Inlet Dredging Fill Site Location, and drawing 031 - Steensby Inlet Dredging Fill Site Location Plans and Sections
- No questions have been raised related to land disposal of the dredged material throughout the NIRB review.
- If Baffinland decides to proceed with a land disposal option, an application for a modification to the Type A licence will be required.

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Airstrips along Railway Corridor

- For the construction of the railway, Baffinland proposes to use temporary airstrips located along the railway service road.
- Temporary airstrips along the railway service road have no water requirements nor do they generate waste.
- A section of the service road is likely to serve as the airstrip.
- The airstrip will be temporary in nature and be located either on the footprint of the service road or within the service road corridor (refer to FEIS Volume 3, section 2.5.8).
- Baffinland therefore considers that these temporary airstrips are non issues as they will be integral to the service road construction and use.

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Emergency Storage Pond – Railway Camps

- Sewage generated at railway camps will be treated and the treated effluent will be transported to the Mine Site and Steensby Port for final disposal.
- At the pre-technical meeting of October 2012, QIA requested that the storage ponds at each camp site be sufficiently large to cope with potential interruptions of road transport .
- The size of the ponds was thus increased to hold at least one year of production of treated sewage effluent. The resulting ponds remain within the development areas identified for the location of the camps.
- No local discharge of effluent – therefore no additional environmental effects

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Emergency Storage Pond – Railway Camps
(continued)

	Camp Size (person)	Daily Sewage m³/day	Pond Size m³
Ravn River	400	120	48,000
Mid-Rail	200	60	24,000
North Cockburn	200	60	24,000
South Cockburn	300	90	36,000
For comparison, the size of ponds at the Mine Site are as follows:			
Existing exploration camp – Mary River			9,400
Future Main Camp – Mary River			110,000

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Emergency Storage ponds – Railway Camps
(continued)

- Baffinland recognizes that it would be preferable and more economical to have local discharges for these camps.
- This cannot be done until the exact locations of the camps are finalized. Once the exact locations of the railway camps are finalized, Baffinland will investigate the possibility of a local discharge for each railway camps.
- The local discharge of treated effluent at these sites will be the subject of an amendment to the Type A Licence.
- Baffinland requests that terms and conditions of the Type A Licence facilitate this approach by including articles 14 and 15 of Part F of the proposed terms and conditions of the water licence.

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Emergency Storage Ponds – Railway Camps
(continued)

Proposed terms and conditions of water licence:

Part F, Article 14:

- For the Ravn River and Mid-Rail construction camps, all sewage effluent shall be collected and transported to the Mary River sewage treatment plant. The Licensee shall continue investigations to identify suitable locations for year round discharge of treated effluent at these sites. Once suitable discharge locations are identified, the Licensee will present to the Board a report detailing the routing of the pipeline and the coordinates of the proposed alternative discharge locations. This report shall contain an environmental assessment for discharge of treated effluent at these alternative locations.

Part F, Article 15:

- For the South Cockburn and North Cockburn construction camps, all sewage effluent shall be collected and transported to the Steensby Port sewage treatment plant. The Licensee shall continue investigations to identify suitable locations for year round discharge of treated effluent at each of these sites. Once suitable discharge locations are identified, the Licensee will present to the Board a report detailing the routing of the pipeline and the coordinates of the proposed alternative discharge locations. This report shall contain an environmental assessment for discharge of treated effluent at these alternative locations.

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Proposed Terms and Conditions for the Licence

- Part D of the working document presents proposed terms and conditions for the water licence. It addresses:
  - Construction drawings and as-built drawings
  - Changes in construction plans
  - Borrow pits and quarry development
  - Surface water management
  - Stream and river crossings
  - Site drainage
  - Bulk fuel tank farms and temporary fuel storage
  - Outdoor hazardous and non hazardous waste transfer site and temporary storage of waste

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Proposed Terms and Conditions for the Licence
(continued)

- The parties have commented on the terms and conditions
  - QIA submission – Annex A
  - AANDC – Issue 12.2
- Baffinland believes that the concerns of the parties are adequately addressed in these proposed terms and conditions.
- In Baffinland's April 5 response to the parties final submissions, the Company has provided responses for each of the parties comments on these proposed terms and conditions.
- DFO's concerns for construction of water crossings are adequately addressed in Part D (articles 21 to 30 – Stream and River Crossings) of the proposed terms and conditions of the water licence.

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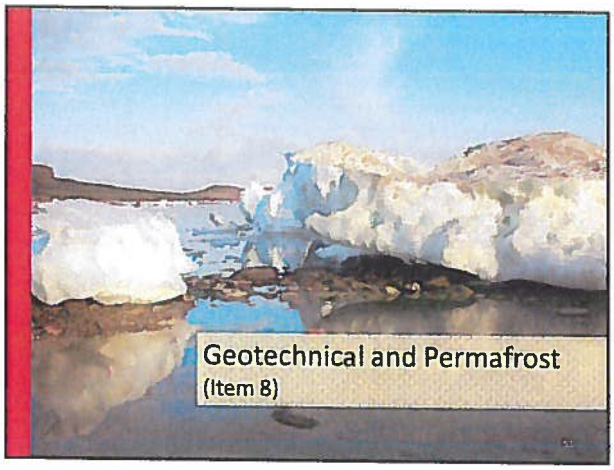

Geotechnical and Permafrost
(List of issues – Item 8)

Design of facilities takes into consideration geotechnical concerns and permafrost conditions:

- Drainage of sites to avoid pooling of runoff / water
- Proposed designs and construction methods to minimize impact (thawing) of permafrost:
  - Railway
    - Design is based on other arctic railways (Russia, Sweden, Tibet)
    - Minimize thawing sensitive soils (increase fill)
    - Minimize disturbance to natural drainage
    - Maximize winter construction of embankment base
    - Limited grades and avoidance of tight curves
    - Regular performance monitoring and maintenance
  - Laydown area, ore stockpiles and building
    - Built on up to 1.5 metre thick granular pad base with a lined perimeter ditch to direct run-off to stormwater ponds
    - Avoidance of ice lenses (to the extent possible)

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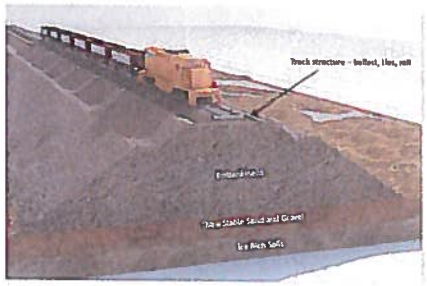
Railway Embankment



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Geotechnical and Permafrost

(List of issues – Item 8)

- Waste rock stockpile
  - Berms rather than ditches will be used to provide drainage diversions in consideration of the challenges in the Arctic (e.g. ice-rich soils and lenses).
  - Berm construction is designed to maintain the frozen layer and prevent any subsurface flow or flows that would undermine the berms.
  - The stormwater management system with the associated dam safety assessment and dam design is included in "Stormwater Management and Drainage System Design" (Annex 1 to the Waste Rock Management Plan)
  - Construction of the waste rock stockpile to promote permafrost formation (aggradation)
- Baffinland has incorporated recommendations provided by NRCan during the Project Certificate review process.

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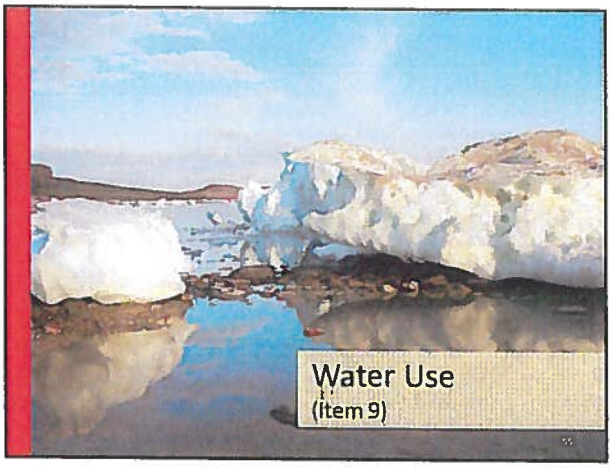

Water Use

(List of issues – Item 9)

- Water will be drawn from approved sources (as listed in Table E-1)
- Baffinland requests that Licence establish an annual limit on water volume to allow for flexibility during the construction period.
- Total annual volumes for the Project:
  - Construction = 580,000 m^3
  - Operation = 230,000 m^3
- Reporting of water consumption will be done on a monthly basis.
- Baffinland requests that the Licence authorize the Company to use recycled water for various uses (Part E, article 8).
- During construction, there will be occasional need to draw from sources other than draw points listed in Table E-1. This is addressed with proposed term and condition Part E, article 10.
- There are no other users of water on Inuit Owned Land or Crown land associated with the Project.

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Water Use

Table E.1: Fresh Water Quantity Limits

Camp / Site	Intake	Coordinates (approximate)	Permit Limit (m3/yr)
Mine Inlet (Port)	Philips Creek (summer) Km 32 Lake (winter)	N 7964579 E 521714 N 7951862 E 514501	25 000
Mary River (Mine Site)	Camp Lake	N 7914995 647 E 557818 253	240 000
Steensby Port	Unnamed Lake (ST 347 Lake) (permanent camp) Unnamed Lake (3 km Lake) (dust suppression & other minor uses)	N 7804826 580 E 596600 563 N 7800206 634 E 596698 129	155 000
Ravn River Area	Unnamed Lake (Ravn Camp Lake)	N 7895658 80 E 594510 99	53 000
Mid-Rail Area	Unnamed Lake (Rivek Lake) (summer) Unnamed Lake (Ravn Camp Lake) (winter)	N 7876470 04 E 595602 59	29 000
Cockburn Lake Tunnels Camp	Cockburn Lake	N 7813929 50 E 603882 25	37 000
Cockburn South Camp	Cockburn Lake	N 7825563 84 E 597661 01	41 000

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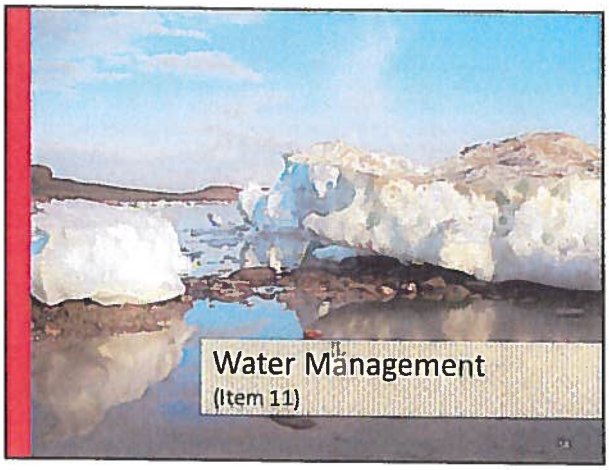

Key Water Management Features
(continued)

- No process water or tailings pond discharges
- Runoff from ore and waste rock piles will be directed to sedimentation ponds and monitored for quality prior to discharge to receiving environment
- Discharges from ore stockpiles and waste rock stockpile will meet established effluent criteria under MMER and Water Licence
- Work to date on mine contact water quality indicates water treatment will not be required for waste rock stockpile runoff or mine pit water (will be discussed under geochemistry)
  - On-going waste characterization and monitoring program to validate
  - Contingency would be to install water treatment, if necessary

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Key Water Management Features
(List of issues – Item 11)

- Treatment plants include:
  - Sewage treatment plants with storage ponds
  - Oily water treatment plant (located at maintenance shops)
  - Mobile oily water treatment units
- Surface runoff management
  - Secondary containment for bulk fuel storage
  - Discharge criteria for landfarm water
  - Groundwater seepage criteria for landfill
  - Diversion structures and sedimentation ponds for runoff from ore stockpiles
  - Waste rock stockpile limited to two watersheds
  - Waste rock stockpile runoff sedimentation ponds
  - Mine pit water will be trucked to waste rock stockpile during operation

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Key Water Management Features

Surface Runoff Management

- Surface Water, Aquatic ecosystem, Fish and Fish Habitat Management Plan addresses (update submitted on March 31, 2013):
  - Site drainage and range of mitigation measures and monitoring requirements for various earthworks activities and works on water crossings
- Ore stockpiles
  - Ore mined in the pit will be dumped on a small run-of-mine (ROM) stockpile located near the primary crusher located on the south side of the pit (approx. 400,000 t.)
  - Following primary and secondary crushing, the ore is carried on conveyors to the ore storage area where stacker-reclaimers load the ore on two linear stockpiles and reclaim the material for conveyor transport to the railcar loader where two rail cars are loaded simultaneously.
  - The temporary ore stockpiles for the railway operation have an expected combined total capacity on the order of 1.4 Mt.
  - Since ore will be stored in these locations only temporarily and the drainage during operations is controlled, there is little concern about long term potential effects of PAG materials stored at these locations.

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Key Water Management Features

Surface Runoff Management

- Ore stockpiles (continued)
  - Each ore stockpile will be constructed of a 1.5 metre thick granular pad base with a lined perimeter ditch to direct run-off to a stormwater pond.
  - Because of the rapid turnover of both the ore stockpiles, no oxidation of the ore will take place.
  - Because of the coarseness of the ore, the amount of runoff will be small.
  - Sedimentation will be provided to reduce suspended solids below the MMER maximum concentration criteria of 30 mg/l.
  - Run-off from the small Run-of-Mine (ROM) ore stockpile near the primary crusher will be collected in a stormwater management pond to allow sedimentation of suspended solids.
  - The crushed ore stockpile (1.4 Mt) also has rapid turnover (50,000 tpd) meaning that no oxidation of the ore will take place.
  - The overflow from these ponds are MMER discharge and will be released to an existing drainage that reports to the Mary River.

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Key Water Management Features

Surface Runoff Management

- Waste Rock Stockpile
  - Open-pit mining will generate large quantities of waste rock that will be stored at dedicated locations and quantities of ore that will be stored temporarily in ore stockpiles.
  - A waste rock disposal area designed for permanent storage of waste rock will be located north of the open pit. Based on the current mine plan, an estimated 640 Mt of waste rock will be generated from the mining of Deposit No. 1.
  - Waste Rock Management Plan (Water Licence Application, Attachment 5, Appendix 10D-5)
    - addresses the issues of location, deposition of the waste rock, inspection, potential release of contaminants to the receiving environment, geotechnical stability, as well as closure considerations.
  - The stormwater management system with the associated dam safety assessment and dam design is included in "Stormwater Management and Drainage System Design" (Annex 1 to the Waste Rock Management Plan)
  - The run-off management system for the waste rock stockpile area will consist of channels formed by berms around the stockpile perimeter and two appropriately sized surface water management ponds.
  - Berms rather than ditches will be used to provide drainage diversions in consideration of the challenges in the Arctic (e.g. ice-rich soils and lenses).
  - Berm construction is designed to maintain the frozen layer and prevent any subsurface flow or flows that would undermine the berms.

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Key Water Management Features

Surface Runoff Management

Waste Rock Stockpile System is designed to operate as follows:

- "Non-contact" water will be diverted away from the waste rock stockpile and will be discharged (drain) into their respective watersheds.
- During freshet, run-off will be contained in two sedimentation ponds where suspended solids will settle out. Both ponds are sized to contain the 2 year return event for sedimentation purposes.
- The "west" pond (700,000 m^3 capacity) will decant water to an existing drainage that leads to a tributary of Camp Lake with final discharge into Camp Lake.
- The smaller "east" pond (400,000 m^3 capacity) will not be required until later years of the mining operation and will discharge to an existing drainage that reports to the Mary River.
- Sediment to be collected in the ponds will vary from year to year. Ponds will be inspected after freshet and the sediment removed when required. The sediment is non-toxic and will be hauled to the waste rock stockpile for disposal.
- The pond collection system will be monitored for run-off quality and compared with MMER criteria.

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Key Water Management Features

Surface Runoff Management

Waste Rock Stockpile System is designed to operate as follows (continued):

- Snow will accumulate in the waste rock stockpile during the winter. During the summer the melted snow along with any rainfall will seep through the active zone run-off the sides of the waste rock stockpile and drain from the foot of the perimeter of the waste rock stockpile.
- Estimates of waste rock stockpile run-off water quality is presented in Annex 4 to the WRMP, "Interim Waste Rock Stockpile Seepage Quality Model Report".
- This modelling shows that, following sedimentation, run-off from seepage of water through the waste rock meets all the MMER discharge requirements.
- Two discharge locations for this runoff. Camp Lake tributary and Mary River
- As additional geochemical, geotechnical and geological data are collected, and detailed engineering is completed, the management plan will be further optimized using an approach that protects the environment while operating in a cost-effective manner.
- Current waste rock characterization program will be completed by 2014
  - Improve modelling assumptions for waste rock water quality
  - Improve modelling assumptions for pit water quality

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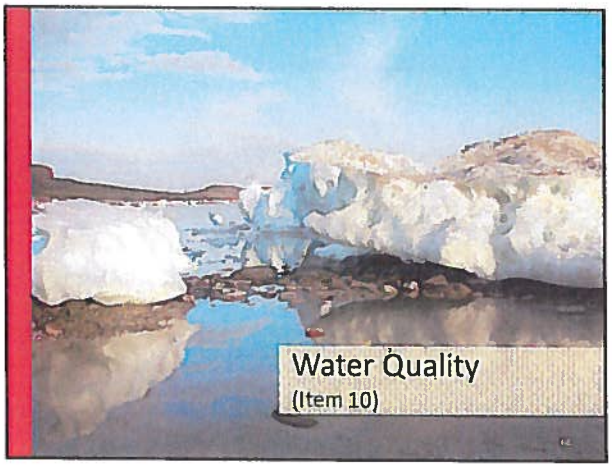

Water Quality

(List of Issues – Item 10)

- Issues Identified by Agencies
  - Treated Sewage and Oily Water Effluent
    - Sewage and oily water effluent discharge limits
  - Mine Contact Water
    - Metal Mining Effluent Regulation (MMER)
    - Pit water quality – legacy concerns
  - Landfarm and Landfill Water
  - Water Crossings (addressed under construction of infrastructure)
    - Construction and decommissioning of water crossings
    - Post construction/decommissioning monitoring
  - Sediment and erosion control (addressed in the Surface Water Management Plan)

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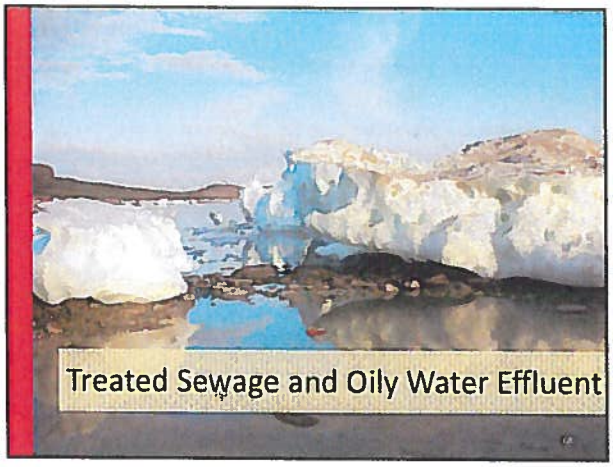

Discharge Locations at Milne Port

- Seasonal operation at Milne Port
  - Up to 150 employees during the sealift operation
- Treated Sewage Effluent Discharge location;
  - Sewage Treatment Plant discharge to ditch that reports to the marine environment
  - Process Sewage Water Pond which also discharges to the same ditch
- Oily Water Treatment Plants will also discharge to the same ditch

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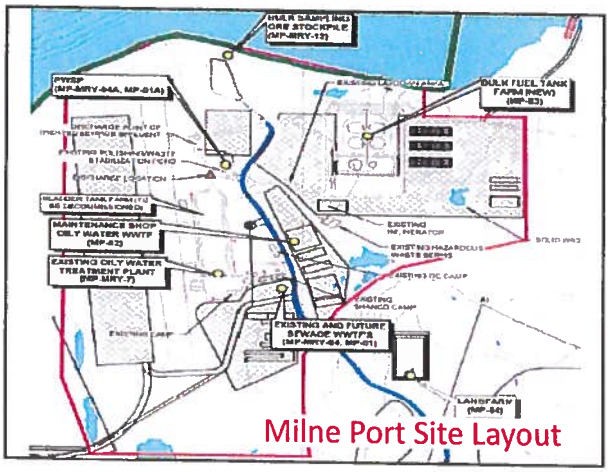

Discharge Location at Steensby Port

- Figure 2.3 Steensby
- Sewage and Oily Water Treatment Discharge is to Steensby Inlet via a marine outfall
- Runoff (if any) from the ore stockpile reports to sedimentation ponds which then discharge to Steensby Inlet.

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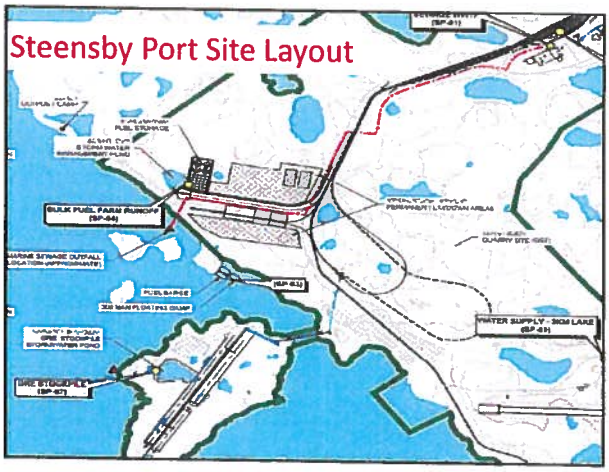

Discharge Locations at the Mine Site

- There are two categories of discharge:
  - Treated Sewage Effluent and treated Oily Water Effluent
  - Mine Contact Water
- Treated sewage and oily water effluent will discharge to a holding pond. From this pond it is pumped to the Mary River for discharge during the summer months.
- Treated Sewage Effluent from the existing exploration camp is discharged to a holding pond which is then pumped to Sheardown Lake during summer months.

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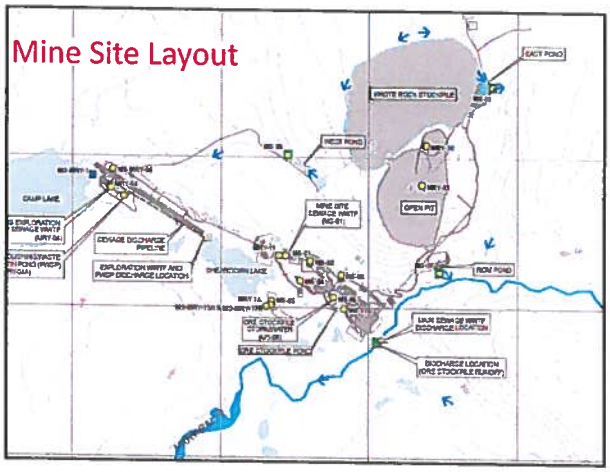
Mine Site Layout



Discharge Limits for Sewage and Oily Water

- Discharge criteria proposed:
  - Table F-1 : Sewage Treatment
    - Discharge criteria to freshwater applicable to Mine Site
    - Discharge criteria to marine waters applicable to Milne Port and Steensby Port
  - Table F-2: Oily Water Treatment
    - Discharge criteria for oily water treatment
  - Table F-3: Bulk Fuel Secondary Containment Water
- These discharge limits were discussed and agreed to during AEMP and Water Licence Term and Condition meetings
- Concerns for nutrient levels are addressed:
  - For discharge criteria to Sheardown Lake, Baffinland has agreed with EC that phosphorus levels could be lower (1 mg/L average and 2 mg/L maximum)
- Proposed limits are protective of the receiving environment

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Table F-1 - Sewage Treatment Discharge Limits

Treated Sewage Effluent Discharge to Freshwater	
Parameter	Maximum Average Concentration
BOD5	30 mg/L
Total Suspended Solids	35 mg/L
Fecal Coliform	1000 CFU/100 mL
Ammonia	4 mg/L average concentration, 8 mg/L max. grab concentration
Phosphorus	4 mg/L average concentration, 8 mg/L max. grab concentration
Oil and Grease	No visible sheen
pH	between 6.0 - 9.5
Treated Sewage Effluent Discharge to Marine Waters (Milne Inlet and Steensby Inlet)	
Parameter	Maximum Average Concentration
BOD5	100 mg/L
Total Suspended Solids	120 mg/L
Fecal Coliform	10,000 CFU/100 mL
Oil and Grease	No visible sheen
pH	between 6.0 - 9.5

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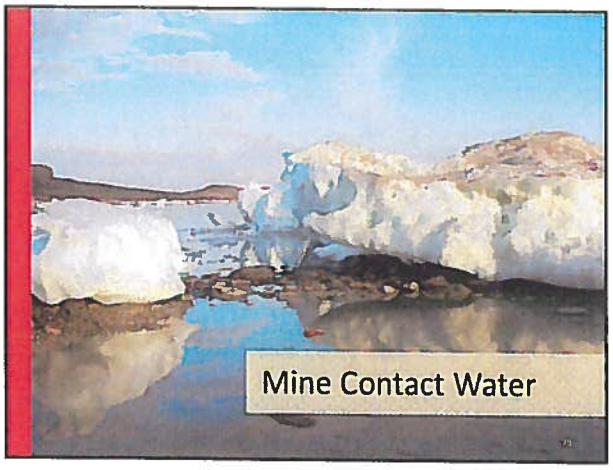
Table F-2 - Oily Water Treatment

Parameter	Guidelines : Industrial Waste Discharge in Nunavut (mg/L)
pH	6 – 9.5
TSS	35
Ammonia	4
Phosphorous	4
Benzene	0.370
Ethylbenzene	0.090
Phenolic Compounds	0.02
Toluene	0.002
Oil and Grease	15 and no visible sheen
Arsenic	0.5
Copper	0.30
Lead	0.20
Mercury	0.006
Nickel	0.50
Zinc	0.50

Table F-3 - Bulk Fuel Secondary Containment Water

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



Mine Contact Water Discharge Locations

- Four discharge locations:
  - Ore Stockpiles
    - Run of Mine Ore Stockpile (discharges from sedimentation pond that flows into Mary River)
    - The ore stockpile (discharges from a sedimentation pond to the Mary River)
  - Waste Rock Stockpile Sedimentation Ponds:
    - West Sedimentation Pond (Discharges to a drainage basin leading to Camp Lake)
    - East Sedimentation Pond (Discharges to a drainage basin leading to Mary River)

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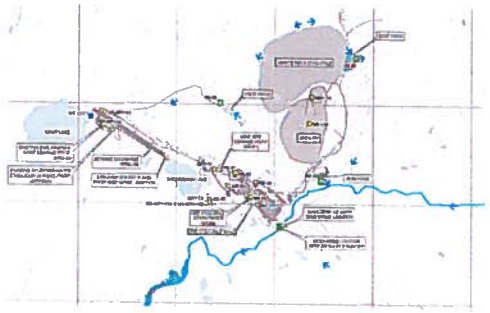
Mine Site Layout – Mine Contact Water Discharge Locations



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Mine Contact Water Quality

- Mine contact water refers to:
  - Waste rock stockpile seepage and runoff
  - Ore stockpile runoff
- Discharge criteria for mine contact water presented in Table F-6 are consistent with the discharge criteria of the MMER regulation.
- Studies completed as part of the FEIS (based on very conservative assumptions) indicate that discharge of mine contact water will have no significant effects on the receiving water quality.
  - This will be discussed under geochemistry (List of issues – item 13)
- Section 6 of the AEMP focuses on the implementation of the environmental effects monitoring program (Schedule 5) specified by the MMER.

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Mine Contact Water – Table F-6

Deleterious Substance	Maximum Authorized Monthly Mean Concentration (mg/L)	Maximum Authorized Concentration in Composite Sample (mg/L)	Maximum Authorized Concentration in Grab Sample (mg/L)
pH			6.0 < pH < 9.5
Ammonia			Non-acutely toxic
Nitrate			Non-acutely toxic
Deleterious Substances - mg/L (MMER Schedule 4)			
Arsenic	0.50	0.75	1.00
Copper	0.30	0.45	0.60
Cyanide	1.00	1.50	2.00
Lead	0.20	0.30	0.40
Nickel	0.50	0.75	1.00
Zinc	0.50	0.75	1.00
TSS	15.00	22.50	30.00
Acute toxicity			
Fish species and aquatic biota			MMER Schedule 5

Waste Rock and Pit Water Quality Modelling

- Water quality modelling indicates that the waste rock pile and open pit area run-off water will not contain concentrations of metals in excess of discharge requirements based upon the MMER discharge criteria.
- However, in the event that ongoing water quality modelling or field monitoring (AEMP) shows a trend toward significant effects on receiving water quality, then adaptive management will be considered that could include water treatment.
- An overview of the water treatment alternatives is found in the Waste Rock Management Plan, Section 3.7.5

Baffinland

Mine Contact Water Quality

EC suggestion 2.4 (a) – proposed Lower Limits for MMER

- For mine contact water, discharge limits are stipulated under Metal Mining Effluent Regulations (MMER – Schedule 4)
- Environment Canada has commenced a review of the MMER, and has proposed new Schedule 4 limits as part of this review – extensive stakeholder involvement will occur over next 2 years which will likely result in changes to the proposed limits
- Final decisions are expected to be published in the spring of 2015

Baffinland

Mine Contact Water Quality

EC Suggestion 2.4 (a) – proposed Lower Limits for MMER

- The MMER sets the standards prescribed by the government of Canada for mine water discharges and also includes a requirement for EEM to ensure that any potential effects on downstream water quality are identified and addressed.
- Environment Canada's suggestion to reduce mine contact water discharge limit by an order of magnitude from current MMER limits is not consistent with the regulation.
- Environment Canada's suggestion 2.4 (a):
  - pre-empts the conclusion of the MMER review currently in progress, as these discussions are in their infancy and no consensus has yet evolved regarding potential revision to MMER;
  - Pre-empts the outcome of the detailed AEMP proposed for the Project.

Baffinland

Mine Contact Water Quality

EC Suggestion 2.4 (a) – proposed Lower Limits for MMER

- "Protection for Northern Ecosystem":
  - The AEMP is the mechanism under the Water Licence which will provide site-specific biological and chemical data and assessment of possible changes .
  - The AEMP incorporates the requirements for an Environmental Effects Monitoring Program as defined under MMER Schedule 5.
  - The AEMP is designed to provide assessment information to provide an early warning of potential on the ecosystem.
    - The EIS has identified the sensitive components of the ecosystem
    - The AEMP focuses on monitoring those components, assessing risks, and implementing adaptive management
  - A more detailed discussion on EC suggestions 2.4 (b) and (c) respecting receiving water quality objectives will be discussed later in the context of AEMP.

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Landfarm and Landfill Water Management

- The project will construct landfarms and landfills
  - Landfarms at Milne Port, Mine Site and Steensby Port
  - Landfills at Mine Site and Steensby Port
- Water pooling inside landfarms will be monitored for quality prior to discharge. Discharge criteria for water quality are presented in Table F-4.
- Groundwater seepage from the landfills will be monitored for quality as per the requirements of the Project Certificate (condition # 23, 24). Groundwater quality criteria are presented in Table F-5.

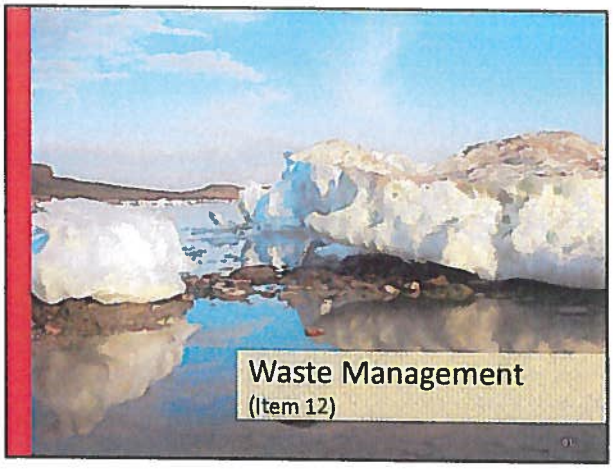
Baffinland

Table F-4 – Landfarm Water Quality

Parameter	Maximum Average Concentration (mg/L)
pH	6.0-9.0
Total Suspended Solids	15
Oil and Grease	0.015 and no sheen
Total Lead	0.001
Benzene	0.370
Toluene	0.002
Ethylbenzene	0.090

Table F-5 - Landfill Runoff / Seepage

Parameters	Maximum Average Concentration (mg/L)
pH	6.0-9.5
As	0.5
Cu	0.3
Pb	0.2
Ni	0.5
Zn	0.5
Total Suspended Solids	15
Oil and Grease	No visible sheen



Waste Management

(List of Issues – Item 12)

- Waste management facilities (other than waste rock) include:
  - Waste sorting
  - Incineration for organic camp waste and sewage treatment plant sludge
  - Landfilling of non combustible and non hazardous wastes
  - Landfarms for treatment of contaminated soils or snow
  - Temporary storage area for both hazardous and non hazardous wastes
- The Waste Management Plan was presented in support of the Water Licence Application
  - Provides the detail operating and maintenance manuals for the incinerators, landfarms and landfills
- Proposed terms and conditions for the Licence applicable to the management of waste are presented in Part E, article 18 to 52

Baffinland

Waste Management

(List of issues – Item 12)

- All hazardous wastes will be shipped off site for ultimate treatment and disposal (annual sealift)
- Few comments in parties final submissions related to waste management
  - Environment Canada's comment related to incinerator testing is a requirement of the Project Certificate (conditions 11 and 12)
  - Proposed terms and conditions of the Water Licence:
    - Part F, article 32 & 33 – addresses incineration
    - Part F, article 36 – addresses incineration of dewatered sewage treatment sludge
  - QIA's comment on use of landfarm remediated soils
    - Baffinland supports QIA's recommendations
    - Baffinland proposes that remediated soil be used in reclamation work

Baffinland

Waste Rock Management

- An estimated 640 000 000 tonnes over the life of the Project
- Baffinland will implement the Waste Rock Management Plan submitted in the Water Licence Application and will submit an updated plan 60 days prior to mine pre-stripping
- Key Features of the Waste Rock Management Plan:
  - On going waste rock characterization for the life of the Project
  - Sorting of Waste Rock according to ARD potential (currently estimate that 11% of the waste rock is PAG)
  - Any PAG will be confined to dedicated areas within the waste rock stockpile and surrounded and covered by non PAG rock to neutralize oxidation
  - Waste rock pile is confined in two watersheds and the water management has been discussed earlier
- Proposed terms and conditions for the Licence related to waste rock management are presented in Part F, articles 52 to 61.

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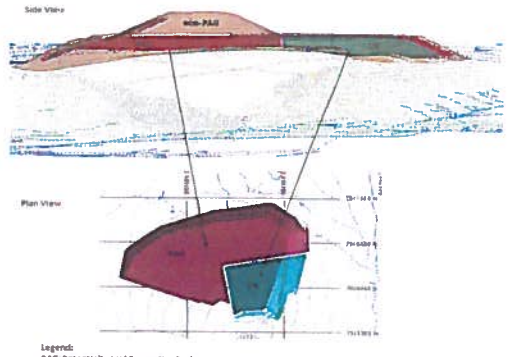
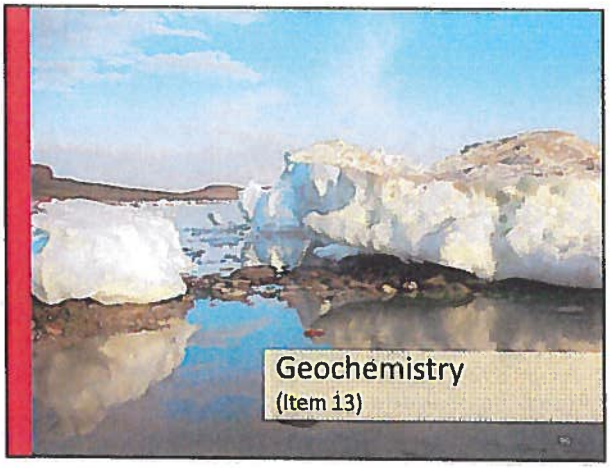
Waste Rock Management





Geochemistry
(List of issues – Item 13)

- Acid Rock Drainage and Metal Leaching (ARD/ML) Assessment
  - Considerable work completed to date and ongoing
  - Waste characterisation study: 2012-2014 ongoing for life of mine
  - A small portion of the waste rock (11%) has been classified as potentially acid generating (PAG)
  - Ongoing kinetic testing of PAG has not created acidic conditions to date
  - Waste Rock Management Plan, to be approved as part of the Water Licence, includes provisions to manage PAG to limit impacts to water quality (terms and conditions Part F, articles 52 to 61).

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Geochemistry
(List of issues – Item 13)

- Models are tools – Fundamental assumptions used
  - Waste rock characterization results (source terms for release of contaminants)
    - Composition and mineralogy or ore and waste rock
    - Acid generation / neutralization potential
    - Humidity cell test work
    - Estimation of quantities of potentially acid generating material (approximately 11% of waste rock)
    - NRCan supports for the construction of a test waste rock pile on site once mining begins
    - Goal – establish credible and realistic release rates of contaminants
  - Updated in-pit waste rock geological model
    - Estimation of mine pit wall exposure by type of material / mineralogy
  - Water quality model overview and assumptions
    - Combines source terms for release of contaminants with the geological model results to predict water quality over time.

Baffinland

Geochemistry
(List of issues – Item 13)

- Concerns / Issues related to geochemistry were addressed during the NIRB review as well as at a recent meeting with NRCan and agencies. Key concerns related to:
  - Predictions of runoff water quality for waste rock pile
  - Predictions of mine pit water quality at end of mine life and potential legacy issues
- Discussions at NRCan – February 25, 2013
  - Presented an update on the waste rock characterization work
    - Previous work
    - Progress of the 2012-2014 waste rock characterization campaign
  - Reviewed fundamental assumptions used in the model for predicting water quality
    - Waste rock characterization results (source terms for release of contaminants)
    - Updated in-pit waste rock geological model
    - Water quality model overview and assumptions

Baffinland

Geochemistry
(List of issues – Item 13)

- Assumptions used in modelling to date have been very conservative
- Focus of effort is to improve confidence in source terms for release of contaminants
  - Agreement with NRCan's recommendation for the use of a "field test pile"
  - Further definition of pit geology/mineralogy – ongoing characterization program

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ARD Modelling

Waste Rock

- Waste rock characterization provides type of material (estimate amount of PAG)
- Establish source terms – provide release rate and mass loading of contaminants
- Meteorology / precipitation data – provide estimated flows of runoff
- Calculate the mass loading of contaminants in waste rock stockpile runoff

Mine Pit

- Drilling – establish mineralogy of deposit
- Geological model – estimate amount and type of material eventually exposed on pit wall exposed surfaces
- Meteorology / precipitation data – provide estimated water flows on mine pit walls
- Calculate the mass loading of contaminants in pit lake water

Receiving Water Quality Modelling

- Step 1: Establish source terms (source and quantities of contaminants – as explained on previous slide)
- Step 2: Collect meteorological / precipitation data for the site
- Step 3: Collect hydrological data for affected watersheds (stream flows)
- Step 4: Combine Step 2 and Step 3 to provide estimated flows:
  - for runoff from waste rock stockpile area (Worse case conditions – no flow is retained within rock pile)
  - For flows in streams (Camp Lake Tributary) and the Mary River (receiving waters – worse case scenario are the low flow periods)
- Step 5: Combine Step 1 (source terms) with Step 4 (waste rock flows) to provide estimate of "End of Pipe" discharge for waste rock (compare results of Step 5 with MMER Schedule 4 limits
- Step 6: Combine Step 4 (receiving water flows) with Step 5 (waste rock discharge flows) to predict receiving water quality (compare with CCME criteria)

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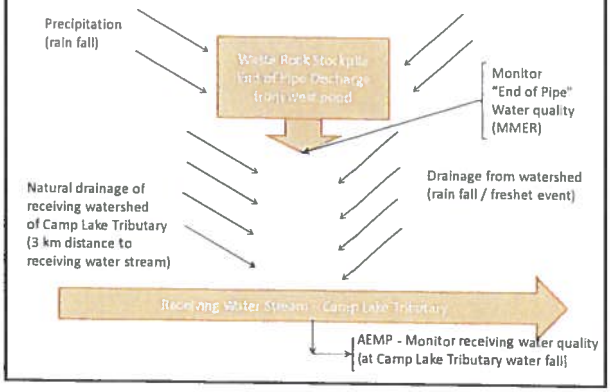
Receiving Water Quality Modelling



Model Predictions

- Modelling shows that end of pipe discharge from the waste rock sedimentation ponds will meet MMER discharge criteria (FEIS, Volume 7)
- Modelling also shows that the discharge of mine contact water from the waste rock sedimentation ponds are "not expected to result in an adverse environmental effect" on downstream water and sediment quality (FEIS, Volume 7, Section 3.4.2.2, pg. 144 and 148).

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Management Plans
(List of Issues – Item 14)

- All management plans are based on the principle of continual improvement and adaptive management
- Important to focus management on mitigation measures and monitoring of relevant parameters that will ensure that:
  - Project certificate terms and conditions are implemented
  - Type A Water Licence terms and conditions are implemented
  - Company commitments, goals and objectives are achieved
- Management plans are "living" documents that require updating
- Baffinland requests that the Board approve management plans submitted with the Licence Application
- Various management plans will be updated following issuance of Type A Water Licence

Baffinland

Management Plans
(List of Issues – Item 14)

- Updates of key management plans have been submitted in March and April 2013 in support of existing Type B and 2013 work plan (future Type A Licence):
  - Borrow Pit and Quarry Management Plan
  - Q1 Quarry Management Plan
  - Surface Water, Aquatic Ecosystems, Fish and Fish Habitat Management Plan
  - Fresh Water, Sewage and Waste Water Management Plan
  - Waste Management Plan
  - *Hazardous Material and Hazardous Waste Management Plan*
  - Emergency Response and Spill Contingency Plan (2013)
  - Environmental Management Plan (for Type B)
  - Updated Abandonment & Reclamation Plan (January 2013)
  - Air Quality and Noise Abatement Management Plan

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Management Plans
(List of Issues – Item 14)

- Additional Management Plans to come:
  - Milne Port OPEP
  - QMR2 Quarry Management Plan
- Waste Rock Management Plan
  - To be updated and submitted 60 days prior to mine pre-stripping
- Blasting Management Plan (Project Certificate conditions 44 and 48)
  - Q1 Quarry Management Plan submitted on March 14, 2013 for review/comment
  - Contains blasting operation management plan specific to quarry Q1
  - Similar management plans will be submitted for each quarry
- Distinct blasting management plans will be submitted for:
  - Mining operation
  - Tunnelling for the railway
  - Blasting in or near water bodies

Baffinland

Management Plans
(List of Issues – Item 14)

- Explosives contain ammonium nitrate. Concerns with use of explosives (blasting) arise from potentially high levels of residual ammonia, nitrite or nitrate entrained in surface waters to water bodies.
- Nitrogen is essential for all living organisms – animals or plants
  - Nitrogen forms essential part of the proteins and DNA found in cells
  - Animals get nitrogen from eating plants.
  - Plants require nitrogen to grow and survive
  - Plants get nitrogen from water and soil by absorbing nitrogen in the form of nitrates and ammonium
  - Nitrates are essential for the growth of aquatic plants which are the food source for aquatic organisms and fish
- Effects of excessive nitrate in water bodies:
  - Unreacted explosives entrained in surface water has the potential to increase the concentration of ammonium and nitrates in receiving water bodies
  - Eutrophication - promotes excessive growth of algae (algae bloom) which can deplete water of oxygen (anoxic event) resulting in death of invertebrates and fish
  - For eutrophication to occur (in a water body – a constant and elevated input of nutrients (ammonium, nitrates or phosphorus) is necessary

Baffinland

Management Plans
(List of Issues – Item 14)

- Short term duration for the use of explosives (quarry operations) does not favour conditions for eutrophication of water bodies.
  - There are thousands of quarry operations across North America
  - Aggregates obtained from quarries are used for road construction everywhere without indication of deteriorating water quality due to release of ammonium/nitrates.
- Baffinland believes that the concern over excessive explosive residues entrainment to water bodies is addressed through the implementation of best management practices for the use of explosives – minimize losses and spillage of explosives.
  - Refer to Q1 Quarry Management Plan

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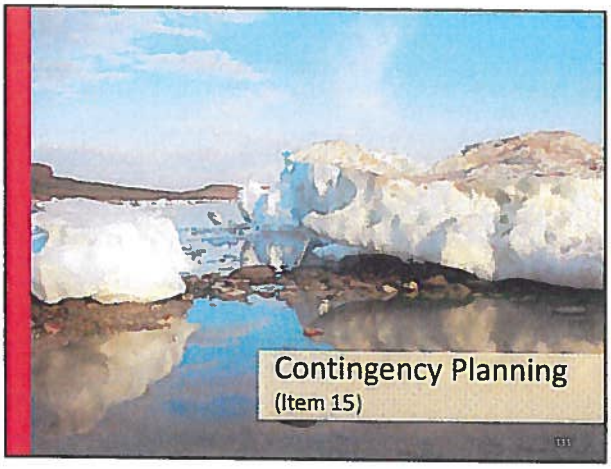


Contingency Planning
(List of Issues – Item 15)

- An Emergency Response and Spill Contingency Plan was submitted with the Water Licence Application
- This management plan will be updated on an annual basis
- The plan was updated and submitted to the NWB on March 31 to support the 2013 work plan.
- The next update is scheduled for year end 2013
- Refer to proposed Terms and Conditions in Part I

Baffinland

Monitoring
(List of issues – Item 16)

- Monitoring is an integral component of all management plans
  - Focus of monitoring within management plans is to ensure that routine activities are adequately mitigated to prevent adverse effects and performance monitoring of these activities
  - Adaptive management component
- Aquatic Effects Monitoring Program (AEMP)
  - Focuses on validating predictions of potential aquatic effects
  - The AEMP incorporates the environmental effects monitoring (EEM) requirement of the MMER
  - Incorporates adaptive management

Baffinland

Monitoring – AEMP Framework

- AEMP framework developed in cooperation with EC, DFO, QIA, AANDC and NWB staff.
- Two workshops held and draft AEMP circulated for comments
- Reviewers commented on AEMP in their final submissions
- Key comments relate to:
  - Benchmarking
  - Specific levels that would require action
  - Management responses for each action level

Baffinland

AEMP Data Assessment

- Receiving environment monitoring data collected through the AEMP requires evaluation
- Need to establish a systematic approach that will be used, as well as management responses that should be taken
- Developing a "Management Response Framework" which lays out:
  - Benchmarks to be used in assessing data
  - Specific Levels which will require action
  - Management Responses for each Action Level

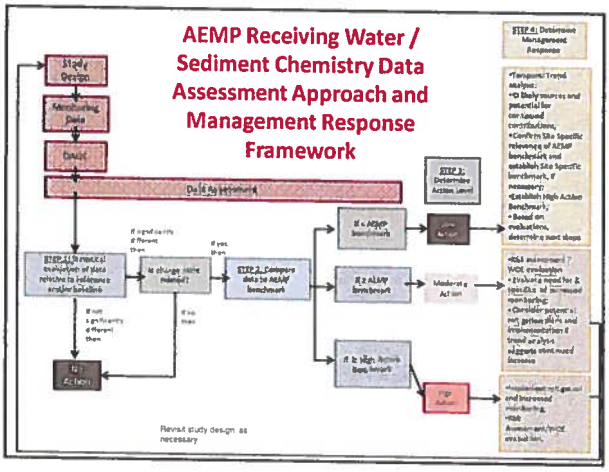
Baffinland

AEMP Data Assessment

- AEMP benchmarks will be:
  - the CCME guidelines for the protection of aquatic life (CCME-PAL)
  - CCME sediment quality guidelines; or
  - Site Specific guidelines developed through the CCME guidance document
- The AEMP will include a Management Response Framework that embraces an adaptive management approach
- Baffinland will organize a third workshop to finalize the Management Response Framework component of the AEMP

Baffinland

AEMP Receiving Water / Sediment Chemistry Data Assessment Approach and Management Response Framework



Monitoring – AEMP Framework

- The AEMP will be implemented in two phases:
  - Phase 1 of the AEMP will be implemented following the issuance of the licence;
  - Phase 2 of the AEMP will be implemented at the commencement of mining operations.
- The general monitoring requirements are presented in Part J for the proposed terms and conditions of the licence.
  - The AEMP framework is presented in schedule J.1
  - The proposed annual reporting requirements are outlined in Schedule J.2

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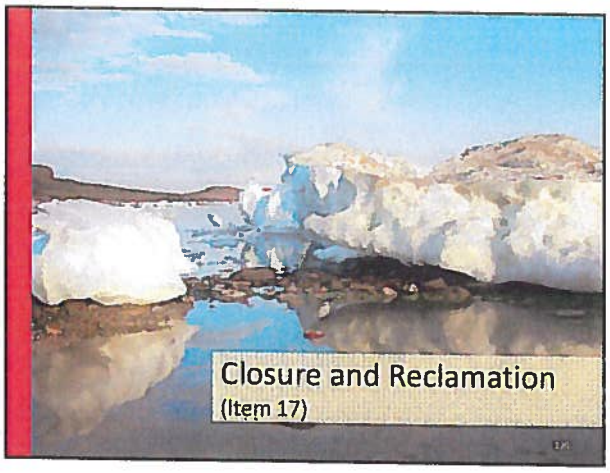

Closure and Reclamation

(List of Issues – Item 17)

- A Preliminary Abandonment and Reclamation Plan (PA&RP) was included as Attachment 10 to the Water Licence Application in February 2012.
- This plan was guided by a number of planning policies, guidelines and lease requirements including:
  - Abandonment and Reclamation Policy for Inuit Owned Lands (QIA 2009);
  - Mine Site Reclamation Policy for Nunavut (AANDC 2002); Mine Site Reclamation Guidelines for the Northwest Territories (AANDC 2007).
- Baffinland's abandonment and reclamation goals and objectives are outlined in detail in section 2.4 of the Plan.

Baffinland

Closure and Reclamation

- Updates to the Abandonment and Reclamation Plan
  - During the initial years of the project, Baffinland proposes to update the Abandonment and Reclamation Plan (*Interim Plans*) on an annual basis to reflect the progress of the development at the site.
  - Each update will be accompanied by a closure cost estimate.
  - Baffinland proposes that this updated annual estimate be used to adjust the security held for the Type A Licence on an annual basis.
- Once the Project construction is completed, Baffinland proposes to update the Interim Abandonment and Reclamation Plan every 3 to 5 years.

Baffinland

2013 Closure and Reclamation Updates

- Two closure cost estimates for abandonment and reclamation of the site have been submitted to the Board on March 31 and April 5, 2013:
  - Update to reflect current status (pre-2013 work plan activities)
  - Update to reflect post 2013 work plan activities (utilizing the widely accepted RECLAIM model)
- Update to reflect current site conditions
  - This update is a requirement of the current Type B Licence and of the Commercial Lease.
  - Closure costs were estimated in accordance with QIA policies
  - Closure estimate was used to establish how much of the current security bonding should be rolled over to the future Type Licence (once granted) and how much should remain under the Type B.

Baffinland

2013 Closure and Reclamation Updates

- Update to reflect post 2013 Work Plan activities
  - In February 2013, a work plan was submitted for development work to be undertaken and expected to be completed during 2013.
  - This work plan will see the completion of the 2013 Workplan.
  - The purpose of this second update is to estimate the closure and reclamation costs associated with these additional activities.

Baffinland

Pit Lake Water (Legacy Concern)

- Based on current mining plan, an actual mine pit will not be formed until after the 10th year of mining operation
- At the end of mining, the open pit will gradually fill with water from precipitation; time for natural filling of the pit is estimated at 85 to 150 years, depending on annual precipitation, evaporation and other factors
- AMEC (2012b) developed water quality estimates for pit water for the final year of mining (Year 21)
- Current modelling predictions indicate that it is possible that the pit water will have a pH of around 4.2, which is outside the pH range of the MMER (6.0 to 9.0).

Baffinland

Deposit 1 Open Pit

Pit Lake Water Quality

- Pit lake water quality is a legacy issue identified by AANDC and Environment Canada
- Baffinland's response to these concerns:
  - Initial pit water modelling is based on very conservative assumptions (worst case scenario) – concern is pH and potential metal leaching at low pH
  - An actual mine pit will not occur until after 10 years of operations
  - There is time to collect additional information on "source terms" which will improve confidence in modelling predictions

Baffinland

Pit Lake Water Quality
(continued)

- Regular updates on pit water modelling predictions will be provided to the NWB in the future updates of the *"Interim Abandonment and Reclamation Plan"*
- This interim plan will present mitigation approaches related to pit water quality
- The final closure plan will be informed by information collected throughout the life of the mine
- The final closure plan will require approval by land owners and the NWB

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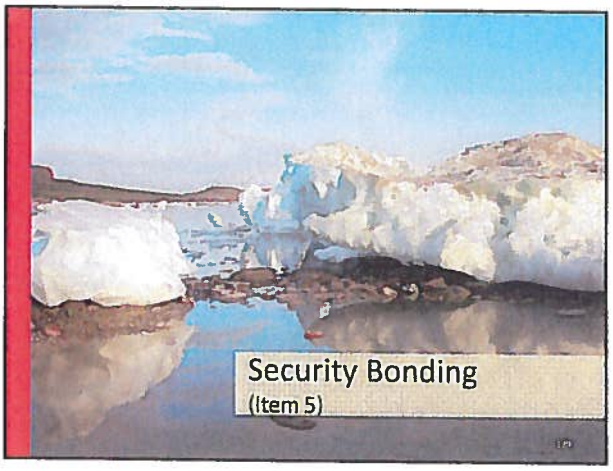


Security

(List of Issues – Item 5)

- Baffinland has calculated the "End of 2013" closure and reclamation costs at a total of approximately $37 million.
- Current security bonding
  - Total current security = $24,000,000
    - Approximately $6 million with NWB (Type B) and $18 million with QIA (Lease)
  - Amount to be retained for Type B = $ 1,250,000
  - Carry over to Type A = $22,650,000
  - Incremental for "End of 2013" = $13,350,000
  - Total amount of security for Type A = $36,000,000
- Baffinland proposes that the total security to be posted for the 2013 year be $37.25 million
  - Breakdown of land related liabilities = 94%
  - Breakdown of water related liabilities = 6%.

Baffinland

Security

- Baffinland makes the following recommendations as to how the security deposit for the Mary River should be set:
  - There will be one approved Closure Plan that relates to the activities proposed for the upcoming year and this plan will meet the requirements of the Land Owner – the QIA, the Nunavut Water Board, and AANDC.
  - There will be one agreed upon amount of Security for both Land and Water related activities.
  - Baffinland will not over bond.

Baffinland

Security

- Baffinland will post the security in one of the following ways:
  - The total amount of security for land and water is held by the land owner (the QIA) - the QIA and AANDC will have an agreement on how they will share and access securities if required.
  - The total amount of security for land and water is held by AANDC – the QIA and AANDC will have an agreement on how they will share and access securities if required
  - The total amount of security is held by the Bank and a beneficiary note is provided to the land owner for its percentage of the total security related to land based reclamation and a another beneficiary note is provided to AANDC for the percentage of water based reclamation

Baffinland

Security

- Baffinland also recommends that clauses be included in the security section of the licence that reflect the following:
  - The Proponent must by November 1st each year submit an updated work plan (to the NWB, the QIA, and AANDC) for the upcoming year and this updated work plan must also include an updated closure cost estimate for the works related to the upcoming year.
  - The Proponent will arrange for a meeting between November and December each year with the QIA, the NWB, and AANDC to review the proposed Closure Cost Estimate in order to agree on that upcoming year's estimate for land and water related reclamation. If the parties can not agree, then the NWB will determine the amount.
  - The Proponent will by March 1st of each year, post the newly agreed upon Security for the upcoming year.

Baffinland

Security

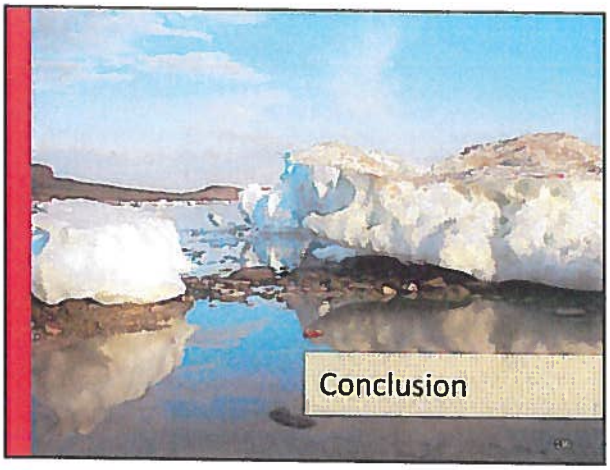
- Under Part C of the proposed terms and conditions for the Water Licence, Baffinland has proposed conditions applying to security.
- Baffinland proposes that the Water Licence require the posting of such further or other amounts as may be required by the Board, on an annual basis, based on the annual estimates of anticipated mine restoration liability in accordance with Part K, article 2 of the proposed terms and conditions for the Water Licence.
- Baffinland has had discussions with the QIA, AANDC and NWB respecting the terms of security, with a view to avoiding overbonding.

Baffinland

Financial Responsibility of Baffinland

- Attachment 2 to the Water Licence Application provides financial information to establish the financial responsibility of Baffinland in accordance with s. 57(b) of the Nunavut Waters Act.
- As a follow up to the Technical Meeting – Pre-Hearing decision, Baffinland also provided the Board with updated financial information.

Baffinland



Conclusion

- We are hoping to commence 2013 work activities under the new Type B Licence in early May and to continue under the Type A Water Licence when issued
- Training and hiring of North Baffin residents has commenced
- There is excellent support for the Project
- Baffinland looks forward to working with the NWB, the QIA and other parties in developing the Project

Baffinland