

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>

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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>

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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>

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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 Mittimatalik 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>

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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> 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> 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> 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> 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> 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>