

# APPENDIX 2C ERP – ENVIRONMENTAL INTERACTION MATRICES

TABLE 2C-1	MILNE PORT (Change)
TABLE 2C-2	MILNE INLET TOTE ROAD (Change)
TABLE 2C-3	MINE SITE (Change)
TABLE 2C-4	RAILWAY (No Change)
TABLE 2C-5	STEENSBY DCFH (No Change)
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TABLE 2C-7	SOCIO-ECONOMIC COMPONENTS (Change)



## BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT

EFFECTS INTERACTION MATRIX - MILNE PORT

	Milne Port - Facility or Activity	KEY INDICATORS	ATMOSPHERIC	Air quality	Noise Vibration	TERRESTRIAL	Sensitive Landforms	Soil	Vegetation health	Plants used by Inuit, where they occur	Biodiversity	Peregrine falcon	Ked-throated loon	Snow geese	Caribou	FRESHWATER AQUATIC LIFE AND HABITAT	Hydrology	Water and sediment quality	Freshwater fish and fish habitat  MARINE	Physical oceanography	Chemical oceanography	Sea ice	Port site marine habitat	Coastal fish communities	Ringed seal	Beluga whale	Narwhal	Wairus	Polar bear	Marine birds	SOCIO-ECONOMIC	Cultural resources (archaeological sites)
Construction	Items Assessed in FEIS  Vegetation clearing' stripping: for footprint of all facilities and roads.  Laydown areas (temporary): cleared land for storage of construction materials, and use.  Ore and freight dock piling, blasting, dredging, extraction, drilling.  Explosives magazine, manufacture, and use (temporary): construction of a temporary facility, blasting,  Earth moving: excavation, drilling, grading, trenching,  backfilling.  Aggregate sources/ borrow sites (permanent): drilling, blasting, extraction, hauling.  Alistring (permanent): land clearing, installation of lights, and use.  Water use and management: ditching, ponding, berms, snow clearing and stockpilling.  Communications systems (permanent): installation of towers.  Fuel storage and distribution (permanent): construction of bermed facility, operation of trucks.  Concrete production (temporary): facility, production, waste.  Construction of roads.  Equipment and vehicle use: heavy machinery and trucks.  Barge and related facilities (permanent): construction of Project buildings, and use.  Waster management use.  Spills and emergency management.  Hazardous materials handling and storage.  Power generation and distribution.  Additional terms Assessed in ERP Submission.  Construction of ore dock.  Construction of ore dock.			1	1 0 2 2 2 2 2 2 2 2 2 2 1 1 1 0 0 1 1 0 0 1 1 0 0 1 1 1 1		1 2 1 2 2 1 1 2 0 0 0 0 2 1 1 1 1 1 1 1	1 1 1 1 1 1 0 0 1 1 1 1 2 2 2	2	2 2 0 1 2 2 0 1 1 1 1 1 2 1 1 0 0 0 0 1 1 1 1	2 0 1 2 2 0 2 1 1 1 0 0 2 2 1 1 0 0 0 0	0 0 0 1 1 1 0 0 1 1 0 0 0 0 1 1 1 1 0	2 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 1 1 0 1 1 2 0 0 0 0 0 1 2 0 0 0 0 0		1 0 0 1 1 1 2 0 0 0 2 2 0 0 0 0 0 0 0 0	1 0 1 1 1 1 1 1 2 2 1 1 1 0 0 2 2 2 2 2	1 1 1 2 2 1 1 1 1 1 1 2 2 2 2 2 2 2 0 0 0 0	000000000000000000000000000000000000000	0 2 1 0 0 0 0 0 1 1 0 2 1 2 2 2 0 0	0	0 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2 0 0 0 0 0 0 0 0 0 1 1 2 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0		2 2 2 2 2 2 2 2 2 2 2 0 2 2 2 0 0 2 2 2 0
g Operation	Items Assessed in FEIS Ore stockpiles and rail/road transport. Ore and freight dock: one boat every two days during open water. Barge and ship traffic, including operation. Airstrio. Communications systems. Fuel storage and distribution. Equipment, vehicle and aircraft use. Camp and related facilities. Waste and wastewater management. Spills and emergency management. Hazardous materials handling and storage. Power generation and distribution. Water use and management including snow management and stockpling. Additional Items Assessed in ERP Submission Ore stockpling Ore stockpling Terrestrial facilities dismantling; dismantling of infrastructure, demolition, drainage restoration, excavation			2 2 1 0 0 2 2 2 0 1 2 1 1	2 0 2 0 2 0 1 0 0 0 0 0 0 0 2 0 2 0 2 0 1 0 0 0 1 0 0 0 1 0 1 0 1 0 1 0 1 0 1		2 0 0 0 0 1 1 1 0 0 0 0	0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0	2 0 0 0 0 0 1 1 1 1 1 0 0	1 0 0 0 0 0 1 1 1 0 0 0 0	0 0 0 0 0 1 1 1 1 1 0 0 0	1 0 0 1 1 1 0 0 0 0 0 1 1 0 0 0 0 0 0 0	2 2 2 2 2 2 2 2 2 2 1 1 2 1 1 1 1 1 1 1	2 2 1 1 1 2 2 2 1 0 1 1 1 1 1 1 1 1 1 1	0 0		0 0 2 2 0 0 0 1	0 0 1 2 1 1 1 2 2 2 2 1 1 2 2 1 1 1 1 1	22 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	000000000000000000000000000000000000000	2 2 0 0 0 0 0 2 2 0 0 1 1	0 0 0 0 1 0 0 0 0	2 2 0 0 0 0 0 2 2 2 0 0 0	2 2 1 0 0 0 0 2 2 2 0 0 0	0 0 0 2 2 2 2 2 2 2 2 2 2 0 0 0 0 0 0 0	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2 0 0 2 0 1 2 0 0 0 0 1 1 2 0 0 0 0 0	2 2 2 0 0 0 2 0 1 2 0 0 0 0 0 0 0 0 0 0	0 2 2 2 0 0 0 2 2 2 0 0 0 0 1 1 1 1 1	2 2 1 1 0 1 0 0 0 0 0		0 0 0 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0
Decommissioning	Infrastructure, cemoniton, drainage restoration, excavation and backfilling/flugging, waste management, and ground restoration.  Marine facility dismantling: dismantling and removal of infrastructure.  Additional Items Assessed in ERP Submission Planned future uses of Milne Inlet port Facilities  Impact Ratings:			1 0	1 2	S:V	0 Baffinl	2 2 0 lland\EF	0 0 RP Draf	1 0 0	0	0	2 2 1 1 1 0 0	1 0	0 0 cory Fr	amewor	0 0 k\Appe	0	2 0 App 2CV	0 0 1	2	0 0 0	1	0	0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	1	1	0 1 0 23 CK	0 0 .xls]20		0ne Port

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## BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT

#### EFFECTS INTERACTION MATRIX - MILNE INLET TOTE ROAD

	Tote Road - Facility or Activity	KEY INDICATORS	ATMOSPHERIC	Air quality	Noise	Vibration	TERRESTRIAL	Sensitive Landforms	Soil	Vegetation health	Plants important to Inuit, where they occur	Biodiversity	Peregrine falcon	Red-throated loon	Eider	Snow geese	Caribou	FRESHWATER AQUATIC LIFE AND HABITAT	Hydrology	Water and sediment quality	Freshwater fish and fish habitat	MARINE	Physical oceanography	Chemical oceanography	Seaice	Port site marine habitat	Coastal fish communities	Ringed seal	Bowhead whale	Beluga whale	Narwhal	Wairus	Polar bear	Marine birds	SOCIO-ECONOMIC	Cultural resources (archaeological sites)
	Items Assessed in FEIS									1	_	Т			_	Т	_				_															
	Laydown areas (temporary): cleared land for storage of			0	0	0		1	2	2	2	2	0	1	1	1	0		1	1	1															2
	construction materials.  Vegetation clearing/ stripping: for footprint of all facilities and			1	1	0		1	2	2	2	2	0	1	1	2	2		1	1	1															2
	roads. Aggregate sources/ borrow sites (permanent): drilling,															-+																				h
	blasting, extraction, hauling.  Earth moving: excavation, drilling, grading, trenching,			2	2	2		2	2	2	2	2	1	2	2	2	2		1	2	1															2
	backfilling.  Explosives storage and use (temporary): construction of a			2	2	2		2	2	2	2	2	0	1	1	1	1		1	1	1															2
į	Explosives storage and use (temporary): construction of a temporary facility, blasting.			2	2	2		1	2	2	2	2	0	0	0	0	0		1	2	2							N/A								2
Construction	Equipment and vehicle use: heavy machinery and trucks.  Construction of roads: including riparian clearing, dust			2	2	.1_		0	2	2	2	2	1	11.	1	1	1		0	11.	0															2
ځ	Construction of roads: including riparian clearing, dust suppression, and bridge and culvert installation. Road usage.			2	2	1		2	2	2	2	2	1	1	1	- 1	1		2	2	2															2
	Spills and emergency management.			2	2	1		1	1	1	1	1	0	1		1	0		0	1 2	2															2 1 0-2 0
	Hazardous materials handling and storage.			1	1	0		1	1	1.	1	Ė	0	0			0		0	2	0															0
	Water use and management: ditching, ponding, berms, snow clearing and stockpiling.			1	1	0		2	2	2	1	2	0	1	1	1	1		2	2	2															2
	Additional Items Assessed in ERP Submission Additional upgrades to Tote Road			2		2		2	2	2	2	4	1	1	-1	1	1		1	1	1															
	Additional borrow sources and quarries used for material			2	2	2		2	2	2	2	1	1	1	i	1	İ		1	2	i															
$\vdash$	Items Assessed in FEIS										-				+		+																			Н
	Road usage.			2	2	0		1 0 0	0	1	0	1	1	1		1	2		0 0 0	1	2 0 0															1
ig	Spills and emergency management. Hazardous materials handling and storage.			1	1	0		0	Ó	0	0	0	0	Ó			0		0	2	0							N/A								0-2 0
Operation	Water use and management including snow management and stockpiling.			1	1	0		1	1	1	1	1	0	1	1	1	1		1	2	2															0
	Additional Items Assessed in ERP Submission Haulage of iron ore along the Tote Road			1	1	0					1	~~~	1		1	1	7		0																	Ш
						~~~						~									~~~															
	Items Assessed in FEIS Facility/ road dismantling: including dismantling and removal														+																					<u>}</u> ∦
lionin	of infrastructure, demolition, drainage restoration, excavation and backfilling/ plugging, waste management, and ground			2	2	1		2	2	2	1	2	1	2	2	2	1		2	1	2							N/A								1
miss	restoration.																		<u> </u>																	ļ
Decommissioning	Additional Items Assessed in ERP Submission			0	0				0	0	0	0	0		0	0	0			0	0															}
1	none			<u>-</u> -	Ü	0		0	v	<u>v</u>		· ·	v	0		٧			0	- <u>`</u> -	· ·															j
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S\Baffinland\ERP Drafts\Volume 2 - Consultation, Regulatory Framework\Appendices\App 2C\[ERP - Tables 2C-1 to 2C7 Effects Interactions Matrices May 23 CK.xls]2C-2 Tute Road 10-Jun-13

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## BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT

#### EFFECTS INTERACTION MATRIX - MINE SITE

	Mine Site - Facility or Activity	KEY INDICATORS	ATMOSPHERIC	Air quality	Noise	Vibration	TERRESTRIAL	Sensitive Landforms	Soil	Vegetation health	Plants important to Inuit, where they occur	Biodiversity	Peregrine falcon	Ned-tilloated tool	Snow geese	Caribou	FRESHWATER AQUATIC LIFE AND HABITAT	Hydrology	Water and sediment quality	Freshwater fish and fish habitat	MARINE	Physical oceanography	Chemical oceanography	Seaice	Port site marine habitat	Coastal fish communities	Ringed seal Bowhead whale	Beluga whale	Narwhal	Walrus	Polar bear	Marine birds	SOCIO-ECONOMIC	Cultural resources (archaeological sites)
Construction	Items Assessed in FEIS Open pit mining stripping, excavation, drilling, blasting, heavy machinery. Ore crushing: grading, construction of facility. Waste rock management facilities: earth moving, heavy machinery use, grading. Laydown areas (temporary): cleared land for storage of construction materials. Camp and related facilities (permanent): construction of Project buildings. Aggregate sources/ borrow sites (permanent): drilling, blasting, extraction, hauling. Airstrip (permanent): land clearing, blasting, installation of lights. Communications systems (permanent): construction of towers. Fuel storage and distribution (permanent): construction of bermed facility, operation of trucks.  Concrete production (temporary): facility, production, waste. Equipment and vehicle use: heavy machinery and trucks. Vegetation clearing' stripping: for footprint of all facilities and roads.  Explosives storage and use (temporary): construction of a temporary facility, blasting, Earth moving: excavation, drilling, grading, trenching, backfilling. Spills and emergency management  Waste management: garbage and sevage waste facilities. Hazardous materials handling and storage Construction of roads: land clearing and road installation, water body crossings. For exploration of carbination of stripping and storage Construction of roads: land clearing and road installation, water body crossings. For exploration of stripping and storage Construction of roads: land clearing and road installation, water body crossings.  Additional lems Assessed in ERP Submission  None-All ERP activities are within scope of Mine Site development			2 2 2 1 1 2 1 1 2 2 1 2 2 1 2 2 1 2 1 2	2 2 1 1 1 2 1 1 2 2 1 1 1 2 2 2 1 1	1 1 1 0 1 1 2 2 1 1 0 0 2 2 2 0 1 1 0 0 1 1 1 0 0 0 0		0 0 0 1 1 2 2 1 2 2 2 2 0 0	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 1 1 2 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 1 1 1 2 2 2 1 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 1 1 1 2 2 2 2 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11 11 11 11 11 11 11 11 11 11 11 11 11	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 1 0 0 0 0 0 0 0 2 1 1		2 2 1 1 1 0 0 1 1 0 0 1 1 0 0 2 2 0 0 0 0	2 2 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 0 1 1 1 1 1 2 0 0 1 1 2 0 0 0 0 0 0 0							N/A							0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Operation	Items Assessed in FEIS Camp and related facilities. Camp and related facilities. Copen pit mining. Ore stockplies and transport. Ore crushing. Airstrip. Communications systems. Fuel storage and distribution. Equipment, vehicle and aircraft use. Barge and ship traffic. Waste and wastewater management. Spills and emergency management. Hazardous materials handling and storage. Road usage. Power generation and distribution. Water use and management including snow management and stockplind and storage. Langer great of the communication of the communicati			2 2 2 2 2 1 1 0 0 2 2 2 2 2 1 1 2 2 1 1 0 0 0 0	2 2 1 0 0 2 2 1 1 2 2 1 1 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		1 1 2 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0	0 2 1 1	0 1 1	0 0 0 0 0 0 0 1 1 0 0	1 0 0 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 1 0 0 2 1 1 0 0 0 0 0 0 1 0 0 0 0	1	2 2 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 2 1 0 2 2 2	1 2 2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							N/A							0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Decommissioning	Mine site facilities: including open pit closure, waste rock storage facility restoration, dismantling and removal of infrastructure, drainage restoration, backfilling/plugging, waste management, ground restoration and revegetation.  Additional Items Assessed in ERP Submission  None  Impact Ratings:			0		0	5	2 0 S:\Bafff	1 0	0	0	0	0	) !	2 2 0 0	0	attory Fra	1 0	1 0 k\Appe	1 0	s\App 2	CVER	P - Tal	bles 20	C-1 to	2C7 E	N/A	nteract	ons Ma	atrices	s May 23	3 CK.x		1 Mine

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## BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT

#### EFFECTS INTERACTION MATRIX - SHIPPING

	Shipping - Facility or Activity	KEY INDICATORS	ATMOSPHERIC	Air quality	Noise	Vibration	TERRESTRIAL	Sensitive Landforms	Soil	Vegetation health; wildlife habitat	Plants important to Inuit, where they occur Biodiversity	Peregrine falcon	Red-throated loon	Eider	Snow geese	Caribou	FRESHWATER AQUATIC LIFE AND HABITAT	Hydrology	Water and sediment quality	Freshwater fish and fish habitat	MARINE	Physical oceanography	Chemical oceanography	Sea Ice	tal f		Bowhead whale	Beluga whale	Narwhal	Walrus	Polar bear	Warne bilds	SOCIO-ECONOMIC	Archaeological and cultural historic sites
Construction	Items Assessed in FEIS Sealift of equipment and materials to site. barges to Mine Port (open water only) barges to Steensby Inlet port (open water only) Additional Items Assessed in ERP Submission none			1	2 2	0		0	0	0	0 0 0	0	2 2	2 2	2 2	0		0	0	0		0	2 2	0 2		2 2	2 2	2 2	2	2 2	2 2	1		0
Operation	Items Assessed in FEIS Ore shipment off-site to smelters, ships from Milne Port (open water) ships from Milne Port (open water) ships from Steensby Port (open water) cebreaking ships from Steensby Inlet (winter) Additional Items Assessed in ERP Submission Ore carriers from - shipping from Milne Port			2 2 2	2 2 2	0 0 0		0 0	0	0 0 0	0 0 0 0 0 0	0 0 0	0	2 2 0	1 0	0 0 0 1		0	0 0 0	0 0 0		0 0 2	2	0 2 2 2	2 2 2	2	2 2 2	2 2 2	2 2 2 2	2	2	1 1 1 1 2 2	-  -  -  -	0 0 0
Decommissioning	Items Assessed in FEIS  Sealift removal of equipment and materials.  Additional Items Assessed in ERP Submission			1	1	0		0	0	0	0 0	0	2	2	2	1		0	0	0		0	2	0 :	2	2	2	2	2	2	2	1	-	0
	none						S:\B	affinlar	nd\ERF	Draf	ts\Volum	e 2 - C	Consult	ation, F	Regulat	ory Fi	ramewo	rk\App	endice	s\App	2C\[ER	P - Ta	bles 2	C-1 to	2C7 Eff	fects I	nteracti	ions M	atrices	May 2	23 CK.:	ds]2C-4		oing

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# BAFFINLAND IRON MINES CORPORATION MARY RIVER PROJECT

### INTERACTION MATRIX - SOCIO-ECONOMIC COMPONENTS

Project Component	SOCIO-ECONOMIC	Population Demographics	Education & Training	Livelihood and Employment	Economic development & self-reliance	Human Health & Well-Being	Community Infrastructure & Public Service	Cultural Resources (archaeology)	Resources and Land Use	Cultural Well-being	Contracting & business opportunities	Benefits, Royalty & Taxation	Governance & Leadership
Jobs													
Employment		2	2	2	2	2	2	0	2	1	1	0	0
Payment of wages and salary		1	2	2	2	2	1	0	2	1	2	0	0
Training													
Orientation and training		0	2	0	2	1	1	0	0	1	0	0	0
Procurement													
Procurement of goods and services from RSA/LSA		1	0	0	2	0	0	0	0	1	2	0	0
Project Construction and Operations													
Milne Port		0	0	0	0	0	0	2	2	0	0	0	0
Milne Inlet Tote Road		0	0	0	0	0	1	2	2	0	0	0	0
Mine Site		0	0	0	0	0	0	2	2	0	0	0	0
Railway		0	0	0	0	0	0	2	2	0	0	0	0
Steensby Port		0	0	0	0	0	0	2	2	0	0	0	0
Shipping		0	0	0	1	0	0	2	2	0	0	0	0
Temporary closure		0	0	1	1	0	0	1	1	1	0	0	0
Final closure		0	0	1	1	0	0	2	2	0	0	0	0
Payment of taxes and royalties													
Payments to government		1	0	0	2	0	1	0	0	0	0	2	1
Payments to private organizations (NTI, QIA)		1	0	0	2	0	0	0	0	0	0	1	0

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10-Jun-13

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