

APPENDIX A

STATUS OF PC CONDITIONS IN 2017

Subject Area	PC Condition No.	Proponent Commitment	Reporting Requirement ¹	2017 Condition Status ²	Summary of Condition Requirement
Climate	1	N/A	Annually	In-Compliance	GPS/tidal gauge monitoring of sea levels and storm surges.
	2	58	As needed	Not Applicable	Validation and update of climate change impacts of the project on the LSA and RSA.
	3	63	Annually	Not Applicable	Exploring and implementing steps to reduce GHGs.
	4	N/A	As needed	Not Applicable	Engage Inuit in climate change related research and studies.
	5	59	As needed	In-Compliance	Reasonable measures to ensure that Project-site weather related information is publically available.
	6	N/A	As needed	In-Compliance	Provide results of SO ₂ , NO ₂ , and GHG emissions calculations using fuel consumption or other relevant criteria.
Air Quality	7	57, 61, 62	Prior to construction	In-Compliance	Update AQ and noise abatement plan to include continuous SO ₂ and NO ₂ monitoring at port sites to capture operations phase ship-generated emissions for several seasons.
	8	61	Annually	In-Compliance	Demonstrate through SO ₂ and NO ₂ monitoring at the mine site and ports that emissions remain within predicted levels. Provide rationale and mitigation measures for exceedances.
	9	57	Annually	In-Compliance	Provide calculations of GHG emissions at the port sites and other Project sources including Project associated aircraft.
	10	2, 57	Prior to construction	In-Compliance	Update to dust management plan to include monitoring and management plans.
	11	57	Prior to construction	In-Compliance	Develop and implement Incineration Management Plan.
	12	N/A	As needed	In-Compliance	Conduct at least one stack test immediately following commissioning new incinerators.

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Noise and Vibration	13	N/A	As needed	In-Compliance	Work with Fisheries and Oceans Canada to select overpressure threshold applied to explosives for the protection of fish and aquatic life.
	14	32	Annually	Partially-Compliant	Conduct noise and vibration monitoring at Project accommodations in summer and winter during all phases of the project.
	14a	32	As needed	In-Compliance	Demonstrate appropriate adaptive management practices during construction for activities with the potential to disrupt marine mammals.
	14b	32	Annually	In-Compliance	Demonstrate appropriate adaptive management practices for project activities with the potential to disrupt terrestrial wildlife and Project site users.
	15	32	Annually	In-Compliance	Collaborate with the QIA and local Hamlets when undertaking consultation with communities regarding railway, tote road and marine shipping operations. Provide visuals and discuss safety considerations.
Hydrology and Hydrogeology	16	N/A	As needed	In-Compliance	Ensure that water related infrastructure is consistent with FEIS and FEIS addendum.
	17	6	As needed	Non-Compliant	Develop and implement measures to ensure that all effluent satisfies discharge criteria established by relevant regulatory authorities.
	18	42	As needed	In-Compliance	Confirm and update, as needed, the approximate fill time of the mine lake pit identified in the FEIS.
	19	57	As needed	In-Compliance	Develop and implement adequate water infrastructure monitoring to ensure that natural water flow is not significantly hindered. Monitor and report water withdrawal rates and water use for domestic and industrial purposes.

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Groundwater and Surface Waters	20	57, 65	As needed	In-Compliance	Monitor the effects of explosive residue and by-products from Project related blasting. Implement measures to ensure explosives do not negatively effect the surrounding area.
	21	2	As needed	In-Compliance	Ensure that the scope of the AEMP is consistent with the requirements in the condition.
	22	57	Prior to construction	In-Compliance	Develop a Sediment and Erosion Management Plan.
	23	57	Prior to construction	Partially-Compliant	Develop and implement Groundwater Monitoring and Management Plan.
	24	6	As needed	Non-Compliant	Ensure that effluent discharge conditions are met all times.
	25	N/A	Prior to construction	In-Compliance	Identify sensitive landforms and develop and implement measures to minimize Project impacts on identified landforms.
	26	57	Prior to construction	In-Compliance	Develop and Implement Erosion Management Plan.
	27	N/A	Annually	In-Compliance	Record notes on impacts to the aesthetic value of the Project area heard in public consultations.
	28	N/A	As needed	Partially-Compliant	Monitor Project effects on permafrost and ensure its integrity.
	29	N/A	As needed	In-Compliance	Provide construction design and drawings for review and acceptance by relevant authorities. Provide as-built drawings to authorities following construction.
	30	65	As needed	In-Compliance	Develop site-specific quarry operation and management plans before the development of any potential quarry site or borrow pit.

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Vegetation	31	N/A	As needed	In-Compliance	Ensure that Project activities are planned and conducted to minimize the Project footprint.
	32	N/A	As needed	In-Compliance	Ensure that all supplies brought to site are clean of soil that could contain plant seeds not naturally occurring in the area. Inspect vehicle tires prior to initial use in Project area.
	33	57	Annually	In-Compliance	Include relevant monitoring and management plans within the TEMMP.
	34	N/A	As needed	In-Compliance	Conduct soil sampling to determine levels of metals in soils where berry producing plants are, near any potential development area prior to commencing operations.
	35	N/A	Prior to construction	Not Applicable	Monitor baseline metal levels in organ tissue of caribou harvested with the local study area, prior to commencing operations.
	36	67	Annually	In-Compliance	Establish an on-going monitoring program of vegetation used as caribou forage near project development areas, prior to commencing operations.
	37	43, 68	As needed	Not Applicable	Incorporate methods to evaluate the potential introduction of invasive plant species into the Terrestrial Environment and Monitoring Plan. Report non-indigenous plant species to the Government of Nunavut.
	38	N/A	Annually	In-Compliance	Review and adjust all monitoring information and management plans annually and adjust as needed to prevent/reduce adverse project effects on vegetation.
	39	39	Prior to construction	In-Compliance	Develop a progressive revegetation program for disturbed areas no longer in use.
	40	N/A	As needed	In-Compliance	Include revegetation plans in the Site Reclamation Plan that promotes progressive reclamation compatible with the surrounding environment.

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Freshwater Environment	41	64	As needed	In-Compliance	Maintain a 100-m naturally vegetated buffer between the high water mark of any fish-bearing water bodies and permanent quarries with the potential for acid rock drainage, unless otherwise approved.
	42	N/A	As needed	Non-Compliant	Maintain a 30-m naturally vegetated buffer between the mining operation and adjacent water bodies.
	43	N/A	Prior to construction	In-Compliance	Submission of a Site Drainage and Silt Control Plan to the relevant authorities prior to the start of construction.
	44	N/A	As needed	In-Compliance	Meet or exceed guidelines for blasting thresholds set by Fisheries and Oceans Canada for the protection of fish and fish habitat.
	45	N/A	As needed	In-Compliance	Adherence to the No-Net-Loss principle at all phases of the Project.
	46	64	As needed	Partially-Compliant	Ensure runoff from fuel storage and maintenance facility areas, sewage and wastewater other facilities generating liquid effluent and runoff meet discharge requirements.
	47	N/A	As needed	Partially-Compliant	Design and construct all Project infrastructure so as they do not prevent or limit the movement of water in fish bearing streams.
	48	N/A	As needed	In-Compliance	Engage with Fisheries and Oceans Canada and the QIA to explore Project specific thresholds for blasting that would exceed guidelines.
	48(a)	N/A	Annually	In-Compliance	Conduct additional surveys for the presence of arctic char in freshwater bodies and ongoing monitoring of arctic char health where applicable, within watersheds proximal to the mine, tote road and Milne Inlet Port project development areas, including but not limited to, Phillips Creek, Tugaat and Qurluktuk. Consult with MHTO re: the design, timing, and location of proposed surveys and ongoing monitoring.

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Terrestrial Environment	49	46, 47, 49, 50	As needed	In-Compliance	Establish a Terrestrial Environment Working group to serve as an advisory body.
	50	70	As needed	In-Compliance	Develop and implement a Project specific terrestrial monitoring plan.
	51	58	As needed	In-Compliance	Consider and, where appropriate, cooperate with relevant regional and/or community-based monitoring initiatives that raise issues or produce information pertinent to mitigating project-induced impacts. Give special consideration for supporting regional studies of population health and harvest programs for North Baffin caribou.
	52	N/A	As needed	In-Compliance	Initiate and develop a timeline to test and implement deterrence mechanisms for caribou near hazardous areas, within 3 months of issuances of the project certificate. Report information back to the Terrestrial working group.
	53	15, 71, 73	Annually	In-Compliance	Proponent shall demonstrate all measures outlined in the condition to mitigate impacts to caribou.
	54	N/A	Prior to construction	In-Compliance	Provide an updated Terrestrial Environment Monitoring Plan which includes all aspects included in the condition.
	55	57, 74	As needed	Not Applicable	Develop an adaptive management plan applicable to wolves and wolf habitats in collaboration with the Government of Nunavut.
	56	N/A	As needed	In-Compliance	Develop a progressive strategy for the recovery of terrestrial wildlife habitat that is consistent with the Nunavut Wildlife Act.
	57	N/A	Annually	In-Compliance	Report annually on terrestrial environment monitoring efforts including information included in the condition.
	58	60	Annually	In-Compliance	Incorporate a review section in the NIRB annual report including the information outlined in the condition.

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Terrestrial Environment	59	N/A	Annually	Partially-Compliant	Ensure that aircraft maintain, whenever possible altitudes outlined in the condition. Develop measures to ensure all employees and subcontractors providing aircraft services are respectful of wildlife and Inuit harvesting that may occur in the Project development area.
	60	N/A	Prior to construction	In-Compliance	Develop a blasting program to minimize the effects of blasting on terrestrial wildlife, prior to construction.
	61	N/A	As needed	In-Compliance	Implement a stop work policy when wildlife in the area may be endangered by Project work, whenever practical and not causing human safety concerns.
	62	N/A	As needed	In-Compliance	Prohibit Project employees from transporting firearms to site and from operating firearms in the Project area for the purpose of wildlife harvest.
	63	N/A	Annually	In-Compliance	Liaise with local Hunters and Trappers Organizations in advance of carrying out terrestrial wildlife surveys. Meet with the organizations annually to discuss wildlife monitoring.
	64	N/A	As needed	In-Compliance	Ensure the environment protection plan incorporates waste management provisions to ensure carnivores are not attracted to Project site(s).
Birds	65	N/A	As needed	In-Compliance	Ensure all employees at site receive bird awareness training (avoidance of nests and large concentrations of foraging and moulting birds).
	66	75	As needed	In-Compliance	Avoid bird Species at Risk and their nests; establish avoidance zones as per TEMMP.

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Birds	67	75	As needed	In-Compliance	Ensure mitigation and monitoring strategies for bird Species at Risk are updated for consistency with applicable status reports, recovery strategies, action plans and management plans.
	68	N/A	As needed	In-Compliance	Install flashing red, red strobe or white strobe lights and guy-wire deterrents on communications towers. Consider reducing lighting when possible in areas where it may serve as an attractant to birds or other wildlife.
	69	N/A	As needed	In-Compliance	Prior to bird migrations and nesting, identify and install nesting deterrents (e.g. flagging) to discourage birds from nesting that will be disturbed by construction/clearing activities.
	70	N/A	As needed	In-Compliance	Protect any nests found (or indicated nests) with a buffer zone as per setback distances outlined in the TEMMP.
	71	N/A	Annually	Partially-Compliant	Subject to safety requirements, the Proponent shall require all project related aircraft to maintain a cruising altitude of at least: <ul style="list-style-type: none"> a. 650 m during point to point travel when in areas likely to have migratory birds. b. 1100 m vertical and 1500 m horizontal distance from observed concentrations of migratory birds. c. 1100 m over the area identified as a key site for moulting snow geese during the moulting period (July-August), and if maintaining this altitude is not possible, maintain a lateral distance of at least at least 1500 m from the boundary of this site.

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Birds	72	N/A	Annually	Partially-Compliant	Ensure that pilots are informed of minimum cruising altitude guidelines and that a daily log or record of flight paths is maintained and available for regulatory authorities.
	73	N/A	As needed	In-Compliance	Develop detailed and robust mitigation and monitoring plans for migratory birds taking into consideration input from relevant organizations.
	74	57, 77	Prior to construction	In-Compliance	Develop and update relevant monitoring plans for migratory birds prior to construction including the key indicators included in the condition.
	75	77	Annually	In-Compliance	Report annually on terrestrial habitat loss due to the Project to verify impact predictions and project footprint.
Marine Environment	76	40, 51, 79, 84, 85	As needed	In-Compliance	Develop a comprehensive environmental effect monitoring program to address concerns and identify potential impacts on the marine environment.
	77 (revised)	46, 49, 51	As needed	In-Compliance	Establish a Marine Environment Working Group.
	78	N/A	Annually	In-Compliance	Update baseline information for landfast ice using a long term data-set and with inter-annual variation.
	79	N/A	As needed	In-Compliance	Provide the Canadian Hydrographic Services with bathymetric data and other information in support of Project shipping where possible.
	80	N/A	Prior to construction	Not Applicable	Prior to commercial shipping of iron ore, a detailed risk assessment is to be conducted for Project related shipping accidents.
	81	84	As needed	Not Applicable	Reassess the potential for ship wake impacts to cause coastal change following changes to the proposed shipping route.

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Marine Environment	82	N/A	As needed	Not Applicable	Encouraged to have ore carriers to be subjected to sea trials to measure wake characteristics at various speeds.
	83	N/A	As needed	In-Compliance	Install tidal gauges at Steensby and Milne Ports to monitor sea levels and storm surges.
	83 (a)	N/A	Annually	Partially-Compliant	Identify potential for and conduct monitoring to identify effects of sediment redistribution associated with construction and operation at Milne Port.
	84	N/A	As needed	Not Applicable	Update sediment redistribution modelling once ship design has been completed and sampling should be undertaken to validate the model and inform sampling sites and the monitoring plan.
	85	84	As needed	Not Applicable	Develop a monitoring plan to verify Project impact predictions associated with sediment redistribution resulting from propeller wash in shallow water locations along the shipping route. Additional mitigation measures are required if monitoring detects negative impacts.
	86	85	Prior to construction	Partially-Compliant	Prior to commercial shipping of iron ore, use more detailed bathymetry collected from Steensby and Milne Inlets to model anticipated ballast water discharges from ore carriers. This information should be used to update ballast water discharge impact predictions and sampling should be conducted to validate the model.
	87	85	Annually	In-Compliance	Develop a detailed monitoring program at a number of sites over the long term to evaluate changes to marine habitat and organisms and to monitor for non-native introductions resulting from Project-related shipping. Initiate program several years prior to any ballast water discharge at Steensby or Milne Inlets.

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Marine Environment	88	85, 86	Prior to construction	In-Compliance	Prior to commercial shipping of iron ore, provide update risk analysis regarding ballast water discharge to assess the adequacy of treatment and implications on the receiving environment.
	89	57, 87	As needed	Partially-Compliant	Develop and implement a ballast water management program that may include the treatment and monitoring of ballast water discharges in a manner consistent with or exceeds applicable regulations. The management program should reflect all inclusions outlined in the condition.
	90	57	As needed	In-Compliance	Incorporate into the Project Shipping and Marine Wildlife Management Plan provisions to achieve compliance with the requirements under the International Convention for the Control and Management of Ships Ballast Water and Sediment (2004) or its replacement regulation as amended.
	91	N/A	As needed	Non-Compliant	Develop a detailed monitoring plan for Steensby and Milne Inlets for fouling that complies with all applicable regulatory requirements and guidelines issued by Transport Canada.
	92	10, 108, 110	Annually	In-Compliance	Ensure that the Proponent maintains the necessary equipment and trained personnel to respond to all sizes of potential spills in a self sufficient manner.
	93	N/A	Prior to construction	Not Applicable	Prior to construction, based on vessel selection, reassess the risk analysis of using vessel -based fuel storage with the inclusions outlined in the condition.
	94	106	As needed	Not Applicable	Consult directly with affected communities regarding its plans for over-wintering of fuel in Steensby Inlet.
	95	8	As needed	Not Applicable	Meet or exceed all regulatory regulations and requirements to the practice of overwintering of a fuel vessel at Steensby Inlet with reporting to NIRB and Transport Canada.

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Marine Environment	96	8	Deferred	Not Applicable	Update the NIRB on the results of all compliance monitoring and site inspections undertaken by government agencies for the overwintering of a fuel vessel at Steensby Inlet.
	97	N/A	Prior to construction	In-Compliance	Prior to commercial shipping of iron ore, conduct fuel spill dispersion modelling that minimally includes those items outlined in the condition.
	98	11, 106	As needed	In-Compliance	Incorporate the results of revised fuel dispersion modelling into its impact predictions for the marine environment and the spill response and emergency preparedness plans.
Marine Wildlife	99	81	As needed	In-Compliance	With the Marine Environment Working Group, consider and identify priorities for conducting supplemental baseline assessments for the items outlined in the condition.
	100	57	Deferred	Not Applicable	Update the Project Shipping and Marine Wildlife Management plan to include avoidance of polynyas and mitigation measures designed for potential fuel spills along the shipping lane during the winter months.
	101	N/A	Annually	In-Compliance	Incorporate all items outlined in the condition into the appropriate monitoring plans.
	102	30, 36	Annually	In-Compliance	Ensure that routing of project vessels is tracked and recorded for both the southern and northern shipping routes, with data made real-time available to communities in Nunavut and Nunavik.
	103	N/A	Annually	In-Compliance	Report annually to the NIRB regarding project related ship track and sea-ice information including all items outlined in the condition.

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Marine Wildlife	104	N/A	Annually	In-Compliance	Plan shipping routes to Steensby Port in accordance with the items outlined in the condition. Summarize all incidences of significant deviations from the nominal shipping route presented in the FEIS to/from Milne and Steensby Ports.
	105	N/A	Prior to construction	Partially-Compliant	Ensure that measures to reduce the potential for interaction with marine mammals particularly in Hudson Strait and Milne Inlet area identified and implemented prior to commencement of shipping operations.
	106	N/A	As needed	Non-Compliant	Ensure that shipboard observers are employed during seasons where shipping occurs and provided with the means to effectively carry out the duties. The role of shipboard observers should be taken into consideration in the design of any Project purpose built ships.
	107	N/A	As needed	Non-Compliant	Revise the proposed 'surveillance monitoring' to improve the likelihood of detecting strong marine mammal, seabird or seaduck responses occurring too far ahead of the ship to be detectable by observers aboard the ore carriers.
	108	N/A	As needed	Non-Compliant	Ensure that data produced by the surveillance monitoring program is analysed by experienced analysts (in addition to being discussed as proposed in the FEIS) to maximize effectiveness in providing baseline information and/or detecting potential effects. Data from the long term monitoring should be treated with the same rigor.
	109	N/A	As needed	In-Compliance	Conduct a monitoring program to confirm the predictions in the FEIS with respect to disturbance effects from ships noise on the distribution and occurrence of marine mammals.

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Marine Wildlife	110	84	As needed	Partially-Compliant	Immediately develop a monitoring protocol that includes acoustical monitoring to assess short, long term and cumulative effects of vessel noise on marine mammals. Work with the MEWG to identify appropriate early warning indicators that will ensure rapid identification of negative impacts along southern and northern shipping routes.
	111	N/A	As needed	Non-Compliant	Develop clear thresholds for determining if negative impacts as a result of vessel noise is occurring.
	112	N/A	Prior to construction	Partially-Compliant	Prior to commercial shipping of iron ore, in conjunction with the MEWG, develop a monitoring protocol that includes acoustical monitoring that provides an assessment of the negative effects of vessel noise on marine mammals. Consideration of early warning indicators and thresholds of impacts should be included.
	113	N/A	Annually	In-Compliance	Conduct monitoring of marine fish and fish habitat including monitoring for Arctic Char stock size and health condition in Steensby and Milne Inlets, as recommended by the MEWG.
	114	N/A	As needed	Not Applicable	In the event of the development of a commercial fishery in Steensby Inlet or Milne Inlet areas, in conjunction with the MEWG, shall update the monitoring program for fish and fish habitat to ensure that the ability to identify Arctic Char stock(s) and any changes in stock size and structure of affected stocks and fish health is maintained to address any monitoring issues relating to the commercial stock fishery.
	115	N/A	As needed	In-Compliance	Continue to explore off-setting options in both the freshwater and marine environment to offset serious hard to fish which will result from the construction and infrastructure associated with the project.

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Marine Wildlife	116	N/A	Prior to construction	Not Applicable	Prior to construction, develop mitigation measures to minimize the effects of blasting on marine fish and fish habitat, marine water quality and wildlife that includes compliance with the Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters.
	117	N/A	As needed	In-Compliance	Ensure that blasting in, and near, marine water shall only occur during periods of open water. Blasting in, and near, fish-bearing freshwater should occur to the greatest degree possible in open water. Blasting during ice-covered periods must meet requirements established by Fisheries and Oceans Canada.
	118	N/A	Prior to construction	In-Compliance	Prior to construction, incorporate into the appropriate mitigation plan, thresholds for the use of specific mitigation measures meant to prevent or limit marine wildlife disturbance.
	119	N/A	Prior to construction	Not Applicable	In conjunction with the MEWG, monitor ringed seal birth lair abundance and distribution for at least two years prior to the start of ice-breaking to develop a baseline, with continue monitoring over the life-time of the project.
	120	N/A	Annually	In-Compliance	Ensure, subject to vessel and human safety, that all Project shipping adhere to mitigation measures outlined in the condition for the protection of marine wildlife.
	121	80, 83	As needed	Partially-Compliant	Immediately report any accidental contact by Project vessels with marine mammals or seabird colonies to Fisheries and Oceans Canada and Environment Canada, respectively.
	122	N/A	Annually	In-Compliance	Summarize and report annually to the NIRB regarding accidental contact by Project vessels with marine mammals or seabird colonies through the applicable monitoring report.

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Marine Wildlife	123	N/A	As needed	Not Compliant	Provide sufficient marine mammal observer coverage on Project vessels to ensure that collisions with marine mammals and seabird colonies are observed and reported throughout the lifecycle of the Project. The marine wildlife observer protocol should include those items outlined in the condition.
	124	N/A	As needed	In-Compliance	Prohibit all Project employees from recreational boating, fishing and harvesting of marine wildlife in Project areas, including Steensby and Milne Inlets.
	125	41	Prior to construction	Not-Applicable	Prior to the use of acoustic deterrent devices, carry out consultations with communities along the shipping routes and nearest to Steensby and Milne Inlet Ports to assess acceptability of the devices. Feedback from consultation should be incorporated into the mitigation plan.
	125(a)	35	Annually	In-Compliance	Consult with potentially affected communities and groups, particularly the Hunters and Trappers Organizations regarding the identification of Project vessel anchor sites and potential areas of temporary refuge for Project vessels along the shipping routes within the Nunavut Settlement Area. Feedback from the consultation should be incorporated.
	126	N/A	As needed	In-Compliance	Design monitoring programs to ensure that local users of the marine area in communities along the shipping route have opportunity to be engaged throughout the life of the Project in assisting with monitoring and evaluating potential Project-induced impacts and changes in marine mammal distributions.

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Marine Wildlife	127	27, 28	Annually	In-Compliance	Ensure that communities and groups in Nunavik are kept informed of Project shipping activities and are provided with opportunity to participate in the continued development and refinement of shipping related monitoring and mitigation plans.
	128	27, 28	As needed	In-Compliance	Consult with local communities as fish habitat off-setting options are being considered and demonstrate incorporation of this input in the design of the Fish Habitat Off-Setting Plan.
Population Demographics	129	41, 43, 45, 46	Annually	In-Compliance	Encouraged to engage in the work of the Qikiqtaaluk Socio-Economic Monitoring Committee along with other agencies and affected communities, endeavoring to identify areas of mutual interest into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities and the North Baffin region as a whole.
	130	41, 43, 46	As needed	In-Compliance	Consider establishing and coordinating with smaller socio-economic working groups to meet Project specific monitoring requirements throughout the life of the Project.
	131	45	As needed	In-Compliance	The Qikiqtaaluk Socio-Economic Monitoring committee is encouraged to engage in monitoring of demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole.
	132	N/A	As needed	In-Compliance	Encouraged to partner with other agencies in the North Baffin region, the Municipal Training Organization and the Government of Nunavut in developing/implementing programs which encourage Inuit to remain living in their home communities while seeking ongoing and progressive training and development.

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Population Demographics	133	43, 45	Annually	In-Compliance	Encouraged to work with the Qikiqtaaluk Socio-Economic Monitoring committee and with the Government of Nunavut and other relevant stakeholders to design and implement a voluntary survey to be completed by its employees on an annual basis in order to track housing status and migration intentions. Non-confidential findings are to be reported to the Government of Nunavut and the NIRB.
	134	N/A	Annually	In-Compliance	Provide in the annual report to the NIRB a summary of employee origin information including information outlined in the condition.
Education and Training	135	93	As needed	In-Compliance	Encouraged to consider offering additional options for work/study programs available to Project employees.
	136	92, 94	As needed	In-Compliance	Encouraged to work with training organizations and/or government departments offering mine-related or other training in order to provide additional training opportunities for employees which are transferable and meaningful.
	137	92	Annually	In-Compliance	Prior to construction, develop an easy referenced listing of formal certificates and licences that may be acquired via on-site training or training during employment at Mary River. Listing to be updated on an annual basis, provided to the NIRB upon completion and whenever it is revised.
	138	92	As needed	In-Compliance	Encouraged to work with the Qikiqtani Inuit Association to ensure timely development of effective Inuit training and work-ready programs.

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Education and Training	139	N/A	Prior to construction	In-Compliance	Prior to construction, undertake and provide results of a detailed labour market analysis which provides quantitative predictions on the number of employees to be sourced from southern Canada and foreign markets. Within 90 days of receipt of the Project Certificate, submission of an updated labour market analysis must be submitted.
	140	N/A	Annually	In-Compliance	Encouraged to survey Nunavummiut employees as they are hired and specifically note the level of education obtained and whether the incoming employee resigned or left an educational institute to take up employment with the Project.
	141	92	As needed	In-Compliance	Prior to construction, encouraged to work with the Qikiqtani Inuit Association in order to prioritize the provision of training of Inuit to serve as employees in monitoring or other such capacities.
Livelihood and Employment	142	105	As needed	In-Compliance	Encouraged to address the potential direct and indirect effects that may result from Project employee's on-site use of various Inuktitut dialects as well as other spoken languages.
	143	N/A	As needed	In-Compliance	Encouraged to consider the use of both existing and innovative technologies as a way to ensure Project employees are able to contact their family and friends.
	144	N/A	As needed	In-Compliance	Encouraged to make requirements for employment clear in its work-readiness and other programs and documentation.
	145	43, 45	As needed	In-Compliance	Encouraged to work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring committee to monitor the barriers to employment for women.
	146	N/A	As needed	Not Applicable	The Government of Nunavut and the Qikiqtani Inuit Association are encouraged to investigate the possibility for Project revenue streams to support initiatives or programs which offset or subsidize child care for Project employees.

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Livelihood and Employment	147	43	As needed	In-Compliance	Encouraged to work with the Government of Nunavut and the Nunavut Housing Corporation to investigate options and incentives which might enable and provide incentive for employees living in social housing to maintain employment as well as to negotiate for an obtain manageable rental rates.
Economic Development	148	45	As needed	In-Compliance	Encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-economic Monitoring committee's monitoring program which addresses Project harvesting interactions and food security and broad indicators of dietary habits.
	149	N/A	Prior to construction	In-Compliance	Prior to operations, required to undertake an analysis of the risk of temporary mine closure giving consideration to the affects of such to the North Baffin region.
	150	34	Prior to construction	Partially-Compliant	Ensure that specific conditions are met in regard to Sirmilik National Park, as outlined in the condition.
	151	N/A	As needed	In-Compliance	Encouraged to investigate measures and programs designed to assist Project employees with home ownership or access to affordable housing options.
	152	N/A	As needed	Not Applicable	The Qikiqtani Inuit Association is encouraged to provide the Board and the Qikiqtaaluk Socio-Economic Monitoring committee which information regarding the effectiveness of any provisions within the Inuit Impact Benefit Agreement which may require that larger contracts are broken into smaller contracts.
Human Health and Wellbeing	153	96	As needed	In-Compliance	Encouraged to employ a mental health professional to provide counselling to Inuit and non-Inuit employees in order to positively contribute toward employee health and well-being.

Subject Area	PC Condition No.	Proponent Commitment	Reporting Requirement ¹	2017 Condition Status ²	Summary of Condition Requirement
Human Health and Wellbeing	154	43, 45	As needed	In-Compliance	Work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic committee to monitor potential indirect effects of the projects.
	155	N/A	Prior to construction	In-Compliance	Encouraged to provide the NIRB with an updated report on its development of mitigation measures and plans to deal with potential cultural conflicts which may occur at site.
	156	N/A	As needed	In-Compliance	Encouraged to assist with the provision and/or support of recreation programs and opportunities within the potentially affected communities in order to mitigate potential impacts of employees' absence from home and community life.
	157	96	As needed	In-Compliance	Consider providing counselling and access to treatment programs for addictions, domestic parenting, and marital issues that affect employees and/or their families.
Community Infrastructure	158	43	As needed	In-Compliance	Encouraged to work with the Government of Nunavut and other relevant parties to develop a Human Health Working Group.
	159	43	As needed	In-Compliance	Encouraged to work with the Government of Nunavut to develop an effects monitoring program that captures increases to community based and airport infrastructure in the local study area and Iqaluit.
	160	N/A	As needed	In-Compliance	The Government of Nunavut and the Qikiqtani Inuit Association are encouraged to cooperate to ensure that benefits are in a broad sense distributed across impacted communities and demographic groups that best offsets Project related impacts to infrastructure or services.
	161	N/A	As needed	In-Compliance	The Government of Nunavut should be prepared for the potential need for increased policing to handle on-going Project related demographic changes in subsequent crime prevention.

Subject Area	PC Condition No.	Proponent Commitment	Reporting Requirement ¹	2017 Condition Status ²	Summary of Condition Requirement
Culture Resources and Land Use	162	97	As needed	In-Compliance	Make all reasonable efforts to engage Elders and community members of the North Baffin communities for input into monitoring programs and mitigative measures to ensure that they are informed by traditional activities, cultural resources and land-use.
	163	N/A	As needed	In-Compliance	Continue to engage and consult with the communities of the North Baffin region to ensure that Nunavummiut are kept informed about Project activities.
	164	30, 34	As needed	In-Compliance	Provide notification to communities regarding scheduled ship transits throughout the Regional Study Area including Eclipse Sound and Milne Inlet. Real-time data should be made available. Changes to proposed shipping routes should be provided to the MEWG, the community of Pond Inlet and communities in the region.
	165	14	As needed	In-Compliance	Encouraged to provide buildings along the rail line and Tote Road for emergency shelter purposes to be made available for employees and land users of the area.
	166	30	As needed	In-Compliance	Ensure through consultation efforts and public awareness campaigns that the public has access to shipping operations personnel for transits into and out of Steensby and Milne ports via telephone or internet contact to ensure information regarding ice conditions and ship movements can be shared.
Benefits, Royalties and Taxation	167	43	As needed	Not Applicable	Encouraged to enter into negotiations for a Development Partnership Agreement with the Government of Nunavut.

Subject Area	PC Condition No.	Proponent Commitment	Reporting Requirement ¹	2017 Condition Status ²	Summary of Condition Requirement
Governance and Leadership	168	45	As needed	In-Compliance	Include the aspects outlined in the condition into the monitoring program adopted by the Qikiqtani Socio-Economic Monitoring committee.
	169	N/A	Annually	In-Compliance	Provide an annual monitoring summary to the NIRB on the monitoring data collected related to the regional and cumulative economic effects associated with the Project and any proposed mitigation measures.
Accidents and Malfunctions	170	N/A	As needed	Not Applicable	Include an updated Terrestrial Wildlife Management and Monitoring Plan plans for increased caribou monitoring efforts including weekly winter track surveys and bi-monthly surveys in the summer and fall.
	171	N/A	As needed	Not Applicable	Include within the updated Terrestrial Wildlife Management and Monitoring Plan, a commitment to establish deterrents along the railway and Tote road embankments at any areas where the movement of caribou presents a likelihood of mortality to occur.
	172	8	Prior to construction	Not Applicable	Encouraged to provide the Government of Nunavut with evidence that the vessel intended for use for the overwintering of fuel has been designed and certified for use under the operational conditions. Proof of vessel owner's insurance policies are required.
	173	9	As needed	In-Compliance	Employ best practices and meet all regulatory requirements during ship to shore and other marine based fuel transfer events.
	174	108, 110	As needed	In-Compliance	Provide, as well as the Canadian Coast Guard, spill response equipment and annual training to Nunavut communities along the shipping route.

Subject Area	PC Condition No.	Proponent Commitment	Reporting Requirement ¹	2017 Condition Status ²	Summary of Condition Requirement
Accidents and Malfunctions	175	34, 57	Deferred	Not Applicable	In coordination with the Qikiqtani Inuit Association and the Hunters and Trappers Organizations of the North Baffin communities and Coral Harbour, provide updates to the Shipping and Marine Wildlife Management Plan to include adaptive management measures to take should the placement of route markers along the ships track during ice breaking not prove to be feasible for marking the route.
	176	N/A	Prior to construction	Not Applicable	Required to revise its spill planning to include additional trajectory modelling for Hudson Strait, where walrus concentrate, as well as Milne Inlet, Eclipse Sound and Pond Inlet during winter conditions.
	177	13, 37	As needed	In-Compliance	Enroll any foreign flagged vessels commissioned for Project-related shipping within Canadian waters into the relevant foreign program, equivalent to Transport Canada's Marine Safety Delegated Statutory Inspection Program.
Alternatives Analysis	178	N/A	As needed	Not Applicable	Subject to safety requirements, require all Project vessels to maintain a route to the south of Mill Island to prevent disturbances to walrus and walrus habitat.
Operational Variability	179	4	Deferred	Not Applicable	Not to exceed 20 ore carrier transits to Steensby Port per month during the open water season (242 transits per year).
	179a	4	Annually	In-Compliance	The total volume of ore shipped via Milne Inlet shall not exceed 4.2 million tonnes.
	179b	4	Annually	Non-Compliant	The total volume of ore transported by truck on the Tote road shall not exceed 4.2 million tonnes per year.

Subject Area	PC Condition No.	Proponent Commitment	Reporting Requirement ¹	2017 Condition Status ²	Summary of Condition Requirement
Transboundary Effects	180	N/A	As needed	In-Compliance	The Marine Environment Working Group shall invite a representative from Makivik Corporation to be a member of the group.
	181	N/A	Annually	In-Compliance	Regardless of whether Makivik Corporation participates as a member of the Marine Environment Working Group, the group will provide Makivik with regular updates throughout the life cycle of the project.
	182	N/A	As needed	In-Compliance	Make available any ship route deviation routes provided to the NIRB to Makivik Corporation.

NOTES:

1. Reporting Requirements are generally grouped as follows:

Annually - Condition is reported on in the Annual Report.

As Needed - Condition is reported on based on changes to the Project or specific timelines and as the Condition dictates.

Prior to Construction - Condition is reported on prior to the construction phase and generally includes the timelines "prior to operation" and "prior to shipping".

Deferred - Condition is specific to an aspect of the Project which is not yet viable and will be reported on when said aspect does become viable and as the Condition dictates.

2. 2017 Condition Statuses are generally grouped as follows:

In-Compliance - Condition requirement(s) has/have been met.

Partially-Compliant - Condition requirement(s) has/have been partially met. Demonstrable efforts towards meeting compliance requirements is evidenced.

Non-Compliant - Condition requirement(s) has/have not been met. Rationale for being unable to meet compliance requirements is provided.

Not Applicable - Condition is tied to a project phase or component that was not active during the 2017 reporting year, or the responsible party is not the Proponent.

APPENDIX B

2017 COMMUNITY ENGAGEMENT RECORDS

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	You mentioned that there will be zero job loss, and there are over 200 truck drivers and only 4 Inuit truck drivers.	We are committed to Inuit employment so there will be no job loss for those 4 Inuit, whatever happens to the rest happens.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	There are skilled Inuit, carpenters etc. I worked at Baffinland building the road. Most Inuit jobs were taken over by Non-Inuit people because Inuit did not have the writing skills to do paperwork. But they do have the skills to do the work. These Inuit ended up being helpers only and then quit their jobs because of this.	This situation happened at Meadowbank as well. Under the IIBA we are developing programs to improve literacy for Inuit so that this situation can be addressed.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	When families are sick at home or a death in the family, some workers were not allowed to go home. Baffinland should allow their families to go home.	Inuit families are very close, for immediate family employees can take a leave. Grandparents, uncles are not part of the leave criteria, but we can send people home for immediate family. There is a committee under the IIBA - in this committee we have heard that Inuit and Non-Inuit have different ways of having a family so Inuit sometimes have lifetime friends they consider family. When Inuit are grieving for family they cannot focus on their job. Baffinland HR policy we have to follow, but we just heard from Joshua that perhaps we need to work on it, but until it is changed we have to follow the current policy.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	You have one person working in the community. I think that you need one more person working here to do communications. I heard someone on the radio in Pond Inlet sharing information that we didn't know, but we couldn't call in. There are a lot of things we do not hear here in Arctic Bay. Arctic Bay is lacking information in comparison to Pond Inlet, I envy Pond Inlet and all that is happening there. I don't know how to solve this, perhaps we need another person here and perhaps someone needs to work with Meena. I support the expansion because it is providing economic opportunities. I worked for Nanisivik for 10 years, but no one ever intimidated us - we were fully accepted as workers. There was very good communication there. We need to improve communication here with Baffinland.	We communicate through the BCLOs in the communities. When we want to communicate with the communities we contact the BCLOs. When you receive information from others it has not come directly from Baffinland. In Pond Inlet, this was the QIA, not Baffinland on the radio.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	BCLO needs a vehicle to transport workers to the airport.	Each community has different issues; some have taxis, some don't. We are looking at options to provide transportation.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	Are there still elders working at the site?	Yes, there are two elders on-site. They started in in November and December from Clyde River and Pond Inlet.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	The ship in January or February transporting supplies, is this a pilot project or part of the plan?	If it is approved, we will do that. If it is not approved because of concerns, we will not. If it's approved, it will only be once or twice when needed and would be supplies only not ore or fuel.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	My concern is for seals which have dens/lairs under the snow. The ship may disrupt their habitat. I know it would affect only those seals on the route, but I think October or November would be better when there is fresh ice to not disturb them as much.	Noted. This is an important concern.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	Who do I request formally to get another person to help Meena? I want this urgently. Not next year but now. I would like a reply formally.	There is a QIA CLO, or you can contact one of the Baffinland BCLOs to see if they can support you.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	My children work for Baffinland not QIA, so I know what Meena is saying. My daughter gets direction from Meena here in Baffinland, my son gets direction from a contractor in Iqaluit. What I am saying is you need someone to coordinate with the contractors side as well so that there is the same messaging.	This is noted.
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	My concern is that the Pond Inlet channel, has an abundance of wildlife and seals, if the ships come in during ice, the seals and narwhals will be affected negatively. How will Baffinland compensate these loses? When an icebreaker broke ice last, lost snowmobile were replaced. I want Baffinland to use that example to help with future because pond inlet people use that area for hunting. That's my comment, I don't like the idea of them shipping when there is ice.	We hear this in Pond Inlet and record these comments, up to and including the public meeting. That's why we are here, to hear your comments. If anyone wants to speak, after we break I would be happy to talk with you.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	Why do we have the most numbers employees in Baffinland out of the 5 communities, is it because we have the most experience, do you know?	I know Arctic Bay have the most employees, I think it's related to the mine before. The most income revenue salaries are only for Baffinland and not with other contractors, QIL have a lot of employees, they are not included in that estimate. QIL tries to replace from same community to keep the numbers the same, so if one quits in Arctic Bay they try to hire from Arctic Bay. Hall beach has a lot more so its different community, these numbers are only for Baffinland compared with the QIA so the number of salaries we saw did not include the contractors, I think that's the main reason. ROBERT: It also might be because the community members in artic bay have more experience thus paid more.
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	What percentage of Inuit are employed at Baffinland? What is the agreed percentage of Inuit employment [in the IIBA]? With Inuit quitting their job, you said you would go back and find the reasons why they quit. A number of people said the number of Inuit people are too low, they had experiences being belittled and made inferior. I think you need to make sure they are not belittling Inuit workers. I think that is the reason they are quitting their jobs. I know one person in particular, was threatened and belittled, he talked back twice and was fired by them. You need fair and equal employment for Inuit employees, not for their skin or race, people are feeling unwanted. I know that one person spoke to me on that. We need less discrimination based on their race.	Currently, it is at 16.3%, we agreed 25%. We need to hear back from employees who felt mistreated, I am not trying to take away responsibilities but QIA has a complaint form. I have never heard issues from employees, they should approach HR, in order to make complaints. My niece was harassed by a worker, at another place, and she was blamed for stealing a laptop, which two guys took as a joke, he harassed my niece. I found her crying after my shift, she and I went to HR with her, and she was scared and we made a complaint together. The guy was disciplined for what he did. We need to teach Inuit workers to make complaints through QIA or HR.
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	The HR department found out from those people who were fired, call them, when you come to communities all we hear is good news. You need to ask them rather than ask for them to tell you, you make the initiative to ask them why they were fired. I think you as the company needs to take initiative to stopping and finding out the reasons, why they are fired, and not wait for them to find you.	We are trying to introduce exit interviews, for people who quit or let go, we hope to analyze that info to try and make it better. We are using cross culture training, which is something we are doing in the future. We always take our Inuit employees, seriously but we need to hear from them. You are right, we will reach out in the coming months.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	You know for Arctic Bay, Pond Inlet and Iqaluit, some young people wait 15 years to find a house. Those people who have been waiting when they go down south and get hired can [get a house]. Do employees have to remain in the community, or can they go down south and keep working?	If someone is hired from Clyde River, they need to fly back to Clyde River. We are not stopping people from moving. If they apply for the job, from Ottawa, it will not be paid by Baffinland for moving expenses, but you can certainly move.
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	I am very serious again, there seems to be the opposite, I have a son in law from Clyde River, but he can go to work from here. You seem to twisting, he was able to go here even though he was hired from Clyde River. I don't know how that is possible.	If that person went here from Clyde River he likely paid for his own flights, but he can go to work from here if he applied from here.
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	I am very serious Joe in regards to railways, and the caribou that move through Mary River. There still are caribou now and they have not arrived from the south yet so the roads seem to be an obstruction to the migration.	Thank you for your comment.
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	I am very serious Joe in regards to railways, and the caribou that move through Mary River. There still are caribou now and they have not arrived from the south yet so the roads seem to be an obstruction to the migration.	Thank you for your comment.
Public Meeting	2017-05-31 - Arctic Bay - Community Meeting	Arctic Bay	My question is to do with the workers here in Arctic Bay. It's obvious they have affects with drugs and alcohol, can they ask for healing or treatment and for paid leave if they want treatment for their addictions?	We have an employee assistance program for employees and their families. It is available for all employees of Baffinland.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	I heard a worker at Mary River say the supervisors say "I hate Inuit". We need a grievance process to allow people notify incidents of discrimination.	We are working with HR to address the problem. It is a focus of my job. QIA and Baffinland are working close together to address the issue.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	For truck drivers who lose their job with the switch to rail and get re-trained elsewhere, would there be any changes to their wages or salaries?	No, there will be no changes. It will stay the way it is.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	Inuit Firm contracts, I have been hoping to have notices on contracts since the start of the project. Try to ask Meena for contracts for bid. No awareness at all for contracts out for bid. There needs to be more awareness.	We communicate available contacts to the QIA and there is a process to communicate them to available contractors. Working on IPCS. We will get more information and get back to you on how the process works.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	We don't have a taxi here, have you ever consider a way to get workers to the airport?	We have looked at the issues and we are looking into provide support or funding to start a taxi service for Arctic Bay. This we feel is the best way to address the issue. For example, QIL as part of their contract have a requirement to provide transportation to and from the airport, but there is no taxi available for them to use.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	The 4.2 Mtpa are approved, now you are asking for 12 Mtpa, would it decrease the life of mine?	No, it just took longer to ramp up. We are committed to mining for a multi-generational project. We have 9 deposits that could lead to a 100 year project.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	The infrastructure you no longer need, is it possible for those to be made available to the communities.	Yes, QIA and communities have first rights. We will talk to them first before getting rid of anything.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	Have you ever considered a subsidy for workers to help pay for their rent? I pay \$62 a month if I don't work, I would pay \$2000 if I had a high paying job.	We will discuss an option with HR and see if it is something we can address or consider?
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	Could there be funding directly from Baffinland to the school for food lunch program at school? They struggle with food security.	I would ask you put in a request and it is something we can do.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	I am a teacher a Nunavut Arctic College, for the work ready program, can you provide breakfast for students?	We will look into it.
Community Group Meeting	2017-05-31 - Arctic Bay - Hamlet Meeting	Arctic Bay	For the elders at site, the workers want to speak Inuktitut more. Would it be possible for you to have elders in community instead of site?	Thank your comment. Baffinland will look into this.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	There was going to be a rail line to Steensby Inlet, this is the first I heard of building one to Milne Inlet. Is the Steensby line not planned anymore?	The Steensby rail line is already approved. The company still intends to build the rail line, but with the economy we cannot build it right now. We are approved to mine 4.2mtpa in the ERP and ship through Milne, but we know that we need to expand to make money. And that we cannot move more ore by trucks on the Tote Road so we need to build a rail line.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	Why build the rail line to Milne Inlet - because it is closer? And did you do a study to show where you had to build because of the steep hills?	We have to divert from the Tote Road in one area because of the steep hill in that area, but for the most part it follows the Tote Road, because it needs to follow a certain elevation.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	The ore stored at Milne Inlet will not be in a building and exposed to the environment. I am not concerned about the dust because there are no chemicals attached to it because of the processing of the ore. In Nanisivik it was different because of the processing, but I am not concerned here because it is very different.	Thank you for your comment.
Community Group Meeting	2017-05-31 - Arctic Bay - HTO Meeting	Arctic Bay	We will expect this letter of request from Baffinland for support for the expansion project. We will reply to that.	No response required.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	If there is a fuel spill on the ship do you have sufficient equipment to respond?	In the event there is a spill in the ocean environment, there are spill kits and there is a spill response team. There is also regular training for them. If it is outside of Pond Inlet than the coast guard is supposed to deal with it, however if it happens in Milne Inlet than we have a kit to help mitigate that.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	In the event of having an additional dock, who would have to approve it, would DFO have to approve it?	You would have to approve it in two different ways. Fish cannot be disturbed and fish use that area and would be using the area in future. DFO would have to approve changes to the area. If the fish were to stop using the area, we would have to have a plan to help the fish could go somewhere instead of the Inlet if the dock affected the fish. No habitat loss with the new dock due to the rehabilitation of fish.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	Are there other ways we could transport iron ore, such as airplanes? Could airplanes be used so our wildlife could not be as affected?	It's a good question, but iron ore is very heavy, and cannot be transported by airplane. It's too heavy.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	Will there be additional traffic as a result of the railway construction? Will heavy equipment operators need extra training?	No jobs will be lost by Inuit but retraining to maintain the train. We are able to provide training to people with driver's license or heavy equipment license, in order to give appropriate training.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	Is the training going to be in the communities or in Baffinland?	Our main focus is in the 5 communities, most of the training will be at site, apprenticeship will be in Iqaluit, or Alberta.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	When Baffinland first started, we had a meeting in Eclipse (general meeting). We were meeting but did not receive honorarium. Someone mentioned that iron ore ships would need monitors, and I feel the winter shipping will have a negative impact on seal pups. I worked on icebreakers for over a year, on more than one occasion, we saw blood on the ships and could not figure out which animal was affected, if it was birds or cods. Sometimes when the ships are ice breaking a lot of cod is washed up on shore. I wonder if it is in the works to have services in the ships to deal with this problem.	One of the things we heard in the community meetings, is that there was a lot of concern from community about ice breaking. We have changed our plans to accommodate it. We are trying to look at the option of a winter sealift if needed however we are aware of the impact on the seals. There is a difference between iron ore ice breakers and Coast Guard ships and so it is a different impact.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	I was not aware that there was a difference between the ice breakers and iron ore ships.	With the iron ore ships, the ice is not completely flattened but skidoos at least are able to cross. Iron Ore ice breakers do not make as many ridges as other ice breakers.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	How many heavy equipment operators driving those trucks?	There are about 200 heavy equipment operators, many white but 3-4 Inuit, there are many operators who would be able to get another job, their employment would not change. They would not lose their jobs. Additional jobs will be created when the rail line is built even if we do not use the tote road anymore. Training will be provided for those who have to change jobs.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	I have heard that jobs were available from my cell inmate and tried to get a job as a janitor, but I heard you are only able to be hired if you speak English. Do you need to speak English to be a janitor? I have been having a difficult time paying bills, and tried to apply to Mary River. They were not telling the truth apparently because before they led me to believe I could get a job but I have not yet got one.	You need to speak English for safety reasons. We can't verify anything if we can't hear anything, we need to hear directly from individuals about jobs issues, and direct them to QIA to help assist them with language and employment issues. There is also a grievance form available. You can go to BCLO and get a grievance form from him to bring process forward?

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	If I want to work at Mary River, do I need a security screening, if I am an alcoholic, or drug user? I used to support the project and the screening process and now I regret that. I only thought that they would be screened when they entered the mine not the entire time they are at the mine.	The mine has 0 tolerance of alcohol and drugs, it doesn't matter who you are white, or Inuit you have to go through the security screening process. If anyone goes to Mary River they go through the screening process. They don't make accusations about if someone is a criminal or not. The mine has a 0 tolerance rule against drugs and alcohol. We have a policy in place with safety equipment, and it is provided, for safety purposes. Wayne: this is standard for mines across Canada. In Alberta, blood drug testing is common. It's not something Baffinland is doing to be unfair it's something every mine does across Canada.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	When there is a blasting to extract the resources, there is an explosion. It affects small wildlife and streams and rivers are also affected by the blasting as dust and rock residue can impact the environment, can you try to decrease that impact?	We are very careful to make sure where we are blasting, and the explosives we use. We try to make sure we do not overuse our blasting. We monitor the runoff to make sure that it meets standards given to us. We have to meet them. If it's not than we fix it. When it comes to dust, crushing screening and transport creates more dust. We are switching to rail, and moving away from tote road. We want to move the crushing and screening away from mine site to port site and that will minimize dust. The blasting is much less of an issue.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	I have never been to the mine, but I have been informed that sometimes they do not talk to their superiors, before they start blasting. We need to lay down the gravel, and minimize blasting. I have observed blasting with no gravel, and the char were impacted even though people say otherwise, and I think that is because of the mine. We as Inuit who live have lived in the arctic our whole lives, we hear that everything is done according to regulations. But I think more can be done, more should to done to mediate the issue in terms of blasting. Especially because before you actually do some blasting you lay down gravel at the site you are using explosions. When they were transported they were in a sealed area, and we had to use facemasks which should be the case at the mine. The mining company said it would not impact the environment but I have seen significant change. I am not against the project but I want more solutions. I want to make sure that we don't lose the animals; we need to use a strategy. Let's not concentrate on the negative things but let's get a strategy.	You can put your comments on a grievance form for QIA, so that they can help advise Baffinland and you will get a response about how they will try to mitigate the environmental concerns. We are here to consult with the council about these things.
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	I can imagine that the dust would rise in the air from the blasting and fly in the wind and then go to the snow and the ocean. Many animals look for food around the shore, so those are my concerns. The animals always eat little vertebrates and what not and the dust will slowly go to the ocean so that's a concern I have.	Thank you for those comments, I am not an expert in blasting but we will take these back to the company. A few comments on the effects on animals in the area. Iron ore is quite safe, it has been eroding for a long time, we are speeding that up but the animals are used to that, so when we observe the animals we are not seeing negative impacts, we will continue to monitor. We are doing that with community groups, QIA, pond inlet HTO to make sure it is taken care of.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-29 - Clyde River - Community Meeting	Clyde River	Your records on activities in the mine are going very well based on word of mouth. You were talking about Panamax ships and larger vessels, but my issue is with the large ship, it is very large and very long. Milne Inlet has a very narrow channel and the ship also has to go through Bruce Head and ragged island which is not very wide. If they are going to use that ship in coming years, it might be too large to enter Milne Port. I know of a large ship that others use and I wonder if that would be better. It's my speculation that a very large and wide ship would be too big for Milne Inlet which might be too shallow and too narrow to allow such a boat. Are you going to be using the large ship to enter Milne Port?	We have been using the small ship to date and with phase we would like to use the cape size ship. This is something we looked at very carefully, we look to traditional knowledge and sea captains. We understand there are narrow points, and we have studied it closely and think we are able to go through with the cape size ship safely. This is the best compromise we can find, in order to ship most ore while respecting the communities. We are proposing this to you now, and we are interested in the concern and details communities can provide.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	Where are you at today with the NPC?	Trying to get NPC to conduct the review to accept the amendment.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	Is Baffinland hoping to complete approval process in 2017?	Approval takes about a year after filing. File in Sept 2017, hope for approval Sept 2018.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	Are you building the newly proposed 800 person accommodation under Phase 2 or existing operation?	No, will be done under existing operation.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	I would like to see a community gymnasium or athletic center at the mine site. So on long weekends or special occasions community children can come to get together or host tournaments.	That is an interesting idea. The new camps will have larger recreational facilities but for the workers, not necessarily community youths. I will mention it to the project management team as a potential option to consider. May not be best at the project site, but maybe in another community.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	Clarification on 2 weeks on / 2 weeks off, are they required to do this? Is there any flexibility in the off shift rotation to do 1 week in the home town and 1 week in another community?	Mining is driven by production. We need to be careful as we need to be able to plan. We have not had someone request splitting the rotation across several communities but could be something to consider.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	You want to build an additional loading docks, would you still require winter shipping?	We would be conducting open water shipping only. Two loading docks allow us to load faster.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	Would you be able to hire additional people before Phase 2 is approved?	Employment will not be driven by approval. We are focusing on increasing Inuit employment currently, not just associated with Phase 2. We want people to understand issues before it becomes an issue that effects their employment. A lot of times there is misunderstanding between employees and supervisors in regards to expectations. Need people to feel comfortable on-site.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	In Pond Inlet, do you want a support letter from HTO and Hamlet Council?	NPC needs to change their land use plan. We would be interested in a letter of support to move the project to the environmental assessment process.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	If you are using less fuel, why are you adding fuel tanks?	We will be using less fuel for transportation, but more fuel overall due to increased energy and heating demand.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	Will you be able to ship 12 Mtpa by continuing to use trucks? Why did you not ship 4.2 Mtpa in 2016?	We had breakdowns at the crusher and ship loader. We added additional equipment to try to catch up. Using trucks along the tote road lead to a lot of breakdowns. If we could move it by truck, we would consider it but we found over the last 2 years, moving that much by truck would be nearly impossible.
Community Group Meeting	2017-05-29 - Clyde River - Hamlet and HTO Meeting	Clyde River	What do people in Pond Inlet feel?	People in Pond Inlet want to participate in the review process, they want to participate in the NIRB process. Commit to a public hearing. Some people are for it and some are against, they want the ability to have their say.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-06-02 - Hall Beach - Community Meeting	Hall Beach	It would increase the amount of money coming in according to Baffinland, around 1950's there were 2 elders here, there was a mines site with a camp near the shore, and here we are, they were the groundwork and none of their kids are working for Baffinland, so how are you going to make sure that we are providing Inuit employment for multi generations.	We have gone through a whole new structure, we are dedicated to the IIBA and increasing Inuit employment and training. We have Inuit people here who are dedicated to increasing Inuit employment and training. We have a chance to do things right, we have sectors of government which are committed to working with us. We are here and hoping that the mine will last for 100 years. We want to do better than what has been done in the past. DAVID: Regarding the rail because right now we have heard that hauling the iron ore is more sustainable and it will benefit of the IIBA agreement, we looked at all possible restrictions that might affect Inuit. We are trying to improve Inuit employment, and this is helpful to the employment of Inuit. We need money to support ourselves, this is all included in the IIBA agreement. We are only looking at the 21-year lifespan in this proposal, we will continue to hold up the IIBA in the 20-year span, once phase 2 has been approved. When the new exploration companies are here we did not have Nunavut land claims agreement, the new mines are much more respectful to the needs of the current intuit workers now. So that we can know every aspect. We know because we document things and regulate it with the IIBA, which is not set in stone, it's something we can change in regards to the needs of the people. Mines have many agreements they have to follow such as the Nunavut land claims agreement.
Public Meeting	2017-06-02 - Hall Beach - Community Meeting	Hall Beach	Thank you for keeping us informed and communicating with us about changes and involvement.	Thank you for your comment. No response required.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-06-02 - Hall Beach - Community Meeting	Hall Beach	<p>I glad that you guys are here. I have a few questions but its past my bedtime so I will try to keep it brief. I am wondering, how long the life of the mine will be, will it be going for my grandchildren, and this will get more opportunities for employment for Inuit. Will it continue into the next generation? Next question, for proposal for rail line to go in for the IIBA and the new jobs to come out when the rail line is active, and once they start constructing the accommodations there will be many I don't mind at all, because we know all this construction will provide opportunities. What will happen for employment opportunities when they are done? Will there be training around trains and employment?</p>	<p>Regarding the lifespan of the mine, our current mine lifespan has not changed with phase 2, there is a 21-year lifespan for the first deposit, we have had a delayed start so the time has not changed. There are 9 deposits in the Mary River region and we are interested in all of them. This is a multi-generational project, we hope to build both the rail to the north and the south. We still have enough ore to mine for generations. We have a long lifespan, that means our relationships in communities and training youth is very important to us. When we go for approval, we have to look at a lifespan that is somewhat predictable. It depends on a lot of things it could go for 100 years depending on the future. Regarding your second question, the way we see this is that during the peak in positions in construction. Baffinland is hungry for Inuit employees, this is an opportunity to get trained and then use the training and qualifications to be more hireable to Baffinland. When we look at operation, work forces, and the phase 2 operation, we will not see a decrease in Inuit employment. We hope to increase it. There are not many people anywhere in the world that are experts in northern railway, we will bring in experts for training for everyone including Inuit. If we cannot provide it on site, we will send people off site to be trained. As Robert mentioned we are shooting for 25 percent this year, we realize that is a lot of training but it's what we are willing to do.: Our CEO Brian Penney during our town hall meeting acknowledged we are on Inuit land and that we have to respect and prioritize Inuit. We know we have made some mistakes in the past and we are trying to correct those mistakes, I am not making excuses, but we are trying to learn from our mistakes. I am optimistic, that we will be making opportunities, for future generations.</p>

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-06-02 - Hall Beach - Community Meeting	Hall Beach	In order to educate Inuit, what type of training in place?	We hired a learning and development specialist, for existing and new employees. I personally approached family service, about apprenticeship; they are responsible for when a person is interested in becoming an apprentice. People who want to be an apprentice need to take a tradesmen ship exam and get at least a 70% on it, so that they can understand the job. They then get 1 year on the job training, after which they get technical training in Rankin or Alberta, we follow the Alberta curriculum. The Nunavut apprenticeship board investors such as Baffinland has to take the lead in what we want in terms in apprenticeship. A workplace literacy program will be provided on site. This is not going to happen overnight and I am not making excuses, but we are going to work hard over the long expectancy of the mine. It's everyone's responsibility that young people go to school and stay in school, and finish high school and get further education. They need to go and get their technical training, I hope that answered your question.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	Do you communicate properly with QIA or just the communities?	QIA and Baffinland work closely on the IIBA, it requires QIA and Baffinland to work to closely together and we do so. Especially related to employment. We don't work much with NTI but mainly QIA.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	Is there any assessment or monitoring, has there been any impact of since the start of the project?	We have a number monitoring programs and working groups. We have had some vehicle strikes but haven't observed significant impacts outside of that. We do main types of assessments; we have been hearing by Pond Inlet HTO due to shipping narwhal. Although quota has increased.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	There is always an accident somewhere. We heard someone had died, how do you deal with a major accident? They really impact on person.	We use FLRA, JHA's and Management plans to control incidents and make sure we have resources in place to respond to them in case of occurrence. We have morning and weekly toolbox talks. We track incidents to find trends.

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Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	You were saying 6 communities, de-centralized, why did Arctic Bay get \$1.5M and Pond Inlet \$1.5M. Say Hall Beach \$900k. How do you decide percentage of employees come from each community?	We are always looking for employees. We are not going by if the community is decentralized or the size of population. We get employees because people have applied from these communities. A lot of hall Beach employees work for QIL so this is not included. We are not considering contractors in these numbers. QIL tries to replace employees in the same communities to keep logistics easier.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	The weather haven camp, the accommodations are not working, it is very noisy.	We need to make sure our camps meet noise requirements, this is tested in the North.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	Will there will be a training opportunity, for the rail?	We just recently hired a rail and training specialist. We will train both new coming employees and pre-existing employees. There will be apprenticeship programs in Nunavut. If not available, we will go to other areas to develop the skills. We also met recently with family services, they said it was up to Industry to take the lead.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	In the end you ask for our support, when is the best time to give our support letter to you?	We will send a written formal request but we can't say by a certain date. We will send a request once we know more.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	Would you require a motion to issue a letter of request?	That will be up to the Hamlet to decide.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	I want to ask about Steensby Inlet, when do you think it will start?	The Steensby project will start when there is financing for it. When we get enough revenue to pay for it. It cost 5B to build it so we need money to do it. The north rail way is only \$1B.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	People in Pond Inlet would be worried, about a potential sealift in the winter. It will really impact the seals. It would frighten and scare away seals and narwhals. How can get benefits for the seals?	A lot of planning needs to be done before we do a winter sealift. Including pre- and post-seal den surveys. If wildlife is impacted, then there is a compensation fund if it effects hunters. If there is a big issue, they all cannot get compensation, but an individual can.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	Do they do cultural awareness training, at Baffinland? Wasn't it required by their approval?	There is a cultural awareness program on-site. There is an online cross cultural program required for each new employee. We are looking to do more. We are on Inuit land we are need to respect Inuit cultural and hiring. It is personal commitment from our CEO. Currently online, will work on improving it and potentially delivering in person. We do a cross cultural presentation in February with the QIA.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	What percentage of Inuit employees are on site?	16.2% of workers in 2016 measured in hours worked. Our goal in 25% for 2017. Working on improving that. We have dedicated recruiter just for Inuit employees.
Community Group Meeting	2017-06-02 - Hall Beach - HTO and Hamlet Meeting	Hall Beach	What you are proposing is the Phase 2, I am satisfied with that. But before the major projects are done, I don't want to see employment drop away after construction is over. They work for 2 weeks and home for 2 weeks. I like that but some of young miss their flights or before they leave they party and then they let go before they get there. Should not be a reason for them to let go if they still feel the effects from the night before.	We are trying to increase Inuit employment. But we guarantee no Inuit job loss due to phase 2, they will be trained in other positions. If they party the night before, we can't control that. The reason they are sent home is for safety reasons. We want to make sure people come to work safe and fit. We don't want accidents to happen.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	We have heard there is \$750,000 for the wildlife compensation fund, is this only for the people of Pond Inlet?	BIM has given the wildlife compensation fund \$750,000 until the funds are depleted to less than \$50K and then we re-negotiate the fund. The amounts are not given out yearly to Pond Inlet, the money is given out in an individual basis. The first step is that the HTO assesses the request, if they deem it as a legitimate claim, the QIA assesses it formally. It must be determined that the loss was directly related to the Project. A request can also be escalated to the QIA executive for a ruling. / The wildlife fund is not given just for the Pond Inlet area. / The \$750K is for all Inuit impacted hunters. For example, if you have to change your route for traditional harvesting practices as a result of the Project, and you have to use more gas this is where the compensation fund can come into effect.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	What happens if it is not just the mining site? What if it is also other ships that go through?	These funds are only for impacts of Baffinland, but for other companies or researchers or organizations that use the area.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	It was very hurtful when (the community working group) was cut off. We want to formally request the committee and we want to help more with the Mary River Project.	The hamlet council would write to the QIA to request sub-committees. We are looking for a supporting document from you to let NIRB know that we want to go onto the next phase.
Public Meeting	2017-06-01 - Igloolik - Community Meeting	Igloolik	If I was employed by Baffinland and I was not brought back. I keep expecting to get a call back and they let me go without explanation. It would be great if we get back feedback because I am still expecting, to go back. They brought me back to Igloolik, and I was waiting to get back, and I found out I was fired. I did not even receive a call or a letter, I am still expecting this.	I just want you to understand, usually when people are let go there is a review process, and a written report, everyone usually has to do this. We can all be contacted in order to get info. We are working with a work readiness program, and we will allow people who have been let go for minor offences to do this program and have an opportunity to be rehired.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-06-01 - Igloolik - Community Meeting	Igloolik	I am happy you guys are all here, according to what I hear, and how I understand the presentation, we are looking after the environment by putting in the rail line. There is also an economic benefit, and the truck drivers would not be losing their positions, once they started shipping ore. There are managers on the ship to prevent spills in the shipping season. I know you have good intentions, but we know there are some environmental impacts.	We heard that there were concerns and we are acting to try to find alternatives to monitor the ships. As of yet we have not had a good way of monitoring the impacts, we are building a subcommittee to see what we can do to meet that objective. We had a meeting in May, and Nunavut Impact Review Board said exactly what the last person said there was a safety issue to have monitors on the ship so they are trying to find out how the assessment would be. There would be environmental monitoring from the community members, this would monitor impacts shipping would have on the environment.
Public Meeting	2017-06-01 - Igloolik - Community Meeting	Igloolik	I wasn't expecting to win a prize so that is very nice. When you were talking you kept saying NIRB, are you talking about Ontario or Nunavut? You were talking about horizon, I don't understand who horizon is, can you clear up who they are? And due to climate changes, it is impacting the permafrost, is this being monitored too, and the ocean? These are the impacts that we heard of the climate change. Due to the warming of the sea from the bottom, and according to Inuit knowledge. Are you combining Inuit knowledge and scientific knowledge, and there are huge rapid changes?	When I say environmental I am saying NIRB, there was an issue between the Inuktitut and English translation. Horizon is a company, and QIL is the company responsible for setting up the camp. They are the ones part of that. Not only does Baffinland make sure we have Inuit employees we make sure our contractors are too, they are coming on a hiring tour. Regarding climate change, we do a lot of monitoring, changes are happening quickly in the Arctic, our mine life is 21 years for 1 deposit. We want a long term mine which means we need to concentrate on the environment and relationships with communities. The scientific and Inuit knowledge get compared and we combine them, and then we develop potential scenarios. We then try to make sure we put things in place to prevent negative impacts. It is hard to predict. In regards to phase 2 we want to get into the environmental review process, and with regulators we will try to accomplish this as best we can. We also recognize that we burn a lot of diesel, so current operation and we would like to look at potential to use wind and solar power in order to power for future. We have started with marine and terrestrial groups but we probably need to do more.
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	Training on the job is so important. They need to understand their job and what their role is.	Thank you for your comment. No response required.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	Once the railway is done, the hauling trucks will decrease, how about all the drivers and heavy equipment operators, would they decrease?	Yes - once the rail is done, we will no longer need ore haul truck drivers. They will be retrained to other jobs. Employment will not be lost.
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	When they first started plan for Steensby Rail. It is my understanding the Steensby Project is now stalled or off the table?	The Steensby Rail is not completely off; it is set aside as we need to follow what type of financing we have. At the time it was approved in 2012, the price of ore and economy dropped so Baffinland isn't in a position to currently develop it. Would be impossible to do 12 Mtpa by truck.
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	Inuit employment, you said two weeks in two weeks out, that would also take off the reliance of income support, especially for people in Igloolik, they have trouble. Our money was gone by the time our 2 weeks are over.	After they have been working for two weeks, this is how we set up their wage. They still get bi-weekly payments regardless if they are on rotation or not. In the Work Ready program, Finance education and budgeting will be a focus (food, rent).
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	One of the issue we want to hear more is the safety issues. Especially the safety issues, when they first start, it's good to take First Aid and WHMIS training. It is a requirement to work at the Hamlet. It is a recommendation to provide this training to the community.	There are some first aid sessions offered, but they are not mandatory. WHMIS is provided. This is a good suggestion to make it mandatory.
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	There are people that are hired at Baffinland, that go in for 2 weeks then when they try to go back, they say they are not hired or wanted back.	That is unfortunate if that is the case and we will work to correct that. The work ready program will help address this. Can't guarantee jobs but they will have a priority.
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	If people who have been hired and are no longer employed, we will look at them or will they be allow to be re-hired?	For employees who have minor offences or quit, they will be allowed back and we will actually be focusing on this. Speaking to Nuna East, they say people who come back a second time are actually the best employees because they recognize the opportunity.
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	Sometimes workers quit their job because there is no cigarette available on-site.	There is no store at Baffinland. There are strict regulations about this and Baffinland wants to promote cigarette reduction and healthy lifestyle. We can take that back to our CEO, if it is becoming a barrier we can find if it is something we can consider?

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	The cultural barrier is considerable; it is something they need to consider to be able to accommodate employees. Is there cultural sensitivity awareness program? This would help.	Cultural sensitivity training is available. The Work Readiness Program will focus on communication barriers that we have. Conflict resolution will be focus. Cultural awareness training is mandatory for all people to go to site. We need to be aware of our history, people are being intimidated, it is a real fear so we need to be able to address those issues.
Public Meeting	2017-06-01 - Igloolik - Community Meeting	Igloolik	With the switch to rail, will there be a risk of train derailment.	The rail line will be a low speed rail line. Will travel roughly 50 km/hr. The risk of derailment is less compared to high speed lines. In addition, we will have a detailed safety management and inspection system to make sure the train is safe. In addition, we will avoid transporting people or equipment so if there was a major spill, it would be only iron ore.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	If P2 goes through will the schedule remain the same? Or will the families be moved there similar to Nanisivik?	The schedule will remain 2 weeks in and out. Nanisivik could do that because the federal government contributed to make this happen. This was assessed and it was determined that this was to be a mine site not a family site.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	What about the construction of the port near Igloolik?	The original proposal was to include shipping from Steensby Inlet.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	There are 200 drivers and 3 or 4 Inuit drivers? Once the rail way is done, there will be zero job loss, can instead of job loss can we see jobs increase?	We are just saying that once we use the rail and the ore is not hauled by truck, those truck drivers will not lose their jobs because there will be other opportunities provided to them. If we are approved for P2 this will definitely increase the job requirements. Milne Port has 350 people working there and the Mary River site has as much, but the accommodation for 800 people has already been approved, so we will be able to hold this many people.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	We were told that there was wildlife compensation from Baffinland? We used to caribou hunt on Baffin Island but now they have a much smaller quota. Can we get an increase for the quota of caribou?	Since the caribou are at risk, The migration of caribou changes with each generation. Right now on Baffin Island the caribou migration has decreased naturally. The wildlife compensation is given by QIA for wildlife impacted by the Project.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	We see on television that near mine sites in other provinces, the caribou population declines. It seems that you are not taking responsibility and not taking IQ into consideration. I know that the road and railway line will impact the caribou population. When there is a mine site there is always a negative impact. It's not just based on IQ, there are more impacts.	The assessments and statistics are showing that the decline in the caribou populations were occurring even before the mine was present. Elders and scientists are working together to learn about the caribou migration. And on both sides we heard very similar information on the decline of the caribou. Caribou populations are declining in other areas as well Iqaluit, Pangnirtung for example which is not related to mining. /The wildlife compensation fund is outlined in an article under the IIBA. The compensation is based on specific loss of an individual animal from impacts of the project. The overall population effects on marine or terrestrial wildlife are addressed in the final environmental impact statements and are then approved by regulators. There is no indication that the mine has caused the decline in the caribou population and then only temporary disbursement of narwhal before habituation. There will be a new environmental impact statement and if it indicates that there may be severe effects, the NIRB will not approve the project. / There are also surface rights tribunals, when there is an impact from the mine site you can report it to the tribunal.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	We are trying to increase the quota for caribou hunting.	The GN is responsible for the caribou quotas. The Qikiqtaaluk wildlife board sets up the quotas for the areas, they decide on how the quota is distributed so that request is more appropriate to them.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	I am concerned about the railway. Originally from Pond but living in Igloolik. Will you make the railway right by the road?	We are proposing that the rail line follows the tote road, except in one area where we have to go away because of the terrain.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	How come the wildlife board is not here since they are always making the decisions?	These were created by the QIA Prior to approval of the Project, QIA established a Mary river community group in each community, when the project was approved in 2012 the community groups dissolved. They were created by QIA with Baffinland and it is up to the QIA if they wish to re-establish them. There is still a community group in Pond Inlet. Is the HTO formally requesting that we create this sub-committee again for Igloolik? Pond Inlet is the only community that requested a revised committee, no other community has requested this.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	We had people come here who did caribou collaring near Meadowbank in Baker Lake. They showed results that every caribou that was collared turned back when they got near the mine. They were people based out of Arviat.	If this information is sent to Baffinland, we will certainly look into this and review the information.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	I have a comment only that I have been anxiously waiting for Baffinland to come to Igloolik and give us more information. We want to be involved more, scientists are not the only ones who can provide information, Inuit have lived here for a long time. We know that the caribou migrations and populations change over the years but if we say that there has been more of an increased decline that should be taken into consideration.	Thank you for your comment. Baffinland is committed to ongoing engagement with the communities, including Igloolik.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	We have heard that iron ore prices are low but you are still going on.	Yes the iron ore price deeply effects our decisions.
Community Group Meeting	2017-06-01 - Igloolik - HTO Meeting	Igloolik	In the past we have declined consultation, but it is now in operation so we will support. But if there is an impact we will voice our concern. We are very concerned for our hunters.	Thank you for your comment. Baffinland is committed to ongoing engagement with the communities, including Igloolik.
Community Group Meeting	2017-06-01 - Igloolik - Hamlet Meeting	Igloolik	The Hamlet committee has never been to the project. I think it would be wonderful to go there as a community or Hamlet member to understand how the project works. Some of us worked there in 1960 when they were first there.	Maybe the best way is for the Hamlet to make a proposal to Baffinland to take a tour, I can support it the best that I can.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-01-16 - Iqaluit - Procurement & Contracting Workshop	Iqaluit	What is the incentive for larger Southern contractors to subcontract to Inuit firms?	Many southern firms may not be familiar with working in arctic conditions, and to be able to match or exceed the MIEG, they should want to work with Inuit firms to meet these goals. If exceed % of the MIEG far enough they receive financial incentive.
Community Group Meeting	2017-01-16 - Iqaluit - Procurement & Contracting Workshop	Iqaluit	What is the value of this bonus?	Contract by contract basis, the incentive has to benefit both contractor and BIM. Depends on size of contract and what type of labour is available and needed for that contract.
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	<p>Environmental monitoring contract was available but then BIM ended up doing their own environmental monitoring program so I am wondering if this contract will be given back to me?</p> <p>Designated firms can apply for contracts and can apply for designated funds through QIA, and if you are listed on the DIFL than you would be informed and given advanced notifications of contracts. 45 days in advance is the notice of which any of the firms on the list are given. If you are to apply thought the DIFL then we will help you with your applications. [Becky Mearns]</p>	We are not familiar with this contract but we will get back to you regarding details of what may have happened here. Please come and speak to me about this after the session.
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	Environmental monitoring contract was available but then BIM ended up doing their own environmental monitoring program so I am wondering if this contract will be given back to me?	<p>We are not familiar with this contract but we will get back to you regarding details of what may have happened here. Please come and speak to me about this after the session.</p> <p>Generally, the process is that designated firms can apply for contracts and can apply for designated funds through QIA, and if you are listed on the DIFL than you would be informed and given advanced notifications of contracts. 45 days in advance is the notice of which any of the firms on the list are given. If you are to apply thought the DIFL then we will help you with your applications.</p>

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	If BIM and QIA are planning to put money into education, entrepreneurship, etc. would BIM be able to allocate these funds to Pond Inlet so that people would not have to travel too far to other communities obtain these skills?	<p>Education and training fund is \$1million a year, we are beginning to look at the types of programs to start using this funds for Inuit.</p> <p>We will be looking into the amount of funds that will be used and also what programs could be the most useful for Inuit.</p>
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	We have no classroom space and this is a huge disadvantage to reach the goal of upskilling northern communities.	As part of the education and training fund, we are specifically looking into English as a second language and a relaunch of the work readiness program. English is not a block to employment but may hinder advancement. Help Inuit employees obtain high school diploma. Scholarships of \$5000 are given each year to students. We have committed to 3 additional years of contribution to the education and training fund. BIM will not be funding infrastructure development because BIM sees this is a government mandate. BIM is trying to get away from only trades and focusing also on tertiary education. Each college student that receives BIM scholarships also receives a laptop computer.
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	Is there any website or email lists for advanced contract notification?	<p>DIFL firms listed on here receive contract notification through email once BIM releases a contracting opportunity. The DIFL is open at any time for Inuit firms to be added to this list.</p> <p>BIM is looking into developing a contracting portal that will be accessed through its website where Inuit firms can look at opportunities there.</p>
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	Could workshops be made available of the procurement process through video on the BIM website? Breakdown of what is service contracts and what are other types of contracts?	We are looking into having future workshops such as this one in the Northern Baffin Communities.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	So if \$500,000 is in the BCSF can Inuit apply for these funds? Can we as a group benefit from this funding or is this specific to a certain contract? What is that funding really for? For contracting?	<p>It is to build capacity whether that is to improve business operations, additional training, or equipment to help your business. Funds are there to provide support for a business that is trying to startup or improve. For example, if you need help with how to apply to win a contract. [Becky Mearns]</p> <p>This also leverages existing funds from Kakivak i.e. getting licensing, becoming bondable. \$500,000 a year is only for the north Baffin communities. Kakivak helps all Baffin communities.</p>
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	\$500,000 goes to one individual contractor or the whole group?	No, it's for support of your business. The \$500,000 per year is for entire communities of North Baffin that are in need support for their business.
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	The grants available from Kakivak for business can we get again or is it only one-time funding?	If you're a start-up, there is possibility of continued support but not for a company to be given funds each year. It's to build capacity. Support money includes for instance the legal fees associated to start your environmental monitoring company. It's not there to subsidize operations of your business every year.
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	QIA question, what about the results from the North Baffin Inuit survey?	Yes, regarding the Inuit labor gap analysis, QIA can get reports to the CLOs and distribute to the communities. QIA is currently looking at how to make this available to people in Pond Inlet.
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	I want to know whether the BSCF under IIBA is only for North Baffin communities?	Guidelines are within IIBA regarding who can apply to this funding.
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	Community members do not see all the contracts that come up and if contracts are up for renewal this should be posted and advertised publically. We want to know more about what contracting opportunities are available.	QIA and Baffinland will improve communication regarding these contracts and opportunities.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-01-18 - Pond Inlet - Procurement & Contracting Workshop 1	Pond Inlet	BCSF is funded by BIM and we would like to know how much is set aside for this particular service? Is this fund categorized to Songs three types of contracts in his presentation or one lump sum?	<p>QIA and Kakivak will be organizing this fund and will be organizing this based on the needs of the Inuit Firms; depending on capacity issues. BIM contributed \$250,000 and BIM also \$250,000.</p> <p>This can be applied to directly or help to leverage to other funds through this program. Clarity funds started in 2014 – 2016, in total should be \$1.5 million in that fund set aside.</p>
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	How is the IIBA managed and where does the money go?	The IIBA was signed between QIA and Baffinland in 2013. People will be reviewing it and it can change. I am in charge of implementation and there is joint management committee and JEC that meets regularly to discuss IIBA priorities. QIA is the ones to receive the funds from Baffinland, they cannot go directly to the community. QIA is responsible for deciding how the money is spent. Just had an annual review forum in Arctic Bay that developed recommendations on what the IIBA should focus on. Those are available if you are interested to understand what was decided.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Would like Bruce head narwhal monitoring to be continued and shared with the community.	Baffinland will continue the program, will be coming to Pond Inlet in a few weeks to discuss Bruce Head planning with the HTO and will provide.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	QIA wildlife monitors should observe Eclipse Sound for impacts from shipping in addition to Bruce Head.	QIA Lands Department is looking at Community-Based monitoring program and could look at eclipse sound monitoring as well.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Will Baffinland be doing any ice thickness measurements in Eclipse Sound?	Baffinland is not looking at doing any ice breaking as part of shipping iron ore. Will do ice thickness measurements if we are looking at doing a winter resupply voyage.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Why are there only 5 college scholarships if Baffinland is trying to promote education in the communities?	Baffinland continues to work with QIA and Government of Nunavut on skills development training programs.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Can we document the role of Pond Inlet citizens in the development of the Mary River Project? Members of the community were involved in the first sampling in the 1960's.	Baffinland agreed that this was a good idea and we would look into the concept. This information could be included in work readiness program and employee on-boarding training.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	The use of the word 'probation' has negative connotations in the community as it is tied to jail and law enforcement. Could we use a different word to describe the first 3 months of work at Mary River?	We will pass on the message to HR and see if there is an alternative.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Concerned that if more ships are passing by that there will be an impact on narwhal.	Baffinland indicated that there will be more information provided in the EIS submission and that there will be more opportunities to provide comments and concerns during the hearings.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Will the rail cars be covered to reduce dust?	The rail cars won't be covered but the ore that is transported on the rail way will be large size pieces so there will be less dust.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Likes the idea that the crushers are being moved but is concerned about water being impacted from the Tote Road. Is the water safe to drink?	Dust is not dangerous and the water is safe to drink. Operations is working to reduce the amount of dust on the road.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Dust is a problem. Dust from the ore stockpile has been seen as far away as Bruce head. He is very concerned about dust.	Concern is noted. We are working on ways to reduce dust.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	In regards to the request for support. We can support the project if Pond Inlet will receive Royalties directly from Baffinland and not through the QIA.	Baffinland noted that the IIBA is with QIA and that we can't do anything outside of the IIBA. QIA noted that IIBA says that QIA will support the communities.
Community Group Meeting	2017-05-30 - Pond Inlet - Hamlet Meeting	Pond Inlet	Hamlet council would like a direct meeting with the QIA to discuss the issue of benefits to the community. QIA has noted the request and indicated that Hamlet Council should make a direct request to QIA Executive.	Thank you for your comment. No response from Baffinland required.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Are the train tracks built to withstand snow?	There is a plow at the front that would clear the snow.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	You want to conduct winter shipping during the seal pup season? I want you to be advised this will have an environmental issue in the month of March. Inuit need a stronger voice in the company so that the company better understand our concerns. We have been impacted the most compared to other communities. We have the most ships coming through and we haven't had a narwhal migration in 2 years. We deserve more benefits than the other communities. The scientists say we are not impacted but they don't understand, we have been here longer and understand better that we are being impacted. We have fear of winter shipping. In January and February, we still have wildlife. Money, money, money you act is the most important thing in the world.	We as staff members don't have final say but we as Inuit can act as advisors. For example, we cancelled the winter shipping program in 2017 as a response to shipping concerns. We do provide advice. We meet regularly with the HTO and community and consider their feedback. They have a stronger voice than we do. We meet regularly with the HTO and community and consider their feedback. They have a stronger voice than we do and part of the reason we are here is to understand your feedback.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Is there a process outside the community fund to offer sponsorships?	Yes, informal phone call and email and we try to do what we can.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Karen gave a presentation during the HR tour, do we have a plan in place on how the work readiness program will be given?	We are developing content now, will cover communications, travel, dealing with conflict. Hoping to have ready for June. Will try to follow same model as Meadowbank. They went through a lot of the same problems Baffinland has related to absenteeism and turnover so we are trying to learn from there.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	There is a program at Arctic College to prepare for work and ultimately work at Baffinland but they get discouraged as they don't always get hired.	We are working with Arctic College and the work readiness program to start in the Fall to help get people ready to work. We are learning from past mistakes to learn what we can do better. Doesn't happen overnight but we are trying to do better by reaching out to communities, GN, QIA to help identify opportunities. We are also working with contractors to make sure they will be hiring Inuit and focus on Inuit training, such as Horizon HR tour in July. We need more people trained and ready to go as we try to expand in the next few years.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	I know you are getting more Inuit in the coming years. We are getting a lab in town. Also, the HTO can supply food for the Inuit on-site.	We have a country food kitchen and good to know this is an option.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	What about other contractors on-site, are they offering Inuit jobs.	Other companies get evaluated by showing they can hire Inuit in their companies and they need to show Inuit content. There a penalties if they don't meet the requirements.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Don't southern people get training on Inuit culture? It was mentioned how we have been abused in the past, they need to understand and be aware.	We do cultural training for all employees prior to coming to site. On Nunavut day we will be having an event. QIA held a cultural awareness event.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Wildlife compensation under the Phase 2 program, will it change?	Funds provided to HTO currently related current operation. Will look how to consider Phase 2 in the future.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Can anyone get access to the community compensation fund?	Funds provided to HTO currently related current operation. Will look how to consider Phase 2 in the future. This will be discussed at a hearing to determine final results. We are here to hear your comments and feedback.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	When the ice is starting to form, Inuit have a concern on breaking ice.	Under the Phase 2 project we want to maximize shipping iron ore in the open water season. When the ice forming, we would consult with the MHTO before starting and stopping shipping. HTO will have opportunity to discuss their concerns prior to any approval.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	How can people access Business Development fund and Capacity Fund?	CLO and BCLO can help fill out forms and help access funds. No deadlines, can apply anytime. Current compensation fund is related to ERP. If it was a whole loss of narwhal migration, then we need to look at that separately. Much larger issue that needs to be discussed.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	How will wildlife be affected by phase 2?	We include MHTO to share information and knowledge. We welcome opportunity to keep involvement. If there is evidence we are not seeing, please let us know so we can include it in the assessment.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Will the elders be consulted where the best route will be for the rail line?	Elders were not consulted but we are trying to take the easiest route by keeping it close to Tote Rd.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	From Mary River to Milne Inlet, we sometimes travel by snowmobile. Be good to hear from elders on the right route.	We are working with NPC and on IPGs to determine the best place for it. We are working with them to modify land use plan to allow for it. Before we construct road, we will consult and identify areas to make sure crossings are appropriate. We will come back next year to talk about this.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	We have been caribou hunting near the mine site, even before mining we use two routes.	
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	In the past, people went caribou hunting more in this area.	Thank you for your comment. No response required.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	With respect to the wild life compensation fund – there are forms in QIA office to request for funding, if I were to submit a proposal, how many times can I make a request for funding in a year and who decides?	There is no limit on the number of times you can apply. A committee evaluates it and decides what will be approved. We have work to do on the wildlife compensation fund.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	We want the weather haven camp in the event you no longer need it.	QIA has first rights to purchase the equipment or building, if they are interested please let QIA know so they are aware. If QIA does not want it, we can then offer it to other parties.
Community Group Meeting	2017-05-30 - Pond Inlet - HTO Meeting	Pond Inlet	Previously it seemed Baffinland was always rushing into things. We are happier now and more relaxed to see the engagement that is now going on.	Thank you for your comment. No response required.
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	You mention that the mine is going to operate for 100 years, can things start being cleaned up at the mine right now?	It is a very insightful question, when we talk about long term mine life, we are not talking about adding and adding and adding for 100 years. We will clean up deposit one after we are finished and so on. I understand that dust is a major concern, we are hoping that the rail will mitigate dust concern, and help BIM survive. We are constantly monitoring it, and so far we have seen no effect on wildlife. The deposit we have been mining right now, has been eroded for a long time so the animals and plants are used to it, however we are learning as we go and addressing it. This year they want to make a proposal, phase 2 and right now the current certificate to use the tote road, in the event than Baffinland was approved, and they would want to hear about your concerns they will follow your concerns and recommendations. NIRB is the one who issues certificates.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	Is Baffinland exploring solar power or wind power for phase 2?	We are looking at solar and wind, solar would be difficult but wind looks possible, this is not about phase 2 but ongoing operations.
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	I want to thank you Baffinland for giving jobs for jobless people, there are some people who can only be employed by Mary River. Thank you.	Thank you for your comment. No response required.
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	There are some signs that state you cannot drink from the stream, how is Baffinland going to mitigate this?	As far as we know there is no restrictions on any drinking water. That being said if there are traditional places you get drinking water we would like to know, we try to monitor all freshwater.
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	Under the phase 2 proposal, you want to increase shipping of iron ore, and once this is approved from the DFO would we see approval from the NPC in terms of shipping? Would the department of ocean and fisheries need to approve that?	In regards to shipping of ore, NPC has first approval. For the actual number of ships, we are allowed to use, NIRB decides. The frequency or intensity of ships is monitored by NIRB, DFO and EC. They are part of marine environment working group, and contribute information and opinions about approvals. This is a constant cycle of looking at what is happening and deciding what is okay.
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	I tried to apply to Mary River and I can't get hired, and Inuit in mine are diminishing. I was trained by QC and I apply to job at Baffinland they always say they have no position. What about follow up on potential employees but continue to provide training. When I apply for a job I never hear back. It seems we are backtracking to 2012 for work ready program.	The Work Readiness Program is something we are doing when someone is not successful at the mine. I can give you a business card and make sure you get follow up. We know we made some mistakes in the past, however we have changed the leadership, and we are working to make it easier for Inuit people to apply. Brian Penney, is concerned about making hiring and training of Inuit our priority. In part my job is to help recruitment department to hire Inuit people. I don't want to make any promises, people who participate in work readiness program will have priority hiring.

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	<p>It appears there should be more training programs in the north, there are lots of training opportunities down south in Ontario. There should be more training of heavy equipment operators in the north. We should have more BCLO's than one in each communities and if they have to go on medical travel they should be replaced temporarily. The frequency of ships will impact pond inlet. A fox which was painted red by a white person, a lot of people were against that, they could not determine who painted the fox red and that was unfortunate. Last year, a lot of sculpins died out. We do not hear about these negative impacts on wildlife but a lot of us are being impacted. In the future, we want to hear all of the concerns not just what Baffinland wants us to hear. Can a report be made by Baffinland when such impacts are found?</p>	<p>Part of my job is to help Inuit to apply for benefits and insurance, and QIA is developing a grievance database for employees. A database of Inuit employees that are ready to work is a great idea. Whether a fox or a rabbit is killed by a vehicle QIA always informs the HTO's but they do not necessarily pass it on to the communities. Through the wildlife compensation program, QIA has set away some funds for wildlife compensation purposes. I want to know roadkill there were, we should give it some careful consideration, and we need better communication with community and QIA. HTO should voice their concerns more. We do have environmental working groups set up that have many associations in attendance, in terms of getting info back to communities, we are trying to provide reports that are more accessible to people in communities. Our reports are publically posted on the BIM website document portal. We are open to more ideas on how to serve the communities. We will have future community visits. QIA and many organizations are working on the working group we had a meeting in May and we have returned to summarize this info. I was supposed to go on radio and I got tied up, once this tour is concluded I will go on radio to discuss these issues. I would like to respond, to the comment, it is difficult to anticipate when BCLO's will have to go out on medical leave. I was glad to hear this comment we did not have a BCLO for a lengthy time.</p>

Type	Event Name	Community of Interest	Stakeholder Comment	Baffinland Response
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	<p>The stockpile that was mentioned in Milne Inlet, they will increase stockpile in new location, will that stockpile be covered or will it be an open stockpile?</p> <p>Follow-up: I agree with you but keep in mind there will always be dust, and also once the railway line has been constructed, we would want a railway committee to be established.</p>	<p>Based on the studies so far, the stockpiles do not add dust. It's not dust blowing off stockpile, it's more the handling and transport of ore. We are trying to mitigate this by using rail and covering the crusher, people do not have to handle it as much because of the new purposed additions. We are open to feedback about this. We would consider a railway safety committee. This proposal is not finalized and we have a lot of consultation to go before it is approved. Regarding the dust, I appreciate the comment.</p>
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	<p>We seem to be backtracking to the original concept and with the rail. The people of Pond Inlet will be impacted but other communities will not be. Why is the mine only impacting pond inlet?</p>	<p>That was originally Steensby, and the ore prices were high, now they are low, it is not economically feasible. This is something we are very aware of, we are working with the QIA to address, to make sure the QIA understands the concerns of Pond Inlet. We are in a difficult situation and we have rules we need to follow.</p>
Public Meeting	2017-05-30 - Pond Inlet - Community Meeting	Pond Inlet	<p>How does this affect mine life?</p>	<p>Mine life is not affected, Project ramp-up has taken longer than expected.</p>

APPENDIX C

2017 WORKING GROUP MEETING NOTES

APPENDIX C1

2017 MEWG MEETING RECORDS



Marine Environment Working Group Meeting 10 Meeting Minutes

Date: March 15, 2017

Location: Teleconference at 13:00 – 15:30 pm

Remote: 1-866-251-3220 ID: 6861183#

Participants		
Member Organization	Attendees	
Baffinland Iron Mines (Baffinland)	Wayne McPhee (WM)	P
	Megan Lord-Hoyle (MLH)	P
Qikiqtani Inuit Association (QIA)	Jeff Higdon (JH)	P
	David Qamaniq (DQ)	P
	Luc Brisebois (LB)	P
Department of Fisheries and Oceans (DFO)	Heather Clark (HC)	P
	Veronique D'Amours Gauthier	N
	Kim Howland	N
Government of Nunavut (GN)	Lauren Perrin (LP)	P
	Brad Pirie	N
Parks Canada (PC)	Francine Mercier (FM)	P
Environment Climate Change Canada (ECCC)	Grant Gilchrist	N
Makivik	Gregor Gilbert	N
Mittimatalik Hunters and Trappers Organization (MHTO)	Mathias Qaunaq (MQ)	P
	Elijah Panipakoocho (EP)	P
Observer Organization		
World Wildlife Fund – Canada (WWF)	Andrew Dumbrille	P
Oceans North Canada (ON)	Chris Debicki	N
	Kristin Westdal	N
Baffinland Consultants		
Golder	Andrea Locke (AL)	P
	Erin Linn (EL)	P
	Phil Rouget (PR)	P
Interpreter		
Pond Inlet	Morgan Arnakallak (MA)	P
Additional Recipients		
Qikiqtani Inuit Association (QIA)	Stephen Williamson Bathory	N

I – In person, P-phone in participation, N- Not attending

Agenda	
1.	Welcome and introductions (Megan Lord-Hoyle)
2.	Baffinland update (Megan Lord-Hoyle)
3.	Introduction to the technical team from Golder: Phil Rouget and Erin Linn. Andrea Locke departing Golder (MLH)

Agenda
Marine Environment Monitoring Presentation
Introduction and technical presentation delivered by Phil Rouget

Comments	
1.	AD: Have the results been received from the Bruce Head study in 2016? MLH: BIM has just received the draft version two weeks ago (later than normal). We plan to share with the group as soon as comments have been incorporated;
2.	MHTO: Will drones be used for the narwhal monitoring program? PR: We are not using them in 2017, but BIM is considering this option, yet nothing is planned specifically. There is a third option for tagging purposes – VHF tagging in Tremblay Sound. We are also looking into satellite imaginary;
3.	MHTO: Will winter corridor be the same as summer corridor? MLH: Yes, proposed shipping corridor for 2017 remains the same.
4.	AD: Will the only surveys be at Bruce Head and seal study? PR: Bruce Head study will occur during summer and seal monitoring will be taking place in January; other programs are currently being reviewed with BIM;
5.	LB: Have you developed the framework for the ringed seal studies yet? If not, I suggest you work with the HTO to get their feedback. PR: No, this is very collaborative as this is step one to build the program. We haven't finalised our program yet, and will be contacting HTO and individuals involved. LB: I recommend face-to-face meetings in Pond Inlet rather than calls. PR: agreed with LB.
6.	AD: WWF species conservation fund; Does BIM give Golder 100K and say to stretch it as far as they can? Or how does it work? MLH: This is the first step. A lot will happen between now and the finalization of these programs, one of which includes budgetary considerations based on the programs selected.
7.	LB: Wouldn't the fact that no ship is seen in the area feed into habituation of the animal or the response? How will narwhals react to the real sound of the ship? PR: This is the reason we are planning to run this study to identify animals' reaction. We will be working with the local community to identify low or no vessel activity periods.
8.	MHTO: Bruce Head program during high shipping season. Could the playback program be run before the shipping season begins? PR: Yes, it is definitely possible. We will still need to run the Bruce Head program to perform behavioural studies. This is more of a logistical question, but it will be possible if there are narwhals in the area.
9.	MHTO: Narwhals typically go up in July when ice is breaking up, but more go up in August. Members are concerned with Bruce Head happening at the end of July/ beginning of August.

	<p>PR: Traditionally Bruce Head monitoring starts late July; perhaps schedule an earlier program as it will not require extensive planning for the initial monitoring – will need to discuss this further.</p> <p>MHTO: They are very eager for a program like that and want to note that there are many seals in the area at that time also.</p> <p>10. AD: Goes back to budget as it is challenging to plan a program without seeing a number. MLH: We are taking other areas into consideration when it comes to annual programs (studies that could be done every couple years).</p>
	<p>Face –to-face meeting – Megan Lord-Hoyle</p>
	<ul style="list-style-type: none"> • Face to face meeting in spring – proposed at the end of April; • Feedback – last week of April is not good; first week of May could work; • Logistically it will not be possible at site; considering having this meeting in Ottawa; if this doesn't work because of other Canada 150th Anniversary activities in Ottawa, then we will have a meeting in Toronto; • Working towards having the November meeting to be held at site; • Spring meeting – will share an agenda; intention – finalize monitoring programs and emphasis on community based monitoring and development of the monitoring framework; • Will be looking for feedback and suggestions from all parties on the monitoring framework, we will set aside time for all parties to present on applicable research/programs at the meeting. This will require feedback in advance of the meeting for planning.
	<p>Break – 15 minutes</p>
	<p>Technical presentation delivered by Andrea Locke</p>
	<p>1. MHTO: Asked about narwhal tagging, and if the information will be picked up via GPS. AL: Admitted she was not the expert on tagging and suggested to speak with Phil when he returns. PR: Information will be received via receiver station which is located at shore; VHF – signal within the line of sight; Satellite would allow to obtain information.</p> <p>2. JH: Could local repeater stations interfere with these stations? PR: There is a possibility for signal interference from other equipment already set up. We will need to have a conversation with MHTO to identify stations' location and frequency.</p> <p>3. MHTO: Fish around Milne Inlet need to be monitored to see if they are getting more iron in their bodies. AL: If any char are killed they are sent to the lab to be tested for metal, hydro carbons and other contaminants that may be picked up. This has happened over the last couple of years. MHTO – left the call at this stage. No further comments received at the end; A number of conversations will be held with different groups re: economics/social studies. BIM will be Looking for specific feedback and input from groups.</p>

Action Items		Action By	Date Completed
Meeting, November 29, 2016			
1.	Include analysis of tug boat noise levels in monitoring	Baffinland/Golder	
2.	Evaluate the need to include noise and vibration monitoring in Pond Inlet	Baffinland/Golder	
3.	Provide a copy of the Annual Project review forum presentation to KH	Baffinland	
4.	Prepare Draft ToR revisions	Baffinland Dec 23,2016	Dec 22, 2016
5.	Draft letter to NIRB requesting clarification on their role	Baffinland	February 17, 2017
6.	Distribute list of participants for review by organizations	Baffinland	Dec 22, 2016
7.	Schedule winter conference call	Baffinland	Complete
8.	Distribute ECCC reporting template developed with the HTOs	GG	Nov 30,2016
9.	Consider options for observers/inspections around ragged island	Baffinland	Complete
10.	Look into any devices placed in the water around the port area	Baffinland	
11.	Send emergency ballast water exchange zones report	KH	
12.	Look into MMO report to be prepared for QIA	Baffinland	
Meeting, March 15, 2017			
1.	JH to email comments following the meeting	JH	March 15, 2017
2.	Baffinland to schedule face to face meeting for 1 st week of May	MLH	Complete

Marine Environment Working Group

Wednesday May 3, 2017

8:30 am – 5:00 pm

Ottawa Delta City Centre

101 Lyon Street North, Ottawa ON K1R 5T9 Canada



Conference Call In Details: 1 866 251-3220 ID: 29299503#

Member Organization	Participants		Member Organization	Participants	
Baffinland (BIM)	Wayne McPhee (WP)	I	Mittimatalik Hunters and Trappers Organization (MHTO)	Mathias Qaunaq (MQ)	I
	Megan Lord-Hoyle (MLH)	I		Elijah Panipakoocho (EP)	I
	Joe Tigullaraq (JT)			Daisy Koono (DK)	I
Qikiqtani Inuit Association (QIA)	Stephen Williamson Bathory (SWB)	N		Patrick Innuaraq (PI)	I
	Jeff Higdon (JH)	I	Observer Organization	Participants	
	Luc Brisebois (LB)	I	World Wildlife Fund – Canada (WWF)	Andrew Dumbrille (AD)	N
	David Qamaniq (DQ)	I		Amanda Hanson Main (AHM)	N
Fisheries and Oceans Canada (DFO)	Veronique D’Amours-Gauthier (VG)	I	Oceans North Canada (ONC)	Chris Debicki	N
	Kim Howland (KH)	I		Kristin Westdal	N
Environment and Climate Change Canada (ECCC)	Amy Black (AB)	N	Baffinland Consultants	Participants	
	Grant Gilchrist (GGi)	I	Golder (GL)	Phil Rouget	I
Government of Nunavut (GN)	Brad Pirie (BP)	I	Golder (GL)	Erin Linn	I
	Amy Robinson (AR)	N	Environmental Dynamics Inc. (EDI)	Mike Settingington	I
	Krista Johnson (KJ)	I	Additional Observers		
Parks Canada (PC)	Francine Mercier (FM)	I	Post-graduate students (ECCC)	(2 students)	I
Makivik (MK)	Gregor Gilbert (GG)	I	Interpreter	Geela Tigullaraq	I
Recipients: All above. Anne Wilson (ECCC), Jean Francois-Dufour (ECCC), Marianne Marcoux (DFO), Trevor Taylor (ONC)					

P-phone in participation, I – In person, N- Not attending

Agenda

Time	Activity
8:30 am - 9:00 am	Welcome and introductions (Megan Lord-Hoyle, All)
	Baffinland Update and Meeting Objectives (Megan Lord-Hoyle)
9:00 am – 9:30 am	Seabird Monitoring (Grant Gilchrist)
9:30 am – 10:00 am	2017 Marine Environment and Narwhal Monitoring Programs (Phil Rouget and Erin Linn)
10:00 am – 10:30 am	Health Break

10:30 am – 12:00pm	2017 Marine Environment and Narwhal Monitoring Programs (Phil Rouget and Erin Linn)
12:00 pm – 1:00 pm	Lunch (provided)
1:00 pm – 3:00 pm	Monitoring Framework and Scheduling Workshop (Megan Lord-Hoyle, All) Discussion on: <ul style="list-style-type: none"> • Field programs and alignment with Project objectives • Thresholds for adaptive management • Requirements to develop a monitoring framework and schedule
3:00 – 3:30 pm	Health Break
3:30 – 5:00pm	Roundtable updates on relevant research projects Next Steps
Reference Material:	
 Baffinland and Golder Final Present	 ECCC May 3 Presentation.pdf

Comments	
1.	<p>Update Presentation</p> <p>MLH gave an update presentation on the Project, an overview of Phase 2 with a focus on shipping, and the NIRB Annual Report.</p> <p>LB: Reviewed NIRB annual report, found new format to be beneficial.</p> <p>DQ: Asked whether Inuktitut translation of NIRB report had been given to HTO</p> <p>MLH: There is only an Inuktitut translation of the Popular Summary, the entire report has been sent to HTO.</p>
2.	<p>Seabird Monitoring Update</p> <p>GGi: Update on seabird research in response to broader research questions as well as Project terms and conditions. Research could produce 50 technical papers. Highlighted @AChangingArctic twitter feed.</p> <p>KH: Will the study include bird diets. Also mentioned that fish stock in Hudson's Bay is changing.</p> <p>GGi. Yes, diets are studied.</p> <p>LB: How are the studies related to Baffinland?</p> <p>GGi: The studies are setting a baseline as well as looking at key foraging and breeding areas to inform shipping movements. Future studies will refer to the baseline assessment to determine potential impacts. This project drives innovation and requires a diverse group of people.</p>
3.	<p>Marine Mammal Monitoring Program</p> <p>PR: 2017 is the 4th year of the Bruce Head monitoring program. Golder and Baffinland will be going to Pond Inlet to discuss with interested members of the community. A training session will be run before the study. Eventual plan is to transfer program to a community based monitoring program. Golder/Baffinland is collaborating with the DFO for the Narwhal Tagging program. The tagging program will be run by DFO with support from Baffinland and Golder and additional equipment to meet Baffinland study objectives.</p> <p>MQ: Better to start the study before the ships start coming to accurately assess impact of Baffinland ships, also marine mammals are generally more afraid of tourist ships and not afraid of the Baffinland</p>

	<p>ships. We are concerned about pollutants getting into their diet. PR: The study will monitor behavior for all boat types and DFO will collect data on Narwhal stomach contents. The timing of the study is meant to align with periods where there is no ship presence or hunting to observe behavior with and without ship presence.</p> <p>General discussion on Narwhal mortality during tagging study. EL: This is a DFO led program so we need to ask them – in previous years there were no mortalities and the team has reduced the handling time. There will be 2 veterinarians as part of the team. Erin will follow up with DFO and Phil will provide the information in the upcoming Pond Inlet meeting JH: DFO has lost animals during tagging studies in the past. MLH: Should there be a mortality associated with Project impacts there is a Wildlife Compensation Agreement in place. The tagging program is being run and lead by DFO, we will have to follow-up with them as they likely have their own protocol in place. VG/LB: The DFO has a protocol in place, as they are leading the program the compensation should come through their direction. *VG: Returned from lunch explaining the DFO protocol with the HTO on whale injury/death. The Inuit field team member makes a decision about whether to put an animal down, there is no compensation provided, however the whale is given to the community to use and the HTO gets the tusk. LB: Based on this and that DFO is leading the program, the Baffinland/QIA wildlife Foundation is not appropriate to use.</p> <p>MQ: Workers in Mary River are not all from Pond Inlet so narwhal should go to hunters.</p> <p>DQ: There are programs which use cameras to follow sharks to observe behavior, could that be used here?</p> <p>PR: Open to using new technology like attaching cameras to the whales however could be an issue with water clarity.</p>
3.	<p>Marine Ecological and Aquatic Invasive Species Monitoring Program</p> <p>EL provided updated of the 2017 program, outlined areas of possible DFO collaboration. Expansion of coverage of program to include Ragged Island and an expanded aquatic invasive species program from years previous.</p> <p>MQ: Main concern is contamination in the food supply. Would like to see monitoring continue.</p> <p>DQ: Noted that two individuals in Pond Inlet have taken diving courses for consideration in hiring.</p> <p>PR: This will be further discussed with the HTO in Pond Inlet.</p> <p>JH: Are there plans in 2017 to do a second radial design to set a baseline for the second ore dock? PR: The radial design is based on the discharge point not the ore dock so the second ore dock is within the current study data.</p> <p>KH: DFO sampling will be covering a greater area (around 5km from the port). There is a standard approach using PVC plates being developed but ice can be an issue for this. Baffinland including looking at hull fouling is beneficial. Additional baseline on ballast water would be helpful to help compare current conditions and the treated ballast water in the future.</p> <p>MLH: This is on our radar but is most likely not possible for 2017. We will be discussing internally and with our shipping companies.</p> <p>EP: We want the studies to continue and monitor the health of fish including halibut. We would also like to hear more about the studies and the outcomes because people are curious and these animals are part of the diet.</p>

	<p>MQ: Brought up what had been mentioned previously that there was concerns of the land eroding where ships pass by.</p> <p>PR: We are doing modelling of the potential wake effects to wind and wave effects along the northern shipping corridor. Effects from propeller wash will also be looked at along with the effects of a new ore dock, and ballast water discharge. Results will be ready as part of the Environmental Assessment. MQ: Would like to report back on these results to the community.</p> <p>JH: Explain hydrodynamic modelling. PR: explains the process of modelling and confirms that the effects are realistic.</p> <p>LB: Any Project related fatalities need to be reported to the wildlife foundation. Also preference should be given to ships that use ballast water treatment. Where is the location of ballast water exchange?</p> <p>KH: Testing for ballast water salinity only works if it's coming from fresh water. Transport Canada keeps track of water exchange. The exchange is in the Atlantic prior to entering Nunavut waters.</p> <p>WM: Ballast water treatment is not available. Plan is to release ballast water at the port so that the exchange of ballast can be confirmed. Transport Canada keeps a data base of ballast water exchange forms.</p> <p>EP: Is Baffinland monitoring near Pond Inlet? Have we tested if water is saltier deeper down? PR: Several programs that have collected data from fresh and salt water interface near the port. Shouldn't be much difference between open ocean and Pond Inlet. KH: Slight difference but not enough to impact organisms in the water.</p>
4.	<p>General Discussion</p> <p>JH: Are we still looking at the play back study in the future?</p> <p>PR: The playback study is an add on to the Bruce Head program, not possible in 2017 but still considering for 2018.</p> <p>MLH: A number of the programs discussed at the March meeting were developed further based on budget and logistics etc. They are not off the table for the future but we have prioritized the programs for this year.</p> <p>LB: Bylot Island has largest colony of arctic geese, concern for the Inuit. MS: responds saying that terrestrial study looks at snow geese areas.</p> <p>MQ: Commented on a past event where a polar bear was killed in Mary River and the hide was not properly removed and damaged. LB: The protocol wasn't followed by Baffinland because they didn't have someone available who knew how to remove the hide. This process is being addressed.</p> <p>EP: Narwhals don't mind people walking on land but they are threatened by sudden noise or movements. Also discussed eiders and thick billed murrets that go under ice to get food. Are there any ideas to re-instate ship board observer program and get data more safely.</p> <p>WM: Baffinland has looked at many alternatives and worked with MEWG, consultants, and DFO but viable options have not been put forward. This is an area for a potential sub-committee. Sub-committee on shipboard observers formed with LB, WM, GGi, and JH (QIA, ECCC, Baffinland).</p> <p>EP: monitoring was done in 2012-13 and narwhals would dive when vessel was close however they would return 30 minutes later, back to surface once the ore vessel passed by.</p>

	<p>PR: DFO will be running seal aerial survey in May, discussions in place about involvement in the future.</p> <p>KH: The current monitoring of ballast water discharge prevents the updated risk analysis suggested in condition 88.</p> <p>JH: Asked about previous aerial surveys for seals specifically 2016. PR: There is a data sharing agreement for 2016 with DFO. Golder completed analysis of 2 days of data in good conditions and distance analysis is being completed. This is a very slow process. Looking at visual detection software to expedite the analysis. VG: asking DFO science to provide status on their work.**</p>
5.	<p>Community Based Monitoring Discussion</p> <p>MLH presented concept of community based monitoring and proposal to develop sub-committee and coordinate efforts with both industry and government focus, in order to build capacity for local environmental monitoring.</p> <p>GGi, Parks Canada, expressed interest.</p> <p>LB: Community based monitoring slide deck was provided to the MEWG in November 2016 for reference.</p> <p>JH: asked if the HTO was doing any community based monitoring?</p> <p>DK: When researchers want to do work they go to the HTO board to receive a letter to go ahead. DQ: No community based monitoring going on presently.</p> <p>EP: We could delegate tasks to the HTO, hunters can provide information on the whereabouts of animals, and how far we have to get to them. Seals are moving further away from community. A harvesting program where they marked hunting seasons in their calendars was done before the Project started.</p> <p>JH: Alaskan hunters have done monitoring, any information on that? PR: Impact in Alaska has been affected by seismic activity for a lot longer (50 years), they do have programs similar to Baffinland.</p> <p>JH: We can also ask for feedback from Ocean North they had a community based monitoring workshop in Cambridge Bay. I also developed a draft program for the QIA but it was never implemented.</p> <p>LB: Suggested Mary River Community Group and other HTO's in North Baffin be invited for participation on the sub-committee</p> <p>KH was interested in participating. BP said he would check with GN.</p> <p>Sub-committee on community based monitoring formed with GGi, LB, FM, PR, KH, WM. ECCC student, Frankie Jean-Gagnon, expressed interest in participating.</p>
6.	<p>Round Table Updates</p> <p>Makivik</p> <p>GG: No direct interest in the study area. Makivik interested when Steensby was proposed. Current research focus is on the stock identification of beluga whales in Hudson Strait. This is collaborative research with ECCC, DFO and GN. Currently gathering community input on the study design.</p> <p>Parks Canada</p>

<p>FM: Interest is the proposed Lancaster Sound National Conservation Marine Area. The feasibility study has been submitted to QIA, CCME and Minister of the Environment.</p> <p>HTO EP: Updated everyone on HTO interests. This includes harvesting of fish, specifically Halibut, and the building of a new office space and community freezer. EP participated in the April 2017 caribou survey near Mary River, there were small animals like fox, ptarmigan, but no caribou. Trying to negotiate more requests for research because environmental impact is significant, especially to the animals.</p> <p>QIA LB: Involved in multiple committees, will get back to NIRB on Project Certificate and monitoring framework. We need to look at our commitments included in the IIBA, and work on community based monitoring.</p> <p>DFO KH: We are involved in multiple parts of the program. Doing work on Greenland halibut and Arctic Char in Pond Inlet area. Invasive species research on ports across the arctic – Churchill, Deception Bay and Iqaluit.</p> <p>MQ: There were two people that used a machine underwater, the sounds scared the narwhal away. Uncertainty on who it was and what study but could locate on a map because he was helping. The machine was meant to prevent ships from running over narwhal and seal, but MQ has not seen narwhal or seals get that close to a boat. General: uncertainty on what the system was. PR: It could've been a system that is used to test waves and broadcasts in high frequencies. We would need to confirm the location and timeframe. JH: We heard these comments in 2012 when we were consulting, Baffinland didn't know anything about it in summer of 2011 or 2012. MQ: The testing was to see if Narwhals would get run over by ships.</p> <p>No updates on marine programs from GN.</p> <p>LB: Could we get a video on the operation focussed on shipping? MLH: We have one available on the website.</p>
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	Action Items	Action By	Date Completed
1.	HTO meeting in May/June to discuss	Baffinland and Golder	June 11 and 12 2017
2.	Coordinate meeting in November on site	Baffinland	
3.	Create sub-committee for Community-Based Monitoring	Baffinland to kick start	
4	Create sub-committee for Ship Board Observer Program	Baffinland	
4.	Look into potential systems in 2012 that would have created underwater noise	Golder	
5.	Jean Francois to provide snow goose survey information next fall		Next fall

Feedback on draft minutes provided by Environment Canada on June 29th and QIA on July 11th 2017. No other comments received.



Marine Environment Working Group Meeting

Date: September 13, 2017, 1 – 2:30 pm

Location: Conference Call

Participants	
Member Organization	Attendees
Baffinland Iron Mines (Baffinland)	Megan Lord-Hoyle (MLH)
	Joe Krimmerdjuar (JK)
Qikiqtani Inuit Association (QIA)	David Qamaniq (DQ)
	Jeff Higdon (JH)
Mittimatalik Hunters and Trappers Organization (MHTO)	Elijah Panipackchoo (EP)
Department of Fisheries and Oceans (DFO)	Kim Howland (KH)
	Véronique D'Amours-Gauthier (VDG)
	Marianne Marcoux (MM)
Government of Nunavut (GN)	Brad Pirie (BP)
Environment Canada (ECCC)	Grant Gilchrist (GP)
Wild World Fund Canada (WWF)	Andrew Dumbrille (AD)
	Amanda Hanson-Main (AHM)

*** Golder is not able to participate in this call due to the demobilizing from the field.

Agenda	
1.	Welcome and introductions
	1. 2017 Field Marine Program Update – Status of programs
	2. General Baffinland Update and re-cap of proposed ice management in August
	3. Shipboard Observer update
	4. Community-Based Monitoring Update
	5. Confirmation of dates and location of Fall face to face meeting – proposing the week of November 27
	6. Review of Scheduling for meetings and document release and review by working group members
	7. Round Table

Discussion and Comments
<p>Field Program Status (MLH): <u>Marine Environment Effects Monitoring – August 9 – September 14, 2017</u> All activities have been completed as planned except the dive program to observe fouling on vessels, due to safety reasons. Under water cameras were used to observe for fouling. Field Techs: 5 Inuit hired for the program</p>

Bruce Head – July 23 – August 23, 2017

All activities have been completed as planned.

Marine Mammal Observers/Polar Bear Monitors: 6 Inuit hired for the program

Tremblay DFO Tagging Program – Early August – September 14, 2017 – (Update as of Sept 9)

All activities have been completed as planned. Successfully deployed all 10 Baffinland Fasloc0GPS satellite tags on animals, as well as all 5 MiniPAT dive tags and 6 Acousonde deployments (and counting). 16 whales have been live captured and tagged with 4 more to be tagged under the permit. Most of the whales have spent the majority of their time in the shipping lanes. Post Call Update: 20 whales were live captured and tagged which was the maximum allowable on the permit.

Field Techs: 2 Inuit hired to participate in the program.

Inuit hires:

Successful coordination with the HTO, all Inuit hired through the HTO, which posted the jobs and provided initial screening. 15 individual positions originally posted, 14 people participated in the training day in July in Pond Inlet. We had a number of challenges with obtaining medical information in time and some who decided not to participate at the last minute. In the end, 13 positions were filled. This model seemed to work really well. Intention to return to Pond Inlet this fall and follow-up with those who are willing to engage more in the reporting during the off season and debrief on the programs as a whole.

Comments:

JH: Were the 13 hires from Pond Inlet?

MLH: yes, they were all from Pond Inlet;

JH: How effective was the camera to replace the drive program?

MLH: no information at this moment; it would be better to consult with Golder in November;

DQ: Will you be using cameras in the future?

MLH: it will come down to how successful the program was; Golder will have more information;

DQ: Were there any fatalities when tagging narwhals?

MLH: no fatalities reported; all tagged whales continue to transmit their daily locations/movements via satellite - all data suggests animals are behaving normally

KH: Did you end up doing sampling at Ragged Island for marine based monitoring?

MLH: yes, I think it was two days spent doing sampling in that area;

DFO – Kim Howland Aquatic Invasive Species – August 10-23 (KH)

- We started out in Pond inlet and hosted a two day work shop: explained work we are doing and discussed how local knowledge and science could work together;
- Worked mainly on the baseline species (small organisms);
- Collected samples in Pond Inlet; mainly cruise ships traffic;
- Worked with Ikaarvik group in Pond Inlet and someone from Salluit, Nunavik - experience working on project in Deception Bay;
- Chartered the Nuliajuk (GN research vessel);
- Environmental DNA – involved youth in collecting samples from the water;

- We are interested in seasonal effect; community will continue collecting samples for the next several months; identify how well this method works – will help to learn if it makes sense to collect samples during different seasons;
- Good field season at Milne Port: sampled 16 sites

There was concern about ships being staged around Ragged Island – interest whether program could be extended around that area for the near future; will be reviewing funding within the community, governmental funds and BIM in kind support;

Ballast water sampling – was not feasible at that time; spoke with the Port Master and his suggestion would be to follow up with MLH and Jared Gardner (Head of Shipping, Baffinland Iron Mines).

Comments:

AD: It sounds like you are starting from scratch. There seems to be some work done in the past. Are you building a new program?

KH: Our program is a bit more extensive in terms of how large of an area we are sampling. Samples preserved in ethanol (versus formalin) as this allows future analyses.

For example, environmental DNA – something BIM might consider for their field monitoring program. We are quite interested in accessing the species list; it would be nice to get a spreadsheet from SEMs work; it will help when running genetic samples in the future;

AD: It sounds like you will be integrating work done in the past.

KH: Yes. Certainly the work builds on past work.

MLH: It is my understanding that Golder and Kim have been in discussions around data sharing, as Golder was running an aquatic invasive species monitoring program as well.

KW: Yes, Golder was also running a program, but some of the sampling methods were different; it will be interesting to see what species were picked up by Golder

Shipboard Observer Update (MLH)

- Discussed with sub-group
- Agreed that a subcommittee would be useful
- Agreed that implementing the shipboard observer program would be difficult until custom ore carriers are built
- Formal update to MEWG in November

Community-Based Monitoring Update (MLH)

- Baffinland delayed in developing formal sub-group outline – will have for discussion in November at the latest
- Successful use of community members in this year’s program will provide a solid basis/process to build on
- Baffinland completed a research paper over the summer on best-practices

Comments:

JH: Did you commission this paper?

MLH: Not externally. Summer student was working on this research as part of her summer placement; final version will be reviewed and distributed to the group in the near future.

General Updates (MLH)

- NPC is currently reviewing the proposal for an amendment to the NBRLUP which requests that the rail line be considered as part of the transportation corridor and includes the use of ice

breaking to allow winter re-supply sea lifts in December through February. Comments are requested by October 2, 2017. More information is available on the NPC website. This amendment will receive a determination before the Phase 2 proposal will be assessed.

Comments:

AD: If anyone is interested in the copy of the proposal he could send it out. It was a difficult process of obtaining this documentation from NPC.

MLH: Please free to also reach out to me, and I could distribute this documentation;

AD: You don't intend to ship ore during December?

MHL: This is correct. We are only looking to bring sealift of supplies if required;

AD: Has something change for the need in this request?

MLH: No, this is more of a planning ahead in case urgent items are required, for example, additional equipment for the operations (trucks, parts, etc.);

AD: You decided not to include March, April and May because of the community concerns related to seal?

MHL: Yes, this is correct.

- Ice Management: In order to decrease operational variability, Baffinland began investigating the option of bringing in an ice class vessel to provide ice management services at the beginning of the shipping season. The reason for this was that although land fast ice break-up occurred within seasonal variability, there were pockets of gathered ice at the mouth of Eclipse Sound and the mouth of Milne Inlet, which prevented the ore carriers from transiting. The ice management vessel was intended to come in and move the ice to allow for safe passage.
 - Baffinland is exploring options to bring in an ice management vessel again for the completion of the 2017 Shipping Season through October. If Baffinland will be proceeding with this option a formal written notification will go out as more details become available. Once again we will coordinate with the HTO to ensure that they are aware of what is happening and can share any feedback on the proposed approach.

No comments on ice management

Face to Face Meeting – week of November 27th in Iqaluit (MLH)

Due to accommodation needs on-site there is no option to hold the fall meeting on site. We will only be able to explore this option again, upon completion of a new camp to extend accommodations.

We had discussed the week of November 27th for the meeting and I did not receive any conflicts. We will move forward with these dates to take place in Iqaluit.

Comments:

DQ: Are you confident additional accommodations will be built this or next year?

MLH: Requests have been submitted to NIRB; BIM is currently waiting for their approval;

JH: Will there be any issues with booking rooms in Iqaluit given the current capacity there?

MLH: We will do our best to secure a block of rooms for the upcoming meeting. Alternative would be a meeting in Ottawa.

JH: What will the dates be?

MLH: Dates will be November 28 and 29 to conduct both working group meetings.

AD: What is the intention of the face to face meeting?

<p>MLH: November meeting will be used as an opportunity to present a draft of results; discuss what worked and what did not work; intention will be to incorporate comments from that into the draft reports which will be available for review as well following the meeting; spring meeting will be more of a forward looking meeting for planning of the upcoming summer season;</p> <p>JH: 2016 Aerial survey performed by DFO – will the Golder analysis be available for review? MLH: I will follow up on this and provide an update to the group. GG: I will be providing a presentation during November meeting; had a successful summer season – into reporting now and currently working with EDI to prepare final reports.</p> <p>DQ: Glad we were able to work with HTO to employ Inuit to participate in the summer field work; Looking forward to seeing the final reports, especially the use of the tags. Glad everything went well. MLH: Very happy how this summer turned out; all the Inuit hired have been great</p>
<p>Schedule of Report Review Timelines</p> <p>Baffinland is expecting four main reports for the marine environment. Have to confirm feasibility of dates with Golder, these are approximate timeframes. Asking for no longer than a three week review turnaround to have all reports finalized and posted by March 31st.</p> <p>Marine Environment Effects Monitoring Report</p> <ol style="list-style-type: none"> Proposing draft to MEWG February 15, 2018. Comments back from MEWG March 2, 2018 – two week review. <p>DFO Habitat Offset Report</p> <ol style="list-style-type: none"> Due to DFO on January 1 of each year. No comment period – regulatory report. Will be circulated to MEWG for records <p>Bruce Head</p> <ol style="list-style-type: none"> Proposing draft to MEWG Jan 15th and comments back from MEWG by Feb 5th or Jan 1 with Comments back from MEWG Jan 19. <u>Post Call Update:</u> Draft to MEWG Jan 15, 2018 – comments to be received by MEWG Feb 5, 2018. <p>Narwhal Tagging</p> <ol style="list-style-type: none"> Proposing draft to MEWG Jan 15th and comments back from MEWG by Feb 5th or Jan 1 with Comments back from MEWG Jan 19. <u>Post Call Update:</u> Draft to MEWG February 15, 2018. Comments back from MEWG March 2, 2018 – two week review. Deadlines have been re-evaluated due to the extensive data analysis needs, and review by DFO.
<p>Closure:</p> <p>Round table updates/Comments - None Proposed agenda items for the November meeting - None</p>

	Action Items	Action By	Update
1.	Baffinland to confirm date and location of face to face meeting	Baffinland	Completed – Meeting set for November 28, 2017 in Iqaluit
2.	Provide update on 2016 Aerial Survey	Baffinland	Data to be submitted as part of the Marine Mammal EIS Addendum, deliverable scheduled for this fall.

Input on draft comments received by: Golder; QIA. No other parties provided comments.

Marine Environment Working Group Meeting

Date: November 29 & 30, 2017, 1pm-5pm and 8:30am-12pm

Location: Ilinniapaa Campus
775 Fred Coman Street, Box 989, Iqaluit NU

Member Organization	Participants		Member Organization	Participants	
Baffinland	Megan Lord-Hoyle (MLH)	I	Parks Canada	Francine Mercier (FM)	I
	Joe Tigullaraq (JT)	N	Makivik	Gregor Gilbert	N
Qikiqtani Inuit Association and Consultants	Stephen Williamson Bathory (SB)	N	Mittimatalik Hunters and Trappers Organization	Mathias Quanaq (MQ)	I
	Luc Brisebois (LB)	I		Elijah Panipakoocho (EP)	I
	Jeff Higdon (JH)	I		Daisy Koono (DK)	N
	David Qamaniq (DQ)	I	Observer Organization	Participants	
	Nadine Shillet (NS)	I			
Fisheries and Oceans Canada	Veronique D'Amours-Gauthier (VDG)	N	World Wildlife Fund – Canada	Andrew Dumbrille (AD)	I
	Kim Howland (KH)	I		Amanda Hanson Main (AHM)	N
				Brandon LaForest (BL)	I
Environment and Climate Change Canada	Grant Gilchrist (GG)	I	Oceans North Canada	Chris Debicki (CD)	N
	Anne Wilson (AW)	P		Kristin Westdal (KW)	I
Government of Nunavut	Brad Pirie (BP)	I	Baffinland Consultants	Participants	
	Lauren Perrin (LP)	N	Golder	Phil Rouget (PR)	P
	Jon Neely (JN)	N	Golder	Erin Linn (EL)	I
	Mike Harte (MH)	I	Environmental Dynamics Inc.	Mike Settingerton (MS)	I
	Amy Robinson (AR)	I			

P-phone in participation, I – In person, N- Not attending

Agenda
Welcome and introductions
<ol style="list-style-type: none"> 1. Baffinland Update and Meeting Objectives <ol style="list-style-type: none"> a. Phase 2 Approval Process b. NIRB Monitoring Framework Appendix A Draft Release and Comments c. Ore Carrier Escort Services

2. Monitoring Program Planning <ul style="list-style-type: none"> a. Updates to Shipping and Marine Wildlife Management Plan b. Development of monitoring program frequency schedule c. Development of thresholds for adaptive management d. Aerial and Acoustic Surveys + Shipboard Observer Program
3. Shipboard Observer Committee Update
4. 2017 Seabird Monitoring Focus
5. 2017 Marine Environmental Effects Monitoring Program
6. 2017 Marine Mammal Monitoring Program
7. Round Table

Discussion and Comments
<p>Baffinland Project Update</p> <p>AD: Is there no winter sealift as part of Phase 2?</p> <p>MLH: Correct, all winter shipping is removed from Phase 2.</p> <p>AD: What is the proposed change in volume of ore mined?</p> <p>MLH: We are proposing to increase the production level of 4.2 MT to 12 MT per annum.</p> <p>AD and KW: How many shipping trips will be required with the increased level of production and what is the route?</p> <p>MLH: There will be approximately 140 voyages out of Milne Port through Eclipse Sound.</p> <p>GG: Are there any safety concerns related to grade of topography on proposed rail route?</p> <p>MS: The design will minimize the steep grades to Milne Port.</p>
<p>EWG Role, Responsibility and Decision-Making Authority</p> <p>MLH: The proposal to shift the MEWG from an advisory committee to a decision-making body will negatively impact Baffinland’s capacity to make decisions and changes regarding the Project. Presently the MEWG is able to provide effective and valuable feedback and thereby inherently has important agency in the Project’s decision-making process. Significant efforts have been made over the last year to increase communication including adding two more meetings per year, developing a schedule for circulation of draft reporting and when comments are expected back by and providing regular updates when any changes to Project monitoring or operations related to the marine environment are occurring.</p> <p>LB: The working group does have considerable power in that any member may write to the NIRB if they feel that the group is not functioning as it should. Further, over the last year, Baffinland has made considerable effort to ensure consistent communication and providing information to inform discussions. The QIA doesn’t feel that the group needs to have decision making power and that the group is functioning already.</p> <p>AD: Our frustration relates to the fact that Baffinland made a decision to cancel a monitoring program before consulting the MEWG. Not that we wanted this to be a decision making body, but that the group wasn’t doing the work that it was tasked to do. We do not feel that the MEWG has been effective, but recognizes that Baffinland is re-affirming its commitment.</p> <p>KW: Baffinland has not provided all information or some reports in the past which would be useful for the group to provide advice on the monitoring programs.</p>

GG: The group does function and can provide feedback in this forum. There may have been mis-communications in the past which have led to the current issues. Moving to a decision-making body is not necessary to ensure the group is functioning.

MLH: Baffinland acknowledges some of the challenges that the MEWG has experienced in the past, but our position remains that transitioning the MEWG from an advisory group to a decision-making body is problematic. Baffinland will send out all past reports to the group to ensure that the information is disseminated. All reports from 2013-2015 are available on the NIRB site through the annual report. All 2016 reports are publicly available on the Baffinland website and have been circulated for input from the group before they were finalized. All commentary on the Draft NIRB monitoring framework is available on NIRBs website. This discussion is to ensure transparency and to discuss Baffinlands position with the group. Baffinland will continue to ensure transparency in our reporting and decision-making with this MEWG.

All: General agreement that the group does not need to move to a decision making body, but that significant efforts to ensure transparency in reporting and changes to monitoring programs are made and recorded.

Adaptive Management

AD: There is a lot of scientific work being done and we are seeing impacts on the environment, however we are not seeing the application of effective adaptive management. The MEWG is yet to see any of the results from monitoring.

MLH: Adaptive management has been put in place. e.g., speed of all ships, including re-supply. We are putting in operational procedures in response to comments from the group. We have also adapted some of our monitoring programs to better respond to gaps in answering the questions the group is trying to get at.

Cumulative Effects

MS: We need to consider the long-term effects of the way project conditions are written. The Baffinland terms and conditions are very prescriptive and do not allow for flexibility over the Project life to adapt to changes.

JH: The volume of material being shipped will have an effect on marine life.

AD: DFO should be assessing the cumulative effects of the Project with proposal for increased shipping.

KH: We have had our own review processes and collaboratively developed programs have come out of those efforts. Cumulative effects assessment needs to be a request for Canadian Science Advisory Secretariat (CSAS) process

KH provide an overview of the CSAS process and it was noted that Transport Canada requests a CSAS as well. It was discussed that the MEWG should request additional participation and input from DFO.

EP: It's a bit confusing, especially in the early stages of the monitoring program. It seems like we are doing ok. This summer was different with the number of killer whales and that they were there all summer. The cruise ships can discharge grey water without penalization, and they can have impacts. We still need to strengthen our wording of the mandate as a monitoring committee. We need to strengthen our spill response. Again, we're in the early stages of the monitoring program, but we need to be in agreement moving forward.

Aerial Surveys and Shipboard Observers

MLH provided an overview of the planned shipping activities for 2018.

MLH presented a discussion on the requirement of aerial surveys annually. Is there a more effective use of resources to answer the same questions/intent of the aerial surveys without conducting them annually?

GG: At the next meeting, it would help the group to see the number of ship transits on a seasonal basis, and variability on a year-to-year basis. That might influence how frequently the aerial surveys will need to occur.

LB: In absence of ship-board monitoring, perhaps we should consider more land-based survey points, and the impact of not conducting aerial surveys. If DFO does them one year, then fine, but if we don't do them, then we have no data on distribution and abundance from that year.

PR: The key question is narwhal response to shipping. If the question was determining exact abundance of narwhal, then do aerial surveys, but that's not the objective. The aerial surveys will not tell us anything about narwhal response to shipping. We would not pick up a change in response to Baffinland unless it was a huge change. So, we propose reducing those surveys, and focusing on things that are directly related to the question of interest. Even if we design the surveys as they have been in the past, they don't have statistical power to detect small level changes – they will only tell us at the level of the stock. There is so much variability that it's clear that the surveys won't pick up the difference.

GG: So, what are the alternatives?

PR: Looking at a number of lines of evidence, rather than just focusing on aerial surveys. Instead we have designed programs at the level of individual or group to better understand the response to disturbance, in terms of both vertical and horizontal movement.

JH: How do you scale individual response up to the level of the stock?

PR: We're looking at satellite imagery. We might be able to generate raw counts of narwhal.

KW: I don't think Baffinland should be relying on aerial surveys, however I think we need the aerial surveys to continue while the shipping is ramping up.

PR: What is that going to tell us?

KW: I don't know. We still haven't seen the results from the original surveys? I am heated about this issue, because I've been asking for these data for over a year.

PR: May I suggest that we provide to MEWG members all previously completed aerial survey reports which show the high degree of variability present in annual survey data (abundance/density) which limits the ability to detect potential small to moderate changes in narwhal abundance (or behavior) from shipping using this survey method.

LB: From listening to Phil the other day (at meetings held with Pond Inlet HTO and participants from the field programs), having integrated data sets gives us lots of information. It adds to the level of knowledge we have on narwhal. We're just at the maximum point of shipping before we're suggesting increasing for Phase 2.

GG: Unless the previous data is reviewed, there is a reluctance to end surveys.

AD: The integration report provided a summary of surveys, it didn't tell us anything about the results. We only saw a Power Point presentation of the aerial survey results and that data revealed that after two ships, there was an impact. We are yet to see that detailed report.

MQ: We can also include the narwhal harvest data from the hunters in Pond Inlet. There is also the IQ – the migrations, the numbers, some will swing over to Admiralty Inlet... the timing of these population estimates are very critical [based on knowledge about narwhal movement].

KH: Some IQ might help explain some of the variance, using Bayesian methods to incorporate IQ to get closer to the truth. On the fish side we use that a lot. It sounds like there's a lot of uncertainty in these estimates.

MQ: Surveyors should consult with Inuit before coming to do survey work. If IQ is integrated during the fall, instead of expensive flying we could ask for oral studies from Inuit instead of flying.

MLH: All LGL reports have been included in the previous NIRB annual reports. Whatever LGL provided will be made available to the group again. Also, objectives of the aerial surveys have to be made clear.

FM: If you have the data, we need to get it out so people can do their analysis.

LB: Ship Board Observer – the training has stopped. It has to be replaced with something else. There were interesting things being learned, but it has been dropped.

PR: We are exploring a purchase of 30-cm resolution satellite imagery from Digital Globe (DG) which may allow for true (actual) counts of narwhal on a given survey day (eliminates spatial gaps that are present in standard distance sampling approaches such as line transect surveys). Satellite imagery has the advantage over transect surveys in that it allows for raw counts of animals (and therefore decreases the variability encountered using standard distance sampling methods). However, it is reliant on appropriate targeting of the study area of interest by the satellite swath (temporal and spatial), and being able to collect data in the full ‘study area’ during a period of clear weather (<15% cloud cover).

PR and KH: We shouldn’t cancel aerial survey program. We require five (5) years of data for aerial surveys to establish validated baseline.

MLH: The 2016 aerial photographic survey report is being finalized and will be shared with DFO before it is shared with the group, but will be available to the group before the NIRB annual report. This conversation will be revisited at our next meetings before any decisions are made.

DAY 2

Shipping and Mammal Monitoring

EP: We need to monitor ship traffic and the associated workforce of this Project component. If something goes wrong in the future we need to be clear and on the same page regarding the MEWGs mandate. We have seen an effect on the terrestrial environment and smaller habitat. We want to share this information.

GG: We will write a letter to DFO recommending that they attend MEWG meetings to help share this kind of information with NIRB and DFO.

KW: We have concerns about the number of ships increasing.

GG: We would like to see a graph showing the projection for increased number of ships.

KW: It would be useful to know the anticipated year-to-year variations in the number of ships.

KW provided a presentation to the group and noted the following:

- KW noted that she thinks the QIA will continue to support her project.
- Interested in participating in tripartite monitoring program for Milne / Tremblay with Scripps, QIA and HTO.
- Ship speeds from 8 knots to 10 knots.
- Cruise ships in Tremblay are not large ore carriers.
- AIS is not useful data for Oceans Norths.

EL provided a presentation related to the Marine Environmental Effects Monitoring Program. The MEWG had some questions about the mercury readings, but explained that this is not a source from the mining activity. There were also some questions about iron dust deposition in the marine environment. MLH talked about dust generated during ship loading, and the fact that Baffinland cannot water the stockpiles but operational changes to the shiploader have been made to reduce dust.

MQ: During marine sampling we noticed that when fish are moving back up the river, sometimes you see that death is occurring naturally. The fish on slide 27 had a stomach full of cod. Would like to see what the fish are that were taken from stomach contents during the sampling program. We were monitoring fish as they were going back up the river. We didn’t catch many.

MQ: would like some of the pictures from the marine program presentation to be shared with him.

EL: Stomach contents from the incidental mortality/dead fish have been sent to the lab and we will be able to share results for what those were in the spring MEWG meeting.

GG: I would suggest that contaminants assessment be made available to Northern Contaminants Program. LB asked whether there was any opposition to sending the information. MLH agreed to this request.

MK: The camera used for marine habitat surveys isn't very stable, it tends to move. It takes about 12 hours to do the camera survey, even though it's not a very long distance. Sometimes sediment is stirred up. The camera has no wings, so it's just trying to move along the bottom. Maybe modify it himself to get it working better. EL responded that this is something that we use along other coastlines and that the video is being analyzed. We will be able to report back to the MEWG at the next meeting to show the video that was taken and see if changes in the equipment are needed.

EL: The dive program could not be completed safely due to port activities. The Port has to be locked down for an extended period of time. An ROV can't be used because samples have to be collected.

LB: Wanted ballast water exchange explained. MLH explained.

BP: Is there a behaviour change as a result of tagging of marine mammals?

EL: The tags deployed on the animal also aid in understanding how the animal responds to tagging, particularly with the first 24 - 48 hours we know to watch for changes. The veterinarians on the team also conduct a health assessment of the animal during tagging.

BP: Have the orcas ever approached the capture nets?

EL: They have never been captured in the nets on the Tremblay tagging programs. If they did, they would go right through the nets or be immediately freed from the nets as per the same procedures used to quickly release narwhal from the nets. This year, the orcas did chase narwhal into the nets as they were fleeing from the orcas (in this case, the nets ripped under tension and animals went right through the net).

BP: There's never an issue with a narwhal swimming away with some net attached?

EL: Not that we are aware of on the Tremblay Program. DFO may be able to provide other input.

LB: Retrospective question about killer whales, can Baffinland have some type of effect on them?

GG: Orcas are stealthy, difficult to study. We know very little about them.

AD: Asked about the collaborative agreement for the tagging program and how results are shared/used. MLH responded.

Seabird Monitoring – Environment and Climate Change Canada

GG provided a presentation on seabird monitoring to the Group.

Oceans North Acoustic Monitoring Program - Presentation

KW: I am participating in a research program with the Scripps Institute. They have an acoustic monitoring station deployed at the floe edge. Passive acoustic monitoring presentation. Hydrophones can pick up sound from ships 20 km away, and narwhal up to 10 km. Based on data collected to-date, it appears that narwhals call more when there are less ships, however our analysis isn't yet complete.

LB: What is the primary analysis you'll be able to get from this research and provide to this group?

KW: We'll see if there is a relationship between presence of ships and narwhal calling behavior.

EP: Narwhals sound like a creaking door when they're sick. Sounds from narwhals increase as they move up and down near the surface. They are quiet when they are being hunted. They create a screeching noise when they are being disturbed and this can also be indicative of illness. Of course there are different sounds that they make. Harp seals make sounds like crying dogs... you can hear that sometimes when you're outside. Narwhals are not very close friends with harp seals, just because of the sounds. Bearded seals seem like a friendlier mammal. KW: We didn't pick up any bearded seals on hydrophone, however we did pick up a sperm whale in the past (2015).

DQ: You mentioned equipment at the floe edge. Is it anchored at the floe edge? KW: It is anchored at the bottom, year-round.

<p>WWF presentation on their Lancaster Sound Mariners Guide.</p> <p>AD distributed the Mariner’s guide for Lancaster Sound distributed.</p> <p>PK: Parks Canada is looking to be more involved in things like WWF’s mariner’s guide. The IIBA will be done by summer of 2019 however we have interim management plan at same time. The interim plan will be in effect until a full management plan is developed within 5 years of the signed IIBA. Project Manager for the National Marine Conservation Area (NMCA) started work yesterday who will likely attend the next MEWG meeting sitting in for FM.</p> <p>AD: Increased shipping has created community concerns. We need to consider operational guidance and setback requirements. It would be useful to develop a month-by-month operational guidance program based on mammal migration patterns. The onset of the Project is a great opportunity to collect important wildlife data for the region.</p> <p>AD: We are concerned that ship captains do not know what marine mammals look like, and are therefore unable to identify and avoid them. We should ensure a 7-10 knot limit for all vessels.</p>
<p>Invasive Species Monitoring</p> <p>KH provided an update on invasive species monitoring.</p> <p>KH: There has been one invasive seaweed species recorded in the Arctic (Goldsmith et al. 2017). Pond Inlet not showing as being at risk for the next 30 species currently being examined. Ice will provide a buffer for invasive species.</p> <p>Aquatic Invasive Species Research (2015-2018). eDNA techniques are picking up a few more species than are being found in the more traditional sampling. In Milne Inlet, looked at tidal effects on eDNA species composition and recovery.</p> <p>2017 Milne Inlet Survey:</p> <ul style="list-style-type: none"> - N=14 subtidal - N=3 intertidal <p>DQ: Are you going to do some more work in Milne?</p> <p>KH: Good question. We have some concerns related to the Ragged Island area... they may be offloading some ballast there before proceeding to Milne. We don’t have funding earmarked to complete this research, but there may be an opportunity in the future.</p> <p>MLH: Next steps in terms of MEWG - Draft reports are going to start rolling out in January. We outlined the timelines in our last meeting minutes.</p>

	Action Items	Action By	Update
	Send letter to DFO requesting input and participation?	EWG	
	Include replacement for Francine from Parks Canada on future EWG correspondence?	Parks Canada	
	Distribute LGL Reports to MEWG	Baffinland	Complete – All Marine Monitoring reports from LGL and SEM from 2013-2015 sent on Dec 18, 2017.
	Include a graph of shipping activities and projections to inform aerial survey discussion	Baffinland	

	Update Terms of Reference (ToR) for the MEWG to further clarify roles of participants and of the Working Group.	Baffinland	
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APPENDIX C2

2017 TEWG MEETING RECORDS



Terrestrial Environment Working Group Meeting

Date: March 16, 2017

Location: Teleconference at 13:00 – 15:30 pm

Remote: 1-866-251-3220 ID: 6861183#

Participants		
Member Organization	Attendees	
Baffinland Iron Mines (Baffinland)	Megan Lord-Hoyle (MLH)	P
	Bill Bowden (BB)	P
Qikiqtani Inuit Association (QIA)	David Qamaniq (DQ)	P
	Luc Brisebois (LB)	P
	Kim Poole (KP)	P
Environment and Climate Change Canada (ECCC)	Jean Francois Dufour (JFD)	N
	Paul Smith (PS)	N
Government of Nunavut (GN)	Brad Pirie (BP)	N
	Amy Robinson (AR)	N
	Lauren Perrin (LP)	P
Mittimatalik Hunters and Trappers Organization (MHTO)	Mathias Qaunaq (MQ)	P
	Elijah Panipakoocho (EP)	P
Observer Organization		
World Wildlife Fund – Canada (WWF)	Andrew Dumbrille	N
	Amanda Hanson Main (AHM)	N
Baffinland Consultants		
Environmental Dynamics Inc. (EDI)	Mike Settington (MS)	P
Additional Recipients		
Qikiqtani Inuit Association (QIA)	Stephen Williamson Bathory	N

I – In person, P-phone in participation, N- Not attending

Agenda	
1.	Welcome and introductions (Megan Lord-Hoyle)
2.	Technical presentation provided by Mike Settington
3.	Discuss next face-to-face meeting proposal (Megan Lord-Hoyle)

Terrestrial Monitoring Studies for 2017	
Comments	
	<p>Dust and Vegetation:</p> <p>General discussion around what thresholds are being used - Canadian Council of Ministers of the Environment (CCME), site-specific or other where CCME do not exist. MS: For the most part CCME are used, other sources are used when CCME (federal guidelines) do not exist.</p> <p>MHTO: Are all samples below the threshold?</p>

	<p>MS: Yes. Although there have been individual samples above threshold levels due to lab errors, etc. – these areas were resampled again to ensure they are below thresholds.</p> <p>KP: Are pH levels monitored?</p> <p>MS: Not looking at soil pH levels. Good question to follow up given the dust level generated from the project. pH levels (acidity of the soil) are recorded during the lab testing, but are not included in the final reports.</p> <p>MHTO: If/when the rail is constructed, will the amount of dust change?</p> <p>MS: I believe there will be less dust generated from the train.</p>
	<p>Caribou Survey:</p> <p>JH: Clarification on the viewing shed area for the height of land surveys - a helicopter was used to try and test what might be feasible from the distance and then you did a GIS exercise to see from the vantage points how far you can actually see?</p> <p>MS: The GIS gave us the viewable limits, so it gave us the extended view while standing on the hillside. The helicopter is used to bring the observer to different distances with a radio and radio back until eyesight was lost. That approach got us out to 5 km, but we have limited the viewing shed to 4 km. The GIS work helped to pull out areas we cannot see due to the height of land (hills, valleys, etc.).</p> <p>JH: That sounds good, but again on the next page you have those four photos and you said the one the bottom right was at about 2 km. Are you comfortable or confident that given reasonable visibility that an animal at almost 4 km would be detected by your observers?</p> <p>MS: I think this will take some more testing for sure to find out and again we need more animals to really put this to the test. We are making our best estimates right now. I would like some local observers, the hunters that have done this through living on the land to see if we can get some better information.</p> <p>MHTO: One of the hunters has participated in this study in 2013 and is confident in his knowledge of this study and would be willing to participate again.</p>
	<p>Roads:</p> <p>MHTO: Comment about road crossings and snow banks: looking at the map of the Tote road at station 3 hunters use that area and it would be helpful to have less snow there; there is also an area between stations 9 and 10 that hunters use as crossing – will appreciate if that area is also kept clean of snow banks.</p> <p>MLH/BB: Thank you for pointing this out Elijah – I took note of that and that’s definitely something Bill and I, and others can follow up with and see what can be done with it. If we get the particular locations we can incorporate this into our snow bank management plan. We do our best to keep snow banks to a minimum, but is a constant challenge.</p>
	<p>Birds:</p>

	<p>MLH: this year we are talking about development of Baffinland document portal - web portal; this means 2016 Annual report will be available on BIM website as well as on the NIRB website.</p> <p>MHTO: Are you aware of Snow Buntings and Gyrfalcons arriving early April.</p> <p>MS: Yes, thank you very much. The Gyrfalcons are early arrivers for sure, and they are residents in the north, but maybe not that high north. Snow Buntings we see earlier in the season and they nest in piles of rocks along the shoreline.</p> <p>We have only found about 6 gyrfalcon nesting sites across the entire region of study area, including down south to Steensby Inlet. Part of our monitoring program was supposed to include monitoring gyrfalcons which would have meant surveys earlier in the year. We do our cliff nesting occupancy surveys right now in early June. We would have been doing these late April or early May for gyrfalcons, but we do not have enough nest sites. This is something the working group decided was not necessary balancing the level of effort required and the minimal impacts present – sample size is so small, it would tell us very little about project’s effects.</p> <p>MHTO: Are there studies on snow or Canada geese?</p> <p>MS: We are not doing anything specific on monitoring snow or Canada geese as they are not an indicator species for the Project, but we do conduct studies opportunistically when the biologists are on site and view geese.</p> <p>There are restrictions on helicopter over flights over an area south west from the project which ECCC has identified as an important molting area for geese (season is around late June – August;, so we are not flying low during that period).</p>
	<p>Monitoring Frequency:</p> <p>MLH: Over the next year Baffinland is looking to establish the monitoring frameworks for future planning - logistics, budget, feasibility, staffing etc. We are really looking at getting these frameworks consistent for both the Terrestrial and Marine side; and ensuring that we have a good monitoring plan going forward that we can present to our regulators and to the Nunavut Impact Review Board. We are really interested in the feedback from this as a group and certainly welcoming feedback now, but would like to address this again in the next face to face meeting and have this type of information settled or at least a way forward for how we can address this in the coming year.</p> <p>MS: There are programs that do not have a scientifically valid reason to run annually, so outlining a framework will help to eliminate confusion, where comments have been made on the cancellation of programs, no programs have been cancelled they are just not required every year.</p> <p>MLH: We welcome feedback now if there is any, but definitely something we would like to address at the next meeting.</p> <p>KP: Suggestion that this would be more appropriate for the face to face meeting. Suggested that for vegetation, running the program three years consistently before establishing a monitoring schedule would be beneficial. MS:</p>

	<p>MLH: For the 2017 Field Monitoring the majority of the program focus on Caribou monitoring this summer; these programs have had members of the communities participate and provide valuable knowledge and input; Baffinland would like to reach to out to HTO members on how best we can incorporate community involvement (hunters, elders and community members); If there are any other opportunities in any of these programs and people have ideas – we are definitely open to further conversations.</p> <p>MHTO: Confirmed their interest in participation.</p>
	<p>Face to face meeting (MLH):</p> <ul style="list-style-type: none"> • First week of May to be held in Ottawa • If there are any objections – to let me know • November meeting – planning to hold it at site

No action Items Noted.



Terrestrial Environment Working Group

Thursday May 4, 2017

9:00 am – 5:00 pm

Ottawa Delta City Centre

101 Lyon Street North, Ottawa ON K1R 5T9 Canada

Conference Call In Details: 1 866 251-3220 ID: 29299503#

Member Organization	Participants		Member Organization	Participants		
Baffinland	Wayne McPhee (WM)	I	Mittimatalik Hunters and Trappers Organization (MHTO)	Mathias Qaunaq (MQ)	I	
	Megan Lord-Hoyle (MLH)	I		Elijah Panipakoocho (EP)	I	
	Joe Tigullaraq (JT)	I		Daisy Koono (DK)	N	
Qikiqtani Inuit Association (QIA)	Stephen Williamson Bathory (SWB)	N	Observer Organization	Patrick Innuaraq (PI)	N	
	Kim Poole (KP)	I		World Wildlife Fund – Canada (WWF)	Andrew Dumbrille (AD)	N
	Luc Brisebois (LB)	I			Amanda Hanson Main (AHM)	N
	David Qamaniq (DQ)	I				
Environment and Climate Change Canada (ECCC)	Jean Francois Dufour (JF)	P	Baffinland Consultants	Participants		
	Paul Smith (PS)	N	Environmental Dynamics Inc. (EDI)	Mike Settingerton (MS)	I	
Government of Nunavut (GN)	Brad Pirie (BP)	I				
	Amy Robinson (AR)	N				
	Krista Johnson (KJ)	I				

P-phone in participation, I – In person, N- Not attending

Agenda

Time	Activity
9:00 am - 9:30 am	Welcome and introductions (Megan Lord-Hoyle, All)
9:30 am – 9:45 am	Baffinland Update (Megan Lord-Hoyle)
9:45 am – 10:00 am	Meeting Objectives (Megan Lord-Hoyle)
10:00 am – 10:30 am	Health Break
10:30 am – 12:00pm	2017 Field Monitoring Programs (Mike Settingerton)
12:00 pm – 1:00 pm	Lunch (provided)
1:00 pm – 3:00 pm	Monitoring Framework and Scheduling Workshop (Megan Lord-Hoyle, All) Discussion on: <ul style="list-style-type: none"> Field programs and alignment with Project objectives Thresholds for adaptive management Requirements to develop a monitoring framework and schedule
3:00 – 3:30 pm	Health Break
3:30 – 5:00pm	Roundtable updates on relevant research projects; Next Steps

Reference Material:



EDI
TEWG_Presentation_



Final Presentation
for TEWG May 4 Meeting

Comments

1. **Baffinland Update**
MLH presented Baffinland update and Phase 2 proposal summary focussed on the terrestrial environment.

General discussion on dust levels at the site and options for mitigation.
BP: Questioned if moving the crusher and screener to the port will reduce the dust levels given the stockpiles will remain uncovered.
WM: The stockpiles will continue to be a challenge and ways to manage the dust will be continually explored. There are two stockpile types – lumps and fines. Fines contribute higher dust levels. Moving the crushing and screening equipment indoors will mitigate a large amount of the dust issues. In addition, more efficient crushing produces less fines.
LB: Were screens for the stockpiles installed? WM: Yes this past winter. They were not effective, looking at other options.

MQ: What is the equipment at the port that creates a lot of dust. WM: The stacker reclaimer. In the summer we can use water to mitigate dust but we can't do this in the winter so investigating other options including a 'shroud' that can be installed. Other technology which is similar to a snow making machine is also being investigated.

DQ: Are there lessons learned from Voiseys Bay that can be applied? WM: Yes, although we have significantly higher volumes of material to work with so the applications are not the same.

MQ: The road creates a lot of dust, similar to our trails. Can you decrease the dust by putting gravel down? Seeing dust on the lakes where people get water is of concern. WM: We can try to put more gravel instead of sand on the road to decrease dust. The move to a rail line will significantly cut down on road traffic and decrease overall dust levels. KJ: What volumes of water are you using and where is it sourced from? WM: Water is managed under the water license, the volumes and sources are in the terrestrial annual report for reference.

LB: What in the dust should we be worried about? MS: The issue of dust is universal. There are two things to consider – 1) finer dust settling vegetation (caribou forage) and changing the taste of the forage and 2) larger areas of settlement smothering vegetation. The potential uptake of iron is not a concern, but we continue to monitor for metals.
2. **2017 Terrestrial Monitoring**
MS provided a summary of the Terrestrial Annual Report and the 2017 field programs.

Caribou Monitoring:
EP: Provided summary of participation in the caribou monitoring at Mary River in April 2016. Monitored snow bank height, presence of caribou and animal tracks. Dust could be seen on the snow banks, this is from the dozers while clearing the snow dust gets mixed in. When the snow melts you see more dust similarly to our community. No caribou were seen. Tracks of foxes, hare and ptarmigan could be seen. The hare were not dirty at all, only one fox at Mary River was dirty. During the 70's wolves were killed to control Caribou population leading to peak populations. Based on oral history from elders the Caribou

move around in North Baffin, from Igloolik to Arctic Bay. They travel north and they are usually seen by Mary River area. Killing more wolves helps to increase the number of caribou.

MQ: During the summer, caribou will travel to Nunavik to have their young. EP: When calves are able to walk they travel to the middle of Baffin. In between Pond Inlet and Clyde River there is a river where elders would hunt for caribou. When there is snow they travel back towards Mary River.

LB: The caribou on Baffin are down in general, but there are sightings near Iqaluit. Is it possible that the mine site activity is keeping the caribou away from the area? MS: Biologists agree that the populations are down in the area. In 2012, a helicopter survey of the area identified 12 caribou. IQ workshops have indicated that since the 1990s the numbers have been declining, possibly from eating all of the forage. This seems to be a 70 year cycle based on IQ. KP: Clarified that the 70 year cycle is peak to peak so caribou numbers will increase slowly throughout that time. Referenced a 100 year cycle in Greenland caribou populations which is tied to vegetation abundance. LB: All science seems to be showing that the decline of caribou is universal and is not tied to the Mine site.

JT: Asked MHTO about caribou's diet and stomach contents right before they left Pond Inlet. MQ: Stomach contents were darker than Caribou from Arctic Bay. Stomach contents are green but get blacker around Pond Inlet. EP: In the mountains around Pond Inlet vegetation on the rocks (lichen) is black.

JT: Learned that forage in low areas is often green, so when low area vegetation is gone they eat rock lichen which makes stomach contents very dark. This change could predict a population decline if food supply is also declining. From early 2000's Igloolik and Hall Beach residents saw less Caribou because they moved to mainland for food but recently they have been moving back to Clyde River area.

LB: Noted that EP's (MHTO) participation in monitoring was positive and encouraged more people from the MHTO to participate to increase knowledge. MLH: Baffinland would like to provide opportunities to others, and it is up to the MHTO to identify those who participate in the working groups and/or those whose skills match the field monitoring requirements. EP: We would like to continue to work together. Younger people need to be engaged to train and spread the skills. Hunters have really good knowledge of the land that can be shared with younger people and scientists to train them.

Transportation/Dust:

KP: Noted that 2016 average traffic was below the predicted traffic but for only 3.3 mtpa so, traffic/dust may increase and exceed predicted levels. MS: The largest impact the traffic levels have is on dust. KP: Noted that sensory impacts could also be an issue. WM: Moving to rail transport would decrease possible animal interactions and dust levels. In 2017 new larger ore trucks were delivered to site, this will reduce the number of trucks needed to move 4.2 mtpa.

KP: It would be interesting to compare the areas of dust level exceedances to areas where the calcium chloride and water are being applied. The Golder 2016 report was good, what is missing is a best practices guide and the QIA is looking for a document with performance indicators and thresholds for action. WM: Last year active management was hindered by issues with the trucks for application. This year we have more resources and people to continue to address and expecting better results. The actions are started by visual observations, we can't wait for monitoring to tell us action is needed. The road maintenance crew is there every day so are acutely aware of changes.

General:

KP: Agnico Eagle is developing a TEWG for Meadowbank with support of GN, etc. based on the model of this group and the benefits it provides.

Helicopter overflights:

KP, JF, and BP raise issue of non-compliance of helicopter over flight. WM: There were actions taken this year to put conditions in helicopter contracts, document non-compliance, and check the status of the flights more regularly.

KP: Is the snow goose protected area polygon accurate? JF: Originally surveyed in the 80s, identified as important through the land use plan process, but we can look at old survey data to see distribution of snow geese in the area. It's important to note that the disturbance appears limited to one area rather than across the whole sensitive area (i.e. flight corridor). MS: The snow goose area was removed from the DLUP. JF: It was removed from the most recent ECCC submission to NPC as it didn't fit the criteria for categorizing areas as highly/moderately risk intolerant, likely because snow geese are an over abundant species and it was based on old survey data.

Bird nest surveys:

Required survey of the land prior to construction. PRISM surveys contribute to ECCC regional and international shorebird monitoring program.

DQ: Asked about shoreline bird studies. MS: Looked at surveys in Milne Inlet and birds have finished nesting when the ice goes out so no potential impacts on bird nests.

MQ: Noted that fish in the lake between km 60-80 should be tested. WM: We do have studies that test fish in freshwater but they are not discussed in this working group. We are organizing a workshop this summer/fall to review the programs and results.

Vegetation survey:

KH: The Dust fall on lichen condition (58c) is not being met. MS: The vegetation survey can cover this condition but difficult to collect enough data. Would take a long time to gather trends, so can't be answered annually. KP: Looking for more frequent data collection for soil metals. Suggested sampling every two years (so in 2018) instead of waiting until 2019. MS: We could consider in 2018, but need to look at geo-statistics to understand natural variability.

DQ: People in the community make tea with snow, should they be worried about using snow near the site? MS: I personally would avoid using snow near buildings and the road, this is where the highest levels are seen.

Community-Based Monitoring

BP: GN would like to see a written proposal. WM: Will put this together.

3.	<p>Round Table Updates</p> <p>ECCC JF: Paul Smith will be setting up long term camp on Prince Charles Island related to PRISM and other migratory bird studies. Parks Canada is planning PRISM surveys south of Pond Inlet this summer. University of Laval will be doing PRISM surveys on Bylot Island as well. ECCC will be conducting PRISM surveys on North Baffin Island in 2018, as part of ECCC Arctic-wide PRISM surveys.</p> <p>HTO EP: Nothing planned for caribou. Quotas are already set and the government has put tags on the caribou. After 5 years there will be a report. People also still sell fox hides and seal skins. MQ: Iron ore is not to blame for the loss of caribou. This started in the mid 90's when caribou. KP: What is the caribou limit for Baffin island? MQ: 25 per community for the next 4 years. EP: 250 for all of Baffin, 25 allocated for Pond Inlet. DQ: Only Bull caribou can be hunted. EP: There was an agreement between Baffinland and HTO for caribou monitoring before QIA got involved.</p> <p>QIA LB: Will be a part of the upcoming Baffinland community tour. QIA has prepared a slide deck on community based monitoring. Has become more comfortable with attending the working group meetings, that there hasn't been much impact from the mine operations. We are going in the right direction. DQ agreed with this statement.</p> <p>GN BP: Difficult to get update from biologists in the field. North Baffin regional biologist position needs to be filled. BP is changing roles so will not sit on the WG, but will continue the regional caribou monitoring program. Continued interest in the community based monitoring initiatives.</p>
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Action Items		Action By	Date Completed
1.	Set up sub-committee for Community Based Monitoring and provide a summary memo on the structure and intent of the CBM sub-committee	Baffinland	
2.	GN to provide updates on caribou program	BP	
3.	JF will look into snow goose boundaries for helicopter compliance	ECCC	
4.	Organize TEWG meeting at mine site in late November	Baffinland	

Feedback on draft minutes provided by QIA on July 11th 2017. No other parties provided comments.



Terrestrial Environment Working Group Meeting

Date: October 3, 2017, 1 – 2:30 pm

Location: Conference Call

Participants	
Member Organization	Attendees
Baffinland Iron Mines (Baffinland)	Megan Lord-Hoyle (MLH)
Qikiqtani Inuit Association (QIA)	Luc Brisebois (LB)
Government of Nunavut (GN)	Brad Pirie (BP)
	Lauren Perrin (LP)
Environment Canada (ECCC)	Jean-Francois Dufour (JFD)
Wild World Fund Canada (WWF)	Brandon Laforest (BL)
Environmental Dynamics Inc.	Mike Settingington (MS)

Agenda	
1.	Welcome and introductions
	1. General Baffinland Update
	2. 2017 Field Program Update – Status of programs (Mike Settingington)
	3. Round Table
	4. Confirmation of dates and location of Fall face to face meeting – proposing the week of November 27 th
	5. Review of Scheduling for meetings and document release and review by working group members

Discussion and Comments
<p>Baffinland Update (MLH):</p> <ul style="list-style-type: none"> Baffinland submitted a proposal to amend the North Baffin Regional Land Use Plan to the Nunavut Planning Commission (NPC) in August 2017. NPC requested public comments which closed on Oct 2, 2017. Baffinland is in the process of providing a response. The Nunavut Impact Review Board has approved Baffinland to build an 800 man camp at Mary River, a 300 man camp at Milne Port and to bring in two fuel tanks (Capacities of 3 million litre and 0.75 million litre respectively) to Milne Port, under the existing Project Certificate No. 005. Wayne McPhee, former Director of Sustainability is no longer with Baffinland. MLH will be lead on working group related matters. <p>Field Program Status (MS): All field programs have been completed successfully.</p> <p><u>Caribou Surveys:</u></p>

- Height of Land Survey: there were two programs conducted – one in April and second in the middle of June. Snow track surveys were also conducted in April.
- Elijah P. (HTO) member of the working group assisted in the field work during these programs

Raptors Study:

- Occupancy was studied in mid-June
- Productivity was conducted in August

Vegetation Monitoring:

- Completed this survey after QIA suggested to continue the survey for an extra year. Data will be analyzed for inter-annual variability and repeatability.

Metal Sampling:

- Resampling questionable sites from 2016
- Data for the reports is coming in
- No particular issues with dust monitoring program this year;

Comments:

None

MLH: BIM is supporting Government of Nunavut who is currently up at site right now performing Caribou Survey;

MS: this would be the 3rd survey Government of Nunavut is performing. It will be interesting to see the results.

Roundtable

LB: Possibility of meeting in Pond Inlet; meetings would be open to the public;

MLH:

- BIM is not opposed to holding a meeting in Pond Inlet but because it is a deviation from the agreed locations in the Terms of Reference it will have to be agreed to by all members of the working group as it may require additional resources from each organization;
- Working group meetings will remain closed door - will not be a public meeting as they have been designed to conduct technical conversations;
- If the intent is to broaden the communication of environmental programs and results this can be achieved in other ways such as holding meetings directly with the HTOs and/or others to focus specifically on the environment.
- Two organization have responded that the preference to maximize resources is to continue to hold the meetings in Iqaluit or Ottawa.

LB:

- This is a thought for when we are having meetings – it might be a great idea to invite guests and open it to the public but I understand the concerns and agree;
- We are not quite ready at this point, but something to re-visit.

MLH:

- We need to be very cognizant of how group resources are spent and what is the best use of those resources to maximize the intent of these meetings;

<ul style="list-style-type: none"> • Holding the groups open to the public would require a re-structuring of the meeting, would inherently require more time and would not allow for the very focused technical discussions that are required to address the analysis of results of development of mitigation measures; • BIM is currently working on setting up a strategy on how to share environmental information with the communities – conduct a community tour focusing on the field programs/gather input; this information can then be brought back to the working group for discussion; the working group meetings will remain closed with member and observer organizations participating as is consistent with the terms of reference; • Comments from any other organization? - None
Face to Face Meeting – week of November in Iqaluit (MLH)
<ul style="list-style-type: none"> • Intention of the face to face meeting is to thoroughly go through the results we have to date; • Prepare Final terrestrial annual report for January – mid February; • Draft report will be coming out at the end of October for comment and discussion at the November meeting; written comments to be submitted by December 15th, 2017. The Draft report will have data gaps that come out at the end of the year (dustfall and traffic data), but will be complete enough to analyze trends and discuss; • We will continue to plan logistics for the working group meeting in November in Iqaluit unless I hear unanimously otherwise by Friday October 6.
Closure:
Proposed agenda items for the November meeting - None

	Action Items	Action By	Status
1.	Baffinland to confirm date and location of face to face meeting	Baffinland	Complete – Nov 30, 2017 Iqaluit

No comments received by any parties before Finalization.

Terrestrial Environment Working Group Meeting

Date: November 30, 2017, 9:00 am – 5:00 pm

Location: Ilinniapaa Campus
775 Fred Coman Street, Box 989, Iqaluit NU

Member Organization	Participants		Member Organization	Participants	
Baffinland	Megan Lord-Hoyle	I	Mittimatalik Hunters and Trappers Organization	Mathias Quanaq (MQ)	I
	Joe Tigullaraq	N		Elijah Panipakoocho	I
Qikiqtani Inuit Association	Stephen Williamson Bathory	N		Daisy Koono	N
	Jeff Higdon	I	Observer Organization	Participants	
	Luc Brisebois	I	World Wildlife Fund – Canada	Andrew Dumbrille	I
	Nadine Shillet (NS)	I			
	Jeff Higdon (JH)	I			
David Qamaniq	N	Amanda Hanson Main	N		
Environment and Climate Change Canada	Jean Francois Dufour	I	Baffinland Consultants	Participants	
	Anne Wilson	P			Environmental Dynamics Inc.
Government of Nunavut	Brad Pirie	I			
	Lauren Perrin	N			
	Jon Neely	N			
	Mike Harte	I			
	Amy Robinson	I			

P-phone in participation, I – In person, N- Not attending

Agenda
Welcome and introductions
Baffinland Update and Meeting Objectives
1. Phase 2 Approvals Process
a. NIRB Monitoring Framework Appendix A Draft Release and Comments
2. 2017 Field Monitoring Programs Draft Results
3. 2018 Monitoring Program Planning
4. Roundtable updates on relevant research projects:
a. ECCC – PRISM Surveys
b. Conclusions and Action Items

Discussion and Comments
General Discussion
<p>LB: commented on lack of overall reporting of a review of environmental incidents on site for the year. Will it be possible to include in terrestrial group a summary reporting at the meeting about key environmental issues such as spills, accidents, etc?</p> <p>MLH: We can consider providing that as an overview in future meetings [action]</p>
Dust fall Monitoring
<p>LB: How tall are the dust fall collectors, and does that mean you're only collecting dust at that height?</p> <p>MS: Dust is collected in jars at about 6 feet. It is a standard sampling method and is representative of dust fall on ground.</p> <p>LB: Is calcium chloride approved for use? Is it safe?</p> <p>MLH: It is approved for use in Nunavut, and was identified as such in regulations, and in the FEIS.</p> <p>BP: It would be helpful to see suppression maps overlaid with dust fall collector stations.</p> <p>MS: This will be provided in final version of report (and was part of the presentation) [action].</p> <p>BP: It would help clarify whether or not the mitigation measures are effective.</p> <p>MS: The current design of the monitoring program is sufficient for understanding the Project-related dust fall and effectiveness of associated mitigation measures. Previous annual reports have shown this through statistical analyses, power of detecting trends, revisions to programs, etc.</p> <p>MQ: As a hunter, we see the most dust at the mid-point of the road.</p> <p>BP: Based on information presented in the NIRB report, we understand that there are dust-related mitigations in place, yet these are not identified and described in the Draft Report – so there is a gap there. What is the status of development of mitigation measures for non-H2O options for stockpiles? We are yet to see update on this in 2017. This is concerning given that there are nine (9) stockpiles proposed in the Phase 2 plan.</p> <p>MLH: We do not apply dust suppression to ore stock piles (it will degrade the ore and add moisture content). Dust suppression is used on roads. Updates to dust suppression measures used in 2017 and a more detailed discussion will be included in the final report [action]</p>
Vegetation
<p>LB: Is high-level imagery available to get an indication of the greenery?</p> <p>MS: Yes, this is something we are continuing to look at using, but right now the technology isn't advanced enough for our purposes.</p> <p>LB: Why is iron not considered a contaminant of potential concern?</p> <p>MS: There are no CCME (Canadian Council Ministers of Environment) guidelines, and has not been considered in any levels of concern to the environment. Iron is considered an inert substance. A more through answer is likely available in original reports (risk assessment) for FEIS, and likely described in FEIS.</p>
Air Traffic
<p>LB: Why are there so many helicopter flights to Steensby?</p> <p>MLH: Baffinland engages in active exploration activities. Other reasons could be regular inspection of site, and access to fuel. Further, Baffinland does not have a restriction on the number of flights to Steensby or other areas.</p> <p>LB (question to EP): Do you think that the helicopter's flying so low is the reason why we aren't seeing caribou? Do you think this is having a disturbance on wildlife?</p> <p>EP: No, I don't think this would have an effect on animal migratory patterns.</p>
Caribou and other Wildlife Species Monitoring

BP: We have completed two (2) caribou surveys in 2017. The data have not been summarized, but we can share preliminary results – 254 caribou were spotted during the March 26th survey. We do not yet have the data for the September 30 – October 4 survey. Current management measures will continue until we can determine if the population rebound has stabilized.

MS: Elijah can we use your name in the final report, as the knowledge you contributed to the caribou surveys conducted by Baffinland with your assistance was very valuable.

EP: Yes, you have my permission.

EP: Community members are starting to see caribou where they weren't previously seen. I also participated in the Government of Nunavut (GN) survey in the springtime. We noticed that caribou towards Clyde River appear to be migrating towards the Mine site. We are seeing calves.

MLH: The NIRB has requested that Baffinland work with the GN to determine or evaluate the relevance of the GN survey work to the Mary River Project. I would like to discuss that with representatives from the GN.

GN: We have no response on that at this time **[action]**.

JH: (reviewing notes provided by Kim Poole). Good report, improvements made based on previous feedback from other annual reports. Definitions well defined in the raptor section. Can you provide weather conditions prior to snow track surveys in this report?

MS: We will try to improve on weather condition reporting for conditions prior to survey, however, they have always been general, and rely on personnel observations that use the road **[action]**.

LB: Was the fox that was killed for aggressive behavior tested for rabies?

MLH: Baffinland will check on that **[action]**.

JF: How does the reported area disturbed in 2017 where the Active Migratory Bird Nest surveys were completed compare to the overall footprint for this year?

MS: This value is in the NIRB report. I will also include it in the final terrestrial report for 2017.

Roundtable Discussions

JF: Presented an overview of PRISM work. In 2018 the Baffin region will be included in surveys. JF proposed an approach of surveying in higher probability Red Knot breeding habitat, and leaving some remote song/call recorders.

MLH: We can follow up on this, regarding Baffinland support, after this meeting. **[action]**

BP: There is a best practice guidance document for wildlife deterrents, dust mitigations, wildlife-road interaction mitigation and blasting mitigations that will be released in the first quarter of 2018. The guidance includes recommendations on mitigation for wildlife.

In regards to the draft terrestrial annual report, if we have any additional recommendations we would like to see we will send them to MS for consideration and incorporation, where possible.

The GN also has two (2) new regional biologists, one based out of Pond Inlet and one in Igloolik starting in January of 2018.

LB: Nadine will be attending TEWG meetings and Luc is moving departments. Kim Poole will not be part of TEWG. QIA is in the process of looking to bring in a new expert. David will remain on the TEWG as a representative for QIA. We have been working in Pond Inlet with the community to review all of the submissions to the NPC in advance of the hearing.

LB: Have you determined if the raccoon (invasive species) was brought in from the ships?

DQ: Pictures of the raccoon were taken at the Port. What kind of ship was it on? We are concerned what would happen if raccoons come onto land and if there will be more invasive species as a result of the Project.

MLH: We will provide an update on investigation to confirm the story, at next TEWG meeting **[action]**.

WWF: No update

HTO: HTO election is upcoming so members may change.

	Action Items	Action By	Update
1	High-level overview of environmental incidents to be included in BIM update.	Baffinland	
2	Include a discussion of dust-suppression techniques in final terrestrial report.	EDI	
3	Provide details on spring and fall 2017 caribou surveys conducted from Mary River Site. Provide long-term strategy for continued surveys.	GN	
4	Weather conditions prior to tracks survey	EDI	
5	Records on fox that was dispatched on site, was it sent for rabies test?	Baffinland	
6	Confirm report of raccoon on site.	Baffinland	
7	Follow up with JF (ECCC) to discuss PRISM work in 2018 and study support for Red Knot	Baffinland /ECCC	

APPENDIX C3

2017 SEMWG MEETING RECORDS



Meeting Notes
Mary River Socio-Economic Monitoring Working Group (SEMWG) Meeting
February 2, 2017 (300pm – 445pm)
By Teleconference

Attendees:

Baffinland Iron Mines Corporation (Baffinland):

Mary Hatherly
Adam Grzegorzcyk
Jason Prno (consultant)
Richard Cook (consultant)

Government of Nunavut (GN):

Lou Kamermans
Chantelle Masson
Erika Zell
Arielle Stockdale

Qikiqtani Inuit Association (QIA):

Rebecca Mearns
Shane Cameron (consultant)

Indigenous and Northern Affairs Canada (INAC)

David Abernethy
Rachel Theoret-Gosselin

Other Information:

Jason Prno facilitated the meeting. Richard Cook took meeting notes.

Meeting Notes:

- 1. Introductions (All)**
- 2. Update on the 2016 Socio-Economic Monitoring Report (Baffinland)**
 - a. In preparation, to be submitted with NIRB Annual Report
 - b. Similar in structure and content to 2015 report, which was a significant departure from previous reports. Now much more comprehensive, with additional indicators added.

This was done to bring the report better in line with EIS indicators and PC conditions. The report has been improved further for 2016.

- c. 2015 report – Issued in draft to get feedback from the SEMWG, so we’ve taken that feedback and have incorporated it into the 2016 report.
- d. A new addition to the 2016 report – Revamp of employee information survey. This will be an addition to the 2016 report.
- e. Baffinland is considering the inclusion of a trends analysis in the 2016 report; similar to the NWT Communities and Diamonds report and more recently the Meadowbank monitoring report. Looking forward to obtaining SEMWG feedback on the approach, when people review the 2016 report.
- f. Currently have most of the government data we need for the 2016 report, just waiting on company data for 2016.
- g. Inuit employment was lower than Baffinland would like in 2016, and Inuit turnover was higher than they would like. Baffinland is taking active steps to address this. An Inuit HR Strategy and Inuit Procurement Strategy are in the final stages of preparation.
- h. Baffinland will table the draft Inuit HR Strategy with QIA for discussion. It includes high level commitments which are intended to assist Baffinland/contractors in meeting or exceeding the MIEG. First goal is to strengthen stakeholder engagement and collaboration. Second goal is to strengthen data collection processes. Want to see employee skills and match that with upcoming needs, to be able to identify training initiatives required. Want to roll out a revamped Work Readiness Program, which will be run as a pilot in 2017 with the intention to deliver 2x/year in each community in subsequent years.
- i. Want to improve recruitment, and develop a process to catch issues in first 8 weeks following site employment to identify and address employee concerns. A number of initiatives are being looked at with regards to youth fairs, scholarships, and developing programs for youth and women to gain experience/exposure on-site. What has been lacking is a process of monitoring and an evaluation framework. Some initiatives to discuss with QIA in the future include joint training for BCLOs/CLOs, HR career information tour, and an on-site apprenticeship program. New instructions to contractors are also envisioned (want to improve contractor reporting of Inuit employment), with incentive and penalty schemes attached. Baffinland is revising its onboarding and retention programs. Baffinland would like to create a mechanism to track employee concerns, including complaints/grievances. Voluntary employee survey is also being looked at.
- j. Inuit HR Strategy is a companion piece to Inuit Procurement Strategy.
- k. Company takes Inuit employment very seriously, and we acknowledge Baffinland has not met targets. Want to encourage Inuit employment but equally important is retention and advancement of Inuit through the workforce. Baffinland will be developing 3 to 5 year goals to address training, recruitment, advancement and retention.
- l. RE: 2016 monitoring program data - Some data remains only available at the territorial level. Where data is lacking, Baffinland will continue to track issues through the QSEMC process and Baffinland’s community engagement program.

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Questions and comments on 2016 Socio-Economic Monitoring Report (All)

LK – Will we follow the same process as last year of circulating a draft to the SEMWG before the annual report?

JP - Won't be able to get a draft report out before annual report, because of when data becomes available. The purpose of the draft last year was to provide an opportunity to get comments on the new reporting format.

LK – It's a practice we advocate for. Meadowbank has provided early drafts, but has latency in their reporting. TMAC has provided us with a draft before. Maybe we can have communication with Baffinland before the annual report is submitted so we don't have to go through NIRB process with formal comments.

JP – That's what we were looking at, and part of why we wanted to have this call, because one face-to-face meeting a year makes continuity difficult. Perhaps more regular teleconferences with the SEMG would address this concern.

RM – We can be available more often for these types of calls.

JP – Richard is taking notes and we'll circulate them to the SEMWG.

DA – How will the trends analysis be different from what you are already doing?

JP – This is something we looking at for 2016, but wanted to talk to the group before moving too much farther ahead. We haven't done this before, but are considering analyzing trends before/after development and year over year. We're interested in a dashboard approach.

DA - Will this be presented in bar charts, etc.?

JP – To be determined. But, It would be nice to agree on common indicators so we can compare projects across the territory.

DA – We'll wait and see what you produce; we're looking forward to seeing what is done.

AG – We are still a young project and therefore have only ~2 years of operational data. So, we are just now getting to the point where we can do trends analyses. It will depend on available data and length of the dataset.

3. Obtain working group feedback on the new Baffinland Employee Information Survey

JP – Baffinland decided to revamp is survey to achieve PC condition requirements. A draft of the survey documents were distributed to the SEMWG members prior to this call. One PC condition specifically

asked us to work with QSEMC in developing the survey, so this is why we asked this group (which is a subset of the QSEMC) for feedback. Baffinland will issue the survey to all new employees as part of the onboarding process. Survey will be voluntary. Inuit employees living within and outside of Nunavut will be asked to complete the survey, in addition to non-Inuit employees living in Nunavut. Wouldn't be administered to contractors. One of the PC conditions focuses on migration, and we have tailored our questions as such. We are hoping to generate initial data in Q1-2017 for the 2016 monitoring report. Afterward, survey results will be reported by calendar year. Hope to get information out for the 2016 report, but results may need to be presented at a later date if this is not possible. Feedback on the survey from the SEMWG is requested.

AS – We added a number of suggested questions on the survey. Does everyone have them with track changes?

JP – They were only issued to Baffinland.

AS – There were two subsets of questions we added. The first were questions on respondents' current housing situation. Overcrowding is a very important topic. For the people finding employment, what is their current situation, and will employment affect their housing situation? The majority of Nunavummiut live in public housing. With increased income, will different options be available to them? We want to take advantage of employment by bringing people out of public housing, if it is possible. If the survey is for incoming employees only, the data we collect may be more limited. Or is it for outgoing employees too?

JP – The survey is planned to be administered only during the onboarding of new employees.

AS – So it may be premature to ask about home ownership, since new employees might not know what employment will mean for their housing. So maybe asking questions on their current housing situation is sufficient.

LK – The PC condition states an annual survey will be conducted.

JP – Survey results would be reported annually for new hires. Baffinland really struggled with obtaining survey responses before when on-site HR staff tried to survey employees. They received lots of push back. We thought best way to get feedback year after year was by integrating the survey into the new employee onboarding process.

LK – Voluntary surveys are hard to do. But seeing changes over time will be difficult if you're surveying each employee only once.

JP – Good point. We can talk about this further. But the poor reception of survey last year is why we are proposing what we are now.

LK – Getting that information right away is critical, but it needs to be followed up on to see changes over time.

JP – Comparability diminishes if a given employee fills it out once, and then doesn't fill it out, for example, until 5 years later, or never fills it out again. So the GN would prefer to have survey administered voluntarily every year?

LK/AS – From housing perspective, it would be difficult to figure out impact of the project over time otherwise. I like the idea that the survey can be anonymous, but it could be useful to analyze cohorts (e.g. what is the housing situation for new employees vs. employees after 5 years, etc.?). The data is a lot less valuable when it is not collected annually.

AG – From the proponent's perspective it is our preference to collect this data, but we had a strong pushback from our employees when we last tried. We can't make people do the survey, so that's why we proposed the approach we did.

JP – There is another point that we want to discuss – There are a number of housing questions added by the GN that divert from the essence of the PC condition. We want a survey that is focused on what is required to be collected, is simple and easy to complete, and reduces barrier to having people complete it.

LK – We took the approach that we weren't necessarily limited to what was specified in the PC. NIRB doesn't always incorporate all comments made by reviewing parties into their PCs. We ultimately want to know if the projects provide a benefit. I don't think the questions we added change the direction of the survey. The GN can provide more information / comments on why the questions are needed, if you like? Or could Baffinland highlight those that are not applicable?

JP – We can send you our comments if you like. Did INAC or QIA have any comments on the survey?

RM – We've looked at the survey and share concerns with the GN re: only conducting the survey on new employees. Is there way to look at trends? We do have some comments/suggestions we can provide in writing. We also have an upcoming JMC meeting in Oakville. One thing on the agenda for some time has been the development of a workplace conditions survey. This would be done with current employees at Baffinland, as a requirement of the IIBA. We have been discussing with Baffinland a survey with employees or employment coordinators. Is there a way to integrate the workplace conditions survey with this survey? And could you use Inuit employment coordinators to get participation? It's not clear how the previous survey was rolled out and communicated – It's worth looking into. Getting respondents to fill out a survey can be difficult. It's important to explain why the survey is being conducted and how it will benefit things.

JP – I wasn't aware of this other survey; it's worth considering combining them both.

MH – It's on the agenda for the JMC for next week, so we can talk about it then?

RM – Yes, combining the surveys would be much better, if possible. We will send comments on re-wording questions or with follow up questions. Is there a need to include the employee’s names on the survey? Or can they remain anonymous?

RC – Have other companies conducted such surveys?

LK – Meadowbank conducted a survey several years back, and found it very helpful. I will look into whether or not the Meadowbank survey is shareable.

DA – Re: survey question 9 on community location – Are you trying to see what community they would want to relocate to?

JP – Community employment location would be specific to BCLOs or Baffinland Iqaluit staff.

DA – Regarding the need to complete the survey annually, I agree with the GN’s interpretation of the Project Certificate.

[Unrecorded comments]

RTG – My comments on survey were already brought up. Re: confidentiality - Make it clear their name is optional as it currently appears mandatory. We need to read up PC Condition No. 133 and what its actual intention was. You should find a way to monitor change of status. Could you survey 1-year, 3-year, and 5-year employees?

4. Discuss Baffinland’s plans for addressing the socio-economic impact assessment portion of the Phase 2 EIS.

[RC provided an update on the status of the Phase 2 review and EIS]

JP – For the Phase 2 baseline, the goal is to draw on and reference the considerable amount of baseline work that has already been prepared for the Project. The intention is not to present an updated baseline report. Plenty of monitoring data has been generated since the FEIS. We want to focus on what we’re already monitoring and what’s already been determined to be important to monitor. For the impact assessment, we want to focus only on the residual effects assessed in the FEIS (largely leaving aside subjects of note and other topics and information). We will discuss and provide summary information on how each of the residual effects will or will not change due to the Phase 2 Proposal. If any of these effects are expected to change significantly, a more detailed effects assessment discussion will be provided.

LK – From reviewing the ERP, it was very hard to see what was being studied and what numbers we were working with, because the document was flipping between the FEIS and ERP addendum. Nailing down how we are going to refer to the project, as it now includes the southern rail line, will be important.

[RC – Defined the 4 stages of Phase 2]

EZ – When will the proposal go to NPC?

AG – In the next couple of days.

RTG – Have you discussed with NIRB if there would be a screening phase?

RC – Baffinland already has amended guidelines, so the best case is that they proceed right to review. But we don't know what NIRB will decide in terms of next steps.

AG - Yes, we will be meeting with NIRB next week.

5. Other Matters

LK – The GN is contemplating a territorial socio-economic monitoring workshop, an idea which was borne out of the Kitikmeot SEMC. Realizing we will likely have projects in each region soon, we don't currently get a full perspective of how the industry is affecting the territory. We would like to see aggregated territorial reports. The workshop would bring industry and other players together to discuss indicators, processes, and how to approach socio-economic monitoring in the near future. We also want regional Inuit organization attendance and input, so will send details to you shortly. If we're all on the same page, we will start into the planning, logistics, and development of materials. We were at one point thinking April would be the best time for the workshop, but the earliest now is May.

[Meeting adjourned at 4:45 pm]



Meeting Notes
Mary River Socio-Economic Monitoring Working Group (SEMWG) Meeting
September 14, 2017 (5:00pm-6:00pm)
Frobisher Inn – Iqaluit, Nunavut

Attendees:

Baffinland Iron Mines Corporation (Baffinland):

Mary Hatherly (MH)

Andrew Moore (AM)

Jason Prno (consultant) (JP)

Government of Nunavut (GN):

Lou Kamermans (LK)

Chantelle Masson (CM)

Rhoda Katsak (RK)

Qikiqtani Inuit Association (QIA):

Rebecca Mearns (RM)

Shawn Harriman-Byrne (SHB)

Indigenous and Northern Affairs Canada (INAC)

David Abernethy (DA)

Julia Prokopick (JP-INAC)

Other Information:

Lou Kamermans chaired the meeting. Andrew Moore took meeting notes.

Meeting Notes:

- 1. Introductions (All)**

- 2. NIRB Draft Appendix A**

LK - Introduced the topic and began discussion. Indicated that the MRSEMWG is largely self-directed and should continue work as such.

MH - Indicated that BIM intends to provide comments to NIRB on Appendix A, but has not yet.

RK - Asked for more information about what is included in NIRB's Appendix A.

JP – Provided some initial comments about Appendix A and indicated that they will be elaborated on in a formal submission. Indicated that BIM has a desire to strengthen the role of this working group as it relates to socio-economic monitoring.

LK - Indicated that that GN has reviewed Appendix A, but not yet in enough detail to provide extensive comments. The GN intends to share their comments with members of the working group prior to submitting them to NIRB.

JP - Should include Megan Lord-Hoyle of Baffinland in conversations about this to ensure she is engaged on this work and all comments related to Appendix A.

LK - Next step is for GN to get in touch with Mary H. and provide comments, and to make a concerted effort to align comments provided by working group members to NIRB.

DA - Wants clarity on reporting/commenting approach.

LK - Provided clarification. Indicated that comments are due October 22

3. Role of Socio-Economic Monitoring in NIRB Community Information Sessions

LK - This was raised by Rhoda. Indicated that SEMC representative should be present at these meetings. Provided some clarity on what the NIRB community visits consist of and why an SEMC representative should attend.

JP - GN would be the SEMC representative on these community visits?

LK - Asked for working group member opinions on this matter.

MH - We would need to discuss this internally first and see who would be the best representative to attend.

RK – NIRB typically talks about territorial and marine monitoring but not socio-economic issues at these meetings.

LK – We will talk to NIRB and see what opportunities exist for SEMC participation.

DA - Has the GN gone in the past? Believes that INAC has had people participate in the past.

LK - Will check with GN internally to see what works.

?? – There are lots of separate community visits, and lots of information is provided to communities. This is lots of duplication. Should we be collaborating?

DA - Thinks INAC does try to collaborate timing. But is not sure. Agrees that duplication is bad.

LK - Will follow-up with NIRB to see about collaboration.

RK - BIM does regular community update sessions. NIRB does it annually, but provides mostly environmental information. We need more socio-economic information in the communities. We need more public reporting.

JP – I've attended scoping sessions held by NIRB in the past. These kinds of sessions are managed and led by NIRB; they may be hesitant to have companies play too big a role in these sessions.

LK - Good point. Someone from the SEMC would good be a good representative to talk objectively.

4. Plans for 2017 Socio-Economic Monitoring Report - Incorporation of Workshop Deliverables

JP - Provided update on plans for 2017 report. Indicated that 2017 report will be similar to last year's layout. Some changes may occur, but they will not be significant.

LK - After the workshop, the working group should have a follow-up chat. Should we meet before a draft workshop report is issued or after?

MH/JP – If we meet following issuance of the draft report it would allow for substantive discussion.

JP – I know other companies have issued their annual socio-economic monitoring reports in draft previously. I'm not sure this is something Baffinland can do, because reports are due March 31st and all data may not be received until close to submission time.

LK - AEM submits in December. Allows for a draft report review process. This is not something that GN endorses or would necessarily like to implement elsewhere. Provided an explanation of history of how AEM reporting is structured and why.

JP/MH - Timing remains an issue for us to provide a draft report. However, we're happy to provide an update by phone to the working group like we did last year.

LK – It would be a good idea for a draft report to be issued, to allow for better incorporation of reviewer perspectives. Can Baffinland provide a basic draft report?

JP/BM – Our submission timeline is a NIRB timeline. We don't have much flexibility re: timing.

JP – Baffinland's NIRB Annual Report draws heavily on the Socio-Economic Monitoring Report so it is very important to get done by March 31st.

LK - If it's not possible, then Baffinland can expect more feedback on the final report.

JP – BIM is fine with that. However, our preference is to deal with these issues to the greatest degree possible at working group level, as this is the group that contains the monitoring experts.

LK - As a practice, we will work with deadlines given to produce NIRB comments. We can decide whether to address issues at the working group level or formally through NIRB.

JP - We should aim to have a teleconference ahead of formal submission to discuss comments.

DA - Agrees. This is also done in the water licensing process. Allows for a simple discussion to avoid any misconceptions.

5. Baffinland Phase 2 Proposal EIS Update

MH - Provided Phase 2 update. EIS is being worked on but no clear timeline for submission to NIRB yet as there are outside factors to consider such as the NPC review.

LK - How is Baffinland's relationship with NPC?

MH – We're concerned about the lengthy consideration of Phase 2. But our aim is to keep relationships amicable, which is in the best interest of all parties.

JP – I am part of the team working on the Phase 2 Proposal socio-economic impact assessment. BIM would like to use this working group to discuss socio economic issues related to Phase 2 impact assessment issues, if possible.

LK - Agrees. Thinks that is a great approach. GN will be consistent in where its socio-economic priorities are.

DA – Re: monitoring report in April. Can there be a meeting where the monitoring report is initially presented?

6. MRSEMWG Follow-up to Reviewer Comments - 2016 Socio-Economic Monitoring Report

JP - BIM is here to address working group comments/answer questions. We have replied to GN and QIA comments to NIRB already in writing. Would like to deal with future comments in this forum, where possible.

RK – There were lots of comments in the report about employment. Arctic Bay was the highest employment community. This is interesting, as Pond Inlet is a bigger community. What is Baffinland

doing to retain employees? This question was asked at a community meeting in the past. It was not followed-up on at the July meeting this year. Should we as a group proactively bring up these issues? JP - BIM has made new commitments in this area, such as those related to the IHRS, MIEG, and IPCS. They are all part of the response to this concern. We are happy to report back as additional concerns are heard.

MH/RK – We need to come up with a meaningful way to answer these questions.

DA - What about your work ready program? Please provide a summary.

MH – Summarized plans for revised work ready program.

RK/LH - SEMC should be addressing these concerns in its reports. Territorial monitoring may be the best way to address these concerns. This would just be a general good practice.

JP - Detailed records of SEMC meeting minutes are very important to maintain, even in the new territorial monitoring report format.

LK - As proposed, an appendix would contain a summary of meeting minutes.

7. Review and Update of SEMWG TOR

LK - Should the TOR be re-considered?

JP – We'll need to take this back and see where improvements can be made from a BIM perspective.

LK - Shared and explained org. chart that is being worked on with Agnico-Eagle (AEM). Open to looking at this for inclusion in BIM's TOR. Will seek AEM permission to share this with the Mary River working group.

JP - Maybe we should wait until the AEM chart is finalized?

LK - When we review the TOR we should be more explicit about appointing a Chair. Anyone have a different opinion?

Group - No objections.

JP - Asked clarifying questions about Chair responsibilities.

LK - Explained and shared GN's view on responsibilities (i.e. to organize and host working group meetings, facilitate meetings, take notes).

DA - As we go through the TOR it will be beneficial to clarify expectations. Create greater structure related to deliverables, and maybe have quarterly calls?

[Meeting adjourned at 5:54 pm]

APPENDIX C4

2017 QSEMC MEETING RECORDS

Qikiqtaaluk Socio-Economic Monitoring Committee Annual Meeting, July 5 & 6, 2017, Arctic Bay, Nunavut

The meeting began with participant introductions. The following communities and other stakeholders were represented:

- Arctic Bay
- Cape Dorset
- Pangnirtung
- Sinikiluaq
- Pond Inlet
- Hall Beach
- Iqaluit
- Grise Fiord
- Qikiqtarjuaq
- Igloolik
- GN Department of Health
- GN Department of ED&T
- INAC NGMP
- Nunavut Bureau of Statistics
- Baffinland
- QIA

The community roundtable proceeded with a few items of note including

- The need for community freezers in almost all communities
- The need for more public housing
- Grateful for the employment from Baffinland in the communities in the LSA
- Lots of fishery exploration that has the potential of a positive economic effect in communities
- New infrastructure including hotels, daycares and housing units
- The need for more child care in all communities
- The need for community hall infrastructure in a number of communities especially for youth
- Overall infrastructure maintenance in all communities

Following the community roundtable, the GN department of Health gave a presentation. Discussions that followed included:

- Contaminated sites and how it impacts health
 - QIA steering committees are dealing with contaminated sites with NTI
- Meat studies for walrus and country food takes too long

- NRI just finished construction of a lab for testing – staff are being trained to do testing in Iqaluit which should decrease wait time for results
- Using statistical data, is there strategic planning that the GN is going to use to actually start this upstream planning process?
 - The GN needs to work together in all departments to start working in a systematic way to improve Nunavut as a whole

The meeting continued with a presentation from INAC on the Nunavut General Monitoring Program. Conversations that took place surrounded topics such as:

- Whether the data from projects being funded is shared publicly and how INAC is looking at making this info public
- The Nunavut Association of Municipalities (NAM) and the information they can provide to researchers including what needs to be researched
- The need for data from all institutions at a municipality level

After the lunch break, the presentation that followed was on behalf of the Nunavut Bureau of Statistics. Items of discussion that followed were:

- The many factors that can contribute to data trends
- The difficulty in relating specific trends directly to the Mary River Project since it's been in operation for a short time
- Collecting data for the sake of collecting data vs using this data and doing something with the information to make changes in Nunavut

The day ended with the Baffinland presentation and the discussion that followed. Items discussed included:

- Safety training and emergency response on-site
- Rotational shift issues for staff with children
- How staff can learn to properly manage money for their two weeks off the mine site
- The need to recruit and keep Inuit staff
- Work readiness programs that are successful for other Nunavut projects
- The need for childcare in communities and who plays a role in delivering these resources (QIA/GN/GoC/Proponent)
- The training for heavy equipment operators is great but there needs to be training for mechanics
- Pension planning and financial planning
- Shipping routes for the Project
 - **Baffinland to send the map presented at the meeting**
- The communities outside of the local looking for more hiring and employment opportunities at the project

- It was noted that jobs are open to all Baffin communities so all Qikiqtaaluk communities are equally eligible to apply

The second day of the meeting started with a recap of the previous day. Participants were given a document with the Valued Socio-Economic Components (VSEC's) for the Mary River Project. These VSEC's are:

1. Population Demographics
2. Education and Training
3. Livelihood and Employment
4. Economic Development and Self-Reliance
5. Human Health and Well-Being
6. Community Infrastructure and Public Services
7. Contracting and Business Opportunities
8. Cultural Resources
9. Resources and Land Use
10. Cultural Well-Being
11. Benefits, Royalty and Taxation
12. Governance and Leadership

The committee was asked to decide and order these VSEC's in number of importance to them. Discussions then followed surrounding these VSEC's, as well as any other relevant items according to the Qikiqtaaluk communities and stakeholders. The conversation took up the entire morning, and it proved to be a valuable morning full of discussions surrounding what communities feel are the most important to them, the region and the territory as a whole. These topics covered areas such as:

- Infrastructure for country food processing plants to provide for a local economy and better healthy food opportunities
- Racism resulting in Inuit turnover
- Mental health initiatives on-site and in the communities
- Human health and well-being needs to be a priority
- Conflict management and cultural sensitivity
- Employment leading to an increase in self-esteem
- The need for translations in communities at stores
- Smaller communities (especially farther away from the Mary River Project site) are not benefiting from education and training
- Drop-out rates from schools
- Where community members can find work if they have an education
 - Finding a lack of employment opportunities in the small communities even when people are well educated
- The need for mental health programs in communities and health centres
- Parents need education and guidance on good parenting skills
- The opportunity for role model programs in communities

- The need for cultural and recreational programs on-site at Mary River
- The disincentive in finding employment if you live in social housing
 - The more money you make, the more you pay in rent in social housing so to keep affordable rent people stay unemployed
- The need for recording Traditional Knowledge and IQ so young people can learn and carry on this knowledge
- Issues of racism on-site for local employees
- Stories of employees being demoted instead of promoted
- Turnover due to lack of childcare, homesickness, racism, 12 hour shifts being too long – need some breaks to enjoy recreational time
- The Elder advisor program is a good idea but it doesn't work when the Elder is not from the same community as the staff
- Mental health workers in communities do not keep information confidential – deters community members from using that resource
- Would like to see a program on behalf of Baffinland to see Elders receiving country food
- Royalties need to be better managed so that communities see more money

Overall, most VSEC's were touched on, but some that came up multiple times were:

- Human Health and Well-Being
- Education and Training
- Cultural Well-Being
- Community Infrastructure and Public Services

The meeting concluded with a decision on where the next QSEMC will be held. All members voted, and the decision was to host the next annual meeting in Sanikiluaq. The date will be determined at a later time.

Action items for the next meeting and the time leading up to the meeting are:

- Baffinland to send the map of the Mary River shipping route
- Have the community profiles provided by Department of Health translated
- The possibility of reporting on cultural activities on site at the Mary River Project

APPENDIX D

2017 PHOTO ESSAY

Project Overview - 2017

In 2017, Baffinland focused on mine production from Deposit No. 1 with 4.54 million tonnes mined and hauled using the Tote Road.



Deposit No. 1 has an estimated 20-year resource. There is potential to expand the mine life of the Mary River Project through the development of other deposits in the area.



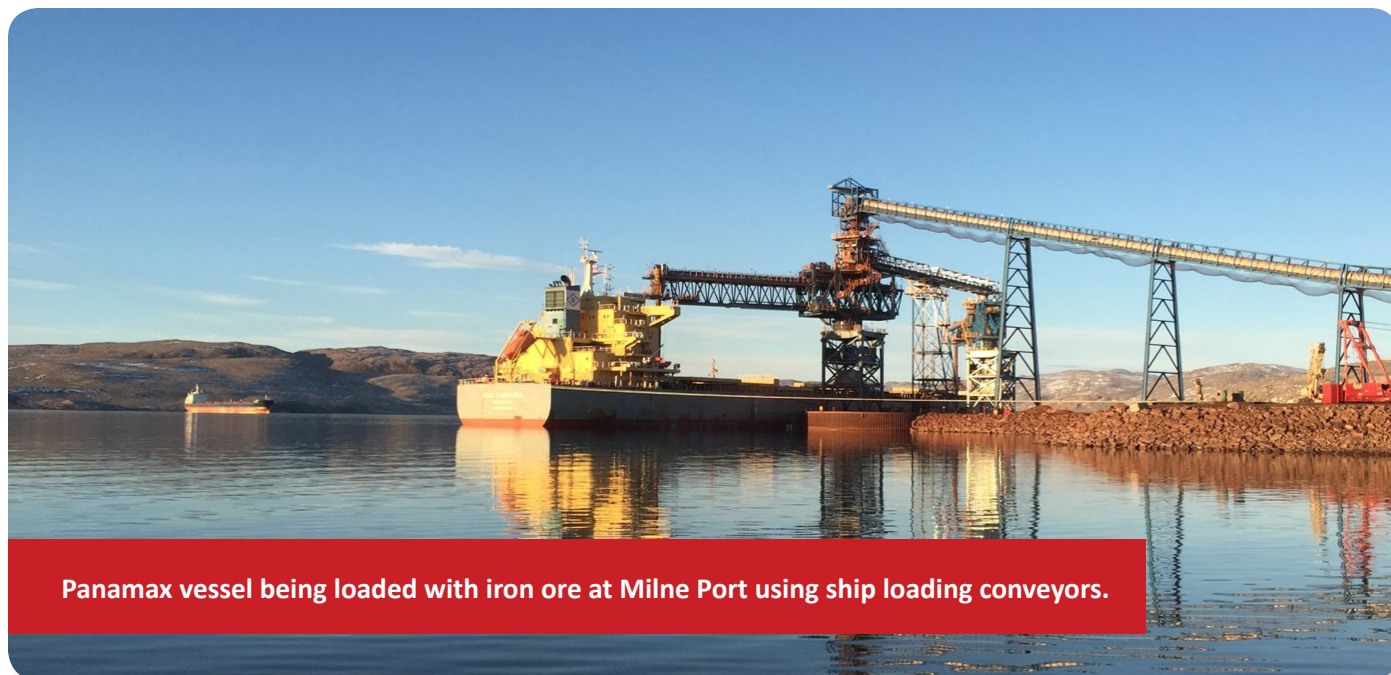
Ore is transported from the Mine Site to the Port along the Tote Road in the form of lump and fines. There are no concentrators, tailings, or tailing ponds associated with production.



After being hauled along the Tote Road, the ore is stockpiled at Milne Port and loaded onto ships that travel across the North Atlantic to deliver the ore to European markets.



The 2017 open water shipping season, from August 2 to October 17, was the most successful shipping season for Baffinland since Project operations began and the largest shipping program by volume ever executed in the Canadian High Arctic.



Baffinland shipped over 4.1 million tonnes of iron ore using panamax vessels from its Milne Inlet Port to markets in Germany, the United Kingdom, and Japan.

Site Activities Completed in 2017

In addition to the mining, hauling and shipping of ore, several activities were undertaken to support the continued advancement of Project operations in 2017. Notable activities include the replacement of accommodation camps, the implementation of the Tote Road Earthworks Execution Plan and the construction of required infrastructure to support the mining, hauling and shipping of ore and other associated Project activities. A comprehensive list of operational activities undertaken in 2017 can be found in Section 3.1 of the Report.



Continued development of the Q1 Quarry at Milne Port to support construction activities in 2017.



Aerial view of the new gravel pad constructed at Milne Port to support 2017 and on-going construction requirements at the Port Site.



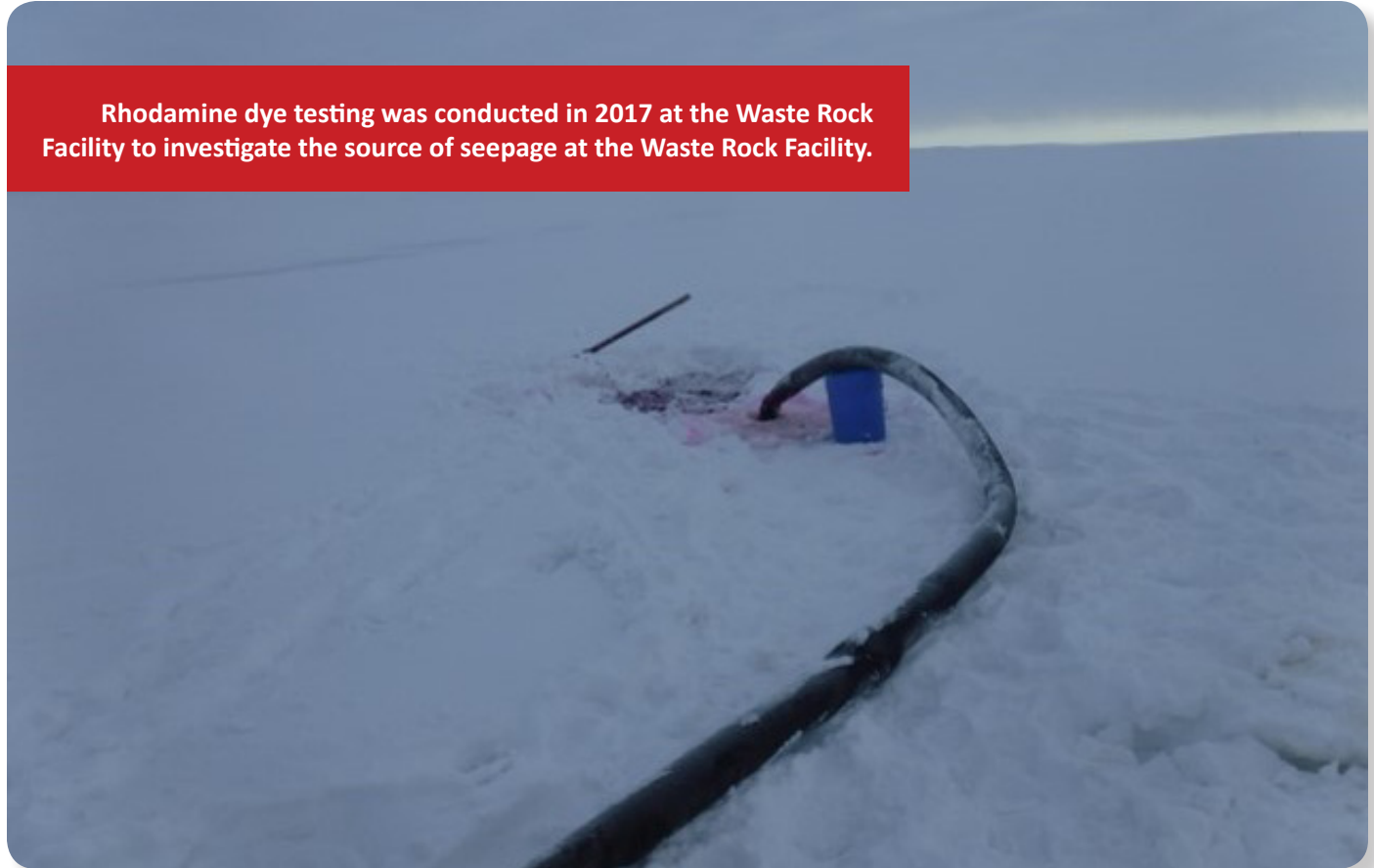
Corrective Actions Implemented in 2017 to Address Non-Compliance

In 2017, Baffinland took corrective actions related to three Directives issued by regulatory agencies. The three Directives included a Fisheries Act Directive issued by Environment and Climate Change (ECCC) in 2016 and two Directives issued by Indigenous and Northern Affairs Canada (INAC) in May and September 2017, respectively.

A description of these Directives, and the corrective actions taken by Baffinland as a result are captured in Section 3.2.2. of this Report.



An emergency ditch and sump was constructed to contain and mitigate observed seepage at the Waste Rock Facility.



Rhodamine dye testing was conducted in 2017 at the Waste Rock Facility to investigate the source of seepage at the Waste Rock Facility.

Baffinland continues to address items outlined in the INAC Inspector's Direction and is co-operating with ECCC's ongoing investigation.

Environmental Monitoring and Adaptive Management

Baffinland conducts a number of annual monitoring programs including the marine mammal shore-based observation monitoring program at Bruce Head, marine environmental effects monitoring program, terrestrial environment monitoring, aquatic environment monitoring, air and noise monitoring and socio-economic monitoring.

Marine Mammal and Environment Monitoring

The Bruce Head program was conducted between July 31 and August 29, with a total of 27 surveys completed. The shore-based survey collects data on narwhal Relative Abundance and Distribution (RAD) and on group composition and behaviour.



In 2017, Baffinland also ran the Marine Environmental Effects Monitoring Program which is focused on monitoring for potential Project-related effects on the marine habitat, including Aquatic and Invasive Species monitoring in and around Milne Port, and contributed to the Tremblay Sound Narwhal Tagging Program, which is a monitoring program led by Fisheries and Oceans Canada.



Terrestrial Environment Monitoring

As part of the terrestrial environment monitoring program Baffinland monitored several aspects of the terrestrial environment related to dust fall, vegetation abundance and soil base metals monitoring, snow track and snow bank height monitoring, height of land caribou surveys, pre-clearing nest surveys and cliff nesting raptor occupancy and productivity surveys. Baffinland also provided support to regional caribou monitoring surveys conducted by the Government of Nunavut in the spring and fall of 2017.

Height of Land Surveys being conducted in 2017 as part of the terrestrial monitoring program. Further details on the terrestrial monitoring program are summarized in PC Condition sheets 49 to 75.



Snow bank height monitoring was conducted in 2017 along the Tote Road to ensure that snow banks are low enough to allow caribou and other wildlife to access and cross the Tote Road.





A photo of the beautiful views of the landscape the terrestrial environment monitoring team observed while completing the cliff nesting raptor occupancy and productivity surveys in 2017.

Monitoring for dustfall from the Project is an important aspect of the terrestrial environment monitoring programs. Adaptive mitigation measures have been installed to further minimize the total amount of dustfall resulting from Project activities, and to minimize potential effects of dustfall from the Project on the environment.

Dust cloud blowing off the ore stacker at Milne Inlet Port, November 21, 2017





In 2017, the total amount of dustfall was reduced from 2016 as a result of the application of these additional mitigation measures.

Freshwater Monitoring

Annual freshet water quality monitoring occurs in accordance to Nunavut Water Board Licence and the Project Certificate. Freshet monitoring occurs at four monitoring locations at the Mine Site, along the Tote Road at fisheries crossings, and at Milne Port.

Tote Road Freshet Monitoring					
Date/Time:		Project Related: Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Culvert #		Initial Samples taken Yes <input type="checkbox"/>	No <input type="checkbox"/>	If no,why?	
Samplers:		Follow up samples? Yes <input type="checkbox"/>	No <input type="checkbox"/>	If no,Why?	
Pictures Taken: Yes <input type="checkbox"/>		No <input type="checkbox"/>		Number of Pictures #	
YSI Model:	YSI Pro DSS <input type="checkbox"/>	YSI 6820 <input type="checkbox"/>	6000QS <input type="checkbox"/>		
YSI Calibrated	Yes <input type="checkbox"/>	No <input type="checkbox"/>			
Sedimentation Controls Implemented		Silt Fences <input type="checkbox"/>	Silt Curtains <input type="checkbox"/>	Check Dams <input type="checkbox"/>	
Fisheries Regulated: Yes <input type="checkbox"/>		No <input type="checkbox"/>	Rip-rap <input type="checkbox"/>	Geotextile <input type="checkbox"/>	Spring Berm <input type="checkbox"/>
Water Level: Dry <input type="checkbox"/>		Stagnant <input type="checkbox"/>	Low <input type="checkbox"/>	Moderate <input type="checkbox"/>	High <input type="checkbox"/>
Water Quality:		Turbid <input type="checkbox"/>	Clear <input type="checkbox"/>	Sheen <input type="checkbox"/>	
YSI Measurements					
Location	pH	Temp. (°C)	Conductivity (µs/cm)	Turbidity (NTU)	DO%
Notes:					
Flow taken: Yes <input type="checkbox"/>		No <input type="checkbox"/>			
Velocity:		Depth:			

Tote Road Freshet Monitoring Inspection Sheet

In the event of required mitigation during freshet, Baffinland undertakes immediate corrective actions in response to reported sediment releases including silt fence and spring berm installation, check dam construction and operation, armoring of ditches, banks, swales and road embankments near water bodies, and redirection of sediment and turbid waters away from fish habitat.



Additional details regarding Baffinland's freshwater monitoring program and mitigation measures can be found in PC Conditions 41 to 48(a)

May 16, 2017 - Construction of check dam north of culvert CV-186 (Sheardown Lake Tributary)

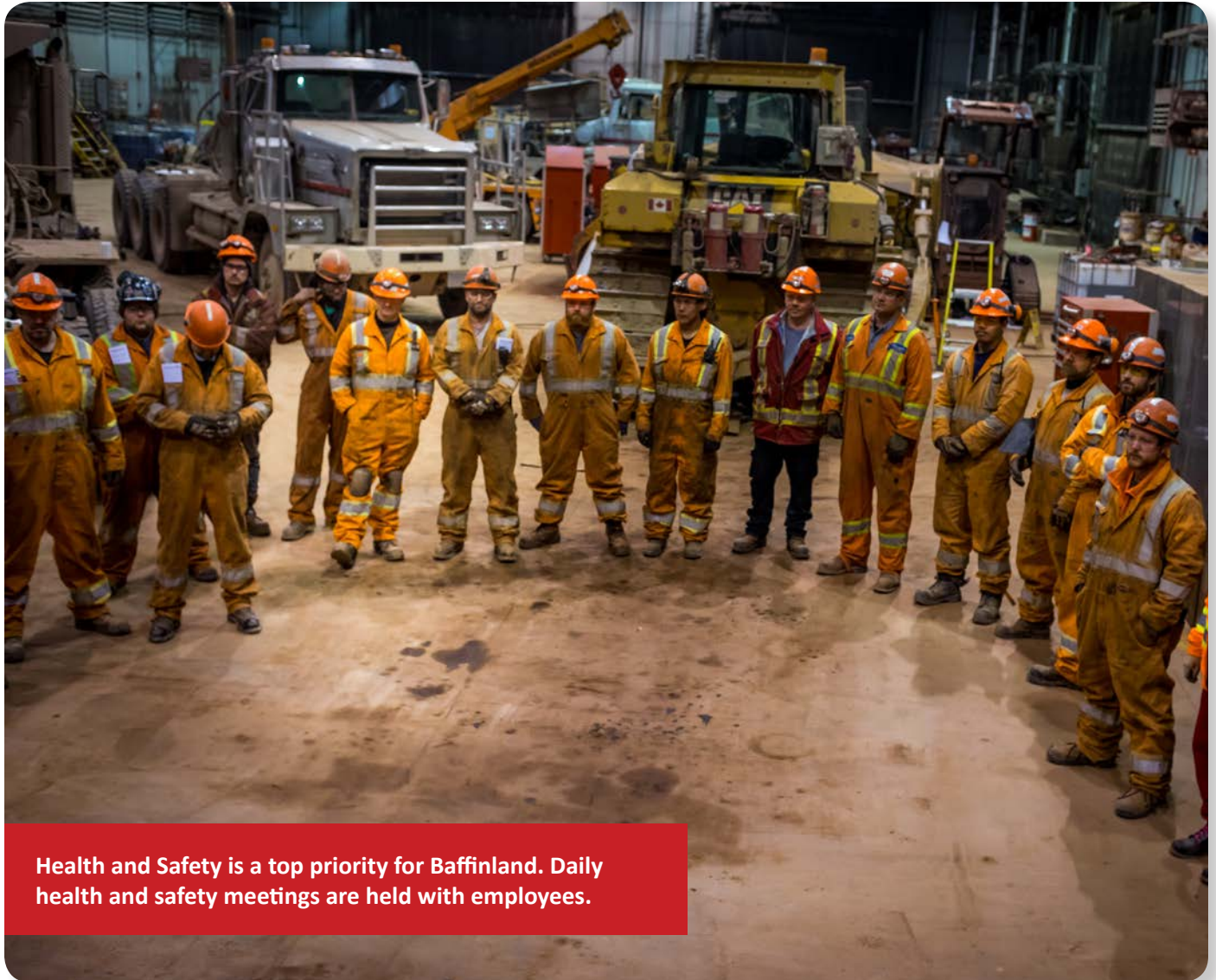


May 26, 2017 – Silt fences installed to contain sediment released as a result of Milne Port East Sedimentation Pond (MP-05) overflow on May 25, 2017



People at Work

Baffinland employees continue to be our most important resource and their safety our top priority. In 2017 Baffinland employed 892 individuals across the corporate and operations offices. This has resulted in a greater number of local individuals hired by Baffinland, including Inuit community members that live by and work for the Project.



Health and Safety is a top priority for Baffinland. Daily health and safety meetings are held with employees.

In 2017, Baffinland continued to struggle with the retention of Inuit employees and continues to fall short of the Minimum Employment Goal (MIEG) of 25%. A number of efforts were made in 2017 with the aim of improving the overall numbers of Inuit employed by the Project.

To overcome ongoing challenges with recruitment and retention of Inuit employees, Baffinland supports and implements a number of social initiatives including enhancing procurement and contracting opportunities, improving Inuit retention strategies and encouraging and implement education and training opportunities for North Baffin Inuit.



Additional information related to education and training and employment initiatives implemented by Baffinland in 2017 can be found in PC Conditions 135 to 141.

Inuit and Stakeholder Engagement

Baffinland's approach to stakeholder engagement emphasizes the importance of informing stakeholders, establishing effective communication strategies, and collecting feedback from stakeholders on potential issues and concerns.



During 2017, Baffinland completed a number of engagement activities, which included:

- Engaging with community members through Baffinland Community Liaison Officers stationed in each of the five (5) North Baffin communities;
- Hosting public meetings and open houses;
- Conducting community and employee surveys;
- Participating in multi-stakeholder forums (e.g. Working Groups);
- Holding focus groups, workshops and meetings with individual community groups and hamlet Councils;
- Hosting site meetings for interested observers; and
- Distributing Project-related information through websites, newsletters, advertisements and other means.



Working Groups

Baffinland also engages with stakeholders through regular meetings with the Marine Environment Working Group, the Terrestrial Environment Working Group and the Socio-Economic Monitoring Working Group.



MEWG Meeting held in 2017 (Ottawa, Ontario) Pond (MP-05) overflow on May 25, 2017

The Working Groups include representatives from Baffinland, the Government of Nunavut, the Qikiqtani Inuit Association, Environment and Climate Change Canada, Fisheries and Oceans Canada, the Mittimatalik Hunters and Trappers Organization, Parks Canada and Makivik Corporation. Oceans North and the World Wildlife Fund also attend Working Group Meetings as observers.

Consultation on the Phase 2 Expansion Project

During 2017, Baffinland met with community group meetings in each of the five (5) North Baffin communities – Arctic Bay, Clyde River, Hall Beach, Igloolik and Pond Inlet – to provide information about and receive feedback on the proposal for the Phase 2 Expansion Project.



Community members input and participation in these open houses helps Baffinland better understand how to operate the Project in a way that minimizes any potential Project-related effects and community concerns related to the proposal.

In 2017, as part of consultation on the Phase 2 Expansion Proposal Project, Baffinland has shared information related to the design of new infrastructure associated with the proposal. Consultation will continue into 2018, as Baffinland proceeds with obtaining environmental approvals for the Proposal.

Changes at the Mine Site

- Construction of upgraded camp
- Moving crushing of ore to Mine Port
- Construction of rail line

Changes to the Tote Road

- Increase in number of trucks during construction
- Decrease in activity following rail construction
- Tote road will still be used to transport people, fuel, and equipment
- Measures of safety and wildlife protection will not change during Phase 2
- Continuous access to road will not change

Rail vs Tote Road

- Number of ore haul truck drivers will decrease over the life of the project
- Other types of jobs will replace these positions
- More efficient way to move more ore
- Less fuel consumption
- Less waste generation
- Less dust emissions
- Minimizes animal interactions

Community members input and participation in these open houses helps Baffinland better understand how to operate the Project in a way that minimizes any potential Project-related effects and community concerns related to the proposal.

APPENDIX E

CONCORDANCE TO NIRB RECOMMENDATIONS

No.	NIRB Comment	NIRB Recommendation	Baffinland Response	Concordance to 2017 Annual Report
1	<p><u>Monitoring Sea Levels and Storm Surges at Steensby Port and Milne Inlet</u> Baffinland is required pursuant to Conditions 1 and 83 of the Project Certificate to undertake monitoring of sea levels and storm surges at Steensby Port, and Milne Inlet area using GPS and tidal gauges. Within its annual reporting to the NIRB, Baffinland reported that it utilized the tidal data collected in 2014 for informing its oceanography and ballast water dispersion modelling for the Project, and that following the completion of the modeling exercise, the tidal gauge was removed and was not re-installed at Milne Port in 2016, and as such no tidal data were collected or available from Milne Port for the current reporting period. The NIRB notes that in its 2016 Board Recommendations to Baffinland, Recommendation #1 specifically requested that the Proponent submit tidal gauge monitoring data for 2014 and 2015 respectively, including information regarding how it intends to address site-specific issues affecting the implementation of sea levels and storm surges monitoring in the Project area. While Baffinland indicated within its response to Board Recommendations that it has engaged its consultant to re-install the tidal gauge, and commence GPS monitoring at Milne Port in the summer of 2017, the NIRB reminds the Proponent that trends related to sea levels and storm surges from the Milne Inlet area cannot be predicted based on the data available for 2014 only. Further, the NIRB also reiterates that the submission of this monitoring data is required to clarify whether implementation of additional mitigation measures are necessary to ensure that the impacts of climate change on Project infrastructure, including Milne port facilities are adequately minimized and mitigated.</p>	<p>The Board requests that Baffinland recommence the monitoring of sea levels and storm surges at Milne Inlet to support trend analysis and that it identifies any site-specific conditions that continue to limit its efforts to retrieve data from the tidal gauge installed at Milne Inlet. It is requested that confirmation of resumption of monitoring is provided to the NIRB following re-installation of the tidal gauges, and that associated monitoring data be submitted to the Nunavut Impact Review Board in the 2017 Annual Monitoring Report.</p>	<p>Baffinland can confirm that the tidal gauge was installed at Milne Port during the 2017 open water season. The monitoring data will be submitted to the NIRB in the 2017 annual report as requested.</p>	<p>PC Condition No. 1</p>
2	<p><u>Greenhouse Gas Emission Reporting</u> Baffinland is required pursuant to Condition 3 of the Project Certificate to provide interested parties with evidence of continued initiatives undertaken to reduce greenhouse gas (GHG) emissions from the Project area. Within its 2016 Annual Monitoring Report to the NIRB, Baffinland reported that it calculated the annual GHG emissions from the Project site; however, the NIRB notes that the Proponent did not include within its annual reporting information or documents substantiating how it has implemented site-specific initiatives to reduce GHG emissions.</p>	<p>The Board requests that Baffinland provide the Nunavut Impact Review Board with updates regarding its climate change strategy, noting any specific activities it has undertaken or anticipated initiatives to be implemented to specifically reduce greenhouse gas emissions from the Project sites. It is requested that Baffinland provide an update on this within its 2017 Annual Report.</p>	<p>The Climate Change Strategy has been developed in draft as part of the FEIS Addendum for the Phase 2 Proposal, and is currently undergoing internal review. The company is looking to formally implement the strategy in 2018. Details on the implementation will be provided in the 2017 Annual Report.</p>	<p>PC Condition No. 2 and 4</p>
3	<p><u>Air Quality Monitoring</u> Baffinland is required pursuant to Conditions 7 and 8 of the Project Certificate to update its Air Quality and Noise Abatement Management Plan to support the continuous monitoring of SO₂ and NO₂ emissions from the Project site, and report on the data collected, in order to ensure that emissions remain within predicted levels across the Project sites, and where applicable, within limits established by all applicable guidelines and regulations. Within its 2016 Annual Monitoring Report to the NIRB, Baffinland reported that it could not collect or measure emissions parameters due to equipment failure, as such no specific updates were made to the Air Quality and Noise Abatement Management plan during the reporting period. In its 2016 Board Recommendations, the NIRB notes that Recommendation #3 to Baffinland requested that the details of any contemplated changes to the ongoing air quality monitoring program, including rationale for the potential suspension of any monitoring parameters (e.g., SO₂ and NO₂), be provided to the NIRB and other authorizing agencies prior to terminating such monitoring activities. While Baffinland has not indicated its intention to suspend air quality monitoring or discontinue the measurement of these parameters, the NIRB notes that Baffinland has not consistently monitored SO₂ and NO₂ emissions across the project site or developed an alternative strategy for monitoring emissions in the event of instrumentation malfunction or failure.</p>	<p>The Board requests that Baffinland recommence the monitoring of SO₂ and NO₂ emissions across the project site and develop an alternative strategy for monitoring such emissions in the event of instrumentation malfunction or failure. The Nunavut Impact Review Board also requests that Baffinland provide information on the ambient concentration of SO₂ and NO₂ from different project sites, including a timeseries analysis of emission variations across Project sites and that this update be provided within the Proponent's 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland recommenced SO₂ and NO₂ monitoring in March 2017 at the Port Site, and November 2017 at the Mine Site. Training in operation and maintenance of the air quality analyzers was provided to employees in March and November of 2017. Monthly calibrations have been completed at both sites since the monitoring resumed. An audit of the Port Site air quality monitoring station was completed in November, and it was determined that the equipment was being calibrated properly and operating well.</p> <p>There have been no exceedances of any of the Nunavut Ambient Air Quality Guideline parameters since the start of SO₂ and NO₂ monitoring. Ambient concentration monitoring results, including a time-series analysis of emissions, will be provided in the 2017 Annual Report.</p>	<p>PC Condition No. 7 and 8</p>

No.	NIRB Comment	NIRB Recommendation	Baffinland Response	Concordance to 2017 Annual Report
4	<p><u>Dust Management</u> Baffinland reported that dust management and monitoring was incorporated into the Air Quality and Noise Management Plan and the Road Management Plan prior to the start of construction, and that it further developed a Dust Mitigation Action Plan in response to excessive dust generated onsite. Baffinland also referenced the submission and updates to two (2) key documents (the Air Quality and Noise Management Plan and the Road Management Plan) in substantiating its compliance with Condition 10 of the Project Certificate as pertaining to dust management. Further, the NIRB notes that the web link provided by the Proponent in the 2016 Annual Monitoring Report to enable access to the referenced documents was non-functional; as such the NIRB was unable to confirm whether the Proponent is in full compliance with this term and condition of the Project Certificate. In addition, 2016 Board Recommendation #9 to Baffinland indicated that the 2015 Air Quality and Noise Abatement Management Plan was not updated with information that reflected the specific mitigation measures and adaptive management measures that would be implemented in the event of high threshold level of dust deposition, exceeding levels predicted in the FEIS or FEIS Addendum.</p>	<p>The Board requests that Baffinland substantiate its efforts of undertaking dust management and monitoring activities by submitting the referenced documents (the Air Quality and Noise Management Plan and the Road Management Plan), and provide details of the specific changes or updates made to its existing Dust Monitoring and Mitigation Plan in response to excessive dust emissions generated from the site, with details of how it intends to incorporate adaptive management strategies for increased dust deposition from its operations. It is requested that Baffinland provide updates on its efforts for dust management and monitoring, and also submit all the referenced documentation within the next 30 days to the Nunavut Impact Review Board.</p>	<p>Baffinland continues to investigate how to better mitigate dust on site and plans to update the Air Quality and Noise Management Plan in 2018. Baffinland continues, as scheduled, to evaluate and report on dust emissions through its approved dust monitoring program at the Mine Site, Port Site and Tote Road. Baffinland has worked diligently towards decreasing dust generated by wheel entrainment across the Project Sites, specifically reducing dust generation from ground surfaces by applying water and/or chemical suppressants (CaCl) to road surfaces and site layouts during summer conditions.</p> <p>Measures implemented to mitigate downwind dust of the Ore Pad were implemented in spring 2017 by removing dust impacted snow from areas of accumulation, including snow drifts near water bodies and the beach west of the ship loader; this snow removal program will continue for 2018. The Crushers at the Mine Site were installed with engineered dust shrouds on the main surge bins to reduce windblown dust as well as hoods at the out flow areas. A snow fence trial was conducted at the Ore and Crusher Pads to determine effectiveness of capturing windblown ore dust snow, however varying wind directions confounded results. Research towards various dust control binding agents for crusher pads and roads continue.</p> <p>Copies of the current management plans are available from the Baffinland online document portal, provided below for reference. Updates to these plans will be included with our 2017 Annual Report.</p> <p>Air Quality and Noise Management Plan http://www.baffinland.com/downloadocs/baf-ph1-830-p16-0002-r6---air-quality-and-noise-abatement-management-plan_2017-01-09-42.pdf Roads Management Plan http://www.baffinland.com/downloadocs/roads-management-plan_2017-11-34-21.pdf</p>	<p>The Air Quality and Noise Management and the Roads Management were not updated in 2017. Baffinland continues to monitor the plans effectiveness, any necessary updates to the plans will be considered in 2018.</p> <p>Copies of the current management plans are available from the Baffinland online document portal, provided below for reference.</p> <p>Air Quality and Noise Management Plan http://www.baffinland.com/downloadocs/baf-ph1-830-p16-0002-r6---air-quality-and-noise-abatement-management-plan_2017-01-09-42.pdf Roads Management Plan http://www.baffinland.com/downloadocs/roads-management-plan_2017-11-34-21.pdf</p>
6	<p><u>Aircraft Movements and Flight Levels</u> In the 2016 Annual Monitoring Report, Baffinland indicated that helicopter flights associated with the Project site have not been compliant with Conditions 59, 71, and 72 of the Project Certificate as pilots are to maintain the minimum cruising altitudes of at least 610 metres during point to point travel when in areas likely to have migratory birds, and 1,000 metres vertical, and 1,500 metres horizontal distance from migratory birds. Baffinland further reported that for the transects flown within the snow goose area during July and August, compliance was 28 percent (%) and 2% respectively. Further, Baffinland indicated that the helicopter flight height compliance outside of the snow goose area in July and August was 37% and 34% respectively, and that all areas flown outside of the sensitive season for waterfowl in June and September, saw 37% and 4% compliance respectively and that in general compliance to minimum cruising altitude was lower in 2016 than it was in 2015.</p>	<p>The Board requests that Baffinland to develop an action plan to mitigate aircraft disturbance to migratory birds, and address the consistent non-conformance with the flight altitude guidelines. It is requested that Baffinland provide information on how it will work with the helicopter contractor on revised protocols, pilot training and monitoring of flight logs to improve performance and compliance with the required flight altitude guidelines. It is also requested that Baffinland provide an update on its conformance within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will provide an update on compliance with Conditions 59, 71 and 72 in the 2017 Annual Report.</p>	<p>PC Condition No. 59, 71, and 72</p>

No.	NIRB Comment	NIRB Recommendation	Baffinland Response	Concordance to 2017 Annual Report
7	<p><u>Shipboard Observer Program</u> Baffinland reported to the NIRB that the ship-based surveillance monitoring was conducted in 2013, 2014 and 2015, but was discontinued in 2016 due to safety concerns arising from the on-boarding of the observers, and the general lack of success of observers on ships to observe marine mammals during ship voyages. The NIRB notes that Baffinland provided no updates within its annual reporting on the status of compliance with this condition, nor discussed any alternative programs it was considering for monitoring vessel interactions with marine mammals and seabirds during the year. While Baffinland indicated that it will continue discussions with the Marine Environment Working Group (MEWG) to identify an alternative program that would incorporate an accidental strikes reporting protocol, the NIRB expects the Proponent to remain committed to achieving compliance with this condition. This is particularly important, recognizing Baffinland is currently seeking regulatory approvals associated with its Phase 2 Development proposal which involves increasing the frequency of shipping for the Project; failure to demonstrate adherence to shipboard monitoring may contribute to public concern regarding potentially increasing shipping levels.</p>	<p>The Board requests that Baffinland develop an alternative strategy for monitoring vessel interactions with marine mammals, including seabirds should the ship-board observer program continue to be unfeasible due to safety concerns. It is also requested that Baffinland should notify the Nunavut Impact Review Board of any updates on this condition as pertaining to the design of any alternative programs, including evidence of Marine Environmental Working Group consensus on the agreed alternatives before the implementation of such programs. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>An update on the current status of the ship-based surveillance program will be provided in the 2017 Annual Report.</p>	<p>PC Condition No. 106, 121 and 123</p>
8	<p><u>Marine Environment-Ship Noise</u> Baffinland is required pursuant to Conditions 110 and 111 to develop a monitoring protocol to prevent impacts to marine mammals from Project shipping activities and expected to work with the Marine Environment Working Group (MEWG) to determine appropriate early warning indicator(s) that will ensure rapid identification of negative impacts along the southern and northern shipping routes. In addressing these conditions, Baffinland indicated within its 2016 Annual Report to the NIRB that the two (2) acoustic sites quantified vessel noise and detected the acoustic presence of marine mammal calls, but that the effects on marine mammals and marine mammal populations were not assessed. In addition, Baffinland also noted that no early warning indicators of negative impacts of vessel noise have been developed.</p>	<p>The Board requests that Baffinland provide information on how it intends to work with the Marine Environmental Working Groups in developing its early warning indicators of negative impacts of vessel noise on marine mammals pursuant to Condition 110 of the Project Certificate. It is also requested that the Proponent report on the specific indicators being developed noting how the Marine Environmental Working Group has been involved in identifying such indicators for use, including a description of how the indicators are to be used to inform marine mammal-vessel interactions. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will provide an update on compliance with Conditions 110 and 111, including any updates from the Marine Environmental Working Group in the 2017 Annual Report.</p>	<p>PC Condition No. 110 and 111; Appendix C1</p>
9	<p><u>Freshwater Aquatic Environment</u> Baffinland indicated within its 2016 Annual Monitoring Report that there were three (3) exceedances involving effluent discharges to the receiving environment, which constituted non-compliances with Condition 17 of the Project Certificate. In reporting these exceedances, Baffinland further indicated that in 2016, there were other sedimentation events including instances where surface water run-off downstream of Project facilities exceeded the discharge criteria for total suspended solids (TSS) and other parameters, which also constituted non-compliance with the requirement of Condition 46 of the Project Certificate. Baffinland also outlined that as a result of these reported exceedances, it received a Fisheries Act Direction in June of 2016 from Environment and Climate Change Canada under the Fisheries Act, and a letter of non-compliance from Indigenous and Northern Affairs Canada. Although Baffinland clarified that the high number of non-compliant discharges in 2016 was largely as a result of the freshet that occurred in the early spring, the NIRB reminds the Proponent that compliance with Conditions 17 and 46 of the Project Certificate, and implementation of protocols within the Sediment and Dust Mitigation Action Plans continue to be a requirement for the Mary River Project.</p>	<p>The Board request that Baffinland demonstrate how it has complied with the requirement of Conditions 17 and 46 of the Project Certificate, and implemented the protocols for managing sedimentation events during freshet onsite. It is requested that this information be incorporated in the 2017 Annual Monitoring Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 17 and 46</p>
10	<p><u>Freshwater Aquatic Environment - Watercourses</u> Pursuant to Condition 47 of the Project Certificate, Baffinland is required to ensure that all Project infrastructure in watercourses are designed and constructed in such a manner that they do not unduly prevent and limit the movement of water in fish bearing streams and rivers. Within the 2016 Annual Monitoring Report to the NIRB, Baffinland indicated that mild (e.g. CV-106) to severe (e.g. south channel at BG-50) hanging culverts or culvert that are above the water line were noted at a few crossings as described in Table 3.3 of the 2016 Annual Report to the DFO. Baffinland further reported that mild perching of culverts does not appear to have affected fish passage, but indicated that the crossing at BG-50 was sufficiently perched through erosion to prevent all upstream access for fish in the south channel. INAC previously noted in 2015 that 11 of 34 fish-bearing in-water crossings had minor issues that required monitoring and potentially mitigation, and that there is potential for the crossing at BG-01 to become impassable in the future. The NIRB also notes that its 2016 Board Recommendation 15 to Baffinland requested that the Proponent develop an action plan for the improvement of the identified fish-bearing crossings. Further, the NIRB notes that there is a growing number of hanging or perched culverts around the vicinity of fish bearing streams, as such recommends that Baffinland take action to improve fish passage and make upgrades to culverts along the Tote Road.</p>	<p>The Board requests that Baffinland develop an action plan to address the hanging culverts around fish bearing streams, particularly for the crossing at BG-50. It is requested that Baffinland clarify how it has consulted Fisheries and Oceans Canada and modified its fish habitat monitoring program, and that it demonstrate how the Tote Road Earthworks Execution Plan has included an assessment of improvements to fish passage and upgrades to culverts along the Tote Road. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 45</p>

No.	NIRB Comment	NIRB Recommendation	Baffinland Response	Concordance to 2017 Annual Report
11	<p><u>Survey and Monitoring of Arctic Char</u> Condition 48(a) requires Baffinland to provide plans to conduct additional surveys for the presence of arctic char in freshwater bodies and implement ongoing monitoring of arctic char health in areas affected by the Project. While Baffinland reported that surveys of arctic char were ongoing in the Project area, the NIRB notes that Baffinland's 2016 Annual Monitoring Report did not contain information or data on the general health status of arctic char population in freshwater bodies around the Project site. The NIRB requested in its 2016 Board Recommendation 4 to Baffinland that the Proponent support its conclusions regarding mine-related effects on fish health beyond reliance on morphometric parameters (length, size, weight, and age) and metal bioaccumulation trends in assessing effects. Further, the NIRB also recommended that Baffinland consider improvements to its Core Receiving Environment Monitoring Program (CREMP) to further substantiate its conclusion of no mine-related effects on fish population. In reviewing the 2015 Annual Monitoring Report, the NIRB notes that the Proponent did not provide any follow-up details regarding arctic char health or exposure-related effects due to mining derived contaminants.</p>	<p>The Board request that Baffinland provide information on how it is meeting Condition 48(a) and implementing monitoring of arctic char health in areas affected by the Project, including a discussion of how this monitoring would be informed through consultation with the Mittimatilik Hunters and Trappers Organization. It is also requested that the status of arctic char health sampled from the vicinity of the mine area and reference locations be provided and included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition 48(a); Consultation has not been specifically conducted on the monitoring of arctic char health, with respect to monitoring program design and implementation, however consultation related to all of Baffinland's monitoring programs occurs at public meetings and during community meetings with the HTO. Baffinland maintains ongoing engagement with the MHTO through MEWG meetings where members have the opportunities to ask any questions related to freshwater fisheries monitoring being conducted.</p>
12	<p><u>Marine Environment - Vessel Fouling Monitoring</u> Pursuant to condition 91, Baffinland is required to develop a detailed monitoring plan for Steensby Inlet and Milne Inlet for vessel fouling, and includes sampling areas on ships where antifouling treatment is not applied such as the areas where non-native species are most likely to occur. Within its annual reporting to the NIRB, Baffinland indicated that fouling had been monitored in Milne Port and Ragged Island (located in Eclipse Sound at the mouth of Milne Inlet) using annually collected underwater videos of the habitat offset area adjacent to the ore dock and natural benthic habitat (Milne Port only), and from settlement baskets (filled with native rocks to provide a surface for the settlement of fouling species) deployed in Milne Port and Ragged Island in 2014 and 2016 to detect settlement that would occur over two years. Baffinland further reported that no fouling monitoring has taken place on vessel hulls, and that no trends in fouling in the marine environment of Milne Inlet have been reported to date based on the collected 2014 and 2015 data.</p>	<p>The Board directs Baffinland to implement fouling monitoring on vessel hulls, as required by Condition 91. It is also requested that Baffinland provide the results of its settlement basket monitoring and underwater video surveys, including the proposed SCUBA-based monitoring program for detection of fouling on vessel hulls moored at Milne Port. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 91</p>
14	<p><u>Migration of Inuit and non-Inuit residents and Inuit Employee Turnover Rate</u> The QIA indicated that Baffinland's 2016 Annual Monitoring Report did not provide sufficient data regarding in-migration and out-migration of Inuit and non-Inuit residents within the North Baffin Local Study Area (LSA). The QIA also noted that information regarding employee residence, housing and migration status were not available for 2016 as required pursuant to Condition 133 of the Project Certificate. The NIRB notes that its 2016 Board Recommendation #13 to Baffinland requested that the Proponent, in consultation with the Qikiqtaaluk Socio-Economic Monitoring Committee, develop robust indicators to measure and survey the in-migration and out-migration of Inuit and non-Inuit residents in the North Baffin Local Study Area. The NIRB reminds Baffinland to continue to work with the QIA and the Qikiqtaaluk Socio-Economic Monitoring Committee to address the expectation for monitoring the migration of Inuit and non-Inuit residents and Inuit employee turnover rate.</p>	<p>The Board requests that Baffinland, in consultation with the Qikiqtaaluk Socio-Economic Monitoring Committee, develop robust indicators to measure and survey the in-migration and out-migration of Inuit and non-Inuit residents in the North Baffin LSA and discuss how this may affect local housing opportunities within the LSA. It is requested that Baffinland conduct a survey of the Inuit employee turnover rate on an annual basis and that the results of the survey be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 131, 133, and 140</p>
15	<p><u>Non-Inuit LSA residents and Contractor Employees</u> The QIA requested that Baffinland provide data for non-Inuit residents and contractors' employees who reside in the local study area, including information regarding Baffinland's Inuit employee payroll. The NIRB notes that its 2016 Board Recommendations 14 to Baffinland requested that the Proponent provide information regarding monitoring of non-Inuit residents and contractor employees in the local study area (LSA), and where applicable, provide information regarding Baffinland's Inuit employee payroll, in order to provide an understanding of the expansion of the local market for consumer goods and services within the LSA. The NIRB has consistently encouraged the Proponent to work with the QIA to address this information gap.</p>	<p>The Board requests that Baffinland consult with the Qikiqtani Inuit Association in discussing priorities regarding monitoring of non-Inuit residents and contractor employees in the local study area, and where applicable, provide information regarding Baffinland's Inuit employee payroll, in order to provide an understanding of the expansion of the local market for consumer goods and services within the local study area. It is requested that this data be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 131, 133, and 140</p>
17	<p><u>Aquatic Effects Monitoring Plan</u> ECCC noted that the results of the Aquatic Effect Monitoring Program (AEMP) submitted in the 2016 Annual Monitoring Report is version 1, while the version available on Baffinland's web portal was an updated version. ECCC recommended that Baffinland provide the current version of the AEMP results to the NIRB for inclusion with the 2016 Annual Report on the NIRB public registry.</p>	<p>The Board request that Baffinland provide the current version of the Aquatic Effect Monitoring Program for inclusion with the 2016 Annual Report on the Nunavut Impact Review Board registry within 30 days receipt of these recommendations. It is also recommended that the next update of the Aquatics Effects Monitoring Plan include maps and figures that are legible and that this information be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Rev 1 of the AEMP is the currently approved version; Rev 2 has not yet been approved by the Nunavut Water Board. For this reason, Baffinland submitted the approved Rev 1 version with the 2016 Annual Report, which is available on the Baffinland Document Portal. Baffinland proposes to provide the Rev 2 version with the 2017 Annual Report, provided it has been approved by the NWB.</p> <p>Aquatic Effects Monitoring Plan Rev. 1 http://www.baffinland.com/downloadocs/aquatic-effects-monitoring-plan_2017-11-43-17.pdf</p>	<p>Rev 1 of the Aquatic Effects Monitoring Plan remains the currently approved version. The AEMP is available on the Baffinland Document Portal.</p> <p>Aquatic Effects Monitoring Plan Rev. 1 http://www.baffinland.com/downloadocs/aquatic-effects-monitoring-plan_2017-11-43-17.pdf.</p>

No.	NIRB Comment	NIRB Recommendation	Baffinland Response	Concordance to 2017 Annual Report
19	<u>Groundwater & Surface Water</u> ECCC noted that Table 4.11 of the 2016 Annual Report states that "groundwater is not monitored; surface seepage is monitored in accordance with the Water License". ECCC further indicated that groundwater around the mine waste rock piles should be monitored for metal leaching which could drain during the freeze-thaw cycle, and that Baffinland should provide its justification for not monitoring groundwater around the mine waste rock piles.	The Board requests that Baffinland monitor groundwater drainage around the mine waste piles and in other Project locations pursuant to Condition 23 of the Project Certificate or clarify/justify why groundwater is not currently being monitored. It is requested that data regarding groundwater monitoring be included within the 2017 Annual Report to the Nunavut Impact Review Board.	Baffinland will provide an update on ground water monitoring in the 2017 Annual Report.	PC Condition No. 23
20	<u>Air quality</u> ECCC noted that no incinerator stack testing has been conducted since the initial testing in 2013. ECCC specifically noted that potential problems with incineration may have arisen since the initial testing, resulting in the potential release of contaminants, such as dioxins, furans, and mercury at levels exceeding allowable standards into the environment. ECCC further indicated that Baffinland has not included any commitments to conduct a follow-up incinerator stack testing in the Project's Waste Management Plan and recommended that Baffinland perform stack testing of the incinerators every three (3) years.	The Board requests that Baffinland perform stack testing of incinerators at regular three (3) year intervals, and to report the results of such testing in future Annual Reports to the Nunavut Impact Review Board.	Baffinland is in compliance with Project Certificate Condition No. 12, which states: "Prior to commencing any incineration of on-site Project wastes, the Proponent shall conduct at least one stack test immediately following the commissioning of each temporary and permanent incinerator." Baffinland is currently reviewing industry standards and best practices, and will develop a more detailed response to be included in the 2017 Annual Report.	Baffinland will conduct routine stack tests for dioxins, furans and mercury every five years following commissioning to confirm the above monitoring. See PC Condition No. 12.
21	<u>Effluent Discharge Criteria, including Ground water/surface water monitoring</u> INAC reported that Baffinland's annual reporting did not include detailed information of water volume and analytical data associated with effluent discharges from the Crusher Pad Sedimentation Pond (MS-06) and Waste Rock Sedimentation Pond (MS-08) pursuant to Conditions 17 and 24 of the Project Certificate. INAC also commented on Baffinland's compliance status with Conditions 20 through 30 of the Project Certificate noting that on page 79 of Baffinland's 2016 Annual Monitoring Report the Proponent was not clear on how many instances or one-time exceedances of effluent discharges from the project site have occurred. In addition, Baffinland reported that surface water runoff downstream of active quarries and mining areas showed elevated ammonia and nitrate levels in comparison to baseline concentrations during the 2016 period. INAC indicated that Baffinland did not include any detailed data of the chemical parameters in the report or identified where such data could be found and accessed.	The Board requests that Baffinland include detailed data of water volume and analytical data associated with the surface water runoff from active mining/quarries areas and effluent discharges from the Crusher Pad Sedimentation Pond (MS-06) and Waste Rock Sedimentation Pond (MS-08) and other project facilities in order to verify its compliance with terms and conditions 17 and 24 of the Project Certificate. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.	Baffinland compiles this data and presents it in the Annual QIA and NWB Report For Operations. The 2016 report can be found on the Baffinland Document Portal. An update on compliance with conditions 17 and 24 will be provided in the 2017 NIRB Annual report. 2016 QIA and NWB Annual Report For Operations http://www.baffinland.com/downloadocs/17-03-31---2016-qia-nwb-annual-report-for-operations_2017-10-32-04.pdf	PC Condition No. 17 and 24
22	<u>Hydrodynamic Modelling</u> INAC commented on page 183 of the Annual Monitoring Report noting that the report lacked detailed measurement data for the hydrodynamic modelling sampling program conducted in Milne Inlet pursuant to condition 83(a) of the Project Certificate. Although Baffinland reported that the results of the sampling showed a well-defined vertical gradient in salinity, increasing from the surface the bottom of the marine water, INAC requested that the Proponent clarify when or in which season the above-noted salinity profile was taken and also indicate whether it would be different in different seasons. Further, INAC also commented that the results of physical and chemical parameters, such as conductivity, total suspended solids, turbidity, nutrients, metals and other chemical species in the water column and in the sediment collected from Milne Inlet area were only presented in descriptive terms without any quantitative data description being provided within the report.	The Board requests that Baffinland improve upon its reporting of results associated with the hydrodynamic modeling program by incorporating both descriptive and quantitative data of all relevant parameters in future annual reports. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.	Baffinland will address this recommendation in the 2017 Annual Report.	PC Condition No. 83(a)
24	<u>Nunavut Annual Net Migration</u> The GN noted that some surveyed Baffinland employees indicated that they intend to relocate to a different community in the next 12 months and with housing inventories not available in many communities, the GN further expressed concerns that such move may place additional stress on housing-related issues. The GN recommended that further questions be developed and incorporated into the pre-existing voluntary employee survey to better define the effects of project-related influences on housing in the north Baffin LSA.	The Board requests that Baffinland assess Project-related influences on housing in the north Baffin local study area, as well as to continue developing employee surveys to properly address all socio-economic indicators likely to arise due to migration. It is requested that the results of the survey be provided and incorporated within the 2017 Annual Report to the Nunavut Impact Review Board.	Baffinland will address this recommendation in the 2017 Annual Report.	PC Condition No. 133; Section 3 and Section 8 Appendix G of the 2017 Annual Report
25	<u>Community Survey Results</u> The GN commented that the 2016 North Baffin community survey reported on in the 2016 Annual Report did not report examples of negative changes expressed in the community surveys. The GN further noted that the availability of such information would lead to opportunities to review impacts reported on behalf of communities, and where impacts are found to be valid, the Proponent can then investigate whether mitigation measures have been or can be successfully implemented.	The Board requests that Baffinland adhere to the recommendation of the Government of Nunavut to provide examples of negative changes or concerns reported in the community surveys and a description of how Baffinland intends to address these impacts and confirm that proper mitigation measures have been implemented. The positive and negative results associated with the community surveys should be provided and included within the 2017 Annual Report to the NIRB.	Baffinland will address this recommendation in the 2017 Annual Report.	Figure 4 Appendix B of 2016 Annual Report; Figure 6 Section 5.4.6 and Section 7 of 2016 Annual Report; A community survey was not conducted in 2017.

No.	NIRB Comment	NIRB Recommendation	Baffinland Response	Concordance to 2017 Annual Report
26	<p><u>Childcare availability and Cost</u></p> <p>The GN commented that the lack of child care in communities may result in the increase in Inuit turnover rates at the Project and recommended that the Proponent investigate the feasibility of using the Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat (INPK) to provide additional supports to community daycares or child care services over and above what is available through the GN's Start-up Contribution program.</p>	<p>The Board requests that Baffinland follow the recommendation of the Government of Nunavut to address the increase in Inuit turnover rates at the Project by exploring the feasibility of using the Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat fund to provide additional supports to community daycares or child care services over and above what is available through the Government of Nunavut's Start-up Contribution program. It is requested that updates with respect to providing additional supports to community daycares or child care services for employees or through Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat fund be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 145</p>
27	<p><u>Food Security</u></p> <p>The GN noted that Baffinland's annual reporting did not make any conclusion regarding food security for affected community members and that the majority of discussion in the 2016 Annual Monitoring Report tended to focus on income, including food access and affordability of food in the local communities. The GN specifically commented that the access to hunting grounds continues to be identified as an ongoing issue for residents of Pond Inlet but that Baffinland has yet to measure or report this impact.</p>	<p>The Board requests that Baffinland consider working with appropriate stakeholders to develop a measurement tool/indicator for food security and provide information on the impact of the Project on food security, including access to hunting grounds. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 148 and 168</p>
28	<p><u>Pressures on Existing Health and Social Services</u></p> <p>The GN reported that the Project has had impacts on the health care service provisions and recommended that service requests and interactions be tracked to monitor the degree of impact and determine if improvements can be made to the system and process currently in place for health and social services.</p>	<p>The Board requests that Baffinland engage with the Government of Nunavut to discuss possible Project implications on existing health and social services, including strategies for tracking health and social service requests. The Proponent should also consider providing information regarding outbreak investigations of communicable diseases, medical assessment or return to work as a requirement of insurance or workplace policies, and treatment of workplace injuries upon returning to the community. It is requested that an update on this engagement and related outcomes be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>PC Condition No. 158 "A Memorandum of Understanding (MOU) was also signed with the GN Department of Health in November 2013 and updated in 2017 regarding site health services and medevac procedures. More specifically, this MOU describes the health care staff and services Baffinland will provide on-site, including procedures Baffinland will follow during medevac situations, for pre-employment medical examinations, and for the reporting and management of communicable diseases, amongst other topics. The MOU also describes how Baffinland will pay for and/or reimburse the GN Department of Health's for costs associated with the medical transportation of employees and for conducting pre-employment medical exams.</p> <p>Baffinland has additionally provided information on potential socio-economic effects of the Project in its 2017 Socio-Economic Monitoring Report. This includes indicator data related to pressures on existing health and social services provided by the GN that may be impacted by Project-related in-migration of employees (i.e. total and per capita number of health centre visits in the Local Study Area (LSA), number of visits to Project site medic).</p>

No.	NIRB Comment	NIRB Recommendation	Baffinland Response	Concordance to 2017 Annual Report
32	<p><u>Uncontrolled Seepages from Waste Rocks</u></p> <p>During the tour of the waste rock dump that occurred as part of the NIRB's 2016 site visit, NIRB staff noted uncontrolled seepage of site contact water into the adjacent tundra from the piles of potentially acid generating waste rocks. It was observed that the waste rock storage area lacked appropriate water management structures required to properly divert or intercept overland runoff from waste rock dump to the nearby sediment pond. Subsequent to the 2016 visit, Baffinland constructed the MS-08 facility (sedimentation pond and ditching) to address the issue. The NIRB's 2016 Board Recommendation 19 to Baffinland specifically requested that the Proponent provide an explanation for the uncontrolled seepage of site contact water from the piles of potentially acid generating waste rock into the adjacent tundra and provide an action plan for addressing the environmental issue. During the March 2017 site visit NIRB staff noted that MS-08 had been constructed, but as a result of the snow and freezing conditions onsite it was not possible to assess the effectiveness of the facility.</p> <p>Prior to the August 2017 site visit, it was noted by the QIA and ECCC that the MS-08 facility was not effective in containing the runoff from the waste rock pile during the freshet. During the August 2017 site visit, the NIRB staff further noted that MS-08 had overflowed, with the site contact water/ runoff flowing into the adjacent tundra. Baffinland indicated its intent to re-ditch the western portion of MS-08 and re-engineer the sedimentation pond and interception ditch as necessary to prevent further seepage and overflow from the facility.</p>	<p>The Board requests that Baffinland provide an action plan showing how the MS-08 facility will be improved to ensure that site contact water is properly managed around the waste rock piles, and that discharge from the waste rock dump meets criteria and is properly contained and channeled, and not allowed to flow into the adjacent tundra. It is requested that this information be provided within 30 days receipt of these recommendations.</p>	<p>Baffinland is in the process of finalizing a strategy to address outstanding concerns regarding the Waste Rock Stockpile Facility (Facility). Once finalized, an Action Plan will be provided to NIRB, as well as INAC, ECCC and the QIA. A brief description of the 2017 events and corrective actions taken to date were summarized in an update sent from Baffinland to ECCC on November 21, 2017 (Attachment No. 3). Further discussion will be provided in the 2017 Annual Report.</p>	<p>Section 3.2.2.3 of the 2017 Annual Report</p>
33	<p><u>Landform - Contaminated Snow, Soil and Synthetic Liners</u></p> <p>During the March and August 2017 site visits, the NIRB staff noted significant improvement to the landfarm facility due to the ongoing removal of entrenched synthetic liners and the control of windblown debris from the site consistent with the request of the NIRB's 2016 Recommendation #20 to Baffinland. However, the NIRB staff observed that some liner scraps continue to be visible within the contaminated soils located in the facility. In addition, waste barrels, plastic buckets and other non-soil debris were also observed in the landfarm.</p>	<p>The Board requests that Baffinland adhere to industry best practices for landfarm operations, including for management of contaminated snow and waste synthetic liners. It is requested that an update regarding this recommendation be provided within the next Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland will address this recommendation in the 2017 Annual Report.</p>	<p>In response to the Boards request that Baffinland adhere to industry best practices for landfarm operations, Baffinland has continued to operate the landfarm facility as outlined by Baffinland's Landfarm Operation, Maintenance and Monitoring Manual. Baffinland has worked diligently towards decreasing the amount of debris contained within soil delivered to the landfarm through monitoring and training of operators. During July 2017 BIM personnel conducted a cleanup effort removing debris from the contaminated soil in the landfarm that had been deposited over the winter months, this effort will continue in 2018. A tilling program is currently being researched to increase evaporative processes, this program would expose additional debris currently covered by soil and will be removed while this tilling operation occurs. Materials used to temporarily store hydrocarbon contaminated soil are removed on an ongoing basis throughout the summer months when contents have thawed.</p>

APPENDIX F

2017 SOCIO-ECONOMIC MONITORING REPORT

2017 Socio-Economic Monitoring Report for the Mary River Project

March 31, 2018

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Suggested Citation

Jason Prno Consulting Services Ltd. 2018. *2017 Socio-Economic Monitoring Report for the Mary River Project*. Report prepared for Baffinland Iron Mines Corporation. March 31, 2018.

EXECUTIVE SUMMARY

This report has assessed the socio-economic performance of the Mary River Project in 2017, as well as Baffinland's compliance with various Project Certificate terms and conditions. Performance was assessed using socio-economic indicators and information for several Valued Socio-Economic Components (VSECs) included in the Final Environmental Impact Statement (FEIS):

- Population demographics
- Education and training
- Livelihood and employment
- Contracting and business opportunities
- Human health and well-being
- Community infrastructure and public services
- Resources and land use
- Economic development and self-reliance
- Benefits, royalty, and taxation

The information presented in this report supports many of the FEIS predictions for these VSECs and identifies positive effects the Project has had. For example, approximately 2.38 million hours of Project labour were performed by Baffinland employees and contractors in Nunavut in 2017, which was equal to approximately 1,181 full-time equivalent positions (FTEs). Of this total, 313,068 hours were worked by residents of the LSA, representing approximately 155 FTEs. In addition, approximately \$7.06 million in payroll was provided to Baffinland LSA employees (not including contractors) and \$387.2 million was spent on procurement with Inuit-owned businesses and joint ventures in 2017.

Employment in the LSA is one area where Project activities didn't fully match FEIS predictions in 2017, as LSA employment hours in 2017 were somewhat lower than originally predicted. Likewise, there were several Inuit employee departures in 2017. Baffinland continues to take positive steps to address the issue of Inuit employment and recently finalized its Inuit Human Resources Strategy (IHRS) and Inuit Procurement and Contracting Strategy (IPCS) with the QIA. These documents describe goals and initiatives that will be used to increase Inuit employment and contracting at the Project over time.

Furthermore, Baffinland and the QIA are partners in the \$19 million Qikiqtani Skills and Training for Employment Partnership (Q-STEP) training program, which has been designed to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators, and other actions to meet the Minimum Inuit Employment Goal (MIEG) established with the QIA should also assist with increasing LSA employment over time. However, additional monitoring will be necessary to track the success of these and other Baffinland Inuit employment programs. Baffinland will also continue to track employee turnover causes and outcomes, moving forward.

Where appropriate, trends have been described for indicators assessed in this report. These trends (i.e. pre-development, post-development, and since the previous year) demonstrate whether an indicator has exhibited change and describes the direction of that change. Trend analyses can be useful for assessing potential Project influences on an indicator. The table that follows summarizes the information and trends observed in 2017 relative to previous years. In some cases, additional data and

monitoring will be necessary before the FEIS predictions presented in this report can be fully verified. In others, direct correlations between the Project and data trends were either unable to be identified or were unclear. The process of socio-economic monitoring often requires many years of data to effectively discern trends and causality. Even then, various factors may be found to influence causality and some of these may not be easy to measure. Successful socio-economic monitoring for the Project will require appropriate long-term data, the regular input of all Project stakeholders, and a focus on continuous improvement.

2017 Socio-Economic Monitoring Reporting Summary for Baffinland Iron Mines Corporation’s Mary River Project

VSEC	Indicator(s)	Pre-Development Trend	Post-Development Trend	Trend Since Previous Year	Scale	Summary
Population Demographics	Known in-migrations of non-Inuit Project employees and contractors	Not applicable	No change	No change	North Baffin LSA	Since 2015, a net of zero known non-Inuit employees/contractors have in-migrated to the North Baffin LSA
	In-migration of non-Inuit to the North Baffin LSA	Not available	Not available	Not available	North Baffin LSA	Limited data currently available. However, the percentage of Inuit vs. non-Inuit residents in the North Baffin LSA has remained relatively constant.
	Known out-migrations of Inuit Project employees and contractors	Not applicable	↑	No change	North Baffin LSA	Since 2015, a net of five known Inuit employees/contractors have out-migrated from the North Baffin LSA
	Out-migration of Inuit from the North Baffin LSA	Not available	Not available	Not available	North Baffin LSA	Limited data currently available. However, the percentage of Inuit vs. non-Inuit residents in the North Baffin LSA has remained relatively constant.
	Population estimates	↑	↑	↑	North Baffin LSA Iqaluit	Population numbers continue to increase across the territory
	Nunavut net migration	↑	↓	↑	Territory	An decreasing post-development trend in Nunavut annual net migration is currently occurring
	Employee and contractor changes of address, housing status, and migration intentions	Not applicable	Not applicable	Not applicable	Project	22.8% of the 2018 Inuit Employee Survey respondents housing situation changed in the past 12 months. 9.9% moved to a different community in the past 12 months but no one moved into or out of the North Baffin LSA. 17.7% intend to move to a different community in the next 12 months. 8.8% intend to move away from the North Baffin LSA. No individuals intend to move into the North Baffin LSA. 60.7% of respondents currently live in public housing.
	Employee and contractor origin	Not applicable	Not applicable	Not applicable	Project	An average of 1,572 individuals worked at the Project in 2017, of which 219 were Inuit. Most the Project’s Inuit employees and contractors were based in LSA communities. Most of the Project’s non-Inuit employees and contractors were based in Canadian locations outside of Nunavut.
Education and Training	Participation in pre-employment training	Not applicable	↑	No change (not offered 2014-2017)	Project	Since 2012, there have been 277 graduates of Baffinland pre-employment training programs. A new Work Ready program will be delivered in local communities beginning in 2018.
	Number of secondary school graduates	↑	↓	↑	North Baffin LSA Iqaluit	A decreasing post-development trend in graduation numbers is apparent in the LSA, which was not evident prior to the Project
	Secondary school graduation rate	↑	↓	↑	Region	A decreasing post-development trend in graduation rates is apparent in the region, which was not evident prior to the Project
	Investments in school-based initiatives	Not applicable	↑	No change	Project	Investments continued to be made in school-based initiatives in 2017. These included laptop donations to secondary school graduates and the launch of a community literacy initiative.
	Hours of training completed by Inuit employees and contractors	Not applicable	↑	↑	Project	Inuit received 4,024 hours of training in 2017 and a total of 15,867 training hours since Project development
	Types of training provided to Inuit employees and contractors	Not applicable	↑	No change	Project	Inuit continue to receive various forms of Project-related training
	Apprenticeships and other opportunities	Not applicable	↑	No change	Project	One Inuit apprentice worked at the Project in 2017
Education and employment status prior to Project employment	Not applicable	Not applicable	Not applicable	Project	54.0% of 2018 Inuit Employee Survey respondents had no certificate, diploma or degree, 32.0% had a high school diploma or equivalent, and 14.0% of respondents had higher than a high school diploma or equivalent. 31.4% resigned from a previous job in order to take up employment with the Project and 3.1% suspended or discontinued their education because they were hired to work at the Project.	
Livelihood and Employment	Hours of Project labour performed in Nunavut	Not applicable	↑	↑	Project	2,380,990 hours of labour were performed in Nunavut in 2017 and 8,837,636 hours of labour have been performed since Project development
	Project hours worked by LSA employees and contractors	Not applicable	↑	↓	North Baffin LSA Iqaluit	229,658 hours of labour were performed by North Baffin LSA residents (9.6% of total) and 83,410 hours of labour were performed by Iqaluit residents (3.5% of total) in 2017
	Inuit employee promotions	Not applicable	↑	↓	Project	3 Inuit employee promotions occurred in 2017
	Inuit employee turnover	Not applicable	↑	No change	Project	There were 42 Inuit employee departures in 2017, equal to an Inuit employee turnover rate of 45%
	Hours worked by female employees and contractors	Not applicable	↑	↑	Project	162,550 hours were worked by female employees and contractors in 2017 (6.8% of total), 85,988 hours of which were worked by Inuit females (3.6% of total)
	Childcare availability and costs	Not available	Not available	Not available	Project	This topic continues to be tracked through the QSEMC process and Baffinland’s community engagement program
Contracting and Business Opportunities	Value of procurement with Inuit-owned businesses and joint ventures	Not applicable	↑	↑	Project	Baffinland awarded \$387.2 million in contracts to Inuit-owned businesses and joint ventures in 2017; a total of \$819.1 million has been awarded to Inuit-owned businesses and joint ventures since Project development
	LSA employee payroll amounts	Not applicable	↑	↓	Project	Approximately \$7.06 million in payroll was provided to LSA residents in 2017. Since 2014, Baffinland has provided approximately \$33.3 million in payroll to its Inuit employees.
	Number of registered Inuit firms in the LSA	Not available	↑	↑	North Baffin LSA Iqaluit	There were 44 NTI-registered Inuit firms in the North Baffin LSA and 109 in Iqaluit in 2017
Human Health and Well-Being	Number of youth charged	↓	↓	↓	North Baffin LSA Iqaluit	A decreasing post-development trend in the number of youth charged is apparent in the LSA and was evident prior to the Project

	Proportion of taxfilers with employment income	↓ No change	↓ ↓	No change ↑	North Baffin LSA Iqaluit	A decreasing post-development trend in the proportion of taxfilers with employment income is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is also apparent in Iqaluit, after experiencing no change prior to the Project.
	Median employment income	↑ ↑	↑ ↑	↓ ↑	North Baffin LSA Iqaluit	An increasing post-development trend in median employment income is apparent in the LSA and was evident prior to the Project.
	Percentage of population receiving social assistance	↓ ↓	↓ ↓	↑ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in the percentage of the population receiving social assistance is apparent in the LSA and was evident prior to the Project
	Number of drug and alcohol related contraband infractions at Project sites	Not applicable	↑	↑	Project	There were 15 drug and alcohol related contraband infractions at Project sites in 2017
	Number of impaired driving violations	↑ ↑	↑ ↓	↑ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the number of impaired driving violations is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is apparent in Iqaluit, which was not evident prior to the Project.
	Number of drug violations	↑ ↑	↑ ↓	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the number of drug violations is apparent in the North Baffin LSA and was evident prior to the Project. A decreasing trend is apparent in Iqaluit, which was not evident prior to the Project.
	Absence from the community during work rotation	Not available	Not available	Not available	Project	These topics continue to be tracked through the QSEMC process and Baffinland's community engagement program
	Prevalence of gambling issues					
	Prevalence of family violence					
	Prevalence of marital problems					
	Percent of health centre visits related to infectious diseases	↓ ↓	↓ ↓	↓ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in the percent of health centre visits related to infectious diseases is apparent in the LSA and was evident prior to the Project
	Rates of teenage pregnancy	Not available	Not available	Not available	Project	This topic continues to be tracked through the QSEMC process and Baffinland's community engagement program
	Crime rate	↑ ↑	↓ ↓	↓ ↓	North Baffin LSA Iqaluit	A decreasing post-development trend in crime rates is apparent in the LSA, which was not evident prior to the Project
	Number of times Baffinland's EFAP is accessed	Not applicable	↑	↑	Project	The EFAP was accessed 38 times in 2017; 12 of these were by Nunavummiut
Community Infrastructure and Public Services	Number of Project employees and contractors who left positions in their community	Not applicable	Not applicable	Not applicable	Project	The 2018 Inuit Employee Survey indicated 22 individuals (or 31.4% of respondents) resigned from a previous job in order to take up employment with the Project. Of these, 7 were casual/part-time positions and 15 were full-time positions.
	Number of health centre visits (total)	↑ ↑	↑ ↑	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the total number of health centre visits is apparent in the LSA and was evident prior to the Project
	Number of health centre visits (per capita)	↑ ↑	↑ ↑	↓ ↓	North Baffin LSA Iqaluit	An increasing post-development trend in the per capita number of health centre visits is apparent in the LSA and was evident prior to the Project
	Number of visits to Project site medic	Not applicable	↑	↑	Project	There were 6,337 visits to the Project site medic in 2017; 1,193 of these were by Inuit
	Baffinland use of LSA community infrastructure	Not applicable	↑	No change	Project	Baffinland continued to use some LSA community infrastructure to support Project operations in 2017
	Number of Project aircraft movements at LSA community airports	Not applicable	↑	↑	Project	There were 1,628 Project aircraft movements at LSA airports in 2017
Resources and Land Use	Number of recorded land use visitor person-days at Project sites	Not applicable	↑	↓	Project	There were 154 recorded land use visitor person-days at Project sites in 2017
	Number of wildlife compensation fund claims	Not applicable	↑	No change	Project	One claim was submitted to QIA for review in 2017 and was approved. It resulted in compensation of \$14,200.00 being paid.
Economic Development and Self-Reliance	Project harvesting interactions and food security	Not available	Not available	Not available	Project	This topic continues to be tracked through the QSEMC process, Baffinland's community engagement program, and related indicators
Benefits, Royalty, and Taxation	Payroll and corporate taxes paid by Baffinland to the territorial government	Not applicable	↑	↑	Project	Approximately \$1.491 million in employee payroll tax was paid to the GN in 2017. Increased tax amounts are anticipated to be paid once the Company becomes profitable.

Guide to Using the Table:

VSEC: Refers to 'Valued Socio-Economic Component' and includes a selection of VSECs assessed in the Mary River Project FEIS.

Indicator(s): Indicators are an important aspect of socio-economic monitoring. Indicators are metrics used to measure and report on the condition and trend of a VSEC.

Trend: Refers to whether an indicator has exhibited change and describes the direction of that change. Black arrows (↑↓) indicate the direction of change that has occurred. Where there is no discernable or significant change 'No change' is used. Where there are insufficient data or other issues preventing a trend analysis, 'Not applicable' or 'Not available' are used. 'Pre-development trend' refers to the five-year period preceding Project construction (i.e. 2008 to 2012). In some cases, averaged data from this period have been compared against averaged data from previous years (i.e. 2003-2007, where available) to determine a trend. 'Post-development trend' refers to the period after Project construction commenced (i.e. 2013 onwards). Averaged data from this period may have also been compared against averaged data from the pre-development period to determine a trend. 'Trend since previous year' refers to the two most recent years in which indicator data are available.

Scale: 'Territory' refers to data that are available for Nunavut. 'Region' refers to data that are available for the Qikiqtaaluk Region. 'North Baffin LSA' refers to data that are available for the North Baffin Local Study Area communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet. 'Project' refers to data that are available for the Mary River Project.

Summary: A brief description of the trend and/or related data.

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ABBREVIATIONS

Baffinland	Baffinland Iron Mines Corporation
BCLO	Baffinland Community Liaison Officer
EFAP	Employee and Family Assistance Program
ERP	Early Revenue Phase
ESDC	Employment and Social Development Canada
FEIS	Final Environmental Impact Statement
FTE	Full-Time Equivalent
GDP	Gross Domestic Product
GN	Government of Nunavut
IHRS	Inuit Human Resources Strategy
IIBA	Inuit Impact and Benefit Agreement
INPK	Ilagiiktunut Nunalinnullu Pivalliajutisait Kiinaujat
IPCS	Inuit Procurement and Contracting Strategy
LSA	Local Study Area
MIEG	Minimum Inuit Employment Goal
MOU	Memorandum of Understanding
NBS	Nunavut Bureau of Statistics
NIRB	Nunavut Impact Review Board
North Baffin LSA	The communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet
NTI	Nunavut Tunngavik Incorporated
Post-Development	Period after Project construction commenced (i.e. 2013 onwards)
Pre-Development	Five-year period preceding Project construction (i.e. 2008 to 2012)
Project	Mary River Project
QIA	Qikiqtani Inuit Association
QSEMC	Qikiqtaaluk Socio-Economic Monitoring Committee
Q-STEP	Qikiqtani Skills and Training for Employment Partnership
RSA	Regional Study Area
SEMWG	Mary River Socio-Economic Monitoring Working Group
VC	Valued Component
VEC	Valued Ecosystem Component
VSEC	Valued Socio-Economic Component

1. INTRODUCTION

1.1 MARY RIVER PROJECT OVERVIEW

The Mary River Project (the Project) is an operating open pit iron ore mine with associated project components that is owned and operated by Baffinland Iron Mines Corporation (Baffinland or the Company). The Project is located in the Qikiqtaaluk Region of Nunavut on northern Baffin Island. The mine site is located approximately 160 km south of Pond Inlet (Mittimatalik) and 1,000 km north of the territorial capital of Iqaluit.

The Project consists of three currently active main project locations - the Mine Site, the 100-km long Milne Inlet Tote Road, and Milne Port. The Project also includes a proposed railway and Steensby Port, both located to the south of the mine site. At the end of 2012, the Nunavut Impact Review Board (NIRB) issued Project Certificate No. 005 authorizing the construction, operation, and closure of an 18 million tonne per annum (Mt/a) operation which included a 149-km railway and year-round shipping of iron ore from a port facility at Steensby Inlet (Steensby Port). Mine construction began in 2013.

In 2013, Baffinland applied to the NIRB to amend its Project Certificate to allow for an Early Revenue Phase (ERP) operation, which included the additional production of up to 4.2 Mt/a of iron ore, ore haulage over the Milne Inlet Tote Road, and open water shipping of ore from Milne Port. On May 28, 2014, the NIRB issued an amended Project Certificate No. 005 approving the ERP. Mining of ore began in the last quarter of 2014 and the first shipment of ore occurred in the summer of 2015. The amended Project Certificate allows for the future development of the 18 Mt/a railway operation, for a total combined production rate of 22.2 Mt/a. However, the mine is currently working toward the 4.2 Mt/a production rate via Milne Port associated with the ERP.

In the fall of 2014, Baffinland announced its intention to seek approval for a second phase of the ERP. The 'Phase 2 Proposal' consists of an expansion of the 4.2 Mt/a ERP operation by 7.8 Mt/a to 12 Mt/a of ore. This ore will be transported to Milne Port by rail and then delivered to market over an expanded shipping season. The Phase 2 proposal is part of Baffinland's approach to develop the Mary River Project in a phased and economically feasible manner. A Phase 2 Proposal Project Description was submitted to the NIRB on October 29, 2014, and on November 30, 2016 a Project Update on the Phase 2 Proposal was provided. Pending the necessary regulatory approvals, Baffinland expects to submit a Draft Environmental Impact Statement Addendum for the Phase 2 Proposal in 2018. Additional information on Baffinland's regulatory submissions and approvals can be found on the NIRB public registry: <http://www.nirb.ca/>.

1.2 SOCIO-ECONOMIC MONITORING REQUIREMENTS

Project-related socio-economic monitoring requirements originate from the Nunavut Agreement and NIRB Project Certificate No. 005. The Nunavut Agreement is a comprehensive land claims agreement signed in 1993 between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada. As a result of signing the Nunavut Agreement, Inuit exchanged Aboriginal title to all their traditional land in the Nunavut Settlement Area for a series of rights and benefits. The Nunavut Agreement also created various 'institutions of public government' such as the NIRB and Nunavut Water Board and established conditions for the review and oversight of resource development projects. Article 12, Part 7 of the Nunavut Agreement provides details on monitoring programs which may be required under a NIRB project certificate and notes the purpose of these programs shall be:

- (a) to measure the relevant effects of projects on the ecosystemic and socio-economic environments of the Nunavut Settlement Area;
- (b) to determine whether and to what extent the land or resource use in question is carried out within the predetermined terms and conditions;
- (c) to provide the information base necessary for agencies to enforce terms and conditions of land or resource use approvals; and
- (d) to assess the accuracy of the predictions contained in the project impact statements.

As noted previously, NIRB issued an amended Project Certificate No. 005 (i.e. NIRB 2014) approving the ERP on May 28, 2014. NIRB (2014) and Section 12.4 of this report should be consulted for further information on the terms and conditions specific to socio-economic monitoring that were included in the Project Certificate.

Several terms and conditions included in Project Certificate No. 005 relate to Baffinland's engagement with the Qikiqtaaluk Socio-Economic Monitoring Committee (QSEMC). The QSEMC is one of three regional socio-economic monitoring committees in Nunavut. These committees were established in 2007 to address project certificate requirements for project-specific monitoring programs and to create a discussion forum and information sharing hub that supports impacted communities and interested stakeholders to take part in monitoring efforts (SEMCs 2017a). Baffinland is actively involved in the QSEMC and regularly participates in its meetings. Most recently, Baffinland participated in the QSEMC's July 2017 meeting in Arctic Bay. A summary of this meeting can be found in SEMCs (2017b) and in Appendix B. Baffinland's responses to two Project-specific action items/recommendations issued by the QSEMC can also be found in Appendix B.

The Mary River Socio-Economic Monitoring Working Group (SEMWG or Working Group) Terms of Reference also provides guidance on Baffinland's socio-economic monitoring program. Baffinland, in addition to the Government of Nunavut, the Government of Canada, and the Qikiqtani Inuit Association (QIA), is a member of the SEMWG. The SEMWG is intended to support the QSEMC's regional monitoring initiatives through Project-specific socio-economic monitoring. The SEMWG also supports the fulfillment of terms and conditions set out in Project Certificate No. 005 that relate to socio-economic monitoring. A Terms of Reference for the SEMWG can be found in Appendix A.¹ It describes the Working Group's purpose; membership and member roles; objectives; and reporting, communication, and meeting requirements. Furthermore, Section 4.1 of the Terms of Reference notes that Baffinland:

"...will prepare an annual socio-economic report, presenting performance data, to the Nunavut Impact Review Board for review...containing data on the indicators selected by the Working Group for the previous calendar year (January to December). These reports will further describe the Company's participation in the [QSEMC], other collaborative monitoring processes and any activities related to better understanding of socio-economic processes."

As established in the SEMWG Terms of Reference, the Working Group members agreed that collaboration is required to effectively monitor the socio-economic performance of the Mary River

¹ Baffinland anticipates updating the SEMWG Terms of Reference in 2018. The existing Terms of Reference is somewhat dated (December 2012) and does not fully reflect the current scope of working group activities. Baffinland will work with SEMWG members in 2018 to complete revisions to the Terms of Reference. Baffinland anticipates including a revised Terms of Reference in its 2018 Socio-Economic Monitoring Report.

Project. It was acknowledged that Baffinland is best able to collect and provide data concerning employment and training in relation to the Project, and the Government of Nunavut and the Government of Canada are best able to report public statistics on general health and well-being, food security, demographics, and other socio-economic indicators at the community and territorial level. The QIA was noted to be best able to provide information and data relating to Inuit land use and culture at the community and regional level.

Baffinland is actively involved in the SEMWG and regularly participates in its meetings. Most recently, Baffinland met with the SEMWG by teleconference in February 2017 and in-person in September 2017 in Iqaluit. A summary of these meetings, including Baffinland's responses to SEMWG action items/recommendations, can be found in Appendix B.

This 2017 Socio-Economic Monitoring Report helps fulfill Project-related socio-economic monitoring requirements associated with the Nunavut Agreement and NIRB Project Certificate No. 005, and follows the guidance provided by the SEMWG Terms of Reference, described above. Baffinland will continue to review and address its socio-economic monitoring requirements moving forward.

1.3 REPORT OBJECTIVES AND ORGANIZATION

This is the fifth annual socio-economic monitoring report prepared by Baffinland for the Mary River Project. Project-specific socio-economic monitoring programs in Nunavut are generally expected to focus on two areas: 'effects monitoring' and 'compliance monitoring'. Effects monitoring keeps track of the socio-economic effects of a project to see if management plans are working or if any unexpected effects are occurring. Compliance monitoring occurs to make sure proponents follow the terms and conditions of the licences, decisions, and certificates issued by authorizing agencies (NIRB 2013). This focus is commensurate with socio-economic monitoring best-practice (e.g. Noble 2015; Vanclay et al. 2015) and can assist companies with achieving their sustainable development goals.

Socio-economic monitoring also supports adaptive management, as findings can alert project proponents to the emergence of unanticipated effects and help initiate a management response. Furthermore, regular review of monitoring plans will help determine whether existing socio-economic indicators and monitoring methods remain appropriate (Vanclay et al. 2015).

In consideration of the above, this report aims to meet the following objectives:

1. Evaluate the accuracy of selected socio-economic effect predictions presented in the Mary River Project Final Environmental Impact Statement (FEIS)² and identify any unanticipated effects.
2. Help identify areas where Baffinland's existing socio-economic mitigation and management programs may not be functioning as anticipated.
3. Assist regulatory and other agencies in evaluating Baffinland's compliance with socio-economic monitoring requirements for the Project.
4. Support adaptive management, by identifying potential areas for improvement in socio-economic monitoring and performance, where appropriate.

² References to the Mary River Project FEIS in this report include any revisions that were made to the FEIS for the original ERP addendum.

This 2017 report presents information related to VSECs assessed in the FEIS. Throughout this report, predicted residual VSEC effects and associated mitigation measures from the FEIS are described. In other cases, socio-economic Project Certificate terms or conditions are described instead of effect predictions. This is followed by a presentation of indicator data (where available) and an analysis of that data. This structure allows Baffinland's reporting to align with the FEIS predictions and Project Certificate terms and conditions, and increases comparability between them and currently available data.

This report is organized in the following manner:

- Section 1 (i.e. this section) introduces the report and the scope of its contents.
- Section 2 describes the methods used in this report and how they support the conclusions that are reached.
- Sections 3 to 11 assess the socio-economic performance of VSECs included in the FEIS.
- Section 12 provides a report summary, comments on adaptive management and future monitoring plans, and summarizes how Baffinland has addressed Project Certificate terms and conditions specific to socio-economic monitoring.
- Appendices A through E provide additional information on Baffinland's socio-economic monitoring program. Appendix A includes a copy of the Terms of Reference for the SEMWG. Appendix B includes meeting minutes from 2017 QSEMC and SEMWG meetings. Appendix C summarizes how Baffinland has addressed Project Certificate terms and conditions related to socio-economic monitoring. Appendix D summarizes Baffinland's responses to NIRB recommendations on the 2016 Socio-Economic Monitoring Report. Appendix E includes a copy of Baffinland's 2018 Inuit Employee Survey.

1.4 SOCIO-ECONOMIC MONITORING PLAN

Baffinland will continue to conduct comprehensive socio-economic monitoring for the Project. A long-term socio-economic monitoring plan is presented in Table 1-1 and summarizes indicators and data sources for all VSECs assessed in the FEIS (or notes where monitoring is not required or other forms of issue tracking and monitoring are taking place). More specifically, indicators are proposed for VSEC-related residual effects and information that has been requested through the Project Certificate. Prior to finalizing the Project's socio-economic monitoring plan, Baffinland solicited feedback from members of the SEMWG on a draft version of the plan presented in the 2015 Socio-Economic Monitoring Report (i.e. JPCSL 2016). Baffinland also identified several internal refinements to this plan and in its approach to socio-economic monitoring prior to finalization.

The structure and content of Baffinland's socio-economic monitoring report may benefit from additional refinement in the future; suggestions from reviewers on how indicators and data sources could potentially be improved are welcome. It is further acknowledged that any significant changes to the socio-economic monitoring program require discussion with the SEMWG. Likewise, Table 1-1 includes several instances where indicators haven't been identified by Baffinland for assorted reasons (e.g. sufficient monitoring is already conducted elsewhere, no residual effects were identified in the FEIS, insufficient data availability). In some additional cases, other forms of issue tracking will take place (e.g. through the QSEMC process or Baffinland's community engagement program). Should new indicators be required for these topics in the future, they will be selected in consultation with the SEMWG.

Worthy of note is Baffinland's recent participation in the September 2017 territorial socio-economic monitoring workshop held by the Government of Nunavut in Iqaluit. Primary objectives of this workshop included development of a list of core monitoring indicators for the territory, identification of methods for addressing socio-economic monitoring data gaps, establishing preferred monitoring report compositions and assessment methodologies, and endorsement of the Government of Nunavut's territorial reporting proposal. Baffinland was an active participant in this workshop (in addition to other territorial mineral developers, federal/territorial governmental agencies, and Inuit organizations) and provided feedback throughout the process. The Company received the Government of Nunavut's draft workshop report and recommendations (Government of Nunavut 2017) and provided comments back to the Government of Nunavut. Some modifications to Baffinland's monitoring plan have been made as a result of the draft report (see Section 2.4 for additional details). Baffinland will investigate the possibility of further aligning its monitoring program with the Government of Nunavut's recommendations, where appropriate, following its review of the final workshop report.

Table 1-1: Socio-economic monitoring plan for the Mary River Project

VSEC	Residual Effect or Project Certificate Term or Condition	Topic	Indicator(s)	Data Source	
Population Demographics	Residual Effect	In-migration of non-Inuit Project employees into the North Baffin LSA	Known in-migrations of non-Inuit Project employees and contractors	Baffinland	
			In-migration of non-Inuit to the North Baffin LSA	Limited data currently available	
	Project Certificate Term or Condition	Out-migration of Inuit residents from the North Baffin LSA	Known out-migrations of Inuit Project employees and contractors	Baffinland	
			Out-migration of Inuit from the North Baffin LSA	Limited data currently available	
		Demographic change	Population estimates	NBS (2016)	
			Nunavut net migration	NBS (2017a)	
Employee changes of address, housing status, and migration intentions	Employee and contractor changes of address, housing status, and migration intentions	Baffinland			
	Employee origin	Employee and contractor origin	Baffinland		
Education and Training	Residual Effect	Improved life skills amongst young adults	Participation in pre-employment training	Baffinland	
			LSA employment and on-the-job training	Baffinland	
		Incentives related to school attendance and success	Number of secondary school graduates	NBS (2016b)	
			Secondary school graduation rate	NBS (2016c)	
		Opportunities to gain skills	Investments in school-based initiatives	Baffinland	
			Hours of training completed by Inuit employees and contractors	Baffinland	
	Project Certificate Term or Condition	Education and employment status prior to Project employment	Types of training provided to Inuit employees and contractors	Baffinland	
			Apprenticeships and other opportunities	Baffinland	
			Education and employment status prior to Project employment	Baffinland	
			Education and employment status prior to Project employment	Baffinland	
Livelihood and Employment	Residual Effect	Creation of jobs in the LSA	Hours of Project labour performed in Nunavut	Baffinland	
		Employment of LSA residents	Project hours worked by LSA employees and contractors	Baffinland	
		New career paths	LSA employment	Baffinland	
			Inuit employee promotions	Baffinland	
			Inuit employee turnover	Baffinland	
	Project Certificate Term or Condition	Barriers to employment for women	Hours worked by female employees and contractors	Baffinland	
Re: childcare availability and costs – Topic will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.					
Contracting and Business Opportunities	Residual Effect	Expanded market for business services to the Project	Value of procurement with Inuit-owned businesses and joint ventures	Baffinland	
		Expanded market for consumer goods and services	LSA employee payroll amounts	Baffinland	
			Number of registered Inuit firms in the LSA	NTI (2017)	
Human Health and Well-Being	Residual Effect	Changes in parenting	Number of youth charged	Statistics Canada (2017a)	
		Household income and food security	Proportion of taxfilers with employment income and median employment income	NBS (2017d)	
			Percentage of population receiving social assistance	NBS (2014)	
		Transport of substances through Project site	Number of drug and alcohol related contraband infractions at Project sites	Baffinland	
		Affordability of substances	Number of impaired driving violations	NBS (2017e)	
		Attitudes toward substances and addictions	Number of drug violations		
	Project Certificate Term or Condition	Absence from the community during work rotation	Topic will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.		
			N/A – Monitoring already conducted through other ‘human health and well-being’ indicators		
			Topics will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.		
			Rates of sexually transmitted infections and other communicable diseases	Percent of health centre visits related to infectious diseases	NBS (2017f)
			Rates of teenage pregnancy	Topic will continue to be tracked through the QSEMC process and Baffinland’s community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.	
Other	High school completion rates	N/A – Monitoring already conducted through other ‘education and training’ indicators			
		Crime rate	NBS (2017g)		
		Number of times Baffinland’s EFAP is accessed	Baffinland		
		Number of Project employees and contractors who left positions in their community	Baffinland		
Community Infrastructure and Public Services	Residual Effect	Labour force capacity	Training and experience generated by the Project	Baffinland	
			Inuit employee turnover	Baffinland	
		Project Certificate		Number of health centre visits (total and per capita)	NBS (2017f)

	Term or Condition	Pressures on existing health and social services provided by the GN that may be impacted by Project-related in-migration of employees	Number of visits to Project site medic	Baffinland
		Project-related pressures on community infrastructure	Baffinland use of LSA community infrastructure	Baffinland
			Number of Project aircraft movements at LSA community airports	Baffinland
Cultural Resources	N/A	N/A	N/A – Monitoring already conducted through annual Archaeology Status Update Reports	
Resources and Land Use	Residual Effect	Quantity of caribou harvested per level of effort	N/A – Potential effects on caribou will continue to be tracked through Baffinland’s terrestrial wildlife monitoring program	
		Safe travel around Eclipse Sound and Pond Inlet	Number of recorded land use visitor person-days at Project sites Number of wildlife compensation fund claims	Baffinland QIA
		Safe travel through Milne Port		
		Emissions and noise disruption at camps		
		Sensory disturbances and safety along Milne Inlet Tote Road		
		Detour around mine site for safety and travel		
		Difficulty and safety relating to railway crossing		
		Detour around Steensby Port		
		HTO cabin closures		
Restriction of camping locations around Steensby Port	N/A – No monitoring required. Effects are permanent for life of Project.			
Cultural Well-Being	N/A	N/A	N/A – No monitoring required. No residual effects identified in the FEIS.	
Economic Development and Self-Reliance	Residual Effect	N/A	N/A – As noted in the FEIS, an integrated assessment of other VECs/VSECs was conducted for the Economic Development and Self-Reliance VSEC. No new residual effects specific to this VSEC were identified. Relevant monitoring of residual effects is conducted through other VECs/VSECs.	
	Project Certificate Term or Condition	Project harvesting interactions and food security, which includes broad indicators of dietary habits	Topic will continue to be tracked through the QSEMC process, Baffinland’s community engagement program, and related indicators. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.	
Benefits, Royalty, and Taxation	Residual Effect	Payments of payroll and corporate taxes to the territorial government	Payroll and corporate taxes paid by Baffinland to the territorial government	Baffinland
Governance and Leadership	N/A	N/A	N/A – No monitoring required. No residual effects identified in the FEIS.	

2. METHODS

2.1 ANALYSIS OF PROJECT EFFECTS

This report assesses the socio-economic performance of the Mary River Project in 2017. It does so primarily through an analysis of Project-related socio-economic effects that were originally predicted to occur in the FEIS. To help focus this analysis, only residual effects that underwent detailed significance assessments in the FEIS are evaluated; key indicators, subjects of note, and other potential effects are not reviewed. Furthermore, only the direction (e.g. positive, negative) and magnitude (where appropriate)³ of these residual effects are evaluated.

One or more monitoring indicators are then identified for each of these residual effects and recent indicator data is presented for consideration against the original effect predictions that were made. Structuring the report in this manner allows the effect predictions to be more readily verified (or refuted) and provides insight into the effectiveness of existing mitigation measures. This report also presents information that was requested through the Project Certificate. This information is evaluated in a similar manner to the residual effects mentioned above, although comparisons against FEIS predictions were not required.

'Indicators' are an important aspect of socio-economic monitoring. Indicators are metrics used to measure and report on the condition and trend of a Valued Component (VC)⁴, and help facilitate the analysis of interactions between a project and a selected VC (BCEAO 2013). Indicators can also provide an early warning of potential adverse effects and are considered the most basic tools for analyzing change (Noble 2015). Noble (2015) suggests good indicators are:

- *Measurable, either in a qualitative or quantitative fashion*
- *Indicative of the VC of concern*
- *Sensitive and detectable in terms of project-induced stress*
- *Appropriate to the spatial scale of the VC of concern*
- *Temporally reliable*
- *Diagnostic to change*
- *Applicable across different types of development projects*
- *Cost-effective to collect, measure, or analyze*
- *Predictable and accurate with an acceptable range of variability*
- *Understandable by non-scientists*
- *Useful for informing management actions or decisions*

The socio-economic monitoring indicators presented in this report were selected with this guidance in mind. Annually produced, community-level statistics have been obtained in support of these indicators where they are readily available. The analyses presented in this report generally also focus on one of two spatial scales: The Local Study Area (LSA) or Regional Study Area (RSA). As identified in the FEIS, the LSA includes the North Baffin point-of-hire communities of Arctic Bay, Clyde River, Hall Beach, Igloodik, and Pond Inlet, in addition to the City of Iqaluit (which is also a point-of-hire). References to the 'North Baffin LSA' include all these communities but Iqaluit. In some cases, data

³ Effect magnitude is typically only assessed where quantitative metrics were provided in the FEIS.

⁴ Valued Components are typically referred to as Valued Ecosystem Components (VECs) and Valued Socio-Economic Components (VSECs) in Nunavut.

for the North Baffin LSA communities have been aggregated to facilitate trend analyses in this report. The RSA includes the entire territory of Nunavut.

Indicator ‘trends’ are discussed throughout this report and describe whether an indicator has exhibited change (and the direction of that change). A ‘pre-development’ trend in this report refers to the five-year period preceding Project construction (i.e. 2008 to 2012). In some cases, averaged data from this period have been compared against averaged data from previous years (i.e. 2003-2007, where available) to determine a trend. Likewise, a ‘post-development’ trend refers to the period after Project construction commenced (i.e. 2013 onwards). Averaged data from this period may have also been compared against averaged data from the pre-development period to determine a trend. A trend ‘since previous year’ refers to the two most recent years in which indicator data are available.

Trend magnitude (e.g. using qualifiers such as ‘large’ or ‘small’) is generally not described in this report; trends are often simply referred to as increasing/decreasing. Available data and trends are then assessed in the context of potential Project influences on the indicator(s) in question. However, it is important to note that Project construction only began in 2013 and there is minimal post-development data currently available in some instances. Socio-economic indicators can also be influenced by many different factors. Correlations (if any) between the Project and socio-economic indicators presented in this report may only come to light with the analysis of additional annual data.

2.2 DATA SOURCES

Data for this report have been obtained from Company, government, Inuit organization, and other sources. Data are presented in textual, graphical, or tabular formats, with a source identified for each. Company data sources include human resources records, site files, and information obtained from other Company documents and employees. In addition, Baffinland has presented selected results from its Inuit Employee Survey, which is completed annually at Project sites on a voluntary basis. A copy of this survey can be found in Appendix E.⁵ Some 2013 and 2014 Project-specific data were also drawn from previous socio-economic monitoring reports prepared for the Project (e.g. BDSI 2015). Results from Baffinland’s community engagement program are also referenced throughout this report and include comments documented in the Company’s StakeTracker database from select public and stakeholder meetings held on the Project in 2017, in addition to comments documented during the 2017 IIBA Annual Project Review Forum (i.e. Dicta Court Reporting Inc. 2017).

Government data have been obtained primarily from the Nunavut Bureau of Statistics, the Government of Nunavut’s central statistical agency. The Nunavut Bureau of Statistics posts current Nunavut population data, economic data, labour force and employment data, social data, census data, and Nunavut Housing Survey data on its website (<http://www.stats.gov.nu.ca/en/home.aspx>) for the public to use. Reports from the QSEMC annual meetings (e.g. SEMCs 2017b) were also reviewed, with the goal of integrating relevant data and insights where appropriate. Some data have also been obtained from

⁵ The Inuit Employee Survey was revised in 2017. Namely, the survey was expanded to include questions that address compliance issues related to *IIBA Article 11 – Workplace Conditions*, in addition to questions that already addressed Project Certificate terms and conditions related to socio-economic monitoring. The survey now contains 11 sections: general, housing, education and work experience, cross-cultural orientation, workplace orientation program, Inuktitut in the workplace, supporting our workforce, counselling and support services, country food, leisure time and traditional activities, and communications. The survey’s target audience was also adjusted to focus on both Inuit employees and contractors.

Nunavut Tunngavik Inc. (e.g. on registered Inuit firms) and other sources (e.g. QIA, federal government agencies, third party groups such as mining associations).

2.3 DATA LIMITATIONS

Some data limitations were identified during the preparation of this report. Notably, appropriate indicator data (e.g. annually produced, community-level statistics) are currently unavailable for some topics. As such, these topics continue to be tracked through the QSEMC process, Baffinland's community engagement program, or related indicators. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. Topics for which data limitations currently exist include:

- In-migration of non-Inuit to the North Baffin LSA
- Out-migration of Inuit from the North Baffin LSA
- Childcare availability and costs
- Absence from the community during work rotation
- Prevalence of gambling issues
- Prevalence of family violence
- Prevalence of marital problems
- Rates of teenage pregnancy
- Project harvesting interactions and food security

Some 2013 and 2014 Company data have also been drawn from previous socio-economic monitoring reports prepared for the Project (e.g. BDSI 2015). However, comparisons against some of this data should be made with a degree of caution. This is because the socio-economic data collection and analysis methods employed by Baffinland have changed in some instances.⁶ Furthermore, some historic Company data presented in this report is of a limited nature or reflects information that was only available for certain periods of time (due to ongoing development of Baffinland's data management systems). Community engagement comments are presented from select public and stakeholder meetings held on the Project in 2017 (i.e. a January procurement and contracting workshop held in Pond Inlet and a May/June North Baffin community tour); StakeTracker records for other community engagement meetings held in 2017 were unavailable.

Baffinland continues to refine its socio-economic data management and reporting systems. For example, improvements to the methods used for tracking employee attendance and hours worked continue to be investigated, as some inconsistencies in Baffinland's existing systems have been identified (e.g. some Inuit employees/contractors have been erroneously identified as non-Inuit). However, Baffinland has attempted to present conservative employment data and/or identify data limitations wherever possible in this report. Data in this report are also presented for the most recent years that are currently available. Lag times in data availability exist for some data sources and 2017 data were not available in all cases.

⁶ Tables 5-1, 5-2, and 5-5 present 2013 and 2014 data from BDSI (2015). However, comparisons against this data should be made with a degree of caution. This is because some calculation methods used by Baffinland have changed and some historic data makes assumptions with regards to hours worked at the Project. Hours worked by non-Inuit in 2013 in Table 5-5 also do not add up completely (i.e. 144 hours are unaccounted for), for unknown reasons.

Finally, some limitations were identified in the 2018 Inuit Employee Survey data. While efforts were made to capture major rotations of current site-based employees, individuals on vacation, medical, or other types of leave at the time of the survey would not have been captured in the survey recruitment efforts. Furthermore, some returned surveys contained unanswered questions or unclear responses. Where survey answers were not provided or were unclear, results are presented in this report as 'unknown'. A modified approach to calculating a survey response rate has also been used. Namely, the number of completed surveys (71) was divided by the total number of Inuit employees/contractors on staff in Q4 2017 (244), as reported in Section 3.5. This is a general, but likely conservative approximation of the survey response rate. This is because the calculation includes all Inuit employees/contractors who worked on the Project during all of Q4 2017 (including community-based positions and individuals who may no longer be working for the Company), rather than only those who were present on site during the much shorter survey administration period. Using this method, a 29% response rate to the 2018 Inuit Employee Survey was achieved.

Baffinland has experienced certain planning challenges when implementing its recent employee surveys. For this reason, the survey discussed in this 2017 Socio-Economic Monitoring Report was completed in January 2018, while the survey discussed in the 2016 Socio-Economic Monitoring Report was completed in February/March 2017. Baffinland is working to address this timing discrepancy moving forward.

2.4 KEY CHANGES SINCE PREVIOUS YEAR'S REPORT

Several changes have been made to this report since the previous year. Many of these changes reflect incremental monitoring program improvements identified by Baffinland or its stakeholders. A description of key changes, reasons for them, and associated report references are summarized in Table 2-1.

Table 2-1: Key changes since previous year's report

Description of Change	Reason for Change	Report Reference
Table 1-1, removal of 'overall effects on children' as a residual effect for the Human Health and Well-Being VSEC	This was erroneously listed as a residual effect; the FEIS identifies this as a key indicator instead. Relevant monitoring continues to be conducted through other indicators (as it was previously).	Section 1.4
Table 1-1, removal of 'increased pressure on the land', 'changes to land-based economy', 'increased opportunities for youth', 'education and training opportunities', 'increased wealth and well-being', 'increased wealth in community', 'rotational absence of residents', 'increased local business opportunities', and 'expanded economic activity, flows, and opportunities' as residual effects for the Economic Development and Self-Reliance VSEC	These were erroneously listed as residual effects. As noted in the FEIS, an integrated assessment of other VECs/VSECs was conducted for the Economic Development and Self-Reliance VSEC. No new residual effects specific to this VSEC were identified. Relevant monitoring of residual effects continues to be conducted through other VECs/VSECs (as it was previously).	Section 1.4
Selected indicators have been re-worded to more explicitly include contractor data in addition to employee data	Provides greater clarity on the types of data reported through selected indicators.	Section 1.4
Indicator trends previously assessed using a trendline are now assessed using average values calculated from available data	Average values provide additional quantitative insight into trend direction and magnitude.	Section 2.1 (Methods) Various sections (Analysis)
Addition of a report section summarizing key changes since previous year's report	Provides clarity on major report changes, year-to-year.	Section 2.4
Addition of the indicator 'investments in school-based initiatives'	Indicator recommended by Government of Nunavut (Government of Nunavut 2017).	Section 4.2
Addition of non-Inuit employee turnover data	Recommended by Government of Nunavut (Government of Nunavut 2017) and QIA.	Section 5.3
Addition of indicator 'number of times Baffinland's Employee and Family Assistance Program is accessed'	Indicator recommended by Government of Nunavut (Government of Nunavut 2017) and QIA.	Section 7.12
Graphical addition of pre-development/post-development periods to selected figures	Inclusion of these periods provides additional context to the indicator data that is presented.	Various figures
Addition of appendix including meeting minutes from annual QSEMC and SEMWG meetings, including Baffinland's responses to Project-specific action items/recommendations issued by the QSEMC in 2017.	Meeting minutes summarize inputs received from the QSEMC and SEMWG regarding socio-economic monitoring and performance of the Project, and its compliance with various Project Certificate terms and conditions.	Appendix B
Addition of appendix summarizing Baffinland's responses to NIRB recommendations on the previous year's socio-economic monitoring report	Appendix clearly summarizes Baffinland's responses to NIRB recommendations on the previous year's socio-economic monitoring report.	Appendix D
Inuit Employee Survey was revised	Survey was revised to address several IIBA compliance issues. Survey target audience was also adjusted to focus on both Inuit employees and contractors.	Appendix E

3. POPULATION DEMOGRAPHICS

Two residual effects for the VSEC Population Demographics were assessed in the FEIS. These include in-migration of non-Inuit Project employees into the North Baffin LSA and out-migration of Inuit residents from the North Baffin LSA. These are reviewed more fully below, in addition to information on three other topics requested through the Project Certificate. However, community and territorial demographic change data are first reviewed for greater context.

3.1 DEMOGRAPHIC CHANGE

3.1.1 Project Certificate Term or Condition

Project Certificate term and condition no. 131 requests that monitoring occur on:

...demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole.

Population estimates and other demographic change measures are included in many socio-economic monitoring initiatives. This is because of their importance to understanding broad socio-economic trends. As such, this section provides an overview of some major demographic changes that are occurring in Nunavut and the LSA communities. Sections 3.2 and 3.3, however, review the FEIS predictions made regarding in-migration and out-migration in the North Baffin LSA in more detail.

3.1.2 Indicator Data

Population Estimates

Population estimates for Nunavut and the LSA communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, Pond Inlet, and Iqaluit are provided by the Nunavut Bureau of Statistics (2016)⁷ and presented in Table 3-1. 2016 was the most recent year population estimates were available. In 2016, the North Baffin LSA communities had a population of 6,608. Approximately 94.5% of this population were Inuit and 5.5% were non-Inuit. Iqaluit had a population of 7,590. Approximately 55.4% of this population were Inuit and 44.6% were non-Inuit. Nunavut had a population of 37,082. Approximately 84.2% of this population were Inuit and 15.8% were non-Inuit.

Between 2012 and 2016, the North Baffin LSA communities grew from a population of 6,050 to 6,608 (or 9.2%). Iqaluit grew from a population of 7,013 to 7,590 (or 8.2%), while Nunavut grew from a population of 34,707 to 37,082 (or 6.8%). Average annual growth rates over this period for the North Baffin LSA communities (2.3%), Iqaluit (2.1%), and Nunavut (1.7%) were considerably higher than the Canadian average (1.1%) (Statistics Canada 2017b). Figure 3-1 displays the population in these locations from 2008 to 2016.

⁷ The Nunavut Bureau of Statistics (2016) notes that community population estimates are preliminary and subject to revision. 2016 estimates, in particular, are suggested to be viewed with some caution, as these are in early preliminary stages.

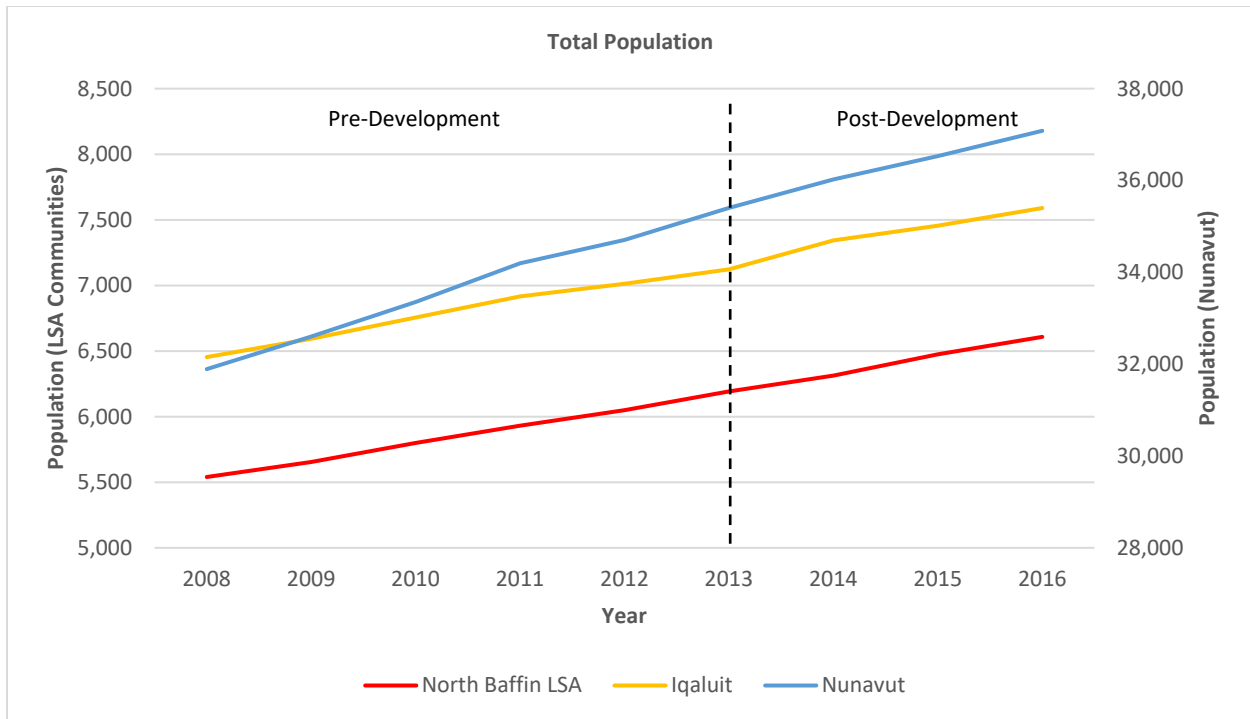
Table 3-1: 2016 population estimates

2016 Population Estimates			
Community	Total Population	Inuit	Non-Inuit
North Baffin LSA	6,608	6,247	361
· Arctic Bay	876	828	48
· Clyde River	1,127	1,085	42
· Hall Beach	956	915	41
· Igloolik	1,986	1,850	136
· Pond Inlet	1,663	1,569	94
Iqaluit	7,590	4,208	3,382
Nunavut	37,082	31,234	5,848

Source: Nunavut Bureau of Statistics (2016)

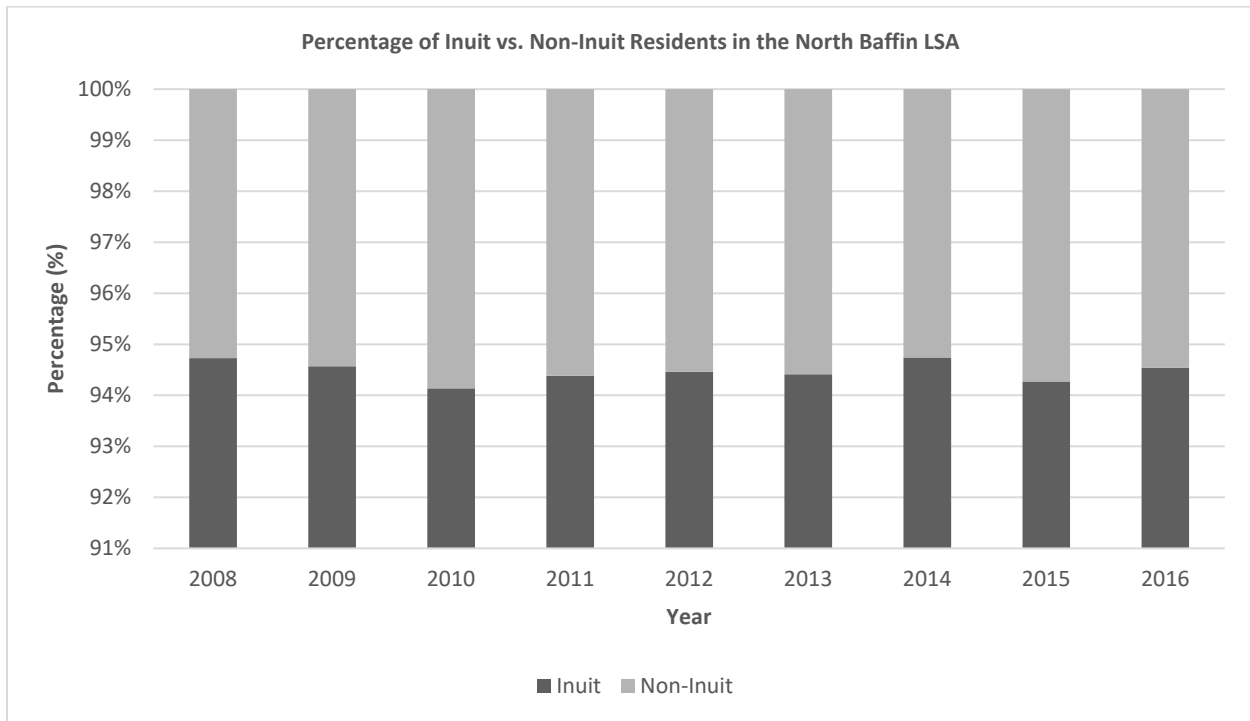
The percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities remains high. An average 94.5% of North Baffin LSA residents were Inuit in the pre-development period, while an equal 94.5% were Inuit in the post-development period. Figure 3-2 displays the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities from 2008 to 2016.

Figure 3-1: Total population (2008 to 2016)



Source: Nunavut Bureau of Statistics (2016)

Figure 3-2: Percentage of Inuit versus non-Inuit residents in the North Baffin LSA (2008 to 2016)

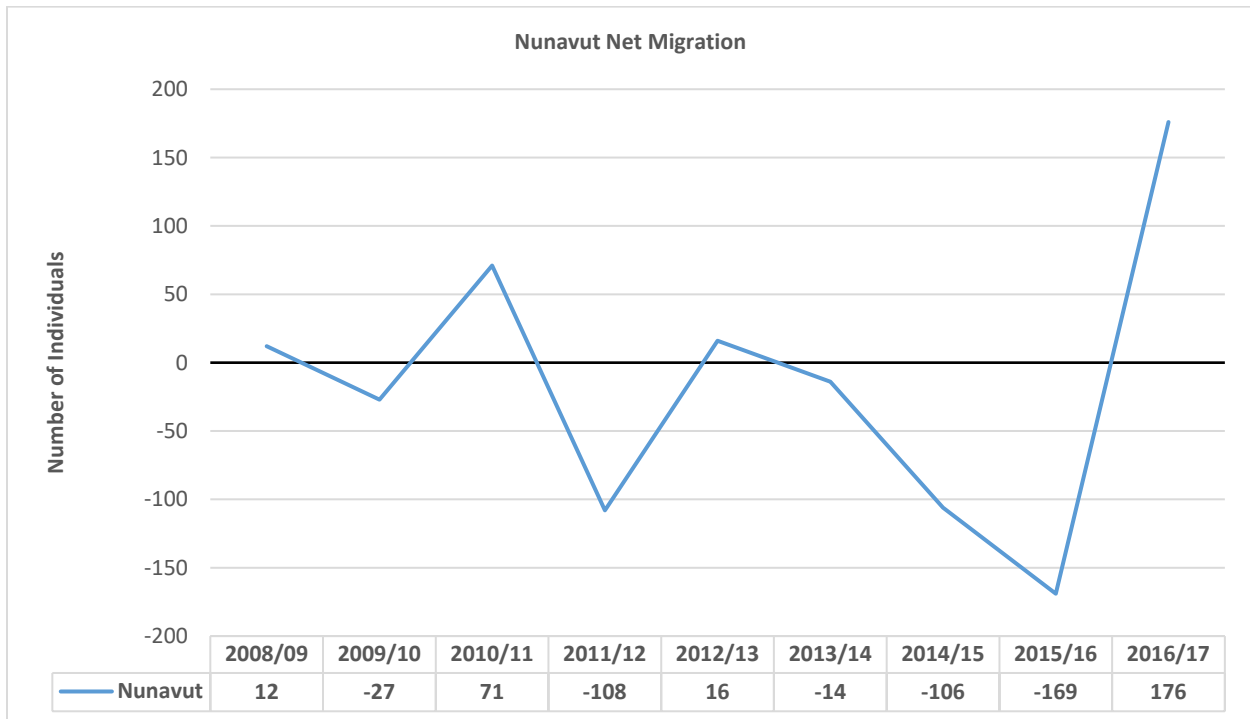


Source: Nunavut Bureau of Statistics (2016)

Nunavut Net Migration

Territorial annual net migration estimates provide insight into broad migration patterns that are occurring in Nunavut. Figure 3-3 displays annual net migration estimates for Nunavut from 2008/09 to 2016/17, which have been obtained from the Nunavut Bureau of Statistics (2017a). A net of 176 individuals were estimated to have migrated into Nunavut in 2016/17. Estimates for preceding years have been variable, from a net of 71 individuals migrating into Nunavut in 2010/2011, to a net of -169 individuals migrating into the territory in 2015/16. Compared to the pre-development period average, an decreasing trend in average Nunavut annual net migration has occurred in the post-development period (from -7 to -28).

Figure 3-3: Nunavut net migration (2008/09 to 2016/17)



Source: Nunavut Bureau of Statistics (2017a)

3.1.3 Analysis

The populations of the North Baffin LSA communities, Iqaluit, and Nunavut have continued to grow since Project development. The percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities has also remained high (and relatively constant) since that time. A decreasing post-development trend in Nunavut annual net migration has occurred. However, no linkage to Project activities is currently evident with any of these indicators. Population growth was occurring throughout Nunavut prior to Project development, and the average percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities was the same during both the pre- and post-development periods. Likewise, annual net migration estimates are currently conducted at too coarse a scale (i.e. territorial) to ascertain any Project-related influences.

3.2 IN-MIGRATION OF NON-INUIT PROJECT EMPLOYEES INTO THE NORTH BAFFIN LSA

3.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted some in-migration of non-Inuit employees hired to work at the Project could occur in the North Baffin LSA but would be of low magnitude (i.e. <5% change in the non-Inuit baseline population). Mitigation developed by Baffinland includes the designation of Iqaluit and an additional southern location as ‘points of hire’, with free transportation provided to employees from these points of hire to the mine site.

3.2.2 Indicator Data

Known In-Migrations of Non-Inuit Project Employees and Contractors

Data on the movement of Project employees and contractors provides insight into potential in-migration trends occurring in the North Baffin LSA. Table 3-2 presents data on known in-migrations of Project employees and contractors to the North Baffin LSA. These data were provided by Baffinland Community Liaison Officers (BCLOs) located in each North Baffin LSA community. More specifically, the BCLOs were asked to report on the number of Project employees and contractors they knew who had moved into and out of each of their communities. BCLOs were also asked to identify whether individuals were Inuit or non-Inuit and locations where these individuals had moved to and from, if known.⁸

Table 3-2 indicates one Inuit employee/contractor is known to have moved into the North Baffin LSA in 2017. An additional one Inuit employee/contractor moved between North Baffin LSA communities; this individual has not been counted as a North Baffin LSA in-migrant. Zero non-Inuit employees/contractors hired to work at the Project are known to have moved into the North Baffin LSA communities in 2017.

Table 3-2: Known in- and out-migration of Project employees and contractors in the North Baffin LSA (2015 to 2017)

Known In- and Out-Migration of Project Employees and Contractors in the North Baffin LSA						
Year	In-Migration		Out-Migration		Inuit Net Migration	Non-Inuit Net Migration
	Inuit	Non-Inuit	Inuit	Non-Inuit		
2015	3	0	4	0	-1	0
2016	1	0	3	0	-2	0
2017	1	0	3	0	-2	0
Total	5	0	10	0	-5	0

Source: Baffinland

In-Migration of Non-Inuit to the North Baffin LSA

Annual in-migration data for non-Inuit North Baffin LSA residents were unavailable from the Nunavut Bureau of Statistics in 2017. However, some insight into this topic can be obtained by assessing changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities since Project development. If substantial non-Inuit in-migration (as per this section) and Inuit out-migration (as per Section 3.3) were occurring because of the Project, the ratio of Inuit to non-Inuit residents in the North Baffin LSA communities would be expected to noticeably decrease. As seen in Figure 3-2, however, the percentage of Inuit residents in the North Baffin LSA communities has remained relatively constant between 2008 and 2016 (ranging between a low of 94.1% Inuit and a high of 94.7% Inuit). In fact, there has been no change in the average percentage of Inuit residents between the pre-and post-development periods (94.5%).

3.2.3 Analysis

The FEIS predicted a <5% change in the non-Inuit baseline population could occur in the North Baffin LSA because of Project activities. In 2012 (the baseline year selected for monitoring purposes), 5% of the

⁸ Family members that may have migrated with employees were not accounted for.

North Baffin non-Inuit population would have equaled approximately 28 individuals. Cumulative Baffinland data available since 2015⁹ indicates a net of zero non-Inuit employees/contractors have in-migrated to the North Baffin LSA. Data on changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities have also failed to reveal a Project-induced trend at this time.

However, this data presents only a partial assessment of migration trends and more detailed in-migration data for the North Baffin LSA communities are currently unavailable from the Nunavut Bureau of Statistics. Furthermore, the factors involved in deciding to migrate can be complex and specific to an individual. While these limitations are acknowledged, available migration data appears to support the FEIS predictions that were made. Without significant in-migration to the North Baffin LSA occurring because of the Project, negative effects on local housing opportunities are considered negligible. In fact, wages earned through Project-related work may enable individuals in the North Baffin LSA to improve their housing situations over time (e.g. through greater capacity to rent and/or own their residence). Out-migration of residents may also help relieve some local housing strains.

3.3 OUT-MIGRATION OF INUIT RESIDENTS FROM THE NORTH BAFFIN LSA

3.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted some out-migration of Inuit residents from the North Baffin LSA could occur but would be of moderate magnitude (i.e. 1% to <5% of the total population). Mitigation developed by Baffinland includes the designation of all North Baffin LSA communities as ‘points of hire’, with free transportation provided to employees from these points of hire to the mine site.

3.3.2 Indicator Data

Known Out-Migrations of Inuit Project Employees and Contractors

Data on the movement of Project employees and contractors provides insight into potential out-migration trends occurring in the North Baffin LSA. Table 3-2 presents data on known out-migrations of Project employees and contractors from the North Baffin LSA. As noted previously, these data were provided by BCLOs located in each North Baffin LSA community. More specifically, the BCLOs were asked to report on the number of Project employees and contractors they knew who had moved into and out of each of their communities. BCLOs were also asked to identify whether individuals were Inuit or non-Inuit and locations where these individuals had moved to and from, if known.⁸

Three Inuit employees/contractors are known to have moved out of the North Baffin LSA in 2017. An additional two Inuit employees/contractors moved between North Baffin LSA communities; these

⁹ 2013-2014 Baffinland migration data was presented in BDSI (2015). However, comparisons with this data should be made with some caution as this report did not identify whether its migration calculations included both Inuit and non-Inuit individuals and/or both employees and contractors. Furthermore, the numbers of migrating individuals were rounded and calculated using different methods than subsequent Baffinland socio-economic monitoring reports. From 2013 to 2014, BDSI (2015) notes less than five individuals moved into the North Baffin LSA from other North Baffin LSA communities. This report also notes less than five individuals moved into the North Baffin LSA from Iqaluit during this period, while less than five individuals moved out of the North Baffin LSA to other North Baffin LSA communities. Five to ten individuals also moved from the North Baffin LSA to Iqaluit during this period, while less than five individuals moved from the North Baffin LSA to Ottawa.

individuals have not been counted as North Baffin LSA out-migrants. Zero non-Inuit employees/contractors are known to have moved out of the North Baffin LSA communities in 2017. Table 3-2 also indicates out-migration of the three Inuit employees/contractors was partially offset by the in-migration of one Inuit employee/contractor to the North Baffin LSA in 2017. Thus, a net of two Inuit employees/contractors out-migrated from the North Baffin LSA in 2017.

Out-Migration of Inuit from the North Baffin LSA

Annual out-migration data for Inuit North Baffin LSA residents were unavailable from the Nunavut Bureau of Statistics in 2017. However, some insight into this topic can be obtained by assessing changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities since Project development. If substantial Inuit out-migration (as per this section) and non-Inuit in-migration (as per Section 3.2) were occurring because of the Project, the ratio of Inuit to non-Inuit residents in the North Baffin LSA communities would be expected to noticeably decrease. As seen in Figure 3-2, however, the percentage of Inuit residents in the North Baffin LSA communities has remained relatively constant between 2008 and 2016 (ranging between a low of 94.1% Inuit and a high of 94.7% Inuit). In fact, there has been no change in the average percentage of Inuit residents between the pre-and post-development periods (94.5%).

3.3.3 Analysis

The FEIS predicted 1% to <5% of the total, primarily Inuit, North Baffin LSA baseline population could migrate out of the North Baffin LSA because of the Project. In 2012 (the baseline year selected for monitoring purposes), 5% of the total North Baffin LSA population would have equaled approximately 306 individuals. As mentioned previously, a net of two known Inuit employees/contractors out-migrated from the North Baffin LSA in 2017. Cumulative Baffinland data available since 2015⁹ indicates there have been a net of five Inuit employees/contractors who have out-migrated from the North Baffin LSA. Results from the 2018 Inuit Employee Survey also complement this assessment, as no respondents indicated they had moved into or out of the North Baffin LSA in the past 12 months (see Section 3.4). Data on changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA communities have also failed to reveal a Project-induced trend at this time.

However, this data presents only a partial assessment of migration trends and more detailed out-migration data for the North Baffin LSA communities are currently unavailable from the Nunavut Bureau of Statistics. Furthermore, the factors involved in deciding to migrate can be complex and specific to an individual. While these limitations are acknowledged, available migration data appears to support the FEIS predictions that were made. Without significant in-migration to the North Baffin LSA occurring because of the Project, negative effects on local housing opportunities are considered negligible. In fact, wages earned through Project-related work may enable individuals in the North Baffin LSA to improve their housing situations over time (e.g. through greater capacity to rent and/or own their residence). Out-migration of residents may also help relieve some local housing strains.

3.4 EMPLOYEE CHANGES OF ADDRESS, HOUSING STATUS, AND MIGRATION INTENTIONS

3.4.1 Project Certificate Term or Condition

No specific predictions related to employee changes of address, housing status, and migration intentions were presented in the FEIS. However, Project Certificate term and condition no. 133 states:

“The Proponent is encouraged to work with the Qikiqtaaluk Socio-Economic Monitoring Committee and in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders, design and implement a voluntary survey to be completed by its employees on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions while respecting confidentiality of all persons involved. The survey should be designed in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders. Non-confidential results of the survey are to be reported to the Government of Nunavut and the NIRB.

3.4.2 Indicator Data

Employee and Contractor Changes of Address, Housing Status, and Migration Intentions

Baffinland has developed a voluntary Inuit Employee Survey (Appendix E) to address Project Certificate term and condition no. 133. The latest version of this survey was administered by a team consisting of Baffinland and QIA representatives at Project sites in January 2018. A total of 71 surveys were completed by Inuit employees and contractors.

Table 3-3 summarizes results pertaining to changes in employee and contractor housing situation. 18.3% of respondents indicated their housing situation had changed in the past 12 months, 62.0% indicated their housing situation had not changed in the past 12 months, and results were unknown for 19.7% of respondents ($n=71$). When ‘unknown’ results are removed, 22.8% of respondents indicated their housing situation had changed in the past 12 months and 77.2% indicated it had not.

Table 3-3: Changes in Inuit employee and contractor housing situation (2018 Inuit Employee Survey results)

Changes in Inuit Employee and Contractor Housing Situation (2018 Inuit Employee Survey Results)		
Type of Change	Number of Respondents	Percentage of Respondents
Housing situation changed in the past 12 months	13	18.3%
Housing situation did not change in the past 12 months	44	62.0%
Unknown	14	19.7%
Total	71	100.0%

Source: Baffinland

Table 3-4 summarizes results pertaining to changes in Inuit employee and contractor community. 9.9% of respondents had moved to a different community in the past 12 months while 90.1% had not ($n=71$). Respondents who had moved to a different community ($n=7$) were then asked which community they had moved from; this result was compared against information provided on their current community of

residence. Of these respondents, 0.0% had moved either into or out of the North Baffin LSA, while 57.1% (or 5.6% of all survey responses) had moved within the North Baffin LSA. 28.6% (or 2.8% of all survey responses) had moves classified as ‘other’ (i.e. moves that did not involve a North Baffin LSA community) and the type of move was unknown for 14.3% (or 1.4% of all survey responses) (i.e. this individual indicated their current community of residence was in the North Baffin LSA, but later indicated they had moved to outside the North Baffin LSA).

Table 3-4: Changes in Inuit employee and contractor community (2018 Inuit Employee Survey results)

Changes in Inuit Employee and Contractor Community (2018 Inuit Employee Survey Results)		
Type of Change	Number of Respondents	Percentage of Respondents
<i>All survey respondents (n=71)</i>		
Moved to a different community in the past 12 months	7	9.9%
Did not move to a different community in the past 12 months	64	90.1%
Total	71	100.0%
<i>Moved to a different community in the past 12 months (n=7)</i>		
Moved from North Baffin LSA to outside of North Baffin LSA	0	0.0%
Moved from outside of North Baffin LSA to North Baffin LSA	0	0.0%
Moved within the North Baffin LSA	4	57.1%
Other	2	28.6%
Unknown	1	14.3%
Total	7	100.0%

Source: Baffinland

Table 3-5 summarizes results pertaining to current Inuit employee and contractor housing status. 5.6% of respondents lived in a private dwelling owned by them, 12.7% lived in a private dwelling owned by another individual, 4.2% were renting from a private company, 52.1% lived in public housing, 0.0% lived in other staff housing, 9.9% lived in another type of housing not listed on the survey, and results were unknown for 14.1% of respondents (n=71). When ‘unknown’ results are removed, 60.7% of respondents lived in public housing.

Table 3-5: Current Inuit employee and contractor housing status (2018 Inuit Employee Survey results)

Current Inuit Employee and Contractor Housing Status (2018 Inuit Employee Survey Results)		
Current Housing Status	Number of Respondents	Percentage of Respondents
Privately owned – Owned by you	4	5.6%
Privately owned – Owned by another individual	9	12.7%
Renting from a private company	3	4.2%
Public housing	37	52.1%
Government of Nunavut staff housing	1	1.4%
Other staff housing	0	0.0%
Other	7	9.9%
Unknown	10	14.1%
Total	71	100.0%

Source: Baffinland

Table 3-6 summarizes results pertaining to Inuit employee and contractor migration intentions. 16.9% of respondents intended to move to a different community in the next 12 months while 78.9% did not. Migration intentions were unknown for 4.2% of respondents (n=71). When ‘unknown’ results are removed, 17.7% of respondents intended to move to different community in the next 12 months and

82.4% did not. Respondents who intended to move to a different community in the next 12 months ($n=12$) were then asked which community they intended to move to; this result was compared against information provided on their current community of residence. Of these respondents, 50.0% (or 8.8% of known survey responses) intended to move from the North Baffin LSA to outside of the North Baffin LSA. 0.0% intended to move from outside of the North Baffin LSA to the North Baffin LSA and 8.3% (or 1.5% of known responses) intended to move within the North Baffin LSA. 25.0% (or 4.4% of known responses) had intentions classified as ‘other’ (i.e. intended moves that did not involve a North Baffin LSA community) and the type of move was unknown for 16.7% (or 2.9% of known responses).

Table 3-6: Inuit employee and contractor migration intentions (2018 Inuit Employee Survey results)

Inuit Employee and Contractor Migration Intentions (2018 Inuit Employee Survey Results)		
Migration Intentions	Number of Respondents	Percentage of Respondents
<i>All survey respondents (n=71)</i>		
Intend to move to a different community in the next 12 months	12	16.9%
Do not intend to move to a different community in the next 12 months	56	78.9%
Unknown	3	4.2%
Total	71	100.0%
<i>Intend to move to a different community in the next 12 months (n=12)</i>		
Intend to move from North Baffin LSA to outside of North Baffin LSA	6	50.0%
Intend to move from outside of North Baffin LSA to North Baffin LSA	0	0.0%
Intend to move within North Baffin LSA	1	8.3%
Other	3	25.0%
Unknown	2	16.7%
Total	12	100.0%

Source: Baffinland

3.4.3 Analysis

Information obtained from Baffinland’s Inuit Employee Survey in 2018 indicated some employees and contractors changed their housing situation in the past 12 months or have migration intentions. The survey also provided an overview of respondents’ current housing status. More specifically, 22.8% of respondents housing situation changed in the past 12 months. 9.9% moved to a different community in the past 12 months but no one moved into or out of the North Baffin LSA. 17.7% intend to move to a different community in the next 12 months. 8.8% intend to move away from the North Baffin LSA. No individuals intend to move into the North Baffin LSA. 60.7% of respondents currently live in public housing. Surveys conducted in future years are expected to provide additional data to compare these results against.

3.5 EMPLOYEE ORIGIN

3.5.1 Project Certificate Term or Condition

No specific prediction related to employee origin was presented in the FEIS. However, Project Certificate term and condition no. 134 states:

The Proponent shall include with its annual reporting to the NIRB a summation of employee origin information as follows:

- a. *The number of Inuit and non-Inuit employees hired from each of the North Baffin communities, specifying the number from each;*
- b. *The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Kivalliq regions, specifying the number from each;*
- c. *The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and*
- d. *The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.*

3.5.2 Indicator Data

Employee and Contractor Origin

Data on the origin, number, and ethnicity of Project employees and contractors who worked on the Project in Nunavut-based positions in 2017 are presented in Table 3-7. An average of 1,572 individuals worked on the Project in 2017, of which 219 (13.9%) were Inuit. In 2017, most of the Project's Inuit employees and contractors were based in LSA communities with smaller numbers residing outside of Nunavut. Most of the Project's non-Inuit employees and contractors were based in Canadian locations outside of Nunavut, with Ontario having the greatest number. Small numbers of non-Inuit employees and contractors were based in Nunavut. There were also a small number of non-Inuit international contractors, and various employees and contractors whose origin was unknown. Within the North Baffin LSA, Pond Inlet had the greatest average number of employees and contractors (41), while Igloodik had the fewest (19). Several employees and contractors also resided in Iqaluit (55).

3.5.3 Analysis

The Project employed many Inuit from the LSA communities in 2017, which is a likely reflection of the Inuit hiring commitments Baffinland has made in those locations. Most non-Inuit individuals in 2017 came from Canadian provinces and territories other than Nunavut. A mine like Mary River requires many employees with various skill sets. Individuals with advanced mining and/or technical skill sets are in limited supply in Nunavut (e.g. Gregoire 2014, MacDonald 2014, MIHR 2014, Conference Board of Canada 2016). The large number of Baffinland employees from outside of Nunavut would at least partly reflect this skills gap.

Table 3-7: Mary River Project employees and contractors by origin and ethnicity in 2017

Mary River Project Employees and Contractors by Origin and Ethnicity in 2017																		
Origin		Baffinland								Contractors								Yearly Average
		Inuit				Non-Inuit				Inuit				Non-Inuit				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Nunavut	Arctic Bay	16	16	18	21	1	2	0	0	5	15	16	15	6	0	0	0	33
	Clyde River	11	11	13	19	4	0	0	0	5	24	29	19	5	0	0	0	35
	Hall Beach	7	12	11	8	1	0	0	0	14	28	26	27	15	1	0	0	38
	Igloolik	4	8	9	6	2	0	0	0	6	10	10	16	6	0	0	0	19
	Pond Inlet	19	18	21	19	1	1	0	0	10	17	36	20	3	0	0	0	41
	Iqaluit	9	12	12	14	2	0	0	1	21	28	31	39	20	17	7	5	55
	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Canadian Provinces and Territories	Alberta	0	1	0	0	30	33	34	49	0	0	0	0	50	60	67	63	97
	British Columbia	0	1	1	1	24	30	31	33	1	0	0	0	27	34	59	40	71
	Manitoba	0	0	0	0	10	11	10	13	0	0	0	0	5	5	8	4	17
	New Brunswick	0	0	0	0	23	25	27	37	1	0	1	1	8	21	30	20	49
	Nfld. and Labrador	1	0	1	2	40	56	48	81	0	0	1	1	15	34	48	37	91
	Northwest Territories	0	0	0	0	1	1	1	0	0	0	0	0	3	7	12	9	9
	Nova Scotia	0	0	0	0	45	55	54	78	0	0	0	0	12	20	30	22	79
	Ontario	9	10	12	12	264	280	277	351	3	3	4	2	97	127	224	151	457
	Prince Edward Island	0	0	0	0	4	4	5	11	0	0	0	0	2	2	3	2	8
	Quebec	0	1	0	0	27	32	32	58	0	1	0	0	28	34	51	36	75
	Saskatchewan	0	0	0	0	5	3	4	3	0	0	0	0	5	3	7	4	9
Yukon	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	
International	Other	0	0	0	0	0	0	0	0	0	0	0	0	4	5	3	4	4
Unknown	Unknown	1	4	2	0	139	153	161	9	1	9	5	2	122	241	337	366	388
Quarterly Totals		77	94	100	102	623	686	684	724	67	135	159	142	433	612	887	763	
Average		93				679				126				674				
AVERAGE TOTAL		1,572																

Source: Baffinland

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors.

4. EDUCATION AND TRAINING

Three residual effects for the VSEC Education and Training were assessed in the FEIS. These include improved life skills amongst young adults, incentives related to school attendance and success, and opportunities to gain skills. These are reviewed more fully below, in addition to information on one other topic requested through the Project Certificate.

4.1 IMPROVED LIFE SKILLS AMONGST YOUNG ADULTS

4.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted positive effects on life skills development amongst young adults in the LSA would arise from the Project. This would occur primarily through access to industrial work supported by pre-employment preparation and on-the-job training. Mitigation developed by Baffinland includes the provision of job readiness training, creation of a supportive work environment, a 'second chance' hiring policy, and a no drugs/no alcohol policy on site. This is in addition to other measures included in the recently finalized Inuit Human Resources Strategy (IHRS). The IHRS is a key strategic document for Baffinland and describes goals and initiatives that will be used by the Company to enhance Inuit employment, training, and skills development at the Project.

4.1.2 Indicator Data

Participation in Pre-Employment Training

Participation in pre-employment training is a useful indicator of life skills development because some individuals may have lacked basic employment skills prior to participating. Baffinland successfully carried out a 'Work Ready' pre-employment training program with North Baffin LSA residents in 2012 and 2013. There were 277 graduates of the program and 150 of those graduates went on to be employed at the Project in 2013. The development of a new Work Ready Program took place over the course of 2017. Baffinland is partnering with the Mining Industry Human Resources Council (MIHR) to deliver this program, which will be 360 hours long over a 12-week period (240 hours of classroom training and 120 hours of enrichment activities). The next Work Ready Program will be held in Igloodik in Q1 2018; after this initial course is evaluated, Baffinland expects Work Ready Programs will be delivered in each North Baffin community in 2018/2019.

LSA Employment and On-the-Job Training

Employment and on-the-job training are also important components of life skills development for young adults, as they provide additional opportunities for gaining valuable experience. In 2017, approximately 313,068 hours were worked by LSA residents at the Project. Likewise, 4,024 hours of on-the-job training were delivered to Inuit in 2017. Sections 4.3 and 5.2 of this report should be reviewed for additional information on Project-related employment and on-the-job training provided in 2017.

4.1.3 Analysis

In 2017, Baffinland continued to provide and/or develop various programs to support the development of life skills amongst LSA residents. These opportunities are notable, especially when considering the

lack of employment and mining-related training opportunities that have historically existed in the North Baffin LSA. Furthermore, Baffinland maintains a healthy and supportive work environment. The Company provides its permanent employees and their dependents with ongoing access to an Employee and Family Assistance Program (EFAP) and established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees.

Definitions of 'youth' and 'elder' in Inuit culture can be subjective and often based more on personal knowledge and experience rather than an exact age. While not all individuals who received pre-employment training, employment, and on-the-job training from Baffinland can be considered 'youth', it can reasonably be assumed that many of these individuals stood to benefit from the life skills development opportunities that were provided. It is further acknowledged that life skills development for some individuals can take time to achieve. However, there are indications positive effects on life skills development amongst young adults in the LSA continue to result from the Project, as predicted in the FEIS.

4.2 INCENTIVES RELATED TO SCHOOL ATTENDANCE AND SUCCESS

4.2.1 Predicted Effect and Mitigation Measures

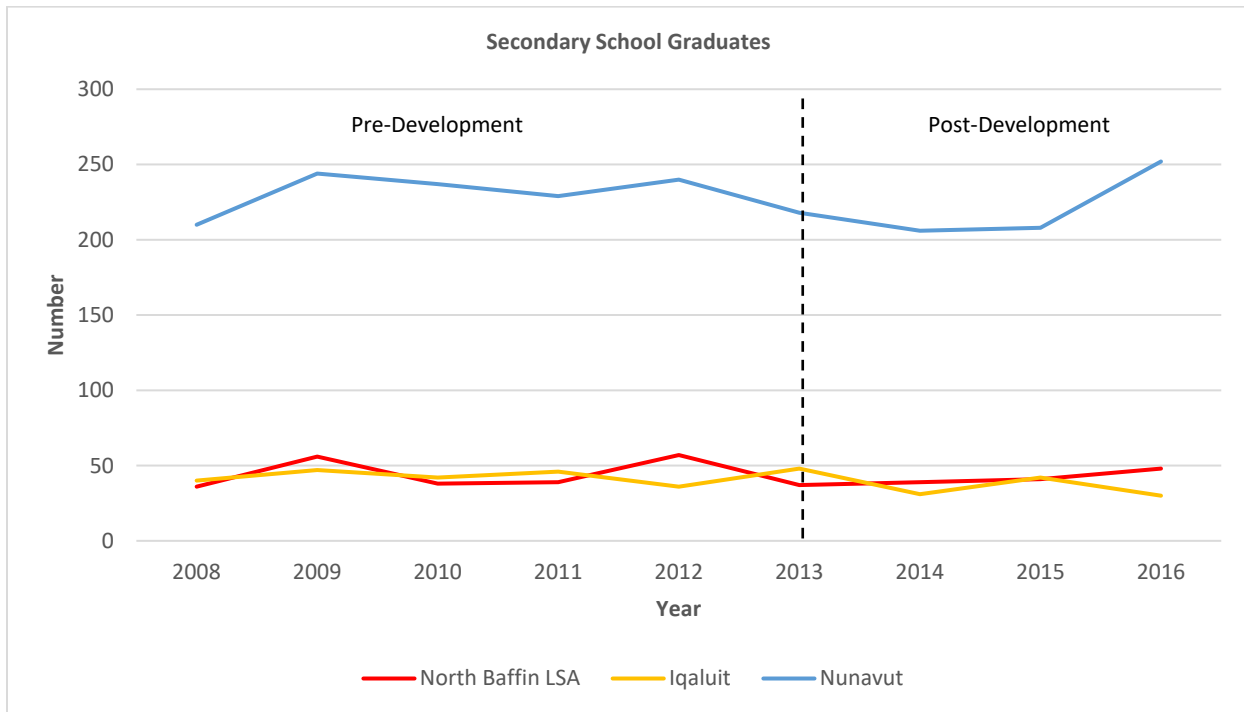
The FEIS predicted the Project would have a positive effect on education and skills development across the LSA by providing incentives related to school attendance and success. While there is some potential that individuals may drop out of school or forego further education to work at the Project, the overall effect of the Project will be to increase the value of education and thereby the 'opportunity cost' of dropping out of school. Associated policies or mitigation measures developed by Baffinland include the establishment of a minimum age (i.e. 18) for Project employment, provision of career planning services, and priority hiring for Inuit, in addition to other measures included in the IHRS. Furthermore, Baffinland continues to support a number education and training initiatives through its donations program and Inuit Impact and Benefit Agreement (IIBA) with QIA.

4.2.2 Indicator Data

Number of Secondary School Graduates

The number of secondary school graduates in the LSA is a useful indicator of school attendance and success. 2016 was the most recent year data on secondary school graduates were available from the Nunavut Bureau of Statistics (2017b). Figure 4-1 displays the number of secondary school graduates by community from 2008 to 2016. In the North Baffin LSA communities in 2016, there were 48 total graduates, up from 41 in 2015. There was a low of 2 graduates in Hall Beach and a high of 17 graduates in Igloodik in 2016. In Iqaluit, there were 30 graduates in 2016, down from 42 in 2015. Compared to pre-development period averages, there have been decreasing trends in the average number of graduates in the North Baffin LSA (from 45 to 41) and Iqaluit (from 42 to 38) in the post-development period.

Figure 4-1: Secondary school graduates (2008 to 2016)



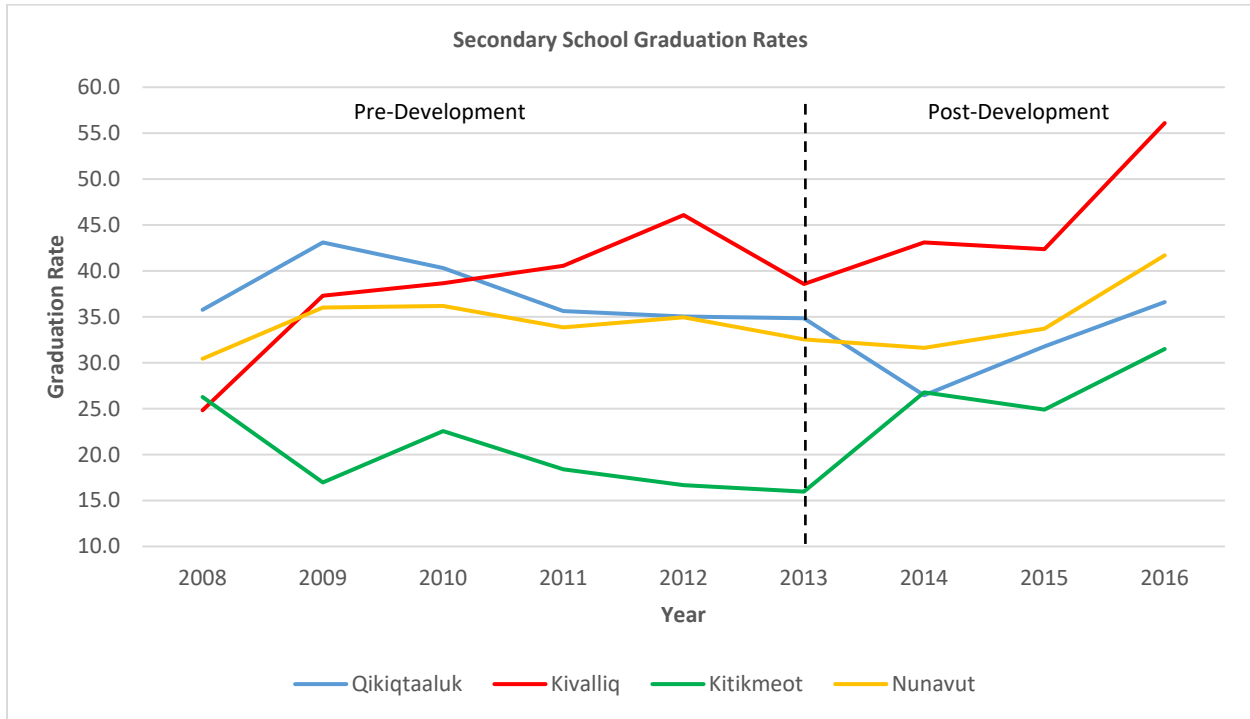
Source: Nunavut Bureau of Statistics (2017b)

Secondary School Graduation Rate

Secondary school graduation rates¹⁰ are another useful indicator of school attendance and success. These have been obtained from the Nunavut Bureau of Statistics (2017c) and are presented in Figure 4-2. However, data are only available for Nunavut and the Qikiqtaaluk, Kivalliq, and Kitikmeot regions. In 2016, the Kivalliq Region had the highest graduation rate in the territory (56.1), followed by the Qikiqtaaluk Region (36.6), and Kitikmeot Region (31.5). Compared to 2015, graduation rates in the Qikiqtaaluk Region were up (by 4.8). Compared to pre-development period averages, there has been a decreasing trend in average graduation rates in the Qikiqtaaluk Region (from 38.0 to 32.4) but increasing trends in the Kivalliq (from 37.5 to 45.0) and Kitikmeot Regions (from 20.2 to 24.8) in the post-development period.

¹⁰ The Nunavut Bureau of Statistics (2017c) notes the 'graduation rate' is calculated by dividing the number of graduates by the average of estimated 17 and 18 year-old populations (the typical ages of graduation). 'Graduates' include students who completed secondary school but excludes those who completed equivalency or upgrading programs. Due to the small population of Nunavut, however, the Nunavut Bureau of Statistics (2017c) notes that graduation rate changes from year to year must be interpreted with caution.

Figure 4-2: Secondary school graduation rates (2008 to 2016)



Source: Nunavut Bureau of Statistics (2017c)

Investments in School-Based Initiatives

Baffinland continued to support several school-based initiatives through its donations program and IIBA in 2017. For example, since 2007 Baffinland has donated laptops to secondary school graduates in the North Baffin LSA communities to motivate youth to complete their high school educations. Baffinland provided 63 laptops to new grade 12 graduates in 2017 and 46 laptops in 2016. As per the IIBA, Baffinland also continues contributing to an annual scholarship fund for Nunavut Inuit (with priority given to applications from the North Baffin LSA communities). Due to certain administrative issues no scholarships were awarded in 2017; however, awards will be made in 2018. In addition, Baffinland launched a Community Literacy Initiative in September 2017. Baffinland representatives, led by CEO Brian Penney, delivered Inuktitut and English books to local schools and libraries in 2017. Baffinland representatives also spoke about the importance of education and the important role education plays in future employment opportunities in the mining industry.

4.2.3 Analysis

There have been decreasing trends in the number of graduates in the North Baffin LSA and Iqaluit in the post-development period which were not evident in the pre-development period (they were previously increasing). A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. There has also been a decreasing trend in graduation rates in the Qikiqtaaluk Region in the post-development period which was not evident in the pre-development period (it was previously increasing). Conversely, the Kivalliq and Kitikmeot Regions have continued to experience increasing trends during the post-development period. Reasons for the lack of a similar trend in the Qikiqtaaluk Region are currently unknown.

As Project construction only began in 2013, there is minimal post-development data currently available. School attendance and success can also be influenced by many socio-economic factors. Correlations between Project effects and school attendance and success, if any, may only come to light with the analysis of additional yearly data. However, there are positive indications the Project continues to provide incentives for youth to stay in school, as predicted in the FEIS. Foremost, Project employment opportunities can motivate individuals to complete their education to improve their chances at obtaining their desired career. Baffinland also continued to make investments in school-based initiatives through its donations program and IIBA in 2017. These investments included laptop donations to secondary school graduates, ongoing scholarship commitments, and the launch of a community literacy initiative.

4.3 OPPORTUNITIES TO GAIN SKILLS

4.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on education and skills development, by providing opportunities for training and skills acquisition amongst LSA residents. Mitigation developed by Baffinland includes the provision of training programs, upgrading opportunities, and career counselling to employees, in addition to other measures included in the IHRS. Furthermore, Baffinland continues to support several educational and training initiatives through its donations program and through compliance with IIBA provisions respecting training and education.

4.3.2 Indicator Data

Hours of Training Completed by Inuit Employees and Contractors

The number of training hours completed by Project employees and contractors is a useful indicator of the magnitude of Baffinland’s annual training efforts. Hours of site-based training completed from 2013 to 2017 by Inuit and non-Inuit are presented in Table 4-1. In 2017 this included any site-based training offered by Baffinland to employees and contractors; it did not include off-site training or training offered by contractors to their staff. In 2017, 43,397 hours of training were completed at the Project site, of which 4,024 hours (or 9.3%) were provided to Inuit. This represents an increase of 1,590 Inuit training hours compared to 2016. A total of 122,950 hours of training have been provided since Project development, of which 15,867 hours (or 12.9%) were provided to Inuit.

Table 4-1: Hours of training completed (2013 to 2017)

Hours of Training Completed			
Year	Inuit	Non-Inuit	Total
2013	1,283	4,555	5,838
2014	3,596	20,271	23,867
2015	4,530	17,352	21,882
2016	2,434	25,532	27,966
2017	4,024	39,373	43,397
Total	15,867	107,083	122,950

Source: Baffinland

Types of Training Provided to Inuit Employees and Contractors

The types of training provided by Baffinland better reveal the full scope of learning opportunities available at the Project. Types and hours of training provided to Inuit and non-Inuit employees and contractors in 2017 are displayed in Figure 4-3. In 2017 this included any site-based training offered by Baffinland to employees and contractors; it did not include off-site training or training offered by contractors to their staff. Training programs with the highest levels of Inuit participation in 2017 included heavy equipment operator (1,803 hours), site orientation (923 hours), mobile support equipment (445 hours), and ore haul truck (121 hours). Training programs are expected to continue to evolve at the Project as operations advance, employment increases, and feedback from Inuit employees is considered.

Apprenticeships and Other Opportunities

Baffinland recently began recruiting candidates for a new apprenticeship program for individuals interested in pursuing a career in the skilled trades. Baffinland is currently recruiting 26 candidates, spread across eight positions: carpenter, electrician, heavy duty mechanic, heavy equipment technician, housing maintainer, millwright, plumber, and welder. Recruits will join Baffinland as trades assistants for six months, job shadowing and learning about their prospective trade. Upon successful completion of the six-month term, candidates will write their Trades Entrance exam. Pending a pass mark being received on the exam, candidates will become full-time, permanent apprentices at Baffinland.

Baffinland and QIA were also recently successful in securing funds through Employment and Social Development Canada's (ESDC) Skills and Partnership Fund for their Qikiqtani Skills and Training for Employment Partnership (Q-STEP) training program. Q-STEP is a four-year initiative that will be undertaken by QIA in close partnership with Baffinland to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The program will consist of both work readiness measures as well as targeted training programs directed at apprenticeships, skills development, supervisor training, and formal certification in heavy equipment operation. The total value of the program is \$19 million. The Government of Canada will provide \$7.9 million, Baffinland will provide \$9.4 million of in-kind support, and Kakivak Association will provide up to \$1.6 million of in-kind support. The Government of Nunavut will also offer operational support to Q-STEP.

As these programs were just getting underway in late 2017, the number of apprentices employed by Baffinland during the year was limited. In 2017, Baffinland employed one Inuit apprentice and zero non-Inuit apprentices. Likewise, zero apprenticeships were completed by Inuit or non-Inuit during 2017. By comparison, Baffinland also employed one Inuit apprentice in 2016.

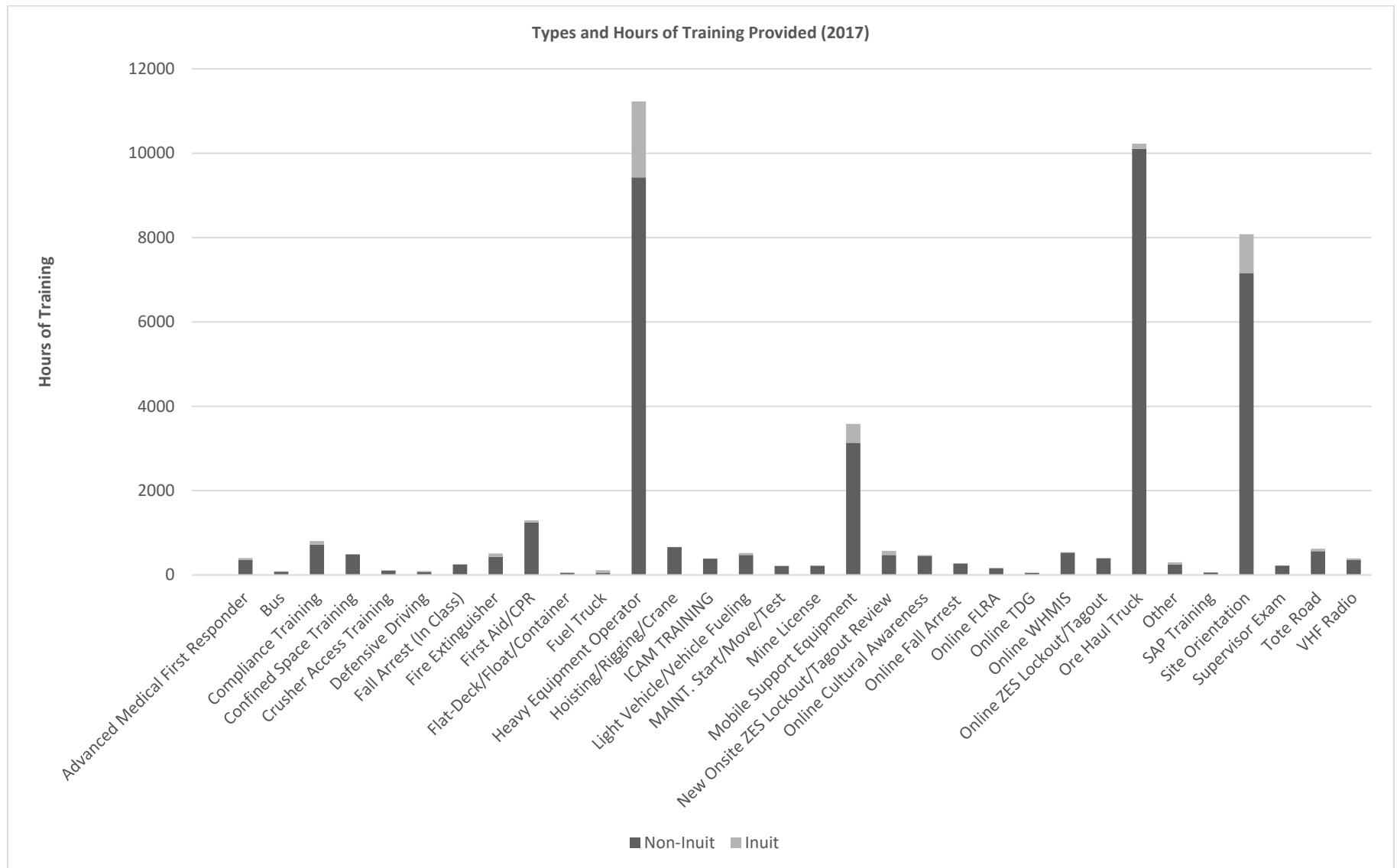
4.3.3 Analysis

The FEIS predicted positive effects on training and skills acquisition amongst LSA residents would arise from the Project. In 2017, Baffinland continued providing many training and skills development opportunities to its Inuit employees. Furthermore, Baffinland employees are regularly exposed to various 'informal' training and skills development opportunities through contact with more experienced coworkers and the process of everyday work. Several other Baffinland programs and IIBA initiatives have also contributed to the development of a more experienced Inuit workforce. For example, Baffinland delivered a 'Work Ready' pre-employment training program to local residents in 2012 and

2013 and anticipates delivering a revised version of this training in 2018. Baffinland has also committed to providing additional near-term training opportunities to LSA residents through its IHRS and the Q-STEP training program. This includes providing employee skills upgrading courses (e.g. GED, literacy and numeracy), training in apprenticeships and heavy equipment operation, and various career advancement programs for existing employees.

It is evident the Project has had a positive effect on education and skills development amongst LSA residents, as was predicted in the FEIS. The opportunities provided by the Project are notable, particularly when considering the current mining skills 'gap' that exists in Nunavut (e.g. Gregoire 2014, MacDonald 2014, MIHR 2014, Conference Board of Canada 2016).

Figure 4-3: Types and hours of training provided (2017)



Source: Baffinland. Training programs totalling >50 hours have been included under 'Other'.

4.4 EDUCATION AND EMPLOYMENT STATUS PRIOR TO PROJECT EMPLOYMENT

4.4.1 Project Certificate Term or Condition

No specific prediction related to employee education and employment status prior to Project employment was presented in the FEIS. However, Project Certificate term and condition no. 140 states:

The Proponent is encouraged to survey Nunavummiut employees as they are hired and specifically note the level of education obtained and whether the incoming employee resigned from a previous job placement or educational institution in order to take up employment with the Project.

4.4.2 Indicator Data

Education and Employment Status Prior to Project Employment

Baffinland has developed a voluntary Inuit Employee Survey (see Appendix E) to address Project Certificate term and condition no. 140. The latest version of this survey was administered by a survey team consisting of Baffinland and QIA representatives at Project sites in January 2018. A total of 71 surveys were completed by Inuit employees and contractors.

Table 4-2 summarizes results on the highest level of education obtained by survey respondents. 38.0% of respondents had no certificate, diploma, or degree. 22.5% had a high school diploma or equivalent, 5.6% had an apprenticeship or trades certificate or diploma, and 4.2% had a college, CEGEP, or other non-university certificate or diploma. 0.0% had any type of university certificate, diploma, or degree, and 29.6% of respondents had unknown educational levels ($n=71$). When 'unknown' results are removed, 54.0% had no certificate, diploma, or degree, 32.0% had a high school diploma or equivalent, and 14.0% had higher than a high school diploma or equivalent.

Table 4-2: Highest level of education obtained (2018 Inuit Employee Survey results)

Highest Level of Education Obtained (2018 Inuit Employee Survey Results)		
Highest Level of Education	Number of Respondents	Percentage of Respondents
No certificate, diploma or degree	27	38.0%
High school diploma or equivalent	16	22.5%
Apprenticeship or trades certificate or diploma	4	5.6%
College, CEGEP or other non-university certificate or diploma	3	4.2%
University certificate or diploma below bachelor level	0	0.0%
University certificate, diploma or degree - Bachelor's degree	0	0.0%
University certificate, diploma or degree above bachelor level	0	0.0%
Unknown	21	29.6%
Total	71	99.9%

Source: Baffinland

Notes: Total percentage may not equal 100.0% due to rounding

Table 4-3 summarizes results on the employment status of survey respondents prior to Project employment. 31.0% of respondents resigned from a previous job in order to take up employment with the Project, while 67.6% did not. Results were unknown for 1.4% of respondents ($n=71$). When 'unknown' results are removed, 31.4% resigned from a previous job in order to take up employment

with the Project while 68.6% did not. Of those respondents that resigned from a previous job in order to take up employment with the Project ($n=22$), 22.7% (or 7.1% of known survey responses) had casual employment status, 9.1% (or 2.9% of known responses) had part-time employment status, and 68.2% (or 21.4% of known responses) had full-time employment status.

Table 4-3: Employment status prior to Project employment (2018 Inuit Employee Survey results)

Employment Status Prior to Project Employment (2018 Inuit Employee Survey Results)		
Pre-Employment Status	Number of Respondents	Percentage of Respondents
<i>Did you resign from a previous job in order to take up employment with the Mary River Project? (n=71)</i>		
Yes	22	31.0%
No	48	67.6%
Unknown	1	1.4%
Total	71	100.0%
<i>If yes, what was your previous employment status? (n=22)</i>		
Casual	5	22.7%
Part-time	2	9.1%
Full-time	15	68.2%
Total	22	100.0%

Source: Baffinland

Table 4-4 summarizes results on the education status of survey respondents prior to Project employment. 9.9% of respondents were enrolled in an academic or vocational program at the time of their hire at the Project, while 81.7% were not. Results were unknown for 8.5% of respondents ($n=71$). When ‘unknown’ results are removed, 10.8% of respondents were enrolled in an academic or vocational program at the time of their hire at the Project while 89.2% were not. Of those respondents that were enrolled in an academic or vocational program at the time of their hire at the Project ($n=7$), 28.6% (or 3.1% of known survey responses) suspended or discontinued their education because they were hired to work at the Project while 71.4% (or 7.7% of known responses) did not.

Table 4-4: Education status prior to Project employment (2018 Inuit Employee Survey results)

Education Status Prior to Project Employment (2018 Inuit Employee Survey Results)		
Pre-Employment Status	Number of Respondents	Percentage of Respondents
<i>Were you enrolled in an academic or vocational program at the time of your hire at the Mary River Project? (n=71)</i>		
Yes	7	9.9%
No	58	81.7%
Unknown	6	8.5%
Total	71	100.1%
<i>If yes, did you suspend or discontinue your education because you were hired to work at the Mary River Project? (n=7)</i>		
Yes	2	28.6%
No	5	71.4%
Total	7	100.0%

Source: Baffinland

Notes: Total percentages may not equal 100.0% due to rounding

4.4.3 Analysis

The employees who completed Baffinland’s Inuit Employee Survey in 2018 had varied educational and pre-employment backgrounds. 54.0% of respondents had no certificate, diploma or degree, 32.0% had

a high school diploma or equivalent, and 14.0% of respondents had higher than a high school diploma or equivalent. By comparison, data from the 2016 Census indicate the proportion of the North Baffin LSA's population (aged 25 to 64 years) with no certificate, diploma or degree was 50.8%; with a secondary school diploma or equivalency certificate was 14.4%; and with a postsecondary certificate, diploma, or degree was 36.0%. Likewise, the proportion of Nunavut's population (aged 25 to 64 years) with no certificate, diploma or degree was 40.9%; with a secondary school diploma or equivalency certificate was 14.6%; and with a postsecondary certificate, diploma, or degree was 44.4% (Statistics Canada 2017c, d, e, f, g, h).

Furthermore, 31.4% of Inuit Employee Survey respondents resigned from a previous job in order to take up employment with the Project. Nunavut's Inuit population employment rate¹¹ 3 month moving average ending in December 2017, for reference, was 47.3% (Nunavut Bureau of Statistics 2018). 3.1% of respondents also suspended or discontinued their education because they were hired to work at the Project. Baffinland will continue to track the education and employment status of its Inuit employees and contractors prior to Project employment to see if any future trends emerge. Surveys conducted in future years are expected to provide additional data to compare these results against.

¹¹ The Nunavut Bureau of Statistics (2009) defines 'employment rate' as the "number of employed persons expressed as a percentage of the population 15 years of age and over". 'Employed persons' are defined as those who "(a) did any work at all at a job or business, that is paid work in the context of an employer-employee relationship, or self-employment; or (b) had a job but were not at work due to factors such as own illness or disability, personal or family responsibilities, vacation, labour dispute or other reasons (excluding persons on layoff, between casual jobs, and those with a job to start at a future date)."

5. LIVELIHOOD AND EMPLOYMENT

Three residual effects for the VSEC Livelihood and Employment were assessed in the FEIS. These include creation of jobs in the LSA, employment of LSA residents, and new career paths. These are reviewed more fully below, in addition to information on one other topic requested through the Project Certificate.

5.1 CREATION OF JOBS IN THE LSA

5.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on wage employment in the LSA by introducing new job opportunities and assisting local residents to access these jobs. A 5%+ change in baseline labour was predicted to result from the Project. Under baseline conditions, the labour market of the North Baffin LSA was estimated to generate a labour demand of 2.0 million hours per year, while the Iqaluit labour market was estimated to generate a demand of 4.7 million hours per year. 5% of these values would equal 335,000 hours per year (i.e. 100,000 hours per year in the North Baffin LSA and 235,000 hours per year in Iqaluit).

More specifically, the Project was predicted to generate a total labour demand of approximately 0.9 million hours per year during ERP operations. With the addition of the 18 Mt/a phase, annual labour demand would increase to 2.9 million hours. Labour demand during the Construction Phase would average roughly 4.1 million hours per year over a six-year period but reach a peak of approximately 7.3 million hours per year. Closure phase labour demand estimates do not currently exist but will be developed by Baffinland in the future. Mitigation developed by Baffinland includes the designation of all LSA communities as points-of-hire.

5.1.2 Indicator Data

Hours of Project Labour Performed in Nunavut

Total hours of labour performed each year is a useful indicator of the Project's labour demand. It also helps reveal the extent to which new job opportunities have become available to LSA residents. Table 5-1 presents total hours of Project labour performed by employees and contractors who worked on the Project in Nunavut-based positions from 2013 to 2017. In 2017, 2,380,990 hours of labour were performed, which is equal to approximately 1,181 full time equivalent (FTE) positions.¹² There were 499,484 more hours of labour performed in 2017 than in 2016. A total of 8,837,636 hours of labour have been performed since Project development.

¹² FTEs are calculated assuming 2,016 hours of employment per person annually, which reflects a typical 2 week on/2 week off rotation (i.e. 24 weeks multiplied by 84 hours per week; this calculation also assumes 2 weeks holidays are taken by each employee).

Table 5-1: Hours of Project labour performed in Nunavut (2013 to 2017)

Hours of Project Labour Performed in Nunavut				
2013	2014	2015	2016	2017
863,177	1,867,882	1,844,081	1,881,506	2,380,990

Source: Baffinland⁶

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors.

5.1.3 Analysis

The FEIS predicted a positive effect on the creation of jobs in the LSA would occur because of the Project. In 2017, the Project continued to generate a substantial number of employment opportunities and labour hours. The generation of 2,380,990 hours of labour in 2017 is in line with the FEIS prediction of a 5%+ change in baseline labour (i.e. at least 335,000 hours created per year). As such, the positive effect on LSA job creation predicted to occur in the FEIS is confirmed.

5.2 EMPLOYMENT OF LSA RESIDENTS

5.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on wage employment in the LSA by introducing new job opportunities and assisting local residents to access these jobs. The magnitude of LSA employment creation was estimated to be a 5%+ change in baseline labour. This equates to at least 335,000 hours of new employment being created per year, in a baseline environment that was estimated to create 6.7 million hours of labour per year.

More specifically, the Project was predicted to result in the employment of an estimated 300 LSA residents each year. These residents would supply approximately 342,000 hours of labour per year to the Project, of which 230,000 hours would be provided by North Baffin LSA residents and 112,000 hours would be provided by Iqaluit residents. Mitigation developed by Baffinland includes management commitments and Company policies related to Inuit hiring, and the development of Inuit employee recruitment and retention programs, in addition to other measures contained in the IHRS.

5.2.2 Indicator Data

Project Hours Worked by LSA Employees and Contractors

Data on the number of hours worked on the Project provides insight into the varying labour contributions of LSA and non-LSA employees and contractors. Table 5-2 summarizes the number and percentage of hours worked by individuals on the Project in Nunavut-based positions from 2013 to 2017. Table 5-2 also includes information on the origin and ethnicity of these individuals, where applicable. In 2017, 313,068 hours were worked by LSA residents (both Inuit and non-Inuit), representing 13.1% of total hours worked on the Project (i.e. 2,380,990) or approximately 155 FTEs. Of this, 229,658 hours were worked by North Baffin LSA residents (representing 9.6% of the total) and 83,410 hours were worked by Iqaluit residents (representing 3.5% of the total). Project hours worked by North Baffin LSA residents decreased (by 1,074 hours) from 2016, while Project hours worked by Iqaluit

residents increased (by 8,306 hours) from 2016. Inuit individuals worked 321,026 hours in 2017, representing 13.5% of total hours worked on the Project or approximately 159 FTEs.

5.2.3 Analysis

The FEIS predicted a positive effect on the employment of LSA residents would occur because of the Project. In 2017, a total of 313,068 hours were worked by LSA residents, 229,658 of which were worked by North Baffin LSA residents. While these numbers don't fully reflect the FEIS predictions (i.e. at least 335,000 hours of new employment would be created, with LSA residents potentially providing 342,000 hours of work and North Baffin LSA residents potentially providing 230,000 hours of work), Baffinland continues to refine its Inuit human resources programs and remains committed to meeting Inuit employment targets.

LSA employment and Inuit employee turnover are areas Baffinland will continue to address in 2018. This will occur in part through implementation of Baffinland's new Inuit Human Resources Strategy (IHRS) and Inuit Procurement and Contracting Strategy (IPCS). These documents describe goals and initiatives that will be used to increase Inuit employment and contracting at the Project over time. For example, the IHRS contains eight strategic directions that will assist Baffinland with meeting its Inuit employment objectives: strengthen stakeholder collaboration, engage and develop Inuit employees (current and potential), workforce readiness, Inuit recruitment and hiring, gender balance, students and youth, Inuit employee retention and advancement, and continuing improvement.

The new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators, and implementation of the Q-STEP training program (in conjunction with QIA) and other actions to meet the Minimum Inuit Employment Goal (MIEG, which was 25% in 2017 and will remain at 25% in 2018) should also assist with increasing LSA employment over time. However, it will likely take many years to fully realize the Project's Inuit employment potential.

Comments shared during Baffinland's 2017 community engagement program and 2017 QSEMC meeting provide additional insight into this matter. For example, one participant in a Pond Inlet community engagement meeting noted "I want to thank you Baffinland for giving jobs for jobless people, there are some people who can only be employed by Mary River. Thank you." During the community roundtable portion of the 2017 QSEMC, participants also expressed gratitude for the employment opportunities provided by the Project in LSA communities (SEMCs 2017b). Likewise, the 2016 QSEMC meeting report notes "the economic benefits of employment and contracts to local businesses have been interpreted as largely positive in the LSA" (Government of Nunavut 2016: 9). During the community roundtable portion of the April 2015 QSEMC meeting it was also noted that in Pond Inlet "the benefits of Mary River from increased employment and money in the community have been noticed and appreciated" (Government of Nunavut 2015: 16). In Igloodik it was noted that "residents and businesses have benefited from more money coming into town from Mary River employment" (Government of Nunavut 2015: 17).

Some comments related to the employment of LSA residents at the Project were also captured in a recent report commissioned by Baffinland on the experience of Inuit residents employed at the Project as perceived by employees, their spouses, managers and supervisors at Mary River. The report, *Mary River Experience – The First Three Years* (i.e. BDSI 2016: 6), notes:

“Individuals spoke about various types of benefits arising from employment. These range from the material rewards that come with increased income, to the mental health benefits of participating on a team and having hope and plans to achieve goals, to the satisfaction associated with learning new things and having an avenue to put one’s skills to good use.”

Insights such as these, combined with the data presented above, confirm the positive effects the Project has had on the employment of LSA residents. While the hours worked by LSA residents in 2017 don’t fully reflect FEIS predictions, Baffinland views this as a temporary situation that can be addressed through initiatives such as the IHRS, IPCS, and Q-STEP training program. Baffinland will continue to monitor LSA employment for future trends.

Table 5-2: Hours of Project labour performed in Nunavut (2013 to 2017)

Employee Ethnicity & Origin	Hours of Project Labour Performed in Nunavut									
	2013		2014		2015		2016		2017	
	Hours Worked	% of total (863,177)	Hours Worked	% of total (1,867,882)	Hours Worked	% of total (1,844,081)	Hours Worked	% of total (1,881,506)	Hours Worked	% of total (2,380,990)
Inuit – North Baffin LSA	125,870	14.6%	281,679	15.1%	208,278	11.3%	198,618	10.6%	217,314	9.1%
Inuit – Iqaluit	38,799	4.5%	80,796	4.3%	85,088	4.6%	51,216	2.7%	65,064	2.7%
Inuit – Other	9,696	1.1%	17,131	0.9%	37,542	2.0%	27,620	1.5%	38,648	1.6%
Inuit (Total)	174,365	20.2%	379,606	20.3%	330,908	17.9%	277,454	14.7%	321,026	13.5%
Non-Inuit – North Baffin LSA	—	—	—	—	5,114	0.3%	32,114	1.7%	12,344	0.5%
Non-Inuit – Iqaluit	—	—	—	—	9,090	0.5%	23,888	1.3%	18,346	0.8%
Non-Inuit – Other	—	—	—	—	1,498,969	81.3%	1,548,050	82.3%	2,032,496	85.4%
Non-Inuit (Total)	688,812	79.8%	1,488,276	79.7%	1,513,173	82.1%	1,604,052	85.3%	2,059,964	86.5%
Total	863,177	—	1,867,882	—	1,844,081	—	1,881,506	—	2,380,990	—

Source: Baffinland⁶

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors. Data for non-Inuit LSA residents were not available for 2013 and 2014 and are included in the non-Inuit total instead.

5.3 NEW CAREER PATHS

5.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on the ability of LSA residents to progress in their jobs and careers. This effect would occur because of new career paths introduced to the region, from entry-level through step-by-step advancement to higher level jobs. Mitigation developed by Baffinland includes management commitments and Company policies related to Inuit hiring and promotions, the provision of individual career support programs, and the creation of a 'second chance' hiring policy, in addition to other measures included in the IHRS.

5.3.2 Indicator Data

LSA Employment

Data on the employment of LSA residents at the Project provides insight into the new career paths made available to LSA residents. This is because some Project jobs may represent an opportunity for individuals to improve their existing employment status (e.g. from unemployed to employed, from part-time to full-time, from lower-skilled to higher-skilled positions) and/or form the basis of future promotion and advancement at the Project. As noted in Section 5.2, a total of 313,068 hours were worked by LSA residents in 2017.

Inuit Employee Promotions

The number of annual Inuit employee promotions is also an important indicator of career progression at the Project. Data on Baffinland Inuit employee promotions (not including contractors) from 2014 to 2017 are presented in Table 5-3. In 2017, 3 Inuit employee promotions occurred, which is 11 fewer promotions than occurred in 2016.

Table 5-3: Baffinland Inuit employee promotions (2014 to 2017)

Baffinland Inuit Employee Promotions	
Year	Number of Promotions
2014	9
2015	14
2016	14
2017	3

Source: Baffinland. Includes temporary promotions. Inuit promotion data were not available for 2013.

Inuit Employee Turnover

Annual Inuit employee turnover provides additional insight into Inuit career progression. The term 'turnover' is inclusive of many different components including resignation, layoff, termination, end of contract, and retirement. High turnover indicates fewer individuals are maintaining stable employment and able to take advantage of potential advancement opportunities. Low turnover, conversely, indicates a greater number of individuals are maintaining stable employment and able to take advantage of potential advancement opportunities. Table 5-4 displays information on Baffinland Inuit employee departures from 2013 to 2017 (not including contractors).

Table 5-4: Baffinland employee departures (2013 to 2017)

Baffinland Employee Departures				
Year	Inuit Employees		Non-Inuit Employees	
	Number of Departures	Turnover Rate	Number of Departures	Turnover Rate
2013	9	—	—	—
2014	45	—	—	—
2015	41	—	165	—
2016	44	45%	210	39%
2017	42	45%	211	31%

Source: Baffinland

Notes: 2013 and 2014 numbers are for indeterminate employees only and information for non-Inuit employees was unavailable. Comparable employee turnover rates for 2013-2015 are not provided, due to differences in how employee numbers and departures were previously calculated by Baffinland.

In 2017, there were 42 Inuit employees whose employment with Baffinland ended for various reasons (e.g. resignation, layoff, termination, end of contract, retirement). This equates to a 45% Inuit employee turnover rate. This is higher than the 31% non-Inuit employee turnover rate documented for 2017.¹³

Some commonly cited reasons Inuit employees had for resigning in 2017 included family/personal issues, obtaining a job in their home community, finding rotational work difficult (particularly on family life), and the work/camp environment. Some of these reasons were similar to those provided in 2016 (i.e. family-related reasons, obtaining a job in their home community, not being happy with working at site, finding rotational work difficult, and dissatisfaction with position responsibilities). For turnover due to dismissal by Baffinland or for involuntary terminations, commonly cited reasons in 2017 included absenteeism, safety-related occurrences, being unfit for duty/performance, and not passing probation. Some of these reasons were similar to those provided in 2016 (i.e. absenteeism and not passing probation, including not passing equipment training).

5.3.3 Analysis

The FEIS predicted the Project would have a positive effect on the ability of LSA residents to progress in their jobs and careers. In 2017, many Inuit were employed by the Project and some were promoted to new positions. The career opportunities introduced to the region represent a positive effect of the Project and are a likely result of the mitigation measures Baffinland has developed regarding local employment.

However, there were several Baffinland Inuit employee departures in 2017. High rates of employee turnover have been an issue for other Nunavut organizations in the past, including the Government of Nunavut and Agnico Eagle Mines Limited (e.g. Bell 2012, Government of Nunavut 2014). Baffinland will continue to monitor employee turnover causes and outcomes and is committed to reducing turnover and increasing Inuit employment where feasible.

¹³ The employee turnover rate has been calculated using guidance provided by Taylor (2002). For example, the 2017 Inuit employee turnover rate was calculated by dividing the total number of Inuit employee departures in the calendar year (42) by the average number of Inuit employees employed in the same calendar year (93 – see Table 3-7), multiplied by 100.

Baffinland's recently finalized IHRS contains several initiatives aimed at reducing turnover. The overriding goal of these initiatives is to ensure Inuit employees are provided with the necessary support to acclimate to life at site. For example, Baffinland has committed to reviewing onboarding procedures to ensure that expectations are clearly communicated and that Inuit employees, like all other employees, are made fully aware of workplace conditions and support resources, such as the Inuit Elders on site. In addition, Baffinland has committed to ensuring Inuit culture and values are respected and that use of Inuktitut at site will be supported, subject to considerations of employee safety. Consideration will also be given to modification of work rotation cycles to enable Inuit to participate in traditional activities. To reduce the stress of familial separation, Baffinland has further noted it will expand existing tools of family communication (phone and internet), including the introduction of Skype. Future monitoring will be necessary to track the success of these and other Baffinland programs.

5.4 BARRIERS TO EMPLOYMENT FOR WOMEN

5.4.1 Project Certificate Term or Condition

No specific prediction related to barriers to employment for women was presented in the FEIS. However, Project Certificate term and condition no. 145 states:

The Proponent is encouraged to work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor the barriers to employment for women, specifically with respect to childcare availability and costs.

5.4.2 Indicator Data

Hours Worked by Female Employees and Contractors

The number of hours worked by female employees and contractors at the Project provides insight into potential employment barriers females may face compared to their male counterparts. Table 5-5 displays the hours (and percentage of hours) worked by women and men on the Project in Nunavut-based positions from 2013 to 2017. In 2017, 162,550 hours (or 6.8% of total hours worked on the Project) were worked by women, which is 11,422 hours more than documented for 2016. The percentage of hours worked by Inuit and non-Inuit women in 2017 were similar (3.6% and 3.2%, respectively). However, the percentage of hours worked by Inuit women compared to Inuit males on the Project (approximately 26.8% of this total) was much higher than non-Inuit women compared to non-Inuit males (approximately 3.7% of this total) in 2017. A similar trend was noted from 2013 to 2016.

Childcare Availability and Costs

Appropriate community-level indicator data are currently unavailable for this topic. As such, this topic continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.

Comments on the lack of childcare in LSA communities and the barriers to employment it creates have been made previously by Project stakeholders (e.g. JPCSL 2017). Some stakeholder comments on childcare were also expressed during the 2017 QSEMC meeting in Arctic Bay. For example, the need for more childcare in local communities was raised by meeting participants during both the community

roundtable and Project-focused portions of the QSEMC. The lack of childcare in local communities was also said to be a cause of employee turnover at the Project (SEMCs 2017b). One comment related to childcare availability and costs was recorded during Baffinland's 2017 community engagement activities:

...can the community request funding for the community infrastructure, let's say, day care facilities, if it's needed? [2017 IIBA Annual Project Review Forum Participant]

It's acknowledged that securing access to adequate child care remains an issue in some parts of Nunavut and can act as a barrier to employment for women (e.g. Pauktuutit et al. 2014; Sponagle 2016). The national non-profit organization representing Inuit women in Canada, Pauktuutit (undated), further notes "an additional barrier for [Inuit] women attaining lasting, full-time employment is inadequate childcare facilities for rotational work schedules".

In any case, the Project has helped address some issues associated with childcare costs. Project incomes can provide employees with enhanced financial capacity that may make childcare more affordable. Furthermore, a new parental subsidy for daycare was recently announced by the QIA that is funded in part by the Mary River Project, through the *QIA Legacy Fund* and *QIA Benefits Fund*.¹⁴ This \$5/day subsidy is available to Qikiqtani families registered with the Nunavut Agreement who have a child enrolled in a licenced childcare facility and is a top-up to the existing Kakivak subsidy of up to \$19/day. The subsidy provides assistance for approximately 250 childcare spaces, is worth up to \$1,250/child per year in savings to Qikiqtani parents and represents a total investment of \$312,500/year by QIA. The subsidy will be offered until March 2019 and may be renewed upon QIA board approval (QIA 2017b).

Baffinland also supports two funds established under the IIBA which could potentially be accessed to provide additional supports to community daycares or child care services in the LSA. While Baffinland makes significant financial contributions to these funds, they are administered solely and exclusively by the QIA. The funds include the Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat (INPK) Fund (which provides up to \$750,000/year for projects in the Qikiqtaaluk Region which enhance community wellness) and the Business Capacity and Start-Up Fund (which provides up to \$250,000/year to Designated Baffin Inuit Firms to help with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management).

¹⁴ The *QIA Legacy Fund* is designed to invest money for the future and help reduce Inuit reliance on outside funding over time by creating an internal pool of revenue for benefits and programs. It has been designed to ensure that revenues placed in it are never used for QIA operational purposes, thereby protecting long-term benefits for Inuit. Money that QIA will invest into the Legacy Fund includes IIBA payments from major projects such as the Mary River Project, money received from NTI from the mining of Inuit owned minerals, money received from sand and gravel projects on Inuit owned land, dividends from Qikiqtaaluk Corporation and the Nunasi Corporation, money received from any investments of the Legacy Fund, and surplus revenues from the QIA's Economic Development Fund, which is designed to receive money from licenses and leases on Inuit Owned Land. The *QIA Benefits Fund* is used to deliver programs to Inuit. As the Legacy Fund grows, revenues from it go to the Benefits Fund to increase programs for Inuit. The Benefits Fund is designed to receive annual payments from the Legacy Fund so that QIA can ensure a stable base of funding to run programs even if revenues change over time. The fund also allows for programs to expand in the future as the invested money grows (QIA 2017a).

5.4.3 Analysis

While Baffinland has continued to encourage the employment of women at the Project, women worked considerably fewer hours on the Project (approximately 6.8% of the total) than their male counterparts in 2017. However, women remain under-represented in the Canadian mining industry as a whole. The Mining Industry Human Resources Council (2016) notes women comprise only 17% of the total Canadian mining workforce, which is significantly lower than the total participation of women in the general Canadian workforce, at 48%. Indigenous women are also less likely than non-Indigenous women to be employed in Canada (Arriagada 2016).

Employment levels can be influenced by many factors, including the existence of barriers faced by certain demographic groups. While Baffinland will continue to track this issue in future socio-economic monitoring reports, it's apparent women continue to face barriers to employment in the Canadian mining industry as a whole. Inadequate access to childcare in the LSA may also be creating some barriers to increased employment of women at the Project. However, the new employment opportunities being created for women in the LSA because of the Project should be acknowledged. Baffinland's financial contributions to various funds and initiatives in the LSA also represent a positive Project effect.

Article 7.15 of the IIBA further obligates Baffinland to implement human resources policies that ensure equal access to employment for both genders. Focused on providing ongoing opportunities to women, the IHRS has established a series of additional priorities for Baffinland over at least the next five years. These include policy review and revision to support the principle of equal access to employment opportunities and to eliminate gender biases, development of recruitment and selection processes to encourage employment applications from Inuit women, development of training programs specifically targeted to Inuit women to prepare them for non-traditional occupations, inclusion of gender sensitivity training as part of employee orientation, and other commitments. Through its annual workplace survey, Baffinland also solicits opinions on workplace conditions for female staff. The results of this survey are reviewed jointly by Baffinland and QIA for potential performance enhancement opportunities in this area.

Table 5-5: Hours worked by Project employees and contractors in Nunavut, by ethnicity and gender (2013 to 2017)

Hours Worked by Project Employees and Contractors in Nunavut, by Ethnicity and Gender											
Employee Ethnicity & Gender		2013		2014		Q4 2015 (see notes)		2016		2017	
		Hours Worked	% of total (863,177)	Hours Worked	% of total (1,867,882)	Hours Worked	% of total (430,244)	Hours Worked	% of total (1,881,506)	Hours Worked	% of total (2,380,990)
Inuit	Male	124,754	14.5%	267,169	14.3%	54,794	12.7%	208,592	11.1%	235,038	9.9%
	Female	49,611	5.8%	112,437	6.0%	20,732	4.8%	68,862	3.7%	85,988	3.6%
Non-Inuit	Male	639,468	74.1%	1,394,204	74.6%	336,124	78.1%	1,521,786	80.9%	1,983,402	83.3%
	Female	49,200	5.7%	94,072	5.0%	18,594	4.3%	82,266	4.4%	76,562	3.2%
TOTAL		863,177	—	1,867,882	—	430,244	—	1,881,506	—	2,380,990	—

Source: Baffinland⁶

Notes: This table includes employees and contractors who worked on the Project in Nunavut-based positions (including community-based Baffinland positions). This table does not include individuals who worked on the Project in non-Nunavut based positions, Baffinland corporate head office staff, or off-site contractors. As Baffinland's human resources data management system was in the process of being developed, some information gaps were unable to be reconciled in 2015. In 2015, gender data related to hours worked was only available for Q4.

6. CONTRACTING AND BUSINESS OPPORTUNITIES

Two residual effects for the VSEC Contracting and Business Opportunities were assessed in the FEIS. These include expanded market for business services to the Project and expanded market for consumer goods and services. These are reviewed in more detail below.

6.1 EXPANDED MARKET FOR BUSINESS SERVICES TO THE PROJECT

6.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on creating market opportunities for businesses in the LSA and RSA to supply goods and services to the Project. Mitigation designed by Baffinland includes the implementation of several Inuit contracting policies, and the development of the IPCS. These have been designed to give Inuit firms preferential treatment and assistance in the contract bidding process. Baffinland's IIBA with the QIA also includes provisions related to local business development. For example, a Business Capacity and Start-Up Fund has been created (which is administered by Kakivak, a subsidiary of the QIA) to assist Designated Baffin Inuit Firms. This fund provides up to \$500,000 annually to help with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management.

6.1.2 Indicator Data

Value of Procurement with Inuit-Owned Businesses and Joint Ventures

The value of Project-related procurement with Inuit-owned businesses and joint ventures is a useful indicator of the business opportunities created by the Project. Table 6-1 summarizes the procurement that has occurred with Inuit-owned businesses and joint ventures from 2013 to 2017. Approximately \$387.2 million in contracts were awarded to Inuit-owned businesses and joint ventures in 2017. Of a total 18 contracts awarded to Inuit-owned businesses and joint ventures, all were awarded in the LSA. Procurement values in 2017 were higher than in 2016 by \$322.8 million. Total procurement (with Inuit *and* non-Inuit firms) in 2017 totaled \$1,068.0 million. Since Project development, a total of \$819.1 million worth of contracts has been awarded to Inuit-owned businesses and joint ventures. The differing values in Table 6-1 are at least partly reflective of the construction activities that have occurred during varying periods on site (e.g. 2013 was a major construction year) and the transition to increased operational activities that occurred in 2015.

6.1.3 Analysis

The Project continued to procure substantial goods and services from Inuit-owned businesses and joint ventures in 2017. Likewise, Baffinland procurement data suggests the Project has had an overall positive effect on creating market opportunities for businesses in the LSA and RSA to supply goods and services to the Project, as was predicted in the FEIS. Baffinland also recently finalized its IPCS with the QIA, which is expected to further enable (if not enhance) the provision of these business opportunities.

Table 6-1: Procurement with Inuit-owned businesses and joint ventures (2013 to 2017)

Procurement with Inuit-Owned Businesses and Joint Ventures					
Procurement Details	Year				
	2013	2014	2015	2016	2017
Value of Procurement with Inuit-Owned Businesses and JVs	\$200 million	\$64 million	\$103.5 million	\$64.4 million	\$387.2 million
Total Number of Contracts with Inuit-Owned Businesses and JVs	13	19	12	9	18
Number of Contracts with Inuit-Owned Businesses and JVs in the LSA	6	3	5	9	18

Source: Baffinland

6.2 EXPANDED MARKET FOR CONSUMER GOODS AND SERVICES

6.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would expand the market for consumer (i.e. non-Project related) goods and services across the LSA. While no specific mitigation measures related to this prediction were proposed in the FEIS, Company commitments related to Inuit employment and contracting support the development of an expanded market for consumer goods and services in the LSA. This is because of the increased purchasing power local residents are expected to have due to Project-induced direct and indirect employment income.

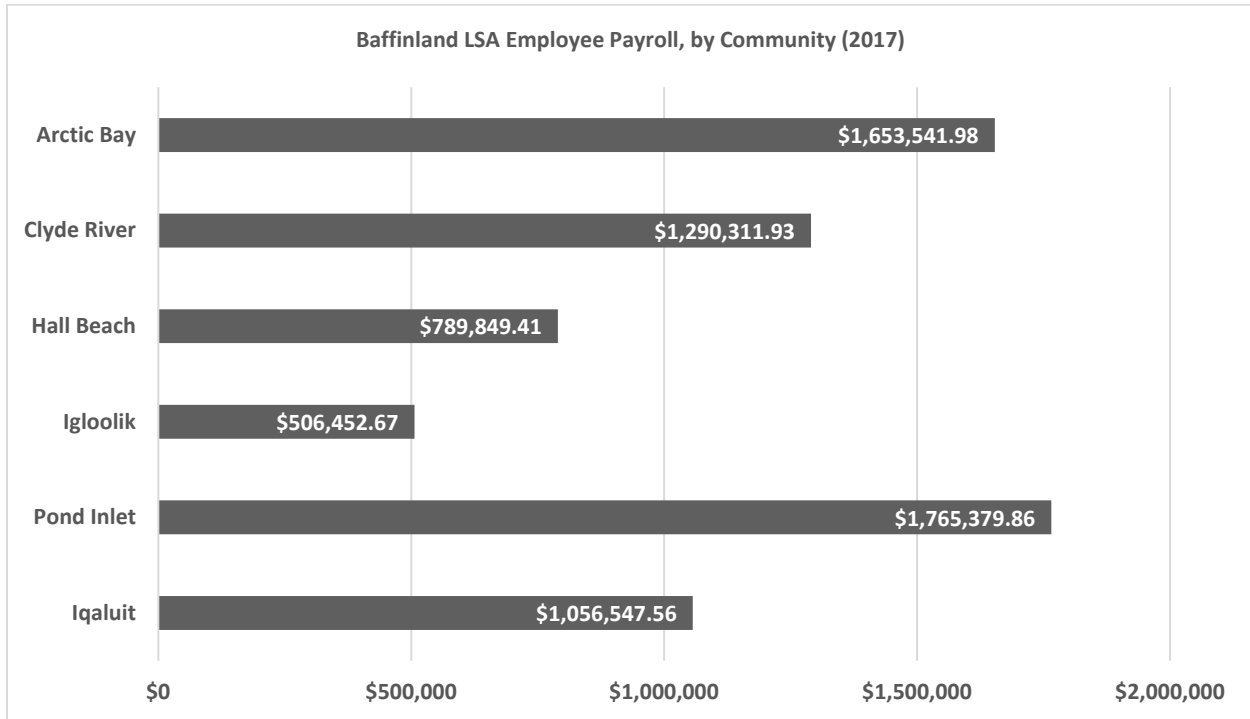
6.2.2 Indicator Data

LSA Employee Payroll Amounts

Yearly payroll expenditures to LSA employees are a useful indicator of the degree to which an expanded market for consumer goods and services has been created by the Project. Through the creation of new jobs in the LSA, the Project has also created a new source of economic wealth for local residents. It is reasonable to expect some of this new wealth will become available for residents to spend on consumer goods and services.

Baffinland's LSA employee payroll expenditures (in Canadian dollars, not including contractors, but including both Inuit and non-Inuit employees) totaled \$7,062,083.41 in 2017. Compared to 2016, this was a decrease of \$524,295.59. While contractor wages are not included in these amounts, the value of procurement with Inuit-owned businesses and joint ventures in 2017 was nevertheless substantial (\$387.2 million, as described in Section 6.1) and represents another important benefit provided by the Project. Figure 6-1 displays the proportion of Baffinland's employee payroll earned by each LSA community in 2017. The top three LSA payroll recipient communities in 2017 were Pond Inlet, Arctic Bay, and Clyde River (in 2016 they were Arctic Bay, Pond Inlet, and Clyde River). The highest earning community (Pond Inlet) received \$1,765,379.86, while the lowest earning community (Igloolik) received \$506,452.67 in 2017. Baffinland's Inuit employee payroll (including LSA and non-LSA communities) is also notable and totaled \$8,313,897.59 in 2017. Since 2014, Baffinland has provided \$33,261,365.59 in payroll to Inuit.

Figure 6-1: Baffinland LSA employee payroll, by community (2017)



Source: Baffinland

Number of Registered Inuit Firms in the LSA

The number of registered Inuit firms in the LSA is another useful indicator of the degree to which an expanded market for consumer goods and services may have been created by the Project. This is because new Project-generated consumer discretionary income would be expected to result in increased demand for (and spending on) local goods and services. Subsequently, the number and offerings of local businesses would be expected to increase to meet this demand.

Nunavut Tunngavik Incorporated (NTI) maintains an Inuit firm¹⁵ registry database for Nunavut. This database (i.e. NTI 2017) provides the name of each registered Inuit firm, describes each firm’s area of business operations, and location where the firm is based. The number of registered Inuit firms in the LSA from 2013 to 2017 is summarized in Table 6-2. Information for 2013 to 2015 was obtained directly from NTI personnel (E. Egeesiak 2016, personal communication), while information for 2016 to 2017 was obtained from the NTI database (i.e. NTI 2017).

In 2017, a total of 153 active Inuit firms were registered with NTI in the LSA. 44 of these firms were based in the North Baffin LSA communities and 109 were based in Iqaluit. The number of active Inuit firms registered in the North Baffin LSA communities has increased by 15 since 2013, while the number of active Inuit firms registered in Iqaluit has increased by 40 since 2013.

¹⁵ As noted by NTI (2017), ‘Inuit firm’ means an entity which complies with the legal requirements to carry on business in the Nunavut Settlement Area, and which is a limited company with at least 51% of the company’s voting shares beneficially owned by Inuit, or a cooperative controlled by Inuit, or an Inuk sole proprietorship or partnership.

Table 6-2: NTI registered Inuit firms in the LSA (2013 to 2017)

NTI Registered Inuit Firms in the LSA					
Location	Number of Firms				
	2013	2014	2015	2016	2017
North Baffin LSA Communities	29	29	31	40	44
Iqaluit	84	108	95	116	109
Total	113	137	126	156	153

Source: Nunavut Tunngavik Incorporated

6.2.3 Analysis

The Project continued to expand the market for consumer goods and services across the LSA in 2017. Considerable amounts were spent both on Baffinland's LSA employee payroll (approximately \$7.06 million) and contracting with Inuit-owned businesses and joint ventures (approximately \$387.2 million) in 2017. These new contributions to the Nunavut economy are a direct result of Project development and represent a positive effect. This is because increased income from direct and indirect Project employment provides LSA residents with a greater capacity to purchase local goods and services. Increased income can also stimulate further business growth (e.g. existing businesses may expand to meet increased consumer demand or new businesses may emerge, wealth generated through employment may increase an individual's ability to start new businesses).

The number of active Inuit firms registered in the LSA communities also increased between 2013 and 2017, which suggests a potential positive Project effect. Anecdotal evidence shared with Baffinland by its suppliers indicates at least some new Inuit firms were registered because of Project-related contracting opportunities. However, it's acknowledged that many factors may contribute to the decision to start (or not start) a new business.

As predicted in the FEIS, the positive effect of the Project on creating an expanded market for consumer goods and services across the LSA is confirmed for this reporting period. It is possible that continued monitoring may uncover additional positive Project effects (e.g. it may take an extended period for some businesses to respond to emerging commercial opportunities); this matter will be assessed further in future reports.

7. HUMAN HEALTH AND WELL-BEING

Six residual effects for the VSEC Human Health and Well-Being were assessed in the FEIS. These include changes in parenting, household income and food security, transport of substances through Project sites, affordability of substances, attitudes toward substances and addictions, and absence from the community during work rotation. These are reviewed more fully below, in addition to information on seven other topics requested through the Project Certificate.

7.1 CHANGES IN PARENTING

7.1.1 Predicted Effect and Mitigation Measures

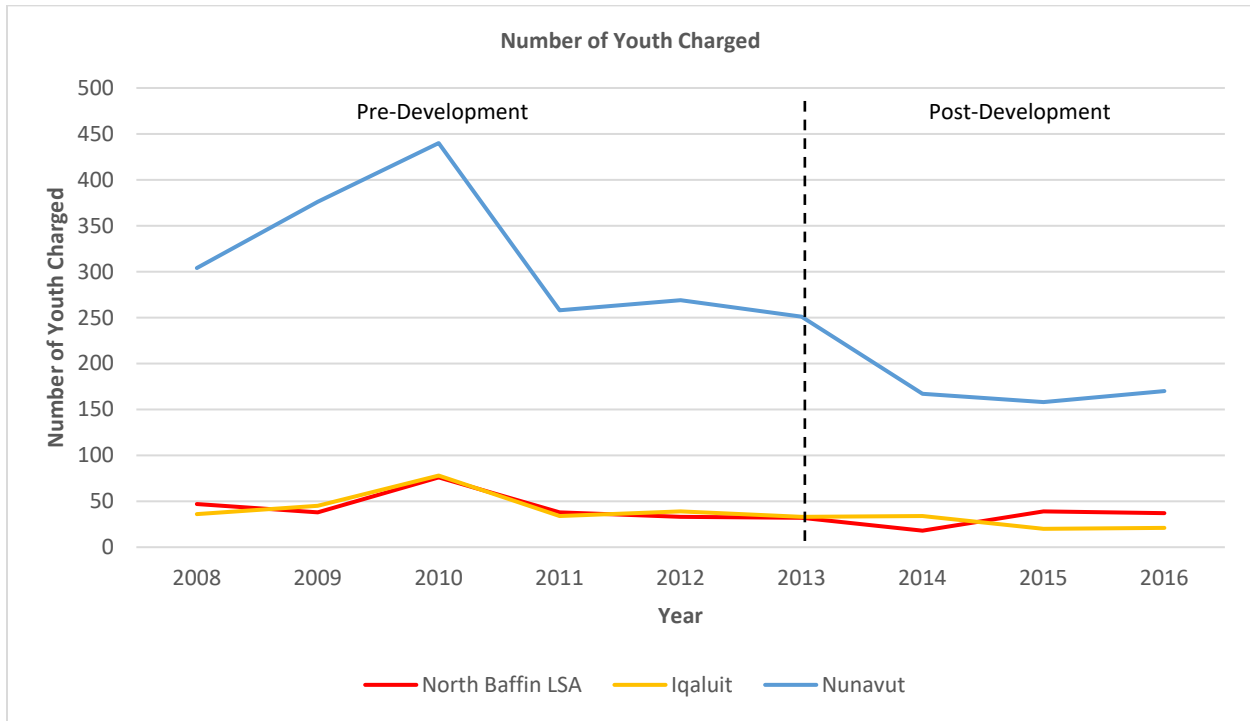
The FEIS predicted the Project would have a positive effect on parenting (particularly as it applies to well-being of children) in the LSA communities (e.g. from increased confidence and financial independence gained through employment, improved mental well-being from having a job and income). The FEIS also predicted the Project could have some negative effects on parenting, but these would be of a non-significant nature. To help mitigate potential adverse effects from fly-in/fly-out employment, Baffinland has provided a predictable rotational schedule, meaningful local employment and incomes, job readiness training for LSA residents considering employment at the Project (e.g. to familiarize workers and their families with the fly-in/fly-out lifestyle), has implemented an EFAP for permanent employees and their dependents, and contributes to the INPK fund through the IIBA negotiated with QIA (which provides up to \$750,000/year for projects in the Qikiqtaaluk Region which enhance community wellness).

7.1.2 Indicator Data

Number of Youth Charged

The number of youth charged is a useful indicator of parenting performance in the LSA communities. This is because children with stable homes and effective parents can be expected to have fewer encounters with the law. 2016 was the most recent year data on the number of youth charged were available from Statistics Canada (2017a). In the North Baffin LSA in 2016, Igloodik had the highest number of youth charged (20), while Clyde River had the fewest (0). The average number of youth charged in the North Baffin LSA communities in 2016 was 7.4. Iqaluit had 21 youth charged in 2016 and Nunavut had 170. Compared to the previous year (2015), there has been a decrease in the number youth charged in the North Baffin LSA communities (by 2) but increases in Iqaluit (by 1) and Nunavut (by 12). Compared to pre-development period averages, there have been decreasing trends in the average number of youth charged in the North Baffin LSA (from 46 to 32) and Iqaluit (from 46 to 27), and Nunavut (from 329 to 187) in the post-development period. Figure 7-1 displays the number of youth charged from 2008 to 2016.

Figure 7-1: Number of youth charged (2008 to 2016)



Source: Statistics Canada (2017a)

7.1.3 Analysis

While there have been decreasing trends in the number of youth charged in the North Baffin LSA and Iqaluit in the post-development period, these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. However, crime rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and youth crime rates, if any, may only come to light with the analysis of additional annual data. Regardless, there are positive indications the Project is contributing to the enhanced well-being of children, by providing LSA residents (and parents) with opportunities to obtain meaningful employment and incomes. These opportunities can help reduce the various family stresses and uncertainties associated with un- and under-employment. Baffinland has also implemented an EFAP for permanent employees and their dependents who may require family-related or other forms of personal assistance.

7.2 HOUSEHOLD INCOME AND FOOD SECURITY

7.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a positive effect on increased household income and food security (particularly as they apply to well-being of children) in the LSA. To help mitigate potential adverse effects, Baffinland has provided meaningful local employment and incomes, job readiness training for LSA residents considering employment at the Project (e.g. which has included a financial management module), and contributes to the INPK fund through the IIBA negotiated with the QIA.

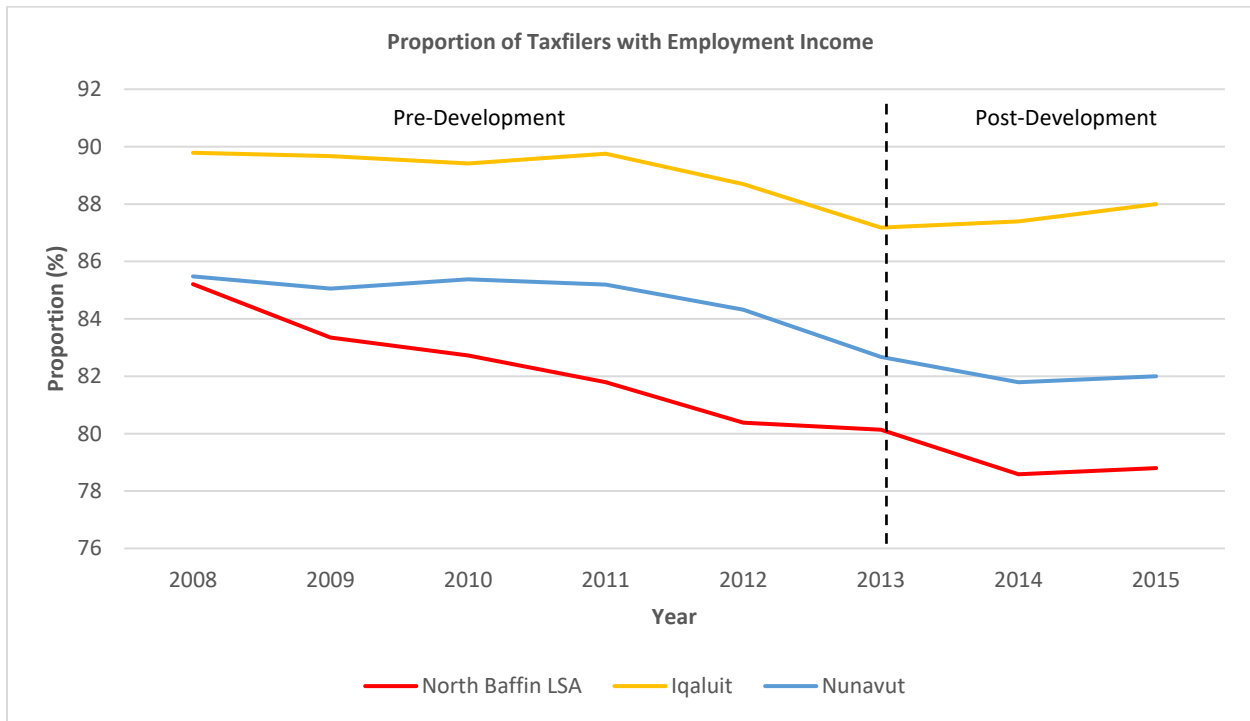
7.2.2 Indicator Data

Proportion of Taxfilers with Employment Income and Median Employment Income

Employment income indicators are useful for tracking household financial performance in the LSA communities. 2015 was the most recent year data on the proportion of taxfilers with employment income were available from the Nunavut Bureau of Statistics (2017d). In the North Baffin LSA in 2015, Arctic Bay had the highest proportion of taxfilers with employment income (82%), while Hall Beach had the lowest (76%). The proportion of taxfilers with employment income in Iqaluit in 2015 was 88%, which was higher than the North Baffin LSA community average (79%) and Nunavut average (82%). Compared to the previous year (2014), there has been no change in the average proportion of taxfilers with employment income in the North Baffin LSA (79%) and Nunavut (82%), while Iqaluit has seen an increase (by 1%). Compared to pre-development period averages, there have been decreasing trends in the average proportion of taxfilers with employment income in the North Baffin LSA (from 83% to 79%), Iqaluit (from 89% to 88%), and Nunavut (from 85% to 82%) in the post-development period. Figure 7-2 displays the proportion of taxfilers with employment income from 2008 to 2015.

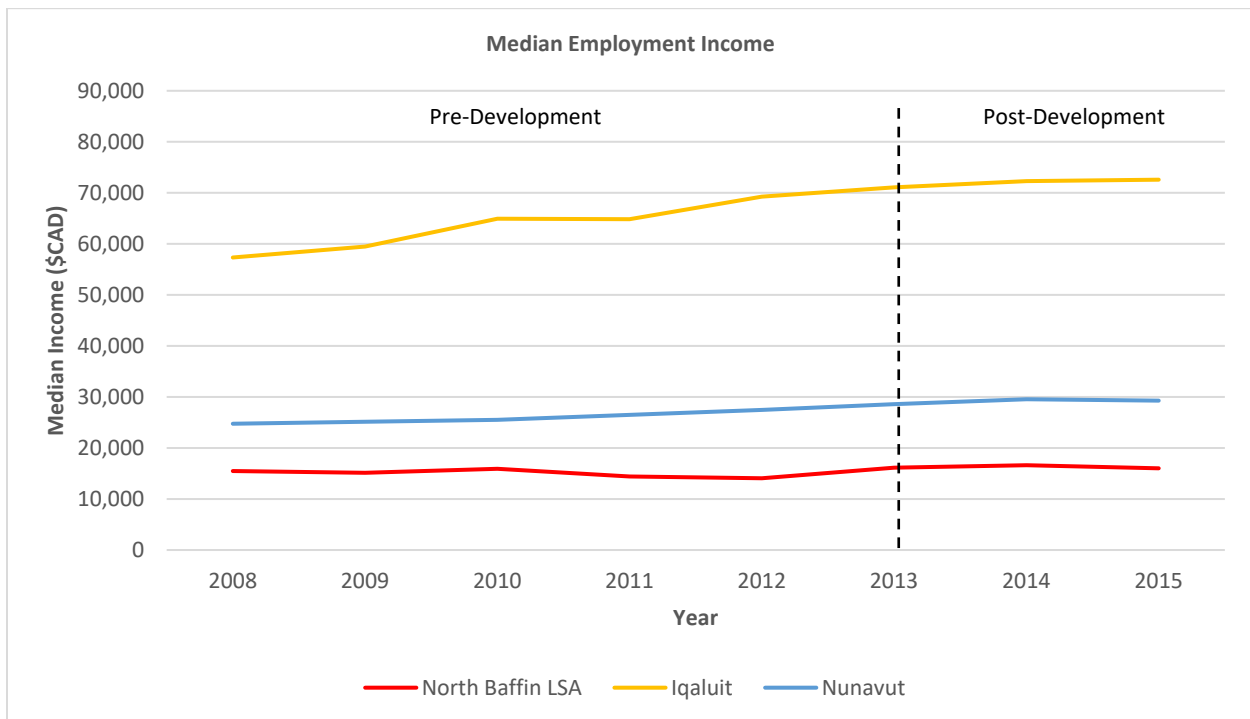
Likewise, 2015 was the most recent year data on median employment income were available from the Nunavut Bureau of Statistics (2017d). In the North Baffin LSA in 2015, Hall Beach had the highest median employment income (\$19,420), while Clyde River had the lowest (\$14,010). Iqaluit's median employment income in 2015 was \$72,580 and was significantly higher than the North Baffin LSA community average (\$15,998) and Nunavut average (\$29,270). Compared to the previous year (2014), there have been decreases in median employment income in the North Baffin LSA (by \$622) and Nunavut (by \$280), but an increase in Iqaluit (by \$270). Compared to pre-development period averages, there have been increasing trends in average median employment income in the North Baffin LSA (from \$15,007 to \$16,251), Iqaluit (from \$63,166 to \$71,990), and Nunavut (from \$25,876 to \$29,133) in the post-development period. Figure 7-3 displays median employment income by community and territory from 2008 to 2015.

Figure 7-2: Proportion of taxfilers with employment income (2008 to 2015)



Source: Nunavut Bureau of Statistics (2017d)

Figure 7-3: Median employment income (2008 to 2015)

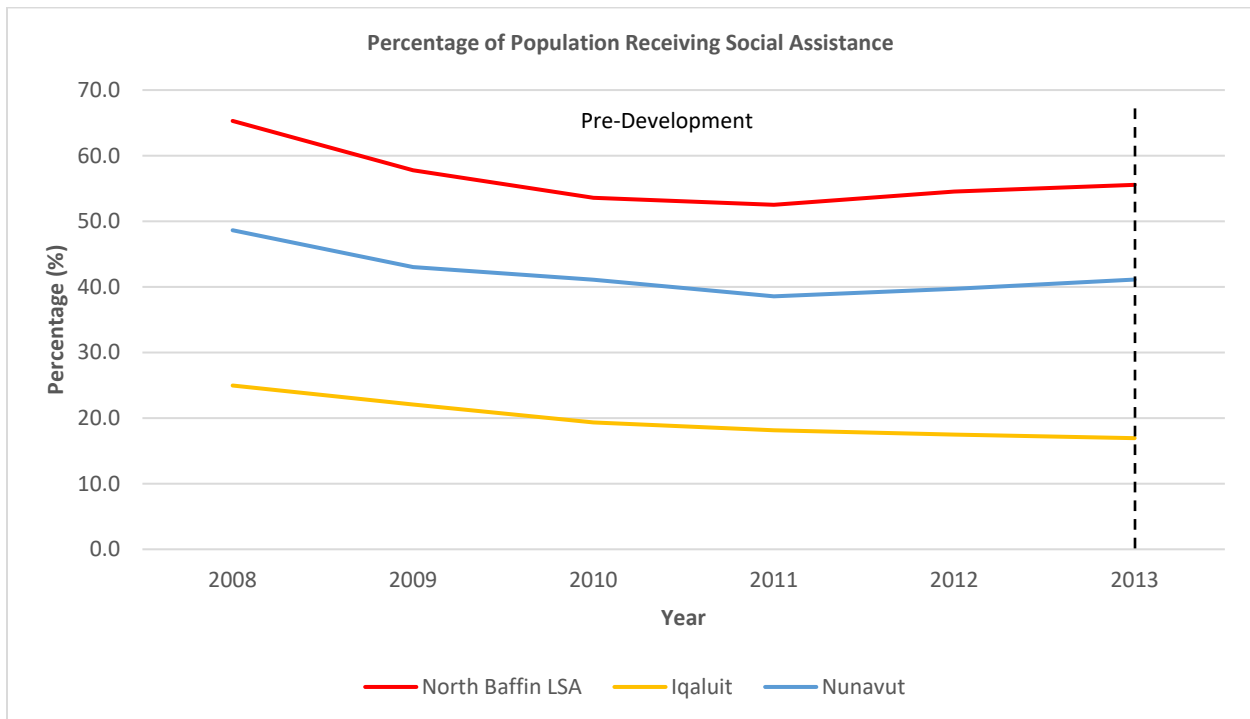


Source: Nunavut Bureau of Statistics (2017d)

Percentage of Population Receiving Social Assistance

The percentage of the population receiving social assistance is also a useful indicator of household financial performance. 2013 was the most recent year data on the percentage of social assistance recipients were available from the Nunavut Bureau of Statistics (2014). In the North Baffin LSA in 2013, Clyde River had the highest percentage of population receiving social assistance (65.3%), while Hall Beach had the lowest (44.6%). The percentage of individuals receiving social assistance in Iqaluit in 2013 was 16.9%, which was significantly lower than the North Baffin LSA community average (55.6%) and Nunavut average (41.1%). Compared to the previous year (2012), there has been an increase in the percentage of the population receiving social assistance in the North Baffin LSA (by 1.1%) and Nunavut (by 1.4%), but a decrease in Iqaluit (by 0.6%). Compared to pre-development period averages, there have been decreasing trends in the average percentage of the population receiving social assistance in the North Baffin LSA (from 56.7% to 55.6%), Iqaluit (from 20.4% to 16.9%), and Nunavut (from 42.2% to 41.1%) in the post-development period. Figure 7-4 displays the percentage of the population receiving social assistance from 2008 to 2013.

Figure 7-4: Percentage of population receiving social assistance (2008 to 2013)



Source: Nunavut Bureau of Statistics (2014)

7.2.3 Analysis

There have been decreasing trends in the proportion of taxfilers with employment income in the North Baffin LSA and Iqaluit in the post-development period. However, a decreasing trend was also noted prior to Project development in the North Baffin LSA. While Iqaluit went from no change (during the pre-development period) to a decreasing trend (during the post-development period), a comparable situation was also noted across Nunavut. This implies factors other than the Project are likely driving these trends.

While there have been increasing trends in median employment income in the North Baffin LSA and Iqaluit in the post-development period, these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends.

Similarly, while there have been decreasing trends in the percentage of the population receiving social assistance in the post-development period in the North Baffin LSA and Iqaluit these trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends.

As Project construction only began in 2013, there is minimal post-development data currently available. Employment income and social assistance rates can also be influenced by many socio-economic factors. Direct correlations between the Project and employment income and social assistance rates, if any, may only come to light with the analysis of additional annual data. There is currently no indication the FEIS prediction is not being met. In fact, there are positive indications the Project continues to improve household income and food security in the LSA. This has occurred by providing LSA residents with meaningful employment opportunities and through contributions to community wellness initiatives. Employment income facilitates the purchase of store bought food and other family goods, while also providing a means to participate in harvesting if desired. Some additional discussion on food security is provided in Section 10.1.

7.3 TRANSPORT OF SUBSTANCES THROUGH PROJECT SITES

7.3.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could increase availability of substances such as alcohol and illegal drugs in the North Baffin LSA due to their possible transportation through Project sites. Mitigation developed by Baffinland includes a no drugs/no alcohol policy on site and baggage searches for all employees and contractors arriving at site.

7.3.2 Indicator Data

Number of Drug and Alcohol Related Contraband Infractions at Project Sites

The number of drug and alcohol related contraband infractions at Project sites is a useful indicator of the degree to which the transport of substances may be occurring at the Project. Table 7-1 displays the total number of drug and alcohol related contraband infractions at Project sites from 2013 to 2017. This includes confiscated drugs, alcohol, or related paraphernalia. In 2017, 15 drug and alcohol-related contraband infractions occurred at Project sites amongst employees and contractors. This was 4 infractions higher than in 2016.

Table 7-1: Number of drug and alcohol related contraband infractions at Project sites (2013 to 2017)

Number of Drug and Alcohol Related Contraband Infractions at Project Sites	
Year	Total
2013	5
2014	12
2015	2
2016	11
2017	15

Source: Baffinland. 2013 records are for a partial year.

7.3.3 Analysis

While all contraband infractions are of concern and taken seriously by Baffinland, the infractions that occurred in 2017 represent only a small number of individuals from the Project workforce. All individuals who do not comply with Baffinland’s no drugs/no alcohol policy are immediately removed from site and disciplinary action (up to and including termination) is commenced. This management response supports Baffinland’s goal of ‘Safety First, Always’ while also preventing further transport of contraband substances through Project sites.

7.4 AFFORDABILITY OF SUBSTANCES / ATTITUDES TOWARD SUBSTANCES AND ADDICTIONS

7.4.1 Predicted Effect and Mitigation Measures

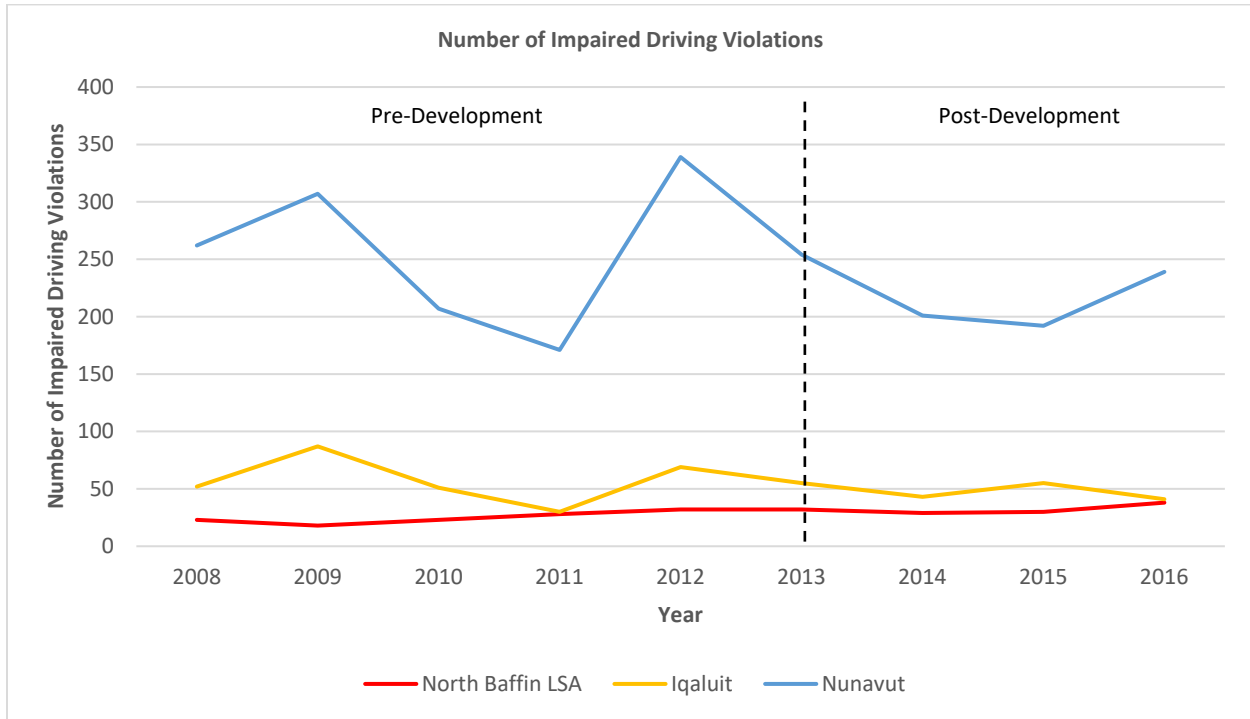
The FEIS predicted increased income from employment at the Project could increase the ability of LSA residents to afford substances such as alcohol and illegal drugs. However, the FEIS also predicted the Project could improve attitudes toward substances and addictions in the LSA (i.e. by providing positive incentives for individuals to reduce substance abuse). Mitigation developed by Baffinland includes a no drugs/no alcohol policy and baggage searches for all employees and contractors arriving at site. Baffinland has also implemented an EFAP for permanent employees and their dependents and contributes to the INPK community wellness fund through the IIBA negotiated with QIA.

7.4.2 Indicator Data

Number of Impaired Driving Violations

The number of impaired driving violations in the LSA provides some insight into whether rates of alcohol abuse are changing. 2016 was the most recent year data on the number of impaired driving violations were available from the Nunavut Bureau of Statistics (2017e). In the North Baffin LSA in 2016, Pond Inlet had the highest number of impaired driving violations (13), while Hall Beach had the fewest (2). The average number of impaired driving violations in the North Baffin LSA communities in 2016 was 7.6. Iqaluit had 41 impaired driving violations in 2016 and Nunavut had 239. Compared to the previous year (2015), there has been an increase in the total number of impaired driving violations in the North Baffin LSA communities (by 8) and Nunavut (by 47), and a decrease in Iqaluit (by 14). Compared to pre-development period averages, there has been an increasing trend in the average number of impaired driving violations in the North Baffin LSA (from 25 to 32) and decreasing trends in Iqaluit (from 58 to 49) and Nunavut (from 257 to 222) in the post-development period. Figure 7-5 displays the number of number of impaired driving violations from 2008 to 2016.

Figure 7-5: Number of impaired driving violations (2008 to 2016)

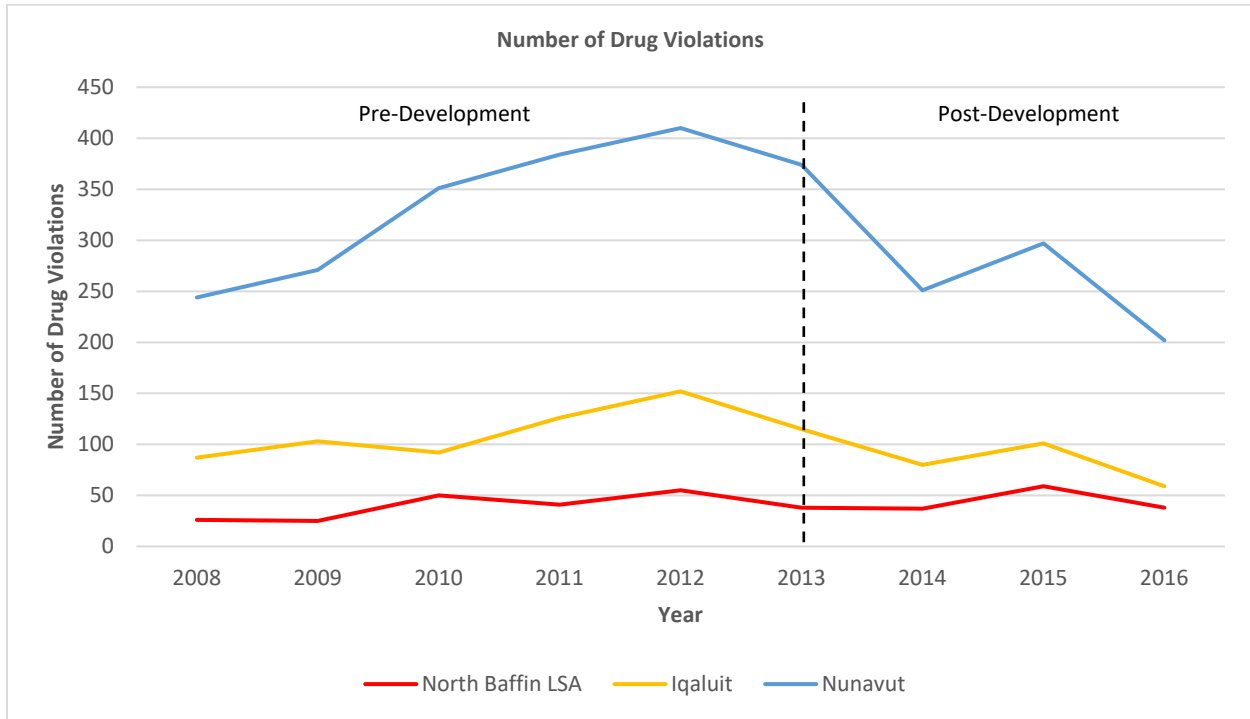


Source: Nunavut Bureau of Statistics (2017e)

Number of Drug Violations

The number of drug violations in the LSA provides some insight into whether rates of drug abuse are changing. 2016 was the most recent year data on the number of drug violations by community were available from the Nunavut Bureau of Statistics (2017e). In the North Baffin LSA in 2016, Igloolik had the highest number of drug violations (19), while Hall Beach had the fewest (2). The average number of drug violations in the North Baffin LSA communities in 2015 was 7.6. Iqaluit had 59 drug violations in 2016 and Nunavut had 202. Compared to the previous year (2015), there has been a decrease in the number of drug violations in the North Baffin LSA communities (by 21), Iqaluit (by 42), and Nunavut (by 95). Compared to pre-development period averages, there has been an increasing trend in the average number of drug violations in the North Baffin LSA (from 39 to 43) and decreasing trends in Iqaluit (from 112 to 89) and Nunavut (from 332 to 281) in the post-development period. Figure 7-6 displays the number of number of drug violations from 2008 to 2016.

Figure 7-6: Number of drug violations (2008 to 2016)



Source: Nunavut Bureau of Statistics (2017e)

7.4.3 Analysis

There has been an increasing trend in the number of impaired driving violations in the North Baffin LSA in the post-development period, which was also evident prior to Project development. Conversely, there has been a decreasing trend in Iqaluit in the post-development period, which was not evident prior to Project development (it was previously increasing). A comparable situation has been noted across Nunavut. Reasons for the lack of a similar trend reversal in the North Baffin LSA are currently unknown.

There has been an increasing trend in the number of drug violations in the North Baffin LSA in the post-development period, which was also evident prior to Project development. Conversely, there has been a decreasing trend in Iqaluit in the post-development period, which was not evident prior to Project development (it was previously increasing). A comparable situation has been noted across Nunavut. Reasons for the lack of a similar trend reversal in the North Baffin LSA are currently unknown.

As Project construction only began in 2013, there is minimal post-development data currently available. Drug and alcohol-related violations can also be influenced by many socio-economic factors. Direct correlations between the Project and drug and alcohol violations, if any, may only come to light with the analysis of additional annual data. However, there are positive indications the Project continues to improve attitudes toward substances and addictions in the LSA, by providing LSA residents with meaningful employment opportunities within a drug and alcohol-free environment. Baffinland also provides access to an EFAP for permanent employees and their dependents who may require assistance with drug and alcohol-related issues.

7.5 ABSENCE FROM THE COMMUNITY DURING WORK ROTATION

7.5.1 Predicted Effect and Mitigation Measures

The FEIS predicted the absence of workers from communities during their work rotations may lead to some moderate negative effects on community processes (e.g. local coaching, politics, and social organizations) in the LSA. However, it was also predicted that organizations and activities would be able to adapt and carry on their functions in light of these effects. Mitigation developed by Baffinland includes a short (two week in / two week out) rotation that allows employees to spend considerable time in their home communities. Baffinland also contributes to the INPK community wellness fund through its IIBA.

7.5.2 Indicator Data

Absence from the Community During Work Rotation

Appropriate community-level indicator data are currently unavailable for this topic. As such, this topic continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. General stakeholder comments on this topic were expressed during the 2017 QSEMC meeting in Arctic Bay. For example, some challenges were noted to arise for rotational workers with children and some turnover was noted to occur due to reasons including lack of childcare, homesickness, racism, and 12-hour shifts being too long. However, specific effects from worker absence on community processes were not noted (SEMCs 2017b). Some comments were also recorded about modifying the length of employment rotations during Baffinland's 2017 community engagement activities. Absence from the community does not appear to be an issue for at least some individuals:

Two weeks on/two weeks off rotation, I don't agree with because I would prefer to stay on site, if I'm able to stay there, or longer time. I don't want to go back and forth. [2017 IIBA Annual Project Review Forum Participant]

...instead of having two weeks off, to have one week off... right now it's two weeks on, two weeks off. But if – possible for you guys to consider two weeks on and then one week off, because when they've been working for two weeks and then come home for two weeks, that gives them time to get lazy to get back to work? [2017 IIBA Annual Project Review Forum Participant]

7.5.3 Analysis

The potential for negative effects to arise on community processes as a result of workers being absent during their work rotations is acknowledged. However, the Project's overall effect on this indicator, if any, remains unclear. Baffinland will continue to use a short rotation (i.e. two week in/two week out) so that workers are not required to be away from their communities for extended periods of time. Pre-employment training programs will also review strategies for successful rotational work with prospective employees, so they can come better prepared to deal with challenges that may arise. Furthermore, Baffinland's recently finalized IHRS notes the Company will consider adopting alternative rotation schedules that are better aligned with familial and community activities. The INPK fund that

Baffinland contributes to also continues to provide support to various community wellness initiatives across the Qikiqtaaluk Region that may assist in this regard. Based on available information, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

7.6 PREVALENCE OF GAMBLING ISSUES

7.6.1 Project Certificate Term or Condition

No specific prediction related to the prevalence of gambling issues was presented in the FEIS. However, Project Certificate term and condition no. 154 states:

The Proponent shall work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and others as deemed appropriate.

7.6.2 Indicator Data

Prevalence of Gambling Issues

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. Gambling issues are an acknowledged concern in the LSA and some stakeholders worry that Project incomes may encourage gambling activities. Some comments on this topic have also been made previously by Project stakeholders (e.g. JPCSL 2017). However, no comments related to the Project and the prevalence of gambling issues were recorded during Baffinland's 2017 community engagement activities or during the 2017 QSEMC meeting.

7.6.3 Analysis

Gambling issues remain a concern for some Project stakeholders. However, the Project's overall effect on this indicator, if any, remains unclear. Gambling is a complex issue that can be influenced by several factors and only a limited number of comments on this topic have been recorded through the QSEMC process and Baffinland's community engagement program. Appropriate statistical data is also currently unavailable. It should be noted that Baffinland continues to provide its permanent employees and their dependents with access to an EFAP and has established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees. Gambling-related or other forms of personal assistance can be obtained through these programs, as needed. Considering the available information and mitigation measures in place, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

7.7 PREVALENCE OF FAMILY VIOLENCE

7.7.1 Project Certificate Term or Condition

No specific prediction related to the prevalence of family violence was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

7.7.2 Indicator Data

Prevalence of Family Violence

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. No comments related to the Project and the prevalence of family violence were recorded during Baffinland's 2017 community engagement activities or during the 2017 QSEMC meeting. However, some data on this topic are available at the territorial level. Burczycka and Conroy (2017) note there were 924 incidents of police-reported family violence in Nunavut in 2015, which equates to a rate of 2,504 incidents per 100,000 population. This is substantially higher than the Canadian rate of 241 incidents per 100,000 population.

7.7.3 Analysis

Family violence remains a concern for some Project stakeholders. However, the Project's overall effect on this indicator, if any, remains unclear. Family violence is a complex issue that can be influenced by several factors and available statistical data is limited (at the territorial scale only). It should be noted that Baffinland continues to provide its permanent employees and their dependents with access to an EFAP and has established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees. Family-related and other forms of personal assistance can be obtained through these programs, as needed. Based on available information, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

7.8 PREVALENCE OF MARITAL PROBLEMS

7.8.1 Project Certificate Term or Condition

No specific prediction related to the prevalence of marital problems was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

7.8.2 Indicator Data

Prevalence of Marital Problems

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG.

Comments on this topic have previously been made by Project stakeholders (e.g. JPCSL 2017). In some cases, Project employment was believed to play a role in marital problems that had developed (e.g. infidelity and/or breakups initiated by the worker or individual at home). No comments related to the Project and the prevalence of marital problems were recorded at the 2017 QSEMC meeting. However, some comments on this topic were recorded during Baffinland’s 2017 community engagement activities:

...as grandmothers and mothers, we’re proud of our children when they go – when they are hired. They leave for a week or two. But sometimes they return early, come back early. But we heard that – why our spouse when they – why they don’t follow us when we go to work. It turned out that there was a problem with the couple. [2017 IIBA Annual Project Review Forum Participant]

So those kinds of problems – and QIL, if you have a spouse – a couple, let’s say, the other one worked for Baffinland, the other one for QIL, the one working for Baffinland... or they move them around. But QIL, if they’re a couple, will not move them. I don’t know if there’s a policy to separate the couple in the worksite. Yes, it really needs to be reviewed. [2017 IIBA Annual Project Review Forum Participant]

Federal Census data on marital status are also available (see Table 7-2). Between 2011 and 2016, for example, the percentage of individuals in the North Baffin LSA who were married or living common law decreased (from 53.9% to 53.3%), while those who were separated or divorced increased (from 2.8% to 3.7%). In Iqaluit, the percentage of individuals who were married or living common law increased (from 53.3% to 53.8%), while those who were separated or divorced decreased (from 5.9% to 5.4%). In Nunavut, the percentage of individuals who were married or living common law decreased (from 53.4% to 53.2%), while those who were separated or divorced remained the same (at 3.5%).

Table 7-2: Marital status of individuals 15 years and over (2011 and 2016)

Marital Status of Individuals 15 Years and Over				
Location	2011		2016	
	% Married or Living with a Common-Law Partner	% Separated or Divorced	% Married or Living with a Common-Law Partner	% Separated or Divorced
North Baffin LSA	53.9%	2.8%	53.3%	3.7%
Iqaluit	53.3%	5.9%	53.8%	5.4%
Nunavut	53.4%	3.5%	53.2%	3.5%
Canada	57.7%	8.6%	57.6%	8.6%

Source: Statistics Canada (2012a, b, c, d, e, f, g); Statistics Canada (2017c, d, e, f, g, h, i)

7.8.3 Analysis

Marital problems remain a concern for some Project stakeholders. However, the Project’s overall effect on this indicator, if any, remains unclear. Marital problems are a complex issue that can be influenced by several factors and only a limited number of comments on this topic have been recorded through the QSEMC process and Baffinland’s community engagement program. Available statistical data is also limited (for limited time periods only). While the percentage of individuals who are separated or divorced increased in the North Baffin LSA between 2011 and 2016, this percentage (conversely) decreased in Iqaluit over the same period for unknown reasons. The five-year data gap between federal

censuses also makes explaining these differences difficult. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and marital problems, if any, may only come to light with the analysis of additional data.

It should be noted that Baffinland continues to provide its permanent employees and their dependents with access to an EFAP and has established on-site Inuit Elder positions to provide counsel and support to all Inuit Project employees. Family-related or other forms of personal assistance can be obtained through these programs, as needed. Considering the available information and mitigation measures in place, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

7.9 RATES OF SEXUALLY TRANSMITTED INFECTIONS AND OTHER COMMUNICABLE DISEASES

7.9.1 Project Certificate Term or Condition

No specific prediction related to rates of sexually transmitted infections and other communicable diseases was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

7.9.2 Indicator Data

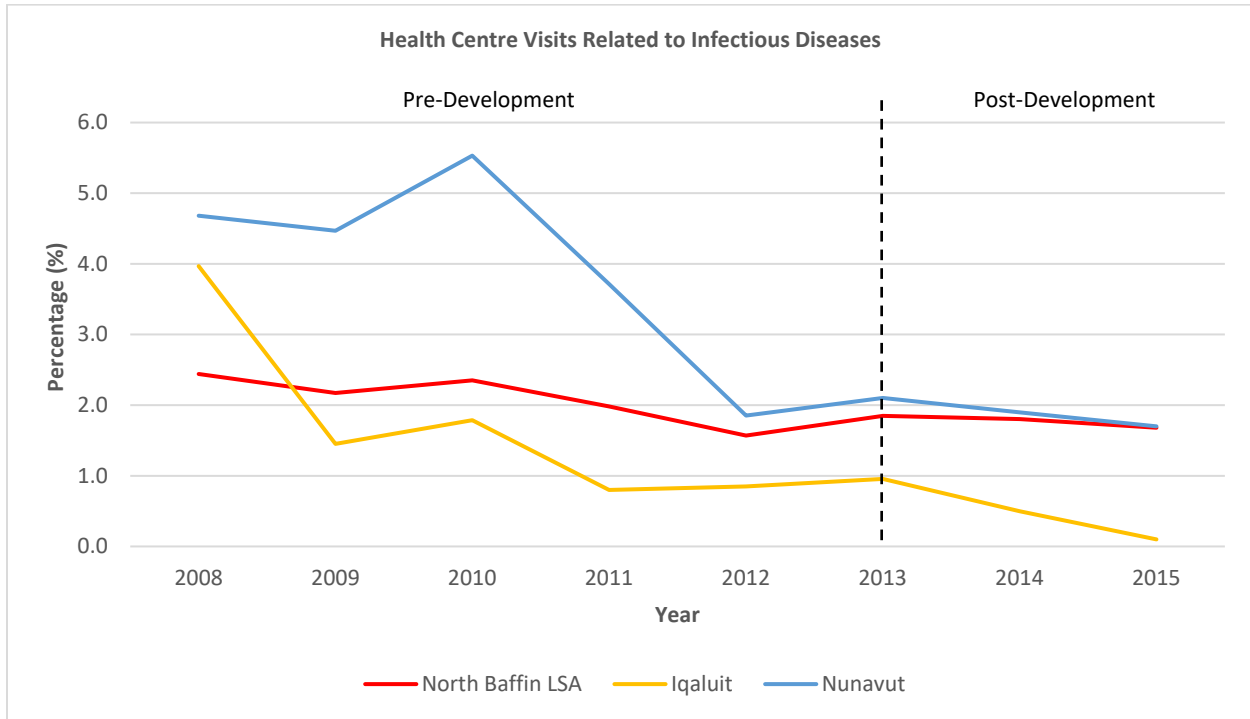
Percent of Health Centre Visits Related to Infectious Diseases

Data on community health centre visits can be used to identify whether health issues are increasing or decreasing in a community. Information on how the Project may affect rates of sexually transmitted infections and other communicable diseases in the LSA has been specifically requested in the Project Certificate. As such, data on the percentage of health centre visits by the diagnostic group 'infectious diseases' is a useful indicator to track.

2015 was the most recent year data on the percentage of health centre visits related to infectious diseases were available from the Nunavut Bureau of Statistics (2017f). In the North Baffin LSA in 2015, Igloolik had the highest percentage of health centre visits related to infectious diseases (2.2%), while Clyde River had the lowest (0.7%). The average percentage of health centre visits related to infectious diseases in the North Baffin LSA communities in 2015 was 1.7%. Iqaluit had 0.1% of health centre visits related to infectious diseases in 2015, while Nunavut had 1.7%.¹⁶ Compared to the previous year (2014), there was a decrease in the percentage of health centre visits related to infectious diseases in the North Baffin LSA communities (by 0.1%), Iqaluit (by 0.4%), and Nunavut (by 0.2%). Compared to pre-development period averages, there have been decreasing trends in the average percentage of health centre visits related to infectious diseases in the North Baffin LSA (from 2.1 to 1.8), Iqaluit (from 1.8 to 0.5), and Nunavut (from 4.0 to 1.9) in the post-development period. Figure 7-7 displays the percentage of health centre visits related to infectious diseases from 2008 to 2015.

¹⁶ The Nunavut Bureau of Statistics (2017f) notes that only visits to Iqaluit's community health centre are reported on, while visits to Iqaluit's hospital are not.

Figure 7-7: Percent of health centre visits related to infectious diseases (2008 to 2015)



Source: Nunavut Bureau of Statistics (2017f)

7.9.3 Analysis

While there have been decreasing trends in the percentage of health centre visits related to infectious diseases in the North Baffin LSA and Iqaluit in the post-development period, decreasing trends were also evident in the pre-development period. A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. However, infectious disease rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and infectious disease rates, if any, may only come to light with the analysis of additional annual data. However, it is worth noting the Project continues to provide all workers with regular access to a site medic, to whom they can confidentially visit with health-related (including sexual health) issues.

7.10 RATES OF TEENAGE PREGNANCY

7.10.1 Project Certificate Term or Condition

No specific prediction related to teenage pregnancy rates was presented in the FEIS. However, Project Certificate term and condition no. 154 requests this topic be monitored.

7.10.2 Indicator Data

Rates of Teenage Pregnancy

Appropriate community-level indicator data are currently unavailable for this topic. As such, this issue continues to be tracked through the QSEMC process and Baffinland's community engagement program. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. No comments related to the Project and teenage pregnancy rates were recorded during Baffinland's 2017 community engagement program or during the 2017 QSEMC.

However, some data on this topic are available at the territorial level. Statistics Canada (2017j) notes 17.6% of all Nunavut live births in 2014 (the most recent year data were available) were to mothers under the age of 20. By comparison, only 2.8% of all Canadian live births in 2014 were to mothers under the age of 20. Boulet and Badets (2017) provide additional information on the topic of early motherhood (i.e. having become a mother before the age of 20) among Inuit, off-reserve First Nations, and Métis women, derived primarily from the 2012 Aboriginal Peoples Survey. Boulet and Badets (2017: 2) note:

"...taking care of a child as a teenager may represent a challenge given the responsibilities associated with motherhood, which can hinder a young woman's progress towards earning a high school diploma and possibly pursuing postsecondary education... among women aged 18 to 44 years, 38% of Inuit women...dropped out of high school due to pregnancy or to take care of a child. Given their lower education level, these young women may be at greater risk for unemployment or dependence on social assistance."

Boulet and Badets (2017) also note 45% of Inuit women, 28% of First Nations women living off reserve, and 20% of Métis women (aged 20 to 44), became mothers before the age of 20; this compared to 6% of non-Indigenous women in the same age group. Likewise, Indigenous early mothers were less likely to have a high school diploma; among Inuit women, 40% of those who became mothers in their teenage years had a high school diploma, compared with 59% of Inuit women who had children later in life (Boulet and Badets 2017).

7.10.3 Analysis

Teenage pregnancy remains a concern for some Project stakeholders. However, the Project's overall effect on this indicator, if any, remains unclear. Teenage pregnancy is a complex issue that can be influenced by several factors and available statistical data is limited (at the territorial scale, for the entire Inuit population, and/or for limited time periods only). Based on available information, the Project does not currently appear to be a significant contributor to this issue. However, this topic will continue to be monitored for emerging trends.

7.11 CRIME

7.11.1 Project Certificate Term or Condition

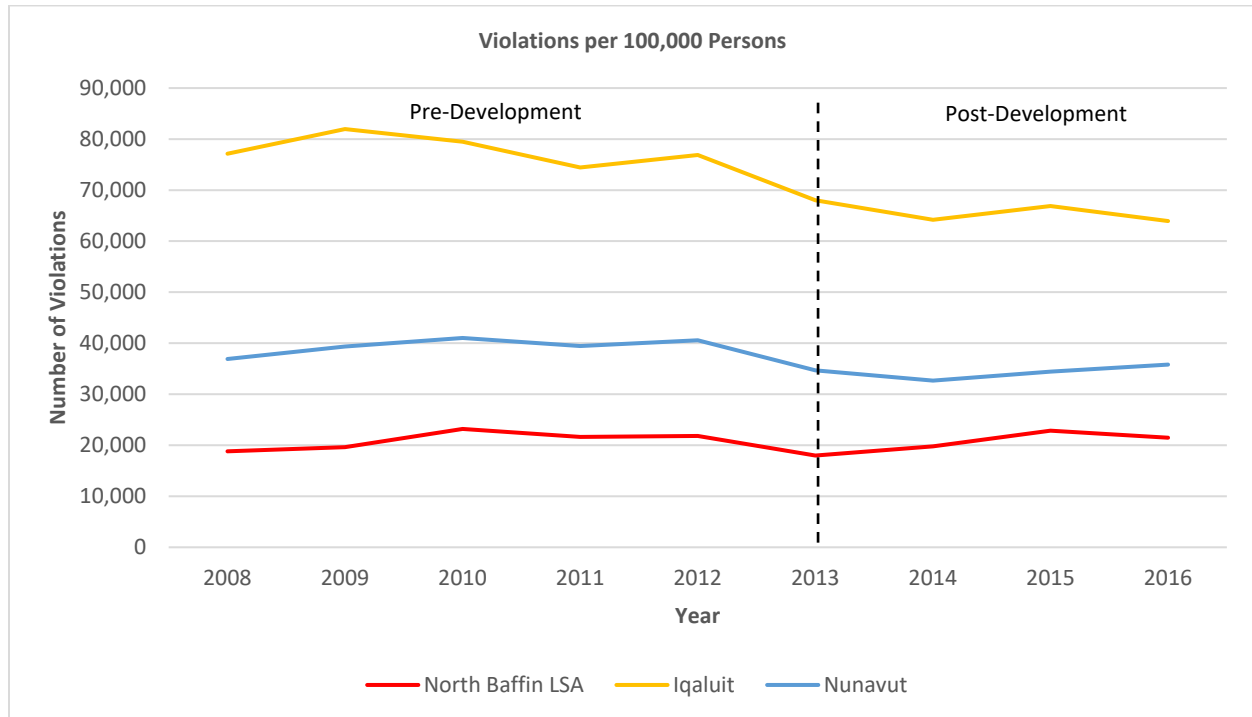
No specific prediction related to crime was presented in the FEIS. However, Project Certificate term and condition no. 154 states other indicators should be monitored "as deemed appropriate". Members of the SEMWG have requested community crime rate data be included in Baffinland's socio-economic monitoring program.

7.11.2 Indicator Data

Crime Rate

Data on community crime rates are useful for providing an indication of whether crime is increasing or decreasing. 2016 was the most recent year crime rate data were available from the Nunavut Bureau of Statistics (2017g). In the North Baffin LSA in 2016, Pond Inlet had the highest number of violations per 100,000 persons (27,841), while Hall Beach had the fewest (8,787). Iqaluit had 63,939 violations per 100,000 persons in 2016, which was significantly higher than the North Baffin LSA community average (21,462) and for Nunavut (35,791). Compared to the previous year (2015), there was a decrease in the number of violations per 100,000 persons in the North Baffin LSA communities (by 1,385) and Iqaluit (by 2,933), but an increase in Nunavut (by 1,350). Compared to pre-development period averages, there have been decreasing trends in average crime rates in the North Baffin LSA (from 21,016 to 20,516), Iqaluit (from 77,983 to 65,750), and Nunavut (from 39,459 to 34,391) in the post-development period. Figure 7-8 displays the number of violations per 100,000 persons from 2008 to 2016.

Figure 7-8: Number of violations per 100,000 persons (2008 to 2016)



Source: Nunavut Bureau of Statistics (2017g)

7.11.3 Analysis

There have been decreasing trends in crime rates in the North Baffin LSA and Iqaluit in the post-development period which were not evident in the pre-development period (they were previously increasing). A comparable situation has been noted across Nunavut, which implies factors other than the Project are likely driving these trends. However, crime rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data

currently available. Correlations between the Project and crime rates, if any, may only come to light with the analysis of additional annual data.

7.12 EMPLOYEE AND FAMILY ASSISTANCE PROGRAM

7.12.1 Project Certificate Term or Condition

No specific prediction related to the Employee and Family Assistance Program (EFAP) was presented in the FEIS. However, Project Certificate term and condition no. 154 states other indicators should be monitored “as deemed appropriate”. Members of the SEMWG have requested data on the number of times Baffinland’s EFAP is accessed annually be included in Baffinland’s socio-economic monitoring program.

7.12.2 Indicator Data

Number of Times Baffinland’s EFAP is Accessed

Baffinland’s benefit plan includes an EFAP, which offers all permanent employees and their dependents professional short-term counselling on an as-needed basis. Baffinland implemented its EFAP in 2015. The EFAP provider, Homewood Health Solutions (Homewood), provides access to a network of certified professionals who deliver personal and mental health and financial wellness programs. The EFAP is a free and confidential program. Homewood offers counselling and support related to a wide variety of health programs such as depression, addictions, family, and work-life balance. The EFAP provides both telephone and online services.

In 2017 there were a total of 38 EFAP cases, whose distribution in Canada is summarized in Table 7-3. This is 20 cases more than in 2016. As shown in Table 7-3, employees and their families who reside in Nunavut accounted for 31.6% of annual EFAP use in 2017.

Table 7-3: Number of times Baffinland’s EFAP is accessed annually (2015 to 2017)

Number of Times Baffinland’s Employee and Family Assistance Program (EFAP) is Accessed Annually			
Year	Nunavut	Other Locations	Total
2015	7	12	19
2016	10	8	18
2017	12	26	38

Source: Baffinland

Notes: Records are only available from 2015 onwards

7.12.3 Analysis

The EFAP continues to provide services to Baffinland’s permanent employees and their dependents on an as-needed basis. The number of times Baffinland’s EFAP was accessed were similar in 2015 and 2016 but grew in 2017. Likewise, employees and their families who reside in Nunavut have remained important users of the EFAP throughout this time. On-site Inuit Elders are also available for all Inuit Project employees to meet with and all employees have regular access to an on-site Project medic. This topic will continue to be monitored for emerging trends.

8. COMMUNITY INFRASTRUCTURE AND PUBLIC SERVICES

Two residual effects for the VSEC Community Infrastructure and Public Services were assessed in the FEIS. These include competition for skilled workers and labour force capacity. These are reviewed more fully below, in addition to information on two other topics requested through the Project Certificate.

8.1 COMPETITION FOR SKILLED WORKERS

8.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could negatively affect the ability of hamlets to maintain their staff in the short-term, due to increased competition for skilled workers created because of the Project. Mitigation developed by Baffinland includes the provision of ongoing skills training to local residents, combined with work experience generated by the Project. These measures are expected to increase the pool of skilled workers in the local labour force in the medium- to long-term and negate any short-term, negative Project effects.

8.1.2 Indicator Data

Number of Project Employees and Contractors Who Left Positions in their Community

Results from the 2018 Inuit Employee Survey presented in Section 4.4 indicate 22 individuals (or 31.4% of known survey responses) resigned from a previous job in order to take up employment with the Project. Of these individuals, 7 were casual/part-time positions and 15 were full-time positions.

8.1.3 Analysis

Some Project employees and contractors have left positions in their communities to pursue employment at the Project. However, some of the community positions departed were of a casual/part-time nature, rather than full-time, permanent employment. At least some of the positions departed were likely also in communities outside the North Baffin LSA; for example, 5 of the 22 individuals in the 2018 Inuit Employee Survey who resigned from a previous job in order to take up employment with the Project listed their current community of residence as being outside of the North Baffin LSA. Community engagement conducted by Baffinland also continues to indicate a high demand for employment opportunities exists in the LSA. The recent *Mary River Experience – The First Three Years* report (i.e. BDSI 2016) provides some additional insight into this topic. For example, the report notes:

“...the potential that the Mary River Project may draw employees away from other local employers seems evident.” [Page 37]

However, the report describes the lack of full-time hamlet work (and other job opportunities) in many communities and important role the Project plays in filling this gap:

“One current Mary River employee spoke about how permanent employment in the community seemed to be out of reach. As more and more people gained drivers’ licenses the practice of sharing hamlet work around a pool of people was leading to slimmer and slimmer employment duration.” [Page 35]

“There are no jobs in the hamlets... and if you do get a job it’s part-time, its casual, you can’t get social assistance... and you may get very little work... you might get 40 hours this week and next week you’ll only get 5 hours.” [Key Person Interviewed, Page 35]

“For some, the advantage of Mary River is that it offers jobs that simply are not available in the small, local economies of North Baffin LSA communities.” [Page 37]

Ongoing training and experience generated by the Project, in addition to regular employee turnover (see Section 8.2), is expected to continue increasing the pool of skilled workers in the local labour force and negate any short-term, negative Project effects. However, this topic will continue to be monitored for emerging trends.

8.2 LABOUR FORCE CAPACITY

8.2.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could positively affect the ability of hamlets to maintain their staff in the medium- to long-term, due to increased labour force capacity created because of the Project. Mitigation developed by Baffinland includes the provision of ongoing skills training to local residents, combined with work experience generated by the Project. Together, these are expected to increase the overall pool of skilled workers in the local labour force from which hamlets (and other local and regional organizations) can draw upon.

8.2.2 Indicator Data

Training and Experience Generated by the Project

As noted in Sections 4 and 5, the Project continues to generate substantial training and experience opportunities for its employees. Since 2013, the Project has cumulatively generated 122,950 hours of training for employees (this does not include any additional training provided directly by Project contractors). 15,867 of these hours (or 12.9%) were completed by Inuit employees. Likewise, 8,837,636 hours of Project labour (and on-the-job experience) have been cumulatively performed in Nunavut since 2013. 1,483,359 of these hours (or 16.8%) were performed by Inuit employees and contractors.

Inuit Employee Turnover

As noted in Section 5.3, employee turnover continues to occur at the Project. While high rates of employee turnover are undesirable in most workplaces, some degree of turnover is expected and considered normal. In 2017, there were 42 Inuit employee departures (not including contractors) at the Project. This is equivalent to a 45% Inuit employee turnover rate.

8.2.4 Analysis

The Project continues to generate substantial training and experience opportunities for its employees. Employee turnover also continues to occur at the Project, which ensures at least some previous Project employees become available for employment elsewhere. Together, this helps increase the overall pool of skilled workers in the local labour force from which hamlets (and other local and regional organizations) can draw upon.

8.3 PRESSURES ON EXISTING HEALTH AND SOCIAL SERVICES PROVIDED BY THE GN THAT MAY BE IMPACTED BY PROJECT-RELATED IN-MIGRATION OF EMPLOYEES

8.3.1 Project Certificate Term or Condition

No specific prediction related to pressures on existing health and social services provided by the GN that may be impacted by Project-related in-migration of employees was presented in the FEIS. However, Project Certificate term and condition no. 158 states:

The Proponent is encouraged to work with the Government of Nunavut and other parties as deemed relevant in order to develop a Human Health Working Group which addresses and establishes monitoring functions relating to pressures upon existing services and costs to the health and social services provided by the Government of Nunavut as such may be impacted by Project-related in-migration of employees, to both the North Baffin region in general, and to the City of Iqaluit in particular.

8.3.2 Indicator Data

Number of Health Centre Visits (Total and Per Capita)

Health centre utilization data can be used to track changes to demands placed on community health services. 2015 was the most recent year data on the number of health centre visits was available from the Nunavut Bureau of Statistics (2017f). In the North Baffin LSA in 2015, Pond Inlet had the highest number of health centre visits (15,518), while Hall Beach had the fewest (6,016). The total number of health centre visits in the North Baffin LSA in 2015 was 59,027. Iqaluit had 16,233 health centre visits in 2015 and Nunavut had 241,082.¹⁶ Compared to the previous year (2014), the number of health centre visits have decreased in the North Baffin LSA (by 4,864), Iqaluit (by 3,561), and Nunavut (by 11,932). Compared to pre-development period averages, there have been increasing trends in the average number of health centre visits in the North Baffin LSA (from 46,264 to 61,083), Iqaluit (from 13,020 to 17,184), and Nunavut (from 193,066 to 244,215) in the post-development period. Figure 8-1 displays the number of health centre visits from 2008 to 2015.

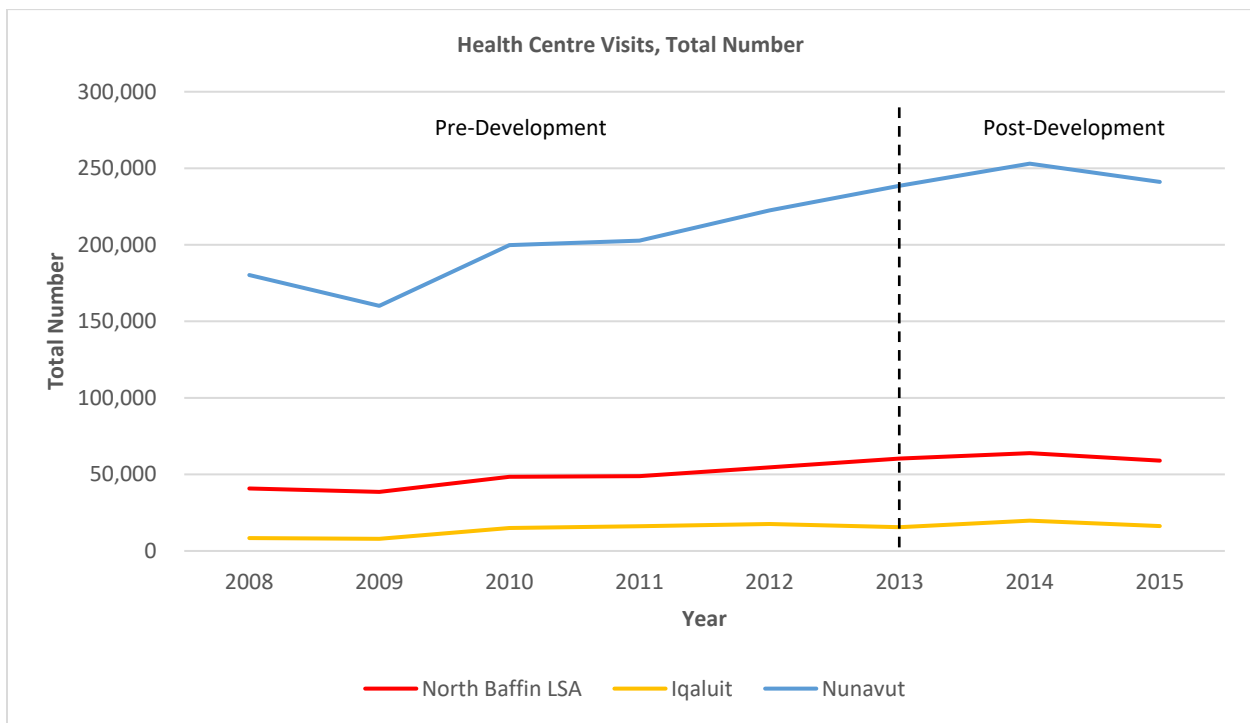
2015 was also the most recent year data on per capita number of health centre visits were available from the Nunavut Bureau of Statistics (2017f). In the North Baffin LSA in 2015, Clyde River had the highest number of per capita health centre visits (13.2), while Hall Beach had the fewest (6.4). The average number of per capita health centre visits in the North Baffin LSA in 2015 was 9.4. Iqaluit had 2.2 per capita health centre visits in 2015 and Nunavut had 6.6.¹⁶ Compared to the previous year (2014), the per capita number of health centre visits have decreased in the North Baffin LSA (by 0.8), Iqaluit (by 0.5), and Nunavut (by 0.4). Compared to pre-development period averages, there have been increasing trends in the average per capita number of health centre visits in the North Baffin LSA (from 8.2 to 9.9),

Iqaluit (from 1.9 to 2.4), and Nunavut (from 5.8 to 6.8) in the post-development period. Figure 8-2 displays the per capita number of health centre visits from 2008 to 2015.

Number of Visits to Project Site Medic

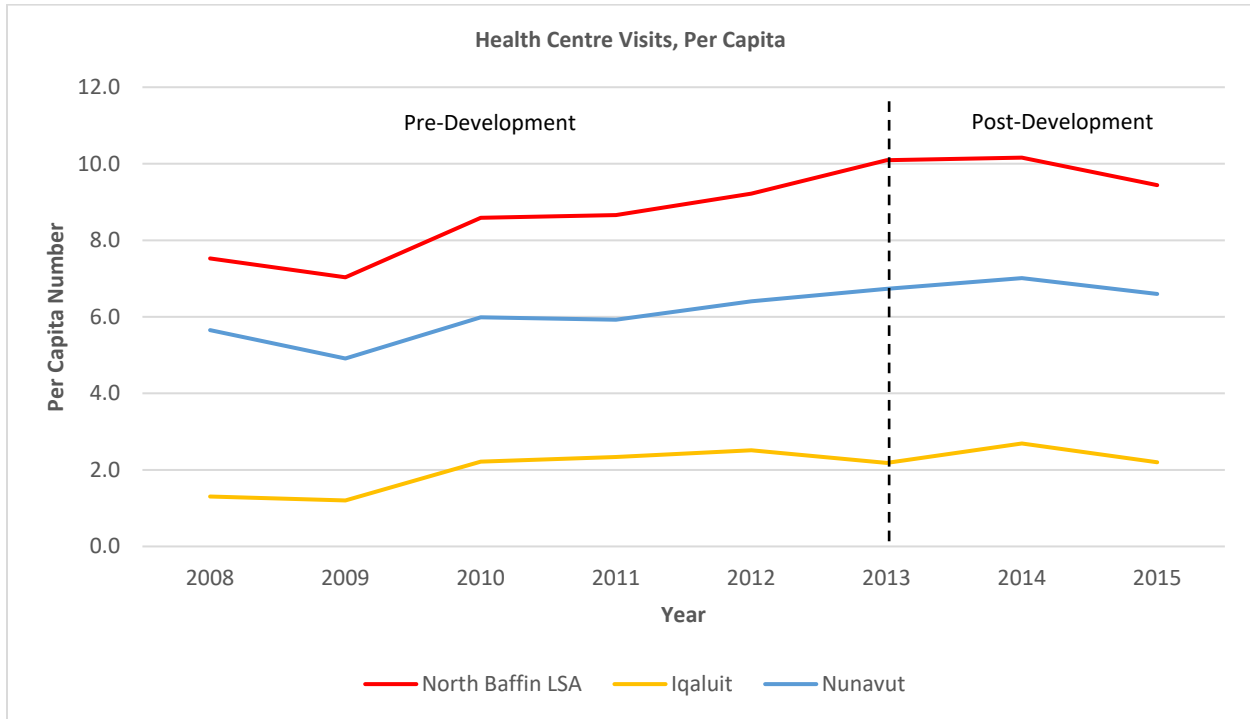
Baffinland provides all employees with regular access to an on-site Project medic. The number of annual Project site medic visits can be used to track demands placed on Project-related health care services. This data also provides insight into the role played by the Project in reducing demands placed on local health care services. In 2017, there were 6,337 recorded visits to the Project site medic, an increase of 2,325 visits from 2016. Table 8-1 displays the number of recorded visits to the Project site medic from 2013 to 2017.

Figure 8-1: Number of health centre visits (2008 to 2015)



Source: Nunavut Bureau of Statistics (2017f)

Figure 8-2: Per capita number of health centre visits (2008 to 2015)



Source: Nunavut Bureau of Statistics (2017f)

Table 8-1: Number of visits to Project site medic (2013 to 2017)

Number of Visits to Project Site Medic					
Ethnicity	2013	2014	2015	2016	2017
Inuit	342	1,158	845	801	1,193
Non-Inuit	870	2,125	2,580	3,211	5,144
Total	1,212	3,283	3,425	4,012	6,337

Source: Baffinland

8.3.3 Analysis

While there have been increasing trends in the number of total and per capita health centre visits in the North Baffin LSA and Iqaluit in the post-development period, these trends were also evident in the pre-development period. An increasing trend has also been noted throughout Nunavut in the post-development period, which implies a longer-term and/or territory-wide trend is likely occurring rather than a Project-induced one.

However, health centre utilization rates can be influenced by many socio-economic factors. As Project construction only began in 2013, there is minimal post-development data currently available. Correlations between the Project and health centre utilization, if any, may only come to light with the analysis of additional annual data. Related information on the percentage of the population receiving social assistance can be found in Section 7.2.

One of the primary ways the Project could negatively influence health and social service provision in the North Baffin LSA – in-migration of workers – has been shown (in Section 3.2) not to be occurring in any

significant manner. In fact, the Project may be having a positive effect on LSA health service provision, by providing employees with regular access to an on-site Project medic. Baffinland's benefit plan also includes an EFAP which offers all permanent employees and their dependents professional short-term counselling on an as-needed basis. On-site Inuit Elders are also available for the Project's Inuit employees to meet with. This access allows LSA employees to have at least some of their health needs addressed on-site, thereby reducing demands placed on local health care providers.

Baffinland continues to work with the SEMWG and QSEMC on socio-economic monitoring initiatives; the GN actively participates in both these groups. A Memorandum of Understanding (MOU) was also signed with the GN Department of Health in November 2013 and updated in 2017 regarding site health services and medevac procedures. More specifically, this MOU describes the health care staff and services Baffinland will provide on-site, including procedures Baffinland will follow during medevac situations, for pre-employment medical examinations, and for the reporting and management of communicable diseases, amongst other topics. The MOU also describes how Baffinland will pay for and/or reimburse the GN Department of Health for costs associated with the medical transportation of employees and for conducting pre-employment medical exams.

8.4 PROJECT-RELATED PRESSURES ON COMMUNITY INFRASTRUCTURE

8.4.1 Project Certificate Term or Condition

No specific prediction related to Project-related pressures on community infrastructure was presented in the FEIS. However, Project Certificate term and condition no. 159 states:

The Proponent is encouraged to work with the Government of Nunavut to develop an effects monitoring program that captures increased Project-related pressures to community infrastructure in the Local Study Area communities, and to airport infrastructure in all point-of-hire communities and in Iqaluit.

8.4.2 Indicator Data

Baffinland Use of LSA Community Infrastructure

Baffinland continued to utilize some community infrastructure in the LSA to support ongoing Project operations in 2017. This included:

- Full-time rental of five offices for Baffinland Community Liaison Officers (BCLOs) in the North Baffin communities of Arctic Bay, Clyde River, Hall Beach, Igloolik, and Pond Inlet, and one office for Baffinland's Northern Affairs team in Iqaluit
- Short-term use of meeting rooms and other local services for events held in various LSA communities. Examples include:
 - January 2017 – Procurement and contracting workshop (Iqaluit and Pond Inlet)
 - March-April 2017 – Career information tour (North Baffin LSA communities)
 - April 2017 – Baffinland attended the Nunavut Mining Symposium (Iqaluit)
 - May 2017 – Community tour to discuss the Phase 2 Proposal (North Baffin LSA communities)

- May 2017 – Baffinland attended the IIBA Annual Project Review Forum. This was jointly held by Baffinland and QIA and attended by representatives from the North Baffin LSA communities (Arctic Bay).
- June 2017 – Shipping and marine monitoring workshop with the Mittimatalik Hunters and Trappers Organization, QIA, and local and territorial politicians (Pond Inlet)
- July 2017 – Baffinland met with the QSEMC to discuss regional and Project-specific socio-economic monitoring programs (Arctic Bay)
- August 2017 – Recruitment tour by Baffinland and Horizon North (the Phase 2 Proposal camp construction and services contractor). Horizon North introduced themselves to the communities and collected resumes for potential employment at the Project (North Baffin LSA communities).
- September 2017 – Community tour to discuss Baffinland’s employment and training initiatives, with an objective of attracting more Inuit employees to Baffinland’s workforce (North Baffin LSA communities)
- September 2017 – Baffinland met with local officials to discuss Baffinland’s proposed amendment to the North Baffin Regional Land Use Plan (Pond Inlet)
- September 2017 – Baffinland met with local officials about ice management and Project shipping (Pond Inlet)
- September 2017 – Baffinland attended the Nunavut Trade Show and Conference (Iqaluit)
- September 2017 – Baffinland attended the Territorial Socio-Economic Monitoring Workshop hosted by the Government of Nunavut (Iqaluit)
- October 2017 – Joint QIA/Baffinland Community Liaison Officer training (Iqaluit)
- November 2017 – Freshwater workshop (Iqaluit)
- November 2017 – Meetings with the Mittimatalik Hunters and Trappers Organization to discuss 2017 summer monitoring programs (Pond Inlet)
- November 2017 – Environmental working group meetings (Iqaluit)
- December 2017 – Baffinland participated in the Nunavut Planning Commission hearing on the Phase 2 Proposal (Pond Inlet)

Additional details on stakeholder meetings and activities Baffinland participated in can be found in the company’s Annual Report to the NIRB.

Number of Project Aircraft Movements at LSA Community Airports

To support the movement of workers, freight, and other materials to/from the Project, Baffinland is required to utilize community airport infrastructure in the LSA. This is due to the remote location of the Project and lack of viable alternative transportation methods (aside from seasonal marine re-supply). In 2017, there were 1,628 Project aircraft movements at LSA community airports, which is 374 more aircraft movements than in 2016.¹⁷ This includes fixed-wing aircraft (e.g. passenger, cargo, and ‘combi’ type) and rotary-wing aircraft (e.g. helicopters used for site activities). Table 8-2 provides information on the number of Project aircraft movements at LSA community airports from 2014 to 2017.

¹⁷ An aircraft movement is defined as a takeoff or landing at an airport. For example, one aircraft arrival and one departure is counted as two movements.

Table 8-2: Number of Project aircraft movements at LSA community airports (2014 to 2017)

Number of Project Aircraft Movements at LSA Community Airports				
Community	2014	2015	2016	2017
Arctic Bay	122	126	120	138
Clyde River	114	112	112	144
Hall Beach	130	122	122	152
Igloolik	118	106	114	122
Pond Inlet	212	136	134	162
Iqaluit	876	708	652	910
Total	1,572	1,310	1,254	1,628

Source: Baffinland

Notes: Records are available from 2014 onwards. 2014-2016 records are for fixed-wing aircraft movements only. 2017 records are for fixed-wing and rotary-wing aircraft.

8.4.3 Analysis

Like previous years, Baffinland continued to use some LSA community infrastructure to support ongoing Project operations in 2017. This use is small in comparison to other ongoing community uses and adds only minimal incremental pressure on LSA facilities. For example, Baffinland’s rental of office spaces in the LSA is generally limited to small facilities (i.e. to support individual BCLOs and Northern Affairs staff), and the use of local meeting rooms and accommodations is often intermittent and short-term in nature (e.g. community meetings only occur a limited number of times per year). Furthermore, the use of these spaces can be considered a positive economic contribution of the Project to local economies (e.g. through payments of rental fees, purchase of related goods and services).

LSA community airports also regularly accommodate various non-Project passenger, cargo, and other aircraft (both scheduled and charter). Project-related aircraft movements add only minimal incremental pressure on these facilities. In 2016 (the most recent year data were available) there were a total of 22,157 aircraft movements in the LSA. This includes 5,518 aircraft movements at North Baffin LSA airports (Statistics Canada 2017k) and 16,639 aircraft movements at the Iqaluit airport (Statistics Canada 2017l).¹⁸ Project-related aircraft movements at community airports in the LSA in 2016 represent only a small portion (5.7%) of this total.

¹⁸ In 2016, the number of aircraft movements at the Clyde River airport were unavailable. 2015 aircraft movements at the Clyde River airport were used to estimate 2016 aircraft movements instead.

9. RESOURCES AND LAND USE

Several residual effects for the VSEC Resources and Land Use were assessed in the FEIS. To help address these a discussion on two indicators (number of recorded land use visitor person-days at Project sites and number of Wildlife Compensation Fund Claims) is provided below. Project harvesting interactions and food security are further discussed in Section 10.1. Other related effects continue to be tracked through Baffinland's terrestrial, marine, and freshwater monitoring programs, or are considered permanent for the life of the Project and are not monitored.

9.1 VARIOUS RESIDUAL EFFECTS

9.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project could have some negative effects on Inuit travel and camping. These include effects on safe travel around Eclipse Sound and Pond Inlet, safe travel through Milne Port, emission and noise disruption at camps, sensory disturbances and safety along the Milne Inlet Tote Road, detouring around the Mine Site for safety and travel, difficulty and safety relating to railway crossing, and detouring around Steensby Port.

Shipping-related mitigation developed and/or proposed by Baffinland includes the provision of community public safety awareness campaigns (e.g. informing the community of vessel movements, tracking the route and timing of passage, periodic public meetings and information sessions), commitments to placing reflective markers around the ship track, establishing a detour around Steensby Port, and providing food, shelter, and fuel to detouring travellers. In addition, other mitigation measures have been identified for Steensby Port that will be implemented once that component of the Project is constructed.

Road and rail-related mitigation developed and/or proposed by Baffinland includes the development of a Roads Management Plan (e.g. establishing speed control and signage, ensuring truck operator vigilance, reporting of non-Project individuals), public education, and the addition of six railway crossing locations. Mine site-related mitigation developed by Baffinland includes various public safety mechanisms (e.g. establishing signage and access barriers, restrictions on entering industrial sites), and the development of a mine closure plan. Baffinland has also developed a Hunter and Visitor Site Access Procedure as an appendix to the Roads Management Plan (Baffinland 2016), which describes how land users can safely access Project facilities at Milne Port and the Mine Site. It further describes Baffinland's policy prohibiting the public from unescorted travel on the Tote Road. Baffinland will instead transport land users and their equipment on the Tote Road in order to prevent land user-Tote Road traffic interactions.

9.1.2 Indicator Data

Number of Recorded Land Use Visitor Person-Days at Project Sites

The number of recorded land use visitor 'person-days' at Project sites provides an indication of how often the Project area continues to be accessed for land use activities. Because groups of individuals may travel together and/or utilize Project sites over multiple days, person-days are useful for calculating the extent of site visitations in a year (i.e. one person-day is equal to one person visiting a site during one day, while ten person-days could equal one person visiting a site during ten days or five people

visiting a site during two days). Baffinland maintains a Hunter and Visitor Access Log to track land use parties that pass through or use Project areas. Table 9-1 presents the number of recorded land use visitor person-days at Project sites from 2013 to 2017. In 2017, a total of 154 land use visitor person-days were recorded at Project sites, which is 139 person-days fewer than in 2016.

Table 9-1: Number of recorded land use visitor person-days at Project sites (2013 to 2017)

Number of Recorded Land Use Visitor Person-Days at Project Sites			
Year	Mary River	Milne Port	Total
2013	41	0	41
2014	14	57	71
2015	4	212	216
2016	15	278	293
2017	26	128	154

Source: Baffinland

Notes: This table only includes recorded land use visitors at selected Project sites; as such, it may underestimate the total number of land users accessing all Project sites.

Number of Wildlife Compensation Fund Claims

The number of annual Wildlife Compensation Fund claims¹⁹ provides insight into land use and harvesting issues which may be arising because of the Project. In 2017, one claim was submitted to QIA for review and was approved. It resulted in compensation of \$14,200.00 being paid out. By comparison, two claims were submitted to QIA for review in 2016. One claim was approved and resulted in compensation of \$600.00, while the second claim was reviewed and denied.

9.1.3 Analysis

Monitoring data suggests Inuit land use activities coexist with the Project, as local land users continued to access Project sites in 2017. Inuit employee harvesting is also permitted at the Project (subject to certain restrictions) although Baffinland’s 2018 Inuit Employee Survey indicates only minimal harvesting is currently conducted (12.1% of respondents indicated they participated in traditional activities (e.g. hunting, fishing, harvesting) during their leisure time on site). However, Baffinland has acknowledged the potential for future wildlife-related impacts from the Project and has contributed \$750,000.00 to a Wildlife Compensation Fund (administered by the QIA under the terms of the IIBA) to address this issue.

Additional discussion on Project harvesting interactions and food security is provided in Section 10.1. Baffinland continues to make positive contributions to the four components of food security identified by the Nunavut Food Security Coalition (2014) through initiatives commensurate with its role as a regional mineral developer (see Table 10-1). This includes providing LSA residents with meaningful incomes (through employment) that enable the purchase of food and support the participation in harvesting activities, and through contributions to various community wellness initiatives. Furthermore, Baffinland has developed mitigation and monitoring programs that aim to avoid adverse effects on terrestrial, freshwater, and marine resources important to LSA residents. Baffinland’s Annual Report to the NIRB should be consulted for monitoring results specific to these topics.

¹⁹ The Wildlife Compensation Fund, established under the IIBA, is administered by the QIA and functions to compensate Inuit for incidents where Project activities interfere with or inhibit harvesting activities.

10. ECONOMIC DEVELOPMENT AND SELF-RELIANCE

No residual effects specific to the VSEC Economic Development and Self-Reliance were assessed in the FEIS. Rather, an integrated assessment of other VECs/VSECs was conducted for this VSEC. Relevant monitoring of residual effects continues to be conducted through other VECs/VSECs. However, information on one topic requested through the Project Certificate is reviewed below.

10.1 PROJECT HARVESTING INTERACTIONS AND FOOD SECURITY

10.1.1 Project Certificate Term or Condition

No specific prediction related to Project harvesting interactions and food security was presented in the FEIS. However, Project Certificate term and condition no. 148 states:

The Proponent is encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-Economic Monitoring Committee's monitoring program which addresses Project harvesting interactions and food security and which includes broad indicators of dietary habits.

10.1.2 Indicator Data

Project Harvesting Interactions and Food Security

Appropriate community-level indicator data are currently unavailable for this topic. As such, this topic continues to be tracked through the QSEMC process, Baffinland's community engagement program, and related indicators. Should new indicators be required in the future, they will be selected in consultation with the SEMWG. Some data related to Project harvesting interactions and food security have already been presented in this report. For example, Section 7.2 discussed household income and food security and provided indicator data on the proportion of taxfilers with employment income, median employment income, and percentage of population receiving social assistance. Section 9.1 discussed the topic of resources and land use and provided indicator data on the number of recorded land use visitor person-days at Project sites and number of Wildlife Compensation Fund claims. Please refer to those sections for additional details.

Comments on Project harvesting interactions and food security have previously been made by Project stakeholders, with some individuals suggesting adverse effects have been experienced because of the Project (e.g. JPCSL 2017). Comments on harvesting and food security were also recorded through Baffinland's community engagement program in 2017. Example comments on the importance of harvesting and country food include:

But the Baffinland – I want to tell them that our wildlife, our land are our main concern. You know, with the economic opportunities, we're supportive of that. Just – you know, if there's a minimal change to the environment or the wildlife, then we're – we are very supportive. So we need to be careful on how we operate in the environment. And the indigenous people, like Inuit, will continue to live here with the wildlife and the land and marine life. [2017 IIBA Annual Project Review Forum Participant]

I don't know if this has ever been considered, hunter support... I know in Mary River... Inuit go to work there. You know, they crave for meat, country food... HTO has country food to sell. We know that one of the workers can take it on the plane, get it to Mary River. But I don't know about – it's possible to sell country food. But if we're selling country food, we need to be approved by Department of Health inspections and other restrictions, when you're buying food... I don't know if you can include that in the agreement somewhere... or if you can consider to accommodate the -- providing country food to the Inuit workers without consequences like health. [2017 IIBA Annual Project Review Forum Participant]

So somehow there needs to be a way, I think, to make things easier to – for the hunters to sell to – or even HTOs to sell to Baffinland so the hunters can gain some income throughout that. [2017 IIBA Annual Project Review Forum Participant]

But if there is an impact we will voice our concern. We are very concerned for our hunters. [2017 Igloolik Meeting Participant]

Comments on potential Project-harvesting interactions were also recorded through Baffinland's community engagement program in 2017. Examples include:

Pond Inlet has wildlife. The Milne Inlet area is a calving ground for narwhal. And last summer, there were not too much narwhal harvested, very few. So they used to harvest a lot of narwhal in the past. So the ocean used to be turned red from blood... we don't see that anymore. And related to the caribou, we were told this winter that past the Mary River, they saw a herd of about 50,000 going towards Mary River. So we know that they're coming back to the area. And this summer, near Pond Inlet, from July, the aircraft, like helicopters and – will be harassing the area, harassing wildlife in the area. [2017 IIBA Annual Project Review Forum Participant]

But the Pond Inlet area, the shipping, we know, will have impact on the marine. So we know that. I think it's even obvious that the shipping – increased shipping will have a negative impact on the number or marine animals. So, you know, that's the only concerns we have, is when it comes to environment and the animals. [2017 IIBA Annual Project Review Forum Participant]

...are you going to continue with the current monitoring... because narwhal used to be in great numbers, but every year it seems to be decreasing... they're moving to other areas, it seems like, because – due to the shipping traffic. [2017 IIBA Annual Project Review Forum Participant]

And, also, Mary River site, there's a calving ground for caribou. May/June, they'll start – so does that mean the caribou around the area are monitored during the calving season? [2017 IIBA Annual Project Review Forum Participant]

I also have a question considering the animals. And we're also impacted by what's happening in that area. [2017 IIBA Annual Project Review Forum Participant]

...caribou, our concern when they're migrating either way, down or back – so the roads – and I think it will impact the migrational route. So if the rail line or the road is preventing the

caribou from migrating, you should build a tunnel to allow the caribou to go through instead of going over. [2017 IIBA Annual Project Review Forum Participant]

...I don't know if it's true or not. But the reason they don't go through Navy Board Inlet, if it's true, that the polar bears should not be disturbed. But human – Inuit hunters will be disturbed. [2017 IIBA Annual Project Review Forum Participant]

I am very serious... in regards to railways, and the caribou that move through Mary River. There still are caribou now and they have not arrived from the south yet so the roads seem to be an obstruction to the migration. [2017 Arctic Bay Meeting Participant]

... I have observed blasting with no gravel, and the char were impacted even though people say otherwise, and I think that is because of the mine. We as Inuit who live have lived in the Arctic our whole lives, we hear that everything is done according to regulations. But I think more can be done, more should to done to mediate the issue in terms of blasting... The mining company said it would not impact the environment but I have seen significant change. I am not against the Project but I want more solutions. I want to make sure that we don't lose the animals; we need to use a strategy. Let's not concentrate on the negative things but let's get a strategy. [2017 Clyde River Meeting Participant]

I can imagine that the dust would rise in the air from the blasting and fly in the wind and then go to the snow and the ocean. Many animals look for food around the shore, so those are my concerns. The animals always eat little vertebrates and what not and the dust will slowly go to the ocean so that's a concern I have. [2017 Clyde River Meeting Participant]

We see on television that near mine sites in other provinces, the caribou population declines. It seems that you are not taking responsibility and not taking IQ into consideration. I know that the road and railway line will impact the caribou population. When there is a mine site there is always a negative impact. It's not just based on IQ, there are more impacts. [2017 Igloolik Meeting Participant]

We want to be involved more, scientists are not the only ones who can provide information, Inuit have lived here for a long time. We know that the caribou migrations and populations change over the years but if we say that there has been more of an increased decline that should be taken into consideration. [2017 Igloolik Meeting Participant]

Inuit need a stronger voice in the company so that the company better understand our concerns. We have been impacted the most compared to other communities. We have the most ships coming through and we haven't had a narwhal migration in two years. We deserve more benefits than the other communities. The scientists say we are not impacted but they don't understand, we have been here longer and understand better that we are being impacted... Money, money, money you act is the most important thing in the world. [2017 Pond Inlet Meeting Participant]

... We do not hear about these negative impacts on wildlife but a lot of us are being impacted. In the future, we want to hear all of the concerns not just what Baffinland wants us to hear. Can a report be made by Baffinland when such impacts are found? [2017 Pond Inlet Meeting Participant]

Likewise, some comments on the adaptability and resilience of wildlife in the Project area were recorded during Baffinland's community engagement program in 2017. Examples include:

...any wildlife, they can get used to human presence... I know that they're not always afraid of humans, you know. The first initial contact – that they're afraid... the first time they see a human, they're afraid, of course. But then afterwards, you know, they can kind of get used to the humans around. And if they're not a threat, then, you know, they're no longer afraid. So I'm not too concerned about the wildlife, because, you know, there's ways that they will adapt to the conditions... so I'm more grateful that we have the economic opportunities available to us now. And the marine – also, I have firsthand knowledge... when there's a noise that they're not familiar with, yes, they'll stay away from that. But the noise – we used to scrape around the boulder, around the shore, trying to get them used to the noise first, and then they would get closer. So I know that the marine – you know, they would bring objects that can make noise or sound, and then they would attract the marine mammals when they're waiting by the shore... only hands-on experience that they were basing their knowledge on. [2017 IIBA Annual Project Review Forum Participant]

All the animals are concerned first, marine, and also on the land, too, because even little, tiny animals are impacted with the action of the marine – the mining in that area. Yes, it is also true that we know the knowledge of how the migrating comes to – migration of the caribou, that they came. And then in a long while, according to the knowledges [sic], that they usually come back... Mary River was also the activity for Inuit when they were migrating from one place to another; it was also a place where they went to. So, yes, even though there's a decline of the population of caribou... it's something that we're not really concerned with because we had heard before that caribou come and then caribou go... and we believe those behaviours will continue even to today's knowledge. But we have to make sure that our concern is – when they're going to be impacted, we have to do a lot more monitor – very close monitoring and very close research on how the wildlife is impacted on that. [2017 IIBA Annual Project Review Forum Participant]

Like, Mary River is – you know, it's halfway... are you aware, yes, of that generational migration of caribou, that they might start heading back again? [2017 IIBA Annual Project Review Forum Participant]

Additional stakeholder comments on country food were expressed during the 2017 QSEMC meeting in Arctic Bay. For example, new infrastructure for local country food processing plants was said to be a priority, in order to provide healthy food locally and create economic development opportunities. A request for Baffinland to develop a program that provides local Elders with country food was also made during the meeting (SEMCs 2017b).

The topic of on-site harvesting activities was addressed in Baffinland's 2018 Inuit Employee Survey. When 'unknown' results were removed, 12.1% of respondents indicated they participated in traditional activities (e.g. hunting, fishing, harvesting) during their leisure time on site, 37.9% respondents did not participate in traditional activities during their leisure time on site, and 50.0% respondents didn't know they could participate in these activities during their leisure time on site. Of note, Article 11 of the IIBA allows for the pursuit of traditional activities by Inuit employees during their leisure hours, subject to certain restrictions.

Some data on harvesting and food security also exists at the territorial level. For example, data from the 2012 Aboriginal Peoples Survey (Statistics Canada 2015a) indicates approximately 66% of Nunavummiut hunted, fished, or trapped in the past year, while approximately 37% of Nunavummiut hunted, fished, or trapped at least once a week during the season. Likewise, approximately 43% of Nunavummiut gathered wild plants in the past year, while approximately 29% of Nunavummiut gathered wild plants at least once a week during the season.

Achieving food security remains a pressing issue in Nunavut (e.g. Nunavut Food Security Coalition 2014, 2016). Wallace (2014) notes food insecurity refers to situations, when, for example, the food that was purchased does not last, and there is not enough money to buy more; a household cannot afford to eat balanced meals; or household members cut the size of their meals or skip meals because there is not enough money for food. Data from the 2012 Aboriginal Peoples Survey (Statistics Canada 2015b) indicates approximately 25% of Nunavummiut have very low food security, 26% have low food security, while 41% have high or marginal food security.

10.1.3 Analysis

Harvesting and consumption of country food remains a valued and important part of the Inuit culture and diet. As noted in Section 7.2, there are indications the Project continues to improve household income and food security in the LSA, by providing LSA residents with meaningful incomes (through employment) that enable the purchase of food and support the participation in harvesting activities. Baffinland also contributes to various community wellness initiatives directly (e.g. through the INPK Fund in the IIBA, school meal program, seasonal country food exchange program, community food bank donations) and indirectly (e.g. through the *QIA Legacy Fund* and *QIA Benefits Fund*)¹⁴, which may assist individuals not directly benefiting from Project employment. The concerns expressed about Project effects on local harvesting and land use are acknowledged. Concerns have also been expressed about declining rates of country food consumption and the lack of food security in Nunavut, generally. However, statistical data on these topics is limited (i.e. available data is from 2012 and is only at the territorial scale).

Monitoring data presented in Section 9.1 suggests Inuit land use activities coexist with the Project, as local land users continued to access Project sites in 2017. Inuit employee harvesting is also permitted at the Project (subject to certain restrictions) although Baffinland's 2018 Inuit Employee Survey indicates only minimal harvesting is currently conducted. However, Baffinland has acknowledged the potential for future wildlife-related impacts from the Project and a Wildlife Compensation Fund has been established to address this issue.

The Nunavut Food Security Coalition (2014) has outlined four components of food security (i.e. availability, accessibility, quality, and use) and factors affecting each component (see Table 10-1). Baffinland has acknowledged it can play a role in each of these food security components. However, the Nunavut Food Security Coalition (2014: 2) also highlights food security components "are influenced by many complex factors" and notes "this critical and complex issue is larger than the mandate of any one organization. A collaborative approach is essential."

Baffinland continues to make positive contributions to the four components of food security through initiatives commensurate with its role as a regional mineral developer (Table 10-1). Baffinland has also developed mitigation and monitoring programs that aim to avoid adverse effects on terrestrial, freshwater, and marine resources important to LSA residents. Baffinland's Annual Report to the NIRB

should be consulted for monitoring results specific to these topics. However, harvesting and food security are complex issues that can be influenced by many factors. For this reason, this topic will continue to be monitored for emerging trends.

Table 10-1: Food security components and Baffinland’s role

Components of Food Security	Factors Affecting Each Component	Baffinland’s Role
Availability	<ul style="list-style-type: none"> • Family size • Human population size • Grocery supplies • Wildlife stocks • Distribution of wildlife • Environmental conditions 	<ul style="list-style-type: none"> • Providing employees with ample and healthy food choices while on site • Avoidance of adverse effects on the local physical/socio-economic environment and terrestrial/freshwater/marine resources utilized by LSA residents (verified through annual monitoring)
Accessibility	<ul style="list-style-type: none"> • Cost of food • Income levels • Gambling and substance abuse • Transportation effectiveness • Strength of sharing networks • Access to hunting grounds • Climate change 	<ul style="list-style-type: none"> • Providing LSA residents with meaningful incomes through employment that enable the purchase of food and support participation in harvesting activities • Direct and indirect contributions to community wellness initiatives (e.g. INPK Fund, school meal program, seasonal country food exchange program, community food bank donations) • Employee support through the EFAP • Avoidance of adverse effects on the local physical/socio-economic environment and terrestrial/freshwater/marine resources utilized by LSA residents (verified through annual monitoring) • Permitting Inuit employee harvesting during leisure hours (subject to certain restrictions) • Permitting Inuit non-employees to access Project sites and participate in harvesting activities (subject to certain restrictions) • Establishment of a Wildlife Compensation Fund to address potential impacts
Quality	<ul style="list-style-type: none"> • Nutritional knowledge • Health of store-bought food • Wildlife health • Food spoilage • Environmental contaminants 	<ul style="list-style-type: none"> • Providing employees with ample and healthy food choices while on site • Establishment of country food kitchens at the Mary River and Milne Port sites • Avoidance of adverse effects on the local physical/socio-economic environment and terrestrial/freshwater/marine resources utilized by LSA residents (verified through annual monitoring)
Use	<ul style="list-style-type: none"> • Traditional knowledge • Food preparation skills • Budgeting skills • Literacy rates • Language barriers 	<ul style="list-style-type: none"> • Completion of a comprehensive Inuit Qaujimatuaqangit study (on several topics, including harvesting), the results of which are publicly available • Commitment to offer financial management training and support to employees • Commitment to offer literacy and numeracy training to employees • Support for the use of Inuktitut at Project sites

Notes: Food security components and factors affecting each component were sourced from the Nunavut Food Security Coalition (2014)

11. BENEFITS, ROYALTY, AND TAXATION

One residual effect for the VSEC Benefits, Royalty, and Taxation was assessed in the FEIS: Payroll and corporate taxes paid by Baffinland to the territorial government. This is reviewed more fully below.

11.1 PAYMENTS OF PAYROLL AND CORPORATE TAXES TO THE TERRITORIAL GOVERNMENT

11.1.1 Predicted Effect and Mitigation Measures

The FEIS predicted the Project would have a beneficial effect on revenues (e.g. through taxes) flowing to the territorial government. No specific mitigation measures have been developed to support this prediction.

11.1.2 Indicator Data

Payroll and Corporate Taxes Paid by Baffinland to the Territorial Government

The value of annual payroll and corporate tax payments by Baffinland to the territorial government helps demonstrate the Project's effect on revenues flowing to the territorial government. In 2017, Baffinland paid \$1,491,098.13 in employee payroll tax to the Government of Nunavut (i.e. a 2% payroll tax levy; other payroll taxes are paid to the federal government). Baffinland did not pay any corporate income tax in 2017 (as the Company is not yet profitable), property tax (as lease payments are made to the QIA and not the Government of Nunavut), or fuel tax (as this is currently being reviewed with the Government of Nunavut).

11.1.3 Analysis

The Project continued to pay taxes to the Government of Nunavut in 2017. As predicted in the FEIS, the positive effect of the Project on revenues flowing to the territorial government is confirmed for this reporting period. Baffinland expects increased tax amounts will be paid once the Company becomes profitable.

12. CONCLUDING REMARKS

12.1 SUMMARY

12.1.1 Report Summary

This report has assessed the socio-economic performance of the Mary River Project in 2017, as well as Baffinland's compliance with various Project Certificate terms and conditions. Performance was assessed using socio-economic indicators and information for several VSECs included in the FEIS:

- Population demographics
- Education and training
- Livelihood and employment
- Contracting and business opportunities
- Human health and well-being
- Community infrastructure and public services
- Resources and land use
- Economic development and self-reliance
- Benefits, royalty, and taxation

The information presented in this report supports many of the FEIS predictions for these VSECs and identifies positive effects the Project has had. For example, approximately 2.38 million hours of Project labour were performed by Baffinland employees and contractors in Nunavut in 2017, which was equal to approximately 1,181 FTEs. Of this total, 313,068 hours were worked by residents of the LSA, representing approximately 155 FTEs. In addition, approximately \$7.06 million in payroll was provided to Baffinland LSA employees (not including contractors) and \$387.2 million was spent on procurement with Inuit-owned businesses and joint ventures in 2017.

Employment in the LSA is one area where Project activities didn't fully match FEIS predictions in 2017, as LSA employment hours in 2017 were somewhat lower than originally predicted. Likewise, there were several Inuit employee departures in 2017. Baffinland continues to take positive steps to address the issue of Inuit employment and recently finalized its Inuit Human Resources Strategy (IHRS) and Inuit Procurement and Contracting Strategy (IPCS) with the QIA. These documents describe goals and initiatives that will be used to increase Inuit employment and contracting at the Project over time.

Furthermore, Baffinland and the QIA are partners in the \$19 million Qikiqtani Skills and Training for Employment Partnership (Q-STEP) training program, which has been designed to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators, and other actions to meet the Minimum Inuit Employment Goal (MIEG) established with the QIA should also assist with increasing LSA employment over time. However, additional monitoring will be necessary to track the success of these and other Baffinland Inuit employment programs. Baffinland will also continue to track employee turnover causes and outcomes, moving forward.

Where appropriate, trends have been described for indicators assessed in this report. These trends (i.e. pre-development, post-development, and since the previous year) demonstrate whether an indicator

has exhibited change and describes the direction of that change. Trend analyses can be useful for assessing potential Project influences on an indicator. In some cases, additional data and monitoring will be necessary before the FEIS predictions presented in this report can be fully verified. In others, direct correlations between the Project and data trends were either unable to be identified or were unclear. The process of socio-economic monitoring often requires many years of data to effectively discern trends and causality. Even then, various factors may be found to influence causality and some of these may not be easy to measure. Successful socio-economic monitoring for the Project will require appropriate long-term data, the regular input of all Project stakeholders, and a focus on continuous improvement.

The objectives of this 2017 report (presented in Section 1.3) have been accomplished in several ways. First, this report provided an analysis (in Sections 3 to 11) of selected socio-economic effects that were predicted to occur in the Project's FEIS. Second, this analysis provided insight into the functioning of Baffinland's existing socio-economic mitigation and management programs (again, in Sections 3 to 11). Third, this report provided information that will assist regulatory and other agencies in evaluating Baffinland's compliance with socio-economic monitoring requirements for the Project (found throughout the report, but Appendix C summarizes how Baffinland has addressed Project Certificate terms and conditions related to socio-economic monitoring and Appendix D summarizes Baffinland's responses to NIRB recommendations on the 2016 socio-economic monitoring report). Finally, this report supports Baffinland's adaptive management objectives for the Project, as issues identified in this report will continue to be monitored and opportunities for potential performance improvements will be assessed.

12.1.2 Summary of Regional and Cumulative Economic Effects

This section provides a summary of regional and cumulative economic effects related to the Project. This is in relation to Project Certificate term and condition no. 169, which states:

The Proponent provide an annual monitoring summary to the NIRB on the monitoring data related to the regional and cumulative economic effects (positive and negative) associated with the Project and any proposed mitigation measures being considered necessary to mitigate the negative effects identified.

The Project continued to make positive contributions to the Nunavut economy in 2017. As noted earlier, approximately 2.38 million hours of Project labour were performed by Baffinland employees and contractors in Nunavut in 2017, which was equal to approximately 1,181 FTEs. In addition, approximately \$7.06 million in payroll was provided to Baffinland LSA employees and \$387.2 million was spent on procurement with Inuit-owned businesses and joint ventures in 2017. Since Project development, approximately 8.84 million hours of Project labour have been performed, \$33.3 million in payroll has been provided to Inuit employees, and \$819.1 million has been awarded to Inuit-owned businesses and joint ventures.

When compared to annual economic outputs for Nunavut as a whole, these values are notable. In 2016 (the most recent year for which estimates are available), for example, there were a total of 16,565 jobs held in Nunavut and 30,103,000 total hours worked (Nunavut Bureau of Statistics 2017h), with average weekly earnings of \$1,274.60 per employee (Nunavut Bureau of Statistics 2017i). By comparison, hours worked by Baffinland's employees and contractors in Nunavut in 2016 (i.e. 1,881,506) represent 6.3% of

the Nunavut total. Average weekly earnings of Baffinland's Inuit employees in 2016 were also higher than the Nunavut average, at \$1,538.70.²⁰

Mining remains an important contributor to the Nunavut economy. Nunavut's real gross domestic product²¹ (GDP) for all industries in 2016 was \$2,039.6 million. Of this amount, '*mining, quarrying, and oil and gas extraction*' was responsible for contributing \$377.8 million (or 18.5%). Mining projects typically also make economic contributions to supporting industries such as '*construction*' (\$207.8 million contribution to the Nunavut economy in 2016), '*transportation and warehousing*' (\$49.1 million contribution to the Nunavut economy in 2016), and '*accommodation and food services*' (\$26.5 million contribution to the Nunavut economy in 2016), amongst others (Nunavut Bureau of Statistics 2017j). The Mary River Project has likely been an important contributor to these amounts, as has Agnico Eagle Mines Limited's Meadowbank Mine (Nunavut's only other operating mine in 2016), and several other Nunavut-based mining projects that are in various stages of development. Mining in Canada, generally, contributed \$55.6 billion to the country's GDP, or 3.4% of total Canadian GDP (in 2015). The industry also directly employs more than 373,000 individuals and remains the largest proportional private sector employer of Indigenous peoples in the country (Mining Association of Canada 2017).

No negative regional or cumulative economic effects associated with the Project were identified in 2017. As such, no mitigation measures are being proposed to mitigate negative effects.

12.2 ADAPTIVE MANAGEMENT

This report identifies several positive effects of the Project on VSECs described in the FEIS and supports several of the FEIS predictions that were made. The information contained in this report also suggests many of the mitigation and management measures established by Baffinland are functioning as anticipated. However, LSA employment and Inuit employee turnover are areas Baffinland will continue to address in 2018 and several new initiatives have been undertaken to support these efforts.

The recently finalized IHRS is a key strategic document for Baffinland in this regard and describes goals and initiatives that will be used by the Company to enhance Inuit employment, training, and skills development at the Project. It contains eight strategic directions that will assist Baffinland with meeting its Inuit employment objectives: strengthen stakeholder collaboration, engage and develop Inuit employees (current and potential), workforce readiness, Inuit recruitment and hiring, gender balance, students and youth, Inuit employee retention and advancement, and continuing improvement. Likewise, the recently finalized IPCS is expected to enhance the business opportunities available to Inuit. It addresses several Inuit contracting requirements contained in the IIBA and identifies preferential opportunities and procedures for Inuit Firms to contract with Baffinland.

Furthermore, Baffinland and the QIA were recently successful in securing funds through Employment and Social Development Canada's (ESDC) Skills and Partnership Fund for their Q-STEP training program.

²⁰ Baffinland Inuit employee numbers (98) and payroll amounts (\$7,841,203.00) for 2016 were presented in Baffinland's 2016 Socio-Economic Monitoring Report. Inuit employee numbers in 2016 were calculated based on the average of quarterly totals. Weekly employee earnings are thus an estimate and may not fully reflect average amounts for the year.

²¹ The Bank of Canada (2016) notes real GDP is "the most common way to measure the economy... GDP is the total value of everything - goods and services - produced in our economy. The word "real" means that the total has been adjusted to remove the effects of inflation." The real GDP amounts by industry presented by the Nunavut Bureau of Statistics (2017j) are in chained 2007 dollars.

Q-STEP is a four-year initiative that will be undertaken by QIA in close partnership with Baffinland to provide Inuit with skills and qualifications to meet the employment needs of the Mary River Project as well as other employment opportunities in the region. The program will consist of both work readiness measures as well as targeted training programs directed at apprenticeships, skills development, supervisor training, and formal certification in heavy equipment operation. The total value of the program is \$19 million. The Government of Canada will provide \$7.9 million, Baffinland will provide \$9.4 million of in-kind support, Kakivak Association will provide up to \$1.6 million of in-kind support, and the Government of Nunavut will offer operational support to Q-STEP. Other ongoing efforts to meet the Minimum Inuit Employment Goal (MIEG) established with the QIA should further assist with increasing LSA employment over time (e.g. the new Baffinland Apprenticeship Program, development of a labour pool of multi-skilled Inuit Heavy Equipment Operators).

Continued monitoring of LSA employment hours, causes of Inuit employee turnover, and the initiatives described in the IHRS, IPCS, and Q-STEP training program (amongst others) will be necessary to ensure successful socio-economic outcomes. Opportunities for potential performance improvements in these areas will also be assessed by Baffinland throughout 2018. While additional monitoring is required to confirm the findings presented in this report over the long-term, no need has been identified to update any FEIS predictions or to modify Baffinland's existing management approach beyond what has been described above. However, Baffinland will continue to use adaptive management as a tool for improving the Project's overall socio-economic performance in the future.

12.3 FUTURE MONITORING AND REPORTING

As noted previously, Baffinland has developed a socio-economic monitoring plan for the Project (see Section 1.4) which addresses the VSECs assessed in the FEIS. Using this plan, Baffinland will continue to monitor and report on Project-related socio-economic performance on an annual basis. Regular engagement with the SEMWG and QSEMC on socio-economic matters will also occur.

Effectiveness of the Project's socio-economic monitoring program will be evaluated in an on-going manner. Information obtained through this process may lead to future modifications of the Project's socio-economic monitoring plan, indicators used, and/or methods of analysis employed. Baffinland also anticipates monitoring may cease for some indicators in the future, especially where FEIS predictions have been sufficiently verified over time. Should the need arise to significantly modify the Project's monitoring program, both the SEMWG and QSEMC will be consulted.

Furthermore, Baffinland recently received the Government of Nunavut's draft territorial socio-economic monitoring workshop report and recommendations (Government of Nunavut 2017). Some modifications to Baffinland's socio-economic monitoring plan have been made as a result of the draft report (see Section 2.4 for additional details). Baffinland will investigate the possibility of further aligning its monitoring program with the Government of Nunavut's recommendations, where appropriate, following its review of the final workshop report. In addition, Baffinland anticipates updating the SEMWG Terms of Reference in 2018. The existing Terms of Reference is somewhat dated (December 2012) and no longer fully reflect the scope of working group activities. Baffinland will work with SEMWG members in 2018 to complete revisions to the Terms of Reference. Baffinland anticipates including a revised Terms of Reference in its 2018 Socio-Economic Monitoring Report.

12.4 CONCORDANCE WITH PROJECT CERTIFICATE TERMS AND CONDITIONS ON SOCIO-ECONOMIC MONITORING

Submission of this report helps achieve concordance with several Project Certificate terms and conditions related to socio-economic monitoring. A summary of each Project Certificate term or condition related to socio-economic monitoring, a description of how Baffinland has addressed each of these, and 2017 Socio-Economic Monitoring Report references (where applicable) can be found in Appendix C. Appendix D summarizes Baffinland's responses to NIRB recommendations on the 2016 Socio-Economic Monitoring Report.

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APPENDIX A: SEMWG TERMS OF REFERENCE

MARY RIVER SOCIO-ECONOMIC MONITORING WORKING GROUP
TERMS OF REFERENCE

1. PURPOSE

1.1 This document sets the Terms of Reference for the Mary River Socio-Economic Monitoring Working Group (the “Working Group”). The Working Group will support the Qikiqtaaluk Socio-Economic Monitoring Committee’s (QiSEMC) regional monitoring initiatives through project-specific socio-economic monitoring. It is intended to provide a forum for Working Group members to engage in the work of the QiSEMC through identification of areas of mutual interest and socio-economic monitoring priorities related to the Mary River project, communities, and the Baffin region as a whole.

1.2 The Working Group will support the fulfillment of Terms and Conditions set out in the Mary River Project Certificate that relate to socio-economic monitoring.

2. WORKING GROUP MEMBERSHIP AND MEMBER ROLES AND RESPONSIBILITIES

2.1 The Working Group will include as members:

- a. Baffinland Iron Mines Corporation (BIMC) or the successor owner/operator of the Mary River project;
- b. Government of Nunavut;
- c. Government of Canada; and
- d. Qikiqtani Inuit Association.

2.2 Each organization is responsible for their own costs of participating in activities of the Working Group.

2.3 Role of BIMC or the successor owner/operator of the Mary River project:

- a. Identify indicators and share project-specific data that can contribute to priorities identified by QiSEMC, where appropriate;
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Review the effectiveness of socio-economic mitigation measures;
- d. Participate and prepare presentations of project-related data/issues for the QiSEMC.

2.4 Role of the Government of Nunavut:

- a. Identify indicators and share data that can contribute to priorities identified by the QiSEMC, where appropriate;
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Participate in the analysis of effectiveness of socio-economic mitigation measures.

2.5 Role of the Government of Canada:

- a. Work with the Working Group to identify and align indicators and share relevant data from the Nunavut General Monitoring Plan (NGMP);
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Participate in the analysis of effectiveness of socio-economic mitigation measures.

2.6 Role of the Qikiqtani Inuit Association:

- a. Identify indicators and share data that can contribute to priorities identified by QiSEMC, where appropriate;
- b. Participate in the analysis of data arising from collaborative monitoring;
- c. Participate in the analysis of effectiveness of socio-economic mitigation measures.

2.7 Protection of Personal Information

It is recognized that, in collecting and sharing of any information and data under these Terms of Reference, each of the members of the Working Group is required to comply with any rules governing the collection, use, and disclosure of personal information, applicable to each member respectively, in accordance with the provisions of privacy legislation.

2.8 Information

The members acknowledge that:

- a. BIMC is best able to collect and provide data concerning employment and training in relation to the Project;
- b. the Government of Nunavut and the Government of Canada are best able to report public statistics on general health and well-being, food security, demographics and other socio-economic indicators at the community and territorial level; and
- c. the Qikiqtani Inuit Association is best able to provide information and data relating to Inuit land use and culture at the community and regional level.

3. OBJECTIVES

3.1 The Working Group has the overall goal of contributing to the ongoing expansion of knowledge related to interactions between communities in Nunavut and the Mary River Project. The priority is on knowledge that will ultimately assist in directing socio-economic benefit from the Project, enhance the accuracy of subsequent predictions related to socio-economic impact assessment, and improve the focus and efficiency of socio-economic monitoring.

3.2 The Working Group aims to undertake collaborative monitoring in order to identify and access priority data that will be useful in improving the socio-economic performance of the Mary River Project. This will involve combining Project-specific performance data with data generated by other member agencies. The resulting insight will be useful in supporting adaptive management measures implemented by member agencies to minimize adverse effects and maximize benefits from the project. The goal will be to analyze the monitoring data in order to assess the effectiveness of current practices; obtain early warning should mitigation measures not be achieving their intended outcome; and provide timely detection of unanticipated outcomes.

3.3 The Working Group aims to improve understanding of priority socio-economic issues in order to increase confidence in socio-economic assessment predictions. The Working Group will identify priority predictions contained in the Mary River Final Environmental Impact Statement (FEIS) and will then work to address how these predictions can be validated or how unanticipated trends/observations can be described.

3.4 The Working Group will provide monitoring data and objective analysis in a manner that is focused, efficient and cost-effective.

3.5 The Working Group will ensure that project-specific monitoring aligns, where appropriate, with QiSEMC priorities, such as, but not limited to:

- a. Health and well-being;
- b. Education, life skills, and training;
- c. Employment and career progression;
- d. Demographics;
- e. Land use, culture, food security; and
- f. Other priorities that may be identified by the QiSEMC.

4. REPORTING AND COMMUNICATION

4.1 BIMC or the successor owner/operator of the Mary River project will prepare an annual socio-economic report, presenting performance data, to the Nunavut Impact Review Board for review. These annual reports will be due on 30 June of each year, containing data on the indicators selected by the Working Group for the previous calendar year (January to December). These reports will further describe the Company's participation in the QiSEMC, other collaborative monitoring processes and any activities related to better understanding of socio-economic processes.

4.2 Following Project Certificate issuance and BIMC's decision to proceed with the construction of the Mary River project, annual reporting will commence following the start of site activities.

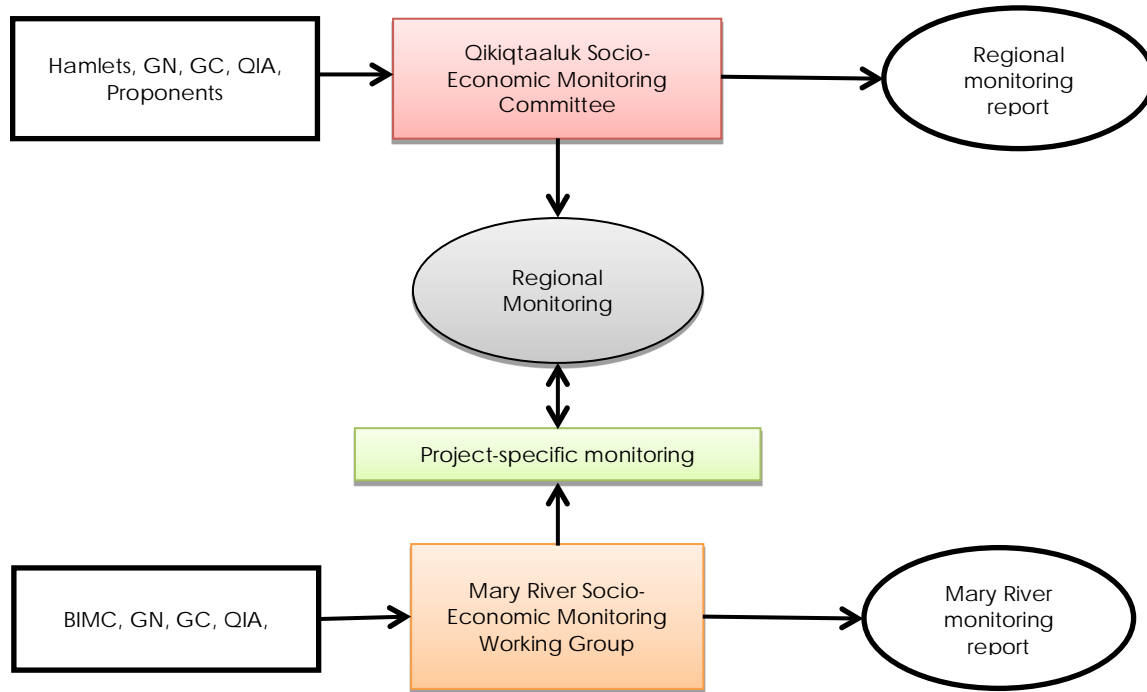
4.3 As appropriate, the Working Group may communicate with, and request data from, other issue-specific working groups that may arise throughout the life of the project.

5. MEETINGS

5.1 The first official meeting will be held within six (6) months of Certificate issuance or at the next QiSEMC following issuance, whichever is first.

5.2 The Working Group is to initially meet twice a year, preferably immediately prior to or immediately after the QiSEMC meetings. This meeting schedule may be changed at a later date if agreed to by all members.

5.3 BIMC will designate a Chair and optionally a Secretary for these meetings. BIMC's appointment of the Chair (which could include itself) recognises the significance of the weight of responsibility for reporting by the Company.



6. RELATION TO IIBA OBLIGATIONS

6.1 The parties recognize that this ToR is separate from any obligations under the Inuit Impact and Benefit Agreement (IIBA) between the proponent and the Qikiqtani Inuit Association and that the mandate of the Working Group shall not include monitoring of the IIBA.

6.2 Any sharing of information with the Working Group related to the IIBA will be solely at the discretion of the Qikiqtani Inuit Association and Baffinland Iron Mines Corporation or successor.

7. REVIEW OF TORS

7.1 These Terms of Reference may be reviewed by Working Group members periodically for any required changes that may be applicable as the Project evolves from construction, through operations and closure.

APPENDIX B: 2017 QSEMC & SEMWG MEETING MINUTES

Qikiqtaaluk Socio-Economic Monitoring Committee Annual Meeting, July 5 & 6, 2017, Arctic Bay, Nunavut

The meeting began with participant introductions. The following communities and other stakeholders were represented:

- Arctic Bay
- Cape Dorset
- Pangnirtung
- Sinikiluaq
- Pond Inlet
- Hall Beach
- Iqaluit
- Grise Fiord
- Qikiqtarjuaq
- Igloolik
- GN Department of Health
- GN Department of ED&T
- INAC NGMP
- Nunavut Bureau of Statistics
- Baffinland
- QIA

The community roundtable proceeded with a few items of note including

- The need for community freezers in almost all communities
- The need for more public housing
- Grateful for the employment from Baffinland in the communities in the LSA
- Lots of fishery exploration that has the potential of a positive economic effect in communities
- New infrastructure including hotels, daycares and housing units
- The need for more child care in all communities
- The need for community hall infrastructure in a number of communities especially for youth
- Overall infrastructure maintenance in all communities

Following the community roundtable, the GN department of Health gave a presentation. Discussions that followed included:

- Contaminated sites and how it impacts health
 - QIA steering committees are dealing with contaminated sites with NTI
- Meat studies for walrus and country food takes too long

- NRI just finished construction of a lab for testing – staff are being trained to do testing in Iqaluit which should decrease wait time for results
- Using statistical data, is there strategic planning that the GN is going to use to actually start this upstream planning process?
 - The GN needs to work together in all departments to start working in a systematic way to improve Nunavut as a whole

The meeting continued with a presentation from INAC on the Nunavut General Monitoring Program. Conversations that took place surrounded topics such as:

- Whether the data from projects being funded is shared publicly and how INAC is looking at making this info public
- The Nunavut Association of Municipalities (NAM) and the information they can provide to researchers including what needs to be researched
- The need for data from all institutions at a municipality level

After the lunch break, the presentation that followed was on behalf of the Nunavut Bureau of Statistics. Items of discussion that followed were:

- The many factors that can contribute to data trends
- The difficulty in relating specific trends directly to the Mary River Project since it's been in operation for a short time
- Collecting data for the sake of collecting data vs using this data and doing something with the information to make changes in Nunavut

The day ended with the Baffinland presentation and the discussion that followed. Items discussed included:

- Safety training and emergency response on-site
- Rotational shift issues for staff with children
- How staff can learn to properly manage money for their two weeks off the mine site
- The need to recruit and keep Inuit staff
- Work readiness programs that are successful for other Nunavut projects
- The need for childcare in communities and who plays a role in delivering these resources (QIA/GN/GoC/Proponent)
- The training for heavy equipment operators is great but there needs to be training for mechanics
- Pension planning and financial planning
- Shipping routes for the Project
 - **Baffinland to send the map presented at the meeting**
- The communities outside of the local looking for more hiring and employment opportunities at the project

- It was noted that jobs are open to all Baffin communities so all Qikiqtaaluk communities are equally eligible to apply

The second day of the meeting started with a recap of the previous day. Participants were given a document with the Valued Socio-Economic Components (VSEC's) for the Mary River Project. These VSEC's are:

1. Population Demographics
2. Education and Training
3. Livelihood and Employment
4. Economic Development and Self-Reliance
5. Human Health and Well-Being
6. Community Infrastructure and Public Services
7. Contracting and Business Opportunities
8. Cultural Resources
9. Resources and Land Use
10. Cultural Well-Being
11. Benefits, Royalty and Taxation
12. Governance and Leadership

The committee was asked to decide and order these VSEC's in number of importance to them. Discussions then followed surrounding these VSEC's, as well as any other relevant items according to the Qikiqtaaluk communities and stakeholders. The conversation took up the entire morning, and it proved to be a valuable morning full of discussions surrounding what communities feel are the most important to them, the region and the territory as a whole. These topics covered areas such as:

- Infrastructure for country food processing plants to provide for a local economy and better healthy food opportunities
- Racism resulting in Inuit turnover
- Mental health initiatives on-site and in the communities
- Human health and well-being needs to be a priority
- Conflict management and cultural sensitivity
- Employment leading to an increase in self-esteem
- The need for translations in communities at stores
- Smaller communities (especially farther away from the Mary River Project site) are not benefiting from education and training
- Drop-out rates from schools
- Where community members can find work if they have an education
 - Finding a lack of employment opportunities in the small communities even when people are well educated
- The need for mental health programs in communities and health centres
- Parents need education and guidance on good parenting skills
- The opportunity for role model programs in communities

- The need for cultural and recreational programs on-site at Mary River
- The disincentive in finding employment if you live in social housing
 - The more money you make, the more you pay in rent in social housing so to keep affordable rent people stay unemployed
- The need for recording Traditional Knowledge and IQ so young people can learn and carry on this knowledge
- Issues of racism on-site for local employees
- Stories of employees being demoted instead of promoted
- Turnover due to lack of childcare, homesickness, racism, 12 hour shifts being too long – need some breaks to enjoy recreational time
- The Elder advisor program is a good idea but it doesn't work when the Elder is not from the same community as the staff
- Mental health workers in communities do not keep information confidential – deters community members from using that resource
- Would like to see a program on behalf of Baffinland to see Elders receiving country food
- Royalties need to be better managed so that communities see more money

Overall, most VSEC's were touched on, but some that came up multiple times were:

- Human Health and Well-Being
- Education and Training
- Cultural Well-Being
- Community Infrastructure and Public Services

The meeting concluded with a decision on where the next QSEMC will be held. All members voted, and the decision was to host the next annual meeting in Sanikiluaq. The date will be determined at a later time.

Action items for the next meeting and the time leading up to the meeting are:

- Baffinland to send the map of the Mary River shipping route
- Have the community profiles provided by Department of Health translated
- The possibility of reporting on cultural activities on site at the Mary River Project

Project-Specific Action Items/Recommendations Issued at the 2017 QSEMC Meeting

Two Project-specific action items/recommendations were issued by the QSEMC to Baffinland at the 2017 QSEMC meeting, to which Baffinland has provided the following responses:

QSEMC Action Item/Recommendation #1: Baffinland to provide a map of the Project's shipping route.

Baffinland's Response: Baffinland will provide a map of the Project's shipping route at the 2018 QSEMC meeting.

QSEMC Action Item/Recommendation #2: Baffinland to investigate the possibility of reporting on cultural activities on site at the Project.

Baffinland's Response: Baffinland has reported on cultural activities on site in its Annual Report to the NIRB (e.g. through Project Certificate Condition No. 155). Baffinland will also provide a summary of on site cultural activities at the 2018 QSEMC meeting.



Meeting Notes
Mary River Socio-Economic Monitoring Working Group (SEMWG) Meeting
February 2, 2017 (300pm – 445pm)
By Teleconference

Attendees:

Baffinland Iron Mines Corporation (Baffinland):

Mary Hatherly
Adam Grzegorzcyk
Jason Prno (consultant)
Richard Cook (consultant)

Government of Nunavut (GN):

Lou Kamermans
Chantelle Masson
Erika Zell
Arielle Stockdale

Qikiqtani Inuit Association (QIA):

Rebecca Mearns
Shane Cameron (consultant)

Indigenous and Northern Affairs Canada (INAC)

David Abernethy
Rachel Theoret-Gosselin

Other Information:

Jason Prno facilitated the meeting. Richard Cook took meeting notes.

Meeting Notes:

- 1. Introductions (All)**
- 2. Update on the 2016 Socio-Economic Monitoring Report (Baffinland)**
 - a. In preparation, to be submitted with NIRB Annual Report
 - b. Similar in structure and content to 2015 report, which was a significant departure from previous reports. Now much more comprehensive, with additional indicators added.

This was done to bring the report better in line with EIS indicators and PC conditions. The report has been improved further for 2016.

- c. 2015 report – Issued in draft to get feedback from the SEMWG, so we’ve taken that feedback and have incorporated it into the 2016 report.
- d. A new addition to the 2016 report – Revamp of employee information survey. This will be an addition to the 2016 report.
- e. Baffinland is considering the inclusion of a trends analysis in the 2016 report; similar to the NWT Communities and Diamonds report and more recently the Meadowbank monitoring report. Looking forward to obtaining SEMWG feedback on the approach, when people review the 2016 report.
- f. Currently have most of the government data we need for the 2016 report, just waiting on company data for 2016.
- g. Inuit employment was lower than Baffinland would like in 2016, and Inuit turnover was higher than they would like. Baffinland is taking active steps to address this. An Inuit HR Strategy and Inuit Procurement Strategy are in the final stages of preparation.
- h. Baffinland will table the draft Inuit HR Strategy with QIA for discussion. It includes high level commitments which are intended to assist Baffinland/contractors in meeting or exceeding the MIEG. First goal is to strengthen stakeholder engagement and collaboration. Second goal is to strengthen data collection processes. Want to see employee skills and match that with upcoming needs, to be able to identify training initiatives required. Want to roll out a revamped Work Readiness Program, which will be run as a pilot in 2017 with the intention to deliver 2x/year in each community in subsequent years.
- i. Want to improve recruitment, and develop a process to catch issues in first 8 weeks following site employment to identify and address employee concerns. A number of initiatives are being looked at with regards to youth fairs, scholarships, and developing programs for youth and women to gain experience/exposure on-site. What has been lacking is a process of monitoring and an evaluation framework. Some initiatives to discuss with QIA in the future include joint training for BCLOs/CLOs, HR career information tour, and an on-site apprenticeship program. New instructions to contractors are also envisioned (want to improve contractor reporting of Inuit employment), with incentive and penalty schemes attached. Baffinland is revising its onboarding and retention programs. Baffinland would like to create a mechanism to track employee concerns, including complaints/grievances. Voluntary employee survey is also being looked at.
- j. Inuit HR Strategy is a companion piece to Inuit Procurement Strategy.
- k. Company takes Inuit employment very seriously, and we acknowledge Baffinland has not met targets. Want to encourage Inuit employment but equally important is retention and advancement of Inuit through the workforce. Baffinland will be developing 3 to 5 year goals to address training, recruitment, advancement and retention.
- l. RE: 2016 monitoring program data - Some data remains only available at the territorial level. Where data is lacking, Baffinland will continue to track issues through the QSEMC process and Baffinland’s community engagement program.

Questions and comments on 2016 Socio-Economic Monitoring Report (All)

LK – Will we follow the same process as last year of circulating a draft to the SEMWG before the annual report?

JP - Won't be able to get a draft report out before annual report, because of when data becomes available. The purpose of the draft last year was to provide an opportunity to get comments on the new reporting format.

LK – It's a practice we advocate for. Meadowbank has provided early drafts, but has latency in their reporting. TMAC has provided us with a draft before. Maybe we can have communication with Baffinland before the annual report is submitted so we don't have to go through NIRB process with formal comments.

JP – That's what we were looking at, and part of why we wanted to have this call, because one face-to-face meeting a year makes continuity difficult. Perhaps more regular teleconferences with the SEMG would address this concern.

RM – We can be available more often for these types of calls.

JP – Richard is taking notes and we'll circulate them to the SEMWG.

DA – How will the trends analysis be different from what you are already doing?

JP – This is something we looking at for 2016, but wanted to talk to the group before moving too much farther ahead. We haven't done this before, but are considering analyzing trends before/after development and year over year. We're interested in a dashboard approach.

DA - Will this be presented in bar charts, etc.?

JP – To be determined. But, It would be nice to agree on common indicators so we can compare projects across the territory.

DA – We'll wait and see what you produce; we're looking forward to seeing what is done.

AG – We are still a young project and therefore have only ~2 years of operational data. So, we are just now getting to the point where we can do trends analyses. It will depend on available data and length of the dataset.

3. Obtain working group feedback on the new Baffinland Employee Information Survey

JP – Baffinland decided to revamp is survey to achieve PC condition requirements. A draft of the survey documents were distributed to the SEMWG members prior to this call. One PC condition specifically

asked us to work with QSEMC in developing the survey, so this is why we asked this group (which is a subset of the QSEMC) for feedback. Baffinland will issue the survey to all new employees as part of the onboarding process. Survey will be voluntary. Inuit employees living within and outside of Nunavut will be asked to complete the survey, in addition to non-Inuit employees living in Nunavut. Wouldn't be administered to contractors. One of the PC conditions focuses on migration, and we have tailored our questions as such. We are hoping to generate initial data in Q1-2017 for the 2016 monitoring report. Afterward, survey results will be reported by calendar year. Hope to get information out for the 2016 report, but results may need to be presented at a later date if this is not possible. Feedback on the survey from the SEMWG is requested.

AS – We added a number of suggested questions on the survey. Does everyone have them with track changes?

JP – They were only issued to Baffinland.

AS – There were two subsets of questions we added. The first were questions on respondents' current housing situation. Overcrowding is a very important topic. For the people finding employment, what is their current situation, and will employment affect their housing situation? The majority of Nunavummiut live in public housing. With increased income, will different options be available to them? We want to take advantage of employment by bringing people out of public housing, if it is possible. If the survey is for incoming employees only, the data we collect may be more limited. Or is it for outgoing employees too?

JP – The survey is planned to be administered only during the onboarding of new employees.

AS – So it may be premature to ask about home ownership, since new employees might not know what employment will mean for their housing. So maybe asking questions on their current housing situation is sufficient.

LK – The PC condition states an annual survey will be conducted.

JP – Survey results would be reported annually for new hires. Baffinland really struggled with obtaining survey responses before when on-site HR staff tried to survey employees. They received lots of push back. We thought best way to get feedback year after year was by integrating the survey into the new employee onboarding process.

LK – Voluntary surveys are hard to do. But seeing changes over time will be difficult if you're surveying each employee only once.

JP – Good point. We can talk about this further. But the poor reception of survey last year is why we are proposing what we are now.

LK – Getting that information right away is critical, but it needs to be followed up on to see changes over time.

JP – Comparability diminishes if a given employee fills it out once, and then doesn't fill it out, for example, until 5 years later, or never fills it out again. So the GN would prefer to have survey administered voluntarily every year?

LK/AS – From housing perspective, it would be difficult to figure out impact of the project over time otherwise. I like the idea that the survey can be anonymous, but it could be useful to analyze cohorts (e.g. what is the housing situation for new employees vs. employees after 5 years, etc.?). The data is a lot less valuable when it is not collected annually.

AG – From the proponent's perspective it is our preference to collect this data, but we had a strong pushback from our employees when we last tried. We can't make people do the survey, so that's why we proposed the approach we did.

JP – There is another point that we want to discuss – There are a number of housing questions added by the GN that divert from the essence of the PC condition. We want a survey that is focused on what is required to be collected, is simple and easy to complete, and reduces barrier to having people complete it.

LK – We took the approach that we weren't necessarily limited to what was specified in the PC. NIRB doesn't always incorporate all comments made by reviewing parties into their PCs. We ultimately want to know if the projects provide a benefit. I don't think the questions we added change the direction of the survey. The GN can provide more information / comments on why the questions are needed, if you like? Or could Baffinland highlight those that are not applicable?

JP – We can send you our comments if you like. Did INAC or QIA have any comments on the survey?

RM – We've looked at the survey and share concerns with the GN re: only conducting the survey on new employees. Is there way to look at trends? We do have some comments/suggestions we can provide in writing. We also have an upcoming JMC meeting in Oakville. One thing on the agenda for some time has been the development of a workplace conditions survey. This would be done with current employees at Baffinland, as a requirement of the IIBA. We have been discussing with Baffinland a survey with employees or employment coordinators. Is there a way to integrate the workplace conditions survey with this survey? And could you use Inuit employment coordinators to get participation? It's not clear how the previous survey was rolled out and communicated – It's worth looking into. Getting respondents to fill out a survey can be difficult. It's important to explain why the survey is being conducted and how it will benefit things.

JP – I wasn't aware of this other survey; it's worth considering combining them both.

MH – It's on the agenda for the JMC for next week, so we can talk about it then?

RM – Yes, combining the surveys would be much better, if possible. We will send comments on re-wording questions or with follow up questions. Is there a need to include the employee’s names on the survey? Or can they remain anonymous?

RC – Have other companies conducted such surveys?

LK – Meadowbank conducted a survey several years back, and found it very helpful. I will look into whether or not the Meadowbank survey is shareable.

DA – Re: survey question 9 on community location – Are you trying to see what community they would want to relocate to?

JP – Community employment location would be specific to BCLOs or Baffinland Iqaluit staff.

DA – Regarding the need to complete the survey annually, I agree with the GN’s interpretation of the Project Certificate.

[Unrecorded comments]

RTG – My comments on survey were already brought up. Re: confidentiality - Make it clear their name is optional as it currently appears mandatory. We need to read up PC Condition No. 133 and what its actual intention was. You should find a way to monitor change of status. Could you survey 1-year, 3-year, and 5-year employees?

4. Discuss Baffinland’s plans for addressing the socio-economic impact assessment portion of the Phase 2 EIS.

[RC provided an update on the status of the Phase 2 review and EIS]

JP – For the Phase 2 baseline, the goal is to draw on and reference the considerable amount of baseline work that has already been prepared for the Project. The intention is not to present an updated baseline report. Plenty of monitoring data has been generated since the FEIS. We want to focus on what we’re already monitoring and what’s already been determined to be important to monitor. For the impact assessment, we want to focus only on the residual effects assessed in the FEIS (largely leaving aside subjects of note and other topics and information). We will discuss and provide summary information on how each of the residual effects will or will not change due to the Phase 2 Proposal. If any of these effects are expected to change significantly, a more detailed effects assessment discussion will be provided.

LK – From reviewing the ERP, it was very hard to see what was being studied and what numbers we were working with, because the document was flipping between the FEIS and ERP addendum. Nailing down how we are going to refer to the project, as it now includes the southern rail line, will be important.

[RC – Defined the 4 stages of Phase 2]

EZ – When will the proposal go to NPC?

AG – In the next couple of days.

RTG – Have you discussed with NIRB if there would be a screening phase?

RC – Baffinland already has amended guidelines, so the best case is that they proceed right to review. But we don't know what NIRB will decide in terms of next steps.

AG - Yes, we will be meeting with NIRB next week.

5. Other Matters

LK – The GN is contemplating a territorial socio-economic monitoring workshop, an idea which was borne out of the Kitikmeot SEMC. Realizing we will likely have projects in each region soon, we don't currently get a full perspective of how the industry is affecting the territory. We would like to see aggregated territorial reports. The workshop would bring industry and other players together to discuss indicators, processes, and how to approach socio-economic monitoring in the near future. We also want regional Inuit organization attendance and input, so will send details to you shortly. If we're all on the same page, we will start into the planning, logistics, and development of materials. We were at one point thinking April would be the best time for the workshop, but the earliest now is May.

[Meeting adjourned at 4:45 pm]



Meeting Notes
Mary River Socio-Economic Monitoring Working Group (SEMWG) Meeting
September 14, 2017 (5:00pm-6:00pm)
Frobisher Inn – Iqaluit, Nunavut

Attendees:

Baffinland Iron Mines Corporation (Baffinland):

Mary Hatherly (MH)

Andrew Moore (AM)

Jason Prno (consultant) (JP)

Government of Nunavut (GN):

Lou Kamermans (LK)

Chantelle Masson (CM)

Rhoda Katsak (RK)

Qikiqtani Inuit Association (QIA):

Rebecca Mearns (RM)

Shawn Harriman-Byrne (SHB)

Indigenous and Northern Affairs Canada (INAC)

David Abernethy (DA)

Julia Prokopick (JP-INAC)

Other Information:

Lou Kamermans chaired the meeting. Andrew Moore took meeting notes.

Meeting Notes:

- 1. Introductions (All)**

- 2. NIRB Draft Appendix A**

LK - Introduced the topic and began discussion. Indicated that the MRSEMWG is largely self-directed and should continue work as such.

MH - Indicated that BIM intends to provide comments to NIRB on Appendix A, but has not yet.

RK - Asked for more information about what is included in NIRB's Appendix A.

JP – Provided some initial comments about Appendix A and indicated that they will be elaborated on in a formal submission. Indicated that BIM has a desire to strengthen the role of this working group as it relates to socio-economic monitoring.

LK - Indicated that that GN has reviewed Appendix A, but not yet in enough detail to provide extensive comments. The GN intends to share their comments with members of the working group prior to submitting them to NIRB.

JP - Should include Megan Lord-Hoyle of Baffinland in conversations about this to ensure she is engaged on this work and all comments related to Appendix A.

LK - Next step is for GN to get in touch with Mary H. and provide comments, and to make a concerted effort to align comments provided by working group members to NIRB.

DA - Wants clarity on reporting/commenting approach.

LK - Provided clarification. Indicated that comments are due October 22

3. Role of Socio-Economic Monitoring in NIRB Community Information Sessions

LK - This was raised by Rhoda. Indicated that SEMC representative should be present at these meetings. Provided some clarity on what the NIRB community visits consist of and why an SEMC representative should attend.

JP - GN would be the SEMC representative on these community visits?

LK - Asked for working group member opinions on this matter.

MH - We would need to discuss this internally first and see who would be the best representative to attend.

RK – NIRB typically talks about territorial and marine monitoring but not socio-economic issues at these meetings.

LK – We will talk to NIRB and see what opportunities exist for SEMC participation.

DA - Has the GN gone in the past? Believes that INAC has had people participate in the past.

LK - Will check with GN internally to see what works.

?? – There are lots of separate community visits, and lots of information is provided to communities. This is lots of duplication. Should we be collaborating?

DA - Thinks INAC does try to collaborate timing. But is not sure. Agrees that duplication is bad.

LK - Will follow-up with NIRB to see about collaboration.

RK - BIM does regular community update sessions. NIRB does it annually, but provides mostly environmental information. We need more socio-economic information in the communities. We need more public reporting.

JP – I've attended scoping sessions held by NIRB in the past. These kinds of sessions are managed and led by NIRB; they may be hesitant to have companies play too big a role in these sessions.

LK - Good point. Someone from the SEMC would good be a good representative to talk objectively.

4. Plans for 2017 Socio-Economic Monitoring Report - Incorporation of Workshop Deliverables

JP - Provided update on plans for 2017 report. Indicated that 2017 report will be similar to last year's layout. Some changes may occur, but they will not be significant.

LK - After the workshop, the working group should have a follow-up chat. Should we meet before a draft workshop report is issued or after?

MH/JP – If we meet following issuance of the draft report it would allow for substantive discussion.

JP – I know other companies have issued their annual socio-economic monitoring reports in draft previously. I'm not sure this is something Baffinland can do, because reports are due March 31st and all data may not be received until close to submission time.

LK - AEM submits in December. Allows for a draft report review process. This is not something that GN endorses or would necessarily like to implement elsewhere. Provided an explanation of history of how AEM reporting is structured and why.

JP/MH - Timing remains an issue for us to provide a draft report. However, we're happy to provide an update by phone to the working group like we did last year.

LK – It would be a good idea for a draft report to be issued, to allow for better incorporation of reviewer perspectives. Can Baffinland provide a basic draft report?

JP/BM – Our submission timeline is a NIRB timeline. We don't have much flexibility re: timing.

JP – Baffinland's NIRB Annual Report draws heavily on the Socio-Economic Monitoring Report so it is very important to get done by March 31st.

LK - If it's not possible, then Baffinland can expect more feedback on the final report.

JP – BIM is fine with that. However, our preference is to deal with these issues to the greatest degree possible at working group level, as this is the group that contains the monitoring experts.

LK - As a practice, we will work with deadlines given to produce NIRB comments. We can decide whether to address issues at the working group level or formally through NIRB.

JP - We should aim to have a teleconference ahead of formal submission to discuss comments.

DA - Agrees. This is also done in the water licensing process. Allows for a simple discussion to avoid any misconceptions.

5. Baffinland Phase 2 Proposal EIS Update

MH - Provided Phase 2 update. EIS is being worked on but no clear timeline for submission to NIRB yet as there are outside factors to consider such as the NPC review.

LK - How is Baffinland's relationship with NPC?

MH – We're concerned about the lengthy consideration of Phase 2. But our aim is to keep relationships amicable, which is in the best interest of all parties.

JP – I am part of the team working on the Phase 2 Proposal socio-economic impact assessment. BIM would like to use this working group to discuss socio economic issues related to Phase 2 impact assessment issues, if possible.

LK - Agrees. Thinks that is a great approach. GN will be consistent in where its socio-economic priorities are.

DA – Re: monitoring report in April. Can there be a meeting where the monitoring report is initially presented?

6. MRSEMWG Follow-up to Reviewer Comments - 2016 Socio-Economic Monitoring Report

JP - BIM is here to address working group comments/answer questions. We have replied to GN and QIA comments to NIRB already in writing. Would like to deal with future comments in this forum, where possible.

RK – There were lots of comments in the report about employment. Arctic Bay was the highest employment community. This is interesting, as Pond Inlet is a bigger community. What is Baffinland

doing to retain employees? This question was asked at a community meeting in the past. It was not followed-up on at the July meeting this year. Should we as a group proactively bring up these issues? JP - BIM has made new commitments in this area, such as those related to the IHRS, MIEG, and IPCS. They are all part of the response to this concern. We are happy to report back as additional concerns are heard.

MH/RK – We need to come up with a meaningful way to answer these questions.

DA - What about your work ready program? Please provide a summary.

MH – Summarized plans for revised work ready program.

RK/LH - SEMC should be addressing these concerns in its reports. Territorial monitoring may be the best way to address these concerns. This would just be a general good practice.

JP - Detailed records of SEMC meeting minutes are very important to maintain, even in the new territorial monitoring report format.

LK - As proposed, an appendix would contain a summary of meeting minutes.

7. Review and Update of SEMWG TOR

LK - Should the TOR be re-considered?

JP – We'll need to take this back and see where improvements can be made from a BIM perspective.

LK - Shared and explained org. chart that is being worked on with Agnico-Eagle (AEM). Open to looking at this for inclusion in BIM's TOR. Will seek AEM permission to share this with the Mary River working group.

JP - Maybe we should wait until the AEM chart is finalized?

LK - When we review the TOR we should be more explicit about appointing a Chair. Anyone have a different opinion?

Group - No objections.

JP - Asked clarifying questions about Chair responsibilities.

LK - Explained and shared GN's view on responsibilities (i.e. to organize and host working group meetings, facilitate meetings, take notes).

DA - As we go through the TOR it will be beneficial to clarify expectations. Create greater structure related to deliverables, and maybe have quarterly calls?

[Meeting adjourned at 5:54 pm]

APPENDIX C: CONCORDANCE WITH PROJECT CERTIFICATE TERMS AND CONDITIONS RELATED TO SOCIO-ECONOMIC MONITORING

Term and Condition No.	Category	Term or Condition	2017 Socio-Economic Monitoring Report Reference	Baffinland Comments
129	Population Demographics – Qikiqtaaluk Socio-Economic Monitoring Committee	The Proponent is strongly encouraged to engage in the work of the Qikiqtaaluk Socio-Economic Monitoring Committee along with other agencies and affected communities, and it should endeavour to identify areas of mutual interest and priorities for inclusion into a collaborative monitoring framework that includes socio-economic monitoring priorities related to the Project, communities, and the North Baffin region as a whole.	Section 1.2 Section 1.4 Appendix A Appendix B	Baffinland continues to engage with the QSEMC and participates in the Mary River SEMWG, a sub-set of the QSEMC whose members include Baffinland, the Government of Nunavut, the Government of Canada, and QIA. A Terms of Reference for the SEMWG (which identifies socio-economic monitoring priorities and objectives for the Project) has been finalized. Baffinland incorporated feedback from SEMWG members in 2016 to finalize the Project’s socio-economic monitoring plan. Baffinland also continues to refine its socio-economic monitoring program based on feedback received from Project stakeholders.
130	Population Demographics – Project-specific monitoring	The Proponent should consider establishing and coordinating with smaller socio-economic working groups to meet Project specific monitoring requirements throughout the life of the Project.	Section 1.2 Appendix A Appendix B	Baffinland continues to work with the QSEMC and the SEMWG on socio-economic monitoring initiatives. In addition, Baffinland regularly engages other committees which operate under provisions of the IIBA on various socio-economic topics.
131	Population Demographics – Monitoring demographic changes	The Qikiqtaaluk Socio-Economic Monitoring Committee is encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the North Baffin communities and the territory as a whole. This information may be used in conjunction with monitoring data obtained by the Proponent from recent hires and/or out-going employees in order to assess the potential effect the Project has on migration.	Section 3.1 Section 3.2 Section 3.3 Section 3.4 Appendix E	Baffinland has provided demographic change information in the Socio-Economic Monitoring Report. Baffinland has also implemented an Inuit Employee Survey, which collects information related to employee and contractor changes of address, housing status, and migration intentions.
133	Population Demographics – Monitoring demographic changes	The Proponent is encouraged to work with the Qikiqtaaluk Socio-Economic Monitoring Committee and in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders, design and implement a voluntary survey to be completed by its employees on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions while respecting confidentiality of all persons involved. The survey should be designed in collaboration with the Government of Nunavut’s Department of Health and Social Services, the Nunavut Housing Corporation and other relevant stakeholders. Non-confidential results of the survey are to be reported to the Government of Nunavut and the NIRB.	Section 3.4 Appendix E	Baffinland has implemented an Inuit Employee Survey, which collects information related to employee and contractor changes of address, housing status, and migration intentions. Baffinland continues to discuss the content and results of the survey with members of the SEMWG and will continue to solicit feedback on potential improvements to the survey.
134	Population Demographics – Employee origin	The Proponent shall include with its annual reporting to the NIRB a summation of employee origin information as follows: a. The number of Inuit and non-Inuit employees hired from each of the North Baffin communities, specifying the number from each; b. The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Kivalliq regions, specifying the number from each; c. The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and d. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.	Section 3.5	Baffinland has presented employee and contractor origin information in the Socio-Economic Monitoring Report.
140	Education and Training – Survey of Nunavummiut employees	The Proponent is encouraged to survey Nunavummiut employees as they are hired and specifically note the level of education obtained and whether the incoming employee resigned from a previous job placement or educational institution in order to take up employment with the Project.	Section 4.4 Appendix E	Baffinland has implemented an Inuit Employee Survey, which collects information related to employee and contractor education levels, and education and employment status prior to taking up employment with the Project.
145	Livelihood and Employment – Barriers to employment for women	The Proponent is encouraged to work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor the barriers to employment for women, specifically with respect to childcare availability and costs.	Section 5.4	Baffinland has presented information on women employed at the Project and potential barriers they may face in the Socio-Economic Monitoring Report. Furthermore, specific reference is made in the Mary River Project IIBA to women in the workplace and the associated barriers they may face. This topic is addressed by Baffinland and QIA through Article 7.15 of the IIBA.
148	Economic Development and Self-Reliance, and Contracting and Business Opportunities – Food security	The Proponent is encouraged to undertake collaborative monitoring in conjunction with the Qikiqtaaluk Socio-Economic Monitoring Committee’s monitoring program which addresses Project harvesting interactions and food security and which includes broad indicators of dietary habits.	Section 7.2 Section 9.1 Section 10.1	Baffinland has presented information on Project harvesting interactions and food security in the Socio-Economic Monitoring Report. Baffinland has also presented related information on household income and food security, and land user-Project interactions in this report.
154	Human Health and Well-being – Indirect impacts to health and well-being	The Proponent shall work with the Government of Nunavut and the Qikiqtaaluk Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and others as deemed appropriate.	Section 4.2 Section 7.3 Section 7.4 Section 7.6 Section 7.7 Section 7.8 Section 7.9 Section 7.10	Baffinland has presented information on the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases, rates of teenage pregnancy, high school completion rates, and other topics (e.g. crime rates, EFAP usage) in the Socio-Economic Monitoring Report.

Term and Condition No.	Category	Term or Condition	2017 Socio-Economic Monitoring Report Reference	Baffinland Comments
			Section 7.11 Section 7.12	
158	Community Infrastructure and Public Services – Impacts to health services	The Proponent is encouraged to work with the Government of Nunavut and other parties as deemed relevant in order to develop a Human Health Working Group which addresses and establishes monitoring functions relating to pressures upon existing services and costs to the health and social services provided by the Government of Nunavut as such may be impacted by Project-related in-migration of employees, to both the North Baffin region in general, and to the City of Iqaluit in particular.	Section 1.2 Section 7.2 Section 7.9 Section 8.3 Appendix A Appendix B	Baffinland continues to work with the QSEMC and the SEMWG on socio-economic monitoring initiatives; the Government of Nunavut (GN) actively participates in both these groups. A Memorandum of Understanding (MOU) was also signed with the GN Department of Health in November 2013 and subsequently updated in 2017 regarding site health services and medevac procedures. More specifically, this MOU describes the health care staff and services Baffinland will provide on-site, including procedures Baffinland will follow during medevac situations, for pre-employment medical examinations, and for the reporting and management of communicable diseases, amongst other topics. The MOU also describes how Baffinland will pay for and/or reimburse the GN Department of Health for costs associated with the medical transportation of employees and for conducting pre-employment medical exams. Baffinland has provided information on potential socio-economic effects of the Project in its Socio-Economic Monitoring Report. This includes indicator data related to pressures on existing health and social services provided by the GN that may be impacted by Project-related in-migration of employees (i.e. percentage of the population receiving social assistance, percent of health centre visits related to infectious diseases, total and per capita number of health centre visits in the LSA, number of visits to Project site medic).
159	Community Infrastructure and Public Services – Impacts to infrastructure	The Proponent is encouraged to work with the Government of Nunavut to develop an effects monitoring program that captures increased Project-related pressures to community infrastructure in the Local Study Area communities, and to airport infrastructure in all point-of-hire communities and in Iqaluit.	Section 8.4	Baffinland has presented information on Project-related pressures on community infrastructure in the Socio-Economic Monitoring Report.
168	Governance and Leadership – Monitoring program	The specific socioeconomic variables as set out in Section 8 of the Board's Report, including data regarding population movement into and out of the North Baffin communities and Nunavut as a whole, barriers to employment for women, Project harvesting interactions and food security, and indirect Project effects such as substance abuse, gambling, rates of domestic violence, and education rates that are relevant to the Project, be included in the monitoring program adopted by the Qikiqtani Socio-Economic Monitoring Committee.	Section 3.1 Section 3.2 Section 3.3 Section 3.4 Section 4.2 Section 5.4 Section 7.2 Section 7.3 Section 7.4 Section 7.6 Section 7.7 Section 10.1	Baffinland has presented information on demographic change, barriers to employment for women, Project harvesting interactions and food security, and potential indirect Project effects such as substance abuse, gambling, rates of domestic violence, and education rates in the Socio-Economic Monitoring Report.
169	Governance and Leadership – Monitoring economic effects	The Proponent provide an annual monitoring summary to the NIRB on the monitoring data related to the regional and cumulative economic effects (positive and negative) associated with the Project and any proposed mitigation measures being considered necessary to mitigate the negative effects identified.	Section 12.1.2	Baffinland has provided a summary of regional and cumulative economic effects in the Socio-Economic Monitoring Report.

APPENDIX D: RESPONSES TO NIRB RECOMMENDATIONS ON THE 2016 SOCIO-ECONOMIC MONITORING REPORT

NIRB Recomm. No.	Description	Baffinland Response	2017 Socio-Economic Monitoring Report Reference (If Applicable)
14	<p>The Board requests that Baffinland, in consultation with the Qikiqtaaluk Socio-Economic Monitoring Committee, develop robust indicators to measure and survey the in-migration and out-migration of Inuit and non-Inuit residents in the North Baffin LSA and discuss how this may affect local housing opportunities within the LSA. It is requested that Baffinland conduct a survey of the Inuit employee turnover rate on an annual basis and that the results of the survey be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland has addressed this recommendation in several ways. Foremost, Baffinland already monitors in- and out-migration of Inuit and non-Inuit residents in the North Baffin LSA through various indicators:</p> <ul style="list-style-type: none"> • Known in-migrations of non-Inuit Project employees and contractors (obtained from an annual survey of Baffinland Community Liaison Officers in each North Baffin LSA community). • Known out-migrations of Inuit Project employees and contractors (obtained from an annual survey of Baffinland Community Liaison Officers in each North Baffin LSA community). • Employee changes of address and migration intentions (obtained from an annual survey of Inuit employees and contractors at Project sites). • Population estimates/changes in the percentage of Inuit versus non-Inuit residents in the North Baffin LSA (obtained from the Nunavut Bureau of Statistics). <p>Monitoring results provide a relevant overview of in- and out-migration trends in the North Baffin LSA. Potential effects on local housing opportunities within the North Baffin LSA are also described in the socio-economic monitoring report. Baffinland acknowledges additional in- and out-migration data for non-Inuit and Inuit North Baffin LSA residents are currently unavailable from the Nunavut Bureau of Statistics (i.e. annual, community-level data). Baffinland also acknowledges statistical data collection in this area is primarily a government activity. Baffinland will endeavour to include new relevant data should it become available in the future. Baffinland will also continue consulting with the QSEMC and SEMWG on potential improvements to the Project's monitoring program. Most recently, the issue of Project 'data gaps' was discussed during the July 2016 QSEMC in Arctic Bay and September 2017 territorial socio-economic monitoring workshop held by the Government of Nunavut in Iqaluit. For example, the topic of in- and out-migration of employees was discussed during the September 2017 workshop and draft recommendations for monitoring this topic have now been provided by the Government of Nunavut (2017). Baffinland's monitoring program for the North Baffin LSA conforms to these recommendations. In addition, Baffinland has provided both Inuit and non-Inuit employee turnover rates in its socio-economic monitoring report. Baffinland also understands additional employee survey questions on housing may be recommended by the Government of Nunavut in 2018. An opportunity to discuss potential new and/or reformulated survey questions will be considered in 2018. A draft response to NIRB recommendation no. 14 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members. However, the Government of Nunavut re-iterated it was developing a list of recommended employee survey questions that will be shared with Baffinland in the future.</p>	<p>Section 3.1 Section 3.2 Section 3.3 Section 3.4 Section 5.3</p>
15	<p>The Board requests that Baffinland consult with the Qikiqtani Inuit Association in discussing priorities regarding monitoring of non-Inuit residents and contractor employees in the local study area, and where applicable, provide information regarding Baffinland's Inuit employee payroll, in order to provide an understanding of the expansion of the local market for consumer goods and services within the local study area. It is requested that this data be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland has addressed this recommendation by including detailed employment data in its socio-economic monitoring report. Specifically, quarterly employment data is provided that depicts the origin, number, and Inuit/non-Inuit ethnicity of Project employees and contractors in the LSA. Baffinland also includes payroll data for Inuit and non-Inuit LSA employees (contractor data is unavailable), in addition to the total value of its Inuit employee payroll (which includes Inuit living outside the LSA). Employment-related topics are also regularly discussed between Baffinland and the QIA through various IIBA committees. A draft response to NIRB recommendation no. 15 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members, including QIA.</p>	<p>Section 3.5 Section 6.2</p>
24	<p>The Board requests that Baffinland assess Project-related influences on housing in the North Baffin Local Study Area, as well as to continue developing employee surveys to properly address all socio-economic indicators likely to arise due to migration. It is requested that the results of the survey be provided and incorporated within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland has addressed this recommendation by complying with Project Certificate term and condition no. 133, which requests that Baffinland design and implement an employee survey to identify changes of address, housing status, and migration intentions. The current Inuit Employee Survey addresses all these requirements. Baffinland also discusses potential Project-related influences on housing related to migration in its socio-economic monitoring report. However, Baffinland has made itself available to the SEMWG and QSEMC to discuss potential improvements to the Project's monitoring program and understands additional employee survey questions may be recommended by the Government of Nunavut in 2018. An opportunity to discuss potential new and/or reformulated survey questions will be considered in 2018. A draft response to NIRB recommendation no. 24 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members. However, the Government of Nunavut re-iterated it was developing a list of recommended employee survey questions that will be shared with Baffinland in the future. The Government of Nunavut also confirmed its final socio-economic monitoring workshop report would be issued soon.</p>	<p>Section 3.2 Section 3.3 Section 3.4 Appendix E</p>
25	<p>The Board requests that Baffinland adhere to the recommendation of the Government of Nunavut to provide examples of negative changes or concerns reported in the community surveys and a description of how Baffinland intends to address these impacts and confirm that proper mitigation measures have been implemented. The positive and negative results associated with the community surveys should be provided and included within the 2017 Annual Report to the NIRB.</p>	<p>Baffinland has addressed this recommendation by providing the following response. The 2016 North Baffin community survey conducted by Baffinland revealed 57% of survey respondents felt the Project provided positive change for their community, 8% felt the Project resulted in negative change, and 35% said they saw no change as a result of the Project. Positive changes noted by respondents included new jobs for local Inuit and youth, income and work-related benefits for families and communities, and new skills development opportunities for local residents. Negative changes included the long separation between families and employees affecting family stability, the ongoing problem of substance abuse in communities, the need for communication improvements between Baffinland and communities, the need for environmental protection of the area, and that not enough Inuit are being hired at the Project. Survey respondents also talked about the need for continued focus on worker safety and equitable community support. Baffinland continues to address these concerns through various means, such as:</p> <ul style="list-style-type: none"> • Maintaining a relatively short (2 week in/2 week out) employment rotation and a commitment to consider adopting alternative rotation schedules that are better aligned with familial and community activities (e.g. a 7 days in/7 days out pilot project is currently underway). • Providing permanent employees and their dependents with access to an Employee and Family Assistance Program. • Providing employees with access to various on-site communications technologies (i.e. phone, internet) so they may regularly communicate with their families. 	<p>N/A</p>

NIRB Recomm. No.	Description	Baffinland Response	2017 Socio-Economic Monitoring Report Reference (If Applicable)
		<ul style="list-style-type: none"> Maintaining a drug and alcohol-free work environment. Ongoing engagement with North Baffin LSA communities to discuss Project activities (e.g. through public and stakeholder meetings); documentation and tracking of feedback through Baffinland's StakeTracker database. Ongoing implementation of Baffinland's Inuit Human Resources Strategy, Inuit Procurement and Contracting Strategy, and the Q-STEP training program in partnership with the QIA. Maintaining a health and safety culture at Project sites, built on Baffinland's 'Safety First, Always' philosophy. Commitment to provide pre-employment and other training opportunities to employees (e.g. Project and/or job-specific, financial management, literacy and numeracy) Ongoing implementation of the Mary River Project IIBA, to ensure community benefits are being delivered by the Project. Annual monitoring of various environmental and socio-economic indicators, to ensure adverse effects are being avoided and positive effects are being delivered. <p>A draft response to NIRB recommendation no. 25 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members although some suggestions were made and have been incorporated into a final response.</p>	
26	<p>The Board requests that Baffinland follow the recommendation of the Government of Nunavut to address the increase in Inuit turnover rates at the Project by exploring the feasibility of using the Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat fund to provide additional supports to community daycares or child care services over and above what is available through the Government of Nunavut's Start-up contribution program. It is requested that updates with respect to providing additional supports to community daycares or child care services for employees or through Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat fund be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland has addressed this recommendation by providing the following response. Baffinland supports two funds established under the IIBA which could potentially be accessed to provide additional supports to community daycares or child care services in the LSA. While Baffinland makes significant financial contributions to these funds, <i>they are administered solely and exclusively by the QIA</i>. It is possible these funds could be used to provide additional supports over and above what is available through the Government of Nunavut's start-up contribution program; however, all decision-making on this matter rests with the QIA. The funds include:</p> <ol style="list-style-type: none"> Ilagiiktunut Nunalinnullu Pivalliajutsait Kiinaujat (INPK) Fund <ul style="list-style-type: none"> Fund provides up to \$750,000/year for projects in the Qikiqtaaluk Region which enhance community wellness (equal annual contributions of \$375,000 by QIA and Baffinland). Fund objectives include the creation of opportunities for community capacity building, the fair distribution of impacts and benefits between communities and across generations, maintenance of consistency with community development objectives, and promotion of mutual understanding and learning. Application details can be found at: http://qia.ca/programs/ilagiiktunut-fund/ Business Capacity and Start-Up Fund <ul style="list-style-type: none"> Fund provides up to \$250,000/year to Designated Baffin Inuit Firms (solely funded by Baffinland). Fund helps with start-up capital and financing, management development, ongoing business management, financial management, contracts and procurement or human resources management. Application details can be found at: http://qia.ca/programs/business-capacity-start-up-fund/ <p>A draft response to NIRB recommendation no. 26 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members.</p>	N/A
27	<p>The Board requests that Baffinland consider working with appropriate stakeholders to develop a measurement tool/indicator for food security and provide information on the impact of the Project on food security, including access to hunting grounds. It is requested that this update be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<p>Baffinland has addressed this recommendation in several ways and does not believe additional monitoring and/or indicators are necessary. Foremost, Baffinland already monitors several topics relevant to food security:</p> <ul style="list-style-type: none"> Proportion of taxfilers with employment income and median employment income (obtained from the Nunavut Bureau of Statistics) Percentage of population receiving social assistance (obtained from the Nunavut Bureau of Statistics) Employee payroll expenditures (Baffinland data) Number of recorded land use visitor person-days at Project sites (Baffinland data) Number of wildlife compensation fund claims (obtained from QIA) On-site employee harvesting activities (obtained from an annual survey of Inuit employees and contractors at Project sites). Territorial harvesting statistics (obtained from Statistics Canada, from the 2012 Aboriginal Peoples Survey) Territorial food security statistics (obtained from Statistics Canada, from the 2012 Aboriginal Peoples Survey) <p>Section 10.1 (Project Harvesting Interactions and Food Security) of the socio-economic monitoring report discusses all of these topics. However, Baffinland acknowledges additional community-level indicator data are currently unavailable for the topic of food security; as such, this topic also continues to be tracked through the QSEMC process and Baffinland's community engagement program. Furthermore, the 2017 report now includes a table describing Baffinland's role in each of the four food security components identified by the Nunavut Food Security Coalition (2014). Taken together, this provides a comprehensive overview of Project-related food security trends in the North Baffin LSA and no additional monitoring is anticipated at this time. However, Baffinland will continue consulting with the SEMWG on potential improvements to all aspects of the Project's monitoring program. A draft response to NIRB recommendation no. 27 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members.</p>	Section 10.1
28	<p>The Board requests that Baffinland engage with the Government of Nunavut to discuss possible Project implications on existing health and social services, including strategies for tracking health and social service requests. The</p>	<p>Baffinland has addressed this recommendation in several ways. Foremost, Baffinland already monitors health and social service-related topics through various indicators:</p> <ul style="list-style-type: none"> Percent of health centre visits related to infectious diseases (obtained from the Nunavut Bureau of Statistics) 	Section 7.2 Section 7.9

NIRB Recomm. No.	Description	Baffinland Response	2017 Socio-Economic Monitoring Report Reference (If Applicable)
	<p>Proponent should also consider providing information regarding outbreak investigations of communicable diseases, medical assessment or return to work as a requirement of insurance or workplace policies, and treatment of workplace injuries upon returning to the community. It is requested that an update on this engagement and related outcomes be included within the 2017 Annual Report to the Nunavut Impact Review Board.</p>	<ul style="list-style-type: none"> • Number of health centre visits, total and per capita (obtained from the Nunavut Bureau of Statistics) • Number of visits to Project site medic (Baffinland data) • Percentage of the population receiving social assistance (obtained from the Nunavut Bureau of Statistics) <p>Monitoring results provide a relevant overview of health and social service-related trends in the LSA. Furthermore, Baffinland remains in regular contact with the Government of Nunavut on health matters related to the Project. Baffinland will also continue consulting with the SEMWG on potential improvements to the Project's monitoring program. Most recently, health-related monitoring was discussed during the September 2017 territorial socio-economic monitoring workshop held by the Government of Nunavut in Iqaluit. As a result, draft recommendations for monitoring this topic have now been provided by the Government of Nunavut (2017) and include the indicators 'number of lost time incidents', and 'number of times GN emergency health services required'. Baffinland continues to investigate the possibility of aligning its monitoring program with these recommendations where appropriate. A draft response to NIRB recommendation no. 28 was provided to the SEMWG on February 8, 2018 and a teleconference to discuss it was held on February 14, 2018. No major concerns on this response were raised by SEMWG members.</p>	<p>Section 8.3</p>

APPENDIX E: 2018 INUIT EMPLOYEE SURVEY

Mary River Project Annual Survey - Inuit Employee

Overview:

****Please note your participation in this survey is completely voluntary and no negative consequences will result to those who decide not to participate****

This survey is conducted by Baffinland and the Qikiqtani Inuit Association (QIA) on an annual basis to collect information about the employees of the Mary River Project and their opinions on several topics. More specifically, this survey is conducted because:

- Baffinland is required to report on employment, education, and housing information pertaining to Project employees under the terms of its Project Certificate issued by the Nunavut Impact Review Board (NIRB).
- Baffinland is required to report on workplace conditions under the terms of its Inuit Impact and Benefit Agreement (IIBA) with the QIA.

Your thoughts and opinions are important and will be used to improve Baffinland's understanding of Inuit employment and workplace conditions at the Project (including for female employees) such as leisure activities, cross-cultural training programs, and access to counselling services and cultural activities.

You may choose to complete this survey on your own or with the assistance of Baffinland or QIA staff. You can also complete this survey in either English or Inuktitut. If you choose to complete this survey, your responses will remain confidential and your name will not be used. However, the information you provide may be used by Baffinland and QIA publicly (e.g. for reporting purposes). If you have any questions you can contact the Mary River Human Resources Office.

There are two types of questions included in the survey: 1) closed-ended, and 2) open-ended. The closed-ended questions provide a list of answer options that you can choose from. Please mark the appropriate box next to your answer choice with an 'X'. Open-ended questions do not have pre-defined answers. Please provide as many comments as you like in the answer box for the open-ended questions. If you require more space for your answers to the open-ended questions, please feel free to attach additional pages to the survey. You may also skip any questions that you do not want to answer.

Thank you for your participation.

General

1. Gender:

- Male Female

2. a) Are you:

- Inuit Non-Inuit

b) If you are Inuit, are you enrolled under the Nunavut Agreement?

- Yes No

c) If you are Inuit, is Inuktitut your first language?

- Yes No

3. Please indicate your age:

- Under 30 years old
- 30 to 39 years old
- 40 to 49 years old
- 50 to 59 years old
- Over 60 years old

4. Who do you work for?

- Baffinland
- Contractor (Please identify): _____

5. How long have you worked for your current employer (Baffinland or contractor)?

- Less than 1 year
- At least 1 year, but less than 2 years
- At least 2 years, but less than 3 years
- 3+ years

6. Which department do you work in?

Housing

7. What is your current community of residence?

- Arctic Bay
- Clyde River
- Hall Beach
- Igloolik
- Pond Inlet
- Iqaluit
- Other: _____

8. What type of housing do you currently live in?

- Privately owned – Owned by you
- Privately owned – Owned by another individual
- Renting from a private company
- Public housing
- Government of Nunavut staff housing
- Other staff housing
- Other: _____

9. a) Has your housing situation changed in the past 12 months?

- Yes No

b) If yes, please explain (e.g. Have you moved? Has the type of housing you live in changed?).

10. a) Have you moved to a different community in the past 12 months?

- Yes No

b) If yes, which community did you move from?

11. a) Do you intend to move to a different community in the next 12 months?

- Yes No

b) If yes, which community do you intend to move to?

Education and Work Experience

12. What is the highest education level you have obtained? (Check only one box)

No certificate, diploma, or degree

- No certificate, diploma or degree

High school diploma or equivalent

- High school diploma or equivalent

Postsecondary certificate, diploma, or degree

- Apprenticeship or trades certificate or diploma
 College, CEGEP or other non-university certificate or diploma
 University certificate or diploma below bachelor level
 University certificate, diploma or degree - Bachelor's degree
 University certificate, diploma or degree above bachelor level

13. a) Were you enrolled in an academic or vocational program at the time of your hire at the Mary River Project?

- Yes No

b) If yes, what program were you enrolled in and where were you enrolled?

c) If yes, did you suspend or discontinue your education because you were hired to work at the Mary River Project?

- Yes No

14. a) Did you resign from a previous job in order to take up employment with the Mary River Project?

- Yes No

b) If yes, what was your previous employment status? (Check only one box)

- Casual Part-Time Full-Time

c) If yes, what was your previous job title?

d) If yes, who was your previous employer?

Cross-Cultural Orientation

15. Baffinland provides a cross-cultural orientation program to increase non-Inuit employees' knowledge and respect for Inuit employees and culture. How would you rate the effectiveness of this program?

- Excellent
 Very good
 Good
 Fair
 Poor
 I didn't participate in a cross-cultural orientation program

16. Do you have any suggestions for improving Baffinland's cross-cultural orientation program?

Workplace Orientation Program

17. Baffinland provides a workplace orientation program to help new Project employees learn about the company's expectations of them. How would you rate the effectiveness of this program?

- Excellent
- Very good
- Good
- Fair
- Poor
- I didn't participate in a workplace orientation program

18. Do you have any suggestions for improving Baffinland's workplace orientation program?

Inuktitut in the Workplace

19. Do you feel comfortable speaking Inuktitut on site?

- Always
- Often
- Sometimes
- Rarely
- Never
- I'm not an Inuktitut speaker

20. How often is Inuktitut spoken during work hours by Inuit employees on site?

- Always
- Often
- Sometimes
- Rarely
- Never

21. Is Inuktitut used for work-related documents on site?

- Always
- Often
- Sometimes
- Rarely
- Never

22. Is Inuktitut media (e.g. newspapers, publications, broadcasts, other resources) not related to work available on site?

- Always
- Often
- Sometimes
- Rarely
- Never

23. Do you have any suggestions for improving Inuktitut usage on site?

Supporting Our Workforce

24. Do you feel supported by supervisors and managers while working at the Mary River Project?

- Always
- Often
- Sometimes
- Rarely
- Never

25. Do you feel supported by on-site elders while working at the Mary River Project?

- Always
- Often
- Sometimes
- Rarely
- Never

26. Do you feel comfortable working at the Mary River Project?

- Always
- Often
- Sometimes
- Rarely
- Never

27. Is respect shown for Inuit and Inuit culture at the Mary River Project?

- Always
- Often
- Sometimes
- Rarely
- Never

28. How would you rate the employee accommodations and living facilities at the Mary River Project?

- Excellent
- Very good
- Good
- Fair
- Poor

29. Do you have any suggestions for improving Inuit employee working and/or living conditions at the Mary River Project?

Counselling and Support Services

30. Do you know how to access the counselling and support services available to Project employees?

- Yes
- No

31. How would you rate the counselling and support services available to Project employees?

- Excellent
- Very good
- Good
- Fair
- Poor

32. Do you have any suggestions for improving Baffinland's counselling and support services?

Country Food

33. How often is country food available on the menu at the dining hall?

- Always
- Often
- Sometimes
- Rarely
- Never

34. How often do you use the country food kitchen?

- Always
- Often
- Sometimes
- Rarely
- Never
- I didn't know there was a country food kitchen

35. How would you rate the quality of the country food kitchen (e.g. Is it a useful space? Is it easily accessible? Is there adequate storage space)?

- Excellent
- Very good
- Good
- Fair
- Poor
- I've never been to the country food kitchen

36. Do you have any suggestions for improving country food availability on site?

Leisure Time and Traditional Activities

37. How would you rate the leisure time activities that are available on site?

- Excellent
- Very good
- Good
- Fair
- Poor

38. Which leisure facilities do you use most regularly on site? (Check up to 3 boxes)

- Fitness room
- TV room
- Music room
- Computer room
- Country food kitchen
- Outdoors/outdoors activities
- Other (please describe): _____

39. How often do you go outdoors for your leisure time activities while on site? (Not including smoking)

- Always
- Often
- Sometimes
- Rarely
- Never

40. a) Do you participate in traditional activities (e.g. hunting, fishing, harvesting) during your leisure time on site?

- Yes
- No
- I didn't know I could participate in traditional activities during my leisure time on site

b) If yes, how often do you hunt, fish, or harvest during your leisure time on site?

- Always
- Often
- Sometimes
- Rarely
- Never

41. Do you have any suggestions for improving leisure time and/or traditional activities on site?

Communications

42. How would you rate your ability to communicate with your family while you are on site?

- Excellent
- Very good
- Good
- Fair
- Poor

43. Do you have any suggestions for improving communications between workers and their families while on site?

Thank you for your participation!

***Please return this survey to Baffinland or QIA survey staff
or
the Mary River Human Resources Office***

APPENDIX G

2017 GEOTECHNICAL INSPECTION REPORTS

APPENDIX G1

AUGUST 2017 GEOTECHNICAL INSPECTION REPORT



BHM Project No. 17-118

BAFFINLAND IRON MINES CORPORATION

ANNUAL GEOTECHNICAL INSPECTIONS

MARY RIVER PROJECT

FIRST INSPECTION OF TWO

August 2017



Prepared for:

Mr. Jeff Bush
Site Services Superintendent
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Milne Inlet Photos
Milne Inlet Drawing

August 15, 2017

Baffinland Iron Mines Corporation
2275 Upper Middle Road East, Suite 300
Oakville, Ontario
L6H 0C3

Attention: Jeff Bush
jeff.bush@baffinland.com

**RE: ANNUAL GEOTECHNICAL INSPECTIONS
BAFFINLAND IRON MINES CORPORATION
OUR REFERENCE NO. 17-118**

1.0 INTRODUCTION

Barry H. Martin, P. Eng., Consulting Engineer, completed the ninth annual water licence geotechnical inspection of the following on-site engineered facilities as required by Licence No. 2AM-MRY 1325 of the Nunavut Water Board:

Pit Walls
Quarries
Landfills
Land Farms
Bulk Fuel Storage Facilities
Sediment Ponds
Collection Ponds
Polishing and Waste Stabilization Ponds

The inspection that took place August 1st to August 10th is the first phase of a biannual inspection to be carried out within the open water shipping season at the two Baffinland sites, in Mary River at the mine site, and at Milne Inlet at the port facility.

The inspections were carried out in accordance with the guidelines set out in "Dam Safety Guidelines 2007" as published by the Canadian Dam Association.

The inspections were completed by Mr. Barry H. Martin, P. Eng., the design Engineer for the initial containment facilities both at Mary River and Milne Inlet, the runway extension, initial bridges on the connecting road, the solid waste disposal site as well as continuing construction of select mine infrastructure.

The eight previous annual water licences geotechnical inspections were completed by Mr. Martin. You shall note that Hazardous Waste Containment Structures have been assigned new designations in the report as compared to previous years and are now identified by both the new designation and the past descriptive designation

The facilities inspected are as per the following:

Mary River Site

Bulk Fuel Storage Containment (MS-HWB-7)
Generator Fuel Storage Facility Containment
Polishing/Waste Stabilization Pond No. 1
Polishing/Waste Stabilization Ponds Nos. 2 and 3 (constructed as a two-cell structure)
Helicopter Fuel Cell Containment
Barrel Fuel Containment (constructed as a two-cell structure)(MS-HWB-3 and MS-HWB-4)
Hazardous Waste Storage (MS-HWB-2)
Enviro-Tank Storage (constructed contiguous with hazardous waste storage and stove oil storage) (MS-HWB-1)
Stove Oil Storage (MS-HWB-5)
Jet Fuel Tank and Pump Containment
Solid Waste Disposal Site
Mine Site Steel Fuel Tank Farm Containment
Quarry (QMR2)
Crusher Pad Drainage Containment
Waste Pile Drainage Containment
Jet "A" Aircraft Containment
Hazardous Waste Containment (MS-HWB-6)

A site plan for the Mary River site showing most structures reviewed is attached.

Milne Inlet Site

Hazardous Waste Storage (constructed as a two-cell structure) (MP-HWB-3, and MP-HWB-4,)
Fuel Tank Farm
New Sewage Effluent Pond (PWSP)
Land Farm
Contaminated Snow Containment
Sediment Ponds East and West
Quarry (Q1)
Loading Area Contaminated Storage (MP-HWB-1)
Fuelling Facility Containment

A site plan for the Milne Inlet site showing most structures reviewed is attached.

2.0 METHODOLOGY FOR INSPECTION

The geotechnical inspector was Barry H. Martin, P. Eng., who also reviewed the two sites in the past 8 years just as the annual shipping season commenced with the arrival of the first ship into port. This particular inspection took place just as the shipping season commenced. It may be noted that the "ice out" this season was later by up to one week than previous years.

The inspections primarily focused on the following aspects:

1. The structures were inspected for conformance with the design basis as presented in “as constructed” and “as-built” drawings (provided in the first and subsequent reports).
2. The structures were specifically inspected for settlement, cracking, and seepage through the berms.
3. The areas around the structures were examined for evidence of seepage.
4. Quarry walls were reviewed for relative stability. I note that the quarries are active removal areas and long term stability was not yet established.
5. New structures under construction were reviewed for conformity with design drawings.
6. Photographs were taken to document observations made during the inspection and are attached.

3.0 MARY RIVER CAMP

3.01 General

There was rain at the Mary River site for a number of days and hence the integrity of the containments could be verified by the water ponding in the containment.

A monitoring program is in place to test storm water that does accumulate within the containment structures. As reviewed, the water that does not meet the water licence effluent requirements is treated on site prior to release. For small amounts, the water is pumped out and transported to where treatment takes place.

At the Bulk Fuel Storage Facility Containment (MS-HWB-7), the water that collects within the dyke is treated at the end of the containment structure. At the time of this inspection, the treatment was actively taking place.

As with the report in previous years there are some new code names assigned to the containment structures.

Bladders and associated piping have been removed from the Bulk Fuel Storage Containment (Exploration Phase Bladder Farm). The Bulk Fuel Storage Containment is currently being used to store barrels of fuel, lubricant cubes, and a large fuel tank at this time. The north end of the berm is being used to store hydrocarbon contaminated water.

3.02 Bulk Fuel Storage Facility (Exploration Phase Bladder Farm)

General Conditions

The Bulk Fuel Storage Facility still exists but it is no longer utilized as a bulk fuel storage facility. There are a number of full fuel barrels and lubricant cubes now stored within the berms, as well as a large fuel tank.

The granular cover over the geotextile liner is still in place within the containment structure and a fair amount of water at one end awaiting treatment.

There is now a ramp over the south end of the containment to permit access over the dyke for placing barrels and cubes for storage.

At the south end, the access is through the former fuel unloading area

Stability

At the time of this initial review, water had not been removed from within the containment and water was ponding above the level of the gravel within the bottom of the containment at the north end of the facility.

At the load-out end of the facility there was water ponding within the dykes. At the former fuel unloading area at the north end there is water ponding within the dykes.

The soil structure is considered stable in the present condition and is in conformance with the design basis for the facility.

The presence of water within the structure and at the load-out area is an indication of the integrity of the liner.

The dykes have been built up last year to reinforce the concept of no loader travel over the dykes.

Recommendations

We have no recommendations with respect to this containment structure.

3.03 Generator Fuel Storage Containment (Exploration Phase)

This particular containment structure is planned to be decommissioned. The fuel bladder that was contained within the dyke has been removed.

The granular fill over the geotextile and liner shall require landfarming with the material from the bulk fuel storage facility.

There is no indication that the liner is compromised and decommissioning should proceed when the ponding water has been removed and granular cover is either moved to a land farm or other containment. There is water ponding within the structure confirming the integrity of the containment.

3.04 Polishing/Waste Stabilization Pond #1

General Conditions

PWSP No. 1 continues to be utilized as a holding facility for sewage plant effluent that does not meet water effluent quality criteria.

Currently the pond is being used primarily as a repository for off spec sewage and sewage sludge forming in lift stations.

The supernatant from PWSP No. 1 is periodically decanted to PWSPs Nos. 2 and 3 where it is tested and treated as required to meet Water Licence effluent requirements.

At the time of our visit there was approximately fifty percent of capacity to accommodate further sewage and the structure readily conforms to its design intent.

Stability

Our review of this area around the pond, at the base of the slopes, showed no sign of seepage and hence we conclude that the liner has been effective in containing sewage and there are no tears or ruptures in the membrane, excepting some minor tears from past activity at the top of the dyke well above the allowable effluent level in the structure in the horizontal portion of the membrane.

A review of the top of the dyke showed no indication of cracking or settlement which would indicate stresses within the structure.

Many of the tears that had occurred in the liner on the top of the dyke have been patched during the period between reviews in 2008 and 2009 and are holding well. As well, there are no signs of weather related deterioration of the liner where it is exposed.

There appears to be no sign of erosion of the dykes, even with the precipitation that has occurred over the lifetime of the facility.

The minor settlements have had little effect on the integrity of the structure.

Recommendations

We have no recommendations with respect to this containment facility.

3.05 Polishing Ponds/Waste Stabilization Ponds #2 and #3

General Conditions

The structure was designed and constructed as a two-cell structure.

The supernatant from PWSP #1 is currently discharged to PWSPs Nos. 2 and 3. The treated effluent is tested for Water Licence effluent requirements, treated if necessary, and discharged to the environment.

At the time of our visit there was considerable freeboard to accommodate further sewage and the structure readily conforms to its design intent. One cell was almost empty and contained less than one foot of liquid. The second cell was operating at 50% of capacity. The empty cell has not been utilized since 2016.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing the sewage and there are no tears or ruptures in the membrane.

Longitudinal cracking which appeared in the dykes of PWSP #3 due to the melt of permafrost wedges in 2009 has not reoccurred and we consider this structure to be stable in its present condition.

Monitoring points have been set upon the top of the dyke and have been monitored since 2009. Settlements have occurred since that time. These settlements have not led to any stress cracks in the structure. Monitoring was discontinued two years ago.

There appears to be no sign of erosion of the dykes and plants are continuing to seed themselves on the dykes. This growth is minimal, however.

The small bubbles that were observed under the liner at the time of the last year's first inspection have returned.

Recommendations

We have no recommendations with respect to this containment facility.

3.06 Helicopter Fuel Tank Containment

General Conditions

The structure was designed and constructed as a single cell structure that contains a 1000 gal fuel storage tank.

The structure currently conforms to its design intent.

In the past, a liner clad wood curb had been added to the top of the berm to prevent the erosion of gravel off the berm, caused by pulling the fuel hose from within the dyke out to the helicopters to provide them with fuel.

As it was the intent of the mine to use fuel that was available in barrels, a temporary cell has once again been constructed with a one piece liner. It measures 16' x 16' x 10" and can readily contain the four fuel drums it contains.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage.

A review of the exterior and the top of the berms showed no sign of cracking or settlement which would indicate stress within the structure.

The structure is considered to be stable in its present condition and contains water that attests to its integrity.

Recommendations

We have no recommendations with respect to this structure.

3.07 Barrel Fuel Containment (Now MS-HWB-3 and MS-HWB-4)

General Conditions

This particular structure which we called “Barrel Fuel Containment” in our previous inspection reports is a two-cell structure which is currently used to accommodate contaminated waste in the east cell and barrels of fuel in the west cell.

Stability

Our review of the area around this containment structure showed no sign of seepage. There is water ponding in this structure attesting to its integrity.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses within the structure.

The structure is considered to be stable in its present condition.

Recommendations

We have no recommendations at this time.

3.08 Hazardous Waste Storage (Now MS-HWB-2)

General Conditions

This particular cell was constructed contiguous with an existing cell, which is referred to on site as the “Enviro Tank Storage”, from drawings by our office in 2010 and conforms to our drawings. It is also contiguous with the Stove Oil Storage cell.

This structure contains hazardous waste.

Stability

Our review of the area around this cell at the base of the slopes, showed no sign of seepage. There is water ponding in this structure.

The structure appears to be stable in its present condition. The water in the cell confirms the integrity of the liner.

Recommendations

There are no recommendations at this time.

3.09 Enviro Tank Storage (Now MS-HWB-1)

General Conditions

This particular structure is constructed contiguous with the Hazardous Waste Storage constructed in 2010 and the Stove Oil Storage cell. It is currently not being utilized and access is blocked.

Stability

Last year there was concern for the integrity of this cell as the cell was dry and the geotextile was exposed from heavy traffic during our initial inspection. During our second inspection, the cell was holding a small amount of water confirming limited integrity of the liner.

The cell was dry last year during the second inspection raising concerns anew on the integrity of the liner. This inspection showed minor water present.

Recommendations

We recommend that the geotextile over the liner be checked and the granular cover be made good prior to continuing use of this cell

3.10 Stove Oil Storage (Now MS-HWB-5)

General Conditions

This particular structure had been used to store barrels of stove fuel in 2011.

The structure again contains barrels of stove oil and some cubes of lubricant.

This structure was constructed in accordance with a standardized drawing provided by this office utilizing a one piece liner.

Stability

Our review of the exterior at the base of the dyke showed no sign of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane having taken place.

A review of the exterior and the top of the dyke showed no sign of cracking or settlement which would indicate stresses with the structure.

There is water contained within the cell confirming the integrity of the liner.

The structure is considered to be stable in its present condition.

3.11 Jet Fuel Tank and Pump Containment

General Conditions

This particular structure was reconstructed based on our recommendations of the 2012 Geotechnical Inspection.

The construction was completed in accordance with our recommendations for such structures and the liner was constructed as a one piece liner with geotextile protection on both sides and gravel over the geotextile as protection.

The construction appears proper and the structure is in good condition.

Minor water ponding confirms the integrity of the liner.

At this time as in our earlier inspection report last year, the jet fuel tank and pump have been removed and the cell is empty.

Stability

Our review of the area around the cell at the base of the slopes showed no sign of seepage and water is ponding within the cell.

The structure is stable in its present condition.

Recommendations

There are no recommendations at this time.

3.12 Solid Waste Disposal Site (Non-Hazardous Waste Landfill)

The solid waste disposal site is currently entering the second phase of its construction. The first lift of solid waste has been placed and covered fully and appears to be doing exactly what it was proposed to do at the design stage. Since our inspections last year, the first lift has been expanded. However much of the expansion is being relocated to a second lift.

Work is currently continuing on building a berm on three sides of the disposal site at a level above the existing lift in advance of placing another lift. The berm is being constructed as per the berm on the first level that served well over the several years. Waste is now being placed within the berm.

Much of the thick cover has been removed from the first lift to accommodate the second lift.

There has been a fence structure of sections of screen and pallets to control wind blown waste from leaving the activity area of the waste disposal site.

3.13 Mine Site Steel Fuel Tank Farm Containment

General Conditions

All work now appears to be complete.

There is water ponding in the bottom of the containment confirming the integrity of the liner. This ponding of water is now well above the cover on the bottom of the containment.

Stability

All work appears to have been completed in accordance with drawings and we have no concerns with the stability of this containment structure.

Recommendations

We currently have no recommendations with respect to this containment structure.

3.14 Quarry QMR2

General Conditions

The quarry has well defined benches. The quarry faces at the benches are clean except in one end where some subsidences have occurred. This is the fracture zone noted in the last review.

Care must be taken while quarrying in the unstable fracture zone.

3.15 Crusher Pad Drainage Containment

General Conditions

Although there was no moisture flowing to the catchment pond, it is evident that the ditches in place and the containment pond are operating as intended. However, there is one low area at the north end where minor drainage bypasses the containment by flowing under the road through a pipe (conduit) used for electrical wires.

Stability

The structure has been completed in accordance with drawings included in our last report in a most satisfactory manner.

Recommendations

The conduit under the road at the north end should be sealed and revisions made to direct water from this area to the catchment ditch.

3.16 Waste Stockpile Drainage Containment

Stability

The dyke appears stable at this time.

This particular structure has now been completed. The structure is in place with all past recommendations having been satisfied. The outfall hose to pump the supernatant water over to the Mary River watershed is in place with the pump in place on the dyke.

3.17 Jet "A" Fuel Containment

General Conditions

This cell was constructed to replace the containment structure near the Weatherhaven Camp.

This cell now contains two double walled tanks and is located north of the air terminal buildings.

Stability

The cell was constructed using a one piece enviroliner with geotextile and was constructed in accordance with standardized drawings prepared in the past for such construction by our office.

There is water ponding in the bottom of the cell confirming the integrity of the liner.

There were no signs of cracking of the dykes. A granular ramp has been constructed over the dyke to facilitate access for snow removal

Recommendations

We have no recommendations with respect to this structure.

3.18 Hazardous Waste Containment (MS-HWB-6)

General Conditions

Although it was constructed in 2012, we had not reported on it until 2015.

It is located near the incinerator and is utilized to store barrels of ash and waste from the incinerator. It is, however, empty at this time.

Stability

The cell was constructed utilizing a one piece enviroliner with geotextile and was constructed in accordance with standardized drawings prepared in the past for such construction by our office.

There is water ponding in the bottom of the cell confirming the integrity of the liner. This water is currently in the form of ice.

There were 3 locations where the enviroliner is damaged near the top of the dyke.

Recommendations

We have no recommendations with respect to this structure other than making repairs to the damaged enviroliner

3.19 Overview

This report is the first phase of the ninth annual Geotechnical Inspection at Mary River and Milne Inlet completed by this author on behalf of Baffinland Iron Mines Corporation and the third year of reporting covering the first of two inspections in one shipping season.

As set out in our past reports, there has been little or no erosion taken place from wind or rain and the dykes constructed of the sand/gravel soil have remained stable at slopes of 3:1 and 4:1.

As noted last year, there are only just now signs of settlement appearing at PSWP's 1, 2 and 3. The settlements are not differential settlements of the dykes but are minor overall settlements of the total structures with respect to the surrounding area.

These settlements appear to be settlements within the one metre \pm active layer above the permafrost and are of little concern as the PWSP's are temporary structures and the settlements have no effect on the dyke stability.

It is expected that many of the structures that form the basis for the inspections set out in the biannual Geotechnical inspections shall be decommissioned as the mine facilities are finalized.

A number of these structures at Mary River are awaiting the construction of a land farm facility to facilitate the disposal of contaminated granular fill from the bottom of containment cells.

We recommend that where clear water has collected from rainfall and no contamination exists that the water be decanted.

Mary River Photos



1. Bulk Fuel Storage Facility (MS-HWB-7)



2. Generator Fuel Containment



3. PSWP #1



4. PWSP #2



5. PWSP #3



6. Helicopter Fuel Tank Containment



7. Temporary Helicopter Fuel Containment



8. Barrel Fuel Containment MS-HWB-4



9. Barrel Fuel Containment MS-HWB-5



10. Hazardous Waste Storage (MS-HWB-2)



11. Envirotank Storage MS-HWB-5



12. Stove Oil Storage MS-HWB-1



13. Jet Fuel Tank and Pump Containment



14. Solid Waste Disposal Site



15. Mine Site Steel Fuel Tank Farm Containment



16. Mary River Quarry (QMR2)



17. Crusher Pad Drainage Containment



18. Waste Pile Drainage Containment

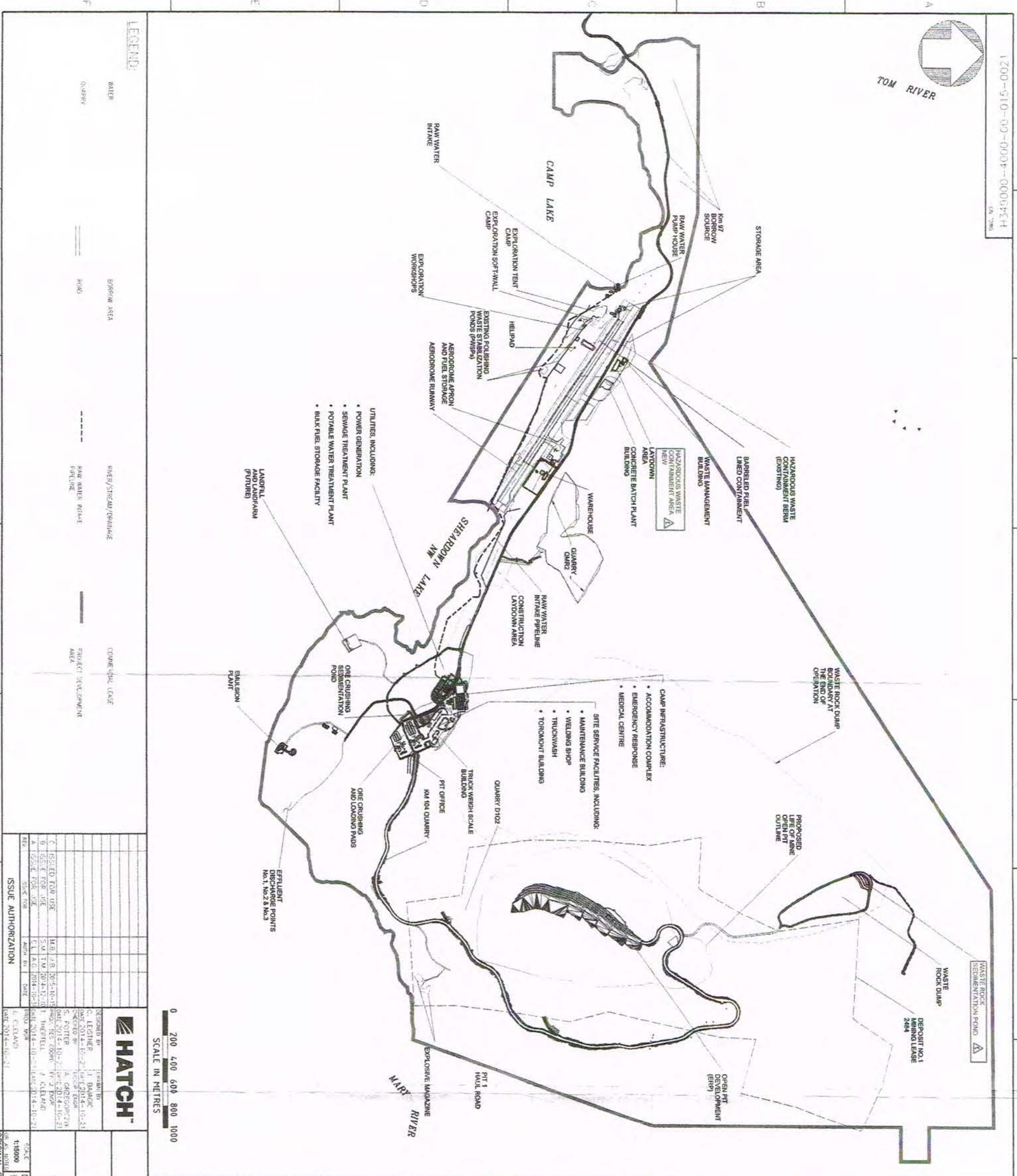
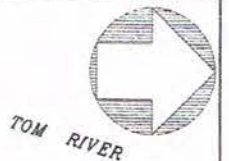


19. Jet A Fuel Containment



20. Hazardous Waste Containment (MS-HWB-6)

Mary River Drawing



- UTILITIES, INCLUDING:
- POWER GENERATION
 - SEWAGE TREATMENT PLANT
 - POTABLE WATER TREATMENT PLANT
 - BULK FUEL STORAGE FACILITY

- CAMP INFRASTRUCTURE:
- ACCOMMODATION COMPLEX
 - EMERGENCY RESPONSE
 - MEDICAL CENTRE

- SITE SERVICE FACILITIES, INCLUDING:
- MAINTENANCE BUILDING
 - WELDING SHOP
 - TRUCKWASH
 - TONKOUNT BUILDINGS



LEGEND

- WATER
- EXISTING AREA
- ROAD
- PROPOSED ROAD/STRAIGHTENAGE
- RAW WATER INTAKE
- CONVEYOR LEASE
- PROJECT DEVELOPMENT AREA

FOR INFORMATION

NOTES:
 1. COORDINATE GRID IS SHOWN IN UTM (MADRS) ZONE 17 AND IS IN METRES.
 2. 2018 WORK SHOWN IN RED TEXT.



MARY RIVER PROJECT

MINE SITE

INFRASTRUCTURE FOOTPRINT

WORK PLAN 2018

ISSUE	NO.	DATE	DESCRIPTION
1	1	2018-01-15	ISSUE FOR USE
2	2	2018-02-15	ISSUE FOR USE
3	3	2018-03-15	ISSUE FOR USE
4	4	2018-04-15	ISSUE FOR USE
5	5	2018-05-15	ISSUE FOR USE
6	6	2018-06-15	ISSUE FOR USE
7	7	2018-07-15	ISSUE FOR USE
8	8	2018-08-15	ISSUE FOR USE
9	9	2018-09-15	ISSUE FOR USE
10	10	2018-10-15	ISSUE FOR USE
11	11	2018-11-15	ISSUE FOR USE
12	12	2018-12-15	ISSUE FOR USE

DESIGNED BY	C. LEITCHER	DATE	2018-01-15
CHECKED BY	S. FORTER	DATE	2018-01-15
APPROVED BY	J. O'BRIEN	DATE	2018-01-15
ISSUE NO.	1	DATE	2018-01-15
DWG. NO.	H349000-4000-00-015-0021	DATE	2018-01-15

1:15000
 ORIGINAL SHEET SIZE: ISO A1 (841 x 594)

DATE PLOTTED: 10/15/2018 9:49:01 AM
 FILE: \\projectwise\boj45702\p..._dtdat..._dms88860\H349000-4000-00-015-0021.dgn

4.0 MILNE INLET

4.01 General

There are still changes taking place at Milne Inlet, even since our last inspection in September/October of last year.

Recent work has just been completed to correct deficiencies/incomplete work at the entrances to the sedimentation ponds.

4.02 Hazardous Waste Storage (MP-HWB-3, MP-HWB-4)

General Conditions

This particular structure has been constructed as a two-cell structure and is now only utilized to store sea cans that contain scraps of enviroliner and geotextile removed from the decommissioning of the exploration phase bulk fuel bladder farm.

A new hazardous waste storage facility has now been constructed near the loadout area for storing hazardous waste to be shipped out and is in full operation as in last year's report HWB-5 is now decommissioned.

Stability

There is water ponding in both cells of the original structure. This confirms the integrity of the enviroliner at this time in these two cells.

Our review of the area around the dykes, at the base of the slopes, showed no sign of seepage. The structure is considered stable.

Recommendations

We have no recommendations with respect to the use of these two cells at this time.

4.03 Fuel Tank Farm

General Conditions

Since both 2012 and 2013 the fuel tank farm has been expanded considerably with the addition of a number of new tanks. No tanks have been added since last season but there is room to place additional tanks.

Two sumps are planned to be installed in the north end (low end) of the containment. Water is currently ponding in the low end of the containment, confirming the integrity of the enviroliner.

Stability

All containment dykes are in excellent condition and there is no sign of weakness.

Recommendations

We have no recommendations with respect to the containment at this time.

4.04 New Effluent Pond (PWSP)

General Conditions

This pond was put into operation in 2014.

The containment pond was operating at less than fifty percent of capacity at the time of our inspection.

Stability

We noted no sign of weakness in any of the construction.

Recommendations

We have no recommendations with respect to the use of this structure having no negative comments on the construction of this structure.

4.05 Landfarm Containment

General Conditions

The landfarm containment is complete except for soil cover on the dykes in the area of the sump.

The landfarm was constructed to accommodate approximately 9000 m³ of hydrocarbon contaminated soil and seasonal water accumulations.

At the time of our inspection, the landfarm was in operation and some sorting of contaminated materials had taken place. Since our last inspection, there is still minor sorting to take place including the removal of some waste and contaminated waste.

There is still some contaminated waste in the landfarm in addition to contaminated soil. No land farming or treatment of contaminated soil has taken place.

It appears as though the structure has been constructed in accordance with good construction practice for structures of this type.

Stability

The structure appears stable as constructed.

Recommendations

We recommend that the remaining dyke structure without protective cover over it be covered as per the design drawings. This however, is not an absolute requirement.

There are no changes in the structure since our last inspection.

4.06 Contaminated Snow Containment

General Conditions

The construction of the contaminated snow containment structure is contiguous with the east end of the landfarm.

It appears as though the structure has been constructed in accordance with good construction practice for structures of this type.

The snow containment facility has a containment volume of 929 m³ based on estimates of volume provided by the owner and only a small percentage of the capacity is utilized.

The structure has been constructed with good quality control.

Stability

The structure appears stable as constructed.

Recommendations

We have no recommendations with respect to this construction at this time. The structure appears as it did in our September/October review in 2016.

4.07 Sedimentation Pond East

General Conditions

The construction of this sedimentation pond for drainage from the east side of the site is complete.

The basin is shaped and the liner has been installed throughout the basin from inlet to the berms on the north side of the basin.

There has been no cover placed over the liner to this point although some tire ballast has been placed over the liner on the north side.

The two inlets to the pond have very recently been upgraded and the enviroliner has been repaired at these locations.

Stability

We have concerns over the stability of the liner on this pond and recommend the possibility of further tire ballast over the liner which appears possibly subject to wind damage. This shall provide a function for used tires.

Recommendations

We recommend review of the use of a ballast (possibly tires) on the exposed liner at the dyke to prevent wind uplift.

4.08 Sedimentation Pond West

General Conditions

The construction of this sedimentation pond for drainage from the west side of the site is now complete with repairs recommended in our report of last year having been completed.

The inlet where the water was being conducted under the liner has been made good and the inlet has been reconstructed.

Stability

We have some concern over the stability of the liner on this pond as we have with the east pond and further recommend that used tire ballast be considered.

Recommendations

We have no concerns other than that of possible wind damage to the liner and recommend the use of tires as ballast.

4.09 Quarry (Q1)

General Conditions

The quarry was just commencing activity at the time of our review and all blasted rock had been removed from the quarry site.

Stability

Rock faces appear stable.

A rock berm has been placed along the face. I assume this is to contain falling rock during the cleaning of the upper face prior to blasting. This is an excellent idea.

Recommendations

We have no recommendations to be made with respect to the quarry.

4.10 Loading Area Contaminated Storage (Now MP-HWB-1)

General Conditions

This area has been constructed near the loading dock to facilitate assembly of hazardous materials for shipment out

Most hazardous waste has now been removed from the containment and shipped out.

Construction appears to have taken place in accordance with standardized drawings prepared in the past

Stability

Construction appears stable. However there is one exposed tear in the liner at the dyke that requires repair.

Recommendations

We have no recommendations with respect to this structure other than to repair the tear.

4.11 Fuelling Facility Containment

General Condition

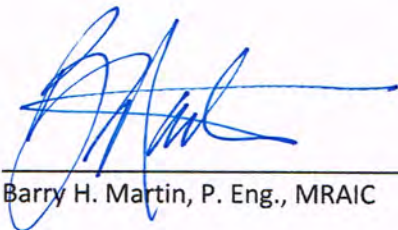
A new fueling facility for the fueling of B trains is under construction utilizing design drawings prepared by our office.

Work conforms to the design drawing.

4.12 Overview

Work on containment structures except for maintenance appears complete.

Respectfully submitted,



Barry H. Martin, P. Eng., MRAIC



Milne Inlet Photos



21. Hazardous Waste Storage (MP-HWB-4)



22. Hazardous Waste Storage (MP-HWB-3)



23. Fuel Tank Farm



24. Sewage Effluent Pond (PWSP)



25. Land Farm Containment



26. Contaminated Snow Containment



27. Sedimentation Pond East



28. Sedimentation Pond East - Liner at south inlet



29. Sedimentation Pond West



30. Milne Quarry (Q1)



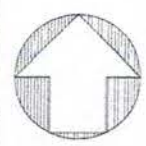
31. Loading Area Contaminated Storage (MP-HWB-1)



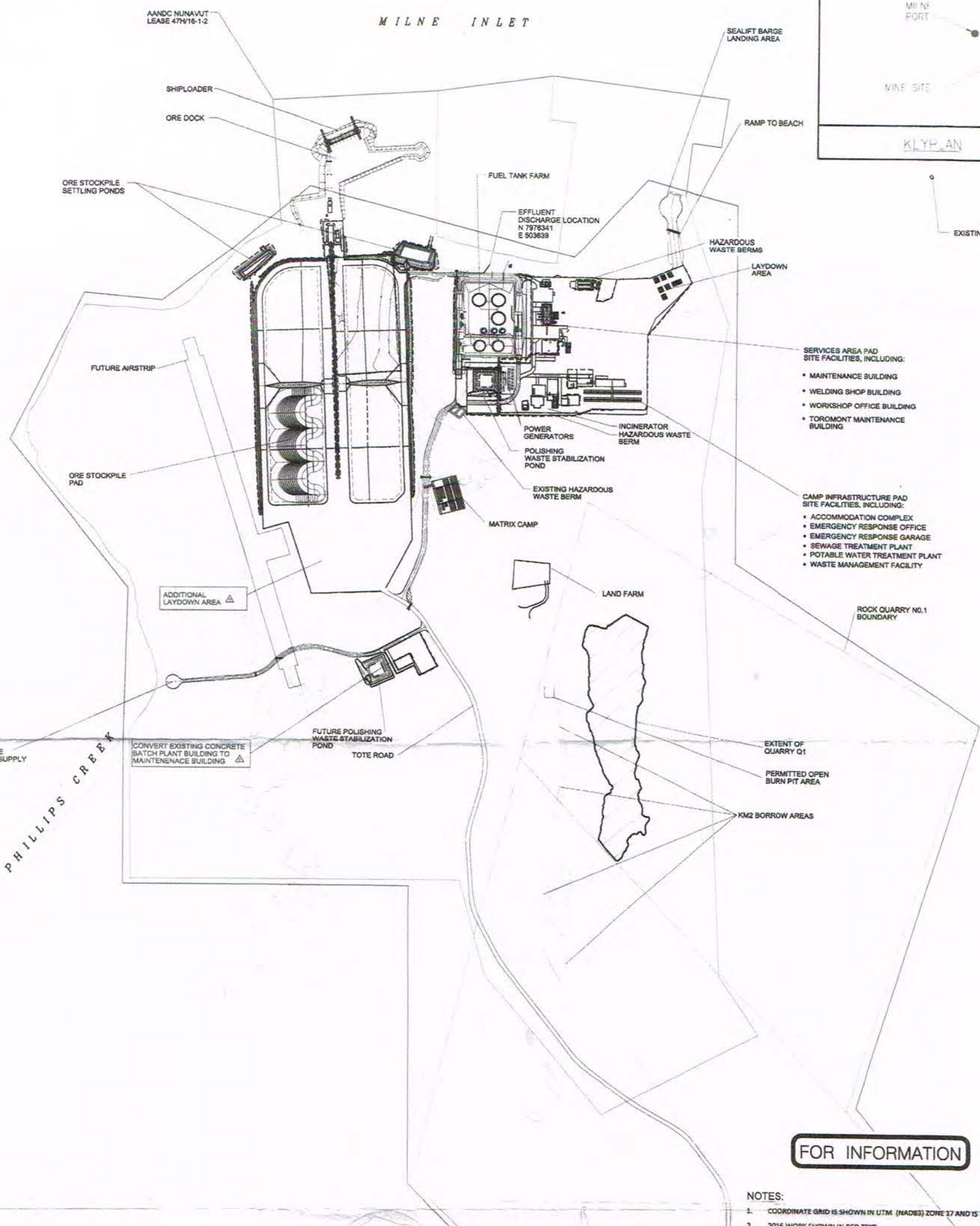
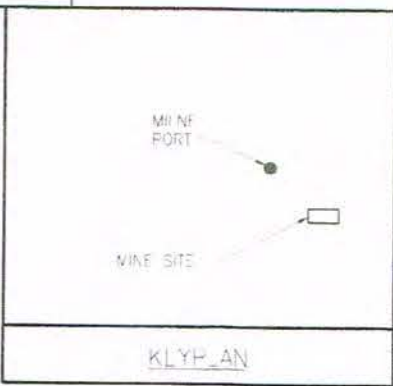
32. Fuelling Facility (OHT Laydown)

Milne Inlet Drawing

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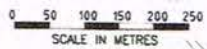


MILNE INLET



FOR INFORMATION

- NOTES:
- COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
 - 2016 WORK SHOWN IN RED TEXT.



LEGEND:

	WATER		RIVER/STREAM/DRAINAGE
	QUARRY		ROAD
	COMMERCIAL LEASE		PROJECT DEVELOPMENT AREA
	AANDC LEASE 47H/16-1-2		BORROW AREAS

HATCH	
DESIGNED BY C. LEISTNER DATE 2014-10-20	DRAWN BY J. BALJACIC DATE 2014-10-20
CHECKED BY S. POTTER DATE 2014-10-20	PROJ. DES. COORD. T. THURTELL DATE 2014-10-20
ISSUED FOR USE M.B. J.B. 2015-10-15	PROJ. MGR. J. CLELAND DATE 2014-06-19
ISSUED FOR USE S.M. T.M. 2014-12-10	
ISSUED FOR USE C.L. T.M. 2014-10-31	
ISSUED FOR USE C.L. A.G. 2014-08-19	
ISSUED FOR USE S.M. T.M. 2014-12-10	
ISSUED FOR USE C.L. A.G. 2014-08-19	

Barrinland

MARY RIVER PROJECT

MILNE PORT INFRASTRUCTURE FOOTPRINT WORK PLAN 2016

SCALE: 1:5000
DWG. NO. H349000-2000-00-015-0021
REV. D

ISSUE AUTHORIZATION

APPENDIX G2

NOVEMBER 2017 GEOTECHNICAL INSPECTION REPORT



BHM Project No. 17-118

BAFFINLAND IRON MINES CORPORATION

ANNUAL GEOTECHNICAL INSPECTIONS

MARY RIVER PROJECT

SECOND INSPECTION OF TWO

November 2017



Prepared for:

Mr. Jeff Bush
Site Services Superintendent
Baffinland Iron Mines Corporation
2275 Upper Middle Road East, Suite 300
Oakville, Ontario L6H 0C3



Barry H. Martin, P. Eng., MRAIC, Consulting Engineer and Architect

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Mary River Photos

Mary River Drawing

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Milne Inlet Photos

Milne Inlet Drawing

5.0 MILNE INLET TOTE RAOD

5.01 General

5.02 Bridge Abutments

5.03 Rock Shatter Utilized as Fill Material at Road and Culverts

5.04 Slope Stabilization at km 90 - 93

Tote Road Photos

Tote Road Drawing

November 29th, 2017

Baffinland Iron Mines Corporation
2275 Upper Middle Road East, Suite 300
Oakville, Ontario
L6H 0C3

Attention: Jeff Bush
jeff.bush@baffinland.com

**RE: ANNUAL GEOTECHNICAL INSPECTIONS
BAFFINLAND IRON MINES CORPORATION
OUR REFERENCE NO. 17-118**

1.0 INTRODUCTION

Barry H. Martin, P. Eng., Consulting Engineer, completed the eighth annual water licence geotechnical inspection of the following on-site engineered facilities as required by Licence No. 2AM-MRY 1325 of the Nunavut Water Board:

Pit Walls
Quarries
Landfills
Land Farms
Bulk Fuel Storage Facilities
Sediment Ponds
Collection Ponds
Polishing and Waste Stabilization Ponds

The inspection that took place September 27th to October 3rd, 2017, is the second phase of a biannual inspection to be carried out within the open water shipping season at the two Baffinland sites, in Mary River at the mine site, and at Milne Inlet at the port facility, as well as the Milne Inlet Tote Road joining the two sites.

The inspections were carried out in accordance with the guidelines set out in “Dam Safety Guidelines 2007” as published by the Canadian Dam Association.

The inspections were completed by Mr. Barry H. Martin, P. Eng., the design Engineer for the initial containment facilities both at Mary River and Milne Inlet, the runway extension, initial bridges on the connecting road, the solid waste disposal site as well as continuing construction of select mine infrastructure.

The eight previous annual water licences geotechnical inspections were completed by Mr. Martin. You shall note that Hazardous Waste Containment Structures have been assigned new designations in the report as compared to previous years and are now identified by both the new designation and the past descriptive designation.

The facilities inspected are as per the following:

1.01 Mary River Site

Bulk Fuel Storage Containment (MS-HWB-7)
Generator Fuel Storage Facility Containment
Polishing/Waste Stabilization Pond No. 1
Polishing/Waste Stabilization Ponds Nos. 2 and 3 (constructed as a two-cell structure)
Helicopter Fuel Cell Containment
Barrel Fuel Containment (constructed as a two-cell structure) (MS-HWB-3 and MS-HWB-4)
Hazardous Waste Storage (MS-HWB-2)
Enviro-Tank Storage (constructed contiguous with hazardous waste storage and stove oil storage) (MS-HWB-1)
Stove Oil Storage (MS-HWB-5)
Jet Fuel Tank and Pump Containment
Non-hazardous Waste Landfill
Mine Site Steel Fuel Tank Farm Containment
Quarry (QMR2)
Crusher Pad Drainage Containment (MS-06)
Waste Rock stockpile pond (MS-08)
Jet "A" Aircraft Containment
Hazardous Waste Containment (MS-HWB-6)

A site plan for the Mary River site showing most structures reviewed is attached.

1.02 Milne Inlet Site

Hazardous Waste Storage (constructed as a two-cell structure) (MP-HWB-3, and MP-HWB-4)
Fuel Tank Farm (MP-03)
New Sewage Effluent Pond (PWSP)
Land Farm (MP-04)
Contaminated Snow Containment (MP-04a)
Milne Port Ore Stockpile Ponds East & West (MP-05 & MP-06)
Quarry (Q1)
Loading Area Contaminated Storage (MP-HWB-1)
Fuelling Facility Containment

A site plan for the Milne Inlet site showing most structures reviewed is attached.

1.03 Milne Inlet Tote Road

Bridge Abutments at km 17, km 62, km 80 and km 97

Cut at km 76

Slope Stabilization at km 90-93.

A map setting out the roadway from Milne Inlet to Mary River is attached.

2.0 METHODOLOGY FOR INSPECTION

The geotechnical inspector was Barry H. Martin, P. Eng., who also reviewed the two sites in the past 8 years just as the annual shipping season commenced with the arrival of the first ship into port. This inspection was planned to take place at the end of the shipping season. This particular inspection took place just as the shipping season ended.

The inspections primarily focused on the following aspects:

1. The structures were inspected for conformance with the design basis as presented in “as constructed” and “as-built” drawings (provided in the first and subsequent reports).
2. The structures were specifically inspected for settlement, cracking, and seepage through the berms.
3. The areas around the structures were examined for evidence of seepage.
4. Quarry walls were reviewed for relative stability. I note that the quarries are active removal areas and long term stability was not yet established.
5. New structures under construction were reviewed for conformity with design drawings.
6. Photographs were taken to document observations made during the inspection and are attached.

3.0 MARY RIVER CAMP

3.01 General

There was freezing weather with wind at the Mary River site and some snow, and hence the integrity of the containments could be verified by the frozen water ponding in the containment.

A monitoring program is in place to test storm water that does accumulate within the containment structures. As reviewed, the water that does not meet the water licence effluent requirements is treated on site prior to release. For small amounts the water is pumped out and transported to where treatment takes place.

As with the report in previous years there are some new code names assigned to the containment structures.

3.02 Bulk Fuel Storage Facility (Exploration Phase Bladder Farm) (MS-HWB-7)

General Conditions

At the Bulk Fuel Storage Facility Containment (MS-HWB-07), the water that collects within the dyke is treated at the end of the containment structure. At the time of this inspection, the treatment operation was not actively taking place.

The Bulk Fuel Storage Facility still exists but it is no longer utilized as a bulk fuel storage facility. There are a number of full fuel barrels and lubricant cubes now stored within the berms, as well as a large fuel tank.

There is now a ramp over the south end of the containment to permit access over the dyke for placing barrels and cubes for storage.

At the south end, the access is through the former fuel unloading area

Stability

At the time of this second review, some water remained from the treatment that occurred in the summer. A significant amount of water was treated from MS-HWB-7 this year. Water was ponding above the level of the gravel within the bottom of the containment at the north end of the facility. This water is just beginning to freeze.

At the load-out end of the facility there was water ponding within the dykes. At the former fuel unloading area at the south end there is water ponding within the dykes.

The soil structure is considered stable in the present condition and is in conformance with the design basis for the facility.

The presence of ice and water within the structure and at the load-out area is an indication of the integrity of the liner.

The dykes have been built up last year to reinforce the concept of no loader travel over the dykes.

Recommendations

We have no recommendations with respect to this containment structure.

3.03 Generator Fuel Storage Containment (Exploration Phase)

This particular containment structure is planned to be decommissioned. The fuel bladder that was contained within the dyke has been removed.

The granular fill over the geotextile and liner shall require landfarming with the material from the bulk fuel storage facility.

There is no indication that the liner is compromised and decommissioning should proceed when the ponding water has been removed and the granular cover is either moved to a land farm or other containment. There is water ponding within the structure confirming the integrity of the containment.

3.04 Polishing/Waste Stabilization Pond #1

General Conditions

PWSP No. 1 continues to be utilized as a holding facility for sewage plant effluent that does not meet water effluent quality criteria.

Currently the pond is being used primarily as a repository for off spec sewage and sewage sludge forming in lift stations.

The supernatant from PWSP No. 1 is periodically decanted to PWSPs Nos. 2 and 3 where it is tested and treated as required to meet Water Licence effluent requirements.

At the time of our visit there was approximately fifty percent of capacity to accommodate further sewage and the structure readily conforms to its design intent.

Stability

Our review of this area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing sewage and there are no tears or ruptures in the membrane, excepting some minor tears from past activity at the top of the dyke well above the allowable effluent level in the structure in the horizontal portion of the membrane.

A review of the top of the dyke showed no indication of cracking or settlement which would indicate stresses within the structure.

Many of the tears that had occurred in the liner on the top of the dyke have been patched during the period between reviews in 2008 and 2009 and are holding well. As well, there are no signs of weather related deterioration of the liner where it is exposed.

There appears to be no sign of erosion of the dykes, even with the precipitation that has occurred over the lifetime of the facility.

The minor settlements have had little effect on the integrity of the structure.

Recommendations

We have no recommendations with respect to this containment facility.

3.05 Polishing Ponds/Waste Stabilization Ponds #2 and #3

General Conditions

The structure was designed and constructed as a two-cell structure.

The supernatant from PWSP #1 is currently discharged to PWSPs Nos. 2 and 3. The treated effluent is tested for Water Licence effluent requirements, treated if necessary, and discharged to the environment.

At the time of our visit there was considerable freeboard to accommodate further sewage and the

structure readily conforms to its design intent. One cell was almost empty and contained less than one foot of liquid. The second cell was operating at 50% of capacity. The empty cell has not been utilized since 2016.

Stability

Our review of the area around the pond at the base of the slopes showed no sign of seepage and hence we conclude that the liner has been effective in containing the sewage and there are no tears or ruptures in the membrane.

Longitudinal cracking which appeared in the dykes of PWSP #3 due to the melt of permafrost wedges in 2009 has not reoccurred and we consider this structure to be stable in its present condition.

Monitoring points had been set upon the top of the dyke and had been monitored since 2009. Settlements have occurred since that time. These settlements have not led to any stress cracks in the structure. Monitoring of top of berm elevation was discontinued two years ago.

There appears to be no sign of erosion of the dykes and plants are continuing to seed themselves on the dykes. This growth is minimal, however.

The small bubbles that were observed under the liner at the time of the last year's first inspection have returned.

Recommendations

We have no recommendations with respect to this containment facility.

3.06 Helicopter Fuel Tank Containment

General Conditions

The structure was designed and constructed as a single cell structure that contains a 1000 gal fuel storage tank.

The structure currently conforms to its design intent.

In the past, a liner clad wood curb had been added to the top of the berm to prevent the erosion of gravel off the berm, caused by pulling the fuel hose from within the dyke out to the helicopters to provide them with fuel.

As it was the intent of the mine to use fuel that was available in barrels, a temporary cell has once again been constructed with a one piece liner. It measures 16' x 16' x 10' and can readily contain a number of drums as are currently placed in this containment.

Stability

Our review of the area around the containment at the base of the slopes showed no sign of seepage.

A review of the exterior and the top of the berms showed no sign of cracking or settlement which would indicate stress within the structure.

The structure is considered to be stable in its present condition and contains frozen water that attests to its integrity.

Recommendations

We have no recommendations with respect to this structure.

3.07 Barrel Fuel Containment (MS-HWB-3 and MS-HWB-4)

General Conditions

This particular structure which we called “Barrel Fuel Containment” in our previous inspection reports is a two-cell structure which is currently used to accommodate contaminated waste in the east cell and barrels of fuel in the west cell.

Stability

Our review of the area around this containment structure showed no sign of seepage. There is frozen water ponding in this structure attesting to its integrity.

A review of the exterior and top of the dyke showed no sign of cracking or settlement which would indicate stresses within the structure.

The structure is considered to be stable in its present condition.

Recommendations

We have no recommendations at this time.

3.08 Hazardous Waste Storage (MS-HWB-2)

General Conditions

This particular cell was constructed contiguous with an existing cell, which is referred to on site as the “Enviro Tank Storage”, from drawings by our office in 2010 and conforms to our drawings. It is also contiguous with the Stove Oil Storage cell.

This structure contains hazardous waste.

Stability

Our review of the area around this cell at the base of the slopes, showed no sign of seepage. There is frozen water ponding in this structure.

The structure appears to be stable in its present condition. The frozen water in the cell confirms the integrity of the liner.

Recommendations

There are no recommendations at this time.

3.09 Enviro Tank Storage (MS-HWB-1)

General Conditions

This particular structure is constructed contiguous with the Hazardous Waste Storage constructed in 2010 and the Stove Oil Storage cell. It is currently not being utilized and access is blocked.

Stability

Last year there was concern for the integrity of this cell as the cell was dry and the geotextile was exposed from heavy traffic during our initial inspection. During our second inspection, the cell was holding a small amount of water confirming limited integrity of the liner.

The cell was dry last year during the second inspection raising concerns anew on the integrity of the liner. This inspection showed minor water present.

Recommendations

We recommend that the geotextile over the liner be checked and the granular cover be made good prior to continuing use of this cell.

3.10 Stove Oil Storage (MS-HWB-5)

General Conditions

The structure contains barrels of stove oil and some cubes of lubricant.

This structure was constructed in accordance with a standardized drawing provided by this office utilizing a one-piece liner.

Stability

Our review of the exterior at the base of the dyke showed no sign of seepage. This shows that there is reasonably little chance of tearing or rupture of the membrane having taken place.

A review of the exterior and the top of the dyke showed no sign of cracking or settlement which would indicate stresses with the structure.

There is frozen water contained within the cell confirming the integrity of the liner.

The structure is considered to be stable in its present condition.

3.11 Jet Fuel Tank and Pump Containment

General Conditions

This particular structure was reconstructed based on our recommendation of the 2012 Geotechnical Inspection.

The construction was completed in accordance with our recommendations for such structures and the liner was constructed as a one-piece liner with geotextile protection on both sides and gravel over the geotextile as protection.

The construction appears proper and the structure is in good condition.

Frozen water ponding confirms the integrity of the liner.

At this time as in our earlier inspection report last year, the jet fuel tank and pump have been removed and the cell is empty.

Stability

Our review of the area around the cell at the base of the slopes showed no sign of seepage and frozen water is ponding within the cell.

The structure is stable in its present condition.

Recommendations

There are no recommendations at this time.

3.12 Non-Hazardous Waste Landfill

The solid waste disposal site is currently in the second phase of its construction. The first lift of solid waste has been placed and covered fully and appears to be doing exactly what it was proposed to do at the design stage. Since our inspections last year, the first lift has been expanded.

Work is currently continuing on building a berm on three sides of the disposal site at a level above the existing lift in advance of placing another lift. The berm is being constructed as per the berm on the first level that served well over the several years. Waste is now being placed within the berm.

The thick cover has been removed from the first lift to accommodate the second lift.

There has been a fence structure of sections of screen and pallets to control blowing waste at the activity area of the waste disposal site.

Recommendations

There are no recommendations at this time.

3.13 Mine Site Steel Fuel Tank Farm Containment

General Conditions

All work now appears to be complete.

There is frozen water ponding in the bottom of the containment confirming the integrity of the liner. This ponding of water is well above the cover on the bottom of the containment.

Stability

All work appears to have been completed in accordance with drawings and we have no concerns with the stability of this containment structure.

Recommendations

We have no recommendations for this containment at this time.

3.14 Quarry QMR2

General Conditions

The quarry has well defined benches. The quarry faces at the benches are clean.

The quarry is active at this time and drilling had just taken place in advance of a major blast at the top end of the quarry. Large boulders have now been around what shall become the new edge of the quarry at the top of the hill.

Recommendations

There are no recommendations at this time.

3.15 Ore Stockpile Stormwater Pond (MS-06)

General Conditions

Although there was no moisture flowing to the catchment pond, it is evident that the ditches in place and the containment pond are operating as intended.

Stability

The structure has been completed in accordance with drawings included in our last reports in a most satisfactory manner.

Recommendations

We have no recommendations for this containment at this time.

3.16 Waste Rock Stockpile Pond (MS-08)

General Conditions

As we were inspecting the drainage containment, we were advised that tests on the water in the catchment area had shown the water to have a low pH.

At the time of our inspection at the top of the hill a sudden snow storm covered the area so we could not readily review the additional catchment “sumps” and ditches placed to catch water not contained by the original ditches and containment. Baffinland continues to investigate the seepage observed originating from the toe of the Waste Rock Sedimentation Pond in 2017.

Stability

Revisions to this facility are expected to be made following a review by the Mine Operations at the site.

Recommendations

When weather permits, the integrity of the existing pond should be restored.

3.17 Jet "A" Fuel Containment

General Conditions

This cell was constructed to replace the containment structure near the Weatherhaven Camp.

This cell now contains two double walled tanks and is located north of the air terminal buildings.

Stability

The cell was constructed using a one piece enviroliner with geotextile and was constructed in accordance with standardized drawings prepared in the past for such construction by our office.

There is frozen water ponding in the bottom of the cell confirming the integrity of the liner.

There were no signs of cracking of the dykes.

3.18 Hazardous Waste Containment (MS-HWB-6)

General Conditions

Although it was constructed in 2012, we had not reported on it until 2015.

It is located near the incinerator and is utilized to store barrels of ash from the incinerator.

Stability

The cell was constructed utilizing a one piece enviroliner with geotextile and was constructed in accordance with standardized drawings prepared in the past for such construction by our office.

There is water ponding in the bottom of the cell confirming the integrity of the liner. This water currently in the form of ice.

There were 3 locations where the enviroliner was damaged near the top of the dyke, where repairs have taken place.

Recommendations

We have no recommendations with respect to this structure.

3.19 Overview

This report is the second phase of the ninth annual Geotechnical Inspection at Mary River and Milne Inlet completed by this author on behalf of Baffinland Iron Mines Corporation and the third year of reporting, covering the second of two inspections in one shipping season.

As set out in our past reports, there has been little or no erosion taken place from wind or rain and the dykes constructed of the sand/gravel soil have remained stable at slopes of 3:1 and 4:1.

As noted last year, there are only just now signs of settlement appearing at PSWP's 1, 2 and 3. The settlements are not differential settlements of the dykes but are minor overall settlements of the total structures with respect to the surrounding area.

These settlements appear to be settlements within the one metre \pm active layer above the permafrost and are of little concern as the PWSP's are temporary structures and the settlements have no effect on the dyke stability.

MARY RIVER PHOTOS



1. Bulk Fuel Storage Facility. (MS-HWB-7)



2. Generator Fuel Containment.



3. PWSP 1



4. PWSP 2



5. PWSP 3



6. Helicopter Fuel Tank Containment.



7. Temporary Helicopter Fuel Containment.



8. Barrel Fuel Containment. (MS-HWB-03)



9. Barrel Fuel Containment. (MS-HWB-04)



10. Hazardous Waste Storage. (MS-HWB-02)



11. Envirotank Storage (MS-HWB-01)



12. Stove Oil Storage. (MS-HWB-05)



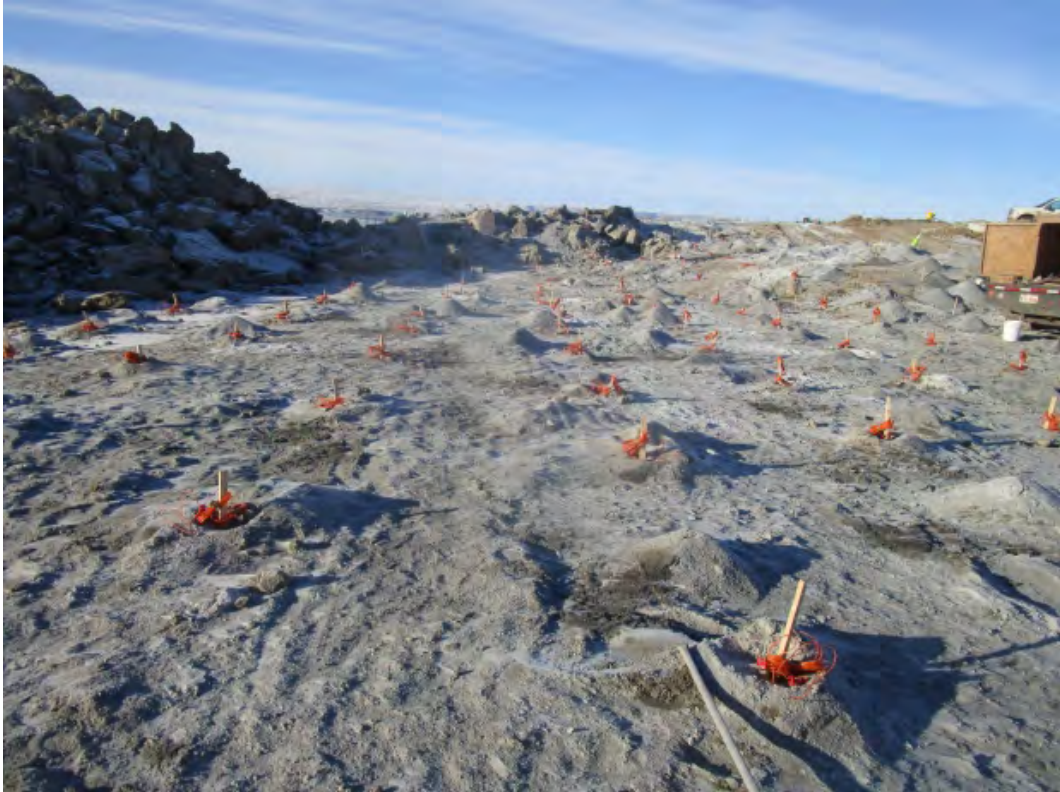
13. Jet Fuel Tank and Pump Containment.



14. Non-Hazardous Waste Landfill.



15. Mine Site Steel Fuel Tank Farm Containment.



16. Mary River Quarry (QMR 2)



17. Ore Stockpile Stormwater Pond (MS-06)



18. Waste Rock Stockpile Pond (MS-08) (Snow) See Drawing.

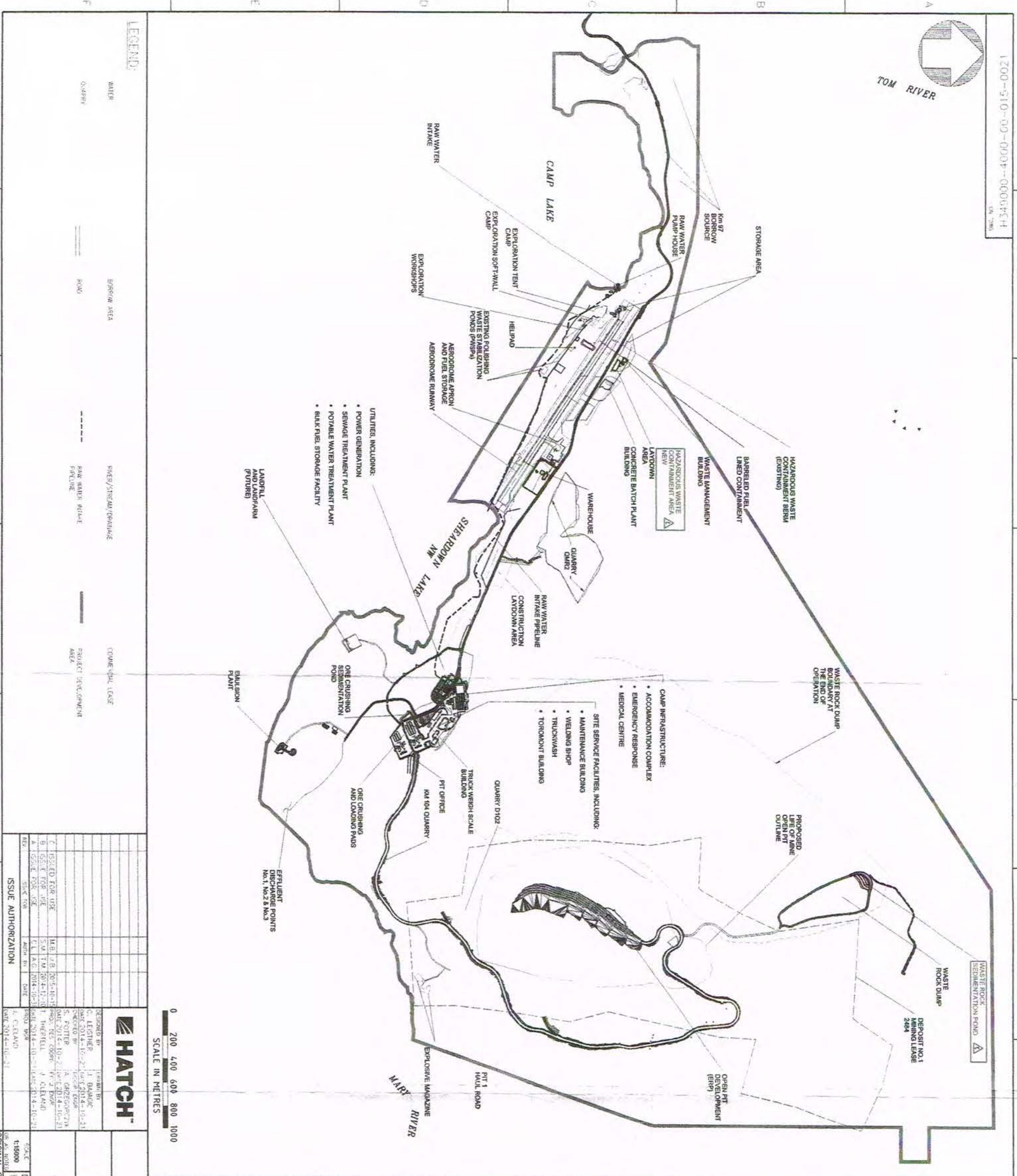
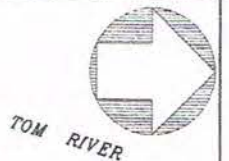


19. Jet 'A' Fuel Containment.



20. Hazardous Waste Containment (MS-HWB-6).

MARY RIVER DRAWINGS



- UTILITIES, INCLUDING:
- POWER GENERATION
 - SEWAGE TREATMENT PLANT
 - POTABLE WATER TREATMENT PLANT
 - BULK FUEL STORAGE FACILITY

- CAMP INFRASTRUCTURE:
- ACCOMMODATION COMPLEX
 - EMERGENCY RESPONSE
 - MEDICAL CENTRE

- SITE SERVICE FACILITIES, INCLUDING:
- MAINTENANCE BUILDING
 - WELDING SHOP
 - TRUCKWASH
 - TONKOUNT BUILDINGS



LEGEND

- WATER
- EXISTING AREA
- PROPOSED/STAGED/CONCEALED
- CONVEYOR LEASE
- PROJECT DEVELOPMENT AREA

NO.	DATE	ISSUE	BY	FOR
1	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
2	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
3	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
4	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
5	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
6	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
7	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
8	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
9	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21
10	2014-10-21	ISSUE FOR USE	M.B. J.B.	2014-10-21



MARY RIVER PROJECT

MINE SITE

INFRASTRUCTURE FOOTPRINT

WORK PLAN 2018

FOR INFORMATION

NOTES:
 1. COORDINATE GRID IS SHOWN IN UTM (MADRS) ZONE 17 AND IS IN METRES.
 2. 2018 WORK SHOWN IN RED TEXT.

MINE PORT
 MINE SITE

KEYPLAN

4.0 MILNE INLET

4.01 General

There are still changes taking place at Milne Inlet, even since our last inspection in July/August of this year.

Work has been completed this season to correct deficiencies/incomplete work at the entrances to the sedimentation ponds.

4.02 Hazardous Waste Storage (MP-HWB-3, MP-HWB-4)

General Conditions

This particular structure has been constructed as a two-cell structure and is now only utilized to store sea cans that contain scraps of enviroliner and geotextile removed from the decommissioning of the exploration phase bulk fuel bladder farm.

Stability

There is frozen water ponding in both cells of the original structure. This confirms the integrity of the enviroliner at this time in these two cells.

Our review of the area around the dykes, at the base of the slopes, showed no sign of seepage. The structure is considered stable.

Recommendations

We have no recommendations with respect to the use of these two cells at this time.

4.03 Fuel Tank Farm (MP-03)

General Conditions

Since both 2012 and 2013 the fuel tank farm has been expanded considerably with the addition of a number of new tanks.

Two sumps have been installed in the north end (low end) of the containment. Water is currently ponding in the low end of the containment, confirming the integrity of the enviroliner.

Stability

All containment dykes are in excellent condition and there is no sign of weakness.

Recommendations

We have no recommendations with respect to the containment at this time.

4.04 New Effluent Pond (MP-01a)

General Conditions

This pond was put into operation in 2014.

The containment pond was operating at less than fifty percent of capacity at the time of our inspection.

Stability

We noted no sign of weakness in any of the construction.

Recommendations

We have no recommendations with respect to the use of this structure having no negative comments on the construction of this structure.

4.05 Landfarm Containment (MP-04)

General Conditions

The landfarm containment is complete except for soil cover on the dykes in the area of the sump.

The landfarm was constructed to accommodate approximately 9000m³ of hydrocarbon contaminated soil and seasonal water accumulations.

At the time of our inspection, the landfarm was in operation and sorting of contaminated materials had taken place. Since our last inspection, there is still minor sorting to take place including the removal of some waste and contaminated waste.

It appears as though the structure has been constructed in accordance with good construction practice for structures of this type.

Stability

The structure appears stable as constructed.

Recommendations

We recommend that the remaining dyke structure without protective cover over it be covered as per the design drawings. This however, is not an absolute requirement.

There are no changes in the structure since our last inspection.

4.06 Contaminated Snow Containment (MP-04a)

General Conditions

The construction of the contaminated snow containment structure is contiguous with the east end of the landfarm.

It appears as though the structure has been constructed in accordance with good construction practice for structures of this type.

The snow containment facility has a containment volume of 929 m³ based on estimates of volume provided by the owner and only a small percentage of the capacity is utilized.

The structure has been constructed with good quality control.

Stability

The structure appears stable as constructed.

Recommendations

We have no recommendations with respect to this construction at this time. The structure appears as it did in our July/August review of this year.

4.07 Milne Port Ore Stockpile Sedimentation Pond East (MP-05)

General Conditions

The construction of this sedimentation pond for drainage from the east side of the site is complete.

The basin is shaped and the liner has been installed throughout the basin from inlet to the berms on the north side of the basin.

There has been no cover placed over the liner to this point although some tire ballast has been placed over the liner on the north side.

The two inlets to the pond have very recently been upgraded and the enviroliner has been repaired at these locations. This was performed at the end of July, 2017.

Stability

We have concerns over the stability of the liner on this pond and recommend the possibility of further tire ballast over the liner which appears possibly subject to wind damage. This shall provide a function for used tires

Recommendations

We recommend review of the use of a ballast (possibly tires) on the exposed liner at the dyke to prevent wind uplift.

4.08 Milne Port Ore Stockpile Sedimentation Pond West (MP-06)

General Conditions

The construction of this sedimentation pond for drainage from the west side of the site is now complete with repairs recommended in our report of last year having been completed.

The inlet where the inlet where possible water infiltration was occurring was addressed at the end of July, 2017, and the inlet has been reconstructed.

Stability

We have some concern over the stability of the liner on this pond as we have with the east pond and further recommend that used tire ballast be considered.

Recommendations

We have no concerns other than that of possible wind damage to the liner and recommend the use of tires as ballast.

We recommend that the ditch that conducts water from the east side of the pond be reviewed to ensure water is conducted to the pond readily.

4.09 Quarry (Q1)

General Conditions

The quarry was active at the time of our review.

Stability

Rock faces appear stable.

A rock berm has been placed along the face. I assume this is to contain falling rock during the cleaning of the upper face prior to blasting. This an excellent idea.

Recommendations

We have no recommendations to be made with respect to the quarry.

4.10 Loading Area Contaminated Storage (MP-HWP-1)

General Conditions

This area has been constructed near the loading dock to facilitate assembly of hazardous materials for shipment out.

Most hazardous waste has now been removed from the containment and shipped out.

Construction appears to have taken place in accordance with standardized drawings prepared in the past.

Stability

Construction appears stable.

Recommendations

We have no recommendations with respect to this structure.

4.11 Fuelling Facility Containment

General Condition

A new fueling facility for the fueling of B trains is in place with construction utilizing design drawings prepared by our office.

Work conforms to the design drawing.

4.12 Overview

Work on containment structures except for maintenance appears complete.

MILNE INLET PHOTOS



21. Hazardous Waste Storage (MP-HWB-3)



22. Hazardous Waste Storage (MP-HWB-4)



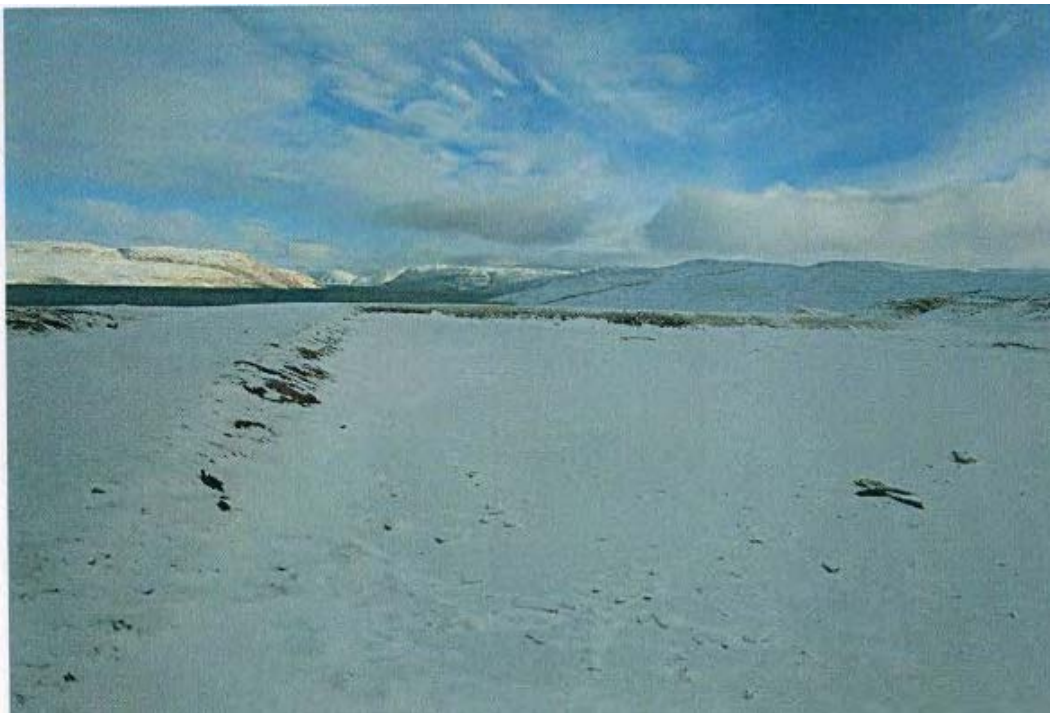
23. Fuel Tank Farm (MP-03)



24. Milne Inlet Sewage Effluent Pond (PWSP)



25. Land Farm Containment (MP-04)



26. Contaminated Snow Containment (MP-04a)



27. Milne Inlet Quarry (Q1)



28. Loading Area Containment Storage (MP-HWB-1)



29. Fueling Facility Containment



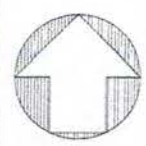
30. Milne Port Ore Stockpile Sedimentation Pond East (MP-05)



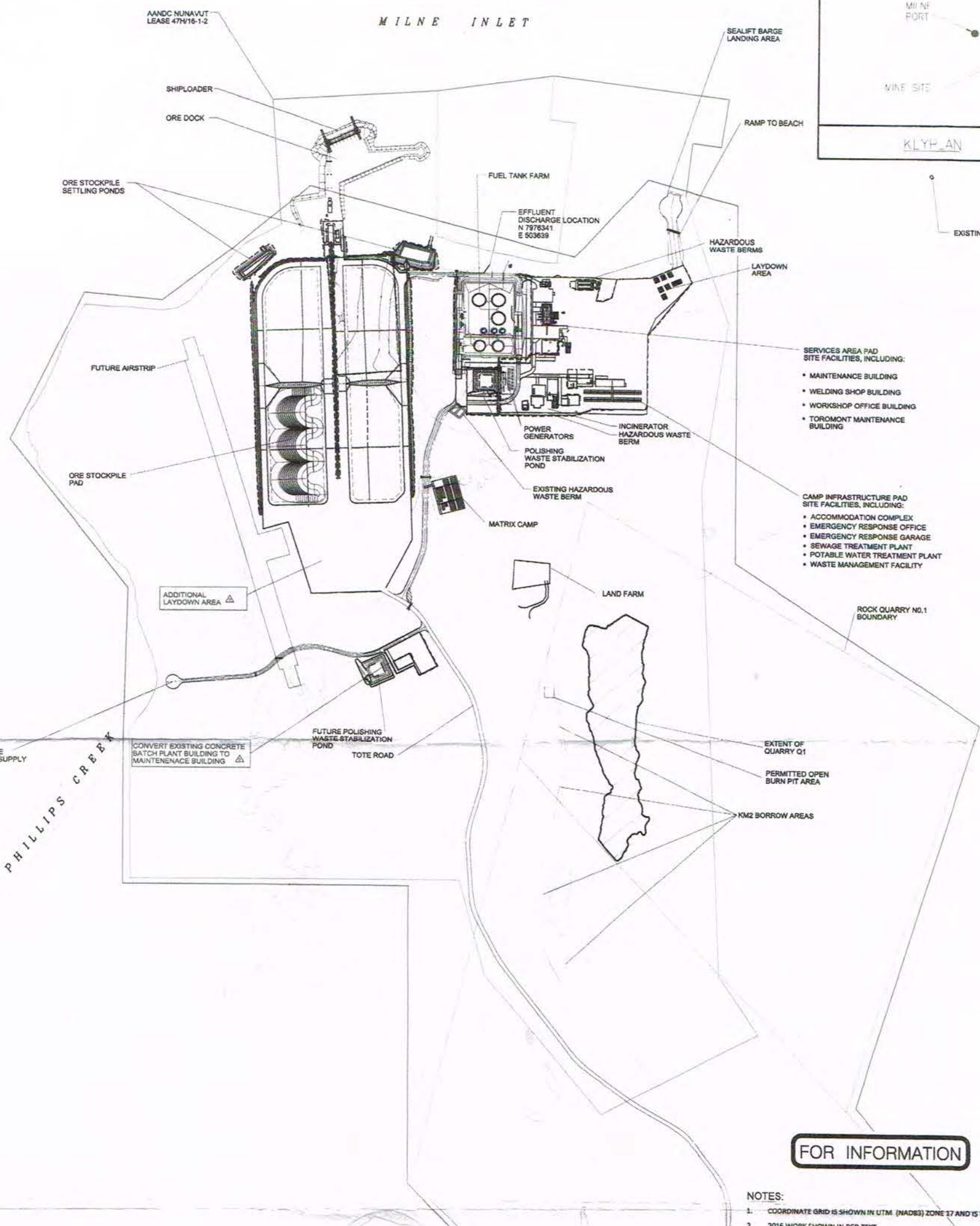
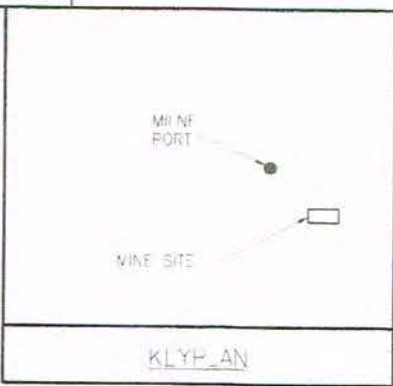
31. Milne Port Ore Stockpile Sedimentation Pond West (MP-06)

MILNE INLET DRAWING

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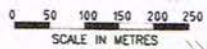


MILNE INLET



FOR INFORMATION

- NOTES:
- COORDINATE GRID IS SHOWN IN UTM (NAD83) ZONE 17 AND IS IN METRES.
 - 2016 WORK SHOWN IN RED TEXT.



LEGEND:

WATER	RIVER/STREAM/DRAINAGE
QUARRY	ROAD
COMMERCIAL LEASE	PROJECT DEVELOPMENT AREA
AANDC LEASE 47H/16-1-2	BORROW AREAS

HATCH	
DESIGNED BY C. LEISTNER DATE 2014-10-20	DRAWN BY J. BALJACIC DATE 2014-10-20
CHECKED BY S. POTTER DATE 2014-10-20	PROJ. DES. COORD. T. THURTELL DATE 2014-06-19
ISSUED FOR USE M.B. J.B. 2015-10-15	PROJ. MGR. J. CLELAND DATE 2014-06-19
ISSUED FOR USE S.M. T.M. 2014-12-10	
ISSUED FOR USE C.L. T.M. 2014-10-31	
ISSUED FOR USE C.L. A.G. 2014-08-19	
ISSUED FOR USE S.M. T.M. 2014-12-10	

Barrinland

MARY RIVER PROJECT

MILNE PORT
INFRASTRUCTURE FOOTPRINT
WORK PLAN 2016

SCALE: 1:5000
DWG. NO. H349000-2000-00-015-0021
REV. D

ISSUE AUTHORIZATION

5.0 MILNE INLET TOTE ROAD

5.01 General

In this site inspection, we have been asked to review and comment on a number of areas of construction on the roadway, including condition of the bridge abutments at km 17, km 62, km 80 and km 97 as well as the quarried material being used for roadway fill and the slope stabilization efforts using armor stone/rip rap in the area of km 90 - 93.

Note that representatives of the bridge designers, ACROW, were on site and were reviewing the ends of the bridge trusses with respect to their displacement from the abutments I understand that they are submitting a report on this.

5.02 Bridge Abutments

The bridge abutments are constructed as what appears to be reinforced masonry where the end of the bridge trusses bear with metal framed containment to contain the sloping fill at the side of the roadway fill.

We understand that it is critical to maintain a clearance between the ends of the bridge trusses and the concrete part of the abutments. The ACROW inspectors were on site to check for this conformity.

From my preliminary review it appears the bridge trusses and the abutments conform to the design requirements, but I leave this in the hands of ACROW. Note the gaps evident in the photos.

The side containment of fill at the abutments appear to be gravity type structures that are now tilting because they are too small.

We've reviewed the remaining sea can bridge abutments. These abutments had been removed flush with adjacent ground in all but one area where no deformation had occurred. Where the abutments were flush with adjacent ground, there was no indication that deformations had taken place while the sea can bridge was active.

We have no current concerns with the stability of what remains of the sea can bridge abutments.

The concrete abutments at this time appear stable, but as can be seen the metal crib portions of the abutments appear are not holding in place as shown in the photos.

Recommendation

I recommend reconstruction of the abutment formed with metal containment utilizing double the length parallel to the road and 50% wider containment.

Due to the concerns of ACROW as to maintain clearance between the concrete abutments and the ends of the trusses, this clearance must be checked annually.

I recommend that consideration be given to having the trucks come to a full stop at least 50 metres from each end of the bridges. The braking action of the ore haulers does put undue stress upon the road bed which is transferred to the concrete abutments near the top of the abutments.

5.03 Rock Shatter Utilized as Fill Material on the Road

Where fill has been required to widen roads, rock shatter from a road cut area has been utilized.

This rock is a sedimentary rock and is blasted out as "slabs" which do not interlock in the fill structure well and as a result cannot be placed at 1:1 slopes on the edge of the fill.

Recommendation

At fill areas, the slope at the edge of the road should be constructed at a 1 ½ to 1 to 2:1 slope giving a lower slope angle.

As well this material should not be utilized directly against culvert structures which should be bedded 4 sides in sand or gravel compacted in place.

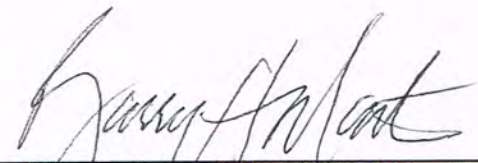
5.04 Slope Stabilization at km 90 - 93

We reviewed the areas at kilometer 90 to 93 where armor stone has been placed at the base of the slopes and rip rap on geotextile has been placed above the armor stone on the slope.

Recommendation

The methodology appears good; however, we recommend that a non-woven geotextile be utilized.

Respectfully submitted,



Barry H. Martin, P. Eng., MRAIC



ROADWAY PHOTOS



32. Bridge Abutment @ km 97 (Note Space)



33. Bridge Abutment @ km 63 (Note Space)



34. Bridge Abutment @ km 80 (Note Space)



35. Typical Rock Used as Fill from km 76



36. Typical Rock Used as Fill from km 76



37. Armor Stone Used in Road Cut Area km 91

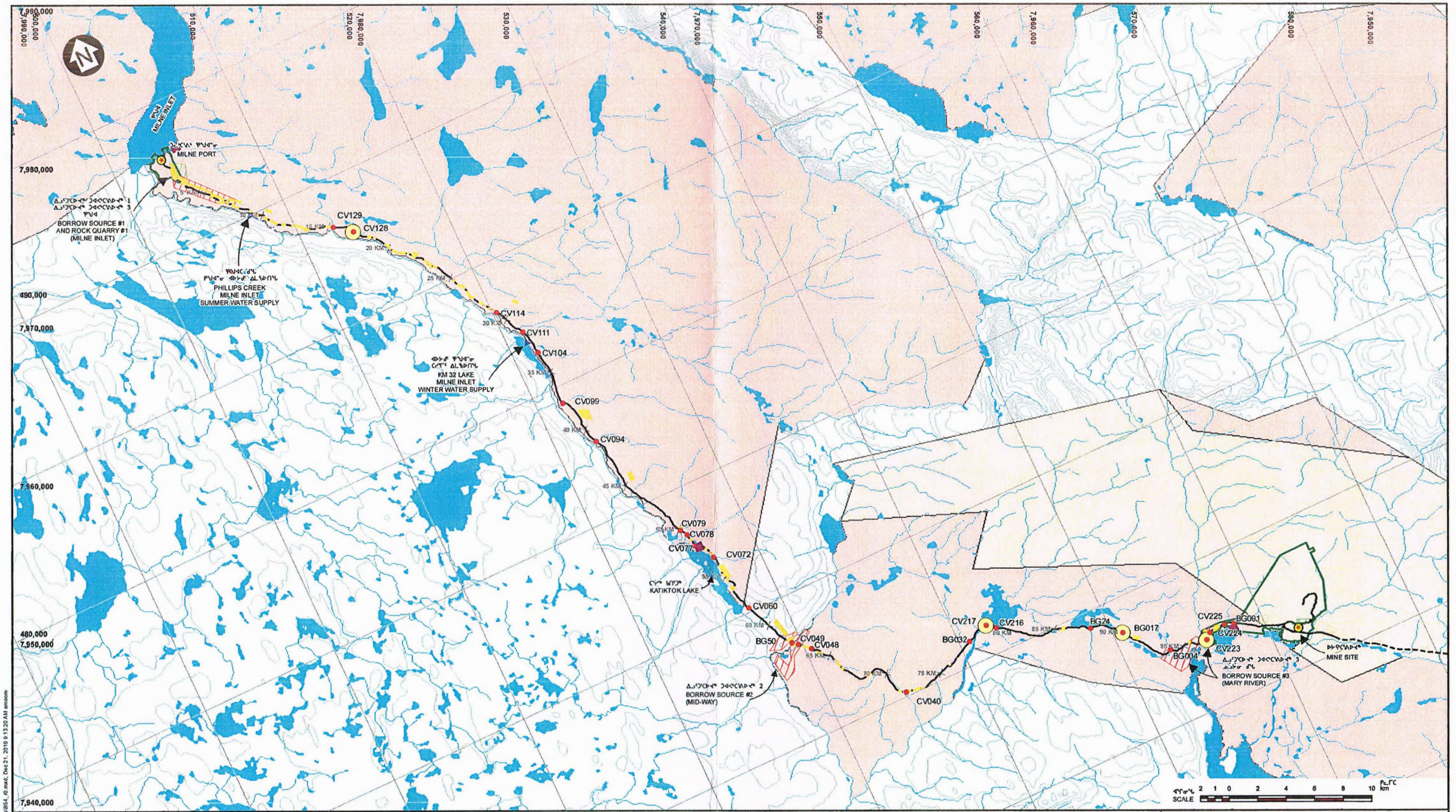


38. Armor Stone Used in Road Cut Area km 91



39. Sea can bridge abutments no longer in use. Note there is no deformation.

ROADWAY DRAWING



LEGEND:

Blue area	WATER	Red square	CAMP	Green outline	POTENTIAL DISTURBANCE AREA
Blue line	RIVER/STREAM/DRAINAGE	Blue triangle	MILNE INLET WATER SUPPLY	Yellow outline	IOL SURFACE AND SUBSURFACE INCLUDING MINERALS
Black line	MILNE INLET TOTE ROAD	Red circle	CROSSINGS SUBJECT TO AN AUTHORIZATION UNDER THE FISHERIES ACT	Red outline	IOL SURFACE ONLY EXCLUDING MINERALS
Dashed line	PROPOSED RAILWAY ALIGNMENT	Yellow circle	CROSSINGS SUBJECT TO AN APPROVAL UNDER THE NAVIGABLE WATERS PROTECTION ACT	Red outline	POTENTIAL QUARRY DEVELOPMENT AREA
Yellow area	QUARRY AND BORROW LOCATION (PROPOSED)	Red outline	EXISTING BORROW AREA LEASE BOUNDARY (IOL COMMERCIAL LEASE)	Green outline	EXISTING ROCK QUARRY LEASE BOUNDARY (IOL COMMERCIAL LEASE)
Yellow area	QUARRY AND BORROW LOCATION (EXISTING)	Green outline	EXISTING ROCK QUARRY LEASE BOUNDARY (IOL COMMERCIAL LEASE)		

REV	DATE	ISSUED WITH REPORT	DESCRIPTION	RAC	ASM	RAC	RDE
DESIGNED	DRAWN	CHKD	APPD				
0	18DEC10						

NOTES:

- BASE MAP: HER MAJESTY THE QUEEN IN RIGHTS OF CANADA, DEPARTMENT OF NATURAL RESOURCES, (2004).
- COORDINATE GRID IS UTM (NAD83) ZONE 17 AND IS IN METRES.
- CONTOURS ARE IN METRES. CONTOUR INTERVAL VARIES
- QUARRY AND BORROW AREA DATA ACQUIRED FROM AMEC DATA EXCHANGE (SEPTEMBER 7, 2010).

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1. መሠረታዊ ስልጠና
2. መሠረታዊ ስልጠና UTM (NAD83) ZONE 17
3. በሰነድ ላይ ያሉት ኮንቶር ደረጃዎች
4. ባህሪ ስራ ላይ ያሉት ቦታዎች በAMEC ደረጃ ላይ ናቸው (ጥቅምት 7, 2010)

BAFFINLAND IRON MINES CORPORATION

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MILNE INLET TOTE ROAD

Figure 3-2.2

KNIGHT PIÉSOLD CONSULTING

PLANO: NB102-181/25
REF. NO.: 8
REV. 0

SAVED: 11/10/2010 10:51:05 AM GIS: ArcView/figures/BSE_L_01.mxd, Dec 21, 2010 9:13:20 AM ammore

APPENDIX H

STATUS OF PROPONENT COMMITMENTS IN 2017

Commitment No.	Relevant PC Condition	Description of Commitment	Status
1	N/A	Baffinland is committed to incorporating the relevant changes in the site layout for infrastructure and design that will take into account the results of continuing environmental advances so as to address engineering concerns related to the Mary River Project.	In-Compliance This commitment is addressed with the submission of Issued for Construction Drawings and As Build Drawings.
2	10, 21	Baffinland is committed to developing and implementing mitigation measures which control fugitive dust emissions.	In-Compliance Refer to summary sheets for PC Condition No. 10 and 21.
3	N/A	Baffinland will undertake only the physical crushing and screening processing of the ore generated from the Mary River Project within the project area.	In-Compliance The Mary River Project involves the crushing and screening of ore. It does not involve milling, processing and generation of tailings.
4	179	Baffinland is committed to providing information on potential variability of the mine's iron ore production rate in response to QIA's comments.	Not Applicable Refer to summary sheet for PC Condition No. 179.
	179a		In-Compliance Refer to summary sheet for PC Condition No. 179a.
	179b		Non-Compliant Refer to summary sheet for PC Condition No. 179b.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
5	N/A	Baffinland is committed meeting or exceeding all regulatory requirements that relate to the Mary River Project, including significant reporting to provide details on the project's performance.	In-Compliance Baffinland continues to meet all regulatory requirements and undertakes annual and other reporting.
6	17, 24	Baffinland is committed to collecting and treating, if required, contact water generated from mining activities to ensure that relevant effluent criteria are met as established in the water licence.	Non-Compliant Refer to summary sheets for PC Condition No. 17 and 24.
7	N/A	Baffinland is committed to constructing their on-land fuel storage with the capability to last at least 16 months, in lined, engineered structures as part of its normal operating practice.	In-Compliance At Milne Port and at the Mine Site, permanent fuel storage has been constructed. Please refer to the site layouts for the location of the permanent fuel containment areas. Steensby Port did not receive fuel and no containment was required.
8	95, 96, 172	As part of standard operation procedures, Baffinland is committed to avoiding ship-to- shore transfer of fuel during freeze-up or break-up periods.	Not Applicable Refer to summary sheets for PC Condition No. 95, 96, and 172.
9	173	Baffinland is committed to undertaking fuel transfer from vessels to shore under good weather conditions. Once the ore dock is constructed at Steensby, fuel transfer will be carried out at the freight dock.	In-Compliance Refer to summary sheet for PC Condition No. 173.
10	92	Baffinland is committed to installing leak detection instrumentation on the overwintering fuel vessel and to conduct ongoing monitoring in the vicinity of the vessel, in accordance with relevant guidelines and regulations. Baffinland is committed to using best management practices to reduce the possibility of spills.	In-Compliance Refer to summary sheet for PC Condition No. 92.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
11	98	Baffinland is committed to maintaining an up to date Spill Contingency Plan and will distribute copies of the Plan to stakeholders.	In-Compliance Refer to summary sheet for PC Condition No. 98.
12	N/A	Baffinland is committed to developing and implementing a Security Plan in accordance with regulatory requirements.	In-Compliance Addressed in Appendix A of the Emergency Response Plan (BAF-PH1-840-P16-0002).
13	177	Baffinland is committed to providing full specifications to Transport Canada, including the sizes, type and design of ore carriers proposed for use, prior to finalizing the ore carrier design.	In-Compliance Refer to summary sheet for PC Condition No. 177.
14	165	Baffinland commits that buildings placed along the rail line for signal and switch requirements will also be intended for use as emergency shelters for Railway personnel.	In-Compliance Refer to summary sheet for PC Condition No. 165.
15	53	Baffinland is committed to creating crossings along the Railway track which facilitate the passage of caribou.	In-Compliance Refer to summary sheet for PC Condition No. 53.
16	N/A	Baffinland is committed to designing the rail track to allow for snow machine and ATV crossings at points intersecting with identified travel routes.	Not Applicable No update. Rail track has yet to be developed.
17	147	Baffinland is committed to work with the QIA to hold meetings in the communities to discuss safety aspects involved with travellers who may potentially be crossing the ship track and Railway using designated (or other) crossings.	In-Compliance Refer to summary sheet for PC Condition No. 147.
18	N/A	Baffinland is committed to purchasing the highest tier (per the USA's EPA standards) of locomotive available for use at the Mary River project.	Not Applicable No update. Locomotives have not been purchased to date by Baffinland.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
19	N/A	Baffinland is committed to having a Railway Emergency Response Plan and trained personnel for responding to Railway specific emergencies.	Not Applicable No update. Rail component of the Project has yet to be developed.
20	N/A	Baffinland is committed to installing ploughs on the sides of locomotives in order to ensure that the rail line is kept clear of snow during Railway operations.	Not Applicable No update. Rail component of the Project has yet to be developed.
21	N/A	Baffinland is committed to carrying out regular maintenance and inspection of the Railway infrastructure in accordance with established guidelines and regulations.	Not Applicable No update. Rail component of the Project has yet to be developed.
22	N/A	Baffinland is committed to comply with the Railway Locomotive Inspection and Safety Rules, Railway Freight Car Inspection and Safety Rules referenced in Transport Canada's final written submission to the NIRB.	Not Applicable No update. Rail component of the Project has yet to be developed.
23	N/A	Baffinland is committed to developing and finalizing an operating strategy that will provide the highest level of safety in transportation of fuel using rail cars.	Not Applicable No update. Rail component of the Project has yet to be developed.
24	N/A	Baffinland is committed to ensuring that bulk fuel transported by rail is contained in tanker cars and all hazardous substances will be shipped in sea containers to minimize spill potential along the rail line.	Not Applicable No update. Rail component of the Project has yet to be developed.
25	N/A	Baffinland is committed to providing detailed maps of the Railway corridor to the Nunavut Planning Commission if a NIRB project certificate is issued for the Mary River Project.	Not Applicable No update. Rail component of the Project has yet to be developed.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
26	N/A	Baffinland is committed to appointing one of its personnel to act as a Marine Safety Officer during the construction, operation, and closure phases of the Mary River Project.	In-Compliance Addressed in Table 1-1 and Sections 5 and 6 (Roles and Responsibilities) in the Milne Port OPEP (BAF-PH1-830-P16-0013).
27	127, 128	Baffinland is committed to meeting with the community of Igloolik once the vessels used to transport ore for the Mary River Project are selected.	In-Compliance Refer to summary sheet for PC Condition No. 127 and 128.
28	127, 128	Baffinland is committed to visiting Igloolik to provide the community with information on the fuel vessel selected for overwintering at Steensby Inlet.	In-Compliance Refer to summary sheet for PC Condition No. 127 and 128.
29	N/A	Baffinland is committed to ensuring that normal shipping activities will be confined to the Nunavut Settlement Area on the north side of the Hudson Strait where conditions are favorable to shipping and to incorporating the necessary mitigation measures to ensure that shipping does not impact marine wildlife and that community concerns are addressed from an operational standpoint.	Not Applicable No update. Southern Shipping Corridor has yet to be utilized. See Shipping and Marine Wildlife Management Plan (BAF-PH1-830-P16-0024) for description of mitigation measures adopted to ensure that shipping does not impact marine wildlife and that community concerns are addressed.
30	102, 164, 166	Baffinland is committed to providing shipping notification on a regular and consistent basis to relevant communities prior to shipping and construction activities for the Mary River Project.	In-Compliance Refer to summary sheets for PC Conditions No. 102, 164, and 166.
31	N/A	Baffinland is committed to ensuring that the vessels used to transport ore from the Mary River Project are of appropriate class and specification, and will operate in a manner that is consistent with applicable regulations and guidelines.	In-Compliance Vessels used to transport ore comply with all applicable regulations and guidelines.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
32	14	Baffinland is committed to providing the QIA with a copy of the frequency-noise distribution graph for sound generated by ore ship propellers travelling through ice.	Partially-Compliant Refer to summary sheet for PC Condition No. 14.
	14a, 14b, 15		In-Compliance Refer to summary sheets for PC Condition No. 14a, 14b, and 15.
33	N/A	Baffinland is committed to implementing appropriate mitigation measures including but not limited to, periodic suspension of shipping if Baffinland determines that shipping-related activities are negatively impacting the project area.	In-Compliance Addressed in the Shipping and Marine Wildlife Management Plan (BAF-PH1-830-P16-0024). The Marine Environment Working Group (MEWG) will inform future mitigations if required.
34	150	Baffinland is committed to issuing public notices to affected communities advising them of shipping traffic schedules, and marker locations. Baffinland is also committed to installing reflective markers at a distance of approximately 100 metres from the ship track ice edge with approximately 500 metres between each marker on both sides of the shipping lane during the winter period to ensure that shipping lanes are visible at all times. Baffinland is committed to conducting weekly patrols along these shipping lanes to ensure that markers are in place and remain visible.	Partially-Compliant Refer to summary sheet for PC Condition No. 150.
	164		In-Compliance Refer to summary sheet for PC Condition No. 164.
	175		Not Applicable Refer to summary sheet for PC Condition No. 175.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
35	125a	Baffinland is committed to providing affected communities and other stakeholders with details on the type and location of all navigational aids installed along the shipping route.	In-Compliance Refer to summary sheet for PC Condition No. 125a.
36	102	Baffinland is committed to providing real-time data on the location of ships or vessels associated with the Mary River Project to all affected communities.	In-Compliance Refer to summary sheet for PC Condition No. 102.
37	177	Baffinland will consider enrolling its vessels operating under the Canadian flag in Transport Canada's Marine Safety Delegated Statutory Inspection Program, as recommended in TC's final written submission.	In-Compliance Refer to summary sheet for PC Condition No. 177.
38	N/A	Baffinland is committed to undertaking a phased approach to any abandonment and restoration, as well as final abandonment and restoration, of the Mary River Project site(s) and relevant monitoring activities in a manner that is consistent with applicable guidelines and regulations.	In-Compliance Addressed in the Interim Closure and Reclamation Plan (BAF-PH1-830-P16-0012).
39	39	Baffinland is committed to investigating and exploring the potential for native species of flora to be used for re-vegetating areas disturbed within the project area.	In-Compliance Refer to summary sheet for PC Condition No. 39.
40	36, 48a, 50, 76	Baffinland is committed to undertaking environmental effects monitoring during the mine life as well as after closure.	In-Compliance Refer to summary sheets for PC Condition No. 36, 48a, 50, 76.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
41	125	Baffinland is committed to participating in ongoing initiatives, including working with stakeholders, to address all issues related to the Mary River Project.	Not Applicable Refer to summary sheet for PC Condition No. 125.
	133		In-Compliance Refer to summary sheet for PC Condition No. 133.
42	18	Baffinland is committed to establishing a working/ advisory group consisting of stakeholders of the Mary River Project to identify and address issues surrounding abandonment and restoration activities associated with the Mary River Project. The terms of reference, as well as information on all issues identified to be resolved by the working group, will be made available to the NIRB and interested persons for information and/or review purposes.	In-Compliance Refer to summary sheet for PC Condition No. 18.
43	37	Baffinland is committed to collaborating with the Government of Nunavut on issues related to the Mary River Project for which both the GN and Baffinland have a stake.	Not Applicable.
44	N/A	GN is committed to working with Baffinland to ensure that an understanding of their respective roles are confirmed.	Not Applicable This Project Commitment is applicable to GN.
45	129, 131, 145, 148, 154, 159, 168	Baffinland is committed to participating in the Qikiqtani Socio-Economic Monitoring Committee (SEMC) working group to ensure that relevant effects of the Mary River Project are monitored.	In-Compliance Refer to summary sheets for PC Condition No. 129, 131, 145, 148, 154, 159, and 168.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
46	49, 77, 129, 130,	Baffinland is committed to participating in formal, stakeholder working groups, such as terrestrial environment and marine environment working groups, as established within and/or outside of the scope of the IIBA, to gain input, insight, advice and oversight from stakeholders throughout the life of the project and to ensure that adaptive management principles are applied accordingly.	In-Compliance Refer to summary sheets for PC Condition No. 49, 77, 129, and 130.
47	49	GN is committed to participating in the terrestrial environment and marine environment working groups as deemed appropriate. GN is committed to providing feedback on terms of reference for the working group.	In-Compliance Refer to summary sheet for PC Condition No. 49
48	N/A	EC is committed to participating in the terrestrial environment and marine environment working groups to the extent that EC resources would allow, and in the context of its mandate.	Not Applicable This Project Commitment is applicable to EC.
49	49, 77	GN is committed to developing, with the terrestrial working group, ways to monitor caribou within the project area during sensitive life cycle periods.	In-Compliance Refer to summary sheets for PC Condition No. 49 and 77.
50	49	GN is committed to undertaking further research to determine the status, health, population and other variables associated with the North Baffinland caribou herd.	In-Compliance Refer to summary sheet for PC Condition No. 49.
51	77, 76	GN is committed to working with other departments and agencies to develop and implement an effective marine monitoring program aimed at determining the impacts of shipping activities on the marine environment.	In-Compliance Refer to summary sheets for PC Condition No. 77 and 76.
52	N/A	QIA is committed to explaining the contents of an IIBA for the Mary River Project to the GN once the IIBA has been finalized.	Not Applicable This Project Commitment is applicable to QIA.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
53	N/A	Baffinland is committed to contributing to overseeing the implementation of the IIBA including monitoring of the Project on a continuous basis to allow for ongoing Inuit input related to environmental and social impacts.	In-Compliance The IIBA was signed between QIA and BIM in September 2013. Please refer to IIBA Annual Forum Report(s) for monitoring results related to IIBA implementation.
54	N/A	DFO is committed to ongoing involvement in assisting Baffinland to develop a robustly designed and long-term monitoring program for verifying impact prediction, demonstrating the efficacy of mitigation measures, and adjusting those measures as needed.	Not Applicable This Project Commitment is applicable to DFO.
55	N/A	CCG is committed to exploring the possibility of increases to its level of service in order to support shipping associated with the Mary River Project, if approved.	Not Applicable This Project Commitment is applicable to CCG.
56	N/A	AANDC is committed to exploring the possibility of having its assigned representatives inform communities in the Qikiqtani Region about the Project as it pertains to their mandate and/or responsibilities.	Not Applicable This Project Commitment is applicable to INAC.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
57	7, 9, 10, 11, 19, 20, 22, 26, 33, 74, 90	Baffinland is committed to updating its management plans to reflect new information, new practices and changes to operating conditions.	In-Compliance Refer to summary sheets for PC Condition No. 7, 9, 10, 11, 19, 20, 22, 26, 33, 74, and 90.
	23, 89		Partially-Compliant Refer to summary sheets for PC Condition No. 23 and 89.
	55, 100, 175		Not Applicable Refer to summary sheets for PC Condition No. 55, 100, and 175.
58	2	Baffinland is committed to contributing to regional monitoring and information gathering.	Not Applicable Refer to summary sheet for PC Condition No. 2.
	51		In-Compliance Refer to summary sheet for PC Condition No. 51.
59	5	Baffinland is committed to giving consideration to the sharing of weather data collected for the Mary River Project with Environment Canada to post on its public weather network.	In-Compliance Refer to summary sheet for PC Condition No. 5.
60	58	Baffinland is committed to monitoring fugitive dust emissions on vegetation along the first few kilometres of the Railway leaving both terminals (Mary River and Steensby Inlet). This monitoring will be extended if it is identified that other areas of the project site are also being impacted by fugitive dust emissions.	In-Compliance Refer to summary sheet for PC Condition No. 58.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
61	7, 8	Baffinland is committed to conducting passive monitoring of SO ₂ at the Steensby Inlet camp.	In-Compliance Refer to summary sheets for PC Condition No. 7 and 8.
62	7	Baffinland is committed to estimating marine shipping vessel emissions associated with the Mary River Project.	In-Compliance Refer to summary sheet for PC Condition No. 7.
63	3	Baffinland and its shipping partners are committed to working with shipyards to reduce fuel consumption by 20% or more.	Not Applicable Refer to summary sheet for PC Condition No. 3.
64	41	Baffinland is committed to carrying out ongoing characterization of the waste rock to ensure that effluent discharge criteria associated with waste rock storage areas are met at all times.	In-Compliance Refer to summary sheet for PC Condition No. 41.
	46		Partially-Compliant Refer to summary sheet for PC Condition No. 46.
65	20, 30, 41	Baffinland is committed to developing a Quarry Management Plan for each of the quarries developed for the Mary River Project and to ensure that all quarry materials used are non-acid generating and non-metal leaching in chemical characteristics.	In-Compliance Refer to summary sheets for PC Condition No. 20, 30, and 41.
66	N/A	Baffinland is committed to the development and implementation of a monitoring program during the construction and other phases of the Mary River Project.	In-Compliance Baffinland maintains on going monitoring programs at all Project sites.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
67	36	Baffinland is committed to carrying out the monitoring plans for native plant species and vegetative health.	In-Compliance Refer to summary sheet for PC Condition No. 36.
68	37	Baffinland is committed to examining invasive species as well as carry out reclamation experiments on re-vegetation options and practices within the Mary River Project area.	Not Applicable Refer to summary sheet for PC Condition No. 37.
69	N/A	Baffinland is committed to undertaking the required or relevant monitoring for both terrestrial wildlife and vegetation throughout the life of the Mary River Project to verify predictions made as well as to confirm compliance with applicable regulations. The information would be used to support adaptive management strategies and required mitigation measures.	In-Compliance Baffinland undertakes annual monitoring of the terrestrial environment. Annual monitoring reports are available on Baffinland's Document Portal.
70	50	Baffinland is committed to developing and implementing a Terrestrial Environment Management Plan and track progress of the plan to assist in guiding adaptive management strategies slated for implementation at the Mary River Project.	In-Compliance Refer to summary sheet for PC Condition No. 50.
71	53	Baffinland is committed to investigating any mortality to caribou resulting from project activity, and to investing in a precautionary monitoring and adaptive management program to mitigate caribou responses to development activities.	In-Compliance Refer to summary sheet for PC Condition No. 53.
72	N/A	Baffinland is committed to implementing appropriate measures to ensure that all caribou carcasses linked to the project activities are discarded in accordance with applicable regulations and guidelines.	In-Compliance This will be incorporated into the Terrestrial Environment Monitoring and Management Plan (BAF-PH1-830-P16-0027) in advance of railway operations. Wildlife compensation is also addressed in the IIBA.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
73	53	Baffinland is committed to implementing traffic controls along the Railway if it is determined that the caribou mortality rate is impacted by the Railway.	In-Compliance Refer to summary sheet for PC Condition No. 53.
74	55	Baffinland is committed to monitoring the effects of the Mary River Project on wolf and wolf denning areas.	Not Applicable Refer to summary sheet for PC Condition No. 55.
75	66, 67	Baffinland is committed to monitoring relevant sections of the project area for nesting and migration activities, noting both areas and patterns, for Falcons, Eiders, Red Knots, sea birds, song birds and shore birds.	In-Compliance Refer to summary sheets for PC Condition No. 66 and 67.
76	N/A	Baffinland is committed to carrying out monitoring over the next few years to look at other types of birds not considered during other research for the Mary River Project.	In-Compliance Addressed in Terrestrial Environment Monitoring and Management Plan (BAF-PH1-830-P16-0027) and via participation in Terrestrial Environmental Working Group (TEWG).
77	74, 75	Baffinland is committed to monitoring migratory marine birds during shipping operations using established methodologies.	In-Compliance Refer to summary sheets for PC Condition No. 74 and 75.
78	N/A	Baffinland is committed to continued contribution to marine bird baseline data collection along southern shipping routes.	In-Compliance Addressed in Marine Environment Monitoring Reports and ongoing support of seabird studies conducted by the Canadian Wildlife Service (CWS) of Environment Canada.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
79	76	Baffinland is committed to undertaking marine mammal and bird surveys/studies to determine information gaps related to shipping-related impacts.	In-Compliance Refer to summary sheet for PC Condition No. 76.
80	121	Baffinland is committed to working with the stakeholders to undertake studies along the marine shipping route to determine the effects of shipping on marine wildlife and mammals, including ship strikes, for the purposes of collecting baseline information, confirming uncertainties, collecting ongoing data, and identifying and implementing future adaptive management strategies.	Partially-Compliant Refer to summary sheet for PC Condition No. 121.
81	99	Baffinland is committed to monitoring seals on land-fast ice and to limit any potential negative impacts, including reducing the amount of ice disturbed.	In-Compliance Refer to summary sheet for PC Condition No. 99.
82	N/A	Baffinland is committed to carrying out surveys in the Hudson Strait in 2012 to collect additional baseline data on species that might be potentially impacted by the project.	Not Applicable This requirement has been completed.
83	121	Baffinland is committed to developing and implementing a Ship Strike Monitoring Plan to capture relevant data for use in adaptive management strategies.	Partially-Compliant Refer to summary sheet for PC Condition No. 121.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
84	76	Baffinland is committed to monitoring the potential effects of shipping on the marine environment along the shipping route or other areas potentially impacted by the project's shipping activities.	In-Compliance Refer to summary sheet for PC Condition No. 76.
	81, 85		Not Applicable Refer to summary sheets for PC Condition No. 81 and 85.
	110		Partially-Compliant Refer to summary sheet for PC Condition No. 110.
85	76, 87, 88	Baffinland is committed to monitoring benthic community and water quality in Steensby Inlet to verify effects of ballast dispersal predication.	In-Compliance Refer to summary sheets for PC Condition No. 76, 87, and 88.
	86		Partially-Compliant Refer to summary sheet for PC Condition No. 86.
86	88	Baffinland is committed to screening and treating ballast water from the ships associated with the Mary River Project to meet or exceed all regulatory requirements prior to release into the marine environment. In so doing, Baffinland will prevent or minimize the introduction of invasive species into Nunavut's marine environment. Upon release, Baffinland is committed to monitoring impacts of ballast water effluent in areas proximal to the discharge/ exchange points.	In-Compliance Refer to summary sheet for PC Condition No. 88.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
87	89	Baffinland is committed to monitoring the discharge of ballast water from vessels to ensure that it meets or exceeds applicable regulations, guidelines and discharge criteria and to meet or exceed international standards set for ballast water and any ballast water guidelines approved by Transport Canada.	Partially-Compliant Refer to summary sheet for PC Condition No. 89.
88	N/A	Baffinland is committed to making available to the NIRB and to interested persons, by December 31, 2012, the report for the shoreline studies completed for the Mary River Project in June 2012.	In-Compliance This was completed in 2013 through the TEWG. Minutes of the meetings are located in Appendix F.2 of the 2013 Annual Report to the NIRB.
89	N/A	Baffinland is committed to hiring practices that are consistent with the terms and conditions in the memorandum of understanding for the IIBA.	In-Compliance Addressed in IIBA Annual Forum Report.
90	N/A	Baffinland is committed to hiring Inuit at all levels in the company for the Mary River Project and intends to put a targeted recruitment program in place to ensure that Inuit, especially Inuit of the North Baffin Region, are hired.	In-Compliance Addressed in IIBA Annual Forum Report.
91	N/A	Baffinland is committed to the preferential hiring of employees from the defined points of hire, which include the communities of Pond Inlet, Igloodik, Hall Beach, Arctic Bay and Iqaluit. Baffinland may consider other points of hire if it deems that there are sufficient numbers individuals available in those communities who want to work at the project.	In-Compliance Addressed in IIBA Annual Forum Report.
92	136, 137, 138, 141	Baffinland is committed to implementing a targeted training plan to build capacity among Inuit to fulfill positions within the organization; some of the capacity building initiatives include refresher training, work ready training and education support programs.	In-Compliance Refer to summary sheets for PC Condition No. 136, 137, 138, and 141.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
93	135	Baffinland is committed to providing a cross-cultural training to both Inuit and non-Inuit employees and to institute ant discriminatory policies and mechanisms to minimize any potential cultural conflicts in the workplace.	In-Compliance Refer to summary sheet for PC Condition No. 135.
94	136	Baffinland is committed to providing training linked to specific job positions and to endeavor to implement job- creation partnerships with interested organizations.	In-Compliance Refer to summary sheet for PC Condition No. 136.
95	N/A	Baffinland is committed to distributing information related to available employment at the Mary River Project through its website, community newspapers and other methods of advertising.	In-Compliance This is ongoing on Baffinland’s website as well as ads in community newspapers and in BCLO offices in North Baffin communities.
96	153, 157	Baffinland is committed to instituting and providing a professional employee assistance and counseling program to assist employees and their family members both at site and at home communities. As part of this program, Baffinland is committed to hiring at least one Inuit Elder to be stationed at each of the Milne and Mary River sites at all phases of the project to assist in counseling.	In-Compliance Refer to summary sheets for PC Condition No. 153 and 157.
97	162	Baffinland is committed to having Inuit Elders visit the Steensby site in 2012 to assist in identifying and ensuring that archaeological sites in the area not impacted by project activities.	In-Compliance Refer to summary sheet for PC Condition No. 162.
98	N/A	Baffinland is committed to providing training to its employees regarding the protection of archeological resources within the project area.	In-Compliance This is ongoing and within current onsite training and orientation program.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
99	N/A	Baffinland is committed to working with the Government of Nunavut to provide details on the design of medical facilities for the Mary River Project during the regulatory phase of the project.	In-Compliance This commitment was satisfied with the MOU signed with the GN in 2013.
100	N/A	Baffinland is committed having an on-site medical facility staffed by a registered nurse or certified paramedic in order to attend to any injury that workers might experience on-site, and is further committed to providing medi-vac services as may be required from the mine site to Iqaluit.	In-Compliance Baffinland currently has an on-site medical facility staffed by a registered nurse. This was also satisfied with the MOU signed with the GN in 2013.
101	N/A	Baffinland is committed to implementing mitigation measures which offset the inconvenience and hardship created for Inuit hunters and travelers that have traditionally used the areas encompassed by the shipping route.	In-Compliance Baffinland has established a Wildlife Compensation Fund in the event Project related vessels interfere with a harvest. Ship locations and movements are also publicly disclosed on Baffinland's website.
102	N/A	Baffinland is committed to ensuring that, during key harvesting periods, Inuit employees are given priority to utilize vacation time over southern workers.	In-Compliance Addressed in IIBA signed in September of 2013.
103	N/A	Baffinland is committed to establishing policies related to Inuit visitation and wildlife harvesting for Inuit employees that is consistent with Baffinland's policies and which also allows for the secure storage of firearms.	In-Compliance Addressed in Hunter and Visitor Site Access Procedure (BAF-PH1-830-PRO-0002). It is noted Baffinland has a no hunting policy on site. Baffinland supports NIRB condition 62 prohibiting employees and contractors from bring firearms to site.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
104	N/A	Inuit monitors will be present at the project site, at all times, and during all phases of the project (construction, operation, closure and post closure).	Non-Compliant
105	142	Baffinland is committed to ensuring employees who are unilingual Inuktitut speakers will not face barriers to employment at the Mary River Project by hiring Inuktitut translators. Baffinland is also committed to providing work training programs and other relevant employment information in both Inuktitut and English.	In-Compliance Refer to summary sheet for PC Condition No. 142.
106	94	Baffinland is committed to seeking and utilizing external expertise to assist them with the development of emergency response planning and to provide formal training specific to accidents and emergency response for the Emergency Response Team, which will be stationed at site at all times. This training would include responding to Railway specific emergencies.	Not Applicable Refer to summary sheet for PC Condition No. 94.
	98		In-Compliance Refer to summary sheet for PC Condition No. 98.
107	N/A	Baffinland is committed to conducting routine training exercises and strategically placing resources and equipment on site for spill response.	In-Compliance Addressed in Emergency Response Plan (BAF-PH1-840-P16-0002), Spill Contingency Plan (BAF-PH1-830-P16-003), Milne Port Oil Pollution Emergency Plan (BAF-PH1-830-P16-0013) and Spill at Sea Response Plan (BAF-PH1-830-P16-0042).
108	92, 174	Baffinland is committed, during operations, to conducting regular and annual spill response exercises and training in known and effective techniques for responding to spills and invite the relevant communities of the North Baffin Region to participate.	In-Compliance Refer to summary sheets for PC Condition No. 92 and 174.

Commitment No.	Relevant PC Condition	Description of Commitment	Status
109	N/A	Baffinland is committed to meeting on a regular basis with the emergency response and preparedness working group to review emergency preparedness.	<p>In-Compliance</p> <p>Since 2012, Baffinland has had annual spill response exercises whose participants include Petronav (fuel vessel), Baffinland and representatives of the community of Pond Inlet are active participants. Additional training and spill response capabilities for the community have been discussed with the Coast Guard in the past and the Coast Guard was reviewing efforts for the community to have additional spill response equipment to deal with non-Baffinland related spill response activity.</p>
110	92, 174	Baffinland is committed to ensuring that adequate resources are allocated to the development and deployment of emergency and spill response capabilities.	<p>In-Compliance</p> <p>Refer to summary sheets for PC Condition No. 92 and 174.</p>

Commitment No.	Relevant PC Condition	Description of Commitment	Status
111	N/A	Baffinland is committed to requiring that all project vessels have Shipboard Oil Pollution Emergency Plans (SOPEPs) in place which meets or exceeds the international standards set out in the Port State Control Memorandum of Understanding, as well as trained personnel on board to respond to spills. Baffinland will be self-sufficient for spill response and will contract the services of an established Response Organization to enable the Company to escalate response capabilities to deal with spills of up to 10,000 tonnes. This Response Organization will have expertise in recovery and cleanup of spills along coast line and involving wildlife.	<p>In-Compliance</p> <p>This commitment is satisfied by Transport Canada regulations. Baffinland has an agreement with Oil Spill Response Limited (OSRL) for spills up to 10,000 tonnes along the shipping route. A Spill at Sea Response Plan (BAF-PH1-830-P16-0042) was developed in 2015 that follows the international and Canadian best practice, ISO 15544, the IMO Manual on Assessment of Oil Spill Risk and Preparedness (2010) and the Spill Contingency Planning Guidelines and Reporting Regulations for Nunavut.</p>
112	N/A	Baffinland is committed to ensuring that all spills are reported in accordance with the relevant spill contingency planning and reporting regulations and guidelines.	<p>In-Compliance</p> <p>Addressed in Spill Contingency Plan (BAF-PH1-830-P16-003).</p>
113	N/A	Baffinland is committed to exploring and implementing measures designed to recover residual fuel from spills under the surface of sea ice.	<p>Not Applicable</p> <p>No update at this time. Bulk fuel associated with the Project is not transported in the marine environment during ice cover conditions.</p>