

## SECTION 2.0 - PROJECT DESCRIPTION

### 2.1 OVERVIEW

In this section a brief synopsis of the Project development plan is presented, describing Project development phases, time frames, work required and a description of the associated infrastructure and activities. A more comprehensive description of all aspects of the Project is provided in Volume 3. The Environmental, Health and Safety Management Framework and associated mitigation and monitoring plans are referenced in Volume 10.

Permanent Project facilities will be sited at the Mine Site at Mary River, at Steensby Port and at Milne Port. The Mine Site will be connected to Steensby Port by a Railway and to Milne Port via the existing Milne Inlet Tote Road. Marine access and shipping through construction and operation phases will occur seasonally through Milne Port and year-round through Steensby Port.

All major Project components will operate year-round with the exception of shipping to and from Milne Port. Based on the iron ore reserves currently-defined and under exploration in Deposit No. 1, the Project will operate for about 21 years. Geological conditions suggest that additional ore may be delineated as exploration continues, potentially extending the life and/or increasing the production rate of the Project. The development of other deposit(s) is conditional on future government approvals.

Site conditions play an important role in the planning and execution of the Project. The Project area experiences cold temperatures in the wintertime and near 24-hour darkness from November to January. Summers bring 24-hour daylight from May to August, with continued cool to cold conditions. Key Project facts are presented in Table 1-1.1.

**Table 1-1.1 Key Project Facts**

General		
Potential Development Area (ha)	Milne Port	224 ha;
	Milne Inlet Tote Road	865 ha; road length of 100 km
	Mine Site	2,739 ha
	Railway	1,308 ha; length of 149 km
	Steensby Port	2,419 ha
Number of Identified Potential Quarries/ Aggregate Site	Milne Port	One borrow area and one rock quarry at future ore stockpiles (approximately 1,200,000 tonnes)
	Milne Inlet Tote Road	20 rock quarries (Q1 to Q20) and 16 borrow areas (P1 to P16) ( approximately 2,700,000 tonnes)
	Mine Site	One existing borrow area (Borrow Area #3), one existing rock quarry (Rock Quarry #2) and one proposed quarry (QMR2);( approx. 2,700,000 tonnes)
	Railway	63 rock quarries (approximately 27,000,000 tonnes)
	Steensby Port	1 rock quarry (QS2), plus one large rock cut for airstrip (approx. 1,300,000 tonnes)

Traffic		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 28
Air Traffic (Max. size aircraft / Estimated flights)	Milne Port (Dash-8 / ATR)	1 daily	1 daily	1 each week	1 each week	1 each week or less
	Mine Site (Boeing 737)	1 daily	1 daily	1 daily	1 daily	3x / week
	Steensby Port (Boeing 737)	1 daily	1 daily	1 daily	1 daily	Emergency/alternate landings only
Road Traffic (trucks/day)	Milne Inlet Tote Road	30	30	120	120	110
Railway traffic	Railway	N/A				4 round trips/day
Work Force						
Workforce (employees)	Exploration	150	150	150	150	150
	Construction On-Site	2,140	2,844	2,811	1,457	
	Construction Payroll	4,280	5,688	5,622	2,914	
	Operation 3 Mt/a	0	150	311	311	311
	Operation 18 Mt/a	0	0	0	0	1,037
Camps Capacities		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 – 28
Camp Capacity (peak # of people)	Milne Port	165	165	165	165	30 to 105
	Milne Inlet Tote Road	50	50	Camp removed		
	Tote Road emergency shelters	14	14	14	14	14
	Mine Site	1,200	1,200	1,200	1,200	475
	Mid-Rail	200	200	200	200→0	Camps removed
	Ravn River	200	200	200	200→0	
	Cockburn Lake	0	100	100	0	
	Cockburn South	0	400	400	400→0	
Steensby Port	600	600	600	600	175	
Water Demand						
Water Demand (m³/day) (expected)	Milne Port and Milne Inlet Tote Road	29,000	29,000	122,900	122,900	122,900
	Mine Site	262,050	273,250	184,800	184,800	93,500
	Railway	135,400	135,400	135,400	135,400	0
	Steensby Port	103,070	143,070	93,070	93,070	75,860

Wastewater Treatment						
Treated (Sewage) Effluent (m³/day)	Milne Port	18	63	63	63	6
	Tote Road Camp	Trucking 15 m³/day	Trucking 15 m³/day	Camp decommissioned - refuge stations only		
	Mine Site	420	420	420	420	60
	Mid-Rail	60	60	60	60	Camps removed
	Ravn River	Trucked to Mine Site WWTP				Camps removed
	Cockburn Lake	Trucked to Steensby WWTP				Camps removed
	Cockburn South	Trucked to Steensby WWTP				Camps removed
	Steensby Port	360	360	360	360	55
Waste Generated						
Waste (tonnes/yr)	Total	7,600	7,600	7,600	7,600	2,200
Waste to Landfill, (m³/yr)	Mine Site	2,750	2,750	2,750	2,750	900
	Steensby Port	1,400	1,400	1,400	1,400	300
Waste to Incinerator (tonnes/yr)	Milne Port	200	200	200	200	170
	Mine Site	1,700	1,700	1,700	1,700	600
	Steensby Port	1,550	1,550	1,550	1,550	230
Power Demand						
Annual Power Consumption (MWh)	Milne Port	50,000				
	Mine Site	114,000				
	Steensby Port	120,000				
Shipping		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 28
Shipping Milne Port	Freight vessels (#)	10	6	3	3	3
	Freight (tonnes)	165,000	95,000	43,000	46,000	46,000
	Fuel tankers (#)	2	3-6	3-6	3-6	3-6
	Fuel delivery (ML)	20	60	60	60	60
Shipping Steensby Port	Freight vessels (#)	13	9	7	4	3
	Freight (tonnes)	206,000	150,000	107,000	80,000	60,000
	Fuel tankers (#)	2	4	4	3	3-6
	Fuel delivery (ML)	20	35	35	120	160
Fuel Storage						
Fuel Storage (Storage container, number and capacity)	Milne Port	Multiple Iso- containers	Permanent tank farm operational 2 steel tanks at 30 ML capacity; total storage of 60 ML			
	Milne Inlet Tote Road	Multiple 20,000 L Iso- containers positions as required			none	
	Mine Site	Existing fuel bladders	3 steel tanks at 5.2 ML capacity; total storage of 15.6 ML			
	Railway	Multiple 20,000 L Iso-containers positions as required				none
	Steensby Port	Multiple Iso- containers	Permanent tank farm operational Diesel = 4 steel tank at 40 ML ; Total storage of 160 ML Diesel = 1 steel tank at 7.5 ML (island tank)			

Production		Construction Phase				Operation Phase
		Year 1	Year 2	Year 3	Year 4	Year 5 - 28
Ore Production (Mt/a)	Road		0.5	3	3	3
	Railway		--	--	--	18
Waste Rock & Overburden (Mt/a approx.)		2	2	6	22	30
Ore Stockpiles (tonnes)	Milne Port		3,000,000	3,000,000	3,000,000	3,000,000
	Mine ROM		400,000	400,000	400,000	400,000
	Mine Site		50,000	250,000	500,000	1,400,000
	Steensby Port - 1.4 Mt fine ore stockpile capacity					900,000
	Steensby Port - 3.2 Mt coarse ore stockpile capacity					2,300,000
Ore Shipments (number of ship transits per year)	Milne Port Handymax (50,000 DWT) or Panamax (75,000 DWT) vessels		Less than 30	50 to 60	50 to 60	50 to 60
	Steensby Port Ten dedicated icebreaker ore carriers (160,000 to 190,000 DWT)					102

## 2.2 SCOPE

The Project scope includes all works and/or undertakings required for the construction, operation, modification, maintenance, decommissioning, and abandonment of the following components: Milne Port; Milne Inlet Tote Road, the Mine Site, Railway, Steensby Port and marine shipping. Air Traffic and on-going geotechnical exploration will also occur during each phase of the Project.

## 2.3 CONSTRUCTION PHASE

The timing for the three main Project phases are summarized as follows:

- 4-year Construction Phase (Construction Year 1 through Construction Year 4 that includes the first years of limited operation using road haulage)
- An approximate 21-year Operation Phase (Year 5 through Year 25)
- An approximate 3-year Closure Phase (Year 26 through Year 28) and 5 year Post-Closure Monitoring Phase (Year 29 to Year 33, or possibly to Year 33)

The Project schedule is illustrated in Figure 1-2.1.

Construction will start by utilizing existing infrastructure established to support exploration and bulk sampling programs, including camps, fuel storage, laydown areas and the Milne Inlet Tote Road which has received some upgrades and servicing. Further upgrades to the Milne Inlet Tote Road and construction of infrastructure at Milne Port are expected to take approximately one to two years. These construction activities are critical for allowing the transport of large equipment (crushers, screening equipment, etc.) for

installation at the Mine Site, to begin construction of the north end of the Railway, and, for the transport of ore along the Milne Inlet Tote Road.

Mine development includes pre-stripping, removal of overburden, and extraction of about 3 Mt/a of ore from Deposit No. 1, which is scheduled to begin about eighteen months after the start of construction. Beginning in Year two of construction, ore will be transported by truck, year-round via the Milne Inlet Tote Road for stockpiling at Milne Port and shipment from Milne Port during the open water season.

Construction of the Railway and infrastructure for Steensby Port is expected to take four years. The Railway is necessary for shipment of iron ore to Steensby Port. To expedite its completion, concurrent construction of the Railway will occur at a number of locations. Construction of the north end of the Railway will be staged from Milne Port via the Mine Site and Steensby Port will be the staging area for the south end.

In addition to camp facilities at Milne Port, construction camps will be established at the Mine Site, Steensby Port, midway between Milne Port and the Mine Site along the Milne Inlet Tote Road and up to four locations along the Railway. Infrastructure such as laydown areas, aggregate sources from rock quarries, and sand and gravel borrow areas will support construction.

Freight and ore docks will be constructed at Milne and Steensby Ports for receipt of equipment and materials during construction and operation and for loading of ore during operations, respectively. Where possible, permanent infrastructure needed for both construction and operation will be built at the onset of construction. Temporary infrastructure needed during construction will be removed once construction is complete.

Large quantities of aggregate will be required for construction activities. Aggregate, including crushed rock from quarries as well as sand and gravel from borrow sources, will be required for construction of Project components, mainly for railway construction and upgrades to the Milne Inlet Tote Road. A number of existing and potential aggregate sources have been identified, mainly along the transportation corridors. Several existing rock quarry and borrow sites located on Inuit-owned land between Milne Port and the Mine Site are permitted under Baffinland's current commercial lease with the QIA. Additional aggregate sources identified for construction include 21 rock quarries and 16 borrow areas along the Milne Inlet Tote Road and 63 rock quarries located along the Railway alignment.

The Project workforce on rotation during the construction phase will peak in 2013. Construction workers hired from Nunavut communities will typically work for two weeks at site followed by two weeks off. Other construction workers will likely work four weeks at site followed by two weeks off.

## PROJECT SCHEDULE

I:\102100181\25\A\Report\Report 6, Rev. 0 - EIS Volume 1 - EIS Summary\4 - Editorial Review Complete\Figure 1-2.1 Project Schedule.xls\Table 1-2.1

### 2.3.1 Milne Port

The site plan for Milne Port is presented on Figure 3-2.1 (Appendix 1A). Milne Port and the Milne Inlet Tote Road will be the main transportation hub supporting construction at the Mine Site, the north portion of the Railway, and for transportation of iron ore to markets within 18 months from the start of construction. Equipment and supplies will be delivered to Milne Port by conventional sealift during the open water season and then transported overland by trucks to the Mine Site via the Milne Inlet Tote Road.

The existing facilities at Milne Port will play a key logistical support role for receiving sealift materials at Milne Port prior to the start of construction to support construction of upgrades and operation of the Milne Inlet Tote Road and construction of permanent facilities at Milne Port and the Mine Site. The existing facilities include: a personnel camp for 60 people, water supply and treatment facilities, mobile diesel generators, a sewage treatment plant, an incinerator, fuel bladders, borrow areas, rock quarries, laydown area, airstrip, and temporary bulk sampling ore stockpile area.

During the first two years of construction, ore stockpile areas, an ore dock, and ore loading facilities will be constructed to allow the loading of iron ore onto ships during the open water season.

A permanent freight dock will be installed to facilitate the timely offloading of equipment and materials from ships and the existing camp and associated facilities (sewage treatment, water supply, waste management, communications, access roads, etc.) will be expanded to accommodate the personnel and activities needed during the construction and operation phases. Laydown areas will be provided for equipment and supplies and a fuel storage area will be constructed for containing fuel. A temporary explosives storage area located at a distance from other Project activities will be provided for use until permanent explosives manufacturing facilities have been completed at the Mine Site.

A new airstrip will be constructed on the west side of Milne Inlet to allow for a runway approach that avoids shipping lanes and freight and ore loading and unloading activities.

The existing laydown areas developed for the bulk sample operation will be supplemented with additional laydown areas within the existing lease. Approximate laydown area sizes for Milne Inlet, Mine Site, and Steensby Port are provided in Table 1-1.1.

Some dredging and pile driving will be required to build the docks. Silt curtains will isolate dredging activities and dredged material will be stored on shore and used for dock and onshore construction fill.

At Milne Port the existing 850 m long gravel airstrip will be reoriented and lengthened to 1,200 m. The airstrip will be maintained through the life of the Project. The estimated air traffic is provided in Table 1-1.1.

### 2.3.2 Milne Inlet Tote Road

The Milne Inlet Tote Road was upgraded in 2008 from a winter road to an all-season road adequate for transporting equipment and ore using 45-t trucks during the bulk sampling program. Additional upgrades will

be undertaken to support the level of traffic proposed with year-round ore haulage from the Mine Site to Milne Port. Figure 3-2.2 presents the alignment of the Milne Inlet Tote Road (Appendix 1A). The following additional upgrades will be carried out during Years 1 and 2 of the construction phase to meet these design criteria:

- Culverts - The existing culverts and sea containers along the Milne Inlet Tote Road will be replaced with new culverts that will be designed in general to the 1 in 100 year storm event for streams classified as fish habitat.
- Bridges – A total of five new bridges will be installed, replacing the four existing four sea container crossings, to allow the passage of oversized and very heavy loads.
- Minor realignments - A number of turns in the road will be re-aligned to allow for the passage of trucks with oversized loads.
- Roadbed surfacing - Most of the existing road is constructed using thin layers of locally obtained overburden materials placed directly on existing ground.
- Grade modifications - Approximately two dozen locations have been identified where grades are too steep for the oversized loads.
- Cuts - Grade alignment changes will be made to reduce these grades. Very few of the corrections will be made using cuts.

Preliminary engineering drawings showing proposed road upgrades are included in Appendix 3B.

A Road Management Plan (Appendix 10 D-8) will stipulate the rules of the road, including for example: the safe access and use by the public including hunters, limiting travel speed, yielding the right-of-way to wildlife, reporting wildlife observations, travelling in convoys for safety, emergency and spill response procedures, a safety policy addressing safe discharge of firearms near the road, truck traffic communications and a community notification and update process.

### 2.3.3 Mine Site

Construction at the Mine Site will focus on establishment of infrastructure needed to support mining activities and the construction of the northern section of the Railway. Existing Project infrastructure established during the bulk sampling program will be used to the extent possible to decrease the land disturbance. Figure 3-2.3 presents the layout of the Mine Site (Appendix 1A). New facilities include a permanent accommodation complex and offices, permanent fuel storage, ore handling and stockpiling facilities, and temporary explosives magazines and a permanent explosives plant. As is typical for work in permafrost areas, the Mine Site building foundations and major structures such as crushers and other ore handling facilities will, where possible, be sited on bedrock. Where this is not practical, a variety of different



pile systems will be utilized in combination with elevated building designs. Surface pads consisting of locally quarried crushed rock (gravel) will be used for access and laydown areas, parking areas, raising of grade, and generally to protect the permafrost around all of the permanent infrastructure facilities.

The airstrip at the Mine Site will be a primary air access point throughout the Project life. The airstrip at the Mine Site will be extended from 1,600 m in length to 2,000 m with a graded area consistent with the dimensions. As a key link to the Project and the requirement for year-round accessibility by air, a gravel runway will be constructed that can accommodate jet aircraft (Boeing 737 - 200) and L-382 Super Hercules turboprop aircraft.)

#### 2.3.4 Railway

An approximately 149-km long railway will be built to transport iron ore from the Mine Site to Steensby Port. The Railway will be constructed to accommodate heavy haul mineral transport. It will also carry mixed general freight traffic to supply the Mine Site and a passenger train for employees. The Railway will require the construction of 24 bridges, seven of which will be major bridges greater than 100 m in length, two tunnels (tunnels in the mountain alongside the eastern side of Cockburn Lake) of about 1,000 m and 300 m in length respectively, and more than 200 culvert crossings. The Railway Alignment is presented in Figure 3-2.4 through Figure 3-2.8 (Appendix 1A).

Construction activities will be staged from both ends of the Railway at the Mine Site and Steensby Port. A construction access road located along the Railway will facilitate establishment of four temporary construction camps (Ravn River area (km 36), Mid-Rail area (km 55), Cockburn Lake tunnels area (km 105) and Cockburn South Camp (km 124)), quarries and temporary airstrips needed to position the large workforce, equipment fleet and fuel required to carry out construction of the railway from multiple work fronts.

The proposed Railway includes: the rail line and embankment -including two tunnels, bridges and sidings; Watercourse crossings (including 24 bridges and a large number of culvert installations); yards and terminals - including loading and unloading (loop) tracks, turning tracks for the locomotives and service and storage track; supporting facilities - including maintenance and emergency facilities; train - including locomotives (engines) and cars; and signalling and telecommunications.

Railway construction largely defines the schedule and time required to construction the Project.

#### 2.3.5 Steensby Port

During the archaeological investigations a number of archaeological resources were identified (Appendix 4D). The location of important archaeological resources has had a considerable bearing on the location of port infrastructure. A reconfiguration of the Steensby Port layout was undertaken following the

2008 archaeological field program to avoid those areas that are considered to be archaeologically significant.

Facilities at Steensby Port will be located on the mainland as well as nearby Steensby Island in Steensby Inlet. Figure 3-2.9 presents the site plan of the future Steensby Port (Appendix 1A). Construction at Steensby Port will include a longer site capture phase than at Milne Port, owing to the lack of existing infrastructure, uneven terrain that result in limited pre-existing laydown area, difficulty in accessing quarry sites and the absence of an airstrip to mobilize a large workforce at the onset. To address this, Baffinland plans to pre-position about 30,000 m<sup>3</sup> of sand and gravel on a barge at the Steensby Port prior to the start of construction.

Development of the initial quarry will allow for the establishment of access roads and laydown areas to receive the very large volume of equipment, materials, and fuel that will be delivered by sealift in the open water season of Year 1 of construction, and for access to additional quarries to construct the airstrip. Site capture, involving the establishment of basic infrastructure (i.e., camps, airstrips, docks, etc.) to allow full construction to proceed, will take an estimated six to nine months.

Two temporary docks will be installed to support early construction, along with an ore dock and permanent freight and fuel unloading dock. The sequence of activities at Steensby Port during the construction phase begins with the building of access roads primarily to the quarry. The construction of laydown areas, airstrip, docks, camps, concrete batch plant, and permanent infrastructure follows.

The proposed airstrip at Steensby Port will be capable of supporting Code C aircraft such as the Boeing 737-200. This will require an airstrip with proposed dimensions of 1,830 m long by 45 m wide.

## 2.4 OPERATION PHASE

The planned operating life of the Project is 21 years. Conventional open pit mining techniques will be used, consisting of drill, blast and excavation of ore, followed by transport to crushing and screening facilities. Once the ore has been crushed into the desired lump and fine iron ore products, the ore will be stockpiled at the Mine Site. Loading facilities will reclaim the ore from the Mine Site stockpiles and load the trucks hauling to Milne Port and the rail cars hauling to Steensby Port. Separate material handling equipment and stockpiles are proposed for the road and railway operations. Additional stockpiles are located at each of the port sites along with ship-loading facilities. The production and handling of ore from the open pit to ship-loading are presented in schematic process flow diagrams on Figures 3-3.1, 3-3.3 and 3-3.4 (Appendix 1A).

Additional successful exploration results could extend the operational life and/or increase the annual ore production volume. Proposed Mine Site access will be by airstrip and railway from Steensby Port. Most supplies will be delivered year-round over the Railway, with some supplies being delivered from Milne Port via the Milne Inlet Tote Road during the open water season.

Trains drawing ore cars (Figure 3-3.7) will be used to deliver iron ore from the Mine Site to Steensby Port and transport supplies from the Port to the Mine Site on return trips. Steensby Port will include rail loading and unloading facilities and rail service/maintenance facilities; worker accommodations; ore loading, freight and tug docks; ore stockpile and ship loading and unloading facilities, and an airstrip. A dedicated fleet of about 10 icebreaking ore carriers (Figure 3-3.9), operated by a shipping company contracted to Baffinland will transport most of the ore to international markets 12 months a year. Additional shipping will occur during the open water season.

About 3 Mt/a of iron ore will be transported year-round by truck from the Mine Site along the Milne Inlet Tote Road to Milne Port where it will be stockpiled for loading onto ships and transported to markets during the open water season. An example truck is shown on Figure 3-3.2 in Appendix 1A. The airstrip can be used for crew rotation if weather conditions are suitable.

Once operations begin, decommissioning of temporary construction infrastructure will take place, as construction camps, equipment and related infrastructure are removed and taken off-site.

The following major activities characterize the operation phase:

- Open pit mining of iron ore in Deposit No. 1;
- Crushing, screening and stockpiling of ore at the Mine Site;
- Loading of ore, railway transport of ore to Steensby Port, offloading to stockpiles;
- Loading of ore, truck transport to Milne Port, offloading to stockpiles;
- Loading of ore carriers (ships) at Milne and Steensby Ports;
- Shipping (including ice breaking) of the iron ore from Steensby Port to customers;
- Shipping during the open water season from Milne Port;
- Annual re-supply for operations by ship during open water to Steensby Port and Milne Port; and
- Railway and/or truck transport of supplies from Ports to the Mine Site.

## 2.5 SHIPPING

Figure 3-1.1 presents the shipping routes from both Milne Port and Steensby Port.

### 2.5.1 Milne Port

The ice-free period in Milne Port lasts approximately 90 days. Handymax (~50,000 DWT) to Panamax (~75,000 DWT) vessels will be chartered. Vessel docking will be assisted in the ice-free period by harbour tugs and lines personnel on the docks.

There will be two main shipping routes from Milne Port:

- Milne Port to the Project's customer base (European Ports), for the movement of ore; and
- Milne Inlet to a southern Canadian port, for re-supply of materials, fuel, and equipment by conventional sealift over the open water and for transport of recyclables and hazardous wastes.

The shipping route to Milne Port from the North Atlantic Ocean is well established through very deep waters. It extends from Baffin Bay and passes through Pond Inlet and Eclipse Sound to the head of Milne Port.

#### 2.5.2 Steensby Port

A dedicated fleet of approximately ten ice class cape-size vessels with a nominal capacity of 160,000 to 190,000 dead weight tonne (DWT) cargo capacity will operate on a 12 month a year basis to transport most of the 18 Mt/a of ore production to market. Fednav has operated ice-breaking bulk carriers in Canada's Arctic for several decades without the assistance of tugs or ice breakers. The cape-sized vessels will be supplemented by chartering additional ships from the open market during the open water season. Vessel docking will be assisted in the ice-free period by harbour tugs and lines personnel on the docks.

There will be two main shipping routes from Steensby Port:

- Steensby Port to the Project's customer base (European Ports), for the movement of ore; and
- Steensby Port to a southern Canadian port, for re-supply of materials and some fuel and equipment and for transport of recyclables and hazardous wastes by conventional sealift over the open water.

The nominal shipping route through Foxe Basin in and out of Steensby Port is along the east side of Koch and Rowley Islands to where it joins with the established shipping lanes in southern Foxe Basin accessing Hall Beach and Igloolik. Bathymetric surveys have indicated that this easterly route is operationally preferable to a western route. In addition, comprehensive Inuit knowledge studies in Igloolik, Hall Beach and three other North Baffin communities indicate a reliance on the waters of a westerly route for harvesting and travel, and a relative absence of use of the marine waters along the preferred shipping route east of Rowley and Koch Islands. Feedback from public meetings Baffinland held in the communities of Igloolik and Hall Beach in 2007 and 2008, also indicated a clear community preference for the selected eastern route.

Entering the well established shipping routes through southern Foxe Basin, the ships will continue through Hudson Strait on established shipping lanes and across the North Atlantic Ocean. Ships passing through Hudson Strait will remain within the Nunavut Settlement Area (NSA) and are not expected to pass through the Nunavik Marine Region of Northern Quebec or the area of shared Nunavut-Nunavik occupancy, under normal circumstances.

## 2.6 CLOSURE AND POST CLOSURE

Throughout all phases of the Project, Baffinland will plan and conduct operations in a manner designed to return Project sites to a safe and environmentally stable condition. Baffinland will undertake progressive reclamation throughout the mine life. Temporary facilities required for the construction camps will be decommissioned and removed at the end of their useful life. Borrow areas, quarries, temporary roads and other disturbed sites will be stabilized to limit erosion of ground surfaces and rehabilitated once they are no longer required. Environmental and safety monitoring will continue as long as necessary to ensure that closure objectives have been met. The Closure Plan is presented in Appendix 10G.

## 2.7 POTENTIAL FOR FUTURE DEVELOPMENT

The Project involves the development of the ore reserves and resources identified and currently under exploration in Deposit No.1, one of nine known iron ore deposits within Baffinland-held mineral leases (Volume 2, Section 2.1). The locations of Baffinland's mineral leases are shown on Figure 3-1.2 (Appendix 1A). As the Company develops Deposit No.1, it will continue further exploration programs to identify further ore reserves in the region. Exploration drilling on Deposits No. 2 and 3 was initiated in 2007 and drilling on Deposits No. 4 and 5 was initiated in 2010. Deposits No. 6 to 9 were discovered during Baffinland's 2010 regional exploration program and have only been sampled at surface.

Annual production rates will vary for a number of factors such as market conditions, ore grades, and unanticipated events. Although the Project has been designed for a nominal 21 Mt/a of iron ore, the operation is capable of a production rate of up to 30 Mt/a for the railway operation and up to 5 Mt/a for the road operation, with additional trains and trucks, expansions to ore stockpiles and higher capacity material handling equipment. Deposits No. 2 and 3 could readily be accommodated by the proposed infrastructure. Deposits 4 and 5 would require additional rail infrastructure from the Mine Site to the deposits or could feed the trucking operation in the future. However, an environmental assessment would be completed and submitted for review prior for developing other ore bodies. Any expansion beyond 30 Mt/a has not been addressed in the Company's current strategic planning.

## 2.8 PROJECT ACCOMMODATION FOR CONCURRENT USES

Baffinland recognizes the need to accommodate the safe joint use of the Project sites by the Project and the people of Nunavut. Examples of the accommodation provisions in the Project include:

- The Nunavut Land Claims Agreement (NLCA) establishes the requirements and expectations for development activities occurring in Nunavut. This Agreement includes a public easement on the Milne Inlet Tote Road. Therefore access to this road will not be restricted. Provisions will ensure that hunter use is compatible with Project operations as stipulated in the Road Management Plan in Volume 10 (Appendix D10-8).

- Hunters will be welcome to stop at Project sites for meals and gas for their snowmobiles and ATV's as indicated in the land use impact assessment (Volume 4, Section 10).
- Along the railway line, locations will be provided for hunter crossings and animal crossings. Final positions of these crossings will be determined in consultation with hunters in the communities.
- Hunters who would pass by snowmobile across the landfast ice at the entrance of Steensby Inlet will need to circle around the Steensby Port. In consideration of this, Baffinland will invite hunters/travellers to stop in at Steensby Port for sustenance and fuel.

## 2.9 WORKFORCE AND HUMAN RESOURCES

Human Resources management activities at Baffinland are guided by the following commitments to the workplace and people:

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

The Company is working in cooperation with stakeholders in Nunavut to establish education and training programs that will provide opportunities for employment of local residents on the Project and equip them with skills that will sustain them beyond the life of the Project.

The estimated workforce during the construction and operation phases is summarized in Volume 3, Table 3-2.1. The estimates include the workers on shift at each of the Project sites on North Baffin, excluding the approximate 150 workers undertaking ongoing exploration. Staff located in Iqaluit, Ottawa and Toronto is not included. The estimates are approximate and will vary both seasonally through the year and between the years. The work-week will consist of six 10-hour days per week with a rest day on the last day of each week, or 2,080 hours annually per person, equivalent to a 40-hour week worked full time for a year. The planned scheduled work rotation for most contractors during the construction phase will be four weeks on/two weeks off. Workers hired from northern communities will work two weeks on/ two weeks off during construction.

The total estimated workforce on shift during the 21 year operation phase is 1,037, including both on-site and off-site personnel, and Baffinland and contract personnel. This estimate does not include staffing of

about 150 workers required for any ongoing exploration work throughout the operations phase. Most on-site staff will work on a scheduled rotation of two weeks working at site and two weeks off.

#### 2.10 PROJECT FINANCING

Based on the shipment of 21 Mt/a of high-grade iron ore (64.7% iron) to the European market, the proven reserves of 160 million tonnes and probable reserves of 205 million tonnes sustain a mine life of over 21 years. Project pre-tax cash flow over the life of the mine is forecasted to be \$18.1 billion with after-tax cash flow of \$11.2 billion (Baffinland, 2008a).

Ultimate project financing is expected to include a substantial debt component. Baffinland is seeking a strategic partner to help finance the capital required for the Project. The Federal Republic of Germany has expressed its interest in acquiring the iron ore to be produced by approving in principle an untied loan guarantee for \$1.2 billion worth of loans for the Project (Baffinland, 2009).