August 12, 2025

Keith Morrison
Manager, Project Monitoring
Nunavut Impact Review Board
29 Mitik Street, PO Box 1360
Cambridge Bay, Nu
X0B 0C0

Re: Response to Intervenor Comments on the 2024 Annual Report

Dear Keith,

Please find attached Baffinland's responses to the comments received on the 2024 Annual Report to the NIRB.

On June 1, 2025, the Nunavut Impact Review Board (NIRB or Board) received Baffinland Iron Mines Corporation's (Baffinland) 2024 Annual Monitoring Report (the Annual Report), which included the marine and terrestrial environment technical reports as appendices. On July 7, NIRB issued a notification to Baffinland regarding the opportunity to address all comments for the 2024 Annual Report. The following day, a second notice was sent concerning late comments submitted by DFO and CIRNAC. NIRB received comments from the following parties:

- Qikiqtani Inuit Association (QIA) – (NIRB Registry ID No.356352)
- Government of Nunavut (GN) – (NIRB Registry ID No. 356353)
- Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) – (NIRB Registry ID No. 356406)
- Environment and Climate Change Canada (ECCC) – (NIRB Registry ID No. 356321)
- Fisheries and Oceans Canada (DFO) – (NIRB Registry ID No. 356407)
- Parks Canada (PC) – (NIRB Registry ID No. 356293)
- Transport Canada (TC) – (NIRB Registry ID No. 35632)
- Health Canada (HC) – (NIRB Registry ID No. 356322)
- Ocean's North (ON) – (NIRB Registry ID No. 356292)

However, neither the July 7th or July 8th notifications were received by Baffinland due to an administrative error within the NIRB system. It was only through a verbal follow-up on July 16th that Baffinland learned that the notification was issued a week earlier. At that time, it was flagged that Baffinland would not be able to meet the deadline and NIRB staff issued a verbal extension of a week (August 12, 2025).

Baffinland appreciates the comments submitted by reviewers on the 2024 Annual Report to the NIRB and wishes to thank everyone for their ongoing engagement in the success of the Mary River Project.

Please do not hesitate to contact us if further clarification is required in the interim.

Sincerely,

Cortney Oliver

Sr. Manager, Environment, Social and Governance

Cc: Megan Lord-Hoyle, Baffinland
Lou Kamermans, Baffinland
Kelli Gillard, NIRB
Varun Nayak, NIRB

Attachments

Attachment 1 – Baffinland Response to Reviewer Comments by Agency
Attachment 2 – Dustfall Distance Prediction
Attachment 3 – Terrestrial Environmental Annual Monitoring Report, Map 7-3
Attachment 4 – Tote Road Monitoring Pilot Investigation Summary
Attachment 5 – July 2025 Waste Rock Facility Thermistor Monitoring Report

Attachment 1

Baffinland Response to Reviewer Comments by Agency

Table A.1: Response to QIA Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
GENERAL COMMENTS					
1	**QIA 2024 NIRB GC# 01**	There are several recommendations made within the Appendix. While BIM has addressed each of the recommendations, very little detail has been included in terms of dates of previous or planned repairs and maintenance.	Please provide available documentation, photographs of proposed and applicable repairs discussed within Appendix C.2, as well as estimated timing of referenced routine maintenance.	**Document Name:** Appendix G.2.6.1 – Mary River Project Geotechnical Inspection Report Pt 1. **Section:** 2024 Geotechnical Inspection Recommendations and Implementation Plan **Page:** 2-8	While BIM acknowledges the request, there is no formal requirement for BIM to supply this level of detail within the Geotechnical Inspection Report. Due to constraints associated with the annual budgeting process, including the annual budgetary cycle, annual work planning cycle, regulatory notifications, and approval timelines, providing this level of detail in a report that is due 60 days after the Inspection completion is not achievable. BIM respectfully invites QIA inspectors to request this information prior to onsite visits and asks that only items strictly required within the Annual Reporting requirements be requested from the QIA's review of the NIRB and/or the NWB/QIA Annual Reports.
2	**QIA 2024 NIRB GC# 02**	The most recent slope stability modelling of the WRF indicates an internal friction angle of 40 degrees was assumed for the waste rock, which is stated to be 'conservative'. It is unclear if this strength is based on literature review or on-site specific lab testing.	Provide documentation of the lab testing data or literature that supports the material characteristics used in the stability assessment. To better understand risks associated with potential variations in materials, it is recommended sensitivity analyses be completed at lower strengths to verify that minimum recommended Factors of Safety are met.	**Document Name:** Appendix E.8.2 Baffinland Response to QIA 2024 Environmental Audit **Section:** Attachment 1, Table 1. **Pages:** 1	See below response.
3	**QIA 2024 NIRB GC# 03**	The most recent slope stability modelling of the WRF indicates an internal friction angle of 40 degrees was assumed for the waste rock which is stated to be 'conservative'. The 2024 geotechnical inspection reports an apparent angle of repose of 32 degrees in the WRF lifts. Materials exhibiting an angle of 32 degrees can potentially exhibit internal friction angles below 40 degrees.	Provide documentation of the lab testing data or literature which supports the material characteristics used in the stability assessment. To better understand risks associated with potential variations in materials, it is recommended sensitivity analyses be completed at lower strengths to verify that minimum recommended Factors of Safety are met. The most recent slope stability modelling of the WRF indicates an internal friction angle of 40 degrees was assumed for the waste rock which is stated to be 'conservative'. The 2024 geotechnical inspection reports that the WRF lifts have an apparent angle of repose of 32 degrees. Although this does not directly equate to the internal angle of friction it is an indication that it may be lower than 40 degrees.	**Document Name:** Appendix G.2.6.2 Geomechanic and Geotech Inspection of Facilities **Section:** Table 1. **Pages:** 1	The 2024 geotechnical inspection reports that the WRF lifts have an apparent angle of repose of 32 degrees based on drive by pictures as shown below. These angles were compared to factual survey data at the time of the draft report (red text). Unfortunately, these comments did not get transferred to the final report. Please also note that the direction shown in the photos is incorrect, they are facing Southwest and Northwest respectively. As represented by the red text, 35-37 degrees is fairly typical for the angle of repose for the WRF. There are many instances where the angle of repose is even higher as shown by the as built cross-section below. It should also be noted that the angle increases further if analysed on a smaller scale. Although this does not directly equate to the internal angle of friction it is an indication that it may be higher than 40 degrees. Uncompacted, poorly graded materials tend to have internal friction angles similar to the angle of repose. The material at the WRF is at the other end of the spectrum - very well graded and angular. These properties are indicative of an internal angle of friction higher than the angle of repose.

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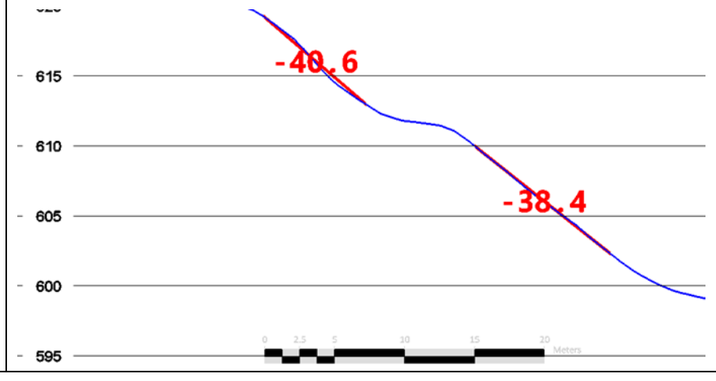
					Lastly, internal friction is usually derived from small scale analyses such as direct shear testing of samples. It would be inappropriate to conduct a lab test on such a small sample size as it would not be representative of the material, which can contain individual particles weighing tens of tonnes.  **Date & time:** 2024.08.28 09:13 **Notes:** 110 Viper pad and shop heavy equipment maintenance area **Coordinates:** 71.32733, -79.22401 (±4m) **Altitude:** 630m **Direction:** SE (153°) **Additional notes:** This is the km 110 stockpile. The apparent slope of the dump face on the right hand side of the photo is 32 degrees. 35-37deg Photo 38  **Date & time:** 2024.08.28 09:16 **Notes:** Waste rock dump **Coordinates:** 71.3341, -79.2364 (±5m) **Altitude:** 604m **Direction:** S (176°) **Additional notes:** Waste rock dump and perimeter ditch. Ditch is rip rapped. Apparent dip of the waste rock slope is 32 degrees. 35-36ish Photo 39 

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
4	**QIA 2024 NIRB GC# 04**	Several repairs to the Tote Road are planned for the 2025 season, however, repair plans and schedule are not provided.	Please provide an outline of the recommended repairs outlined in (Tetra Tech, 2024) which are to be completed for each planned repair and a high-level schedule of when they will occur.	**Document Name:** Appendix G.2.6.1 – Mary River Project Geotechnical Inspection Report Pt 2. **Section:** Table C.3.1 **Pages:** 1-2	While BIM acknowledges the request, there is no formal requirement for BIM to supply this level of detail within the Annual Report. Due to, constraints associated with the annual budgeting process, including the annual budgetary cycle, annual work planning cycle, and regulatory notifications, and approval timelines, providing this level of detail in a report that is due 60 days after the Inspection completion is not achievable. BIM respectfully invites QIA inspectors to request this information prior to onsite visits and asks that only items strictly required within the Annual Reporting requirements be requested from the QIA's review of the NIRB and/or the NWB/QIA Annual Reports.
5	**QIA 2024 NIRB GC# 05**	Groundwater quality is not monitored in the WRF area. Seepage from the WRF has been measured to have relatively high concentrations of various constituents of potential concern as well as low pH levels in the past.	Please provide a conceptual model of groundwater flow describing justification for the lack of groundwater monitoring in the area surrounding the WRF.	**Document Name:** 2024 NIRB Annual Report **Section:** Section 4. Table 4.1.5 **Pages:** 121	As responded to previously (BIM Response to CIRNAC Comments on Baffinland's 2023 Annual Report to the NIRB #3), previous investigations into "groundwater" flow have resulted in no measurable groundwater in test pits, therefore "groundwater" monitoring is not possible at this location. All flow referred to in the QIA's comment is essentially surface water flow and extremely shallow active layer flow. Industry standard definitions of groundwater have no potential to be impacted from the WRF or any other facility in the area, due to an impermeable permafrost layer that is approximately 600 meters thick. Baffinland contends that any potential shallow active layer flow will have no significant difference to surface water "seepage" sampling that is conducted within the footprint of the WRF, and would like to point out that the only parameter of potential concern that has been identified in seepage water to date is TSS, which is not a concern for groundwater contamination. The successful strategic placement of non-AG wastes encapsulating PAG within the WRF is ongoing and has mitigated low PH sourcing from the stockpile. Discharges from the Waste Rock Stockpile Pond have not required pH adjustment in 2025. Furthermore, thermistor results for the WRF show continual frozen conditions from within the WRF down to the original ground elevation, meaning there is no mechanism for subsurface migration of seepage water.
6	**QIA 2024 NIRB GC#6**	In the 2024 Nunavut Water Board Annual Report for Operations Baffinland had indicated that reclamation studies will be provided in the 2024 NIRB Annual Report. Based on QIA's review it does not appear that Baffinland has included the reclamation studies.	QIA requests that Baffinland commit to providing the reclamation studies for their review. QIA may provide further comments related to reclamation research work completed by Baffinland pending this review.	**Document Name**: Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** NA **Page:** NA	Annual monitoring of natural revegetation reclamation test plots was completed in 2024 and is described further in Term and Condition 39 and 40. The 2023 NIRB Annual Report included the report 'Revegetation Survey & Preliminary Reclamation Trial - 2023 Project Update (EDI, 2024b)' which summarizes natural revegetation research up to 2023. Further reclamation research studies will be provided in the 2025 NIRB Annual Report as applicable.
DUSTFALL					
7	**QIA 2024 NIRB DF#1**	Baffinland has engaged in "investigation of dustfall on lake sedimentation in Sheardown Lake NW" at the request of the NIRB. While the positioning of the stations appears in line	Please clarify whether the study design is sufficient to evaluate the influence of:	**App G.4.2 Lake Sedimentation Monitoring Report P 10, Figure 2.1**	The objective of the Lake Sedimentation Monitoring Program (LSMP) is to evaluate if sediment deposition rates are influenced by the Mary River Mine (the

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		with that objective, it is unclear whether the monitoring stations are sufficient to evaluate the influence of indirect sources of dust to the aquatic environment. We specifically highlight the impact of melting snow stockpiles that are entrained with snow onto Sheardown Lake, and locations proximal to the tributaries.	• Melting dust entrained snow stockpiles proximal to Sheardown Lake onto the lake itself, and • The influence of the Sheardown tributaries Further, please clarify whether the study design is sufficient to distinguish these influences from dust directly deposited onto the surface of the lake. We recommend Baffinland update the study design to address these concerns if needed.		Mine), as well as potential effects from sedimentation to aquatic biota, particularly arctic charr (Minnow 2025). Sheardown Lake Northwest (NW) was selected as the study lake for the LSMP because, of the lakes in the vicinity of the Mine, it is expected to receive the most particulate matter via dust deposition and site runoff (Minnow 2025). Therefore, Sheardown Lake NW is expected to represent a "worst-case" scenario of mine-related sediment deposition and potential effects to aquatic biota (i.e., potential effects are most likely to be observed in Sheardown Lake NW, before the other lakes near the Mine). The study design for the LSMP is intended to evaluate if sedimentation influences arctic charr. Key potential pathways of effect between sedimentation accumulation thickness estimates/sedimentation rates and arctic charr have been identified as: • Potential effects on benthic invertebrate communities (BIC) and therefore food availability; • Potential loss of spawning habitat; and • Potential effects on arctic charr egg incubation success and larval survival. The distinction between different sediment sources (i.e., snow stockpiles, tributaries, direct deposition on the lake surface), is not required to meet the objective of the LSMP. Instead, potential effects to arctic charr populations are assessed by monitoring sedimentation at habitats that are considered critical to arctic charr (e.g., for egg incubation) and integrating all the factors (snow stockpile melt, tributaries, and aerial deposition) that influence sedimentation. Low-action TARP thresholds have not been exceeded during the ice-cover or open-water periods, suggesting no or minimal effects on arctic charr habitat and egg incubation success (Minnow 2025). The study design for the LSMP meets its intended objective of improving understanding of sediment deposition rates and potential effects to arctic charr. Therefore, no updates to the study design are proposed. **Reference:** Minnow. 2025. Mary River Project – Lake Sedimentation Monitoring Program 2023/2024. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.

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8	**QIA 2024 NIRB DF#2**	Baffinland describes how the sedimentation rate was evaluated statistically. While these evaluations include a comparison to the baseline period, sedimentation rates in a reference area or differing dustfall isopleths do not appear to have been considered and would be a valuable addition to the study as part of a "Before/After Control/Impact" or BACI study design.	Please include comparisons to sedimentation rates in the reference lake or in an alternate location within a "nil" dust deposition isopleth following a similar study design to that employed in Sheardown Lake NW.	**App G.4.2 Lake Sedimentation Monitoring Report,** **Section 2 Methods,** **Section 2.4 Data Analysis,** **Section 2.4.1 Sedimentation Rate and Sediment Accumulation Thickness Estimates**	The study design for the Lake Sedimentation Monitoring Program (LSMP) is intended to evaluate sedimentation influence on arctic charr, based on the following: 1. Changes to benthic invertebrate communities (BIC) (and, in turn, food availability for arctic charr) resulting from habitat alteration; 2. Loss of spawning habitat due to sedimentation; and 3. Reduced egg incubation success and larval survival due to accumulation of fine material and reduced availability of oxygen in the spawning beds. Sedimentation monitoring before (2013 to 2014) and during (2015 to 2024) mine-operations is an important consideration to evaluate any temporal changes in Sheardown Lake Northwest (NW), whether as part of a before-after control-impact (BACI) or before-after (BA) study design. Comparisons of sedimentation rate and sediment accumulation thickness estimates for Sheardown Lake NW to a reference lake would not achieve a BACI study design. This is, in part, due to the absence of reference lake data from the "before" period (i.e., 2013 to 2014). Instead, if a suitable reference lake were identified and monitored for sedimentation, following the same design as Sheardown Lake NW, data analyses could be completed to determine if differences between exposure and reference areas are changing over time (i.e., are exposure: reference differences getting larger over time, potentially signaling a mine-influence, or are they similar from year to year, potentially signaling natural, regional influences predominate?). Instead of drawing comparisons to a reference lake, mean sedimentation thickness estimates in Sheardown Lake NW are evaluated against low, moderate, and high Trigger Action Response Plan (TARP) thresholds, which are used to assess potential impacts on aquatic biota. The low-action TARP threshold value (0.15 millimetres [mm]) is based on the upper range of the natural sedimentation rate of 50 milligrams per square centimetre per year (mg/cm2/yr) converted to a sediment accumulation thickness estimate using the bulk density of deposited sediment at Sheardown Lake NW. The low-action TARP threshold value was not exceeded during the ice-cover or open-water periods associated with the 2023/2024 LSMP. Additionally, sedimentation rates and accumulation thickness estimates for Sheardown Lake NW are compared to reported values in the literature for Arctic Lakes of similar depth (Minnow 2025). This comparison serves to provide regional context for the data collected from Sheardown Lake NW as part of the LSMP.

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					Reference: Minnow. 2025. Mary River Project – Lake Sedimentation Monitoring Program 2023/2024. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
9	**QIA 2024 NIRB DF#3**	The statistical evaluations of sedimentation rates are intended to determine whether thresholds for low, moderate and high action level responses have been reached based on measured sedimentation rates. These thresholds range from 0.15 mm at the low level to 1mm at the high level. No power analysis has been provided to determine whether the study design and statistical tests are sufficient to evaluate changes of this magnitude with a high degree of confidence.	Please provide a power analysis for the investigation of dustfall on lake sedimentation in Sheardown Lake NW. If power is insufficient to meaningfully detect changes associated with the proposed thresholds, suggest and implement study design changes to address the shortcoming.	**App G.4.2 Lake Sedimentation Monitoring Report,** **Section 2 Methods,** **Section 2.4 Data Analysis,** **Section 2.4.1 Sedimentation Rate and Sediment Accumulation Thickness Estimates**	Please note that the thresholds for low, moderate, and high action level responses are values that apply to sediment accumulation thickness estimates (millimetres [mm] per ice-cover/egg incubation period), rather than sedimentation rates (milligrams [mg] per square centimetre [cm2] per ice-cover/egg incubation period) (Baffinland 2024). The Proponent assumes that the Intervenor is requesting confirmation of whether the study design is sufficient to detect a change in sediment accumulation thickness estimates from 0.15 to 0.54 mm per ice-cover/egg incubation period or from 0.54 to 1 mm per ice-cover/egg incubation period (i.e., from one Trigger Action Response Plan [TARP] threshold to the next). Note that a power analysis is not required, or suitable, for evaluating the sufficiency of the study design to detect changes in sediment accumulation thickness estimates relative to the TARP thresholds, as no statistical analyses are completed as part of the comparisons. The calculated mean accumulation thickness estimates are simply compared to the thresholds to determine if they have been exceeded. **Reference:** Baffinland. 2024. Aquatic Effects Monitoring Plan BIM-5200-PLA-0023. Rev 2. March 31, 2024.
10	**QIA 2024 NIRB DF#4**	QIA previously requested that Baffinland provide details of their evaluation of the use of DusTreat at the crusher and ore stockpiles (QIA 2023 NIRB DF #6). QIA acknowledges Baffinland's response that the crusher and ore stockpile trials are ongoing, but notes that Baffinland did not provide a timeline for when the trials would be completed or when the results would be shared.	QIA requests that Baffinland provide an update on when the crusher and ore stockpile trials will be completed and when they will share the requested details of the trials for review and comment.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 6-7	These trials are iterative in nature, and are not intended to be the only mitigations employed for dust management at the Crusher. As these trials are ongoing, and iterative, BIM believes that sharing detailed trial methodologies with QIA for a multi-disciplinary peer review is premature during the trials. BIM continues to progress the trial with one crusher operating with DustTreat in winter months and a second crusher currently has supplies on order to implement the trial. As outlined within the Terrestrial Environmental Monitoring Report, total annual dustfall at DFM-02, which is adjacent to the crushing facility, remained relatively consistent from 2018 to 2021, increased in 2022 and then decreased substantially in 2023 and 2024. This observed decrease coincided with the ongoing dust suppressant trial. We invite the QIA to inquire about results and ongoing iteration

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					of these trials when inspectors are onsite, or prior to site visits, so that the information shared and the feedback presented is up to date, can be done in real time.
11	**QIA 2024 NIRB DF#5**	QIA previously requested that Baffinland monitor lichen-metal concentrations more frequently than presently scheduled so that if thresholds in the TEMMP are exceeded, timely responses can be undertaken (QIA 2023 NIRB DF #9). Baffinland responded that their prescribed monitoring frequency is 3-5 years, which they have met and that their sampling to date has suggested that lichen metal concentrations present a low risk. QIA recognizes that while many lichen-metal concentrations are below baseline, some show significant increases above baseline values or exceedances above lichen indicator values. Without timely monitoring data Baffinland will be unable to undertake appropriate corrective responses, meaning that potential adverse impacts could persist for longer periods. As well, QIA previously requested a meeting with Baffinland by September 2024 to resolve the outstanding issues with the isopleth modelling that have been on-going since February 2023. Baffinland responded that they would discuss this further with QIA and requested that QIA provide a consolidated summary of outstanding comments.	A. QIA requests at a minimum that Baffinland undertake annual monitoring at sites where statistically significant increases in lichen metal concentrations have been detected and/or lichen indicator values have been exceeded, to determine whether additional mitigation measures are warranted in these areas. B. QIA requests that Baffinland commit to undertaking a meeting with QIA to resolve the outstanding comments related to the isopleth modelling within 2 months of receipt of QIA's outstanding comments summary document.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 8	a. As responded previously (Refer to **Comment #12 QIA 2023 NIRB DF #9** and **Comment # 66 QIA 2023 NIRB TE #16**): Based on the most recent soil/vegetation base metal monitoring campaign (2022 TEAMR), soil metals predominantly indicated no significant change or were significantly lower than baseline values across all Project areas and sample distances. Many mean lichen-metals concentrations across Project areas and sample distances showed no significant changes from baseline values, although some discrete increases have been recorded (i.e., attributed to occasional 'spikes' in metal concentration, sample variability, and/or proximity to Project operations). These findings suggest that soil/vegetation base metals currently present a low environmental and human health risk. Baffinland maintains that the current lichen-metal concentration monitoring program (occurring at a frequency of 3 to 5 years) is robust and scientifically appropriate for a low-risk environmental indicator. Increasing monitoring frequency is not warranted. b. Baffinland will discuss a bi-lateral meeting with QIA when the outstanding comment document is received.
12	**QIA 2024 NIRB DF#6**	QIA previously requested that Baffinland provide further details on their program for identifying conditions with high risk for dust dispersion (QIA 2023 NIRB DF #13). Baffinland responded that they noted the requested details and that the requested information is still in development, and they have trials and initiatives underway to get an understanding of the interrelation between environmental factors and mitigation methods. QIA notes that Baffinland did not provide additional details beyond their response that the trials and initiatives are underway. Without these additional details, it is difficult for QIA to provide meaningful input into Baffinland's proposed approach, to ensure that ongoing trials and initiatives will contribute to the forthcoming program for identifying conditions with high risk for dust dispersion.	A. QIA requests that Baffinland provide the following details: • Scope and intent of each of the initiatives and trials; • Data being collected for each of the initiatives and trials related to high-risk conditions for dust dispersion (e.g. wind speeds, time since precipitation event); • Methods for collecting the data related to high-risk conditions for dust dispersion; and • Rationale, meteorological data, or literature review that was used to develop the proposed 80 km/h and 60-80 km/h thresholds.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 10-12	Dust Dispersion is dependent on a number of variables, the most significant of which (according to air dispersion modelling science) are source concentration and wind speed. Other variables specific to dust generation from our site activities include relative humidity and precipitation (related to source concentrations). Baffinland provided a response to QIA's initial request in the 2023 NIRB Annual Report, however we do not intend to pursue this avenue any further. Instead, BIM intends to move forward with multiple initiatives to control dust at the source, which in turn reduces the amount available for wind dispersion. As mentioned, according to standard aerial transport modelling inputs and variables, there is a larger reduction in wind dispersion if one targets source concentrations vs. wind speeds. Due to safety and operational constraints, operations are reviewed, reduced and or suspended when windspeeds reach 40-80 km/hr and above. This is communicated via site wide memo to all supervisors. Creating additional arbitrary

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			B. QIA requests that Baffinland commit to providing updates to QIA as the program for identifying conditions with high risk for dust dispersion is being developed. QIA expects that this will include updates while the program is being developed so that QIA is able to provide input before the program is finalized.		wind speed limits (Baffinland previously requested that QIA share any research or documentation on this subject from other jurisdictions, as Baffinland is unable to find any) would significantly impact BIM's operational viability because wind speeds and precipitation are variables that are not within our control. Baffinland will therefore be focusing our mitigation on variables that are within our control, with the objective of reducing point source concentrations of fugitive dust to as low as reasonably achievable, such that wind speed has negligible effect on the overall dispersion of dust.
13	**QIA 2024 NIRB DF#7**	Within the Dust Audit Report, Nunami Stantec notes that as part of their blasting review and blast optimization program study that they monitored 7 blasts in 2023/2024 and that the parameters assessed during the blasts included: • "change in blast size; • change in burden, spacing and collar; • change in powder factor; • effect of stemming plugs; • ore versus waste parameters; and • wind direction and strength during blast times." (p. 6) QIA notes that the list of the parameters assessed by Baffinland will benefit from expansion and that additional parameters should be considered that may impact the amount of dust generation (e.g. time since last precipitation event).	QIA requests that as part of future blast monitoring events for the blasting review and blast optimization program study, Baffinland consider monitoring the following additional parameters: • time since last precipitation event; • relative humidity; and • temperature.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix G.2.5 Section 3.1.1 **Page:** p. 6	The parameters identified by QIA are continuously recorded and may be integrated into the existing blast optimization strategy if it is determined to add value.
14	**QIA 2024 NIRB DF#8**	Within the Dust Audit Report, Nunami Stantec notes that Baffinland provided an update on the committee's recommendation on materials handling and stated that with the future development of Steensby Port "the current plan is to enclose crushing and possibly implement other recommended measures at the mine site." (p. 10). No other details are provided on which of the other recommended measures may be implemented at the mine site.	QIA requests that Baffinland provide further details on which of the other recommended measures will be implemented at the mine site in addition to enclosing the crusher.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix G.2.5 Section 3.2 **Page:** p. 10	It should be noted that the material handling recommendations are not meant to be the only mitigative measures in place to suppress dust. The primary mitigative measures are applying dust suppression including water as well as modifying the crusher along the material handling chain with the objective to reduce dust generation at the crusher, on the tote road, and at the various stockpiles. To further the update provided in the Dust Audit Report, Baffinland currently employs a strategy which incorporates two main Run of Mine "Dump Pockets" at the Mine Site crushing facility and at the Km107 stockpile, to manage material handing and dust. In the case where additional space is required, oversize material can be stored within the pit itself until the rock breaker creates room on the crusher pad or the Km107 stockpile for additional oversize rock. Additionally, a luffing stacker is actively utilized at the Crusher and Port to support operational efficiency and dust control. Baffinland would like to confirm that the new crushing facility that will support the Steensby operation are still in the design phase, but will incorporate all available

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					and applicable best management practices to mitigate dust production from crushing activities.
15	**QIA 2024 NIRB DF#9**	QIA previously requested that Baffinland include comparison of the annual dustfall values to the updated isopleth model and FEIS predictions in the 2024 TEAMR (QIA 2023 NIRB DF #8). Baffinland responded that they would include these comparisons in the 2024 TEAMR, however this comparison appears to be missing in the report.	A. QIA requests that Baffinland provide an updated version of Table 7-5 from the 2024 TEAMR that includes an additional column "EIS Prediction Comparison" noting whether the dustfall data from each station was "Within prediction" or "Above prediction". B. QIA requests that for future TEAMRs Baffinland use the same table format (per above) to report on annual dustfall accumulation at the dustfall monitoring locations.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Appendix G.5.1 Table 7-5 **Page:** p. 7; p. 68-69	A and B: Annual data collected prior to 2024 were compared to the 2013 EIS model predictions. Recognizing multiple project changes between 2013 and 2023, and at the request of QIA, Baffinland engaged Nunami Stantec to update air quality modelling, including dustfall in 2023 (Stantec 2023). In 2024, the annual dustfall data were compared with updated modelling results. Rather than describe the annual results as 'within' or 'above' modelled estimates, the results were presented with the quantified difference, positive or negative, between the predicted and measured annual dustfall. Sites with a positive value in the table column presenting this difference should be viewed as above the modelled value for that site. However, modelled values are estimates, not thresholds, and all models have inherent uncertainty associated with results. **Previous Requests:** This request was previously made in the 2022 Annual Report review (BIM Response to Comments on 2022 NIRB Annual Report, **QIA 2023 NIRB DF #8**).
16	**QIA 2024 NIRB DF#10**	Regarding the calculation of annual dustfall based on monitoring data, Baffinland noted that "Any data gaps were filled in using predicted dustfall, calculated as presented in Doetzel and Bajina (2023)." (p. 57). Baffinland does not provide a reference for Doetzel and Bajina 2023 at the end of the TEAMR.	QIA requests that Baffinland provide reference for Doetzel and Bajina 2023, and a copy of the document if it is not publicly available.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix G.5.1 Section 7.3.1.3 **Page:** p. 57	This reference was inadvertently omitted from the 2024 TEAMR. However, the memo detailing the methods used for predicting dustfall to fill data gaps was provided to the QIA before and during the dustfall-focused meetings on February 16 and 17, 2023. No concerns were raised by QIA at that time regarding this methodology. Baffinland is providing the requested reference again (EDI Environmental Dynamics Inc., 2023. Mary River Project — Winter Dustfall Predictions at Distance Monitoring Sites. Technical Memorandum. EDI File # 23Y0273 (Attachment 2). Prepared for Baffinland Iron Mines Corporation. 5 pp.). The use of predicted dustfall values to supplement monitoring data is an accepted and scientifically defensible practice that supports the quality of our dataset and has been part of our transparent reporting to the TEWG.
17	**QIA 2024 NIRB DF#11**	Baffinland provided Map 7-4 which shows the location of dustfall monitoring locations, extent of estimated dustfall concentrations based on the results of the satellite imagery analysis, and the contour plots showing the predicted low, moderate, and high TSP (total suspended particles) deposition from the updated dustfall modelling. QIA notes that the TSP contour plots in the map appear to be artificially cut off, and do not show their full extent,	A. QIA requests that Baffinland provide revised Map 7-4 that includes the full extent of the TSP contour plots from the updated dustfall monitoring, full extent of the TSP contour plots from the FEIS dustfall monitoring, and all dustfall monitoring stations (including reference stations).	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix G.5.1 Section 7.4.2.3 Map 7-4 **Page:** p. 91	A. Map 7-4 Is intended as a detailed view of the four areas with concentrated dustfall monitors as described in the TEAMR: Mine Site, Milne Port, Tote Road northern crossing and Tote Road southern crossing. The dustfall monitors and FEIS TSP contours will be added to Map 7-3(Attachment 3) to show the full extent. B. The updated dustfall modelling TSP contour spatial files were not available for the 2024 TEAMR/NIRB. These will be included in the figures for the 2025 TEAMR.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		meaning that it is not impossible to see where the updated dustfall modelling, satellite imagery analysis, and dustfall monitoring station results are in alignment and where there might be discrepancies. As well it appears that not all of the dustfall monitoring locations are included in the map (i.e. DF-RR-02, DF-RR-01). QIA is concerned by these limitations to the utility of the map in assessing the potential gaps or alignment of the model with the imagery analysis and dustfall monitoring. In a related previous comment (QIA 2023 NIRB DF#8), QIA had previously requested that Baffinland provide a comparison of dustfall levels from the monitoring stations to the updated dustfall modelling and FEIS predictions. QIA notes that the utility of Map 7-4 could be further improved by having the TSP contour plots from the FEIS dustfall model overlaid as well.	B. QIA requests that Baffinland include as part of future TEAMRs a map that includes the results of the satellite imagery analysis, contour plots from the updated dustfall modelling, contour plots from the FEIS dustfall model, and dustfall monitoring locations.		
18	**QIA 2024 NIRB DF#12**	Project Certificate Term and Condition (PCC) 21 relates to Groundwater and Surface Waters – Aquatic Effects Monitoring Plan (AEMP) and dustfall monitoring. In its comments on Baffinland's 2023 Annual Report to NIRB related to PCC 21, QIA requested Baffinland provide an update on the results of its Pilot Project to study the effects of Project-generated dust and sediment on the ecology of Tote Road streams (App. E.1, p. 5), and on its plans for work in 2024. In response, Baffinland provided a summary of the 2023 work and its study plans for 2024 and 2025. No summary of progress on this Pilot Project was found in the 2024 Annual Report to NIRB.	QIA requests Baffinland provide an update on the results of its Pilot Project and plans for the 2025 study of Project-generated dust and sediment effects on the ecology of Tote Road streams.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board, Appendix E.1 – Response to comments on Baffinland's 2023 Annual Report to the NIRB **Section:** Table A.1, Cmt, # 8 (QIA 2023 NIRB DF#5) **Page:** 5	The intent of the original commitment has been met, and is no longer relevant, as Baffinland is no longer looking to increase haulage and therefore traffic along the Tote Road. Through consultation with the QIA, two (2) novel trials were implemented along the Tote Road: 1. 6PPD-Q Monitoring Pilot Program; and 2. Tote Road Sediment Trap Monitoring Pilot Investigation (Attachment 4). However, the need to establish additional monitoring no longer applies since Baffinland is no longer seeking authorization to increase production to 12 mtpa and ship out of Milne Port and has returned to the original approved ERP limit of 4.2 mtpa. The increased efforts to monitor water quality that may be impacted from the use of rubber tires, and sediment deposition in an erosional stream-based environment did not result in the collection of meaningful data. Baffinland concludes that the data collected through its established TRMP and HADD monitoring programs provides sufficient data to confirm that Baffinland is not significantly impacting water quality from the operation of the Tote Road. Monitoring conducted along the Tote Road to monitor the quality of surface water flows at select water crossings (culverts, bridges), in accordance with the TRMP is ongoing. Upstream and downstream water quality is monitored for pH, TSS, Total Dissolved Solids (TDS) and turbidity. In 2024, no sampling events reported Project-related impacts to surface water as a result of the operation and maintenance of

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					the Tote Road. Further details regarding the results of the TRMP and HADD monitoring will be included with the NWB-QIA 2025 Annual Report. Full details of the additional monitoring completed along the Tote Road under the two (2) novel trial programs, and limitations encountered are provided in the Technical Memorandum: Additional Monitoring along the Tote Road; Pilot Programs Summary, August 10, 2025.
METEOROLOGY AND CLIMATE					
19	**QIA 2024 NIRB MC#1**	Baffinland stated that "as a result of an unprecedented rain event in September 2024, several sections of the Tote Road and culvert crossings were damaged and repairs completed. Of particular note, emergency re-construction was completed at Tote Road kilometers 63.5 and 64 due to the wash-out of the road at these locations." (P. 123). The unprecedented rain event was identified as a 1 in 1000-year storm event. Given that climate change is expected to exacerbate extreme weather conditions, extreme precipitation events may become more frequent at the Baffinland site and may result in increased frequency of washouts necessitating emergency road/infrastructure repairs. Although Baffinland has stated that its monitoring plans and adaptive management framework have been developed to "identify and manage environmental impacts that are being observed and may be influenced climate change" (Comment 17, Appendix E.1), it was unclear if Baffinland had implemented storm response/Erosion and Sediment Control measures into their emergency spill) response plan in place to prevent significant disturbances such as those experienced in September 2024 from happening again.	Please clarify whether adequate consideration has been given for implementing extreme weather event response plans into the emergency response plan. This would include specific erosion and sediment control guidance for managing increased volumes of surface runoff, and more targeted monitoring following repairs, to ensure that mitigation measures or remedies are successful.	**2024 NIRB Annual Report, Baffinland Iron Mines, 2024 Annual Report to the Nunavut Impact Review Board. May 30, 2025.** **Project Certificate Term and Condition No. 17, P. 125-132**	Emergency Response Plans are intended to capture reasonably expected conditions, while remaining adaptable to unforeseen and extreme conditions. The Baffinland Emergency Response Team plans, trains, and executes processes to prepare themselves for a range of potential events, where response actions are tailored to the conditions, severity, and available resources. While a 1-in-1000-year event is not directly mentioned in the Emergency Response Plan, Baffinland was able to adapt to the situation, as clearly outlined in various reports. Therefore, Baffinland firmly maintains that the washouts could not have been prevented, and the response and remediation efforts were performed without delay, adapting to the significant event in an effective manner under the framework of the current Project Management Plans.
WATER QUALITY					
20	**QIA 2024 NIRB WQ#1**	Baffinland stated that the KM 105 pond design "has not performed as expected" (P. 128) evidenced by ongoing seepage from the pond, and following comprehensive evaluation of the pond's performance (and an extensive grout curtain project to remedy seepage from the pond, which was unsuccessful); Baffinland committed to improving sediment and erosion control measures to manage surface water flowing from valley infrastructure. Baffinland stated that a water filtration and polishing system had been installed at the KM 105 pond (which was not fully commissioned in 2024), and effluent from the polishing pond was to flow through an engineered	Please clarify when the water Filtration/polishing system will be fully commissioned at the KM 105 pond, and how effectiveness/success of this method will be measured. Baffinland should also provide a copy of the Construction Summary Report to QIA, when available.	**2024 NIRB Annual Report, Baffinland Iron Mines, 2024 Annual Report to the Nunavut Impact Review Board. May 30, 2025.** **Project Certificate Term and Condition No. 17, P. 125-132**	As explained during previous meetings, Information Requests, and during QIA's June 2025 site visit, the water filtration/polishing system cannot function without a sedimentation pond to feed it, therefore this system will not be utilized in treating water for the Km 105 facility. As the only parameter of regulatory concern from the facility is TSS (with pH concerns only in 2024 related to the grout curtain installation), success of the overall facility is measured by comparing the influent water quality (TSS and pH) prior to polymer dosing, with the seepage water quality (TSS and pH) after filtration through a non-engineered filter berm installed mid-pond, as the water exits the facility at the toe of the dam. The success of further polishing via the downstream polishing pond is measured in regular

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		structure. Baffinland stated that "some of these features are planned to be installed at the end of year following completion of engineering" (P. 131). It was unclear if the water filtration/polishing system was in place at the end of 2024 and would be operational in 2025. Additionally, Baffinland mentioned that a Construction Summary Report would include details of these activities, however, it remains unclear when this report would be issued.			sampling of the new MS-11 effluent sampling location downstream of the polishing pond. As the current facility infrastructure (non-engineered filter berm and polishing infrastructure downstream of the dam) was constructed as a proof of concept (that is currently yielding very favorable results), an engineered permanent version of the solution is under design currently and will be constructed when engineering designs are final. A Construction Summary Report for this will be issued following completion of that construction, including an engineered filter berm and Final Discharge Point (FDP). There will be no Construction Summary Report for the Filter/Polishing system, as it cannot practically be employed at the facility due to a lack of adequate pond volume. The new approach to treatment has been effective during the 2025 open water period and is working as intended/designed. A comprehensive water quality report will be submitted during the annual reporting process on the KM 105 facility.
21	**QIA 2024 NIRB WQ#2**	At the MS-11 location, it was noted that "the collected water has found its way bypassing the liner at the main dam (north pond) and seeped toward downstream beneath the spillway. It is understood that the potential location of the leak is still under investigation and steps will be made to rectify the situation and bring the pond back into service." (P. 153). Further, "minor surface erosion on hazardous waste berms and shifting embankments at the MS-11 surface water pond have been observed in multiple inspections. Culvert failures due to poor soil subgrades persist." Baffinland committed to conducting more monitoring and implementing mitigation efforts, however, it was unclear what mitigation measures had been proposed.	Please clarify what mitigative measures have been proposed/implemented at the MS-11 surface water pond to address erosion on the hazardous waste berms.	**2024 NIRB Annual Report, Baffinland Iron Mines, 2024 Annual Report to the Nunavut Impact Review Board. May 30, 2025.**	Baffinland clarifies that the Hazardous Waste Berms (at the Weatherhaven Complex) are completely unrelated to the MS-11 facility. As documented in the 2024 Geotechnical Inspection Report (Appendix G.2.6.1), there is no visible instability at the hazardous waste berms (sloughing, excessive settlement, or tension cracks). However, some minor surface disturbance/soil displacement caused by foot and truck traffic on the surface of the slopes and crests of the berms was observed at a few locations. As per Baffinland's Implementation Plan, included in Appendix G.2.6.1, berm sections disturbed by required foot and truck traffic will continue to be maintained during routine maintenance activities. In addition, any materials that could interact with the berm walls was removed from the slopes/crest of the berms. Please refer to Appendix G.2.6.1 for the full Implementation Plan associated with recommendations from the 2024 annual geotechnical inspection.
22	**QIA 2024 NIRB WQ#3**	It was previously identified that monitoring wells installed in 2022 and 2023 were improperly installed (i.e., without a bentonite cap) (Comment 23, QIA 2023 NIRB WQ #5, Appendix E.11), which made them vulnerable to surface influences, and therefore were not representative of in-situ groundwater conditions, in addition to QA/QC concerns in 2023. In 2024, an attempt was made to install 12-14 new monitoring wells in August 2024, however, the installation was unsuccessful due to thawed ground conditions (P. 28). In the 2024 monitoring program, Baffinland addressed the well limitations by modifying sampling methodologies, including purging groundwater wells (3 well casing volumes)	Please provide a map indicating where new groundwater monitoring wells will be located, including depth and purpose of each well. Clear well installation records should be provided in the 2025 annual report, to ensure proper installation and to ensure that wells are installed in native material (as some 2022 wells were installed in reworked material, which was not commented on in this report). Existing well records should also be provided, to determine	**WSP (2025). 2024 Groundwater Monitoring Report. Baffinland Iron Mines Corporation. May 21, 2025.**	Wells were installed in April of 2025 and all requested information will be included in the 2025 Annual Groundwater Monitoring Report. As demonstrated by previous Groundwater monitoring reports, all wells are inspected during annual sampling events, and any non-functional wells are compared to the overall monitoring network, and recommendations for replacement are made and implemented in following years. Furthermore, well conditions are both dependent on time of sampling, saturation levels of surfical soils, and thermal conductivity of permafrost in contact with drivepoint wells. All of these variables may cause an individual well to yield groundwater in one year, but be dry or frozen in the following year, and then yield groundwater in a

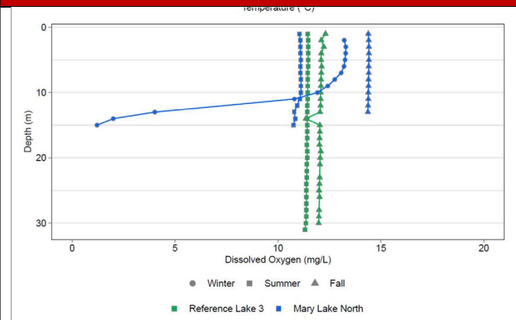
Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		collecting samples only when field parameters had stabilized, and adhering to strict QA/QC protocols (i.e., proper field blank collection), which was reasonable given the program limitations. WSP recommended that new groundwater monitoring wells be installed in "strategic locations across the site" (P. 46), and to remediate the existing (incorrectly installed) standpipe wells by excavating around the well "to a depth of approximately 1 m and constructing a post-installation bentonite seal around the well." The locations of the planned new well installations were unknown. Uncertainties remain regarding the representativeness of the data collected from the existing standpipe wells, particularly water level data, due to surface water runoff and precipitation influences (as acknowledged by WSP).	which standpipes were previously installed in reworked material/test pits, which may impact interpretations. Please provide the planned timeline for installing the new wells. Given that the August 2024 attempt was unsuccessful, QIA recommends re-installing (and remediating the existing wells) once ground is frozen. QIA also recommends the submission of a well inspection and replacement plan, as many wells on the site are frozen/damaged (given the challenges of maintaining wells in permafrost conditions), to ensure that a robust program with sufficient wells remains operational downgradient of project infrastructure (i.e., the Landfill Facility and Hazardous Waste Berm).		subsequent year. Due to these uncontrollable variables, Baffinland does not feel that a prescriptive well inspection and maintenance plan is a reasonable approach and will continue to utilize the advice of their third-party groundwater experts (with arctic expertise) for advice on well replacement, as we have since the beginning of the program.
23	**QIA 2024 NIRB WQ#4**	There is no groundwater monitoring conducted downgradient of the Hazardous Waste Berm (HWB) to assess potential contaminant transport towards Camp Lake. The only downgradient well (MS-HWB-GWB) was reported to be dry in 2024, and may have been dry/frozen since installation (P. 44). This is of particular concern, since exceedances of chloride, fluoride, nitrate, nitrite, pyrene, dissolved copper, dissolved cobalt, naphthalene, and petroleum hydrocarbons (fraction F2) occurred in source area groundwater and groundwater from proximal well locations (HWB-KP22-05, HWB-KP23-03). WSP recommended in the annual groundwater report that downgradient wells be installed in 2025. It was unclear if Baffinland had committed to installing downgradient HWB wells. Further, WSP stated that "concerns have been previously raised about a potential liner leak in the northwest sector of the HWB (Baffinland, 2023); as a result, this sector is currently not being used to further dispose of waste" (P. 12). No further information was encountered regarding this liner leak. Given that there is no downgradient groundwater monitoring, weaknesses in the HWB liner presents a downgradient concern that may have existed for several years that has not been evaluated.	QIA recommends the installation of downgradient wells at the HWB and maintaining these wells to ensure that a complete monitoring network exists. A map showing the proposed monitoring well locations should also be provided. Please provide further information on the presence of a liner leak on the northwest side of the HWB, when the liner leak was discovered, and what short and long-term mitigation measures have been proposed (besides no longer storing waste in this area).	**WSP (2025). 2024 Groundwater Monitoring Report. Baffinland Iron Mines Corporation. May 21, 2025.**	Wells were installed in April of 2025, however a post-drilling borehole collapse prior to well installation at one location has resulted in requiring additional drilling at this location in the fall, once frozen conditions are once again present for the final well to be installed. It is possible other wells and/or thermistors may be installed at the same time, if recommended by the third-party consultant. The requested information will be included in the 2025 Annual Groundwater Monitoring Report. The liner leak at HWB 1 was discovered in 2016 and 2017 during the Geotechnical inspections. Short term mitigations were and continue to be the cessation of using the facility in 2021. Long-term mitigations include continued monitoring and remediation if required upon closure of the facility (Phase II ESA). Currently this is a requirement of Baffinland's closure plan for all HWB's.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
24	QIA 2024 NIRB WQ#5	WSP stated that "data collected before 2023 was excluded [from the historical groundwater data quality review] due to inconsistencies and potential surface water influence" (P. 3), and "groundwater sampling is not consistent throughout the years and low-flow sampling may not be the suitable and the correct Standard Operation Procedure for standpipe wells" (P. 18), and that large variations in analytical results occurred in pre-2023 groundwater data (P. 43). It appears that there is no reliable groundwater data for the site prior to 2023, and 2023 and 2024 data, while qualified in the annual reporting, is still vulnerable to surface water influences. Therefore, groundwater level data over the site's monitoring history is also considered unreliable. WSP/Baffinland also acknowledge that damaged/dry wells was an ongoing challenge, which has resulted in inconsistent monitoring over the years and difficulties comparing results and analyzing trends.	Please clarify whether any reliable groundwater quality data exists at the Mary River Project (prior to 2023) and provide further information as to why problems with the groundwater monitoring network were not identified earlier. Further, please outline strategies for evaluating project impacts/effects at sites over time without reliable historical groundwater data, and implement them as part of the data evaluation in the 2025 annual report.	**WSP (2025). 2024 Groundwater Monitoring Report. Baffinland Iron Mines Corporation. May 21, 2025.**	Baffinland did conduct Groundwater monitoring starting in 2017. However, upon review, conclusions drawn from this data were deemed to be unreliable. Further, groundwater is not a constituent of concern in high arctic permafrost environments, and was specifically excluded from the list of Valued Ecosystem Components during the Environmental Impact Review for the Project. Therefore, no groundwater data was collected prior to 2017 and does not form part of the baseline data for Baffinland. In addition, it remains unclear if industry standard definitions of groundwater apply to the shallow surface water that is being monitored under the current program. The groundwater table is below significant permafrost and ice that is inaccessible within the Project area. In retrospect, the limitations associated with the previous programs were not fully identified earlier due to the reliance on third-party expertise, which at the time, was deemed to meet the required technical standards. However, during review of the 2023 program and data, concerns emerged regarding well installation, development, and sampling procedures, which introduced potential uncertainty in the dataset and prevented Baffinland from drawing accurate conclusions from the results. Power analysis of 2024 methods and WQ data, compared to previous methods, and utilizing further comparisons to monitoring wells that serve as a proxy for wells installed with a bentonite seal, our consultant was able to determine that the 2023 and 2024 data may be reasonably reliable for interpretation of results. Additionally, investigations into the potential influence of the absence of a bentonite seal will be conducted on wells installed in 2025, which will provide further insight into the validity of the concerns with previous data integrity. Baffinland re-iterates that the various reviewers may not be appreciating the true nature of "groundwater" as it exists at the Mary River site. • All subsurface active layer flow is extremely shallow (maximum depth of 3 meters, as supported by Thermistor data); • All subsurface active layer flow is very seasonal in nature (frozen and immobile from October to June – as supported by thermistor data). • The confined aquifer or true groundwater is isolated from all potential mining activities by an impermeable continuous permafrost layer estimated to be approximately 600 – 700 m thick. There is no groundwater use or potential for impacts other than surface water, and all contaminants of potential concern are already present in runoff and contact surface

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					water, which is generally of suitable quality to be released without chemical treatment, directly to the nearest environmental receptor, and any impacts will be detected by existing surface water monitoring programs (SNP/CREMP).
25	**QIA 2024 NIRB WQ#6**	In 2023, Knights Piésold recommended that a well be installed inside the landfill, to evaluate leachate composition. This was not recommended in WSP's 2024 report. Although several 'source' wells exist in the northwest corner of the LF (i.e., LF-KP23-13, seep monitoring locations), no wells are installed within Cell 1-3 to characterize leachate. Further, a sufficient groundwater quality baseline does not appear to exist for the site; WSP stated that "without a strong groundwater quality baseline, it is difficult to characterise whether groundwater is considered leachate or not" (P.19), and therefore groundwater daylighting at the surface was classified as seepage and not leachate. The Landfill Facility has a background monitoring well (LF-KP23-06), and the HWB has 2 background wells (MS-HWB-GWREF1, HWB-KP22-01) for detecting downgradient project effects, however, a baseline dataset for detecting effects over time was not included/addressed. Baffinland had previously stated that no groundwater had been collected prior to 2017, and that "historically across the mining industry, groundwater is not a constituent of concern in high arctic permafrost environments" (Comment 25, Appendix E.1). Given that WSP stated that there was no reliable groundwater data for the site prior to 2023, it was unclear whether Baffinland had established a plan for addressing weaknesses in baseline data collection (i.e., by establishing a regional reference dataset for groundwater)	Please clarify whether a plan exists for establishing baseline data (for detecting effects over time), such as by establishing a regional reference dataset, and whether a groundwater well will be installed in the landfill footprint to evaluate leachate composition, as recommended in 2023.	**WSP (2025). 2024 Groundwater Monitoring Report. Baffinland Iron Mines Corporation. May 21, 2025.**	Baffinland does not intend to install a groundwater well within the existing footprint of the landfill at this time. Numerous attempts to install this well in 2023 and 2024 have been unsuccessful due to the nature of landfilled materials (large bulky metal objects) making installation impossible. Baffinland acknowledges the importance of robust background data for any sampling program, however maintains that "groundwater" at the site is not something requiring regional baseline, for reasons outlined in the response above, reiterated below for clarity: Baffinland re-iterates that the various reviewers may not be appreciating the true nature of "groundwater" as it exists at the Mary River Site. • All subsurface active layer flow is extremely shallow (maximum depth of 3 meters, as supported by Thermistor data); • All subsurface active layer flow is very seasonal in nature (frozen and immobile from October to June – as supported by thermistor data). • The confined aquifer or true groundwater is isolated from all potential mining activities by an impermeable continuous permafrost layer estimated to be approximately 600 – 700 m thick. There is no groundwater use or potential for impacts other than surface water, and all contaminants of potential concern are already present in runoff and contact surface water, which is generally of suitable quality to be released without chemical treatment, directly to the nearest environmental receptor, and any impacts will be detected by existing surface water monitoring programs (SNP/CREMP).
26	**QIA 2024 NIRB WQ#7**	Dissolved uranium exceedances were reported at surface water monitoring station MS-MRY-13C on the shore of Sheardown Lake (downgradient of the Landfill Facility), and at groundwater station LS-KP22-01 (a source well at the west extent of the LF) (P. 135). WSP stated that it was possible that "naturally high uranium concentrations are present at the Project Area" (P. 44), however, given that dissolved uranium concentrations did not exceed guidelines at the background well (LF-KP23-06), it does not	Baffinland should clarify whether there was any other background groundwater quality data that could substantiate the claim that dissolved uranium exceedances at and downgradient of the LF were due to background conditions.	**WSP (2025). 2024 Groundwater Monitoring Report. Baffinland Iron Mines Corporation. May 21, 2025.**	Due to the lack of reliable background data for "groundwater" (see above response for qualifiers on what groundwater is defined by on site) it is impossible to say with 100 percent certainty whether or not the uranium exceedance was due to project related impacts or naturally high levels of uranium. Baffinland is conducting an investigation into this matter as part of the 2025 CREMP and results of the investigation will be shared in the 2025 annual report.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		appear that there is sufficient information to conclude that the exceedance is due to background conditions.			
27	QIA 2024 NIRB WQ#8	Elevated total and dissolved uranium concentrations due to the influence of the mine are ubiquitous across the site. Observations have included: Elevated concentrations compared to reference streams and baseline conditions across all seasons at the CLT1 Upper Main Stem. Elevated dissolved uranium concentrations in Campe Lake in summer compared to Reference Lake 3. • Concentrations of total uranium have been elevated relative to Reference Lake 3 since 2015 and relative to baseline since 2017, with a defined increase in concentration from 2017 to 2022. • Elevated concentrations compared to reference streams and baseline conditions in the spring at SDLT12. • Significant increasing trends in total and dissolved uranium • concentrations in all seasons combined and in almost all individual seasons since the baseline period (2005 to 2024) and over the mine operational period (2015 to 2024) at both SDLT1 sampling stations. • Elevated concentrations of total and dissolved uranium across all seasons compared to Reference Lake 3 and baseline concentrations in 2024 at Sheardown Lake NW. • A significant increasing trend for total and dissolved uranium at all Sheardown Lake NW water quality stations since the baseline period (2007 to 2013) and over the mine operation period (2015 to 2023). The rate of increase greater since 2022. • Nearly uranium concentrations measured in Sheardown Lake NW were in the dissolved form. • Concentrations of uranium in Sheardown Lake SE were elevated compared to Reference Lake 3 and baseline concentrations.	QIA requests that Baffinland develop an AEMP benchmark for dissolved and total uranium.	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report, Appendix G.4.1 Mary River CREMP **Section:** 3.3.1.2 Water Chemistry; 3.3.1.2 Water Chemistry; 4.1.1.2 Water Chemistry; 4.3.1.2 Water Chemistry; 4.4.1.2 Water Chemistry; 4.5.1.2 **Page:** throughout	Note that no data from prior to 2015 are available for Reference Lake 3. Additionally, please note that increasing trends in uranium concentrations have been observed in reference stream locations. Based on the recommendations in the 2024 Core Receiving Environment Monitoring Program (CREMP) report (Minnow 2025), the Proponent is initiating the development of an Aquatic Effects Monitoring Plan (AEMP) benchmark for aqueous uranium in 2025. As a first step, the Proponent is proposing to apply a background concentration procedure (BCP) approach using available baseline and reference waterbody data. Following completion of the proposed BCP calculations, the Proponent will determine next steps for benchmark development. **Reference:** Minnow. 2025. Mary River Project 2024 Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		• Significant increasing trends were identified for total and dissolved uranium at Sheardown Lake SE stations over the mine operation period (2015 to 2023; all stations), since the construction period (2014 to 2023; Stations DL0-02-7 and DL-02-8), and since baseline (2007 to 2023; Stations DL0-02-3 and DL0-02-4; Minnow 2024a). Nearly uranium concentrations measured in Sheardown Lake SE were in the dissolved form which suggests potential for biological uptake and toxicity. Baffinland states, "Development of an AEMP benchmark for uranium will be considered to support evaluation of the potential biological effects of observed concentrations. The development of this benchmark may include review of baseline and reference concentrations as well as review of potential toxicological effects relevant to the aquatic biota present near the mine site." Given the large number of basins impacted by elevated concentrations of total and dissolved uranium, the increasing trends in concentrations, and the high proportion of dissolved uranium it is imperative that uranium be considered a parameter of concern and an AEMP benchmark be developed to ensure proper adaptive management measures are under taken and Valued ecosystem components are protected.			
28	**QIA 2024 NIRB WQ#9**	When discussing in situ water quality parameters, Baffinland did not discuss the low dissolved oxygen concentrations measured at BL0-01-A (1.21 mg/L) during the winter sampling conducted on April 10, 2024. Dissolved oxygen concentrations this low have ecological consequences and should be reported on, discussed in the text of the report and an evaluation of whether the mine influenced dissolved oxygen concentration in Mary Lake under ice should be completed.	QIA requests Baffinland discuss under-ice dissolved oxygen concentrations when concentrations are ecologically relevant in the text of the report and evaluate if the mine has had an impact on water quality and resulted in an ecological effect.	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report, Appendix G.4.1 Mary River CREMP **Section:** 5.3.1.1 In Situ Water Quality **Page:** 286 of 339	Thank you for the recommendation. Low dissolved oxygen concentrations are not unusual at depth in the north basin of Mary Lake during the winter, under ice. Additionally, it is anticipated that mine-related effects would be observed in Sheardown Lakes first, before potential effects are observed in the north basin of Mary Lake.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		 **Figure 5.4: Average In Situ Water Quality with Depth from Surface at Mary Lake North Compared to Reference Lake 3 (REF3) during Spring, Summer, and Fall Sampling Events, Mary River Project CREMP, 2024**			
29	**QIA 2024 NIRB WQ#10**	Baffinland suggests that dust fall is not the main source of sediment to Sheardown Lake NW because they did not identify any positive temporal correlations between dust fall and sediment-based comparisons between cumulative dust fall deposition rates and sedimentation rates and sediment accumulation thickness estimates. However, Baffinland goes on to describe the similarities between the chemical composition of dust fall and sediment collected for the sedimentation report. The chemical similarities between dust fall and sediment suggest dust is a large component of recently accumulated sediment.	QIA requests Baffinland incorporate all lines of evidence to determine the source of sediment to Sheardown Lake NW. This evaluation should include accumulation of sediment as well as sediment chemistry, and consider the melting of dust entrained snow and discharges from tributaries as sources	**Document Name:** Mary River Project – Lake Sedimentation Monitoring 2023/2024, Appendix G.4.2 Lake Sedimentation Monitoring Rpt **Section: 4** Conclusions **Page:** 43 of 119	The overarching objective of the Lake Sedimentation Monitoring Program (LSMP) is to evaluate if sediment deposition rates are influenced by the Mary River Mine (the Mine), as well as potential effects from sedimentation to aquatic biota, particularly arctic charr. More specifically, the LSMP is designed to assess total deposited sediments during the open-water and ice-cover (egg incubation) periods and in three different habitat types within Sheardown Lake Northwest (NW): 1. a potential arctic charr food-source station; 2. a potential arctic charr egg incubation station; and 3. a station that represents the maximum depositional zone within the lake. The study design for the LSMP is not intended to distinguish point-sources of sediment deposited within Sheardown Lake Northwest (NW). The Proponent will continue to submit material from the sediment traps for chemistry analyses, provided sufficient material is available (i.e., collected in the traps), to support quantitative comparisons between sediment and dustfall chemistry. Please note that sediment trap chemistry was only recently incorporated into the LSMP (i.e., during the 2023/2024 monitoring season) and only a single year of data is available. For this reason, only qualitative, not quantitative, comparisons between sediment and dustfall chemistry could be made (Minnow 2025). Quantitative comparisons will be conducted when at least three years' worth of sediment chemistry monitoring data are available. This will depend on there being sufficient sample mass collected to conduct chemical analysis on the sediment-trap material during the open-water and ice-cover periods. Additionally, similarities (qualitative) between sediment and dustfall chemistry do not directly indicate that dustfall is the major source of all deposited sediment

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					material within Sheardown Lake NW. Instead, the results suggest that dustfall could be a potential source of a specific parameter in the collected sediment for that monitoring period. As noted above, there are insufficient years' worth of data available currently to complete statistical comparisons of parameter concentrations measured in sediment and dustfall. Again, this will be remedied through additional years of data collection and chemistry analyses. **Reference:** Minnow. 2025. Mary River Project – Lake Sedimentation Monitoring Program 2023/2024. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
30	**QIA 2024 NIRB WQ#11**	The report describes that Chironomidae were the only taxon to show a consistent significant and ecologically meaningful decline across multiple mine operations years (i.e., 2015 to 2017, 2021, 2023, 2024) relative to the 2007 baseline (proportions of Chironomidae on the high end of natural variability). It is unclear how the high variability observed during the 2007 baseline year influences the interpretation of mine related impacts at this site.	Can Baffinland clarify how the consistent decline in Chironomidae relative to the 2007 baseline is interpreted within the weight-of-evidence framework? How will differences in habitat characteristics between reference and mine exposed sites be addressed in future assessments, and how might this influence conclusions about potential mine-related impacts?	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 3** Camp Lake System – 3.1.4.1 Benthic Invertebrate Community North Branch (CLT1-US) **Pages:** 94 - 95 of 339	Potential mine-related effects to benthic invertebrate communities (BIC) at CLT1-US in 2024 were interpreted based on comparisons to a reference creek, as well as comparisons to the 2007 and 2011 baseline data. By examining these multiple lines of evidence and relying on two years of baseline data, rather than one, to better account for inter-annual variability in the baseline datasets, we are better equipped to form robust conclusions regarding mine-influence. For example, differences in relative proportions of Chironomidae between baseline years (2007 and 2011) were considered, in addition to differences between mine-exposed (i.e., 2015 to 2024) and individual (2007 and 2011) baseline years. Relative proportions of Chironomidae in the samples from 2011 were lower relative to 2007, but statistically comparable to relative proportions of Chironomidae in all subsequent data years (i.e., 2015 to 2024). Had the relative proportions of Chironomidae in 2024 differed significantly from both 2007 and 2011, rather than just 2007, the interpretation would have concluded, and further explored, a potential mine-related effect to BIC. In instances where the spatial (mine-exposed versus reference) and temporal comparisons point to potential mine-related effects to BIC, the Proponent will evaluate (and complete, as appropriate) additional data analysis methods, such as trend analyses, tracking differences between mine-exposed and reference areas over time, and/or assessing BIC endpoints along a gradient of exposure.
31	**QIA 2024 NIRB WQ#12**	The report indicates that a number of Benthic Invertebrate Community endpoints at CLT1-L2 were statistically different from the reference creek and do not appear to be linked to habitat differences between the two areas or mine related influences. Given the mixed and inconsistent temporal patterns observed, it is recommended that Baffinland consider options to better distinguish mine related impacts from habitat variability.	Has Baffinland considered what additional monitoring or analytical approaches are available to more definitively distinguish mine-related impacts from natural environmental variability in this system? This may include establishing a reference site with comparable habitat characteristics	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 3** Camp Lake System – 3.1.4.2 Benthic Invertebrate Community Upper Main Stem (CLT1-L2) **Pages:** 94 - 95 of 339	Please refer to the response provided for WQ#11, above.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
32	**QIA 2024 NIRB WQ#13**	Baffinland reports that Arctic Charr in Camp Lake are significantly longer (up to 33%) and heavier (up to 142%) than those in Reference Lake 3, with consistently higher condition factors (e.g., +20% in 2024). It is also noted that Arctic Charr in Camp Lake are now significantly larger and heavier than during the baseline period. While no negative health effects have been documented, mine-associated increases in lake productivity (e.g., elevated nutrients, algal growth, and benthic invertebrate densities) may be enhancing growth conditions for Arctic Charr. Could the consistently greater size and improved condition of Arctic Charr in Camp Lake since the start of mine operations be attributed to mine related influences on lake productivity (e.g., nutrient enrichment), even if not considered adverse?	**Document Name**: Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 3** Camp Lake System – 3.3.5.1 Fish Community – Littoral/Profundal Arctic Charr **Pages:** 148 - 151 of 339	The 2024 evaluations of water and sediment quality data from Camp Lake were not indicative of potential productivity-related effects to aquatic life, based on comparisons to benchmarks and guidelines. From 2015 to 2024 (i.e., throughout the mine operation period), concentrations of nutrients in Camp Lake remained below Aquatic Effects Monitoring Plan (AEMP) benchmarks and water quality guidelines (WQG) (Minnow 2025). Similarly, mean phosphorus concentrations in lake sediments (littoral and profundal) were below AEMP benchmarks and sediment quality guidelines (SQG) in 2024. Temporal comparisons related to primary (chlorophyll-a concentrations) and secondary (benthic invertebrate densities) productivity in Camp Lake were generally not indicative of mine-related influences; however, chlorophyll-a concentrations were higher in summer 2024 relative to summer 2014 (but not the summers of 2015 through 2023). Overall, chlorophyll-a concentrations in Camp Lake did not show consistent temporal patterns suggestive of nutrient enrichment and/or increased primary productivity. Similarly, no ecologically meaningful differences in benthic invertebrate densities were identified for Camp Lake over the baseline and mine operational periods. Chlorophyll-a concentrations and benthic invertebrate densities were significantly higher throughout the lake and within profundal habitats, respectively, in Camp Lake in 2024, relative to Reference Lake 3 (Minnow 2025). However, chlorophyll-a concentrations in Camp Lake were well below the AEMP benchmark and characteristic of low phytoplankton abundance and ultra-oligotrophic to oligotrophic lakes (Minnow 2025). Benthic invertebrate densities in littoral habitats of Camp Lake and the reference lake were comparable in 2024. Collectively, the water quality, sediment quality, and primary and secondary productivity data are not suggestive of mine-related effects on productivity and, subsequently, arctic charr. Rather, the results reported for arctic charr in 2024 are most likely related to Camp Lake being naturally slightly more productive than the reference lake, as well as the consistently (over time) higher relative proportions of Chironomidae in the benthic invertebrate community (BIC) samples from Camp Lake. Chironomidae are a preferred prey item for juvenile arctic charr and their greater availability in Camp Lake relative to the reference lake may better support juvenile growth and/or survival, which in turn may enhance food availability for

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					larger, piscivorous adult charr that prey on smaller or mid-sized conspecifics (Eloranta et al. 2010, Wight et al. 2023). **References:** Eloranta, A.P., Kahilainen, K.K., and R.I. Jones. 2010. Seasonal and Ontogenetic Shifts in the Diet of Arctic Charr Salvelinus alpinus in a Subarctic Lake. Journal of Fish Biology 77: 80-97. Minnow. 2025. Mary River Project 2024 Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075. Wight, K.J., McNicholl, D.G., and K.M. Dunmall. 2023. A systematic review of the trophic ecology of eight ecologically and culturally important fish species in the North American Arctic. Polar Biology 46: 409-425.
33	**QIA 2024 NIRB WQ#14**	The 2024 Benthic Invertebrate Community at SDLT1 showed statistically significant and ecologically meaningful shifts in community structure compared to both reference and baseline conditions. These changes include increased abundance of pollution tolerant taxa and suggest a less diverse and less functionally balanced benthic community. We understand that Baffinland has implemented a Low Action Response under the AEMP Management Response Framework as a result.	Has the cumulative influence of KM 105 Pond water management and associated water quality changes (e.g., elevated nutrients, substrate embeddedness) been evaluated in terms of long-term mine related impacts on aquatic ecosystem function at SDLT1? If not, QIA recommends doing so as part of the 2025 annual reporting.	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 4** Sheardown Lake System – 4.2.3 Benthic Invertebrate Community **Pages:** 178 - 180 of 339	The KM 105 Pond was identified as the main potential mine-related influence upstream from the SDLT1 monitoring stations (2022 through 2024) and this was considered in the interpretation of the water quality data for SDLT1. Additionally, water quality and substrate embeddedness were considered in the interpretation of benthic invertebrate community (BIC) endpoints for SDLT1 in 2024 (Minnow 2025). The 2025 Core Receiving Environment Monitoring Program (CREMP) report will continue to analyze and report on mine-related influences associated with the KM 105 Pond and will include relevant discussion of potential long-term mine-related impacts to downstream aquatic environments and biota. **Reference:** Minnow. 2025. Mary River Project 2024 Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
34	**QIA 2024 NIRB WQ#15**	Baffinland notes that high nitrogen concentrations from the Dyno facility may promote algal blooms, which can lead to oxygen depletion or habitat alteration. In 2024, algae was noted at SDLT9 in higher concentrations than the reference area.	Has or will algal growth be monitored at SDLT9 over time to assess potential linkages between nutrient enrichment and shifts in the benthic invertebrate community? If temporal trends in nutrient concentrations and algal growth are evident, how are they being integrated	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 4** Sheardown Lake System – 4.2.4 Benthic Invertebrate Community **Pages:** 178 - 180 of 339	The need to include algal monitoring at SDLT9 as part of the Core Receiving Environment Monitoring Program (CREMP) in 2026 will be evaluated following completion of/based on field data collection in 2025. Temporal patterns in nutrient concentrations and observations of algal growth identified as part of the 2025 CREMP will continue to be used to support interpretation of benthic invertebrate community (BIC) endpoints, including those directly related to productivity (e.g., invertebrate densities). Quantitative and

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
			into the interpretation of benthic invertebrate responses at SDLT9?		qualitative comparisons will be completed, as data allow (e.g., to identify if nutrient concentrations and BIC endpoints exhibit similar temporal patterns).
35	**QIA 2024 NIRB WQ#16**	The 2024 BIC results from Sheardown Lake NW showed that total density in littoral habitats was significantly and ecologically higher than the reference lake and exceeded the Critical Effect Size for the Benthic Invertebrate Community (CESBIC) study threshold. The report also identifies increased numbers of Ostracoda (a disturbance-tolerant taxa) and decreased metal sensitive Chironomidae. In addition, the Lake Sedimentation Monitoring Program (2023– 2024) detected higher sedimentation rates and accumulation thicknesses at littoral BIC stations near sediment traps. It appears that sedimentation from mine related disturbances is influencing the benthic invertebrate community structure. The report states, "Shifts in the BIC correlated with sedimentation rate and accumulation thickness will continue to be investigated through the Lake Sedimentation Monitoring Program in 2025 to assess for potential mine related influences."	How will the Lake Sedimentation Monitoring Program be integrated with the long-term biological monitoring to distinguish between natural variability and mine related sedimentation impacts, especially in areas where correlations between sedimentation and benthic invertebrate community shifts are consistent over time?	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 4** Sheardown Lake System – 4.4.4 Benthic Invertebrate Community **Pages:** 209 - 215 of 339	The Lake Sedimentation Monitoring Program (LSMP) represents a targeted monitoring program that will continue under Rev 2 of the Aquatic Effects Monitoring Plan (AEMP) for the Mary River Mine (the Mine). It is not anticipated to be a component of the core monitoring program but results of the LSMP inform the interpretation of AEMP data. The AEMP Annual Report will provide a compilation, assessment, and interpretation of findings across the individual monitoring programs, including the LSMP, the Core Receiving Environment Monitoring Program (CREMP), Dustfall Monitoring Program, and Initial Stream Diversion Program, as appropriate. The evaluation of effects across programs in the AEMP Annual Report will be accompanied by a summary of actions that have been/will be implemented to address potential mine-related influences on the aquatic environment. Actions may include management response actions and/or revisions to the AEMP study design, including the component studies described therein (e.g., the LSMP and CREMP).

36	**QIA 2024 NIRB WQ#17**	The report states, "Gill netting CPUE [catch per unit effort], representing the density of larger, littoral/profundal fish was lower in Sheardown Lake NW in 2024 compared to Reference Lake 3, despite higher chlorophyll-a concentrations and higher benthic invertebrate density in profundal areas."
		
		The report notes that the recent decline in larger Arctic Charr is not considered ecologically meaningful, this trend raises concern given that it occurs alongside indicators of increased lake productivity (e.g. higher chlorophyll-a and higher benthic invertebrate density).
			Please clarify the relationship between increased productivity and lower density on larger Arctic Charr? Could this suggest the influence of unaccounted for mine related impacts? Further, as per comment #85 from the 2023 NIRB review, has the weight-of-evidence approach been applied to this specific observation to assess potential mine related impacts?	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 4** Sheardown Lake System – 4.4.5 Fish Population **Pages:** 215 - 219 of 339	The key conclusions regarding primary (chlorophyll-a) and secondary productivity (benthic invertebrate densities) in Sheardown Lake Northwest (NW) in 2024 are as follows:
					• Primary productivity:
					  ○ No consistent temporal patterns suggestive of nutrient enrichment and/or increased primary productivity over time were identified.
					  ○ Chlorophyll-a concentrations were significantly higher in Sheardown Lake NW relative to reference in 2024.
					• Secondary productivity:
					  ○ No ecologically meaningful differences in benthic invertebrate densities over time were identified for littoral habitats.
					  ○ Although densities of littoral invertebrates were significantly higher in Sheardown Lake NW relative to reference in 2024, differences were not large enough to be considered ecologically meaningful.
					  ○ Benthic invertebrate densities in profundal habitats were occasionally significantly lower during mine operational years relative to baseline and, in some cases, differences were ecologically meaningful.
					  ○ Densities of profundal invertebrates were significantly higher in Sheardown Lake NW relative to reference in 2024, and the difference was considered ecologically meaningful (Minnow 2025).

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					Collectively, these results are not suggestive of an increase in productivity within Sheardown Lake NW over time but, rather, that primary productivity and secondary productivity (predominantly within profundal habitats) were greater in Sheardown Lake NW than in the reference lake in 2024. Further, the 2024 Core Receiving Environment Monitoring Program (CREMP) report concluded that there were no consistent temporal patterns in endpoints related to primary and secondary productivity that are consistent with the temporal patterns in gillnetting catch-per-unit-effort (CPUE). A weight-of-evidence approach was used to assess potential mine-related effects to arctic charr. Potential relationships between productivity and densities of profundal arctic charr will be assessed again as part of the 2025 CREMP. The assessment will include discussion of potential sampling-related influences (e.g., seasonal timing) and environmental factors (e.g., water temperature) that affect fish movement behaviour, spatial ecology, and metabolic demands and have the potential to influence fish catch rates, particularly in 'passive' gill net surveys. The interplay among food availability/productivity/competition and growth and densities of arctic charr (e.g., Amundson et al. [2006]) will also be considered, as appropriate, in the 2025 CREMP report. Finally, as a follow-up to the Proponent's response to comment #85 (2023), The Trigger Action Response Plan (TARP) framework described in the Aquatic Effects Monitoring Plan (AEMP) Rev 2 will be applied to the CREMP starting in 2025. **References:** Amundson, P.-A., R. Knudsen, and A. Klemetsen. 2006. Intraspecific competition and density dependence of food consumption and growth in Arctic charr. Journal of Animal Ecology 76(1): 149-158. Minnow. 2025. Mary River Project 2024 Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
37	**QIA 2024 NIRB WQ#18**	The report states that the condition of non-YOY Arctic Charr in 2024 was 16% lower than baseline, and this exceeded the critical effect size criterion (CESC ±10%), making it ecologically meaningful. While this has not yet been observed every year, the recurring pattern of lower condition compared to baseline is evident, with 2023 being the only year (recently) without a notable difference.	Has Baffinland undertaken an investigation into the potential drivers of the repeated declines in condition of non-YOY Arctic Charr (e.g., changes in habitat quality, food availability, thermal or oxygen stress, or contaminant exposure)?	**Document Name: Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3** **Section: 4 Sheardown Lake System – 4.4.5.2 Fish Health Assessment** **Pages: 219 – 223 of 339**	To date, the Proponent has not completed a targeted investigation into the potential drivers behind the temporal patterns observed for condition of non-young-of-the-year (non-YOY) arctic charr in the Sheardown Lake system. However, for the 2025 Core Receiving Environment Monitoring Program (CREMP) report, patterns in arctic charr condition will be interpreted in consideration of habitat quality, food availability, thermal or oxygen stress, and contaminant

<table>
<tr><th>Cmt. #</th><th>QIA Cmt. #</th><th>Reviewer's Detailed Comment</th><th>PC Recommendations</th><th>Reference Section</th><th>Baffinland's Response</th></tr>
<tr><td></td><td></td><td>We recognize that individual year-to-year differences may not always meet statistical thresholds for mine related impacts. However, consistent trends in key biological indicators, such as repeated declines in fish condition, should not be ignored. These may represent early warning signs of chronic or sublethal stress that could become more pronounced over time.</td><td></td><td></td><td>exposure, as data allow. The need for a targeted study to address concerns related to fish condition in the Sheardown Lake System will be evaluated as part of the 2025 CREMP reporting cycle.</td></tr>
<tr><td>38</td><td>QIA 2024 NIRB WQ#19</td><td>The report indicates that fewer than 10 YOY Arctic Charr were captured in Sheardown Lake NW in 2024, which is notably lower than in the reference lake.
While sample sizes can vary annually, this low catch rate may point to potential issues with recruitment, spawning success, or early life stage survival.</td><td>Can Baffinland provide a discussion of potential contributing factors to the low YOY catch in Sheardown Lake NW, including consideration of habitat quality, spawning substrate conditions, water quality, temperature, and potential mine related influences?</td><td>Document Name: Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3
Section: 4 Sheardown Lake System – 4.4.5.2 Fish Health Assessment
Pages: 219 – 223 of 339</td><td>As indicated by the Intervenor, numbers of young-of-the-year (YOY) fish captured from a given lake may vary annually, depending on a variety of factors, including those that are considered random, or unexplainable. Additionally, catch numbers may differ between lakes within the same region in a given year; this is evident in the table below, which summarizes the numbers of YOY arctic charr captured from Sheardown Lake Northwest (NW) and its corresponding reference lake over the period of record.

Table WQ#19: Numbers of Young-of-the-year Arctic Charr Captured from Sheardown Lake Northwest (NW) and Reference Lake 3, Mary River Mine

<table><tr><th>Dataset</th><th>Reference Lake 3</th><th>Sheardown Lake NW</th></tr><tr><td>Baseline</td><td>-</td><td>0</td></tr><tr><td>2015</td><td>0</td><td>4</td></tr><tr><td>2016</td><td>31</td><td>9</td></tr><tr><td>2017</td><td>26</td><td>12</td></tr><tr><td>2018</td><td>8</td><td>10</td></tr><tr><td>2019</td><td>0</td><td>4</td></tr><tr><td>2020</td><td>21</td><td>15</td></tr><tr><td>2021</td><td>11</td><td>3</td></tr><tr><td>2022</td><td>15</td><td>8</td></tr><tr><td>2023</td><td>11</td><td>4</td></tr><tr><td>2024</td><td>12</td><td>0</td></tr></table>
Note: - = no data.
As shown in the table, numbers of arctic charr captured from Sheardown Lake NW have frequently been below n = 10, and catches in both lakes have occasionally been n = 0.</td></tr>
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Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					The arctic charr considered as YOY in August 2024 would have been spawned in September or October 2023, hatched in early April 2024, and emerged in July of 2024. Therefore, potential contributing factors to the low YOY catch in Sheardown Lake Northwest (NW) in 2024 could include (among others): • Numbers of spawners in fall 2023, as well as the number and quality of eggs released and successful fertilization; • Suitability of substrates for spawning and egg incubation (e.g., area remaining free of fines); • Suitability of water temperatures and dissolved oxygen concentrations during incubation (e.g., deposition of fine material can limit the amount of oxygen in the spawning beds); • Overlying water quality and sediment quality; • Predation; • Food availability (quantity and quality) and competition in the period after emergence. In winter (April) 2024, water temperatures at depth in Sheardown Lake NW were within the ranges of optimal incubation temperatures reported in the literature (0 to 5ºC) (e.g., DFO 1984; Olk et al. 2021). Additionally, dissolved oxygen concentrations measured at depth in Sheardown Lake NW during the April 2024 field program were typically well above the 9.5 milligrams per litre (mg/L) Canadian Council of Ministers of the Environment (CCME) guideline for the protection of early life stage of coldwater fish. The only exception was one value (9.6 mg/L; total n = 6 profiles) that approached the guideline. Although the temperature and dissolved oxygen results appear favourable for egg incubation, it should be noted that the winter sampling represents a snapshot in time (April 2024). Sedimentation rates in habitats associated with arctic charr incubation and food production were higher during the ice-covered period of 2023/2024 relative to baseline (2013/2014) (Minnow 2025). However, annual sedimentation rates for these areas were within the ranges reported for other Canadian Arctic lakes, and potential linkages between sedimentation rates and effects to spawning habitat availability/suitability and dissolved oxygen concentrations in the spawning beds are unclear. As noted above, dissolved oxygen concentrations were only measured once (at n = 6 stations) in Sheardown Lake NW during the winter of 2024. In 2023/2024, mean annual sediment accumulation thickness estimates for habitats associated with arctic charr incubation and food production were comparable to

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					other Arctic lakes and below effects thresholds presented in the Final Environmental Impact Statement (FEIS) for the Mary River Project (Minnow 2025). Additionally, accumulation thickness estimates for the arctic charr incubation period were well below the low-action response Trigger Action Response Plan (TARP) threshold, indicating no mine-related risk of smothering or reduced survival of early life stages of arctic charr. Other data to characterize the potential influence of the other factors listed above are not readily available (e.g., data on predation pressures within Sheardown Lake NW) or would require an in-depth review of the available literature/toxicity testing databases and site-specific data. Therefore, the Proponent will review the YOY catch results for Sheardown Lake NW as part of the 2025 reporting cycle and determine if additional supporting data or studies are needed. **References:** DFO. 1984. Underwater World: Arctic Charr. ISBN 0-662-12942-3. Minnow. 2025. Mary River Project – Lake Sedimentation Monitoring Program 2023/2024. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075. Olk, T.R., H. Jeuthe, H. Thorarensen, J. Wollebaek, and E. Lydersen. 2021. Broodstock management and early hatchery rearing of arctic charr (Salvelinus alpinus ((Linnaeus)). Reviews in Aquaculture 12: 1595-1623.
39	**QIA 2024 NIRB WQ#20**	The Littoral/Profundal Arctic Charr from Sheardown Lake NW were significantly larger and heavier than those from the reference lake in 2024. Condition was also significantly better (by 18%), and this difference exceeded the Critical Effect Size Criterion of ±10%, making it ecologically meaningful, even though in a positive direction. The report attributes this to a higher lake productivity including higher chlorophyll-a and higher benthic invertebrate density. While this change is currently interpreted as non-adverse, consistent trends of increased fish size and condition relative to both reference and baseline conditions may reflect nutrient enrichment linked to mine activities. Such enrichment can alter ecosystem structure and function, even in the absence of direct negative effects.	Has Baffinland evaluated the extent to which nutrient loading from mine related activities may be contributing to enhanced productivity and fish growth in Sheardown Lake NW? Is this trend being tracked as a potential early signal of nutrient driven ecosystem changes?	**Document Name:** Mary River Project 2024 Core Receiving Environment Monitoring Program Report Part 1 of 3 **Section: 4** Sheardown Lake System – 4.4.5.2 Fish Health Assessment **Pages:** 223 – 225 of 339	Nitrate concentrations within Sheardown Lake Northwest (NW) have increased since the baseline period (2007 to 2023) and over the mine operation period (2015 to 2023) (Minnow 2025). Trend analyses were not completed for aqueous concentrations of phosphorus or other nitrogen-containing compounds because they were not triggered under the Trigger Action Response Plan (TARP). However, concentrations of these parameters have remained below Aquatic Effects Monitoring Plan (AEMP) benchmarks and water quality guidelines (WQG). Similarly, mean phosphorus concentrations in lake sediments (littoral and profundal) were below AEMP benchmarks and sediment quality guidelines (SQG) in 2024. Additionally, a trend analysis of phosphorus concentrations in Sheardown Lake NW sediments (littoral and profundal) indicated no increasing or decreasing monotonic trends over time since baseline or during the period of operations. Collectively, these results for water and sediment quality are not suggestive of nutrient-driven changes over time within the lake. Temporal comparisons related to primary productivity (chlorophyll-a concentrations) throughout Sheardown Lake NW and secondary productivity

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					(benthic invertebrate densities) in littoral habitats were not indicative of mine-related influences. No consistent temporal patterns suggestive of nutrient enrichment and/or increased primary productivity were identified, based on chlorophyll-a concentrations. Similarly, no ecologically meaningful differences in benthic invertebrate densities in littoral habitats were identified over the baseline and mine operational periods. However, the 2024 Core Receiving Environment Monitoring Program (CREMP) report identified ecologically meaningful differences (i.e., based on a Critical Effect Size [CES] of ± 2 standard deviations [SD] of the reference mean) in benthic invertebrate densities at profundal areas of Sheardown Lake NW over time. More specifically, invertebrate densities in profundal habitats were occasionally significantly and meaningfully lower, not higher, during mine operational years relative to baseline. Chlorophyll-a concentrations and benthic invertebrate densities were significantly higher throughout Sheardown Lake NW in 2024, relative to Reference Lake 3 (Minnow 2025). However, chlorophyll-a concentrations in Sheardown Lake NW were well below the AEMP benchmark and characteristic of low phytoplankton abundance and oligotrophic conditions (Minnow 2025). Additionally, despite being statistically significant, the differences in invertebrate densities between mine-exposed and reference littoral habitats were not large enough to be considered ecologically meaningful. Differences for mine-exposed and reference profundal habitats were, on the other hand, ecologically meaningful (i.e., were outside the Critical Effect Size [CES] of ± 2 standard deviations [SD] of the reference mean). Collectively, the water quality, sediment quality, and primary productivity data are not suggestive of mine-related influences on productivity and subsequent effects to arctic charr. Interpretation of the BIC data is less straightforward, given invertebrate densities in profundal habitats of Sheardown Lake NW have typically been similar to or below baseline throughout the mine operational period, but higher relative to the reference lake in 2024. Overall, the results reported for arctic charr are most likely related to Sheardown Lake NW being naturally slightly more productive than the reference lake and having lower fish densities relative to reference (e.g., Amundson et al. 2006). **References:** Amundson, P.-A., R. Knudsen, and A. Klemetsen. 2006. Intraspecific competition and density dependence of food consumption and growth in Arctic charr. Journal of Animal Ecology 76(1): 149-158).

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					Minnow. 2025. Mary River Project 2024 Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
40	**QIA 2024 NIRB WQ#21**	The analysis includes comparisons of BIC endpoints across various stations in Sheardown Lake NW, with correlations drawn to sedimentation rates. However, it is unclear if there is a reference or control site, unaffected by mining related activities, included in the analysis.	QIA recommends Baffinland clarify whether a reference site was established as part of the study design. If not, can Baffinland comment on how baseline or background conditions are accounted for in the interpretation of observed patterns?	**Document Name:** Mary River Project 2024 Lake Sedimentation Monitoring 2023/2024 **Section:** 2.4.3 Benthic Invertebrate Community **Pages:** 23 – 24 of 119	No reference or control sites/lakes were established specifically as part of the study design for the Lake Sedimentation Monitoring Program (LSMP). However, a detailed evaluation of benthic invertebrate communities (BIC) in Sheardown Lake Northwest (NW) is completed as part of the Proponent's annual Core Receiving Environment Monitoring Program (CREMP). More specifically, BIC endpoints for littoral and profundal habitats of Sheardown Lake NW are compared to corresponding data from a reference lake (Reference Lake 3) and the pre-mine operation period ("baseline") (Minnow 2025). Currently, lake sedimentation endpoints (e.g., sedimentation rates) in Sheardown Lake NW are compared to pre-mine operation (2013 to 2014) and mine operation periods (2015 to 2024), and the Proponent does not anticipate adding a reference lake to the assessment. The Sheardown Lake system is extremely susceptible to erosional events, which makes finding a corollary to Sheardown Lake NW impractical. **Reference:** Minnow. 2025. Mary River Project 2024. Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
41	**QIA 2024 NIRB WQ#22**	Baffinland states, "However, the relative proportion of Chironomidae at the littoral BIC stations (DL0-01-4 and DL0-01-9) was significantly and strongly negatively correlated with both sedimentation rate and accumulation thickness estimates." As sedimentation rate and accumulation increased, the relative proportion of Chironomidae at the littoral stations (DL0-01-4 and DL0-01-9) decreased, and this relationship was both statistically significant and strong. This suggests that higher sedimentation is negatively impacting the chironomid population in the shallow nearshore zones of the lake, which could have implications for Arctic Charr that rely on them for food, particularly during early life stages.	Given the importance of chironomids as a primary food source for juvenile Arctic Charr, how is this decline being interpreted in terms of potential early ecological effects related to sedimentation?	**Document Name**: Mary River Project 2024 Lake Sedimentation Monitoring 2023/2024 **Section: 3.4.1** Littoral Zone **Pages:** 35 – 38 of 119	At the station considered representative of arctic charr egg incubation habitat (SHAL-2), relative proportion of Chironomidae were strongly negatively correlated with sedimentation rates and accumulation thickness estimates, based on data collected between 2015 and 2024. At the station considered representative of dominant substrate types and the greatest potential for sedimentation to affect benthic invertebrate densities (productivity) and community composition (SHAL-1), data from 2024 suggested a higher relative proportions of Chironomidae at higher sedimentation rates and accumulation thickness estimates than what would be expected based on the correlation analysis for SHAL-2 (above). However, because only a single year of data (2024) were available for SHAL-1, definitive conclusions cannot be made at this time. The Proponent recognizes that benthic invertebrate community (BIC) data are a new component of the Lake Sedimentation Monitoring Program (LSMP), and more data are required to draw strong conclusions regarding results for BIC endpoints

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					and how they relate to natural variability and/or potential mine-influence. The Proponent has committed to collecting further BIC data from SHAL-1 to characterize the relationship between sedimentation and the predominance of chironomids in the BIC. Additionally, although chironomids are the preferred food source of arctic charr, arctic charr are generalist predators and will consume other food sources if available (e.g., Ostracoda), and this may offset any decreases in chironomid populations. Increased densities of Ostracoda were observed at BIC monitoring stations near SHAL-2 (representative of egg incubation habitat). Additionally, the 2024 Core Receiving Environment Monitoring Program (CREMP) report has not identified any changes in juvenile and adult arctic charr densities in Sheardown Lake Northwest (NW) since the onset of mine operations.
42	**QIA 2024 NIRB WQ#23**	The results of the benthic invertebrate sampling in the profundal zone found, "Overall, sedimentation rates and accumulation thickness estimates appear to influence the BIC in Sheardown Lake NW's profundal habitat to some extent, with arctic charr likely relying on these food sources (i.e., chironomids and FFGs) during later life stages and at various points throughout the open water season. Although no adverse effects on arctic charr health have been Observed in annual monitoring, the observed relationships between BIC and sedimentation (rate and accumulation estimates) suggested that continued monitoring of potential sedimentation effects to both BIC and arctic charr is crucial." It is important to note that the 2024 gill net CPUE for Arctic Charr was lower than the three previous years and the reference lake. While this value remains within historical range it may indicate an early sign of change that will need to be monitored for emerging trends. The TARP tables reference a weight of evidence approach. As noted, the TARP is designed to identify statistically significant exceedances of low thresholds that may not trigger ecologically meaningful concerns when assessed on their own. However, multiple lines of evidence are now showing potential impacts. QIA has a growing concern about cumulative effects, especially at higher trophic levels where stressors such as degraded water quality (direct exposure), benthic invertebrate changes (food supply), and habitat alterations may interact to affect fish health.	Can Baffinland clarify the minimum effect size that could meaningfully impact Arctic Charr condition factor, and the power of the existing study design to detect that effect size?	**Document Name:** Mary River Project 2024 Lake Sedimentation Monitoring 2023/2024 **Section: 3.4.2** Profundal Zone **Pages:** 38 – 42 of 119	Population and health endpoints, including condition, for arctic charr in Sheardown Lake Northwest (NW) are assessed annually as part of the Core Receiving Environment Monitoring Program (CREMP; Minnow 2025). For fish condition specifically, a Critical Effect Size (CES) of 10% (expressed as a percentage of the reference mean) is used to identify effects that may be indicative of greater environmental risk, consistent with Environmental Effects Monitoring (EEM) guidance (Environment Canada 2012). A power analysis is completed annually as part of each CREMP reporting cycle, to determine the minimum sample size required to detect a minimum 10% change in arctic charr condition relative to reference or baseline means. The power analyses are completed consistent with EEM guidance (Environment Canada 2012) and indicate that the study design for the CREMP can detect a CES of 10% for arctic charr condition in Sheardown Lake NW (e.g., Minnow 2025). As an example, the power analysis for 2024 indicated that n = 46 nearshore (electrofishing) and n = 39 profundal (gillnetting) arctic charr are required to detect CES of 10%. Target sample sizes for electrofished and gillnetted arctic charr are n = 50 and n = 50 to 100, respectively. **References:** Environment Canada. 2012. Metal Mining Technical Guidance for Environmental Effects Monitoring. ISBN 978-1-100-20496-3.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					Minnow. 2025. Mary River Project 2024. Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
43	QIA 2024 NIRB WQ#24	The report states, "Although sedimentation appears to influence BIC in the areas examined in this report, arctic charr are not sedentary and can access preferred food sources in other parts of the lake, including Sheardown Lake southeast (SE), which is connected to Sheardown Lake NW. Additionally, a more comprehensive annual analysis of the entire lake's BIC community and arctic charr populations/health is conducted through the CREMP, which to date has shown no consistent, adverse mine-related effects. However, ongoing monitoring of the relationship between BIC, sedimentation rates, and accumulation thickness estimates will be essential for providing valuable insights, ensuring timely detection of potential effects, and supporting mitigation measures if any issues arise." While Arctic Charr are mobile, and may avoid impacted areas, this doesn't eliminate localized impacts or habitat loss in key foraging zones like the littoral areas of Sheardown Lake NW. The statement that Arctic Charr are not sedentary and can access preferred food sources in other parts of the lake, appears to downplay the importance of potential localized habitat impacts from mine related activities. While Arctic Charr mobility may allow them to move from degraded areas, this does not remove the ecological importance of those habitats.	Can Baffinland detail how the potential for habitat loss or decreased quality is being considered into a cumulative effects assessment, especially when multiple lines of evidence indicate early warning signs?	**Document Name:** Mary River Project 2024 Lake Sedimentation Monitoring 2023/2024 **Section: 3.4.2** Profundal Zone **Pages:** 38 – 42 of 119	Key potential pathways of effect between sediment accumulation thickness estimates/sedimentation rates and arctic charr have been identified as: • Potential effects on benthic invertebrate communities (BIC) and therefore food availability for fish; • Potential loss of spawning habitat; and • Potential effects on arctic charr egg incubation success and larval survival. Therefore, the potential for habitat loss or decreased quality is being considered in a cumulative effects assessment (or "weight of evidence" assessment") that integrates BIC endpoints and potential sedimentation-related effects to spawning, egg incubation, and rearing habitats for arctic charr. BIC endpoints were first interpreted in the context of sedimentation rates and sediment accumulation thickness estimates as part of the 2023/2024 monitoring period for the Lake Sedimentation Monitoring Program (LSMP). Only one year of data (2024) are available for habitats representative of dominant substrate types and the greatest potential for sedimentation to affect benthic invertebrate densities (productivity) and community composition (SHAL-1). The Proponent is committed to continuing to monitor the BIC in Sheardown Lake NW and including this investigation in the LSMP. However, quantitative assessments of potential relationships between BIC endpoints and sedimentation rate and sediment accumulation thickness estimates at SHAL-1 would require a minimum of three years' worth of data (i.e., quantitative comparisons can be completed during the 2026 reporting cycle, at the earliest). Potential losses or reductions in the quality of habitats used for spawning, egg incubation, and rearing of larval life stages of arctic charr are being assessed along with the BIC data discussed above. This assessment is based on comparisons of sediment accumulation thickness estimates for the ice-covered period (mid-September to mid-July), which also corresponds with the spawning, egg incubation, and pre-swim-up periods in the arctic charr life cycle, to low, moderate, and high Trigger Action Response Plan (TARP) thresholds. Sediment accumulation thickness estimates for Sheardown Lake NW in 2023/2024 were below the low action response threshold of 0.15 mm (ice-cover period; Minnow 2025). The low-action TARP threshold is derived from the dry bulk density of natural rates of sedimentation in Arctic lakes, leading to the conclusion that mine-related changes

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					to the quantity or quality of spawning, incubation, or larval rearing habitat are not likely occurring (Minnow 2025). Further, sediment accumulation thickness estimates for the ice-cover period were well below the level at which adverse effects on fish egg survival may occur. The Proponent will continue to monitor sedimentation at SHAL-2 and draw comparisons to the TARP thresholds to inform whether additional studies or actions are needed. **Reference:** Minnow. 2025. Mary River Project – Lake Sedimentation Monitoring Program 2023/2024. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.
44	**QIA 2024 NIRB WQ#25**	The objective of Project Certificate Term and Condition (PCC) 20 is "To ensure that the effects associated with the manufacturing, storage, transportation and use of explosives do not negatively impact the areas surrounding the Project." (Main Doc., p. 123) In 2023 (CREMP 2023, p. 269) and again in 2024 (CREMP 2024, p. iii) the CREMP found elevated nitrogen-related compounds (ammonia, nitrate, nitrite, and total Kjeldahl nitrogen) in Sheardown Lake tributary 9 (SDLT9), and in 2024 elevated nitrate in both Sheardown Lakes (Northwest [NW] and Southeast [SE]) (App. G.4.1, Figure C.11, pdf p. 291). A special investigation completed in the fall of 2024 identified activities at the Dyno Nobel Emulsion Plant (Dyno facility), which stores ammonium nitrate for explosives production and is adjacent to SLDT9, as the primary source of these compounds (CREMP 2024 App. I, p. I-3 (p. 272 of 276)). Baffinland plans to implement an activity audit of the transportation, storage, and handling of ammonium nitrate at the Dyno facility, with potential additional water sampling during the open water season in 2025, to help identify point source(s) of aqueous nitrogen compounds. The amount of ammonium nitrate used for blasting at the mine will increase significantly with the planned increase in ore production from 4.2 to 18 Mtpa.	QIA requests that Baffinland clarify how the planned increase in ore production may affect the transportation, storage, and handling of ammonium nitrate in relation to aquatic receiving environments.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (Main Document) **Section: 4.6.5** Groundwater & Surface Water, PCC 20 - Explosives **Page:** 123 (pdf p. 141 of 641) **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board, Appendix G.4.1 (Part 1 of 3) Core Receiving Environment Monitoring Report (CREMP) **Section:** Executive Summary **Pages:** iii (pdf p. 5 of 339) **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board, Appendix G.4.1 (Part 2 of 3) Core Receiving Environment Monitoring Report (CREMP) **Section:** Appendix C, Figure C.11 **Pages:** pdf p. 136 of 358 **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board, Appendix G.4.1 (Part 3 of 3) Core receiving Environment Monitoring Report (CREMP) **Section:** Appendix I Sheardown Lake tributary 9 (SLDT9) aqueous nitrogen compounds special investigation	To account for the production increase, the Proponent is planning to complete substantial upgrades to the emulsion plant facility. These upgrades will be presented for review when engineering and permitting requirements allow. During the special investigation completed in fall 2024, aqueous concentrations of nitrate at three stations (i.e., SDLT9-1, MS-C-H-US1, and MSCH-US2) downstream from the Dyno facility on the Mary River Mine site were above water quality guidelines (WQG) and the Aquatic Effects Monitoring Plan (AEMP) benchmark. However, concentrations of ammonia and nitrite at these stations were below the AEMP benchmark and WQG, respectively. It was concluded that activities at the Dyno facility are the likely source of the elevated nitrogen compounds, and an activity audit is being completed. Following the activity audit and potential additional sampling to identify point source(s), mitigation measures will be recommended and implemented. The effectiveness of these measures will be captured through water quality sampling at SDLT9 in 2025, as part of the Core Receiving Environment Monitoring Program (CREMP), which may be supplemented, as necessary, by expanded spatial sampling in fall 2025 as was completed in the fall of 2024.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		How might this affect the nitrogen inputs to the aquatic receiving environments?		**Page: I-3** (pdf p. 272 of 276) **Document Name:** Baffinland Iron Mines 2023 Annual Report to the Nunavut Impact Review Board, Appendix G.4.1 (Part 1 of 3) Core receiving Environment Monitoring Report (CREMP) **Section: 6** Conclusions, Table 6.1 **Pages:** 269 (pdf p. 291 of 307)	
TERRESTRIAL ECOLOGY					
45	**QIA 2024 NIRB TE#2**	QIA previously requested that Baffinland share the results of the caribou fecal pellet programs and associated reporting (QIA 2023 NIRB TE #10). Baffinland responded that there was no relevant information to the project effects that could be gained from an analysis of the 2020 fecal pellets. Baffinland did not provide any information as to why an analysis of the 2020 pellets would not provide relevant data on the project effects, which is concerning to QIA as where possible it would be beneficial to learn more about caribou on North Baffin especially as it relates to the Project.	QIA requests Baffinland provide more details on the 2020 sampling, including an explanation as to why no relevant data on project effects are able to be gained from an analysis of the 2020 fecal pellets.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 41	As responded previously (refer to Comment #60, QIA 2023 NIRB TE #10): No analyses were conducted on the fecal pellets collected in 2011–2014 because the age of the pellets was unknown. No information relevant to the project effects was to be gained from an analysis of the fecal pellets. No pellets were collected in 2020, and identifying that they were (in the bulleted list on page 1 of the overview) was an error. Pellets were not collected in 2020, and none were collected since 2014. Corrections will be made in the 2025 annual report. The caribou monitoring program is robust and multifaceted, and resources are correctly prioritized towards the most effective monitoring methods. This approach has been consistently and transparently communicated to the TEWG. **Previous Requests:** This request was previously made in the 2022 Annual Report review (BIM Response to Comments on 2022 NIRB Annual Report, **QIA 2023 NIRB TE #10**).
46	**QIA 2024 NIRB TE#3**	QIA previously noted concern with an apparent erroneous observation of a piping plover in 2023 (QIA NIRB TE #13). Baffinland noted that the observation was unlikely to be a piping plover and noted that they would try to be as accurate as possible with incidental observations in the future. In Section 9.6 of the TEAMR, Baffinland notes that a common merganser (Mergus merganser) was observed in 2024. QIA notes that this likely a misidentification and that it's more likely the observation was of a red-breasted merganser (Mergus serrator) which breeds on Baffin Island, while common merganser does not.	QIA requests that Baffinland continue to undertake a thorough review of incidental observations made on site to ensure that accounts of species observations in future TEAMRs are accurate.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Appendix G.5.1 **Section** 9.6	Baffinland thanks QIA for this observation and acknowledges the potential misidentification and reaffirms the commitment to data accuracy. As noted in 2023, incidental observations are completed by Baffinland site personnel and contractors, including non-expert observers, who do not have the knowledge/training, nor the appropriate equipment, to accurately identify and/or sex wildlife species. Baffinland will continue to undertake a thorough review of incidental observations made on site to ensure species identification information from incidental observations is as accurate as possible, understanding the inherent limitations to characterizing species, age, or sex of bird or wildlife groups or individuals.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
47	**QIA 2024 NIRB TE#4**	QIA previously requested that Baffinland provide mapping of incidental caribou observations and details on group sizes from incidental observations in 2023 and future reports (QIA 2023 NIRB TE #14). Baffinland responded that either the 2023 aerial survey or other surveys specific to caribou should be reviewed and provided no further details regarding the incidental observations. While Baffinland provided a high-level overview of the incidental observations in Section 9.6, they did not include further details about group sizes and only provided very general locations (e.g. Tote Road, exploration areas southeast of the Project). QIA maintains that incidental observations have benefits in contributing to an understanding of caribou use of the areas around the Project and potential caribou-Project interactions, especially as it appears that caribou numbers are beginning to increase around the Project. Having more details of incidental observations, including the location, group size, and general behaviours, would be beneficial as these data could help inform monitoring and mitigations for the Project.	QIA continues to request that Baffinland provide locations of incidental observations (precise where available or approximate locations such as X km on the Tote Road), details of group sizes, and general behaviours of the individuals from incidental observations, and a map showing the locations of incidental observations.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Section 9.6 **Page:** p. 42-43; p. 160-161	As responded previously (Refer to **Comment #64, QIA 2023 NIRB TE #14**): The incidental observation logs are intended to capture awareness and general observations of wildlife by project personnel in relation to the Project and general project infrastructure. Some observations are made well outside the terrestrial RSA (e.g., during travel to/from exploration areas). Baffinland will review its incidental observations protocol and consider if there are effective location reporting protocols that will be available to a wide personnel experience, to account for the requested level of precision and will aim to produce a map showing the locations. **Previous Requests:** This request for more detailed reporting on incidental observations was previously made in the 2022 Annual Report review (BIM Response to Comments on 2022 NIRB Annual Report, **QIA 2023 NIRB TE #14**).
48	**QIA 2024 NIRB TE#5**	QIA previously noted concerns with the potential project related effects on birds from the construction and operation of the southern railway and Steensby Port and requested that Baffinland undertake further monitoring islet nesting areas, cliff nesting raptors, peregrines, and waterfowl (QIA 2023 NIRB TE #15). QIA acknowledges Baffinland's response that they will undertake islet nesting surveys before southern commercial shipping occurs but remains concerned by Baffinland's lack of commitment for undertaking roadside/railside waterfowl surveys. The construction and operation of the southern railways and Steensby port may produce different effects on waterfowl relative to the Tote Road and Milne Port and should be monitored. Without suitable characterization of current baseline conditions and monitoring adverse effects may occur and continue unmitigated.	QIA requests that Baffinland undertake roadside/railside waterfowl surveys around the Mine site, southern railway route, and Steensby Port to help understand current conditions and potential Project effects once construction and operations of the southern railway and Steensby Port commence. This will help to ensure potential adverse effects are monitored and appropriately mitigated.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 43-44	Bird occurrence along the rail route was sufficiently addressed in the FEIS project baseline conditions (EDI 2011). There is nothing to suggest that bird distributions have changed, and mitigations proposed for that project component apply. **Citation:** EDI Environmental Dynamics Inc. 2011. Bird Baseline Report: Appendix 6E, Volume 6 — Terrestrial Environment, Mary River Project, Final Environmental Impact Statement. Prepared for Baffinland Iron Mines Corporation, Toronto, Ontario. 99 pp.
49	**QIA 2024 NIRB TE#6**	QIA previously requested that Baffinland provide details of the planned timing of the development of the surveillance program to identify the presence of caribou along the railway and operational protocols for trains to avoid collisions with caribou relative to the start of railway operations (QIA 2023 NIRB TE #18). Baffinland responded by saying they would provide the surveillance program	QIA requests that Baffinland commit to providing the surveillance program and operational protocols to QIA and the TEWG at least 2 years in advance of the start of railway operations.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 45	Thank you. This requested is noted. **Previous Requests:** The timing for the development of this program was addressed in the 2022 Annual Report review (BIM Response to Comments on 2022 NIRB Annual Report, **QIA**

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		and operational protocols for QIA and the TEWG to review in advance of the start of railway operations, but provided no timeline on when it would be shared. QIA is concerned that if the surveillance program and operational protocols are not provided at least 2 years in advance of railway operations, there will not be sufficient time to review, provide comments, and resolve outstanding issues between QIA/TEWG and Baffinland.			**2023 NIRB TE #18**).
50	**QIA 2024 NIRB TE#7**	QIA previously requested that Baffinland undertake work to develop baseline information and associated indices for wolf presence/abundance, particularly along the southern railway corridor and Steensby Port area (QIA 2023 NIRB TE #19). Baffinland responded that they will develop baseline information along the southern railway corridor and Steensby Port. QIA notes that no timelines for collecting this baseline information were noted by Baffinland in their response and there was no specific confirmation that this baseline information would include the requested information on wolf presence/abundance.	A. QIA requests that Baffinland confirm how far in advance of construction of the railway Baffinland plans to undertake these baseline studies. B. QIA requests that Baffinland confirm that the baseline studies will include the requested wolf occurrence information.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; **Page:** p. 45-46	A. Baseline vegetation and wildlife surveys were completed at the BIM Project in 2006-2008 (Baffinland Iron Mines Corporation 2010) and 2006-2011 (EDI Environmental Dynamics Inc. 2012), respectively. Surveys covered the proposed Mary River Mine Site, Milne Port, Tote Road, Southern Rail, and Steensby Port. To inform construction and operation, EDI was scheduled to conduct vegetation/soil ground truthing, wildlife habitat reconnaissance, and incidental observations surveys from August 5–20, 2025. Surveys will inform the characterization of current terrestrial conditions (i.e., plant communities, soil, wildlife, wildlife habitat) along the first 40 km (i.e., approximately from Mary River to Ravn River) of the approved Southern Rail Corridor. The purpose of the 2025 vegetation reconnaissance survey is to verify site conditions in relation to the results of the 2006–2008 Vegetation Baseline Report and to provide a current snapshot of terrestrial vegetation and soil before construction activities, such as soil and vegetation removal. Characterising pre-construction vegetation and soil will create benchmarks for comparing future conditions, guiding site-specific monitoring, developing mitigation and management measures, and planning reclamation. The 2025 reconnaissance vegetation survey will identify current vegetation species and cover, existing vegetation communities, and soil profile characteristics along the Southern Rail footprint. The purpose of the 2025 wildlife reconnaissance survey is to confirm site conditions (relative to the 2006-2011 Wildlife Baseline Survey and Report results) and provide a current 'snapshot' of terrestrial wildlife habitat and sign prior to construction activities. Characterization of pre-construction conditions will establish 'benchmarks' so that future conditions can be assessed against the pre-construction conditions and will inform future site-specific monitoring initiatives and development of mitigation and effects management measures. The 2025 reconnaissance wildlife survey will evaluate the current distribution and abundance of terrestrial wildlife along the Southern Rail footprint, identify potential sensitive

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					wildlife areas or features, and confirm/supplement traditional knowledge information. B. As responded previously (refer to **Comment #69, QIA 2023 NIRB TE #10**): Baffinland has already committed to undertaking the work to develop contemporary information along the southern railway corridor and Steensby Port location. Timelines have yet to be determined. **Previous Requests:** This commitment was previously made in the 2022 Annual Report review (BIM Response to Comments on 2022 NIRB Annual Report, **QIA 2023 NIRB TE #19**).
51	**QIA 2024 NIRB TE#8**	QIA requested that Baffinland provide details of the methods for their proposed ARU deployment targeting Red Knots for review and comment in advance of the program initiation (QIA 2023 NIRB TE #20). QIA acknowledges Baffinland's response that they will be bringing this forward to the TEWG. However, in their response Baffinland provided none of the requested details of the planned program. This is a concern for QIA because without these details, it is not possible for QIA to assess whether it will be effective.	A. QIA requests that Baffinland provide the minimum expectations of the program (see below) two weeks in advance of the TEWG meeting in which the program will be discussed. B. QIA requests that Baffinland provide the following details for the ARU program: • The number of ARUs that will be deployed; • Length of deployment of the ARUs; • ARU deployment timing; • Location the ARUs will be deployed and how they were selected; and • Proposed data analysis approach.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 46	A. QIA has mischaracterized BIM's response on this topic/issue (refer to QIA 2023 NIRB TE #20): *Baffinland welcomes discussion on this topic with the TEWG, particularly seeking input from ECCC-CWS and their thoughts on the utility of this program and the likelihood/concern with finding Red Knots in the southern portion of the RSA.* B. Baffinland has not committed to an ARU monitoring program.
52	**QIA 2024 NIRB TE#9**	QIA previously requested Baffinland implement their suggested measures to minimize field of view obstructions due to snow, ice, or fog, and if unable to implement the suggested measures, to provide an explicit rationale for not implementing the specific measure for the remote cameras (QIA 2023 NIRB TE #22). QIA notes that Baffinland responded that they will evaluate and report on the viability of using anti-moisture packs or anti-fog products on the remote cameras, but this evaluation was not included in the 2024 TEAMR. This is a concern for QIA, as without this information it is not clear whether attempts to implement these measures occurred. QIA previously requested that Baffinland report on the number of times remote cameras were checked, including	A. QIA requests that Baffinland report on their evaluation of the viability of using anti-moisture packs or anti-fog products on the remote camera as part of a TEWG meeting in 2025. B. QIA requests that Baffinland provide details on the servicing of each remote camera along with the dates they were checked in future TEAMRs.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Appendix G.5.1 Section 9.4.1-9.4.2 **Page:** p. 48-49; p. 140-141	Baffinland has responded to similar requests previously and reiterates that BIM will continue to review appropriate mitigations to minimize fog or moisture. Baffinland will review the service log data with QIA environmental monitors at their request. **Previous Requests:** This request was previously made in the 2022 Annual Report review (BIM Response to Comments on 2022 NIRB Annual Report, **QIA 2023 NIRB TE #22**).

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		the dates they were checked, if they require servicing, and if so what type of servicing was required. QIA acknowledges that Baffinland included the dates that the cameras were checked in Appendix G.5.1 Section 9.4.1 (December 2023 and June 2024). However, the details regarding the servicing were not reported on in the 2024 TEAMR.			
53	**QIA 2024 NIRB TE#10**	QIA previously requested that Baffinland conduct a literature review regarding wildlife road crossings and the thresholds at which behaviours like paralleling and deflecting from roads may have significant impacts on individuals and local populations (QIA 2023 NIRB TE#24). Baffinland requested further details of the purpose of these associated thresholds. By having thresholds for behaviours like paralleling and deflecting from roads/railways that are based on existing literature, the results of future snow track surveys would be able to be compared to these, and if the threshold is exceeded appropriate mitigations could be undertaken. Identifying these thresholds will be especially important for caribou.	QIA requests that Baffinland conduct a literature review regarding wildlife road crossings and the thresholds at which behaviours like paralleling and deflecting from roads may have significant impacts on individuals and local populations. The results of this literature review should be reported back to the TEWG and used to interpret the snow tracking survey data in future TEAMRs.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 50-51	Baffinland has discussed the definition of deflection and conducted a literature review, including reviews of other proponent definitions and presented this to the TEWG in technical memo format. This has been a topic at the TEWG throughout 2024 and 2025. Baffinland has sought advice from TEWG members and continues to refine the definition for consideration by TEWG.
54	**QIA 2024 NIRB TE#11**	QIA previously noted concern regarding the lack of reporting associated with the wildlife scans / wildlife clearance survey before blasting activities occurred, and requested that Baffinland provide a summary of wildlife scans / wildlife clearance surveys completed before blasting activities (QIA 2023 NIRB TE #25). While QIA acknowledges that Baffinland stated in their response that they have in place a caribou observation form that is completed before blasting activities, Baffinland did not provide a summary of wildlife scan / wildlife clearance surveys were provided in the 2024 TEAMR.	QIA requests that Baffinland provide an annual summary of the wildlife scans / wildlife clearance surveys completed before blasting activities as part of future TEAMRs. QIA expects that this summary will include the date and time of the surveys, location, details of any wildlife observations, and details of mitigations employed if wildlife was observed.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E **Page:** p. 51-52	Baffinland welcomes the QIA to review these documents onsite during environmental inspections/audits. Alternatively, Baffinland suggests engaging directly with the QIA's onsite Environmental Monitors who are welcome to review the wildlife scan documentation and compile a summary to support the QIA's request.
55	**QIA 2024 NIRB TE#12**	Due to concerns regarding the impacts of non-compliant flights on moulting snow geese and wildlife, QIA previously requested that Baffinland (QIA 2023 NIRB TE #3): • provide details of their proposed investigation methods to assess leading causes of non-compliant flights; • provide the results of the investigation, and; • undertake a mid-moulting season assessment of pilot compliance and have discussions with pilots if they have any non-compliant flights.	QIA continues to request that Baffinland: • Provide the proposed investigation methods for review by the TEWG, to ensure that the investigation will identify the root causes of noncompliance; • Provide the results of their investigation, and corrective actions they will undertake to determine why	**Document Name**: Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Appendix G.5.1 Section 5 **Page:** p. 37-38; p. 20-39	Upon review with the third-party subject matter expert, Baffinland believes that additional mitigations and assessments are not warranted, and this issue has been addressed repeatedly. Overlap with the goose area is minimal, resulting from direct flights from Mary River to Steensby Inlet. Baffinland notes that at the July TEWG Meeting, and action item was closed where we informed the TEWG that Pilots undergo Cognibox training on overflight

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		Baffinland responded that they would provide details of their investigation methods, that the results of the investigation would be discussed in the 2024 TEAMR, and that they would complete mid-moulting season assessments of pilots and discussion with pilots regarding non-compliant flights. QIA is concerned by the lack of follow through by Baffinland. In the 2024 TEAMR, Baffinland does not include any details of the investigation methods to assess leading causes of non-compliant flights, or the results of the investigation. As well, Baffinland provides no indication in the 2024 TEAMR that Baffinland completed mid-moulting season assessments / discussions with pilots. QIA notes that 2024 appears to be the fourth worst year for noncompliant flights with 120.55 hours of non-compliant flights (p. 38). QIA remains concerned that Baffinland's corrective actions to reduce non-compliant flights are lacking and is disappointed Baffinland has not provided the requested details despite indicating that they would.	their mitigation protocol was not being followed correctly and how they can prevent this from occurring in the future; and • Commit to completing mid-moulting season assessment of pilot compliance and discussions with any pilots that have breached compliance of the 2021 mitigation protocol. QIA expects that this would include a record of the mid-moulting season assessment and dates/times of the discussions with pilots that had non-compliant flights.		compliance. This happens throughout the flying season as new pilots are brought to site. **Previous Requests:** This request was previously made in the 2022 Annual Report review (BIM Response to Comments on 2022 NIRB Annual Report, **QIA 2023 NIRB TE #3**).
56	**QIA 2024 NIRB TE#13**	QIA requested that Baffinland provide mapping of the helicopter flights routes relative to walrus locations in future annual reports (QIA 2023 NIRB TE #4). Baffinland responded by agreeing to provide this in future reporting, but no walrus haulout locations are included in the helicopter flight route maps found in Appendix G.5.1, Section 5.2.1 of the 2024 Report. This is a concern to QIA as the potential disturbance from flights could lead to adverse effects to walrus and because Baffinland had indicated they would provide this mapping in future reports, but appeared to not have done so.	QIA requests that Baffinland provide mapping of the 2024 helicopter routes relative to walrus haulout locations and to provide this mapping as part of future reports.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Appendix G.5.1 Section 5.2.1 **Page:** p. 38; p. 27-31	In 2023 and 2024, Baffinland did not fly helicopters near any walrus haulout sites. Therefore, no maps were generated. The locations of the haulout sites remain the same and are not situated along the flight path between Mary River and the Steensby Port site. If helicopter operations were to occur near these locations in the future, a map of the interaction would be included in annual reports.
57	**QIA 2024 NIRB TE#14**	As part of the 2023 NIRB Annual report review, QIA requested that Baffinland provide further details of the landscape and safety limitations for snowbank height management that led to compliance levels of 88% in 2023, including mapping showing locations of non-compliance (QIA 2023 NIRB TE #6). In their response Baffinland did not provide a map showing the locations of the noncompliant snowbanks. In the 2024 TEAMR, compliance levels for snowbank height show a further decrease (91% in 2022, 88% in 2023, and 86% in 2024). QIA is concerned by this trend as reduced compliance levels could impact important wildlife crossings for caribou and cause deflections from the Tote Road. As well, Baffinland did not provide a map showing the	QIA continues to request that Baffinland provide a map showing the locations of non-compliant snow banks, and the locations of important wildlife crossings that intersect the Tote Road.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Appendix G.5.1 Summary, Table 0 and Section 9.2 **Page:** p.39; p.xix; p. 130-134	Conducting snowbank height surveys on an active road are not only a safety concern but constrained by the landscape. The goal of the program is to actively manage accumulation where snow is likely to cause banking due to snow removal activities typically associated with roads, and full compliance cannot always be achieved due to the ongoing processes such as snowfall and wind drifting. It is not possible, nor reasonable to expect for snowbanks to be immediately reduced to below 1 m after a snow storm. The surveys are conducted on a schedule, and the results inform road maintenance where the snow banks need to be reduced.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		locations of the non-compliant snowbanks, which could help in understanding if there are locations with chronic non-compliance.			The onsite QIA Environmental Monitors participate in and support Baffinland's field team with snowbank height surveys. During the 2025–2026 winter season, Baffinland will continue to ensure that onsite QIA Environmental Monitors can participate in the snow bank height surveys, allowing them to gather additional landscape and safety information to support the QIA's request.
58	**QIA 2024 NIRB TE#15**	QIA previously requested that Baffinland provide details of existing mitigations to prevent bird collisions on buildings / infrastructure and options for enhanced mitigations to present collisions (QIA 2023 NIRB TE #8). Baffinland responded that mitigations for effects on birds are provided in the TEMMP and that additional mitigations in accordance with the TEMMP may be considered. QIA is concerned that Baffinland did not provide any enhanced mitigations beyond those in the TEMMP that could be used to avoid bird mortalities associated with collisions on buildings / infrastructure. The additional five bird mortalities due to apparent collisions on buildings / infrastructure in 2024 add to this on-going concern (1 loon, 2 ptarmigan, 1 snow bunting, and 1 unknown songbird). As well, within Table 4:23 Baffinland states that "Three (3) bird mortalities were observed, but this is within FEIS predictions" (p. 243). This appears to contradict the FEIS which notes that "Direct mortality of any individual loons due to Project activities is not expected…" (p. 110). QIA is concerned by Baffinland's inaccurate reporting of FEIS predictions.	A. QIA requests that Baffinland provide further details of the five bird mortalities associated with collisions on buildings / infrastructure noted in the 2024 TEAMR, and provide further details of bird mortalities, especially for those not within FEIS predictions, in future reporting. B. QIA requests that Baffinland install suitable mitigations for windows (e.g. American Bird Conservancy Bird Tape) to reduce possible window strikes associated with buildings. C. QIA requests that as part of future TEAMRs that Baffinland provide a map showing the location of bird mortalities that are assumed to be associated with collisions on buildings / infrastructure. This will assist in understanding whether there are buildings / infrastructure that may be causing bird mortalities year after year. D. QIA requests that Baffinland update the statement in Table 4:23 to state that the bird mortalities were not within FEIS predictions.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Table 4:23; Appendix E; Appendix G.5.1 Section 11.5 **Page:** p. 242-243; p.40; p.172-174 **Document Name:** Baffinland Iron Mines 2012 Mary River Project Final Environmental Impact Statement Volume 6 Terrestrial Environment **Section:** Section 4.8 **Page:** pp. 108-111	a. Baffinland will provide additional detail where available in future monitoring reports where bird mortalities are outside FEIS predictions. b. As discussed at the TEWG meeting number 35 held July 10, 2025, Baffinland committed to having an internal discussion about placing window decals as a mitigation at site and will report back to TEWG on the outcome. c. Baffinland will review this request in relation to available data capture. d. Baffinland will ensure in future reporting to cross-reference FEIS predictions with bird mortality events. The mortality in question (loon) was a mortality associated with another sampling program, and not directly project-related.
59	**QIA 2024 NIRB TE#16**	QIA noted that the total bird mortalities reported in Section 11 (Appendix G.5.1 of the 2023 Report) did not match the total reported in Figure 11-1, and requested that Baffinland revise section 11 or Figure 11-1 to ensure this reflects the correct number of mortalities from collisions with buildings / infrastructure (QIA 2023 NIRB TE #9). Baffinland responded that Figure 11-1 will be updated to reflect Project-related mortalities.	A. QIA requests Baffinland provide further details of those 2023 mortalities, including species, date of mortality event, location of mortality event, and assumed cause of mortality. B. QIA requests that Baffinland provide in their response to this comment an updated version of Figure 11-1 that	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix E; Appendix G.5.1 Section 11.5; Table 4:23 **Page:** p.41; p.172-174; p. 242-243	A. Figure 11-1 and Figure 11-2 have incorrect information due to some database inconsistencies. As per Baffinland's Reporting Procedure for Wildlife Incidents, e-mail notification of all Project-related mortalities involving polar bears, caribou, migratory birds, and wolves is provided to QIA's Environmental Monitor and to the HTO of the community of communities affected, in parallel with reporting to the responsible government authority, or within five (5) working days of the incident. Mortalities involving small mammals including Arctic fox and Arctic hare are also

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		QIA notes that the numbers for 2023 have not been updated in Figure 11-1 of the 2024 TEAMR (Appendix G.5.1), and currently shows more than 20 mortalities from collisions with buildings / infrastructure. This is concerning, as it remains unclear what the true number of mortalities in 2023 were, and if the true number is over 20, the details of the mortalities should be provided. In addition to the above on-going concern, the 2024 TEAMR and NIRB Annual Report appear to have discrepancies related to the number of bird mortality events as well. Specifically, in Table 4:23 of the 2024 NIRB Annual Report, Baffinland notes that there were 3 bird mortality events which were associated with collisions with buildings/infrastructure (1 loon and 2 ptarmigan). However in Section 11 of the 2024 TEAMR, Baffinland identifies 5 bird mortalities, including 1 loon, 2 ptarmigan, 1 snow bunting, and 1 unknown songbird associated with collisions with buildings / infrastructure. As well, Figure 11-1 in the 2024 TEAMR does not show any mortalities associated with collisions with buildings / infrastructure. QIA continues to be concerned with Baffinland's inaccuracies related to reporting bird mortalities associated with the Mary River Project.	accurately shows the number of bird mortalities and associated cause for both 2023 and 2024, and update this figure in the 2024 TEAMR		reported to the QIA Environmental Monitor onsite for their dissemination to the QIA as appropriate. Where applicable, the following information is included when reporting wildlife incidents: • Date and time of the initial report; • To whom the incident is reported to; • The manner in which parties were notified; • The type of wildlife involved (including the sex); • A detailed account of what occurred, including time and location; • A description of the event(s) leading up to the incident; • Photos of the carcass; • Photos and description of any tags present; and • Steps or activities followed after the incident. B. Thank you for highlighting these errors. Text in section 11.1 of the 2024 TEAMR indicates all avian mortalities were likely associated with building or infrastructure collisions, and Table 4.23 of the 2024 NIRB Annual Report indicates three (3) bird mortalities were observed in 2024, which is incorrect. Baffinland confirms there was five (5) Project-related bird mortalities in 2024: three (3) of which resulted from vehicle interaction, one (1) of unknown cause, and one (1) from incidental catch in another environmental monitoring program. This data is shown correctly in 2024 TEAMR Figure 11-1 and Figure 11-2.
60	**QIA 2024 NIRB TE#17**	Baffinland states that as part of TEWG meeting #32 they shared two desktop studies (wildlife monitoring option and definitions of caribou deflection) and that no comments were received back from TEWG members. QIA did share comments on the definitions of caribou deflections and this is reflected in Appendix C.2.	QIA requests that Baffinland updating the wording in Section 2.2 to reflect that while comments were not provided in time for TEWG meeting #32 that they were provided in advance of the #33 TEWG meeting.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix G.5.1 Section 2.2; Appendix C.2 **Page:** p. 4; p. 133-134	We thank QIA for sharing their comments on these technical memos. To provide clarity on timing, Baffinland received comments from QIA on the technical memos a few days before the TEWG meeting #33 in January, 2025. This was not captured in the 2024 NIRB report as it was outside the reporting year. However, we acknowledge that comments were received in January 2025.
61	**QIA 2024 NIRB TE#18**	Baffinland notes as part of their caribou Tote Road observations that in 2024 environmental staff were notified of near-project observations of caribou and completed follow-up behavioral monitoring. Baffinland notes that "Fifty-one caribou incidental observations during 22 monitoring events were recorded along the Tote Road in 2024." (p. 163), while earlier on in the report regarding incidental observations they noted that "In total, 97 caribou were seen across 34 observations from the Tote Road between May 21 and August 16, 2024." (p. 161).	A. QIA requests that Baffinland include as part of their reporting if any of the caribou behaviour observed required vehicles on the Tote Road to stop per the caribou decision framework (i.e. major migration, present on the road, within 100m and moving towards the road).	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix G.5.1 Section 9.7 and Section 9.6 **Page:** p. 161-165	A. Any major caribou migration would be an observation that would be fully discussed in the annual TEAMR report. No major caribou migration occurred involving the Tote Road in 2024. Baffinland will consider including additional analysis in the 2025 TEAMR which summarizes any instances in which caribou were sighted within 100 m of the road and were observed to be moving towards the road, requiring traffic to stop as per the caribou decision framework. B. As discussed at the TEWG meeting number 35 held July 10-11, 2025, a variety of Baffinland staff record wildlife observations. Staff outside the Site Environment

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		QIA is concerned by the discrepancy in these numbers as they appear to be quite different. Baffinland notes that as part of these observation environmental staff record: • location description; • survey start and end times; • number of individuals; • sex of individuals; and • behavioural responses. Baffinland provided a very high-level overview of their results of the caribou Tote Road observations including timing of observations by month, distance ranges, and general behaviors. QIA recommends having further details provided of the caribou Tote Road observations so that potential trends between years can be assessed and a more in-depth understanding of the potential Project-caribou interactions are provided.	B. QIA requests that Baffinland provide a table summarizing the caribou observations in 2024 and as part of future TEAMRs that includes the following information: • date; • location description; • survey start and end times; • number of individuals; • sex of individuals; • behavioural responses; and • whether caribou behaviour required vehicles on the Tote Road to stop. C. QIA requests that Baffinland provide a map showing the caribou observations in 2024 and as part of future TEAMRs. D. QIA requests that Baffinland provide an explanation regarding the discrepancy in caribou observations and number of individuals seen in 2024 between Section 9.7 and 9.6.		team are non-expert observers who do not have the knowledge/training, nor the appropriate equipment, to accurately identify species sex and/or behavioural response. The Site Environment team is deployed to confirm wildlife sightings where possible and perform follow-up behavioural monitoring. Baffinland makes every effort to track and capture all wildlife observations and will continue to work with the TEWG to enhance recorded observations where practical. C. This request is not feasible for the 2024 observations as location data from site incidental forms is not always captured or applicable. The incidental observation logs are intended to capture awareness and general observations of wildlife by project personnel at the Project. Some observations are made well outside the terrestrial RSA (e.g., during travel to/from exploration areas). As answered in TE#4 above, Baffinland will aim to produce a map for visual reference in future reports. D. Section 9.6 and Section 9.7 discuss data from two (2) different data sets. Caribou incidental observation data provided in Section 9.6 is a summary of the incidental wildlife sightings which are recorded by on-site personnel (commonly by ore haul truck drivers). Caribou incidental observation data provided in Section 9.7.2 includes data from incidental caribou observations by Environment Department staff and/or environmental consultants, including follow-up behavioural monitoring completed in response to notifications of near-project wildlife observations from on-site personnel (commonly by ore haul truck drivers).
62	**QIA 2024 NIRB TE#19**	Baffinland notes that 10 wildlife mortalities occurred in 2024, including one mortality that "...was a result of incidental catch while completing other surveys." (p. 172). Baffinland does not provide further details as to how the mortality incident occurred, which is concerning to QIA as it is unclear if this kind of event could have mitigations in place to prevent it from occurring in the future.	QIA requests that Baffinland provide further details the mortality even caused by incidental catch including: • type of survey; • species involved in the incident; and • description of how the mortality incident occurred.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** Appendix G.5.1 Section 11 **Page:** p. 172	All wildlife mortalities are reported directly to on site QIA environmental monitors via email. In addition, this information is provided by our consultant directly to DFO as a requirement of their licence to fish for scientific purposes.
MARINE AND AQUATIC ENVIRONMENT					
63	**QIA 2024 NIRB MAE#1**	Numerous Project Certificate Term and Conditions outline the requirements and expectations for a vessel-based marine wildlife observer program (s. 4.6.11, PCCs 103, 106, 107, 108, 121, 122, and 123) (as noted in previous Annual Report reviews). Baffinland ran a Shipboard Observer (SBO) program in some years and introduced the Marine Mammal Observation Network (MMON) program in 2020, when the coronavirus pandemic precluded running the SBO program on board icebreaking vessels. The MMON is a voluntary marine mammal incidental sightings program that in 2024 included participation of seven vessels (all ore carriers, see	QIA requests that Baffinland: 1. address the inconsistencies between the various documents (Annual Report main text and appendices) for the MMON results in both 2023 and 2024, and ensure greater care in future reporting to provide consistent and accurate reporting. 2. report on opportunities to both increase participation in the MMON	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (main report) **Section:** s. 4.3, s. 4.6.9, s. 4.6.11 **Pages:** 43-44, 242-264, 332-425 **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board App. E.1 - Response to Comments	1. The data presented in Appendix G.6.3 of the 2024 NIRB annual report are observations made in the Regional Study Area (RSA) by vessels in transitwhile, MMON results were reported in Appendix G.6.7. and include wildlife spotted throughout the vessels total transit beyond the RSA. We continue to work with ship owners and operators to increase the observation duration and accuracy of marine mammal identification. . 2. In previous years at the commencement of the shipping season, Baffinland informed vessel owners about the Marine Mammal Observation Network (MMON) program, provided training and and encouraged them to observe and report marine

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		for example s. 4.6.11, p. 360, PCC 103), which is a reduction in participation from 2023. In 2024 these 7 vessels reported 4 sightings, for a total of 15 individual marine mammals, in the Regional Study Area (RSA) (Table 4.28, s. 4.6.11, p. 361). There was no SBO program on board the MSV Botnica or MSV Fennica in 2024, as no ice management was required in the shoulder seasons. QIA disagrees with the Proponent with respect to compliance (e.g., s. 4.3, pp. 43-44, Main Report) on Terms and Conditions related to the Shipboard Observer (SBO) program, as these conditions were not met in 2024 and will not be met again in 2025. Issues with the Proponent's monitoring programs were identified by QIA and the NIRB in their reviews of the 2023 Annual Report, and these concerns were not sufficiently addressed. Reporting for 2024 also provides contradictory information on the Proponent's plans for 2025. For example, under PCC 105 (s. 4.6.11, p. 365), Baffinland states it "will place Marine Wildlife Observers (MWOs) on icebreaking vessels during the fall shoulder season when icebreaking operations are required". However, reporting for PCC 106 (s. 4.6.11, pp. 372) indicates that no icebreaking will be required with a return to shipping levels of 4.2 mtpa. With no icebreaking, there will be no SBO program with trained observers, despite it being a requirement in the Project Certificate under multiple Terms and Conditions. Baffinland is planning to continue with the incidental marine mammal sightings program in collaboration with MMON, and has noted a need to expand the program (s. 4.6.11, p. 361). This program could provide useful information to inform monitoring, mitigation, and adaptive management. However, based on 2024 reporting, the reliability of these data is questionable, as it was in 2023. Table 4.29 (s. 4.6.11, p. 361) indicates that one sighting of three Harbour Porpoises was reported in September 2024 (in southern Milne Inlet). There are no confirmed records of this species in the Eclipse Sound region, and this observation is highly suspect, as were the reported observations of Grey Seals in 2023 (see QIA comments on 2023 Annual Report to NIRB). Baffinland expects species identification and data recording to improve as the program continues (App. E.1 - Response to Comments, p. 59), but consistently reliable	network and, more importantly, provide training to operators to increase observer reliability. 3. establish a program that meets Project Certificate Terms and Condition requirements for marine bird monitoring. This should also include compiling, analyzing, and reporting on marine bird observations collected using the ECSAS standardized protocol during previous SBO program deployments. These data should be analyzed to determine habitat use, areas and timing of interaction with Project activities, and behavioural responses to vessels. In responses to 2023 Annual Report comments (Appendix E.1), the Proponent noted that a summary of eider species observations since the beginning of the SBO program would be added in future reports. However, there will be no SBO program, as currently structured, without icebreaking support. These data and analyses should be provided in a standalone summary report. 4. provide an update (as requested by NIRB in 2024) on how it intends to expand the observer program to address Project Certificate Terms and Conditions for marine wildlife including birds.	**Section:** Table A.1: Response to QIA Comments on Baffinland's 2023 Annual Report to the NIRB **Pages:** 59-60 **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board App. G.6.3 - Incidental Marine Mammal Sightings **Section:** full document **Pages:** full document (1 page) **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board App. G.6.7 MMON Summary **Section:** full document **Pages:** full document (2 pages)	mammal sightings as the transit to the RSA. Recognizing that participation could improve, Baffinland met with owners at the end of the 2024 season and reiterated the importance of participating in the network. Additionally, Baffinland sends regular reminders to vessels through the Port Captain. Baffinland shares the training with owners that MMON provides which is found here, and we expect species identification and data recording to increase in 2025. Baffinland has been informed that some owners are supporting this work by incentivizing crews through games like a bingo spotting card. 3. Baffinland continues to support Environment and Climate Change Canada (ECCC) on their sea duck and shorebirds studies in the arctic. While the results have not been published, preliminary findings point out that migration does not interact with Baffinland's northern shipping route. ECCC returned to Baffin Island in July, 2024 to resume surveys on common eider nesting colonies. Baffinland hopes that ECCC is amenable to sharing results at the MEWG. Plans to meet this TC for the Steensby component of the project will be explored with the MEWG as monitoring plans unfold. 4. Baffinland has not proposed ending the SBO program entirely but does not currently have a safe means to place observers on vessels without the Ice breakers. Baffinland will bring any changes to the program to MEWG for discussion, including options for how TC 106 & 107 may be satisfied in the future. Baffinland would like to reiterate that to date there are no known incidents of ship strikes on marine mammals, and much of the intent of TC 106 and 107 stemmed from concerns during the FEIS of ship strikes on marine mammals.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		and accurate data are needed to meet Project Certificate requirements and support effective monitoring and adaptive management now. There are also discrepancies between what is reported in the Annual Report main document and Appendix G.6.3 (Incidental Marine Mammal Sightings) and the MMON data summarized in Appendix G.6.7 (MMON Summary). This issue was also identified last year and has not been fully resolved. The main report (e.g., Table 4:29, p. 361) indicates that four marine mammal species were recorded by MMON vessels in the RSA (one observation each of Narwhal, Ringed Seal, Harp Seal, and Harbour Porpoise). A number of RSA marine mammal sightings reported in the MMON summary in Appendix G.6.7 are not included in the main report text. The MMON summary in Appendix G.6.7 also provides a link (navigatingwhales.ca) where one can view the data. QIA filtered the data to show all observations in the RSA associated with Baffinland (i.e., linked to Baffinland as the partner) that occurred between July 1 and October 31, 2024. This search identifies sightings of unidentified seals, Ringed Seals, Killer Whales, and Harp Seals. These records do not match what is reported in the Annual Report and in Appendix G.6.3, which leads to concerns over the accuracy and reliability of the MMON program itself and the Proponent's reporting on the program. The MMON network provides observations of marine mammals only (and of questionable reliability, as noted), but similar Project Certificate Terms and Conditions also apply to marine birds. For example, PCC 73 (s. 4.6.9, p. 256) requires "detailed and robust mitigation and monitoring plans for migratory birds" (also see PCC 68, 69, and 74). At present, there are no Proponent-led monitoring programs for marine birds. The Proponent is supporting Environment and Climate Change Canada (ECCC) and their university partners on Thick-Billed Murre research at Cape Graham Moore (see for example Table 4:23, p. 242-243), and while this program will provide useful results, it is not a substitute for the robust monitoring plans expected under PCC 74, which identifies Common and King Eiders and seabird migration and wintering as key indicators for follow up monitoring. No 2024 monitoring for these indicators is included in the Annual Report. Project Certificate Conditions 107 and 108 (s. 4.6.11, pp. 373-376) also speak to a need for the Proponent to monitor seabird or seaduck responses to			

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		shipping traffic. Reporting on these two conditions makes no mention of seabird or seaducks. This was identified in QIA comments on the 2023 Annual Report but remains unaddressed. In NIRB's 2024 Annual Monitoring Report, the Board requested an update be included in this annual report on how the Proponent intends to expand this program. The Proponent's response (s. 4.6.11, p. 372, PCC 106; p. 415, PCC 123) refers to the MMON network's marine mammal incidental sighting program and states that the objectives of the relevant Terms and Conditions (e.g., PCCs 103, 106, and 123) can be met with this program. QIA disagrees, for all the reasons identified above. The program would need to be expanded significantly to meet marine mammal observer requirements in the Project Certificate. Even if the MMON were to be significantly scaled up, there would still be issues with data reliability and reporting discrepancies, and the program also does not address the Project Certificate requirements for monitoring of marine birds. These issues have all been raised in previous years, without sufficient resolution by the Proponent.			
64	**QIA 2024 NIRB MAE#2**	Results of the Bruce Head program is summarized in updates of several Project Certificate Conditions in s. 4.6.11 (e.g., PCC 101, 110, 111) and described in greater detail in App. G.6.4. The Bruce Head study has been conducted annually since 2014 (with the exception of 2018), and there are now 10 years of data, including 5 years of Unmanned Aerial Vehicle (UAV)-based behavioural focal follows. Despite these extensive efforts, sample size issues remain for many of the models. For example (summary of results reported in App. G.6.4), models of vessel proximity effects on primary behaviour, unique behaviours, and presence of nursing behaviour were all not statistically significant despite large effect sizes at close proximity to vessels. These nonsignificant findings, despite large effect sizes, have been attributed to low sample size, high variability, and unbalanced data. That sample sizes are still low, despite five years of UAV data, suggests a need to consider alternative statistical approaches and models that may be better suited to the available sample sizes and unbalanced data. Appendix G.6.4 recommends (s. 8.0, p. 158) modifications to the analysis approach with data no longer analyzed by group type and instead using a model that accounts for presence of	QIA requests that Baffinland: 1. explore alternative statistical approaches for analysis of Bruce Head data for discussion with the Marine Environmental Working Group. This should include options for modelling approaches that use UAV and shore-based behavioural data. 2. continue to explore ways to increase UAV-based focal follow effort, recognizing the limitations that exist. 3. prioritize behavioural focal follows over UAV-based EWI surveys. 4. clarify why 3 September 2024 was not filtered from analysis if killer whales were known to be present.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (main report) **Section:** 4.6.11 **Pages:** 332-425 **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board App G.6.4 (in three parts on Registry) - 2024 Bruce Head Shore-based Monitoring Program **Section:** entire report **Pages:** entire report	1. Following QIA's request to explore alternative statistical approaches that would combine shore-based and drone-based data, Baffinland will assess the feasibility of incorporating both datasets into analysis for those response variables where data were analyzed using both methods (i.e., group size, group composition, group spread, and group formation). Other variables (e.g., distance from shore, association of immature, relative distance of immature, and travel speed) are either available for only one method or have incompatible data types and therefore it is not possible to integrate both datasets for a combined analysis. For variables where shore-based data are not available, UAV-only analysis will continue. Note that there are several difficulties anticipated with the incorporation of both datasets: a) the UAV-based dataset is considered to be of higher quality, since data are verified (i.e., undergo QA/QC) on the basis of the focal follow videos (which are a permanent record as opposed to a visually observed singular event). It is common practice for the focal follow videos to be reviewed multiple times by analysts to verify group composition, particularly for sightings where some group members are underwater and not clearly distinguishable. In comparison, with shore-based data, this verification is not possible, and data are inherently prone to a higher level of error. As a

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		immature narwhal in groups. QIA agrees that there is a need to explore alternate analysis methods. Continued efforts to increase focal follows are also important, although limitation exist. UAV-based focal follow survey effort was dependent on weather conditions and external factors such as helicopter traffic and local hunting activity (App. G.6.4, s. 5.6, p. 84). Additional early warning indicator (EWI) (group composition) data was also collected for narwhal in the Behavioural Study Area (BSA) using dedicated UAV surveys starting in 2024 (App. G.6.4, s. 4.2.3, p. 30). Did this increase in effort to collect EWI data take any focus away from behavioural data? Behavioural response data should be prioritized. Behavioural response data analyses in recent years include only UAV-data, and not the behavioural response data collected via shore-based monitoring in the BSA from 2014 to 2021. Is this correct? What statistical approaches are available that could use all of the behavioural response data that has been collected to date? There is some uncertainty regarding the filtering of data on days in which killer whales were present. On p. 41, s. 4.3.1.7 (App. G.6.4) it states that killer whales were present on six days in the combined 2014–2024 dataset, including once in 2024 (on 26 August). These cases were all removed from the dataset. However, p. 153 (s. 5.7.1), notes that killer whales were observed on two occasions during the 2024 study period, on 26 August 2024 and 3 September 2024. Was only one of the two days removed, and if so, why?			result, the combination of the two datasets may result in reduced certainty of modelling estimates (and not increased certainty as intended). b) For UAV-based data, the location of the group is known precisely (and therefore distance from vessels can be calculated precisely). For shore-based data, the location of the group within the BSA is not known. Therefore, the distance would need to be calculated as the distance from vessel to the centroid of the BSA. This results in a low-accuracy distance estimate, which will affect subsequent calculations. c) The UAV-based dataset up to 2024 has 7,067 data points, of which 1,446 (20.5%) are in the presence of vessels. In comparison, the shore-based dataset has 5,025 data points, of which only 381 (7.5%) are in the presence of vessels. Thus, it is expected that behavioural data when no vessels are present may be strongly affected by the addition of shore-based data, since the 'no-vessel' dataset will nearly double (adding 4,644 shore-based cases to 5,621 UAV cases). Until the analysis is performed, it is unclear whether this will influence the results. d) In addition to the incorporation of shore-based data, we will also explore the option of switching from analyzing the effect of 'distance' as a continuous variable, to categorizing the data as "vessel present" and "vessel absent". This is expected to increase statistical power; however, it also presents challenges associated with identifying the cutoff point for vessel presence. At present, vessels within 5 km are considered "present". However, this cutoff was chosen so that the entirety of the effect could be captured. That is, effects at farther distances are small or non-existent, and using the 5 km distance as the cutoff for the categorical analysis approach will dilute the effect (seen at close proximity) and result in not being able to detect vessel effects. Therefore, the cutoff value will need to be closer than 5 km; final choice of cutoff will be made during the 2025 analysis, based on compiled results from previous years. 2. The UAV-based focal follows will continue to be collected as often as possible, prioritizing collection of behavioural data during presence of vessels, to increase the sample size associated with vessel effects. 3. Collection of UAV-based behavioural data is already prioritized over UAV-based EWI data, particularly when vessels are present. EWI drone-based surveys can be done when no vessels are present in the SSA and doing so would therefore not

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					compromise the sample size associated with 'vessel presence on behaviour' analysis. Furthermore, we only undertake EWI surveys when there is a herding event close to shore near the hunting camp (BSA area) because these surveys are completed at higher altitude than focal follow surveys and therefore do not interfere with hunting activities at the camp below Bruce Head. We do not conduct focal follow surveys in this area due to previously shared concerns from hunters. If there are animals in both areas at the same time, we conduct both focal follow surveys in the SSA and EWI surveys in the BSA (in front of camp) at the same time (using two separate drone systems). This way, no data is lost using either data collection method. 4. In the analyses, 3 September 2024 was indeed filtered from the dataset due to presence of killer whales. This date was erroneously omitted from the methods section.
65	**QIA 2024 NIRB MAE#3**	At the 05 June 2025 meeting of the Marine Environmental Working Group (MEWG), Baffinland provided an update on the supplemental spill modelling that it would undertake for the Southern Shipping Route through Hudson Strait and Foxe Basin into Steensby Inlet (App. C.1, pdf file pp. 93-98). After the introductory presentation, it was noted that Baffinland would be conducting further engagements on this topic with Baffin Island communities and HTOs, and Makivvik Corporation. In the Annual Report summary for PCC 97 (s. 4.6.10, p. 327-329), Baffinland notes that this supplemental spill modelling commenced in 2024 and is ongoing, and that "[a]dditional details regarding the proposed modelling locations will be shared with communities located in proximity to the Southern Shipping Route in mid-2025". The revised spill modelling is anticipated to be complete by the end of 2025. No additional information on this topic has been provided to MEWG members since mid-2024. It is now mid-2025, and the assessment is anticipated to be completed within 6 months. What efforts have been made to solicit community information and consult on model locations since the June 2024 MEWG meeting? Reporting for PCC 176 (s. 4.8.1, p. 560-562) states that the spill modelling "covers the areas of Steensby Port, Foxe	QIA requests that Baffinland provide additional clarification on the status of the supplemental spill modelling for the Southern Shipping Route, including updates on consultations that have occurred with communities on proposed modelling locations, and on how MEWG feedback from June 2024 has been factored into the modelling effort.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (main report) **Section:** s. 4.6.10, s. 4.8.1 **Pages:** 327-329, 560-562 **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board App C.1 - MEWG Meeting Records **Section:** MEWG Meeting Records for June 5, 2024 **Pages:** 13-18 (pdf file pages 93-98 of 175)	The spill modelling scope was presented at the Marine Environmental Working Group meeting in June 2024. The work was subsequently put on hold in Q3 2024 and will be re-initiated in 2025. Baffinland will engage with communities located along the Southern Shipping Route and Makivvik Corporation on the specific modelling locations when the work is re-initiated. As stated in Term and Condition 176, the modelling shall include areas in Hudson Strait, such as Mill Island, and mid-Hudson Strait in seasonal conditions.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		Basin, Mill Island and Mid-Hudson Strait", for spill scenarios in winter (February), open water (August), ice breakup (July) and freeze-up (October). These statements suggest decisions have been made on model sites, which contradicts the earlier statements in PCC 97. Additional clarity of project status is requested, along with an update on current spill modelling progress and consultations.			
66	**QIA 2024 NIRB MAE#4**	"On January 19, 2024, DFO issued a Letter of Advice (LOA) for Baffinland's Tote Road Culvert Remediation proposal to implement a permanent crossing solution for ten (10) corrugated steel pipe (CSP) crossings along the Tote Road (DFO, 2024)." (BIM 2023 QIA NWB ARO, s.7.3.8, p. 36). "In parallel with the issuance of the LOA, DFO issued a new Correcti[ve] Measure[s] Order on February 5, 2024 requiring all 20 previously identified culverts to be remediated and to be supported by new sediment and erosion control and environmental monitoring plans." (Main Doc. 2024, s.2.4, p. 17). In 2024, seven (7) culverts identified in the DFO LOA were remediated. Progress on this work is summarized in relation to hydrology (PCCs 16 and 19) and fish passage (PCC 45 and 47) in the Annual Report to NIRB (Main doc.). The Corrective Measures Order is also pertinent to these PCCs and covers another thirteen (13) culverts that require remediation. Neither the Order nor the culverts were mentioned in the Annual Report Main Doc. summaries for PCCs 19, 45, and 47.	QIA requests that Baffinland provide updates to the Annual Report summaries for PCCs 19, 45, and 47 on the status of culverts identified in the DFO Corrective Measures Order that still require remediation, and on progress in 2024 toward completing that work.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (Main Document) **Section:** 4.6.4 Hydrology and Hydrogeology, PCC 16 Water Infrastructure **Pages:** 103-106 (pdf p. 122 to 124 of 64) **Section:** 4.6.4 Hydrology and Hydrogeology, PCC 19 Water Infrastructure Monitoring **Pages:** 116-119 (pdf. P. 134- 137 of 641) **Section:** 4.6.7 Freshwater Environment, PCC 45 General **Pages:** 177-179. (pdf p. 195-297 of 641**)** **Section:** 4.6.7 Freshwater Environment, PCC 47 Watercourses **Pages:** 182-183 (pdf p. 200-201 of 641) **Document Name:** Baffinland Iron Mines 2023 Annual Report to QIA and NWB for Operations [NWB Registry: 240331 - 2023 QIA-NWB Annual Report for Ops - Main Body - As Sent.pdf] **Section:** 7.3.8 Page: 36 (62 of 90) **Document Name:** Baffinland Iron Mines 2024 Annual Report to QIA and NWB on Operations Main Document [NWB Registry: 250331 2024 QIA-NWB 2024 Type 'A' Annual Report for Operations, Main Body- As Sent] **Section:** 2.4 **Pages:** 17 (pdf p. 36 of 94)	Information regarding the status of the culvert crossings identified in the DFO Corrective Measures Order (CMO) is provided in PCC 19 (see Methods section), PCC 45 (see Trends section), and PCC 47 (see Methods section). In addition, please refer to the 2024 Tote Road Fish Habitat Monitoring Annual Report, Appendix G.2.8, as referenced in the Freshwater Environment Summary in section 4.6.7. In 2025, Baffinland has worked with Stantec to obtain site specific information including geotechnical and hydrological investigations on the Tote Road at identified crossings planned for remediations. Analysis of data is currently on going and will support the development of potential engineered designs for the crossings. Further updates on the culvert upgrades for the priority crossings associated with the CMO was submitted to DFO under the Tote Road Crossing Gap Closure Plan in June. The report includes a summary of mitigation measures to date and a description of the current and future approaches to close information gaps for the future design of a permanent crossing plan. Baffinland continues to work with DFO on the implementation of the plan.
67	**QIA 2024 NIRB MAE#5**	Results of the SEM (2013) study Baffinland cites at the start of its PCC 85 summary are erroneous and dated. The study did not follow the recommended DFO methodology and badly underestimated the risk (DFO 2014, p. 24). When repeated by DFO using the correct methodology the final invasion risk ranking for ballast water at Milne Inlet was	QIA requests that Baffinland cite reference material that is both defensible, and current, in future reporting.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (Main Document) **Section:** 4.6.10, PCC 88 Marine Environment - Ballast Water **Pages:** 309ff (pdf p. 327 to 329)	This comment is not relevant to Term and Condition No. 85, which relates to shoreline effects and sediment redistribution and does not cite the indicated references.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		ranked "Highest" not "Lower". The study also predates current ballast water regulations, which require treatment.		SEM (Sikumiut Environmental Management Ltd.). 2013. Risk assessment for the potential introduction of aquatic nonindigenous species through ballast water discharge at Milne Port. Prepared for Baffinland Iron Mines Corporation. Prepared by Sikumiut Environmental Management Ltd. June 4, 2013. [NIRB Registry File: BIMC ERP FEIS V8 130620-08MN053-App 8B-4-Risk Assessments-IT8E.pdf] DFO. 2014. Science review of the final environmental impact statement addendum for the early revenue phase of Baffinland's Mary River Project. DFO Can. Sci. Advis. Sec. Sci. Resp. 2013/024: 51 pp.	Baffinland assumes QIA's comment may have been intended to refer to Term and Condition No. 88. The single sentence referencing the SEM (2013) study at the start of each of the Methods and Results sections of Term and Condition No. 88 was included to provide historical context. The remainder of those sections presented information on an updated risk assessment carried out in 2023 (WSP 2024). This updated assessment investigated risk associated with ore carriers following Baffinland's Ballast Water Management Plan (Baffinland 2019, 2023) mandating ballast water exchange followed by ballast water treatment, and included risk assessments for future scenarios involving larger ore carriers using the ballast water exchange plus ballast water treatment protocol. A description of Baffinland's Ballast Water Management Plan (Baffinland 2019, 2023) and its relationship to the ballast water regulations now in force (Transport Canada, 2022; IMO, 2017) was also provided. Prior to 8 September 2024, when the requirement for ballast water treatment compliant with the D-2 standard came into force, these regulations required ballast water exchange according to the D-1 standard. Baffinland requires that vessels arriving from international waters conduct ballast water exchange followed by ballast water treatment, a protocol which exceeds both the IMO and Transport Canada requirements. Baffinland is currently collaborating with Fisheries and Oceans Canada on the development of a risk-based approach to ballast water sampling. A research study of ballast water arriving at Milne Port was conducted in 2023 and 2024, and is planned to continue in 2025. Results will inform future risk assessments and management plans. References: Baffinland Iron Mines Corporation (Baffinland), 2019. Ballast Water Management Plan. Rev 1. March 31, 2019. International Maritime Organization (IMO), 2017. for the control and management of ships' ballast water and sediments (BWM). Available at: http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships'-Ballast-Water-and-Sediments-(BWM).aspx. Accessed on 11 April, 2025. Baffinland Iron Mines Corporation (Baffinland), 2023. Ballast Water Management Plan (BWMP). BAF-PH1-830-P16-0050, Rev 2. April 2023.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					SEM (Sikumiut Environmental Management Ltd.). 2013. Risk assessment for the potential introduction of aquatic nonindigenous species through ballast water discharge at Milne Port. Prepared for Baffinland Iron Mines Corporation. Prepared by Sikumiut Environmental Management Ltd. June 4, 2013. [NIRB Registry File: BIMC ERP FEIS V8 130620-08MN053-App 8B-4-Risk Assessments-IT8E.pdf] Transport Canada, 2022. Ballast Water Regulations (SOR/2021-120). Government of Canada. Last amended in 2022-02-08. Available at: https://laws-lois.justice.gc.ca/eng/regulations/SOR-2021-120/. Accessed April 2025. WSP Canada Inc. (WSP). 2024. Mary River Project - Sustaining Operations Proposal - Risk Assessment for Introduction of Aquatic Invasive Species from Ballast Water and Hull Fouling. Report No. 1663724-427-RRev3-77000. Prepared for Baffinland Iron Mines Corp. 1 March 2024. 36 p.
68	**QIA 2024 NIRB MAE#6**	Baffinland has reported that, in 2024, all of its 70 ore carrier voyages conducted both exchange and treatment of their ballast water prior to arriving in Milne Port (p. 314). QIA recognizes this as a positive development. In 2024, the salinity of a single ballast water tank in each vessel was tested to provide evidence of mid-ocean exchange. All of the tanks tested were at or above a salinity of 30 ppt, indicating that exchange had occurred, and in compliance with the D-1 standard for ballast water. Biological testing was also conducted on a subset of these vessels, as part of the risk-based assessment of ballast water. This Pilot Project was conducted in 2023 and 2024 by scientists from DFO and Inuit trainees, with Baffinland's collaboration and logistical support. Samples they collected are being used to assess the efficacy of using exchange and treatment to reduce the number of live biota in ballast water and enable vessels to meet the D-2 standards for ballast water under Project operating conditions. Data from the 2024 sampling are not yet available. International testing of ballast water has found that many vessels have treatment systems that are either unable to meet D-2 standards under their operating conditions or are not properly maintained and/or operated (e.g., Drillet and Talbot 2021 – 36% non-compliant (NC); Jallal 2024 – 39% NC; Outinen et al. 2024 – 44 - 49% NC). These results mean compliance testing of ships' ballast water should be	QIA requests that Baffinland clarify what biological testing will be undertaken to verify that the treatment systems used by Project shipping are meeting the D2 standards reliably, under Project shipping conditions, in 2025 and subsequent years.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (Main Document) **Section:** 4.6.10, PCC 89 Marine Environment - Ballast Water **Pages:** 312-316 (pdf p. 330 to 334) Drillet, G., and Talbot, C. 2021. Study on the implementation of the Ballast Water Management Convention in Australia 2019-2020. Prepared by SGS Australia and SGS Global Marine Services, Perth Airport, WA for Australian Government Department of Agriculture, Water and the Environment, Canberra City, ACT. 23 pp. [IMO MEPC 76/INF.56 Annex, 36 pp.] Jallal, C. 2024. High non-compliance rates found in treated ballast water in Australian ports. https://www.rivieramm.com/news-content-hub/news-contenthub/high-non-compliance-rates-found-in-ballast-water-treatment-in-australianports-79464 [Accessed June 28, 2025] Outinen, O., Bailey, S.A., Casas-Monroy, O., Delacroix, S., Gorgula, S.,	Please see MAE#5.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		undertaken to ensure that their treatment systems remain operational after commissioning and meet requirements of the D-2 standard (Outinen et al. 2024).		Griniene E, Kakkonen, J.E., and Srebaliene, G. 2024. Biological testing of ships' ballast water indicates challenges for the implementation of the Ballast Water Management Convention. Front. Mar. Sci. 11:1334286.doi: 0.3389/fmars.2024.1334286	
69	QIA 2024 NIRB MAE#7	"Baffinland is in compliance with industry standards and guidelines including those set by IMO. Specific hull surveys for biofouling were not conducted in 2024 nor does Baffinland plan to conduct additional surveys outside the MEEMP and NIS/AIS programs. The hull biofouling surveys conducted between 2018 and 2020 demonstrated the effectiveness of the IMO standards and no further additional monitoring is required. Additionally, Transport Canada has not issued concerns related to TC 91 that would necessitate underwater surveys of hulls." (Main Doc., s.4, p. 319). It is not clear how the biofouling surveys conducted between 2018 and 2020 demonstrated the effectiveness of the IMO standards. These hull fouling surveys had limited success and were unable to identify many of the taxa to species to determine whether they were nonindigenous and potentially invasive. In 2018 a remotely operated vehicle (ROV)-based underwater video was used to survey the hulls of three Project ore carriers. In 2019, despite using higher resolution video and better lighting on the ROV most taxa still could not be identified to species (2019 Ann. Rep., App. G.8, p. xi). However, barnacles were observed fouling 4 of the 5 hulls examined (2019 Ann. Rep., App. G.8, s.4.2, pg. 149). This is a concern as there are numerous invasive barnacle species (e.g., Amphibalanus amphitrite, A. eburneus, A. improvisus; Fofonoff et al. 2018; Chan et al. 2015, 2016; Goldsmit et al. 2021). In 2020, a survey of the Golden Ruby observed barnacles on the side of the hull from bow to stern and around the propeller (Golder 2021, pdf p. 1503); not one of the taxa observed on the three vessels surveyed in 2020 was identified to species (Golder 2021, pdf p. 1515). Under PCC 91, "The Proponent shall develop a detailed monitoring plan for Steensby Inlet and Milne Inlet for fouling that complies with all applicable regulatory requirements and guidelines as issued by Transport Canada, and includes sampling areas on ships where antifouling	QIA recommends Baffinland reconsider its stance on hull fouling, in consulting with the Marine Environment Working Group (MEWG) and comply with PCC 91.	**Document Name**: Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (Main Document) **Section:** 4.6.10 Marine Environment, PCC 91 Ballast Water **Pages:** 319 (pdf p. 319 of 641) **Document Name:** Baffinland Iron Mines 2020 Annual Report to the Nunavut Impact Review Board **Section:** 4.6.10, PCC 87 **Page:** pg. 293-295 (308-310 of 600) **Document Name:** Baffinland Iron Mines 2019 Annual Report to the Nunavut Impact Review Board, Appendix G.8 - Draft 2019 Marine Environment Effects Program and Aquatic Invasive Species Monitoring Program Report **Section:** 4.6.10 Marine Environment, PCC 91 Ballast Water **Pages:** 304-308 Chan, F.T., MacIsaac, H.J., and Bailey, S.A. 2015. Relative importance of vessel hull fouling and ballast water as transport vectors of nonindigenous species to the Canadian Arctic. Can. J. Fish. Aquat. Sci. 72, 1230–1242. doi: 10.1139/cjfas-2014-0473 Chan, F.T., MacIsaac, H.J., and Bailey, S.A. 2016. Survival of ship biofouling assemblages during and after voyages to the Canadian Arctic. Mar. Biol. 163:250. Fofonoff, P.W., Ruiz, G.M., Steves, B., Simkanin, C., and Carlton, J.T. 2018.	Baffinland is in compliance with Term and Condition No. 91 which states: "*The Proponent shall develop a detailed monitoring plan for Steensby Inlet and Milne Inlet for fouling that complies with all applicable regulatory requirements and guidelines as issued by Transport Canada".* Transport Canada and the International Maritime Organization have issued no regulatory requirements or guidelines for monitoring hull fouling (TC, undated; ICES 2011). Biofouling surveys such as those conducted by Baffinland between 2018 and 2020 using cameras mounted on Remotely Operated Vehicles (ROVs) demonstrated that hull fouling on the ore carriers was not extensive. The value of these surveys for NIS/AIS monitoring was limited as the ROVs were not able to collect specimens for taxonomic identification via microscopy and could not obtain sufficiently clear images to allow for visual identification to lower taxonomic levels and determination of NIS or AIS presence. To overcome this limitation, the decision was made to deploy settlement substrates as a proxy indicator for biofouling taxa at Milne Port, as NIS carried in vessel fouling are adapted to and may preferentially settle on artificial substrates (Pinochet et al., 2020; Sempere-Valverde et al., 2024; Tyrrell and Byers, 2007). Physical collection of specimens from the substrates allows more reliable and definitive taxonomic identification of settled organisms. Advances in hull cleaning/hull crawling robots capable of detaching and vacuuming biological material from the hull may allow for collection of physical specimens, but only in a macerated condition that would prevent taxonomic identification via microscopy. Taxonomic identification using DNA-based methods is an option for these damaged specimens and has also made advances in recent years. The utility of DNA-based taxonomy which Baffinland is currently testing in parallel with microscopic taxonomy for macroalgae and several groups of benthic invertebrates has been limited by substantial knowledge gaps in existing DNA databases, in particular for Arctic species, resulting in misidentification or false positives for some taxa (WSP 2025). At this time, Baffinland concludes that these databases and methods are not sufficiently advanced that a DNA-based hull fouling survey would provide robust results. Baffinland will continue to assess developments in this field and may reconsider the use of a DNA-based hull fouling survey in future.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		treatment is not applied such as the areas where non-native species are most likely to occur." QIA does not support Baffinland's apparent suspension of efforts to conduct meaningful hull fouling surveys and comply with PCC 91. This approach will limit understanding of risk related to hull fouling on Project vessels. This is a concern as hull fouling is an important vector for invasive species (e.g., Gollash 2002; Goldsmit et al. 2021), and Baffinland plans to increase its annual ore shipments from 4.2 Mtpa to 18 Mtpa, with the associated increase in wetted hull area and surfaces prone to biofouling.		National Exotic Marine and Estuarine Species Information System. http://invasions.si.edu/nemesis/. Access Date: 29-Jun -2025 Golder (Golder Associates Ltd.) 2021. Mary River Project, 2020 Marine Environmental Effects Monitoring Program (MEEMP), and Aquatic Invasive Species (AIS) Monitoring Program. Prepared for Baffinland Iron Miners Corp., Oaskville, ON, 18 August 2021. 1581 pp. Goldsmit, J., McKindsey, C.W., Stewart, D.B. and Howland, K.L. 2021. Screening for high-risk marine invaders in the Hudson Bay Region, Canadian Arctic. Front. Ecol. Evol. 9:627497. doi: 10.3389/fevo.2021.627497 Gollasch, S. 2002. The importance of ship hull fouling as a vector of species introductions into the North Sea. Biofouling, 18:105–121.	References: International Maritime Organization (IMO), 2011. Guidelines for the control and management of ships' biofouling to minimize the transfer of aquatic invasive species. IMO Resolution MEPC.207 (62).
70	**QIA 2024 NIRB MAE#9**	The objective of the 2024 Mary River Project Core Receiving Environment Monitoring Program (CREMP) was to assess potential mine-related impacts on the chemical and biological conditions of aquatic environments near the mine after ten years of operations (PCC 20, p. 124; see also PCC 21 and PCC 48(a). In summarizing trends in the results, Baffinland reported, "Overall, the most significant mine-related influences have been observed within the Sheardown Lake System, where most watercourses/waterbodies assessed in the CREMP have shown some degree of mine-related influence. Links between mining activities within the Sheardown Lake System and the observed changes have been identified, and corresponding mitigation measures and recommendations continue." (PCC 20, p. 124). In Sheardown Lake NW "the relative proportion of Chironomidae at the littoral BIC stations (DL0-01-4 and DL0-01-9) was significantly and strongly negatively correlated with both sedimentation rate and accumulation thickness estimates..." (App. G.4.2, s. 3.4.1, p. 30). Chironomid larvae are particularly important prey in the diet of both small and	QIA requests Baffinland: 1) continue collecting sediment trap and dustfall trap samples for chemical analyses and direct comparisons of their constituents, adding TOC to the current suite of analyses, and 2) continue the sediment monitoring program over the long term to improve understanding of factors that influence the benthic invertebrate composition and Arctic char population in Sheardown Lake NW, and provide early warning of Project-related impacts as the mine increases production.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (Main Document) **Section:** 4.6.5 Groundwater & Surface Water, PCC 20 - Explosives **Page:** 123-125 (pdf p. 141-143 of 641) **Section:** 4.6.5 Groundwater & Surface Water, PCC 21 – Aquatic Effects Monitoring Plan and Dustfall Monitoring **Page:** 126128 (pdf p. 144-146 of 641) **Section:** 4.6.7 Freshwater Environment, PCC 48(a) – Freshwater Aquatic Environment – Arctic char **Pages:** 185-187 (pdf p. 203-205 of 641) **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board, Appendix G.4.2 Mary River Project - Lake Sedimentation Monitoring 2023/2024	Baffinland acknowledges the importance of understanding the chemical composition of both sediment trap and dustfall trap samples to report their influence on aquatic ecosystem. As such, Baffinland commits to: • Continuing the collection of sediment trap and dustfall trap samples for chemical analysis; • Reviewing the need and feasibility to update analytical suite to include Total Organic Carbon (TOC) to help assess potential relationships between sediment characteristics and chironomidae in consultation with third party experts; Baffinland agrees that the Lake Sediment Monitoring Program is an important component of the Core Receiving Environment Monitoring Program (CREMP). In support of QIA's recommendation, Baffinland will: • Continue the sediment monitoring program; • Maintain a focus on understanding the drivers of benthic invertebrate community change, with particular attention to functional feeding groups such as chironomids, and their role in supporting Arctic char; • Use the results to inform adaptive management and ensure mitigation measures remain responsive to observed environmental change.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		large Arctic char in Baffin Island freshwater systems in July and August (Stewart and Bernier 1988a, b). So, as Baffinland noted, a shift in the benthic invertebrate composition (BIC) that reduces chironomid availability could negatively affect juvenile growth, reproduction, and overall survival of Arctic char. In the profundal zone of Sheardown Lake NW "...results of the correlation analysis for DL0-01-2 (BIC) and DEEP-1 (sediment trap) stations indicated that, during the open water season and over the mine operational period (2015 to 2024), benthic invertebrate densities were significantly and strongly negatively correlated with sedimentation rate, whereas Simpson's Evenness exhibited a strong positive correlation with sedimentation rate (Table 3.2, Appendix Table C.1, Appendix Figure C.5)" (App. G.4.2, s. 3.4.2, p. 33). And, "the relative proportions of the collector-gatherer FFG [functional feeding group] were significantly and strongly negatively correlated with the sedimentation rate, whereas the relative proportions of the filterer FFG showed a similar (i.e., strong, negative) significant correlation with sediment accumulation thickness estimates (Table 3.2, Appendix Table C.1, Appendix Figures C.5 to C.8)." (p. 35). These results suggest "that as sedimentation rate/accumulation estimates increase, the relative abundance of these FFGs (i.e., filterers and collector-gatherers) decreases." (p. 35) These ecological shifts are a concern given Baffinland's plans to increase ore production from 4.2 Mtpa to 18 Mtpa. Baffinland argues that the "sedimentation rates and accumulation thicknesses were below the Low Action TARP thresholds and FEIS predictions in 2024, and do not appear to be affecting the total benthic invertebrate densities in Sheardown Lake NW" (App. G.4.2, s. 3.4.1, p. 33). However, the TARP thresholds were not developed based on Project-generated sediment or benthic freshwater invertebrates. and changes in important prey density—particularly chironomids, are likely more important than changes in total benthic invertebrate density. The benthic invertebrate program is also point-in-time, not spread throughout the open water season. These information gaps create uncertainty regarding the overall effects of increasing sediment accumulation thicknesses. Further monitoring is needed to enable direct comparisons of the chemical components of sediment trap and dustfall		**Section:** 3.4.1 Littoral Zone **Pages:** 30 to 33 (pdf p. 36 to 39 of 120) **Section:** 3.4.2 Profundal Zone **Pages:** 33 to 35 (pdf p. 38 to 40 of 119) Stewart, D.B., and Bernier, L.M.J. 1988a. An aquatic resource survey of southern Baffin Island, Northwest Territories. Lands Directorate of Stewart, D.B., and Bernier, L.M.J. 1988a. An aquatic resource survey o southern Baffin Island, Northwest Territories. Lands Directorate of Stewart, D.B., and Bernier, L.M.J. 1988a. An aquatic resource survey of southern Baffin Island, Northwest Territories. Lands Directorate of Environment Canada and Northern Environment Branch of Indian and Northern Affairs Canada, Background Report 5: 121 p. + map. Stewart, D.B., and Bernier, L.M.J. 1988b. An aquatic resource survey of central Baffin Island, Northwest Territories. Lands Directorate of Environment Canada and Department of Fisheries and Oceans, Background Report 8: 129 p. + map.	Baffinland is committed to transparent reporting and continuous improvement of its environmental monitoring programs in alignment with Inuit values and ecological stewardship goals.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		trap samples and better understand how they are related (App. G.4.2, s.3.4.1, p. 30). Only one year of sediment trap chemistry is currently available for comparison. Total organic carbon (TOC) should be added to the suite of analyses to better understand its relationship to relative abundance of chironomids (s. 3.4.1, p. 32 footnote 20). The Lake Sediment Monitoring Program is an important tool for gaining understanding of factors that influence the benthic invertebrate composition and Arctic char in Sheardown Lake NW. It should be continued over the long term to provide early warning of Project-related impacts as the mine increases production.			
71	QIA 2024 NIRB MAE#10	"On January 19, 2024, DFO issued a Letter of Advice (LOA) for Baffinland's Tote Road Culvert Remediation proposal to implement a permanent crossing solution for ten (10) corrugated steel pipe (CSP) crossings along the Tote Road (DFO, 2024)." (2023 QIA NWB ARO, s.7.3.8, p. 36). "In parallel with the issuance of the LOA, DFO issued a new Correction Measure order on February 5, 2024 requiring all 20 previously identified culverts to be remediated and to be supported by new sediment and erosion control and environmental monitoring plans." (2024 QIA NWB ARO, s.2.4, p. 17). This work is important to ensure the unobstructed passage of juvenile Arctic char between their wintering habitats downstream of the Tote Road and summering habitats upstream of the Tote Road. It is pertinent to water infrastructure (PCC 16 and PCC 19) and the freshwater environment (PCC 45 and PCC 47). In February to May 2024, prior to the spring freshet, seven (7) of the ten (10) culvert crossings identified in the DFO LOA were removed and rebuilt (BG-04, CV-001, CV-057, CV-059, CV-102, CV-106, CV-216; App. C.1.1, s. 6, p. 22). This work was complicated by the presence of permafrost and ice lenses (App. G.2.8, s. 1.1, p. 2). Following the spring freshet three (3) of these crossings (CV-102, Cv-106, CV-216) were found to have deficiencies and require further work related to settlement (CV-106 and CV-216) and sub-surface seepage (CV-102) (2024 QIA NWB ARO, s. 10.1.4, p. 67; App. C.1.1, s. 5.3, p. 20). One culvert (CV-216) was identified as a priority for re-construction in 2025, to improve fish passage and re-establish road integrity at the crossing. Between 21 and 24 September, overland flooding from an extreme rainfall event damaged six (6) culvert crossings, one (1) of which (CV-049) was completely washed out (App. G.2.8, Part 6, App. C, pdf p. 12 of 31). These were repaired in the	QIA requests Baffinland: • provide an update by the end of September 2025 on the remediation status of the culvert crossings that are being re-designed by DFO and Baffinland, and another update by the end of March 2026 on progress prior to the 2026 freshet, and • provide information on whether in situ water velocities in the newly installed culverts are as designed QIA recommends Baffinland: • complete Tote Road culvert remediation prior to the 2026 freshet to ensure unobstructed fish passage by juvenile Arctic char, • continue to assess whether the culvert crossings offer safe and unobstructed passage upstream in spring and downstream in fall for a range of Arctic char year classes, and • provide its annual culvert fish passage study in the documentation for reviews of both the QIA NWB Annual Report for Operations and NIRB Annual Report.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board (Main Doc) **Section:** 4.6.4 Hydrology and Hydrogeology, PCC 16 Water Infrastructure **Pages:** 103-106 (pdf p. 122-124 of 64) **Section:** 4.6.4 Hydrology and Hydrogeology, PCC 19 Water Infrastructure Monitoring **Pages:** 116-119 (pdf. p. 134-137 of 641) **Section:** 4.6.7 Freshwater Environment, PCC 45 General **Pages:** 177-179. (pdf p. 195-297 of 641) **Section:** 4.6.7 Freshwater Environment, PCC 47 Watercourses **Pages:** 182-183 (pdf p. 200-201 of 641) **Document Name**: Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board, App. G.2.8 Tote Road Fish Habitat Monitoring (7 Parts) **Section:** Part 1, s. 1.1 Mary River Project **Page:** 2 (pdf p. 6 of 135) **Section:** Part 1, s. 3.3 **Page:** 7 (pdf p. 11 of 135) **Section:** Part 1, Table 3, pdf p. 134-135 continued in Part 2, pdf p. 1-2 **Section:** Part 2, Table 4, pdf **Page:** 3-7 of 73 **Section:** Part 6, App. C **Page:** 2 (pdf p. 12 of 31). **Document Name:** Baffinland Iron Mines 2024 Annual Report to QIA and	Baffinland appreciates the QIA's recognition of the successful culvert remediation completed to date. Baffinland notes that this comment contains references to Corrective Measures Order (CMO) culverts, the North/South Fish Habitat Assessment, and the September rainfall event, which involve three (3) separate scopes. Baffinland would like to clarify that the re-construction of culvert crossings compromised by the September 2024 rainfall event (including CV-049), was an emergency repair measure taken to re-instate road travel between the Mary River and Milne Port sites. This crossing is not included in the DFO CMO and, therefore, its emergency re-construction is not comparable to the CMO culverts remediation project with respect to time to complete, complexity, or prioritization. In 2025, Baffinland has worked with Stantec to obtain site specific information including geotechnical and hydrological investigations on the Tote Road at identified crossings planned for remediations. Analysis of data is currently on going and will support the development of potential engineered designs for the crossings. Further updates on the culvert upgrades for the priority crossings associated with the CMO was submitted to DFO under the Tote Road Crossing Gap Closure Plan in June. The report includes a summary of mitigation measures to date and a description of the current and future approaches to close information gaps for the future design of a permanent crossing plan. Baffinland continues to work with DFO on the implementation of the plan. The annual Tote Road Fish Habitat Monitoring program continued in 2025 and will the report will be included within nest years annual reporting cycle. Tote Road CMO culvert remediation is a priority to complete; however, due to the complexity of the re-construction requires the re-evaluation of failed designs and addressing past results in future remediation. It can be anticipated that some variation in catch total will occur year over year. Scheduling of the assessment during freshet conditions is not possible due to high

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		following weeks. Baffinland is working with DFO to re-evaluate geotechnical work and engineering for the remaining culvert crossings based on lessons learned from the 2024 construction program (App. C.1.1, s. 6, p. 22). Following culvert installation Baffinland conducted environmental monitoring at each crossing to assess fish passage during the open water season and identify issues requiring mitigation (App. C.1.1, s. 5.2, p. 19). Forty-nine (49) fish-bearing Tote Road stream crossings were assessed between 11 and 16 July 2024 (App. G.2.8, Part 1, s. 3.3, p. 7). The height of any perches and flow velocities and depths inside the inflow and outflow were measured for each culvert. Catch totals that were higher in 2024 than in previous years at many crossings were attributed to timing the survey when water velocities were lower and water temperatures higher (see also p. 9). The catch difference raises questions about the pros and cons of sampling earlier or later in the spring (i.e., during or following the peak freshet). It suggests there may be advantages to having greater flexibility in the timing of culvert sampling, to ensure comparability and/or optimize the catches. In the spring of 2024, char were not captured or observed at six crossing sites (CV-115, CV-128a, CV-211, CV-212, CV-030, and BG-03), or upstream of 12 others (i.e., CV-114, CV-106, CV-104, CV-078, CV-061b, CV-040, CV-215, CV-021, CV-186, CV-187, and BG-33) (App. G.2.8, Part 1, s. 3.3, p. 8). Some of these absences are due to potential fish passage issues (CV-114, CV-061b, BG-33, CV-215, and CV-186). Perching of culvert crossings remains a common problem, the flow velocity in some culverts exceeded 1 m/s, and sediment deposition and sub-surface flow were observed that may also limit fish passage (App. G.2.8, Part 1, Table 3, pdf p. 134-135 continued in Part 2, pdf p. 1-2). Samples sizes of fish caught upstream and downstream of the culvert crossings are sometimes low or quite different (App. G.2.8, Part 2, Table 4, pdf p. 3-7 of 73). This can make it more difficult to assess whether a culvert is limiting upstream passage of younger year class(es) of Arctic char. Has Baffinland compared the length frequency distribution of all the upstream samples collected over time at a particular crossing with those collected downstream to see how they overlap in terms of fish size and age (e.g., CV-		NWB on Operations (2024 QIA NWB ARO) **Section:** 2.4 **Pages:** 17 (pdf p. 36 of 94) **Section:** 10.1.4 **Pages**: 67 (pdf p. 86 of 94**)** **Document Name**: Baffinland Iron Mines 2024 Annual Report to QIA and NWB on Operations, Appendix C.1.1 Construction Summary Report Round CSP Culverts **Section:** 5.2 **Page:** 19 (pdf p. 29 of 38) **Section:** 5.3 **Page:** 20 (pdf p. 30 of 38) **Section:** 6 **Page:** 22 (pdf p. 32 of 38) **Document Name:** Baffinland Iron Mines 2023 Annual Report to QIA and NWB for Operations (2023 QIA NWB ARO) **Section:** 7.3.8 **Page:** 36 (62 of 90)	flows that are unsafe for personnel to enter the watercourse. Also, YOY do not migrate upstream until after freshet, during lower/normal flow levels, as they cannot swim against the increased water velocities of peak freshet. Length frequency distribution for arctic char captured during spring 2024 surveys of fish-bearing sites is provided in Figure 2 of the 2024 Tote Road Fish Habitat Monitoring Annual Report, and fork length comparison to previous years is discussed in Section 3.3 Fish Use Assessments.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		111, CV-099, CV-079, CV-072, CV-057, BG-24, CV-225, BG-01)? Despite ongoing concern regarding fish passage and delays in cover crossing remediation, QIA recognizes Baffinland's 2024 culvert replacement and remediation work as a positive development, as is the cooperation between DFO and Baffinland to improve culvert designs (App. C.1.1, s. 6, p. 22). QIA looks forward to completion of the remaining thirteen (13) culvert installations and hopes these efforts and ongoing monitoring and remediation will solve the fish passage issues.			
72	**QIA 2024 NIRB MAE#11**	Baffinland states that "Baffinland is continuing to work with DFO to address fish passage issues along the Tote Road…In January 2024, DFO issued a Letter of Advice for Baffinland's Tote Road Culvert Remediation proposal to implement a permanent crossing solution for 10 corrugated steel pipe crossings along the Tote Road" (P. 123). Further, post-construction monitoring of culverts along the Tote Road in 2024 identified "deficiencies at select crossings CV-106, CV-216) post-freshet conditions" (P. 135), and that further engineering work was to be conducted to amend these deficiencies. It was unclear if these deficiencies were amended before the 2025 freshet.	Baffinland should clarify whether deficiencies at Tote Road crossings CV-106 and CV-216 had been amended prior to 2025 freshet.	2024 NIRB Annual Report, Baffinland Iron Mines, 2024 Annual Report to the Nunavut Impact Review Board. May 30, 2025. Project Certificate Term and Condition No. 16 and 17, P. 122-132	Engineered amendments of deficiencies at CV-106 and CV-216 are pending engineered re-designs and their review by DFO.
SOCIOECONOMIC ENVIRONMENT					
73	**QIA 2024 NIRB SE#1**	PC Condition 129 states, "The Proponent is strongly encouraged to engage in the work of the Qikiqtaaluk Socio-Economic Monitoring Committee (QSEMC) along with other agencies and affected communities, and it should endeavor to identify areas of mutual interest and priorities for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the North Baffin region as a whole." The QSEMC did not meet in 2024 due to scheduling constraints, but the Mary River Socio-Economic Monitoring Working Group (SEMWG), a sub-committee of the QSEMC, did meet via teleconference on November 15, 2024. Topics included the revised Terms of Reference, the 2023 Socio-Economic Monitoring Report, and updates from GN, QIA, and CIRNAC. However, the Inuit Employee Survey was not administered in 2024, and no alternate mechanism was	QIA requests Baffinland provide additional detail on why the survey was not administered, and how Inuit perspectives were considered in the absence of the 2024 Employee Survey, such as alternative measures of input or feedback. QIA asks for further clarification as to how socio-economic effects were reviewed during the SEMWG meeting. QIA also requests that Baffinland continue to support re-engagement of the full QSEMC and resume survey activities to inform future evaluations.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.1, PC Condition 129 **Page:** 426 to 429 (PDF p. 444 to 447 of 641)	Baffinland made a decision not to administer the survey in 2024 but is committed to administering the survey in 2025. Alternative measures were not taken to capture the same or similar information that the survey captures. Consequently, this data was not included in the 2024 SEMR. Baffinland would like to note that QIA attends the SEMWG and has access to the materials and notes, including the discussion that occurred as they participated in the 2024 meeting. As QIA knows and understands the QSEMC is organized and chaired by the Government of Nunavut. Baffinland not only supports the QSEMC, but has been engaged with the GN throughout 2024 on topics and discussions they wish to bring forward at the next meeting.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		described to gather Inuit employee feedback or evaluate socio-economic effects across the wider Inuit population during the reporting year 2024 NIRB Annual Report.			
74	**QIA 2024 NIRB SE#2**	PC Condition 130 states, "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." Baffinland reports that it continues to engage with the QSEMC and SEMWG on the Project's socio-economic monitoring program. A revised Terms of Reference for the SEMWG was completed in 2024 and discussions were held on a variety of topics, including the 2023 Socio-Economic Monitoring Report and priorities for 2025.	Baffinland has not addressed our earlier request, so QIA re-iterates the request that Baffinland continue to support SEMWG activities and clarify whether additional, smaller socio-economic working groups will be established to address specific regional or thematic monitoring needs, consistent with the PC. QIA would like to further understand how varying Inuit demographics will be represented across the SEMWG.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.1, PC Condition 130 **Page:** 430 to 431 (PDF p. 448 to 449 of 641)	Baffinland has addressed this in previous IR submissions. Baffinland is not considering establishing smaller socio-economic working groups at this time because we continue to engage with the QSEMC and SEMWG on socio-economic topics and as stated previously, through regular community engagements and committees that operate under the Inuit Impact and Benefit Agreement (IIBA). Baffinland suggests that the QIA brings specific monitoring requests to the twice-annual SEMWG meetings such that they can be discussed in the context of the SEMP
75	**QIA 2024 NIRB SE#3**	PC Condition 131 states, "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." Baffinland continues to rely on outdated public datasets (2016–2019) and internal HR surveys for migration-related insights. No partnerships with Government of Nunavut or other agencies were noted to improve access to upto-date migration data.	QIA requests Baffinland seek updated, reliable sources of demographic data or establish consistent partnerships to access this information, to support more current and meaningful assessment of Project impacts on migration. This is a request that was made in the previous year. QIA requests that Baffinland examine the updated 2021 Statistics Canada demographic information, and make specific requests to Statistics Canada if data suppression is limiting publicly available information. Baffinland may also seek alternative data sources from Hamlet Organizations or the GN to supplement missing data.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.1, PC Condition 131 **Page:** 432 to 433 (PDF p. 450 to 451 of 641)	Baffinland continues to provide demographic change information in its annual socio-economic monitoring report and presents these data for review and discussion with the QSEMC. Since the publication of the 2024 SEMR and the Annual Report to the Nunavut Impact Review Board (NIRB), updated data on annual migration estimates up to July 2024 have been published. This data will be included in the 2025 SEMR and Annual Report to the NIRB. Baffinland will continue to reference other non-government sources of information to supplement this data, including the 2025 Inuit Employment Survey results, BCLO migration survey and Baffinland Human Resource data. Baffinland encourages QIA to raise this at the next SEMWG to see if the group, of which QIA is a member, have other potential data sources for this indicator.
76	**QIA 2024 NIRB SE#4**	PC Condition 132 states, "The Proponent is encouraged to partner with other agencies such as Hamlet organizations in the North Baffin region, the Municipal Training Organization, and the Government of Nunavut in order to adapt preexisting, or to develop new programs which encourage Inuit to continue living in their home communities while seeking ongoing and progressive training and development. Programs may include driver training programs offered within Hamlets, providing upgraded equipment to communities for use in municipal works, providing incentives for small businesses to remain operating out of their community of origin, or supplementing existing recreational facilities and programming in North Baffin communities."	Request QIA requests Baffinland provide further detail on whether any of the reported training programs were delivered in partnership with Nunavut Arctic College, whether they were mine-related or led to recognized credentials, and how Inuit input or employment trends informed program design. So, we can understand the scope of Baffinland's activities, QIA requests clarification on how many training program spaces are made available, how many Inuit enroll, how many Inuit complete the program, and how many graduates are hired into paid employment related to their training.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.1, PC Condition 132 **Page:** 434 to 435 (PDF p. 452 to 453 of 641)	Baffinland maintains ongoing engagement with Nunavut Arctic College (NAC) at the community level to incorporate training offerings to match Operational workforce requirements. As part of the discussions with Inuit employees during their Career Development Plan, Baffinland reviews options for those employees who wish to pursue further studies, such as apprenticeship program. For those requiring educational support, we encourage and support participants to apply to Nunavut Arctic College programs. These programs of interest are the Adult Basic Education (ABE) and Pathway to Adult Secondary School (PASS) programs, or the Pre-trades program which can all be taken while living in their respective community. When advised that a pre-trades program is being delivered in a community, Baffinland engages

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		Baffinland provided a list of training activities (e.g., Work Ready Program sessions), but did not specify if Nunavut Arctic College was involved in delivering any of these or clarify what portion of the training was mine-related or credentialed. There is insufficient information on how programs were adapted in response to Inuit feedback or employment needs.			with its employees from the respective community and socializes and promotes the training through our Employment and Training Facebook page. As part of the 5-day Work Ready Program training, two modules are specifically mine-related: an Introduction to Mining and Preparing for Fly-In, Fly-Out. The Work Ready Program is reviewed for improvements jointly with QIA and in the last two years by the collection of comments from the participants, which have resulted in clearer content and better adapted activities which respond to the needs of our participants. Work Ready Program serves as a pre-requisite for other training streams and employment opportunities, graduates of the program are prioritized for hiring.
77	**QIA 2024 NIRB SE#5**	PC Condition 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. Baffinland confirms that the Inuit Employee Survey was not administered in 2024. While previous years' data are summarized, no alternative method for collecting 2024 data or timeline for reinitiating the survey is provided.	QIA requests Baffinland confirm its plans for reintroducing the Inuit Employee Survey in 2025, and provide a clear explanation how the absence of 2024 data was considered in the monitoring and reporting of demographic trends, including potential implications for housing status, migration intentions, and workforce retention analysis. QIA also request clarification on whether any alternative methods or interim data collection strategies were used to offset the data gap and ensure continue to in demographic monitoring.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.1, PC Condition 133 **Page:** 436 to 440 (PDF p. 454 to 458 of 641)	Baffinland confirms that it plans to administer the Inuit Employee Survey in 2025. The absence of 2024 data from the Inuit Employee Survey was considered throughout the development of the 2024 Socio-Economic Monitoring Report (SEMR), including through the addition of tables identifying data gaps at the beginning of each report section to set the context for data reporting. However, the absence of 2024 data was primarily considered in the description of monitoring results in Appendix E of the SEMR, as lack of data affected the certainty of monitoring conclusions. This consideration is reflected in the 2024 Annual Report to the NIRB where applicable, As in previous years, Baffinland conducted a review of public sources on qualitative and quantitative topics relevant to Socio-Economic Monitoring efforts. For 2024, focused effort was made to search for public sources which may provide information that would normally be collected through the Inuit Employee Survey. No alternative methods or strategies were employed to gather data directly from Baffinland's workforce for the same reasons that the Inuit Employee Survey was not conducted.
78	**QIA 2024 NIRB SE#6**	PC Condition 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.	QIA re-iterates the request that Baffinland report employment by headcount, disaggregated by region of origin, and provide a rationale for not including this data if it remains unavailable. Please also confirm that the contractor headcount	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.1, PC Condition No. 134 **Page:** 441 to 445 (PDF p. 459 to 463 of 641)	Baffinland provides employment summaries through full-time equivalent (FTE) and headcount tools in its annual reports. As per prior year submission and explanation, Mining operators across Nunavut use FTEs when reporting on employment numbers. Headcount, in contrast, provides a count of the number of people employed at a given time and therefore is not indicative of actual hours worked by employees. An FTE is used to describe the number of workers employed at Mary River. One FTE represents 2,184 hours, which is the approximate time one person works on a full-time basis for a year on a three-

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		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. d. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire." Baffinland continues to report on employment using Full-Time Equivalent (FTE) values rather than individual headcount, and no regional breakdown of headcount is provided. Further QIA is concerned that Baffinland has not reported accurate information, notably the headcount for Baffinland Contractors in the NIRB Annual Report is different than in the IIBA Implementation Report. This issue has been repeatedly raised in previous years' submissions yet remains unaddressed.	numbers provided in the report are accurate. Baffinland continues to not directly respond to the request.		week in/three-week out rotational schedule. Reporting on FTEs represents the number of people who would work at the mine site during a year if every person worked the full year in a full-time position. Baffinland confirms that the headcount numbers provided in the report are accurate. Both the 2024 Socio-Economic Monitoring Report (Appendix D; pg. 78) and IIBA Implementation Report (pg. 16) reported 794 contractors by headcount (Inuit and non-Inuit).
79	**QIA 2024 NIRB SE#7**	PC Condition 135 states, "The Proponent is encouraged to consider offering additional options for work/study programs available to Project employees (in addition to study programs at project sites that would be offered to employees when off-shift)." Baffinland stated, "The Q-STEP team continues to seek additional third party funding to support the continuation of apprenticeship training and offer other opportunities at Baffinland. Baffinland will continue to examine programs offered in other jurisdictions, including those offered by other mining companies operating in similar conditions, to determine their potential suitability for offer at the Mary River Project." QIA agrees with Baffinland's assessment of compliance.	QIA requests that meaningful and transferable skills also include completing schooling or high school equivalency, which can promote transferable skills. QIA again requests Baffinland continue to provide training programs and information on any additional offerings for work/study programs available, including whether participants were hired by the company.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.2, PC Condition No. 135 **Page**: 446 to 448 (PDF p. 464 to 466 of 641)	As part of the discussions with Inuit employees during their Career Development Plan, Baffinland reviews options for those employees who wish to pursue further studies, such as apprenticeship program. For those requiring educational support, we encourage and support participants to apply to Nunavut Arctic College programs. These programs of interest are the Adult Basic Education (ABE) and Pathway to Adult Secondary School (PASS) programs, or the Pre-trades program which can all be taken while living in their respective community. When advised that a pre-trades program is being delivered in a community, Baffinland engages with its employees from the respective community and socializes and promotes the training through our Employment and Training Facebook page. The ABE and PASS programs can be done from any location, including work site or from their community. These programs enable existing employees to further develop their skills and knowledge for career progression, in line with their individual Career Development Plans. Also, Baffinland has been using a provider that offers an e-learning catalog which is available for our staff to take training modules, whether they are at work or at home. Based on their job requirements and career development plan objectives,

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					modules have been assigned to our Inuit employees, which are available to complete as continued learning off- rotation.
80	**QIA 2024 NIRB SE#8**	PC Condition 139 states, "Prior to commencing construction, the Proponent is requested to undertake and provide the results of a detailed labour market analysis which provides quantitative predictions of the number of employees that may reasonably need to be sourced from southern Canada and from foreign markets, identifying where applicable, the country of origin for the foreign labour. Within 90 days of the issuance of the Project Certificate, the Proponent is required to submit an updated Labour Market Analysis which considers requirements of the Early Revenue Phase as well as hiring points within Nunavut and outside of the North Baffin region and RSA." Baffinland stated, "The Labour Market Analysis review is conducted triannually." QIA does not agree with Baffinland's assessment of compliance. Baffinland does not provide the information required by this PC Condition. Baffinland's Labour Market Analysis does not provide useful information to come to any clear conclusions. Rather, Baffinland expresses the need to source skilled employees from Southern Canada and foreign countries. Without providing the requested quantitative number of these hires, there is not enough information to come to this conclusion. Baffinland also does not provide which country, if any, from which they hire foreign workers. QIA is also concerned that there may be important differences between skilled position categories (skilled/unskilled labour) that has not been shown here, but could result in important measures to encourage Nunavut hiring.	QIA requests Baffinland report on the quantitative number of southern/foreign employees, the skilled level of these positions, as well as directly address the point of hiring foreign labour by indicating the number of employees sourced from foreign markets and the country of origin of foreign labour. QIA notes that Baffinland did not address this same request that QIA made last year.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section**: 4.7.2, PC Condition No. 139 **Page:** 458 to 460 (PDF p. 476 to 478 of 641)	All employees from territory as well as southern employees are all reported and is captured in TC no. 134. As required in the SEMP, Baffinland reports annually on the quantitative number of employees from other Canadian provinces and territories, as well as international employees, by Full Time Equivalent (FTEs) as required by PC Condition 134. Baffinland also reports on skill level by Inuit and non-Inuit employees. Baffinland continues to encourage QIA to bring requests on socio-economic monitoring program data to the Project-specific SEMWG.
81	**QIA 2024 NIRB SE#9**	PC Condition 149 states, "Prior to the commencement of operations, the Proponent is required to undertake an analysis of the risk of temporary mine closure, giving consideration to how communities in the North Baffin region may be affected by temporary and permanent closure of the mine, including economic, social and cultural effects and taking into consideration the potential drop in employment between the construction and operations phases of the Project." Baffinland stated, "Due to experiencing operational uncertainty and the Project being assessed as being in a 'moderate to high' risk profile for temporary closure in	QIA requests Baffinland indicate the risk profile for temporary closure in 2024 and provide details about the Mine Closure Working Group in the NIRB Annual Report. QIA notes that Baffinland has not directly addressed this same request that QIA provided last year.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.4, PC Condition No. 149 **Page:** 489 to 490 (PDF p. 507 to 508 of 641)	The risk profile for temporary closure in 2024 is low. Baffinland is committed to continuing and expanding its operations, as indicated through continued efforts towards development of the Steensby Component. Baffinland had previously proposed to establish the Mine Closure Working Group to incorporate considerations for post-closure land use of the Project site. Based on the current operations and feedback from stakeholders, Baffinland is proposing to establish a Mine Closure Technical Advisory Group (MCTAG), which would provide opportunities to integrate feedback from relevant members of ISP committees and obtain input from Inuit on closure considerations and concerns directly from Inuit.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		2022, Baffinland implemented a variety of mitigation measures to promote the wellbeing employees in the event of temporary closure." Baffinland stated, "In the case of temporary mine closure, Baffinland's socioeconomic goal is to mitigate unanticipated losses in Project economic benefits for local communities by addressing adverse effects through relevant employee, family, and community programs and support. When the Project is approaching closure, Baffinland will work with government and community stakeholders to implement programs to support employee transition. Baffinland is also committed to working with the QIA to develop a Mine Closure Working Group that will include members from local communities and will address biophysical and socio-economic issues related to temporary and permanent site closure." QIA notes that the risk profile for temporary closure in 2024 was not provided by Baffinland.			The role of the MCTAG will be to facilitate the integration of community representation and technical expertise by drawing on Inuit knowledge, and arctic experience for similar mining operations. It would also provide opportunities to discuss alternative uses for decommissioned facilities into the reclamation options for various Project components. Baffinland expects an early priority for the MCTAG will be to provide technical input in the reclamation research activities applicable to the Project to help address identified uncertainties and review existing action levels. Before the initial MCTAG meeting, Baffinland proposes to develop a mandate for the group, in collaboration with QIA. The mandate will include details on group membership and stakeholder priority for topics to be discussed. Baffinland will undertake further discussions with QIA on the timing for establishment of the MCTAG. Further information on the MCTAG is provided in the Interim Closure and Reclamation Plan, Rev. 6.
82	**QIA 2024 NIRB SE#10**	PC Condition 150 states, "The proponent will ensure the following: a. The Proponent will maintain, where possible, a minimum flying altitude of 2,000 feet over the park, except for approaches to land, take-off or for safety reasons b. The Proponent will ensure that certification of noise compliance is current, where compliance is applicable c. For the purpose of briefing Park visitors, the Proponent will provide Parks Canada (1) prior to commencing the shipping season, with planned daily shipping schedules, and (2) annually, with air traffic information, and (3) to provide updates when significant variations from these are expected d. The Proponent is strongly encouraged to provide due consideration to wilderness experience during its operations in the open water season, especially during the month of August which is typically a time of high use by sea kayakers." QIA does not agree with Baffinland's assessment of compliance. Baffinland does not provide the information detailing efforts to ensure current noise compliance certification, planned daily shipping schedules, annual air	QIA requests Baffinland provide all required information identified in PC Condition 150. QIA requests Baffinland to include all required information in future Annual Reports. QIA notes that this is the same request as last year.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.4, PC Condition No. 150 **Page:** 491 to 493 (PDF p. 509 to 511 of 641)	This comment was responded to in 2023 IR comments. In addition, there were no flights into the Sirmilik National Park in 2024. Baffinland shares a rolling 10-day shipping schedule with interested parties and tags Parks Canada in its shipping posts, daily.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		traffic information, and considerations to wilderness experience during its operations in open water season.			
83	QIA 2024 NIRB SE#11	PC Condition 151 states, "The Proponent is encouraged to investigate measures and programs designed to assist Project employees with homeownership or access to affordable housing options." Baffinland stated, "Baffinland regularly administers an Inuit Employee Survey, which collects data on employee housing status and other topics. Baffinland administered the most recent survey from October 23 to December 1, 2023. Baffinland occasionally provides additional support to Project employees to support homeownership. In 2024, Baffinland continued to provide basic financial literacy training, which covers topics such as budgeting that considers rent/housing as well as loans, through the Work Ready Program (WRP)." Baffinland stated, "Results from the Inuit Employee Survey indicate a large proportion of respondents are unaware of how to go about purchasing a house as well as are unaware of housing-related programs. Baffinland recognizes these potential barriers to homeownership by Inuit employees and contractors. In efforts to address these potential barriers, Baffinland looks forward to engaging with the GN and the NHC through the MoU. Going forward, and if agreed upon with the GN, Baffinland will report on successes and achievements under the MoU in subsequent annual reports." QIA believes the information provided to be insufficient. Baffinland has not implemented measures to assist access to affordable housing for their employees, despite statistics demonstrating a lack of knowledge from their employees on the topic.	QIA requests Baffinland consider additional programs or measures to facilitate homeownership or access to affordable housing. QIA requests that Baffinland directly address housing supply and financial/housing ownership literacy and consider other successful housing initiatives led by the industry in other parts of Nunavut: https://www.premier.gov.nu.ca/en/new-modular-homes-arrive-kivalliq-regionthrough-agnico-eagle-mines-partnership QIA notes that Baffinland has not provided a direct response to this same request as last year.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.4, PC Condition No. 151 **Page**: 494 to 496 (PDF p. 512 to 514 of 641)	Baffinland provides basic financial literacy training, which covers topics such as budgeting that considers rent/housing, as well as loans, through the Work Ready Program (WRP). This is a great topic for a future Joint Executive Committee, Employment Committee Meeting.
84	QIA 2024 NIRB SE#12	PC Condition 153 states, "The Proponent is 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." QIA agrees with Baffinland's assessment of compliance.	QIA requests Baffinland provide information about access to mental health counselling for employees who are not on site. Services should be offered in both English and Inuktitut.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.5, PC Condition No. 153 **Page:** 502 to 504 (PDF p. 520 to 522 of 641)	Baffinland's benefit plan includes an Employee and Family Assistance Program, which offers employees (both on- and off-site) and their dependents professional short-term counselling as well as topic-specific life coaching on an as-needed basis. Pursuant to the IIBA, Baffinland provides Inuit employees with access to professional career counselling and professional counselling for personal issues on an as-needed basis. Such services are available from Inuktitut-speaking counsellors through the Ilisaqsivik Society, and are available to Inuit employees, both on an off site.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
85	**QIA 2024 NIRB SE#13**	PC Condition 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." Baffinland stated, "Due to logistical challenges in convening of the QSEMC, committee members did not meet in 2024. However, the MRSEMWG convened in 2024, which included discussion of monitoring results from the 2023 Socio-Economic Monitoring Report, data limitations, and feedback on how to address challenges posed by data limitations. Baffinland is committed to continuing discussions with the QSEMC and MRSEMWG on how to improve monitoring data." Further, only graduation rates, drug violations, and health care visits were reported on in the 2024 report related to the information referenced in this PC. Neither the body of the Annual Report, nor the SE Monitoring report (Appendix G.7.1) provides details on gambling or marital problems, or rates of teen pregnancy as per PC 154, despite these issues being raised in the QSEMC. While rates of communicable diseases are reported on using dated 2008 and 2016 figures only.	QIA requests Baffinland provide the specific information to monitor indirect effects of the project as requested in PC 154, notably gambling, marital problems, and rates of teen pregnancy.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.5, PC Condition No. 154 **Page:** 505 to 507 (PDF p. 523 to 525 of 641)	Baffinland's annual Socio-Economic Monitoring Report is based on the Socio-Economic Monitoring Plan (SEMP), which identifies topics and indicators, based on each Valued Socio-Economic Monitoring Component (VSEC). The SEMP is updated regularly and reviewed by the Project-specific SEMWG, of which QIA is a member. For the topics mentioned, no specific indicators are identified in the SEMP. Typically, this indicates a lack of reliable, consistently updated, or otherwise appropriate data for the indicator(s). Monitoring is therefore supported through qualitative feedback from the QSEMC and community engagement. As noted, the Government of Nunavut was unable to organize a meeting in 2024. Monitoring for indirect effects such as gambling, marital problems and teen pregnancy can be discussed at future QSEMCs.
86	**QIA 2024 NIRB SE#14**	PC Condition 155 states, "The Proponent is strongly 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 as these may become needed." QIA believes the information provided to be insufficient. Baffinland provides information regarding existing mitigation measures to deal with potential cultural conflicts on page 508-509 of the 2024 NIRB Annual Report and updates on these measures for 2023 (not 2024) are provided on page 510. However, Baffinland does not demonstrate any intent to provide NIRB with an updated measures for 2024 as encouraged by the PC Condition.	QIA requests Baffinland describe their intent in providing an updated report on 2024 activities to deal with potential cultural conflict at site. QIA notes that this is the same request as last year, with clarifications added, as Baffinland has not directly addressed the QIA's request.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.5, PC Condition No. 155 **Page:** 508 to 510 (PDF p. 526 to 528 of 641)	Baffinland has mitigation measures in place to encourage on-site cohesion of employees through cultural awareness and social programs. There are no reported cultural conflicts on site.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
87	**QIA 2024 NIRB SE#15**	PC Condition 157 states, "The Proponent should consider providing counseling and access to treatment programs for substance and gambling addictions as well as which address domestic, parenting, and marital issues that affect employees and/or their families." Baffinland stated, "Baffinland will continue to provide employee access to the EFAP and on-site mental health counsellors, on-site Inuit Cultural Advisors, and site physician assistants." QIA agrees with Baffinland's assessment of compliance. However, QIA is interested in understanding how satisfied Inuit employees are with these services and if there are any steps Baffinland can take to improve these services for Inuit employees.	QIA requests Baffinland clarify level of satisfaction Inuit employees have with these services and if there are any steps Baffinland is taking to address concerns.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.5, PC Condition No. 157 **Page:** 514 to 517 (PDF p. 532 to 535 of 641)	Baffinland has seen an increased use and trust building in the on-site counselling and employee wellness services provided to employees. There are no reported concerns with the on-site counselling services nor with Baffinland's Employee and Family Assistance Program (EFAP) available to employees and their families.
88	**QIA 2024 NIRB SE#16**	PC Condition 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." Baffinland stated that it "actively engages the Government of Nunavut through the SEMWG and QSEMC. Baffinland presents indicator performance data relating to pressure on existing health and social services through these working groups. Furthermore, Baffinland engages with the GN through an MOU directly related to health care services with the GN's Department of Health. The development of an additional working group to discuss human health with the Government of Nunavut would be repetitious in nature." QIA disagrees with Baffinland's conclusion.	QIA requests Baffinland develop a Human Health Working Group alongside the Government of Nunavut. QIA notes that this is the same request as last year and has not been directly addressed by Baffinland.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.7.6, PC Condition No. 158 **Page:** 518 to 520 (PDF p. 536 to 538 of 641)	This comment was duly responded to in 2023 IR comments. No further information has been provided by QIA to substantiate the request, therefore Baffinland is not able to respond differently than the answer provided last year.
INUIT KNOWLEDGE, CULTURE, LAND AND RESOURCE USE AND INUIT QAUJIMAJATUQANGIT					
89	**QIA 2024 NIRB CRLU/IQ #1**	The objective of PC Condition 162 is "To ensure the ongoing and consistent involvement of Elders and community members in developing and revising monitoring and mitigation plans" (525).	Baffinland has not addressed QIA's comment. QIA re-iterates the request that (a) Baffinland provide concrete examples from its engagement activities describing how community member and Elder input has influenced or informed Baffinland's	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board Main Body **Section:** 4.7.7, PC Condition 162 & 163 **Page:** 528 to 532 (PDF p. 546 to 550 of 641)	Baffinland and QIA discuss the incorporation of IQ, engagements and participation at multiple meetings throughout the year including the jointly held Annual Project Review Forum and each quarterly bi-lateral meeting between senior management. Baffinland suggests that QIA share details of these meetings with their consultants, which may satisfy QIA consultant questions and avoid future

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		Similar to previous years, Baffinland outlines a number of mechanisms to involve Elders and community members through in-person community meetings in Igloolik, Pond Inlet, and Sanirajak. Engagement took place to gather feedback on Fisheries Act Authorization application for the Steensby Component and SOP2, and facilitated a community gathering. Participation in MEWG and TEWG meetings and end of shipping season meetings took place along with call-in radio shows. As per QIA's comment from previous years, Baffinland has only addressed the first half of this condition and does not provide information on how these engagement mechanisms ensure involvement in developing and revising monitoring and mitigation plans. No information describes the ways these engagements have resulted in updates to plans. There is no evidence provided that describes how Baffinland is meaningfully applying community engagement results in their work. Similarly, QIA reiterates its request that Baffinland provide some basic evaluation data regarding engagement on mitigation and monitoring, including quantitative (e.g., participation metrics) and qualitative (e.g., participant satisfaction) aspects of engagement. This evaluation data would allow to evaluation of trends (currently not filled in on page 530 of the Annual Report) and for identifying ways of improvement engagement.	mitigation or monitoring plans. QIA additionally requests that Baffinland provide some basic evaluation data regarding engagement on the topic of mitigation and monitoring that is both quantitative (e.g., participation metrics) and qualitative (e.g., participant satisfaction).		reiteration of requests that Baffinland has fully explained both in the NIRB forum through previous intervenor comments on the annual report or to PC amendments and exclusively through frequent and on-going bi-lateral discussions.
90	**QIA 2024 NIRB CRLU/IQ #2**	PC Condition 148 reads, "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." Similar to previous annual reports, Baffinland does not provide information on project interactions with harvesting, food security, and dietary habits for the larger Inuit population. Baffinland reports on how Project employment has impacted their employees' families' ability to participate in harvesting and other land-based activities. No information is provided on Project interactions with harvesting activities and opportunities. QIA also recognizes Baffinland's ongoing funding of QIA's Inuit Stewardship Program and its contributions to other	QIA re-iterates our request from previous years that continues to not be addressed. QIA requests that Baffinland provide information Project interactions on food security and harvesting for Inuit.	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board Main Body **Section:** 4.7.4, PC Condition 148 **Page:** 484 to 488 (PDF p. 502 to 506 of 641)	As noted in last year's responses, with QIA working on these components, it is important that Baffinland and QIA do not duplicate efforts and add any unnecessary consultation requirements on Inuit. Baffinland and QIA continue to discuss the ISP, reporting and CRLU at each quarterly bi-lateral meeting. QIA is welcome to discuss specific collaborations within the Mary River Socio-economic Working Group (MRSEWG) or Qikiqtaaluk Socio-Economic Monitoring Committee's meetings (QSEMC) of which QIA is a member.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		programs which support food security in area communities including school lunch programs and community food bank donations.			
91	**QIA 2024 NIRB CRLU/IQ #3**	Baffinland has designed and is implementing terrestrial environment monitoring programs. For several years, QIA has requested that Baffinland describe if and how IQ has informed terrestrial environment monitoring design, analysis and interpretation of results, as well as conclusions. In Baffinland's response to QIA comments respecting the 2021 Annual Monitoring Report, Baffinland identified that "as part of the Phase 2 submission, Baffinland summarized how Inuit Qaujimajatuqangit has been incorporated throughout the project, including monitoring programs" (Baffinland Response to Comments Received for the 2021 Annual Monitoring Report PDF p. 27). This response suggests that IQ has been incorporated into monitoring programs; however, the inclusion of IQ is not evident from the 2022 or 2023 Annual Monitoring Reports. Baffinland provided no response to QIA's comments regarding the inclusion of IQ in 2023. In the 2023 Terrestrial Environment Annual Monitoring Report, Inuit Qaujimajatuqangit is mentioned only two times– 1. "Work completed for the Terrestrial Environment Monitoring Program is guided by Inuit Qaujimajatuqangit and the Terrestrial Environment Mitigation and Monitoring Plan" (Appendix G.5.1, p. 1 of 201), 2. "The HOL survey methods were developed in consultation with the TEWG… and incorporated Inuit Qaujimajatuqangit into strategies for detecting caribou" (Appendix G.5.1, p 160 of 201). In the 2024 Terrestrial Environment Annual Monitoring Report, Inuit Qaujimajatuqangit is mentioned only two times: 1. "The HOL survey methods were developed in consultation with the TEWG… and incorporated Inuit Qaujimajatuqangit into strategies for detecting caribou" (Appendix G.5.1, p 3 of 125). 2. "…Dust Audit Committee's feedback and has gained valuable insights from the Inuit Qaujimajatuqangit and	As requested numerous times in the past, Baffinland is requested to describe in more detail how IQ was used to design terrestrial, marine, and freshwater monitoring programs and in their analysis and interpretation of results. In this description it should be clear how Baffinland meets Inuit expectations re: Ownership, Control, Access and Possession (OCAP).	**Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board **Section:** 4.6.8 Project Certificate Term and Condition No. 49 through 64 **Page:** 188 to 241 (PDF p. 206 to 259 of 641) **Document Name:** Baffinland Iron Mines 2024 Annual Report to the Nunavut Impact Review Board; Appendix G.5.1 **Section:** Appendix A (Table A.1); Section 9.3.1 **Pages:** p. 2; p. 135	Please see response to QIA 2024 NIRB CRLU/IQ#1. Baffinland is committed to continuing dialogue on how IQ can be practically and effectively integrated with our existing robust environmental management systems.

Cmt. #	QIA Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		community knowledge shared to date. (Appendix G.5.1, p 53 of 125). QIA recognizes that IQ has been used to develop and implement monitoring programs; however, this is not described in Baffinland's Annual Monitoring Reports. The Annual Reports uses western scientific references and methods to monitoring. IQ is a valuable component to the development of these programs; more information needs to be provided to evaluate how well IQ has been considered.			

Table A.2: Response to GN Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
SNOW TRACK SURVEYS					
92	**GN #1**	**IDENTIFICATION OF ISSUE** The GN recommended several changes to the Project's snow track survey study design in its review of the Project's 2023 Terrestrial Environment Annual Monitoring Report (GN, 2024). In reviewing the Proponent's 2024 Terrestrial Environmental Annual Monitoring Report, the GN has several outstanding concerns and recommendations that remain unaddressed, which it considers important given the Proponent's reporting of increased caribou presence near the Project. **IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE** The 2024 Terrestrial Environment Annual Monitoring Report provides evidence that caribou presence near the Project may be increasing. For example, caribou were observed during height-of-land (HOL) surveys in 2024 for the first time in over a decade and were also detected by motion-triggered wildlife cameras for the first time since that program began. As noted by the Proponent: "The change in observations in 2024 may suggest caribou numbers are beginning to increase, and more caribou may be seen in the Project footprint in coming years." (Baffinland, 2025b, p. 138) If caribou are indeed starting to have increased interactions with the Project, monitoring programs designed to detect and assess these interactions must be refined to ensure they collect the most useful data possible. The GN recommended several changes to the Project's snow track survey study design in response to the Proponent's 2023 Terrestrial Environmental Annual Monitoring Report (GN, 2024). The GN notes that the Proponent included some changes based on these recommendations in the 2024 Terrestrial Environmental Annual Monitoring Report.	The GN recommends that the Proponent undertake the following activities: 1. Record the distance of each track from the road at the time of first observation. This information should be summarized by species in future annual reports. 2. Present snow track frequency data adjusted for survey effort.	**Terms and Conditions:** 54dii, 58f (Project Certificate No. 005, Amendment 05) • Baffinland Iron Mines Corporation. 2024 Annual Report to the Nunavut Impact Review Board: Appendix G.5.1 – Mary River Project Terrestrial Environment 2024 Annual Monitoring Report. Part 3 (March 2025a). • Baffinland Iron Mines Corporation. 2024 Annual Report to the Nunavut Impact Review Board: Appendix G.5.1 – Mary River Project Terrestrial Environment 2024 Annual Monitoring Report. Part 4 (March 2025b). • Baffinland Iron Mines Corporation. 2023 Annual Report to the Nunavut Impact Review Board: Appendix G.5.1 – Mary River Project Terrestrial Environment 2023 Annual Monitoring Report (March 2024). • Baffinland Iron Mines Corporation. 2022 Annual Report to the Nunavut Impact Review Board: Appendix G.5.1 – Mary River Project Terrestrial Environment 2022 Annual Monitoring Report (April 2023). • Boulanger, J., Kite, R., Campbell, M., Shaw, J., Lee, D., & Atkinson, S. (2024). Estimating the effects of roads on	Baffinland will review the GN's references and recommendations for the snow track survey design.

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		Some of the GN's recommendations have not been adopted by the Proponent and remain outstanding, including on the following topics: <u>Detection Range</u> The Proponent states that the purpose of snow track surveys is to "[m]onitor the patterns of movement and response of caribou and other wildlife to Project-related activities based on their observable tracks in proximity to roadways" (Baffinland, 2025a, p. 121). Section 9.1.1 of 2024 Terrestrial Environmental Annual Monitoring Report outlines the data collected for each animal track observed during surveys. However, the Terrestrial Environmental Annual Monitoring Report does not provide the distance from the road at which each track was first detected. The GN believes that recording this distance would help assess whether the survey's detection range is sufficient to adequately capture species-specific responses to the road. The GN's recommendation is based on the understanding that different species may react to roads at varying distances, potentially linked to body size (Chen and Koprowski, 2019). For example, larger species like caribou may alter their movements in response to roads and traffic at distances ranging from several hundred of metres a few kilometres (e.g., Boulanger et al., 2024; Severson et al., 2023; Smith and Johnson, 2023), whereas smaller organisms, like lemmings, may respond to roads at distances of only a few metres. If the buffer distance that the surveyors are using is too small, the Proponent may not be capturing tracks from caribou and other wildlife that are responding to the road. Instead, they may be only capturing smaller organisms, which would not be achieving the stated objective of the monitoring program. <u>Presentation/Assessment of Interannual Trends</u> Figure 9-3 summarizes the number of tracks observed by species across years. However, the GN notes that the data presented in this figure do not account for variation in survey effort. The exclusion of this information impacts the interpretation of interannual trends. For example, in 2024, the proponent notes that "12 surveys [were] completed		migration: a barren-ground caribou case study. Canadian Journal of Zoology, 102, 476–493. https://doi.org/10.1139/cjz-2023-0121 • Chen, H.L., & Koprowski, J.L. (2019). Can we use body size and road characteristics to anticipate barrier effects of roads in mammals? A meta-analysis. Hystrix: The Italian Journal of Mammalogy, 30(1),1–7. https://doi.org/10.4404/hystrix-00185-2019 • Government of Nunavut. Government of Nunavut Comments on the Mary River Project 2022 Annual Report (July 2024). • Severson, J.P., Vosburgh, T.C., & Johnson, H.E. (2023). Effects of vehicle traffic on space use and road crossings of caribou in the Arctic. Ecological Applications, 33(8): e2923. https://doi.org/10.1002/eap.2923 • Smith, A., & Johnson, C.J. (2023). Why didn't the caribou (Rangifer tarandus groelandicus) cross the winter road?	

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		after recent snowfall between February and November 2024" (Baffinland, 2025a, p. 122). However, the GN notes that in the previous year, the Proponent conducted 6 snow track surveys (Baffinland, 2024) and in 2022, the Proponent conducted only 4 snow track surveys (Baffinland, 2023). Variable survey effort over time may lead to conclusions that appear to show increased or decreased animal presence near the Project, when the variation in data collected is a result of the number of surveys undertaken. Adjusting the data collected for survey effort would be one approach to help account for this variability so that the data are more comparable across years. An absence of data that are comparable across years can lead to conclusions or trends that are not accurate.			
SNOW DUST CONCENTRATION PILOT STUDY					
93	**GN#2**	**IDENTIFICATION OF ISSUE** In response to comments from the GN and the Qikiqtani Inuit Association (QIA) on the 2023 annual report (Baffinland, 2024), the Proponent made several adjustments to the snow sampling study that compares measured snow dust concentrations with the satellite-derived Snow Darkening Index (SDI). In reviewing the 2024 annual report (Baffinland, 2025), the GN notes that these adjustments are beginning to produce meaningful results and encourages the Proponent to continue the study and substantially increase sample sizes. The GN views this study as an essential component for the monitoring and assessment of wildlife responses to the Project. IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE In 2022, the Proponent initiated a pilot study to measure dust concentrations in snow and correlate these with a satellite-derived index of dust concentration referred to as the Snow Darkening Index (SDI). The advantage of directly measuring dust concentrations in snow rather than relating passive sampling dust fall data to the SDI is that, unlike snow dust concentration, passive sampling (and the dust model used in the Project's FEIS) does not account for dust that is re-distributed by wind after it has initially fallen to the ground. Thus, passive sampling (and modelling) will tend to underestimate the true spatial extent of dust distribution from the Project.	The GN requests that the Proponent continue the snow study with the goal of increasing the snow dust concentration sample size at least 10-fold for comparison with satellite imagery (Landsat and Sentinel).	**Terms and Conditions:** 36, 50, 54d, 58c, 187, and 188 (Project Certificate No. 005, Amendment 05). • Baffinland Iron Mines Corporation. Appendix G.5.1 – Mary River Project Terrestrial Environment 2023 Annual Monitoring Report (March 2024). • Baffinland Iron Mines Corporation. Appendix G.5.1 – Mary River Project Terrestrial Environment 2024 Annual Monitoring Report (March 2025). • Government of Nunavut. Government of Nunavut comments on the Mary River Project 2022 Annual Report (July 2023). • Government of Nunavut. Government of Nunavut Comments on the Mary River Project 2023 Annual Report (July 2024).	Baffinland collected surface snow samples in 2025 for the purpose of increasing the sample size and dust concentration distribution. Baffinland will reassess the program in the 2025 TEAMR. Current methods using passive dustfall data already provide an estimate of dustfall extent and concentration across the landscape. Sampling effort vs impact will be considered in the assessment because potential model improvement over current methods is unknown and snow sampling effort to reach a 10-fold sample size (which would need to be statistically supported) might be unnecessarily high.

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		Additionally, establishing a relationship between dust concentrations in snow and a remote-sensing modality will provide a powerful tool for the Proponent and others in Nunavut to accurately monitor dust originating from anthropogenic sources. The GN views this study as an essential component for the monitoring and assessment of wildlife responses to the Project. As such, in previous years, the GN has urged the Proponent to fully develop this pilot project (GN, 2023; GN, 2024) As noted in Table 7-1 of the 2024 TEAMR: "To increase the number of samples for the snow sampling pilot study, as recommended by the QIA and the GN (QIA DF #11 and GN AR #5; Baffinland Iron Mines Corporation 2024), improvements to sample collection were implemented, including (1) using satellite acquisition dates and footprints to plan sampling dates and locations, (2) extending the sampling period to late May, (3) sampling on cloud-free days, and (4) sampling a variety of dust concentrations." (Baffinland, 2025, p. 47) Additionally, Section 7.4.4 of the 2024 TEAMR report states that: "Using the rational equation presented in Mauro et al. (2015) for mineral dust versus SDI measured from hyperspectral data, a non-linear regression model was fit to the Landsat data with significant coefficients ($P > 0.1$, residual standard error = 0.0151; Figure 7-21) ... A non-linear regression model did not fit to the Sentinel-2 data. Additional samples may be required to increase the sample size. Models are needed for Landsat and Sentinel-2 data to have full coverage of the study area for each year of analysis. The continuation of the pilot study is being evaluated in relation to the need for and viability of improvements to experimental design and comparison with the current method using the passive dustfall monitoring data." (Baffinland, 2025, p. 108). The GN notes that with a sample size of 33, the study identified a statistically significant non-linear relationship between SDI and snow dust concentration using Landsat Imagery. The failure to detect a similar relationship with Sentinel-2 data is potentially due to the much smaller			

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		sample size, as only 11 samples were used compared to 33 for Landsat. These findings indicate the need to increase the sample size for Sentinel data. Moreover, the GN recommends a substantial increase in sample sizes for both Landsat and Sentinel datasets to improve the precision of the results. The measured dust concentrations in snow (Figure 7-21; Tables 7-12 and 7-13) span four orders of magnitude, yet the current sample sizes—33 for Landsat and 11 for Sentinel—are insufficient to robustly define relationships of this scale. Continuation of the snow study by the Proponent with increased sample sizes, may help detect patterns in the data collected and provide additional useful information to better interpret the results. In the GN's view, the ongoing work of the study is essential for the monitoring and assessment of wildlife responses to the Project.			
CARIBOU BEHAVIOR MONITORING					
94	**GN #3**	**IDENTIFICATION OF ISSUE** The 2024 Terrestrial Environmental Annual Monitoring Report indicates that caribou observed walking during HOL surveys or follow-up monitoring are currently classified as showing no response to Project disturbance. However, studies at other mine-road complexes in Nunavut suggest walking increases near infrastructure and traffic, indicating it may reflect a disturbance response. To improve interpretation of the data, the GN recommends the Proponent refine the study methods to collect more detailed data on walking behaviour. This will help the Proponent, the GN and other reviewers better assess whether walking represents a true response to disturbance. This information will help the GN evaluate the effectiveness of the mitigations, monitoring and management being implemented by the Proponent to avoid or limit impacts to caribou. **IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE** The Project uses HOL surveys and on-the-ground monitoring to examine how caribou respond to Project-related	The GN requests the Proponent undertake the following: 1. Provide a clear explanation for the lack of behavioural data from the HOL observations. 2. Amend relevant behavioural monitoring methodology for HOL surveys and follow-up behavioural monitoring to collect additional information on caribou walking behaviour as 'toward', 'parallel to' or away from Project disturbance (e.g., infrastructure and mine-related activities).	**Terms and Conditions:** 53b, 54b, 58b (Project Certificate No. 005, Amendment 05) • Agnico Eagle Mines Limited: Meliadine Division, Appendix 26 – 2024 Terrestrial Environment Management and Monitoring Plan Annual Report (March 2025) • Baffinland Iron Mines Corporation. Appendix G.5.1 – Mary River Project Terrestrial Environment 2024 Annual Monitoring Report (March 2025).	1. During HOL surveys, behavioural information was not recorded for the observed caribou due to the significant distances involved, no means of travel to caribou locations (i.e., Baffinland did not opt to fly helicopters close to caribou groups, and walking was not possible) which precluded accurate assessment. 2. Baffinland's classification of caribou behaviour — including the determination that walking does not in itself constitute a disturbance response — is based on project-specific criteria reviewed previously by the GN (i.e., during the FEIS review and early TEWG review of monitoring programs). While we acknowledge the studies cited by the GN, Baffinland's current methodology is appropriate for the Mary River Project and has been transparently reported to the TEWG. That said, we are open to discussing potential refinements to behavioural monitoring with the working group and standardization among other behavioural monitoring programs in Nunavut should that be of interest to the GN and the TEWG, provided that specific and informed guidance is provided by all parties.

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		activities and infrastructure. The 2024 Terrestrial Environmental Annual Monitoring Report provides an overview of these activities, stating, "Caribou occurrences at or near the [Potential Development Area] are monitored through HOL monitoring (refer to Section 9.3) during the caribou calving period and through on-the-ground monitoring through continual incidental sightings (often by haul truck drivers; refer to Section 9.6). Where caribou are observed on or near the Tote Road, the caribou decision framework (Figure 9-14) comes into effect and guides the action of road users (Baffinland Iron Mines Corporation 2023d). Site personnel are informed of the caribou decision framework and trained to respond appropriately to these scenarios. Concurrently, the Environment Staff are notified of near-project observations and complete follow-up behavioural monitoring." (Baffinland, 2025, p. 162) With respect to HOL surveys, the 2024 Terrestrial Environmental Annual Monitoring Report indicates that fifteen caribou were observed in the Potential Development Area (PDA) during the HOL surveys in 2024. However, no behavioural data were provided by the Proponent for these observations. No explanation is provided explicitly by the Proponent for the absence of this information. Concerning follow-up behavioural monitoring, the 2024 Terrestrial Environmental Annual Monitoring Report states that: "Fifty-one caribou incidental observations during 22 monitoring events were recorded along the Tote Road in 2024. As shown in Figure 9-15, most caribou observations occurred in June (43), but also in May (5), October (2), and August (1). Caribou were observed as near as 20 m and as far as 4 km from the Tote Road (Photo 9-14 and Photo 9-15). No adverse behaviour toward the Tote Road and passing vehicles was noted during the 22monitoring events. Behaviours noted included foraging/feeding, bedded animals, and animals travelling at a 'walking pace'." (Baffinland, 2025, p. 163) This summary demonstrates that the Proponent does not categorize walking as a potential behavioural response to Project activities. However, caribou behaviour studies at other mine-road complexes in Nunavut have demonstrated increases in walking amongst caribou as they approach			

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		infrastructure or when traffic passes, suggesting that walking is in part an adverse response (AEM 2023, 2024). For example, a caribou behavioural study conducted at the Meliadine Project found that: "…[b]oth response only and walking, in addition to response models, showed an increased proportion of response closer to infrastructure. This supports the continued consideration of walking behaviour as a potential response to disturbance for caribou." (Agnico Eagle, 2025, p. 168) And "…[c]aribou were statistically more likely to be walking (a potential response or non-response variable), alert, or running within survey intervals where there was a disturbance (i.e., vehicle traffic). Inclusion of walking as a potential response behaviour may represent a milder response to disturbance events than the other two behaviours, representing a spectrum of possible reactions when disturbed…" (AEM, 2025, p. 169) For these reasons, the GN believes that adjustments to the Project's behavioural monitoring methodology are required to collect additional information to help determine whether walking represents a response or non-response to disturbance.			
HELICOPTER FLIGHTS					
95	**GN #4**	**IDENTIFICATION OF ISSUE** The GN has two main concerns regarding the Proponent's helicopter flight activities as presented in the 2024 Terrestrial Environmental Annual Monitoring Report. First, the Proponent has not explained or proposed corrective actions for the lowest compliance levels since 2016. Second, there is no discussion of reviewing or updating flight corridors to avoid key caribou areas. The GN considers it essential for the Proponent to demonstrate concrete actions aimed at minimizing the impacts of aircraft activity on caribou. **IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE** <u>Inter-annual Trends in Flight Altitude Compliance</u>	The GN requests that the Proponent undertake the following: 1) Explain the significant decline in compliance with helicopter minimum flight altitudes in 2024. 2) Outline the corrective measures that will be taken to address this decline and restore compliance to levels at least consistent with the previous five years (i.e., ~95% compliant). 3) In collaboration with the TEWG, initiate an immediate evaluation of the Project's helicopter flight corridors in relation to caribou distribution and movement patterns. This assessment should	**Terms and Conditions:** 59, 71 and 72 (Project Certificate No. 005, Amendment 05). • Baffinland Iron Mines Corporation. Appendix G.5.1 – Mary River Project Terrestrial Environment 2024 Annual Monitoring Report (March 2025). • Government of Nunavut. Government of Nunavut Comments on the Mary River Project 2023 Annual Report (July 2024). • Nunavut Impact Review Board. NIRB Project Certificate No. 005, Amendment 005 (November 2023)	1) 2024 had a similar number of total non-compliant hours (113 hrs) as 2021 and 2019 (113 hrs and 105 hrs respectively; Table 5.10 2024 TEAMR). However, 2024 had a third of the number of flight hours at 435 hrs compared to 1340 hrs in 2019 and 1295 hrs in 2021, resulting in a lower % compliance. The non-compliant hours of 2019, 2021 and 2024 are two to three times the number of non-compliant hours in 2020, 2022 and 2023 (30 hrs, 64 hrs, and 47 hrs, respectively). Looking at the spatial data 2019, 2021 and 2024 had longer distance flights that were non-compliant, whereas 2020, 2022 and 2023 flights were shorter distance and remained closer to the mine area. 2024 flights were the furthest distance from the mine area. These flights (Traverses program) were identified in the 2024 TEAMR. 2) Baffinland will continue to work with pilots and explained to the TEWG the slight increase in non-compliant flights in 2024. This was discussed at the TEWG meeting

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		In the 2024 Terrestrial Environmental Annual Monitoring Report, the Proponent indicates that, "[n]on-compliant flights increased to 27.72% in 2024, higher than the past six years (3.78% to 8.41%) but comparable to 2017 (26.61%)." (Baffinland, 2025, p. 35). Despite this significant decline in compliance with helicopter flight altitude requirements, the Proponent does not outline any adaptive management measures to address the issue. <u>Flight Corridors Concerning Caribou</u> Terms and Conditions 59 of the Project Certificate states that: "The Proponent shall ensure that aircraft maintain, whenever possible (except for specified operational purposes such as drill moves, take offs and landings), and subject to pilot discretion regarding aircraft and human safety, a cruising altitude 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 observed concentrations of migratory birds (or as otherwise prescribed by the Terrestrial Environment Working Group) and use flight corridors to avoid areas of significant wildlife importance…" (NIRB, 2023, p. 129) Concerning the flight corridors for avoiding areas of significant wildlife importance, section 5.2.1 of the report states that: "Only the key moulting area for Snow Geese was identified for helicopter avoidance in 2024. No locations or boundaries of areas prescribed explicitly by the TEWG or areas of observed concentrations of other migratory birds were identified in 2024." (Baffinland, 2025, p. 24) As outlined in the GN's response to the Proponent's 2023 annual report (GN, 2024), it remains a significant concern to the GN that after more than a decade of operations, the Proponent has not undertaken any revisions to its helicopter flight corridors, as required under Project Certificate Term and Condition 59. The Project now has access to over 10 years of flight data, alongside current and robust information on caribou distribution from incidental observations, HOL surveys, remote camera data, recent	incorporate Inuit Qaujimajatuqangit and Inuit Qaujimaningit, as well as recent scientific data from incidental observations, HOL surveys, remote camera monitoring, aerial surveys, and satellite collaring. The TEWG should work to identify areas of high caribou importance and determine whether these areas can be effectively avoided by adjusting flight corridors.		in July 2025, where Baffinland noted that pilot training is conducted through cognibox. 3) Thank you for this suggestion. The TEWG should be identifying areas of importance should new information or observations be available such as satellite collaring data. Baffinland is happy to add this to a future agenda at GN's request, provided specific and informed guidance is provided by all parties.

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		aerial surveys (e.g., Section 9.5, Baffinland 2024), and the GN's collaring program—all of which are available to the Proponent. Given the availability of this information, a review of the current flight corridors is warranted and should be conducted in collaboration with the TEWG to ensure that helicopter traffic avoids areas of high caribou use. Failure to apply these data toward improving mitigation measures represents inadequate compliance with Term and Condition 59 and is inconsistent with the Proponent's stated commitment to adaptive management.			
TERRESTRIAL BASELINE INFORMATION – STEENSBY INLET					
96	**GN #5**	**IDENTIFICATIN OF ISSUE** Based on the GN's review of the 2024 AR materials, it remains unclear what specific terrestrial environment/wildlife studies the Proponent plans to undertake before the start of construction at Steensby. **IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE** The GN notes that there has been significant interest among various parties in updating baseline information before the construction of the Project's Steensby components (e.g., rail and port). For example, Commitment Igloolik HTA-1 from the Production Increase Proposal Renewal states: "Baffinland will work with the Hamlets and HTOs of Igloolik and Sanirajak to carry out additional baseline studies for marine, terrestrial, and avian wildlife related to Steensby. This could begin as early as 2023." (NIRB, 2023, p. 107) Additionally, the GN notes that the 2024 AR states that, "…[e]ffects to terrestrial wildlife, and in particular key issues such as movement and migration, collaring and supplemental baseline work for Steensby, as well as potential effects of caribou eating vegetation with dust, continue to be expressed in 2024 consultation activities… " (Baffinland, 2025, p. 188) Concerning this, the Proponent includes Table 4:27 (Baffinland, 2025, pp. 339–340), which lists supplemental	The GN requests that the Proponent provide a detailed update on what baseline studies the Proponent is planning to undertake concerning the terrestrial environment/wildlife prior to Steensby components construction. Additionally, the Proponent should identify which parties it will engage with regarding baseline studies for the terrestrial environment in the Steensby area.	• Baffinland Iron Mines Corporation. Mary River Project Terrestrial Environment 2024 Annual Monitoring Report (March 2025). • Nunavut Impact Review Board. NIRB Project Certificate No. 005, Amendment 005 (November 2023)	Baseline vegetation and wildlife surveys were completed at the BIM Project in 2006-2008 (Baffinland Iron Mines Corporation 2010) and 2006-2011 (EDI Environmental Dynamics Inc. 2012), respectively. Surveys covered the proposed Mary River Mine Site, Milne Port, Tote Road, Southern Rail, and Steensby Port. To inform construction and operation, EDI has been conducting vegetation/soil ground truthing, wildlife habitat reconnaissance, and incidental observation surveys from August 5-20, 2025. Surveys will inform the characterization of current terrestrial conditions (i.e., plant communities, soil, wildlife, wildlife habitat) along the first 40 km (i.e., approximately from Mary River to Raven River) of the approved Southern Rail Corridor. Baffinland has, and will continue to, engage with all members of the TEWG regarding the site investigations conducted for the Steensby Component. Table 2.6 of the 2024 NIRB Annual Report outlines the topics discussed during TEWG meetings, including updates on terrestrial surveys for Steensby. In addition, all final terrestrial update reports have been submitted to NIRB as part of the NIRB Annual Reports.

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		baseline studies which the Proponent has undertaken since 2020. However, the GN notes that this work appears to be almost exclusively restricted to the marine environment. Regarding future work, the 2024 AR states: "Activities planned to be undertaken along the Steensby Railway alignment or at Steensby Port in 2025, include a further baseline data collection in advance of the commencement of construction in 2025 or 2026." (Baffinland, 2025, p. 39) Based on the GN's review of the AR materials, it remains unclear what specific terrestrial environment/wildlife studies the Proponent plans to undertake before the start of construction at Steensby.			
TERMS OF REFERENCE – TERRESTRIAL & MARINE ENVIRONMENTAL WORKING GROUPS					
97	**GN #6**	**IDENTIFICATION OF ISSUE** Baffinland Iron Mines (Baffinland or the Proponent) included updated Terms of Reference (ToR) for the Project's Terrestrial Environment Working Group (TEWG) and Marine Environment Working Group (MEWG) in its 2024 annual report materials (Baffinland, 2025). The Government of Nunavut (GN) believes that both the process used by the Proponent to finalize these ToR and the content of the submitted ToRs are inconsistent with the relevant Terms and Conditions governing these working groups in the Project Certificate. **IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE** The GN, represented by the Department of Environment, has been a member of the TEWG and MEWG since its inception in 2012. The requests to update the ToR for these groups came at the behest of several members of the TEWG and MEWG, including the GN, due to concerns that the groups were not meeting their intended objectives. The GN drafted previous versions of a revised ToR for the MEWG and TEWG. Terms and Conditions 49 and 77 of Project Certificate No. 005, Amendment 005 (Project Certificate) describe the requirements for the TEWG and MEWG. For example, Term and Condition 49 states:	The GN requests that the Proponent undertake the following: 1. Provide a definition and explanation of "enforceable recommendations." 2. Provide a definition and explanation of "consensus." The GN requests that the NIRB: 1. Continue to monitor the effectiveness of these working groups by sending a NIRB representative to MEWG/TEWG meetings as an observer. 2. Solicit input from MEWG/TEWG members periodically now and after the establishment of an independent chair to evaluate whether the MEWG and TEWG are meeting their stated objectives as set out in the Terms and Conditions of the Project Certificate.	**Terms and Conditions:** 49, 77 (Project Certificate No. 005, Amendment 05) • Baffinland Iron Mines. 2024 Annual Report to the Nunavut Impact Review Board: Appendix C.3 Environment Working Groups Terms of Reference (May 2025) • Nunavut Impact Review Board. NIRB Project Certificate No. 005, Amendment 005 (November 2023)	Baffinland has explained the definition of enforceable recommendation and consensus to members over the past number of years leading to the finalization of the Terms of Reference. Baffinland has also explained that the Terms of Reference can be reviewed in two-years' time (2027), where members will have opportunity to weigh-in on the effectiveness of the group.

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		"The Terrestrial Environmental Working Group (TEWG) will provide advice, guidance and enforceable recommendations regarding: adding to and improving baseline information, mitigation measures for the protection of the terrestrial environment, monitoring of effects on the terrestrial environment, assessing the accuracy of impact predictions, the development and implementation of adaptive management plans, sharing of relevant Inuit Qaujimajatuqangit, scientific and/or technical knowledge and industry best practice, and, consideration of project changes that may be required to make sure the management of negative impacts is effective and that lasting damage to the terrestrial environment is prevented… The Terms of Reference (ToR) for the TEWG shall be revised to include the following requirements… b) That the Working Group's decision-making process be amended to provide that it must occur on a consensus basis between all working group member parties, with all votes and decisions in writing and recorded by the chair. c) That the Working Group's recommendations be recognized as enforceable recommendations (i.e. will be implemented by the Proponent), with provision that the Proponent may request not to enforce the recommendation at which point the matter shall go to an independent third party (agreed upon by the Proponent, QIA, and the Government of Canada) for dispute resolution…" (NIRB, 2023, p. 35) However, despite the submission clause "b)" above, these ToR were submitted by the Proponent to NIRB as "final" without consensus from the GN or other TEWG/MEWG members. No decision-making process or vote was held at the TEWG or MEWG meetings to achieve consensus on these ToR. In the absence of consensus from the members of the TEWG or MEWG on the ToR, the GN views these documents to be non-binding and an interim measure to be used until an independent chair is in place, when a binding ToR reached by consensus of the members can potentially be reached and implemented. Concerning the content of the ToRs, the GN has several remaining outstanding concerns. One major concern includes the ability of the TEWG/MEWG to advance enforceable recommendations. For example, the TEWG ToR			

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		states, "[f]or greater clarity, any recommendations accepted by Baffinland shall be treated as enforceable recommendations." (Baffinland, 2025, p. 94). However, the GN notes that the process outlined in the TEWG and MEWG Terms of Reference for advancing items to enforceable recommendations enables the Proponent to veto their progression (Figure D7; Baffinland, 2025, pp. 34–35). Additional, outstanding concerns regarding the content of the TEWG and MEWG ToR include: • Duration of and processes to appoint an independent chair. • Requirements for member organizations to select their representatives and vote on recommendations. In the GN's view, it is unlikely that these revised ToR will allow for enforceable recommendations to be passed by the TEWG and MEWG, as required in the Project Certificate. However, the GN recognizes that an independent chair is needed as soon as possible to determine whether these concerns can be addressed. As such, the GN will continue to participate in these groups while continuing to evaluate their efficacy and compliance with the Project Certificate. Should certain requirements of the ToR conflict with the GN's duties as set out by the GN's mandate, policies, legislation and/or the Terms and Conditions of the Project Certificate, the GN retains discretion as to the applicability of these provisions and whether/how they are carried out by GN representatives of the MEWG/TEWG. Additionally, the GN maintains discretion as to determine which representatives it appoints to participate in these groups, as needed to fulfil its role as outlined in Terms and Conditions 49 and 77.			
COMMITMENTS					
98	**GN #7**	**IDENTIFICATION OF ISSUE** Baffinland's 2024 Annual Report (AR) contains two incorrect transcriptions of Project Certificate Terms and Conditions 49 and 77. In both instances, the word "enforceable" appears	The GN requests that the Proponent ensure the correct transcription of Terms and Conditions in their annual report (for 2024 and any future reports), as set out in their Project Certificate.	**Terms and Conditions:** 49, 77 (Project Certificate No. 005, Amendment 05)	Baffinland thanks the GN for raising this as there was an internal miscommunication that resulted in an editing error to the term and condition. This will be corrected in the 2025 NIRB Annual report.

Cmt. #	GN Cmt. #	Reviewer's Detailed Comment	GN Recommendations	Reference Section	Baffinland's Response
		to be omitted where it would precede the word "recommendation" when it is first mentioned. The GN emphasizes that the omission of the word "enforceable" in the Proponent's annual report creates an inconsistency with Terms and Conditions 49 and 77, as defined under the Project Certificate. It may also affect the interpretation of the Terms and Conditions and impact reviewers' ability to assess the Proponent's compliance with the Project Certificate. The GN notes that any changes to the Project Certificate or its Terms and Conditions must follow NIRB's formal review process and receive Ministerial approval. **IMPORTANCE OF REVIEW AND SUPPORTING RATIONALE** Terms and Condition 49 of the Project Certificate states, "The Terrestrial Environmental Working Group (TEWG) will provide advice, guidance and enforceable recommendations…" (NIRB 2023, p. 35) Similarly, Term and Condition 77 of the Project Certificate reads, "The Marine Environment Working Group (MEWG) will provide advice, guidance and enforceable recommendations…" (NIRB 2023, p. 49) However, the word *"enforceable"* has been removed in the 2024 AR where Term and Condition 49 and 77 have been reproduced. These instances occur on pages 190 and 280 of the 2024 AR (Baffinland, 2025). The GN notes that this apparent transcription error could affect reviewers' understanding of the relevant Terms and Conditions. The GN notes that parties (including project proponents) cannot unilaterally modify Terms and Conditions in a Project Certificate. Any proposed changes to the Project Certificate must follow the processes set out in the Nunavut Agreement and the *Nunavut Planning and Project Assessment Act* and require approval by the responsible Minister.		• Baffinland Iron Mines. 2024 Annual Report to the Nunavut Impact Review Board (May 2025) • Nunavut Impact Review Board. NIRB Project Certificate No. 005, Amendment 005 (November 2023)	

Table A.3: Response to ECCC Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
BIRD INCIDENTS/MORTALITY REPORTING					

99	**ECCC #2**	Table 4:23 of the main document states that "*three (3) bird mortalities were observed in 2024: one loon and two ptarmigan all of which were associated with building or infrastructure collisions."* However, in Section 11.1 of the Terrestrial Environment 2024 Annual Monitoring Report (TEAMR), the Proponent denotes that there were five (5) bird mortalities observed in 2024: one loon, two ptarmigans, one Snow Bunting, and one songbird. The Proponent does not provide the rationale behind this discrepancy.
		
		In addition, the Proponent's 2024 Annual Report Main Document and TEAMR note that there were bird mortalities within the Project footprint. However, ECCC's Canadian Wildlife Service does not have a record of notification for these incidents which involve migratory birds.
		
		Under the Migratory Birds Convention Act (MBCA), ECCC has management responsibilities for migratory birds. The list of migratory birds protected in Canada is available here: Birds protected in Canada - Canada.ca. ECCC Canadian Wildlife Service should be contacted in instances involving:
		
		▯ Interactions and incidents involving the potential disturbance of individuals or nests and any mortality events of these species;
		
		▯ Wildlife monitoring reports and annual reports that pertain to these species; and
		
		▯ Updates to wildlife management and monitoring plans, or their equivalents, in relation to these species.
			ECCC recommends that the Proponent provide justification for the reporting discrepancy between the Annual Report Main Document and the TEAMR.
			
			Additionally, ECCC recommends the Proponent notify ECCC's Canadian Wildlife Service (cwsnorth-scfnord@ec.gc.ca) for instances involving migratory birds, specifically:
			
			a. Interactions and incidents involving the potential disturbance of individuals or nests and any mortality events of these species;
			
			b. Wildlife monitoring reports and annual reports that pertain to these species; and
			
			c. Updates to wildlife management
				• Main Document: 2024 NIRB Annual Report (Baffinland Iron Mines Corporation, May 30, 2025)
				  ○ Table 4:23: Birds Impact Evaluation
				• NIRB Appendix G.5.1: Terrestrial Environment 2024 Annual Monitoring Report (Baffinland Iron Mines Corporation, April 2025)
				  ○ Section 11.1 Wildlife Interactions and Mortalities
				  ○ Section 11.2 Wildlife Interactions and Mortality Prevention
					Thank you for raising this comment. Table 4.23 of the 2024 NIRB Annual Report incorrectly indicates three (3) bird mortalities were observed in 2024 and that all of the mortalities were associated with building or infrastructure collisions. Baffinland confirms there was five (5) Project-related bird mortalities in 2024: three (3) of which resulted from vehicle interaction, one (1) of unknown cause, and one (1) from incidental catch as shown in 2024 TEAMR Figure 11-1 and Figure 11-2.
					
					Baffinland acknowledges this feedback from ECCC and confirms that Baffinland will continue to follow the established process, documented in Baffinland's Reporting Procedure for Wildlife Incidents, and report all Project related avian mortalities to ECCC via e-mail to the e-mail address referenced by ECCC in a detailed and timely manner following investigation of the incident.
					
					As per Baffinland's Reporting Procedure for Wildlife Incidents, e-mail notification of a Project-related mortality of a migratory bird or birds is to be provided to ECCC, ideally within a day or two after the incident has been investigated, to enable ECCC Conservation Officers to review the report and associated photos.
					
					All bird carcasses shall be bagged, tagged, and frozen until ECCC Conservation Officers have reviewed the notification report and associated photos and advised on whether further testing is needed.
					
					Notifications of the 2024 migratory bird mortalities were submitted to ECCC at dalfnord-wednorth@ec.gc.ca but inadvertently were not submitted to the cwsnorth-scfnord@ec.gc.ca email address. Baffinland apologizes for the reporting oversight and will forward 2024 notifications to cwsnorth-scfnord@ec.gc.ca as per Baffinland's wildlife incidents reporting procedure.

SPECIES AT RISK MISSING AND/OR EFFECTS AND MEASURES MISSING					

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
100	**ECCC #3**	The Proponent has not identified all species at risk that are likely to be present in the Project area. The Project may have adverse effects on Species at Risk including direct habitat loss, impacts due to noise, dust or other sensory disturbances, wildlife injury or mortality and wildlife attraction.	ECCC recommends that the Proponent include an updated Species at Risk table in the updated Terrestrial Environmental Monitoring and Management Plan (TEMMP) and that ECCC be notified upon its release.	• Main Document: 2024 NIRB Annual Report (Baffinland Iron Mines Corporation, May 30, 2025) • NIRB Appendix G.5.1: Terrestrial Environment 2024 Annual Monitoring Report (Baffinland Iron Mines Corporation, April 2025)	Baffinland commits to including an updated Species at Risk table in the TEMMP and will notify ECCC upon its release.
MISSING INSPECTION DATE					
101	**ECCC #4**	The date of the ECCC inspection was not listed.	ECCC recommends the date of the ECCC inspection be added.	• Main Document: 2024 NIRB Annual Report (Baffinland Iron Mines Corporation, May 30, 2025) ○ Section 4.5.1.3 ECCC Inspections	Please refer to section 4.5.1.3 of the report titled ECCC Inspections. While listing the inspection dates from August 12 to 15 was a slight error, the correct dates of ECCC's time at Mary River was from August 13 to 15 with the majority of the visit being from the 14 to 15th due to travel days.
NON-REPORTED SPILLS AND DISCHARGES					
102	**ECCC #5**	Section 4.5.2 of the Main Document provides the number and details only of spills that were reported to the NT-NU Spill Report Line, CIRNAC, and Qikiqtani Inuit Association (QIA). Annual reports frequently also contain details about spills that occurred but did not meet criteria for reporting. To improve consistency with other annual reports to the NIRB, it is recommended that spills not meeting reporting criteria also be listed to provide a better overall indication of the nature and types of spills occurring as part of the Project.	ECCC recommends the Proponent include details (e.g., type and quantity of substance spilled, cause of spill, date, time) of spills that occurred during 2024 that did not meet criteria for reporting.	Main Document: 2024 NIRB Annual Report (Baffinland Iron Mines Corporation, May 30, 2025) Section 4.5.2 Unauthorized Discharges and Spills	Details for all non-reportable spills are recorded internally and are available for review upon request by regulators, however BIM does not feel it appropriate to include in the annual report due to the potential for misinterpretation.
SOURCES OF IGNITION					
103	**ECCC #6**	A best practice frequently noted as an initial step in spill response is to remove any sources of heat or ignition (until the spilled substance has been identified and it is determined that sources of heat or ignition are safe in their	ECCC recommends that a statement be added to the general spill procedures section specifying that sources of heat or ignition should be removed until the		Although this is included in various SOPs and SWIs as part of normal operations when responding to spills, Baffinland thanks ECCC for the recommendation and will edit the Plan to incorporate this information.

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
		vicinity). This is an important safety measure, as spills may release flammable or explosive vapours.	spilled substance has been identified (and it is confirmed that sources of heat or ignition do not pose a fire / explosion hazard in the vicinity of the spilled substance).	• NIRB Appendix G.8.1: Oil Pollution Emergency Plan (Baffinland Iron Mines Corporation, May 1, 2025) ○ Section 8.0 General Spill Procedures	
TYPES OF SPILLS					
104	**ECCC #7**	Section 8.0 of the Spill Contingency Plan does not fully explore leaks spills from equipment or vehicles due to accidents or malfunctions. It is noted that the possibilities of spills due to tanker truck accidents and equipment rollover were considered for bulk transportation of fuels and lubricants; however, leaks from vehicles and equipment themselves (i.e., leaking engine oil, hydraulic lines, fuel, antifreeze) were not considered. Given the likely widespread use of vehicles and equipment to carry out the project, they can represent an important potential source of fuel leaks and spills to the environment.	ECCC recommends that the Proponent include further analysis on potential spills from vehicles and equipment, specifically exploring loss of hazardous substances from vehicles and equipment such as fuels, engine oil, antifreeze, and hydraulic oil due to vehicle accidents or malfunctions. Mitigation measures that could be considered (as appropriate to the situation) to help reduce the likelihood of spills entering the environment include: • Conduct regular maintenance and inspections on all vehicles and equipment • Use of secondary containment for any equipment with a built-in fuel tank • Use of biodegradable hydraulic oil (when appropriate) for equipment that is working near or in water • Park vehicles and equipment at a location that is at least 31 m from the normal high-water mark of any water body • Use a drip tray under vehicles or equipment that is not being used for an extended period (e.g., overnight)	• Spill Contingency Plan, Revision 6 (Baffinland Iron Mines Corporation, February 28, 2021) ○ Section 8.0 Potential Spill Analysis	Baffinland conducts regular inspections of equipment which includes inspecting for spills and leaks. This is a part of normal operations and is captured on documented pre and post op log books, as well as regular audits and compliance inspections. • Regular maintenance is conducted on all pieces of equipment and will continue to be carried out as per the preventative maintenance schedule; • In accordance with our various management plans and standard operating procedures, secondary containment for any equipment carrying fuel or other substances, is deployed. It should be noted that many if not all pieces of equipment are designed with safety measures to prevent the spillage of substances while in operation, and that preventative maintenance ensures that these safety measures function properly; • Baffinland may look into the prospect of purchasing biodegradable hydraulic oil for specific uses as required, such as for work carried out within 31 m of the HWM, but will continue to follow OEM and manufacturers recommendations; • Normal operational guidelines, found in the EPP include the requirement to park equipment at least 31 m away from the HWM As per Baffinland's Environment Protection Plan section 4.6.2, all employees are required to place a spill tray under pieces of equipment so as to catch any potential leakage.

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
ADDITIONAL MEASURES FOR FUELING OF EQUIPMENT OR VEHICLES					
105	**ECCC #8**	Section 4.7.1.1 of the Environmental Protection Plan lists the measures that will be implemented to reduce the likelihood of spills or leaks associated with fuel storage and handling. There are several additional measures, often implemented as best practices for projects, that could be included here to help to further mitigate any risk of spills and leaks of fuel.	ECCC recommends that the Proponent include (as appropriate to the situation) the following additional environmental protection measures for refueling of equipment and vehicles: • Fuel nozzles equipped with automatic shutoffs • Operators stationed at both ends of hoses during refueling operations, unless both ends of the hose are visible and accessible by one operator • Fuel remaining in hoses is discharged into equipment or returned to the storage container • Use of drip trays or absorbent mats to prevent drips when refueling vehicles or equipment in an area that does not have secondary containment • Provide adequate lighting at refueling areas	• Environmental Protection Plan, Revision 2 (Baffinland Iron Mines Corporation, April 30, 2021) ○ Section 4.7.1.1 Environmental Protection Measures	In general, these recommendations are already included in site specific refueling activities. Personnel operating specific vehicles or stationary equipment all receive training and sign off on refueling plans prior to being able to start job specific tasks. Baffinland will review the applicability of updating the EPP to contain this information as well.
STORAGE OF HAZARDOUS WASTES					
106	**ECCC #9**	Section 4.16.2 of the Environmental Protection Plan lists the measures that will be implemented to reduce the likelihood of spills or leaks of hazardous substances. While one measure specifies that "*Lubricating oils and antifreeze will be dispensed from drums or cubes using either fitted taps or pumps. Spill trays will be placed in locations where there is potential for drips and leaks to occur during the transfer of substances.*", it is instead recommended that secondary containment be used for storage of these materials at all times (not only when there is potential for drips and leaks to	ECCC recommends the Proponent consider storing hazardous materials (e.g., lubricating oils, gasoline, hydraulic fluid, etc.) in facilities with secondary containment in place at all times to capture any potential leaks or spills (not only when there is potential for drips and leaks to occur during the transfer of substances).	• Environmental Protection Plan, Revision 2 (Baffinland Iron Mines Corporation, April 30, 2021) ○ Section 4.16.2 Environmental Protection Measures	Baffinland notes that hazardous materials such as lubricating oils, gasoline, and hydraulic fluids are stored within secondary containment. Hazardous products are either stored within a lined facility, or placed within secondary containment while being used, at all locations across the project site. Compliance with this requirement is audited via regular compliance inspections and audits.

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
		occur during the transfer of substances), to reduce the likelihood of spills or leaks in the event of container malfunction. Given the Project's remote location (limiting the ability to quickly source additional response equipment) and the harsh climatic conditions in place (potentially slowing spill response or making it more difficult), response actions may be made more challenging when spills occur. To this end, the use of secondary containment at all times would help to mitigate the potential for hazardous substances to enter the environment and would help to ease the cleanup efforts in the event of a leak or spill.			
AIR QUALITY ASSESSMENT AT MILNE PORT					

107	**ECCC #10**	Section 1.1 of the 2024 Annual Air Quality, Dustfall, and Meteorology Report states that the Canadian Ambient Air Quality Standards (CAAQS) were established for the management of the larger air zones and are not intended for use at a specific facility Project Development Area (PDA) boundary. Section 1.1 also states that the air quality inside of the PDA boundary is considered from an occupational workplace perspective and is assessed using thresholds or standards that are different from the ambient air quality standards, hence the employment of the Nunavut Ambient Air Quality Standards (NAAQS) to assess air quality impacts. All of the facilities are clearly within the PDA. However, unlike a mine site where workers commute to, the worker camp is located within the PDA. Thus, worker exposures to project-related emissions occur 24 hours a day / 7 days a week. Figure 1.2 reveals that the worker camp is located in close proximity to a helicopter pad with associated NOx emissions as well as dust lofted by the helicopter downwash. Finally, the use of larger ore carriers (Babycape and Capsize) at the nearby berth and anchorages introduces the prospect of higher air impacts for short time intervals depending on wind direction. Thus, it is not apparent whether the air quality impacts are adequately assessed.	ECCC recommends the Proponent:
			
			a. consider longer exposure times when assessing aggregate air quality impacts for receptors at the Milne Port facility;
			
			b. provide an assessment of possible impacts from helicopter operations in the vicinity of the helicopter pad to receptors at the nearby worker camp; and
			
			c. provide an assessment of any correlations between air contaminant concentrations and ship emissions that factor in ship size, location (berth vs. anchorage) and wind direction.
				• NIRB Appendix G.2.1: 2024 Annual Air Quality, Dustfall, and Meteorology Report (Baffinland Iron Mines Corporation, May 9, 2025)
				  ○ Section 1.1 Background and Objectives
				  ○ Figure 1.2 Milne Port Air Quality and MET Stations
					With regard to ECCC's three recommendations:
					
					a) It is important to note that the air quality at site is assessed against the Nunavut Air Quality Standards (NAAQS), which are designed to be protective of public and worker health, including for longer exposure durations. Current monitoring has shown compliance with these standards.
					
					b) Helicopter operations near the camp are limited in frequency and duration, and as such contribute minimally to overall contaminant loading. Given the absence of any exceedances in measured parameters, further assessment is not warranted.
					
					c) On December, 2023, Baffinland provided a memo to ECCC "Ambient Air Quality Monitoring – July to October, 2023" which provided this assessment. Current monitoring already reflects these episodic events through the continuous ambient air monitoring. See sections 4.2.3 and 5 for discussion in this topic. Data collected to date has not shown any exceedances that would indicate a need for further analysis.

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
EXTREME RAINFALL EVENT FOR SEPTEMBER 20-21, 2024					
108	**ECCC #11**	Section 3.2.4 of the Air Quality, Dustfall, and Meteorology Report states that the maximum 24-hour extreme rainfall event recorded at the Mary River meteorology station during September 20 to 21, 2024, was 82.2 mm, with a preliminary analysis by Nunami-Stantec that this event exceeded the expected 1:1000-year event. Table 3.10 shows that the September rainfall total was 155.2 mm for the Mary River Meteorology Station but 54.8 mm at the Milne Port Meteorology Station. At Pond Inlet, the 2-day total was measured at 52.5 mm. It is clear a major rainfall event occurred, and challenges can occur with rain splash possibly enhancing recorded values. It is not evident from Photos 1.1 and 1.7 what the heights above ground of the precipitation sensors were. Having reasonably accurate measurements of precipitation enhances the assessment of the local hydrological impacts as well as drying times until dust generation resumes.	ECCC recommends evaluation of the precipitation amount accuracy for the meteorology stations for this event with consideration of precipitation sensor height above ground and possible effects of rain splash from the water-saturated ground surfaces.	• NIRB Appendix G.2.1: 2024 Annual Air Quality, Dustfall, and Meteorology Report (Baffinland Iron Mines Corporation, May 9, 2025) ○ Section 3.2.4 Rainfall Precipitation ○ Table 3.10 Summary of 2024 Total Rainfall at the Baffinland Meteorology Stations and the Pond Inlet Airport Climate Station ○ Photo 1.1 The Mary River Meteorology Station looking towards the north ○ Photo 1.7 Milne Port Meteorology Station (September 9, 2021) Daily Data Report for September 2024 at Pond Inlet (Government of Canada), available at https://climate.weather.gc.ca/climate_data/daily_data_e.html?hlyRange=2013-01-10%7C2025-07-01&dlyRange=2013-01-11%7C2025-07-01&mlyRange=%7C&StationID=51080&Prov=NU&urlExtension=_e.html&searchType=stnName&optLimit=specDate&StartYear=1840&EndYear=2025&selRowPerPage=25&Line=0&searchMethod=contains&Month=9&Day=20&txtStationName=pond+inlet&timeframe=2&Year=2024&time=LST	The precipitation gauge used at the Mary River met station was installed as per manufacturers recommendations. Further corroborating evidence from measurements at the Mary River Weatherhaven manual rain gauge indicated 77mm of rain over the same general 24hr period. Therefore, Baffinland feels confident that no influence from rain splash during the extreme rain event occurred.
TOTAL SUSPENDED SOLIDS FRESHET EXCEEDANCES AT CAMP LAKE SETTLING PONDS OUTFALL					

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
109	**ECCC #12**	Freshet sampling allows to evaluate the effectiveness of sediment and erosion control measures in place to reduce total suspended sediment (TSS) loads contributed by snowmelt from the Project's infrastructure. Results are presented for four sites: "*The Camp Lake Settling Ponds Outfall (CLSP-OUT), the Camp Lake Tributary 1 Outfall (CLT-OUT), Sheardown Lake Landfill Gate Tributary Outfall (LDFG-OUT), and Sheardown Lake Tributary 1 Outfall (SDLT-OUT)*." Measured TSS concentrations at CLSP-OUT range from 206 to 433 mg/L, above the water licence criteria of 30 mg/L for grab samples and 15 mg/L for average concentrations. Concentrations are consistently higher at CLSP-OUT than at the other three sites. The Annual Report states "*pro-active measures were taken prior to freshet to ensure unimpeded flow through water conveyance structures*" and reports on remedial works to the drainage feeding into culvert CV-187 and SDLT-OUT. Measures employed at CLSP-OUT were not sufficient to prevent high TSS loads, which can negatively impact the aquatic environment. Further measures should be considered.	ECCC recommends the Proponent discuss what further measures at CLSP-OUT could help reduce TSS loads at freshet.	• Main Document: 2024 QIA-NWB Annual Report (Baffinland Iron Mines Corporation, March 31, 2025) Section 7.3.1.0 Freshet Monitoring ○ Table 7.6.3: Water Quality Results for Water Licence Monitoring Location - CLSP-OUT ○ Table 7.6.4: Water Quality Results for Water Licence Monitoring Location - CLT-OUT ○ Table 7.6.5: Water Quality Results for Water Licence Monitoring Location - LDFG-OUT ○ Table 7.6.6: Water Quality Results for Water Licence Monitoring Location - SDLT-OUT **incorrectly labelled as LDFG-OUT**	As part of Modification 13, Baffinland constructed the Camp Lake Settling Pond (CLSP) structure, which has consistently demonstrated effectiveness in limiting elevated total suspended solids (TSS) concentrations to short durations in the associated stream. The low-flow characteristics of the site likely contribute to higher observed concentrations, as reduced dilution capacity can exaggerate the visual and measured impacts of suspended sediment. Each year, Baffinland implements sediment and erosion control measures in accordance with the Surface Water Aquatic Effects Management Plan. These include the deployment of flocculant blocks, spring berms, and the installation of silt fencing and silt curtains, where appropriate, which collectively work to minimize the mobilization of residual sediment into the stream. Further, prior to the 2024/25 winter season, select locations around the Project Site were identified as High Priority Snow Removal Areas and/ or No Snow Push Areas, including the Camp Lake Sedimentation Pond outfall location. An awareness campaign was completed with the Departments responsible for snow management and included receptive discussions with their equipment operators about why these changes in snow management are important. This educational approach, re-enforced with monitoring of snow clearing activities by the Environment Department, proved effective by reducing snow accumulation in proximity to the outfall locations, which contributes to increased TSS results during freshet. Given the transient nature of freshet, the mitigation measures already in place, and the monitoring of the lake itself through the Core Receiving Environment Monitoring Program, as well as the Environmental Effects Monitoring under the Metal and Diamond Mining Effluent Regulations, Baffinland does not consider additional controls to be necessary at this time. Baffinland will continue to monitor performance and assess the effectiveness of existing infrastructure and best management practices as part of its adaptive management approach.
RECOMMENDATIONS IN CORE RECEIVING ENVIRONMENT MONITORING PLAN REPORT					
110	**ECCC #13**	The Core Receiving Environment Monitoring Program (CREMP) Report contains recommendations at the end of each sub-section discussing a creek, river or lake. Further monitoring, temporal trend analysis and the development of an Aquatic Effects Monitoring Program (AEMP) benchmark for uranium are recurring recommendations. It is not clear if the Proponent intends to action some or all of the consultant's recommendations.	ECCC recommends the Proponent confirm which recommendations they plan to implement and provide a timeline for implementation. A discussion and justification should be provided for those recommendations which they do not plan to action.	• NWB Appendix E.9.1/NIRB Appendix G.4.1: 2024 Core Receiving Environment Monitoring Program Report (Minnow Environmental Inc., March 2025)	The Proponent intends to implement each of the recommendations provided in the "Effects Assessment and Recommendation" sections and Table 6.1 of the 2024 Core Receiving Environment Monitoring Program (CREMP) report, which indicates the proposed timeline. Implementation of each of these recommendations is either underway (e.g., activity audit at the Dyno facility) or will be initiated in 2025, with results reported in the 2025 CREMP report and/or Annual Report, as appropriate and which has been done every year as part of this program.

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
BIOLOGICAL EFFECTS OF ELEVATED IRON AND ALUMINIUM CONCENTRATIONS					
111	**ECCC #14**	The CREMP found elevated concentrations of iron, aluminium and uranium and the CREMP Report recommends "*an analysis of total compared to dissolved aqueous concentrations of aluminium, iron, and uranium will be completed to investigate biological availability and further determine potential for effects on aquatic biota.*" Toxicity studies have indicated that "*because of chemical speciation and solubility characteristics at different pH values*", colloidal and precipitated forms of aluminium can cause toxic effects on aquatic biota. Particulate iron can also "*cause ecological effects via physical effects, such as smothering.*"	ECCC recommends the Proponent consider effects from particulate metals in addition to biological uptake activity when determining potential for effects from elevated iron and aluminium concentrations on aquatic biota.	• NWB Appendix E.9.1/NIRB Appendix G.4.1: 2024 Core Receiving Environment Monitoring Program Report (Minnow Environmental Inc., March 2025) ○ Section 3.1.5.2: CLT1 Main Stem • Federal Environmental Quality Guidelines, Aluminium (Environment and Climate Change Canada, August 2022) • Federal Environmental Quality Guidelines, Iron (Environment and Climate Change Canada, May 2024)	The Proponent will review available, peer-reviewed toxicity studies/datasets that include consideration of colloidal/precipitated/particulate forms of aluminium and iron as part of this assessment. The Proponent agrees with Environment and Climate Change Canada (ECCC) that this information will inform/support development of more robust conclusions regarding the potential for effects to biota from elevated aqueous concentrations of aluminium and iron.
CHARR HEALTH AND CONDITION IN THE MARY RIVER					
112	**ECCC #15**	Data collected at stations along the Mary River are presented in Section 5.1 of the CREMP Report and cover water quality, phytoplankton and benthic invertebrate community. The effects assessment at the end of the section includes the conclusion: "*arctic charr health and condition at Mary River in 2024 conformed with predictions made in the Baffinland FEIS*". It is not clear how this conclusion was reached since no data on fish health or condition was presented for stations on the Mary River.	ECCC recommends the Proponent clarify what studies were conducted on arctic charr in the Mary River and how the conclusion on their health and condition was reached.	• NWB Appendix E.9.1/NIRB Appendix G.4.1: 2024 Core Receiving Environment Monitoring Program Report (Minnow Environmental Inc., March 2025) ○ Section 5.1 Mary River	The effects assessment in Section 5.1.4 of the 2024 Core Receiving Environment Monitoring Program (CREMP) report concluded that there were no mine-related effects water chemistry or biota (specifically, phytoplankton and benthic invertebrates) in the Mary River in 2024. Additionally, it concluded that water quality in the Mary River conformed with predictions made in the Final Environmental Impact Statement (FEIS) for the Mary River Project. The conclusion that "arctic charr health and condition at Mary River in 2024 conformed with predictions made in the Baffinland FEIS" was drawn based on conformity of water quality results with FEIS predictions and concentrations of water quality parameters, primary productivity, and benthic invertebrate community (BIC) endpoints being within reference, water quality guidelines, and Aquatic Effects Monitoring Plan (AEMP) benchmarks/thresholds. No studies of arctic charr in the Mary River were completed in 2024. However, fish population surveys were completed in the mine-exposed area of the Mary River in 2023, as part of the Phase 3 Environmental Effects Monitoring Program (EEM). It was concluded that, based on the work completed in 2023, no effluent-related influences on fish community composition or arctic charr abundance were apparent at the receiving environment in Mary River (relative to reference). Further, fish health endpoints did not differ significantly between mine-exposed and reference areas in 2023 (e.g., growth), or differences were not outside Critical Effect Sizes

Cmt. #	ECCC Cmt. #	Reviewer's Detailed Comment	ECCC Recommendations	Reference Section	Baffinland's Response
					(CES) (e.g., condition), suggesting that, overall, there were no adverse effluent-related influences on the health of artic charr at the Mary River in 2023. The results of the 2023 EEM lend support to the conclusions made in the 2024 CREMP report. Monitoring of arctic charr in the Mary River will be completed again in 2026, as part of the Phase 4 EEM program for the mine.
WASTE ROCK FACILITY THERMAL MODEL					
113	**ECCC #16**	Appendix E.10 (Reclamation and Research) – is the WSP Technical Memorandum *"Assessment of Active Zone Depth Considering SSP1-2.6 Climate Change Projections At Mary River Mine"* (*October 4, 2024).* ECCC reviewed and provided comments to the NWB on this Technical Memorandum on February 27, 2024. ECCC notes that the comments and recommendations by ECCC on the technical memorandum, now presented as Appendix E.10 (Reclamation and Research) of the 2024 Annual Report, have not been addressed.	ECCC recommends the Proponent update Appendix E10 (Reclamation and Research) to include ECCC's comments and recommendations as outlined in the February 27, 2024 letter to the NWB "*RE: 2AM-MRY1325 – Baffinland – Mary River Water Licence – ICRP Ver 6 and Thermal Model Reviewed*".	• NWB Appendix E.10: Assessment of Active Zone Depth Considering SSP1-2.6 Climate Change Projections at Mary River Mine (WSP, October 4, 2024) • RE: 2AM-MRY1325 – Baffinland – Mary River Water Licence – ICRP Ver 6 and Thermal Model Reviewed (ECCC to NWB, February 27, 2025)	Baffinland would like to correct the ECCC that their comments were received on January 27, 2025, not 2024. Responses to ECCC's comments were provided in a letter dated July 11, 2025 (Borcsok to Karatyan). These responses will be added to the next version of Appendix E.10 of the QIA-NWB annual report, as appropriate.

Table A.4: Response to CIRNAC Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
DUSTFALL EFFECTS ON SURFACE WATER QUALITY, GROUNDWATER AND CONTRIBUTIONS TO LAND CONTAMINATION					

114	**CIRNAC #1 (ONGOING)**	Reviewing the last four Mary River Annual Reports (2020 to 2023), CIRNAC has been recommending that Baffinland consider including testing the chemical composition of soil base sites for bioavailable metal loadings from the dust, resulting from contact with surface water/soil moisture. During the review of the Mary River 2023 Annual Report to NIRB CIRNAC suggested that Baffinland consider:
		
		a) Developing a dustfall impact Conceptual Site Model (CSM) to summarize and evaluate the sources and extent of contamination and transportation pathways while considering meteorological variables, and where impacts to receptors may be occurring within the PDA.
		
		b) Indicating how dustfall rates correlate with direct or indirect contaminant loading into aquatic environments based on geochemical testing of dust-impacted soil and sediment.
		
		c) Implementing leachability studies in the Terrestrial Environment Mitigation and Monitoring Plans adaptive management action toolkit if soil metal concentrations are higher than baseline or CCME guideline values over two (2) consecutive years. Baffinland has noted that dust isopleth modelling was revised/updated in 2023 for the Project; therefore, a working CSM will not further inform dustfall modelling.
		
		CIRNAC acknowledges Baffinland's responses for CIRNAC's comments on the Mary River 2023 Annual Report, and considers these requests closed with the following exceptions:
		
		a) Under Section 4.6.6 of the 2024 NIRB Annual Report (TC #34), it is identified that: "Lichen-metal concentrations demonstrate some discrete increases at the Project, but values are mostly below or within an acceptable range for lichen-metal concentrations. Soil-metal and lichen-metal concentrations present a low risk to environmental and
			CIRNAC requests that Baffinland:
			
			a) Include the results and details of the 2023 Dust Isopleth Modeling Study conducted by Nunami Stantec as part of the 2025 Annual Report;
			
			b) Conduct soil and vegetation monitoring in 2025 and following years to support ongoing trend analysis; and,
			
			c) Revise the soil and vegetation monitoring schedule to increase the sampling frequency from every 3 to 5 years to every 2 to 3 years.
				• Nunavut Impact Review Board (NIRB) Project Certificate [No.: 005] dated November 17, 2023
				  ○ Terms and Conditions (TC) #10, 21, and 34
				• Baffinland Iron Mines Corporation (Baffinland) 2025. 2024 Annual Report to the NIRB including:
				  ○ Section 4.6.2 Air Quality
				  ○ Section 4.6.5 Groundwater & Surface Water
				  ○ Section 4.6.6 Vegetation
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.2.1: Baffinland 2024 Annual Air Quality, Dustfall and Meteorology Report
				  ○ Appendix G.2.5: Baffinland Dust Audit 2024 Annual Report
				  ○ Appendix G.5: Terrestrial Environment 2024 Annual Monitoring Report (TEAMR).
				• Baffinland 2024. 2023 Annual Report to the NIRB.
				• Baffinland 2025. 2024 QIA-NWB Annual Report for Operations:
					• Baffinland engaged Nunami Stantec to update air quality modelling, including dustfall in 2023 (Stantec 2023). In 2024, the annual dustfall data were compared with updated modelling results. Rather than describe the annual results as 'within' or 'above' modelled estimates, the results were presented with the quantified difference, positive or negative, between the predicted and measured annual dustfall. Sites with a positive value in the table column presenting this difference should be viewed as above the modelled value for that site. However, modelled values are estimates, not thresholds, and all models have inherent uncertainty associated with results. A similar comparison will be completed for results reported in the 2025 Annual Report.
					
					• BIM is committed to the monitoring and assessment timelines described in the TEMMP — which includes sampling and analysis of soil and lichen for determination of metal concentrations in 2025.
					
					• As per the response to **QIA 2024 NIRB DF#5** (above):
					  ○ Based on the most recent soil/vegetation base metal monitoring campaign (2022 TEAMR), soil metals predominantly indicated no significant change or were significantly lower than baseline values across all Project areas and sample distances. Many mean lichen-metals concentrations across Project areas and sample distances showed no significant changes from baseline values, although some discrete increases have been recorded (i.e., attributed to occasional 'spikes' in metal concentration, sample variability, and/or proximity to Project operations). These findings suggest that soil/vegetation base metals currently present a low environmental and human health risk.
					
					Baffinland maintains that the current lichen-metal concentration monitoring program (occurring at a frequency of 3 to 5 years) is robust and scientifically appropriate for a low-risk environmental indicator. Increasing monitoring frequency is not warranted.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		human health and safety. Monitoring will continue as outlined in the [Terrestrial Environment Management and Monitoring Plan] TEMMP schedule." Given that potential increasing trends in lichen-metal concentrations have previously been noted, vegetation and soil monitoring in 2025 would be beneficial for metallic trend analysis. Conducting sampling in 2025 will align with the 2025-2027 TEMMP scheduled monitoring period. b) To maintain compliance with TC #34, QIA has recommended the frequency of soil and vegetation monitoring be increased. Increasing the monitoring frequency will establish a more robust data-set and support trend analysis of metal concentrations in vegetation and soils (2024 TEAMR). CIRNAC supports this recommendation		○ Appendix E.8.2: QIA inspection reports and Baffinland Responses	
WASTE ROCK MANAGEMENT: WASTE ROCK FACILITY – IDENTIFICATION AND MANAGEMENT OF ACID ROCK DRAINAGE / METAL LEACHING WASTE ROCK MATERIALS AND PERMAFROST					
115	**CIRNAC #2 (ONGOING)**	CIRNAC recognizes the effort undertaken to assess the Metal Leaching/Acid Rock Drainage (ML/ARD) potential of waste rock and waste rock management at the Project. Baffinland has largely addressed CIRNAC's comments under Technical Review Comments for 2023 NIRB Annual Report; however, CIRNAC notes the following: a) As per the 2024 Phase 1 Waste Rock Management Plan, rev 4.1 (Baffinland, 2024), Baffinland's ARD classification is continuously monitored and validated with off-site Acid-Base Accounting (ABA) and Shake Flask Extraction (SFE) testing with a frequency of 1 hole per 40,000 t of material. However, the results and interpretation of these tests conducted in 2023 and 2024 are not presented in the 2024 Annual Report. Only operational test results (paste pH and sulfur content) were provided in Appendix E.7 of the 2024 QIA-NWB Annual Report for Operations. The results of these tests would support assessing the potential effects of the Project on water quality within the Project area. b) It is reported that Potentially Acid Generating rock (PAG) and Non- PAG placement on the waste rock facility (WRF) was in accordance with the Phase 1 Waste Rock	CIRNAC requests that, in their 2025 Annual Report, Baffinland: a) Provide the 2023 and 2024 ABA and SFE results on waste rock. These results would support monitoring the potential effects on water quality within the Project area. b) Provide time v/s placement and time v/s geochemistry graphs to demonstrate the effectiveness of the new placement strategy. c) Report the results of thermal monitoring at the WRF.	• NIRB Project Certificate [No.: 005] dated November 17, 2023 ○ TCs #16, 17, 23, 24, 41, 46 • Baffinland 2025. 2024 Annual Report to the NIRB; including: ○ Section 4.6.4 Hydrogeology and Hydrogeology ○ Section 4.6.5 Groundwater & Surface Water ○ Section 4.6.7 Freshwater Environment ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report • Baffinland 2025. 2024 Qikiqtani Inuit Association (QIA) and Nunavut Water Board (NWB) Annual Report for Operations:	a) Baffinland reports water quality results for the Waste Rock Facility, in addition to operational testing results for waste rock generated, in Appendix E.6 of the 2024 NWB-QIA Annual Report for Operations. The water quality monitoring program provides the essential data which indicates water quality associated with the Waste Rock Facility. In 2024, a total of fifty-two (52) water quality samples were collected from the drainage/runoff along the toe of the WRF pile. Water quality was compared against the WRF Water Quality Lower Action Levels identified in the Waste Rock Facility QAQC Monitoring Plan (BIM-5200-PLA-0034) Trigger Action Response Tables, with no exceedances of the Lower Action Levels for Arsenic, Copper, Lead, Nickel, Zinc, or pH throughout the 2024 season for all samples. Results of ABA and SFE testing is used internally to allow for continued monitoring and validation of Baffinland's waste rock classification and identification criteria. The geochemical results from this testing program to date have not revealed any issues with the current waste rock categorization practices. b) Tracking placement of waste rock deposition on a weekly frequency via drone/RTK GPS in tandem with the high-resolution geochemical characterization of our waste ore through blast hole sampling indicates that the placement strategy is effective. As such, no further analysis is required.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		Management Plan (Rev 4.1), confirmed with the analytical testing of in place waste rock material and as delivered at WRF. Further, it has been reported that the drainage from the WRF has shown no exceedances on geochemistry parameters; however, no trends of time v/s placement and time v/s geochemistry parameters were provided. Providing this information would demonstrate the effectiveness of the new placement strategy, i.e., between the date of waste rock placement (as per revised strategy) and geochemistry, were the improvements in drainage geochemistry observed to be instantaneous (with no time lag) or after a specified period of time. Geochemistry process in waste rock is supposed to be slowly occurring, but Baffinland reporting indicates as if it is instantaneous. c) No results presented for thermal monitoring at the WRF.		○ Appendix E.7: Quarry Geochemistry Analytical Sampling Results • Baffinland 2024. Aquatics Effects Monitoring Plan Rev 2 • Baffinland 2024. Phase 1 Waste Rock Management Plan Rev 4.1, including: ○ Appendix A: Waste Rock Management Plan – June 2024 through September 2026 • Baffinland 2024. 2023 Annual Report to the NIRB	c) Thermal monitoring results have been provided in Attachment 5.
GROUNDWATER: INSTALLATION OF NEW AND ADDITIONAL GROUNDWATER MONITORING WELLS IS INCOMPLETE					
116	**CIRNAC #3a**	As per TC# 17, Baffinland "shall develop and implement effective measures to ensure that effluent from project-related facilities and/or activities…. satisfies all discharge criteria requirement established by the relevant regulatory agencies prior to being discharged into the receiving environment." Baffinland is required to demonstrate through reliable and representative data that implemented measures, such as well monitoring, are effective. Baffinland noted (see 2024 Annual Report App E.1 Response to Comments 2023 NIRB Annual Report) that the 2023 groundwater monitoring program may not have provided representative water quality and hydraulic conductivity values at the Mary River Landfill Facility and Hazardous Waste Berms areas due to limitations with the wells. In an effort to address the limitations of the groundwater monitoring program, Baffinland indicated that new and additional wells would be installed in 2024 to address	CIRNAC requests that, in the 2025 Annual Report, Baffinland: a) Provide a schedule for completing the installation of new groundwater monitoring wells with appropriate bentonite seals/ installation procedures. b) Include borehole logs, along with cross-section diagrams to allow for review of hydrogeological interpretations.	• Project Certificate No. 005 (Amendment 05) (November 17, 2023) ○ TCs #17, 23, 24 • Baffinland 2025. 2024 Annual Report to the NIRB; including: ○ Section 4.6.5 Groundwater & Surface Water ○ Appendix E: Baffinland response to Comments on 2023 NIRB Annual Report ○ Appendix G.3: Groundwater Monitoring Report ○ Appendix G.4: 2024 Core Receiving Environment Monitoring Program Report (CREMP)	a) New groundwater wells, complete with a bentonite seal were installed in the early spring of 2025. The installation procedure, borehole logs, and cross section diagrams will be included in the 2025 Annual Groundwater Monitoring Report. b) Baffinland reminds CIRNAC reviewers that we are not dealing with "groundwater", so much as very shallow subsurface active layer seasonal flow. There are no aquitards, or confining layers that can increase complexity of well installations. The separation between the "unconfined layer" or active layer and a "confined layer" or true groundwater, is an impermeable layer of continuous permafrost estimated to be approximately 600-700 meters thick, as described in the 2024 Groundwater Monitoring Annual Report.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		reliability issues and data gaps that were previously identified. CIRNAC notes that the installation of the new and additional wells is outstanding.		• Baffinland 2025. 2024 QIA- NWB Annual Report for Operations	

117	**CIRNAC #3b**	Baffinland continues to implement the Groundwater Monitoring and Management Plan to monitor, prevent and/or mitigate the potential effects of the Project on groundwater within the Project area (Knight Piesold 2024a).
		
		Since its review of Baffinland's 2021 Annual Report, CIRNAC has consistently recommended that the program be expanded to include the Waste Rock Facility (WRF). CIRNAC re-iterates that two shallow test pits were advanced in the 2021 program in the WRF area; however, no information was provided regarding their location, field observations (i.e. test pit logs) or photos. Two test pits are not representative of the WRF area due to the overall size regardless of their location; therefore, the data collected from the two test pits is insufficient to gain a better understanding of the groundwater levels, stratigraphy characterization, permeability, groundwater quality, and groundwater flow direction.
		
		Furthermore, Baffinland reported that there is a potential leak the lined seepage collection pond at the WRF. If there is groundwater bypassing the WRF collection trenches, it is possible that increasing mine-related water quality trends observed in Mary River Tributary-F (MRTF) may be related to WRF since it is unlined. Baffinland has previously suggested that the MRTF water quality trends may be related to effluent discharge from the WRF at MS-08.
			CIRNAC requests that, in their 2025 Annual Report, Baffinland:
			
			a) Re-evaluate the potential for groundwater interaction with the WRF.
			
			b) Provide rationale and back-up data to support using two test pits as the basis for discounting the presence of groundwater at and adjacent to the WRF. Back-up data should include a map of test pit locations, test pit logs, photos of the test pits, and a conceptual site model (with any form of statistical analysis) showing how the two test pits to characterize potential groundwater within the WRF area.
				• Project Certificate No. 005 (Amendment 05) (November 17, 2023)
				  ○ TCs #17, 23, 24
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ Section 4.6.5 Groundwater & Surface Water
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.3: Groundwater Monitoring Report
				  ○ Appendix G.4: CREMP
				• Baffinland 2025. 2024 QIA-NWB Annual Report for Operations:
				• Baffinland 2024. 2023 QIA-NWB Annual Report for Operations:
				  ○ Knight Piésold 2024a
					1. As responded to previously (BIM Response to CIRANC Comment 3c on the 2023 NIRB Annual Report), Baffinland has previously explained that true "Groundwater" as we believe the reviewer is interpreting it, does not exist at Baffinland due to the continuous permafrost layer that is estimated to be approximately 600-700 meters thick. Previous attempts to collect active layer flow samples from the tundra adjacent to the WRF did not yield any subsurface flow.
					2. Baffinland is currently collecting suitable information to develop a conceptual model for active layer flow, which is extremely complex and does not follow typical rules for understanding "groundwater". Baffinland believes that the reviewers misunderstanding of the active layer has led them to believe there is a gap in our monitoring network, however Baffinland argues that there is not a gap and further inquiry regarding groundwater impacts are frivolous and would not be a suitable use of resources. Key reasons for this are below.
					
					a) The active layer and all subsurface flow is only within 0-3 meters in depth. (Supported by thermistor data across the site).
					b) The subsurface of the WRF is in a fully frozen, zero flow state (as supported by thermistors).
					c) The active layer, within the top 0-3 meters (or less) of the WRF and surrounding tundra, is only "active" for a short period of the year, between July and early October. (Supported by thermistor data)
					d) There are no contaminants of concern such as LNAPL ort DNAPL associated with the waste rock that would be heavier than water and would not be subject to monitoring as surface runoff (all water that migrates from the WRF is surface water, which is captured by the WRF ditches and conveyed to the WRF Pond)
					e) The nearest environmental receptor that could be subject to water quality changes from WRF is the receiving environment (Trib F), that receives all of our effluent from the WRF. The vast majority of which meets all discharge requirements without treatment, therefore the minute amount that could enter Trib F via the active layer could not reasonably be believed to have an effect, especially

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
					considering the effects of natural attenuation the soils would have on the extremely low concentrations of contaminants of concern found in WRF seepage). Baffinland therefore re-iterates that the expansion of our "groundwater" monitoring program to other facilities is not necessary, as there is no mechanism for receiving environment impacts that are not already extremely well monitored via our surface water monitoring programs (MDMER/EEM and CREMP).
SURFACE WATER QUALITY: AQUATIC EFFECTS AND DUSTFALL MONITORING					

118	**CIRNAC #4 (ONGOING)**	TC #21 requires the inclusion of measures for dustfall monitoring "to assess seasonal deposition (rates, quantities) and chemical composition of dust entering aquatic systems along representative distance transects at right angles to Tote Road and radiating outward from Milne Port and the Mine Site."
		
		Incorporating dustfall results into the Core Receiving Environment Monitoring Program (CREMP) and Lake Sedimentation Monitoring Program (Appendices G.4.1 and G.4.3) would support validating the effectiveness of the respective monitoring activities. CIRNAC previously recommended taking an adaptive management approach to identifying the need for added protection measures, adaptations to the monitoring programs, and updates to the Aquatic Effects Monitoring Program (AEMP).
		
		In response, Baffinland indicated that "dustfall chemical composition data will be submitted in subsequent annual monitoring reports when available (if there is sufficient material to perform the analysis).
		
		Baffinland will investigate the link of dustfall chemistry data with sediment trap data (and any proximal lake sediment data) for the next report cycle if there is sufficient sediment volumes to run the analysis."
		
		Both the CREMP and Lake Sedimentation Monitoring Program referenced the submission of samples for analysis of metals in the 2023 and 2024 Terrestrial Environment Annual Monitoring Report (TEAMR).
			CIRNAC requests that, in their 2025 Annual Report, Baffinland:
			
			a) Provide the analytical dustfall data with a comparison to applicable regulatory criteria referenced in the 2023 and 2024 TEAMR reports.
			
			b) Integrate the data into the CREMP for comparison with water quality data, to assess for potential changes in water chemistry related to dustfall deposition.
				• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TC #21
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ Section 4.6.4 Hydrology and Hydrogeology
				  ○ Section 4.6.5 Groundwater & Surface Water
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.5.1: TEAMR
				  ○ Appendix G.4.1: CREMP
				  ○ Appendix G.4.3. Mary River Project – Lake Sedimentation Monitoring 2023/2024.
				• Baffinland 2024. Aquatics Effects Monitoring Plan Rev 2
				  ○ Baffinland 2024. 2023 Annual Report to the NIRB; including:
				  ○ Appendix G.2.1 Air Quality, Dustfall and Meteorology Report
				  ○ Appendix G.5.1: TEAMR
					a) Analytical dustfall data are provided in section 7.3 of the TEAMR reports (see Appendix G.5.1 in the 2024 report). Data from dustfall monitoring stations within the vicinity of Sheardown Lake Northwest (NW) and considered representative of potential dust-related inputs to the lake were presented in Table B.7 of the 2023/2024 Lake Sedimentation Monitoring Program (LSMP) report (Minnow 2025). There are no regulatory criteria associated with passive dustfall.
					
					b) The Proponent recognizes the importance of considering dustfall data in the assessment of potential mine-related effects to the aquatic environment. Dustfall chemistry data were integrated into the assessment of sediment trap chemistry data for the first time in 2024, as part of the LSMP completed at Sheardown Lake NW (Minnow 2025). The Proponent intends follow the same approach of using the dustfall chemistry data to support interpretation of sediment trap chemistry data in 2025 (as sample volumes for analytical chemistry allow). The Proponent will consider investigating potential relationships between dustfall and water chemistry as part of the 2025 reporting cycle for the LSMP and/or Core Receiving Environment Monitoring Program (CREMP).
					
					Reference:
					
					Minnow. 2025. Mary River Project – Lake Sedimentation Monitoring Program 2023/2024. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		The 2023 Air Quality, Dustfall and Meteorology Report indicates that there are 49 passive dustfall sampling locations but data is only presented for three locations within the			
INFRASTRUCTURE AND ENGINEERING RELATED TO MINE WORKS: PERFORMANCE OF NEW MS-11 SURFACE WATER MANAGEMENT POND AT KM 105					

119	**CIRNAC #5 (ONGOING)**	MS-11 surface water management pond at KM 105 (KM105 pond) is a part of the first phase of the Long-Term Water Management Plan (LTWMP) implementation to address erosion and sedimentation at the Mine Site (Knight Piésold 2021).
		
		In 2023, seepage was reported to flow through the porous geologic structures adjacent to and below the dam structure, and Baffinland reported that these events have had no impact on the dam integrity.
		
		Monitoring was continued at the seepage location KM105-SWMPSEEP-02 for the duration of the 2023 flowing water season as a followup to the initial spill report. Additionally, seepage remediation work was undertaken in 2023.
		
		As reported in the 2024 Annual Report, Baffinland engaged third-party engineers and water treatment experts to identify and assess potential mitigation and improvements for 2025. The evaluation acknowledged that the engineering solutions for the KM105 dam have not proven effective to date, and further grouting was deemed unreliable as there is a possibility that frozen ground will thaw and open new pathways, allowing seepage to propagate.
		
		The review concluded that water management within the facility footprint below and above the dam should be the focus for 2025 as opposed to continuing the 2024 grout curtain project.
		
		A preliminary conceptual mitigation plan was provided in the January 22, 2025 letter included in Appendix E.8.3 of the 2024; however, a detailed mitigation plan has not yet been developed and final As-built(s) are not complete.
			CIRNAC requests that Baffinland:
			
			a) Provide a detailed description outlining the mitigation plan (below and above the dam) and associated water management infrastructure being completed in lieu of the grout curtain approach by August 15, 2025 or before the next Geotechnical, CIRNAC, or QIA Inspection.
			
			b) Provide a schedule for completing the associated plans and a schedule for implementation and reporting. It is understood that Baffinland will provide detailed reporting as required under TCs #16, 17, 22, and 24. It is understood these modifications are still in development with the third-party engineer.
				• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TCs # 16, 17, 22 and 24
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ Section 3.1 Site Activities Completed in 2024
				  ○ Section 4.3 Summary of 2024 Compliance with Terms and Conditions
				  ○ Section 4.5.2 Unauthorized Discharges and Spills
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.2.6 2024 Geotechnical Inspection Reports
				• NWB Water Licence No. 2AM-MRY2540/Type A dated April 28, 2025.
				• Baffinland 2025. 2024 QIA-NWB Annual Report for Operations:
				  ○ Appendix E.8.1: CIRNAC Inspection reports and Baffinland Responses
				  ○ Appendix E.8.2: QIA Inspection Reports and Baffinland Response
					a) As discussed in our January 22, 2025 letter, the following mitigations have been put in place and as observed by QIA, CIRNAC, and NIRB inspectors in summer 2025, are working extremely well:
					  1. Chemical dosing with Polymer at the inlet from the Mine Haul Road ditch to the first part of the KM 105 facility has resulted in increased flocculation and settling within the first portion of the former pond
					  2. Installation of a proof-of concept non-engineered filter berm mid-way in the KM 105 Pond has resulted in effective filtering of solids during both high and low flows, and is informing the design of the engineered filter berm.
					  3. Further polishing and settling in the downstream pond including the installation of a mid-pond silt curtain, provide added insurance to maintain water quality at the new monitoring/compliance location, although with the mitigations put in place, the seepage at the to of the former dam is fully compliant much of the time in 2025. The overall system shows at times a two to three log reduction in TSS from the Mine haul Road inlet location to the compliance point.
					
					b) Engineering for the final filter berm design is currently underway, as is the design for the engineered final discharge point (MS-11). Once these designs are complete, Baffinland will be following the procedures for modification review as required by NWB, QIA, NIRB, and ECCC. Reporting including final as-built reports will also follow requirements of our Water Licence, commercial Lease, and Project Certificate.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
SURFACE WATER QUALITY – ELEVATED NITRATE IN SURFACE WATER					

120	**CIRNAC #6 (ONGOING)**	In the 2024 Annual Report and CREMP, Baffinland identified that mine related impacts to surface water quality, specifically increasing nitrogen and ammonia concentrations within the Sheardown Lake system, are likely related to the Dyno Emulsion Plant. As per TC #20, Baffinland "shall monitor the effects of explosives residue and related by-products from Project-related blasting activities, as well as develop and implement effective preventative and/or mitigation measures, including treatment, if necessary, to ensure that the effects associated with the manufacturing, storage, transportation, and use of explosives do not negatively impact the Project and surrounding areas."
		
		To comply with TC #20, it is recommended that Baffinland implement mitigation measures and/or treatment to prevent negative effects within the Project and surrounding areas.
		
		CIRNAC also notes that the increasing nitrogen and ammonia concentrations could be considered a change from the existing water quality conditions (i.e., elevated nitrates), which suggests that the Dyno Emulsion Plant should be added to the groundwater monitoring program to support identifying impacts to the Sheardown Lake system
			CIRNAC requests that Baffinland, in the 2025 Annual Report, provide a summary of activities and a timeline on what and when mitigation efforts will be implemented to address impacts associated with the Dyno Emulsion Plant.	• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TCs # 17, 20, and 24
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ 4.6.5 Groundwater & Surface Water
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.3: Groundwater Monitoring Report
				  ○ Appendix G.4.1: CREMP
					In the 2025 Annual Report for the Mary River Mine, the Proponent will provide a summary of activities and a timeline on what and when mitigation efforts have been or will be implemented to address impacts associated with the Dyno Emulsion Plant.

INFRASTRUCTURE AND ENGINEERING RELATED TO MINE WORKS: THERMAL MONITORING OF WASTE ROCK FACILITY					

121	**CIRNAC #7a (ONGOING)**	Previously, CIRNAC requested that Baffinland use additional instrumentation and update the thermal analysis, including heat and oxygen balances across the WRF. Baffinland provided a WRF instrumentation update in its 2023 QIA-NWB Annual Report for Operations.
		
		CIRNAC acknowledges Baffinland's previous responses, but some aspects highlighted in CIRNAC's issue #7 raised in its 2023 review of the Annual Report remain relevant during the 2024 annual review cycle.
		
		An installation update for thermistors at the WRF has been provided in the 2024 QIA-NWB Annual Report; however, no
			CIRNAC requests that Baffinland provide the temperature evolution since instrument installation, at the different monitoring stations, as a function of time and depth.
			
			These requests should be addressed in the 2025 Annual Report.
				• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TCs #25 and 28
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.2.6: 2024 Geotechnical Inspection Reports
					2024 monitoring results have been compiled in Attachment 5.
					
					Increasing temperature at depth at BH-1 is highlighted by the consistency of nodes 15 through 23. The plot (Attachment 5), shows how the temperatures of these nodes correlate with ambient temperature. Despite lag time and depth of burial, there is correlation. It should also be noted that this thermistor's proximity to the dump exterior could make it more susceptible to changes in ambient temperatures and ground disturbances, such as the pond expansion in 2019-2020.
					
					Monitoring will continue and data will be reviewed during the next update to the thermal model.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		monitoring data was included in the report for the 2023-2024 period. Without this information, it is not possible to validate the performance of the mitigation strategy with the non-AG frozen cover. The variation of the waste rock thickness above the thermistors' beads should be monitored simultaneously to ensure proper interpretation of the collected ground temperature data. The addition of two years of data should be used to reassess the observations/statements made earlier for the WRF about: - Increasing temperature at depth at BH-1 - Effect of local warmer zones on the performance of the ARD limitation on the long-term - Heat generation from geochemical reaction and convection not considered in the thermal modeling. An assessment of the active zone depth at WRF considering SSP1-2.6 climate change projections (WSP, 2024) has been provided in the 2024 QIA-NWB Annual Report. The SSP1-2.6 scenario is the most optimistic, projecting significant reductions in greenhouse gas emissions and a sustainable future. However, it is essential to also consider more conservative scenarios to gain a comprehensive understanding of the potential impacts on the WRF future geochemical stability. CIRNAC recommends that Baffinland consider multiple climate change scenarios when forecasting the long-term temperature evolution in the non-AG cover at WRF. By evaluating a range of scenarios, a comprehensive understanding of the potential impacts of varying climate conditions on the site can be gained. This comprehensive approach will help ensure that predictions are robust and account for different possible futures. CIRNAC notes that no monitoring data for the thermistors at the WRF was provided for the 2023-2024 period. Without		• Baffinland 2025. 2024 QIA-NWB Annual Report for Operations: ○ Appendix E.8.1: CIRNAC Inspection reports and Baffinland Responses ○ Appendix E.8.2: QIA Inspection Reports and Baffinland Response ○ Appendix E.10: Assessment of Active Zone Depth Considering SSP1-2.6 Climate Change Projections at Mary River Mine, dated October 4, 2024. • Baffinland 2024. Phase 1 Waste Rock Management Plan Rev 4.1, including: ○ Appendix A: Waste Rock Management Plan – June 2024 through September 2026: ▪ Appendix A2: TECHNICAL MEMORANDUM: ▪ Thermal Model and Assessment of Conceptual Summer Deposition Strategies for the Waste Rock Storage Facility at Mary River Mine	

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		this information, it is not possible to validate the performance of the mitigation strategy with the non-AG frozen cover.			

122	**CIRNAC #7b (ONGOING)**	CIRNAC acknowledges Baffinland's previous responses to CIRNAC 2023 annual report comment #7, but some aspects highlighted in CIRNAC's issue #7 raised in its 2023 review of the Annual Report remain relevant during the 2024 annual review cycle.
		
		An assessment of the active zone depth at WRF considering SSP1-2.6 climate change projections (WSP, 2024) was provided in the 2024 QIANWB Annual Report. The SSP1-2.6 scenario is the most optimistic, projecting significant reductions in greenhouse gas emissions and a sustainable future. However, it is essential to also consider more conservative scenarios to gain a comprehensive understanding of the potential impacts on the WRF future geochemical stability.
			CIRNAC recommends that Baffinland consider multiple climate change scenarios when forecasting the long-term temperature evolution in the non-AG cover at WRF, in order to provide a robust understanding of potential impacts of varying climate conditions, and provide a description of the considerations in the 2025 Annual Report.	• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TCs #25 and 28
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.2.6: 2024 Geotechnical Inspection Reports
				• Baffinland 2025. 2024 QIA-NWB Annual Report for Operations:
				  ○ Appendix E.8.1: CIRNAC Inspection reports and Baffinland Responses
				  ○ Appendix E.8.2: QIA Inspection Reports and Baffinland Response
				  ○ Appendix E.10: Assessment of Active Zone Depth Considering SSP1-2.6 Climate Change Projections at Mary River Mine, dated October 4, 2024.
				• Baffinland 2024. Phase 1 Waste Rock Management Plan Rev 4.1, including:
				  ○ Appendix A: Waste Rock Management Plan – June 2024 through September 2026:
				  ▪ Appendix A2: TECHNICAL MEMORANDUM: Thermal Model and Assessment of Conceptual Summer
					As outlined in the latest ICRP, Baffinland plans to complete 2D thermal modeling of the WRF active layer in 2026, and plans to consider multiple climate change scenarios. Further details can be found in the latest ICRP.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
				Deposition Strategies for the Waste Rock Storage Facility (WRSF) at Mary River Mine	
123	**CIRNAC #7c (ONGOING)**	Previously, CIRNAC requested that Baffinland use additional instrumentation and update the thermal analysis, including heat and oxygen balances across the WRF. Baffinland provided a WRF instrumentation update in its 2023 QIA-NWB Annual Report for Operations. CIRNAC acknowledges Baffinland's previous response but some aspects highlighted in CIRNAC's issue #7 raised in its 2023 review of the Annual Report remain relevant during the 2024 annual review cycle. Baffinland provided the status of all instrumentation at WRF updated to March 2025. The status update includes those that were installed in 2024, those that are permanently down (non-functional), and those that are active. Only thermistors and one vibrating wire piezometer (VWP) are active, going forward. They have discontinued with other instruments such as oxygen sensors, barometers and additional VWP. Their discontinuation has been associated with their usefulness and operational success. Thermistors are both vertical and horizontal strings, covering waste rock and foundations. Additional thermistors will be installed during Q2 to verify ongoing freeze-back of placed materials. It has been reported that the waste rock pile is in a perpetually frozen state, except for the near surface 2 to 3m of active layer. Baffinland is of the opinion that the thermistors installed in targeted locations will provide the necessary monitoring to confirm the deposition strategy is working; however, it is not clear how the geochemical model will be updated without the factual data of oxygen consumption, air and heat generation/flow within the pile. Neither has there	CIRNAC requests that Baffinland, in their 2025 annual report: a) Provide an explanation for how the geochemical model will be updated without the factual data of oxygen consumption, air and heat generation/flow within the pile. b) Provide commentary on when an update of the geochemical model for the WRF will be presented.	• Project Certificate 005 (Amendment 05) (November 17, 2023) ○ TCs #25 and 28 • Baffinland 2025. 2024 Annual Report to the NIRB; including: ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report ○ Appendix G.2.6: 2024 Geotechnical Inspection Reports • Baffinland 2025. 2024 QIA-NWB Annual Report for Operations: ○ Appendix E.8.1: CIRNAC Inspection reports and Baffinland Responses ○ Appendix E.8.2: QIA Inspection Reports and Baffinland Response ○ Appendix E.10: Assessment of Active Zone Depth Considering SSP1-2.6 Climate Change Projections at Mary River Mine, dated October 4, 2024. • Baffinland 2024. Phase 1 Waste Rock Management Plan Rev 4.1, including: ○ Appendix A: Waste Rock Management Plan – June 2024 through September 2026: ▪ Appendix A2: Technical Memorandum: Thermal Model and Assessment of Conceptual Summer	The factual data of heat generation within the pile is being assessed through the installation and monitoring of thermistors in the WRF. Thermistor data has informed Baffinland's conservative deposition procedures to ensure rapid continuous development and raising of permafrost within the WRF and reduce the potential for the development of water and air flow pathways by limiting particle segregation. Monitoring the thermal behavior of the WRF will continue to assess the performance of the deposition strategy and waste rock classification criteria, all designed to ensure progressive freeze-back and mitigate ARD and ML. Baffinland's last 3rd party assessment and update of its waste rock geochemistry, water balance and thermal model of the WRF, was issued in January 2024 and included all available data up to the end of 2022. As outlined in the latest ICRP, updates to the WRF thermal model and geochemistry/water quality model will occur in 2026 and 2027 respectively.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		been any update on geochemical model of the WRF presented.		Deposition Strategies for the Waste Rock Storage Facility (WRSF) at Mary River Mine	
GROUNDWATER AND SURFACE WATER QUALITY: M/LARD INVESTIGATIONS RELATED TO MINE WORKS					

124	**CIRNAC #8 (ONGOING)**	CIRNAC understands that ongoing monitoring at the WRF water quality monitoring was conducted in 2023 at the east and west ditches where they flow to the WRF Pond, as well as in two (2) other locations upstream in the east and west ditches. In addition, sampling of drainage/seepage at the perimeter toe of the WRF pile was conducted.
		
		Baffinland continued to implement a similar WRF water quality monitoring program in 2024. The 2023-2024 monitoring results from the thermistors at the WRF can be interpreted in correlation with water quality in the east and west peripheral ditches, in the WRF surface water pond, in effluent MS-08, and in the downstream receiving water courses.
		
		CIRNAC acknowledges Baffinland's ongoing water quality monitoring and temperature data collection as a "primary means for assessing the thermal behaviour" of the waste rock pile; however, the 2023-2024 monitoring results from the thermistors installed at the WRF were not provided with the 2024 Annual Report (See CIRNAC #7a)
			CIRNAC requests that Baffinland provide the 2023-2024 monitoring results from the thermistors at the WRF, validate the performance of the PAG material management with the non-AG cover, and provide detailed discussions on the thermistor and PAG material management in the 2025 annual report.	• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TCs # 21 and 23
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ 4.6.5 Groundwater & Surface Water
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.3: Groundwater Monitoring Report
				  ○ Appendix G.4.1: CREMP
				• Baffinland 2024. Phase 1 Waste Rock Management Plan Rev 4.1, including:
				  ○ Appendix A: Waste Rock Management Plan – June 2024 through September 2026:
				  ▪ Appendix A1: 2020 to 2022 Waste Rock
				  ▪ Geochemistry Report
				  ▪ Appendix A2: Technical Memorandum: Thermal Model and Assessment of Conceptual Summer Deposition Strategies for the Waste Rock Storage Facility at Mary River Mine
					See response to **CIRNAC #2.**
					
					Updates on the WRF thermal monitoring program, and waste rock deposition will continue to be provided in the QIA-NWB annual report.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
INFRASTRUCTURE AND ENGINEERING RELATED TO MINE WORKS: PERMAFROST AND ML/ARD MITIGATION STRATEGY					

125	**CIRNAC #9 (ONGOING)**	Under the Mary River Project Certificate TC 2, Baffinland is required to provide feedback on the impact that climate change might be having on the project. This includes providing results of any new or revised assessments and studies done to validate and update climate change impact predictions for the Project.
		
		It is recommended to consider multiple climate change scenarios when forecasting the long-term temperature evolution in the non-acid generating (AG) cover at WRF.
		
		By evaluating a range of scenarios, a comprehensive understanding of the potential impacts of varying climate conditions on the site can be gained. This comprehensive approach will help ensure that predictions are robust and account for different possible futures.
		
		Past audits and assessments, such as the 2023 Environmental Mine Audit and WSP 2024, have shown an increase in temperature trend throughout the WRF (down to 19 m), This observation underpins the need for an understanding of long-term climatic trends in the region, including the long-term stability of the permafrost.
		
		CIRNAC acknowledges that Baffinland is developing a thermal model to predict the impact of climate change on the depth of ground subject to seasonal freezing and thawing (active zone) at the WRF. Baffinland expects to provide a memo with the results of the investigation for the next update to the Interim Closure and Remediation Plan (ICRP).
			CIRNAC requests that Baffinland provide a schedule for developing a thermal model and preparing a summary memorandum on the prediction of the impact of climate change on the depth of ground subject to seasonal freezing and thawing at the WRF. Baffinland's memorandum should consider:
			
			a) Evaluating the predicted ground surface temperatures and permafrost development in light of the effects of climate change on the waste rock pile using recent climate change predictions; and,
			
			b) Discussing the implications on the thermal/physical stability of and potential of ML/ARD development in the waste rock. This discussion should include results from the climate change predictions and an evaluation of the increasing sub-surface temperatures at BH1 at about 19 m depth.
			
			CIRNAC also requests supporting data used in the development of the model be appended to the proposed memorandum.
			
			The memorandum should be included as part of the next update to the ICRP.
				• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TC #2
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ 4.6.5 Groundwater & Surface Water
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				  ○ Appendix G.3: Groundwater Monitoring Report
				  ○ Appendix G.4.1: CREMP
				• Baffinland 2025. 2024 QIA-NWB Annual Report for Operations:
				  ○ Appendix E.10: Reclamation Research Studies (WSP 2024. Assessment of Active Zone Depth Considering SSP1-2.6 Climate Change Projections at Mary River Mine, dated October 4, 2024).
				• Okane 2023. 955-221 Mary River Mine 2023 Environmental Audit (November 17, 2023)
					As outlined in the latest ICRP, Baffinland plans to complete 2D thermal modeling of the WRF active layer in 2026, and plans to consider multiple climate change scenarios. Further details can be found in the latest ICRP.

WASTE ROCK MANAGEMENT: PHYSICAL SLOPE STABILITY OF WASTE ROCK FACILITY					
126	**CIRNAC #10 (NEW)**	Project Certificate TC #25 states that Baffinland "shall undertake additional geotechnical investigations to identify sensitive landforms, modify engineering design for Project infrastructure, develop and implement preventative and/or mitigation and monitoring measures to minimize the	CIRNAC requests that Baffinland, in addition to the instrumentation placed or planned for thermal stability of the WRF: a) Implement the Okane and QIA inspection report recommendation to	• Project Certificate 005 (Amendment 05) (November 17, 2023) ○ TC #25 • Baffinland 2025. 2024 Annual Report to the NIRB	This localised surficial slope instability documented in the Okane and QIA inspection report (August 21, 2024) could be attributed to the presence of finer material as well as the over steepening of the freshly placed material. A drone survey taken near the time of inspection shows the angle of that slope to be around 40 degrees. As mentioned in the CIRNAC comment, assumed values are

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		impacts of the Project's activities and infrastructure on sensitive landforms." Okane and QIA inspection report (August 21, 2024) observed localized surface slope instability of waste rock deposited. They attributed the instability to the material gradation variability and the possibility of finer material presence in this area. Another observation was noted that the strength parameters for the slope stability analysis of the WRF in general are based on assumed values. The inspection report recommended carrying out testing on as-deposited material and determining the factual strength parameters.	determine the as-placed waste rock fill properties b) Install instrumentation for WRF deformation monitoring, such as Shape Accel Arrays, for early warning on any slope instability.	• Baffinland 2025. 2024 QIA-NWB Annual Report for Operations: ○ Appendix E.8.2: QIA inspection reports and Baffinland Responses	less than the angles surveyed. The material would be expected to "fail" until natural angle of repose is reached. It should also be noted that there were no geotechnical concerns documented in WSP inspections from 2021 and 2024. See the below figures:

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
					  **Figure 3.3: Localized surficial slope instability on WRF plateau.**
SURFACE WATER QUANTITY: WASTE ROCK FACILITY - WATER BALANCE					

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response

127	**CIRNAC #11 (NEW)**	The Annual Report indicated that on June 21, 2024, rising of ambient temperature and rapid snowmelt resulted in the WRF Pond water levels rising significantly over a short period. A controlled discharge was subsequently initiated with three additional pumps to lower the water level in the pond, and pumping commenced over the spillway onto frozen ground adjacent to the WRF on June 24.
		
		The report also indicated that the discharge was compliant with applicable water licence NWB (2015) and Metal and Diamond Effluent Regulations (MDMER) requirements, and the event was reported to regulators.
		
		Results of Baffinland's investigation of the incident at the WRF identified evaluating the water balance and existing pump infrastructure to ensure it is fit-for-purpose to accommodate the freshet flow by pumping water to the approved Final Discharge Point (FDP) as preventative measures to be taken to prevent a similar reoccurrence.
		
		CIRNAC does not object the investigation outcomes and believes that updating the water balance with current climate, hydrology and land cover would have predicted such scenarios and eliminates such outcomes.
		
		The objectives of the Water Balance model include simulation of the current and future water accumulation in the WRF Pond and water transfers, to understand the risks to current and planned water management strategies and potential site water quantity overflow to the receiving environment.
			CIRNAC requests that Baffinland update the Water Balance model, particularly to include:
			
			a) Collection of climate data, hydrometric data; and,
			
			b) Investigation of methods for collecting snowfall and snowpack within the WRF pond catchment.
				• Project Certificate 005 (Amendment 05) (November 17, 2023)
				  ○ TC #17
				• Baffinland 2025. 2024 Annual Report to the NIRB; including:
				  ○ 4.5.2 Unauthorized Discharge and Spills
				  ○ 4.6.5 Groundwater & Surface Water
				  ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report
				• NWB Water Licence No. 2AM-MRY2540/Type A dated April 28, 2025.
				• Baffinland 2024. Phase 1 Waste Rock Management Plan Rev 4.1, including:
				  ○ 8.1 Deposition Strategy and Guidelines
				  ○ 9. WRF Water Management
				  ○ 9.3 Water Volume Tracking
				  ○ Appendix A: Waste Rock Management Plan – June 2024 through September 2026:
				  ▪ Appendix A.3: 2023 Water Balance Update Report
					A method for collecting snow pack data around Deposit 1 has already been initiated and is planned to continue moving forward.
					
					A review of the existing WRF water balance and newly acquired climate and hydrometric data will occur in 2027 during the ICRP-scheduled update of the WRF Water Quality Model. It will be determined at this time if there is sufficient new data to warrant an update to the existing WRF water balance.

GROUNDWATER: EXPLOSIVE MAGAZINE AREA					
128	**CIRNAC #12 (NEW)**	CIRNAC notes that the risk-based ranking criteria used in Knight Piesold 2023 and 2024 differ throughout the groundwater monitoring program. For example, in Knight Piesold (2024) the 'contaminant present' category was removed because no groundwater monitoring was completed at Milne Port; however, in Knight Piesold (2023),	CIRNAC requests that Baffinland: a) Provide rationale for the differing risk based ranking methodologies between key site areas (e.g., Milne Port, Mine Site,	• Project Certificate No. 005 (Amendment 05) (November 17, 2023) ○ TCs #17, 23, 24 • Baffinland 2025. 2024 Annual Report to the NIRB; including:	a) The risk-based screening criteria used for Milne Port in 2024 were adapted from those applied at the Mine Site in 2023 to reflect site-specific conditions and data availability. At the Mine Site, the "Contaminant Present" criterion was included because groundwater monitoring had been conducted. At Milne Port, this criterion was

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		the 'contaminant present' category applies to facilities within the Mine Site even though groundwater monitoring was not completed at nearly all facilities. Furthermore, Baffinland previously reported that the Explosive Magazine area was considered high risk for groundwater to impact surface water (Knight Piésold 2023). Based on this ranking, the Explosive Magazine Area likely should be added to the groundwater monitoring program.	Waste Rock Facility, Explosive Magazine area, etc.). b) Expand the groundwater monitoring program to investigate the Explosive Magazine area because it has been categorized as 'high risk'.	○ Section 4.6.5 Groundwater & Surface Water ○ Appendix E: Baffinland response to Comments on 2024 NIRB Annual Report ○ Appendix G.3: Groundwater Monitoring Report ○ Appendix G.4: 2024 Core Receiving Environment ○ Monitoring Program Report (CREMP) • Baffinland 2025. 2024 QIA-NWB Annual Report for Operations • Knight Piésold 2024. Mary River Project: 2023 Annual Ground Water Monitoring Program. • Knight Piésold 2023. Mary River Project: Ground Water Monitoring Program Review and Assessment.	removed because no groundwater monitoring data existed, and applying it would have introduced assumptions not supported by evidence. b) Baffinland will not be expanding the groundwater monitoring program to the explosive magazine area. As per the classification of the Explosive Magazine area in the report provided by KP for the 2022 Annual NIRB Report submitted in 2023, the location was designated with a risk rating of medium, contrary to ECCC's comment. The decision not to monitor groundwater in this area was made based on the absence of reported spills, the use of appropriate containment infrastructure, and the low potential for contaminant mobility. As stated, numerous times, subsurface flows at Baffinland are limited to the upper 0-3meters during the seasonal thaw period, as confirmed by thermistor data. To summarize, there is likely no viable groundwater pathway by which contaminants from the Explosive Magazine Area could reach a receptor. Furthermore, the compounds of concern (e.g., nitrate, ammonia) are already monitored through surface water programs. Baffinland maintains that expanding the monitoring program would not represent an effective use of resources, and that there is no gap in environmental oversight.
GROUNDWATER: GROUNDWATER MONITORING PROGRAM EXPANSION – MILNE PORT ORE STOCKPILE AREA					
129	**CIRNAC #13**	CIRNAC previously noted limited surface and water monitoring at the Milne Port ore stockpile area. Aerial imagery presented in the 2024 QIA-NWB Annual Report showed orange-stained contact waters being captured and conveyed around all sides of the ore stockpile(s). Most notable, unlined ditches with orange-stained contact water were present immediately adjacent to the river system to the west. Given the proximity to the river and Milne Port Bay, a shallow groundwater table is expected. While monitoring is conducted within the marine environment in the bay to the north, no monitoring appears to be conducted in the adjacent river. Furthermore, no porewater or shallow groundwater investigation has been	CIRNAC requests that Baffinland: a) Expand the groundwater monitoring program to include the ore stockpile at Milne Port. b) Conduct additional surface water and porewater monitoring/ sampling surrounding the ore stockpile at Milne Port to confirm mine-impacted contact water is not migrating to the receiving environment via groundwater and porewater. Include the results in the 2025 Annual Report.	• Project Certificate No. 005 (Amendment 05) (November 17, 2023) ○ TCs #17, 24 • Baffinland 2025. 2024 Annual Report to the NIRB; including: ○ Section 4.6.5 Groundwater & Surface Water ○ Appendix E: Baffinland response to Comments on 2024 ○ NIRB Annual Report	As clarified previously (BIM Response to 2023 NIRB Annual Report Comment QIA WQ#4, Appendix G.3 of the 2024 NIRB Annual Report, and BIM Response to 2023 QIA-NWB Annual Report Comment ECCC#7), Baffinland would like to reiterate that true "Groundwater" as we believe the reviewer is interpreting it, does not exist at Baffinland due to the continuous permafrost layer that is estimated to be approximately 600-700 meters thick. Baffinland is currently collecting suitable information to develop a conceptual model for active layer flow, which is extremely complex and does not follow typical rules for understanding "groundwater". Baffinland believes that the reviewers misunderstanding of the active layer has led them to believe there is a gap in our monitoring network, however Baffinland argues that there is not a gap, and further inquiry regarding groundwater impacts are frivolous and would not be a suitable use of resources. Key reasons for this are below.

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		completed to confirm the presence or absence of mine impacts to groundwater from the ore stockpile.		○ Appendix G.3: Groundwater Monitoring Report ○ Appendix G.4: CREMP • Baffinland 2025. 2024 QIA-NWB Annual Report for Operations	1) The active layer and all subsurface flow are only within 0-3 meters in depth. (Supported by thermistor data across the site). 2) The active layer, within the top 0-3 meters (or less) of the Ore Pad and surrounding tundra, is only "active" for a short period of the year, between July and early October. (Supported by thermistor data) 3) There are no contaminants of concern such as LNAPL ort DNAPL associated with the ore that would be heavier than water and would not be subject to monitoring as surface runoff (all water that migrates from the ore is surface water, which is captured by the ore pad ditches and conveyed to the Ore Pad Ponds) 4) The nearest environmental receptor that could be subject to water quality changes from WRF is the receiving environment (Milne Inlet), that receives all of our effluent from the Ore Pad. All discharged water from the ore pad is discharged without chemical treatment, as it meets all discharge criteria with TSS being the only contaminant of concern that sometimes exceeds. TSS is not a concern in subsurface flows. 5) Therefore, the minute amount of seasonal subsurface water that could enter Milne inlet via the active layer could not reasonably be believed to have an impact, especially considering the effects of natural attenuation the subsurface soils would have on the extremely low concentrations of contaminants of concern found in Ore pad runoff). Baffinland therefore re-iterates that the expansion of our "groundwater" monitoring program to other facilities is not necessary, as there is no mechanism for receiving environment impacts that are not already extremely well monitored via our surface water monitoring programs (Water Licence SNP Monitoring and MEEMP).
ELEVATED MAJOR IONS AND SALINITY IN DOWNSTREAM WATERS					
130	**CIRNAC #14 (NEW)**	The monitoring data shows a rising trend in major ions (e.g. sulfate, chloride, sodium) and related parameters in downstream water bodies. Appendix G.4.1 indicates that both Sheardown Lake NW and SE exhibited mine-related influences for sulfate. Although sulfate concentrations did not exceed the Aquatic Effects Monitoring Plan (AEMP) benchmark, they were elevated relative to baseline and	The significance of gradually increasing major ion concentrations requires a precautionary approach. CIRNAC suggests that Baffinland: a) Establishes a trend threshold for key parameters like sulfate in the AEMP.	• Project Certificate 005 (Amendment 05) (November 17, 2023) • TCs # 17, 21, 23, 24 • Appendix G.4.1 – 2024 Mary River CREMP Report, Part 1	The following activities are underway or planned for completion as part of the 2025 aquatic monitoring and reporting cycle, and are expected to address recommendations a) and b) from Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC): • Conduct temporal trend analyses for key water quality parameters at CLT1 Main Stem, Camp Lake, Sheardown Lake Tributaries 1 and 12, Sheardown Lakes Northwest (NW) and Southeast (SE), and Mary River Tributary F (MRTF) to

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
		were found to have increasing trends over time. Appendix G.4.1 also notes upward trends in total dissolved solids in waters receiving mine drainage. For example, water flowing from the Mine Site Water Management Pond (station F001) has consistently higher specific conductance than natural streams, indicating high dissolved ion content. Over time, such loading of major ions can alter the freshwater habitat (by increasing hardness/salinity). These minor but cumulative changes may become significant if trends continue. In particular, molybdenum and uranium levels, which remained below guidelines, were markedly higher in 2024 mine-affected lakes than in reference lakes.	b) Undertake a source identification study to pinpoint why sulfate and other ions are increasing. c) Incorporate a salinity monitoring plan into the Surface Water Management Plan, with specific conductance monitoring at key downstream locations to ensure early detection of further salinity increases. These requests should be addressed in the 2025 Annual Report.	○ Section 4.2: Water quality in Sheardown and Mary River systems • Appendix G.4.1 – 2024 CREMP Report (Table 6.1) • Type 'A' Water Licence 2AM-MRY1325 – Part F, Condition 8 and Schedule 4	further investigate temporal trends/patterns. Sulphate is among the key parameters identified for the CLT1 Main Stem, Sheardown Lake Tributary 1, Sheardown Lake NW, Sheardown Lake SE, and MRTF in the 2024 Core Receiving Environment Monitoring Program (CREMP) report. • Investigate potential sources of sulphate and other key parameters at CLT1 Main Stem, Sheardown Lake Tributary 1, Sheardown Lake NW, and Sheardown Lake SE. Salinity monitoring is not required, as the Proponent already monitors concentrations of major ions, and this is sufficient to detect potential mine-related changes to water quality. Additionally, a precautionary approach is already being used, via the Trigger Action Response Plan (TARP) in Rev 2 of the Aquatic Effects Monitoring Plan (AEMP) (Baffinland 2024). The outcomes associated with the activities described above will be reported on in the 2025 CREMP report, as appropriate. **Reference:** Baffinland. 2024. Aquatic Effects Monitoring Plan BIM-5200-PLA-0023. Rev 2. March 31, 2024.
METAL ACCUMULATION IN LAKE SEDIMENTS					
131	**CIRNAC #15 (NEW)**	Sediment concentrations of arsenic, copper, and iron in Sheardown Lake NW exceeded AEMP benchmark levels (e.g. exceeded CCME sediment quality guidelines). Statistical analysis confirms increasing trends in the concentration of these metals since the baseline period. The Annual Report's appendices suggest a continuing pattern: mean iron levels in both littoral and profundal sediments of Sheardown Lake NW in 2024 remained above benchmarks.	CIRNAC requests that Baffinland initiate a focused investigation in 2025 into the sources of arsenic and copper in Sheardown Lake NW sediments in the 2025 Annual Report.	• Project Certificate 005 (Amendment 05) (November 17, 2023) ○ TCs # 10, 21, 22, 187 • Appendix G.4.2 – Mary River Lake Sedimentation Monitoring Report ○ Section 3 and 4: Sedimentation Rates and Sediment Chemistry in Sheardown Lake NW • Appendix G.4.1 – 2024 CREMP Report, Part 1 ○ Section 4.3: Sediment Quality Results • 2024 CREMP Report, Part 1 • CCME Sediment Quality Guidelines	In Sheardown Lake Northwest (NW), arsenic concentrations reported as part of the Core Receiving Environment Monitoring Program (CREMP) in 2024 were highest in the sediment samples from near the inflows from SDLT1 and SDLT12 (stations DD-HAB-9-STN2 and DL0-01-9, respectively) and lower at the outflow station (DL0-01-10) in 2024 (Minnow 2025a). Copper concentrations in sediments were highest near the inflow of SDLT12 and lowest at the outflow station. In 2024, mean concentrations of arsenic and copper in sediment samples collected from Sheardown Lake NW and reported in the CREMP report were below Aquatic Effects Monitoring Plan (AEMP) benchmarks and/or sediment quality guidelines (SQG) (Minnow 2025a). Additionally, mean concentrations of arsenic and copper in sediments of Sheardown Lake NW were similar to those measured at Reference Lake 3. The findings of the Lake Sedimentation Monitoring Program (LSMP) generally corroborate those of the CREMP, despite differences in the sampling methodologies used for the two programs. Sediment trap material collected as part of the LSMP represents freshly deposited material during mine operations, whereas surface sediments (i.e., the upper 2 cm) collected as part of the CREMP (coring) represent sediment quality integrated over time. Currently, sediment chemistry data are only available for the sediment traps that were deployed over the 2023/2024 ice-cover period. The mean sediment trap material arsenic

Cmt. #	CIRNAC Cmt. #	Reviewer's Detailed Comment	CIRNAC Recommendations	Reference Section	Baffinland's Response
				○ Interim Sediment Quality Guidelines (ISQGs) • Final Environmental Impact Statement (Baffinland)	concentration for one of the littoral areas (SHAL-2) was above the AEMP benchmark, but comparable to sediment from Reference Lake 3 and below SQG (Minnow 2025b). Similarly, mean copper concentrations in sediment trap material from Sheardown Lake NW were below AEMP benchmarks and SQG. Based on the results summarized above, a focused investigation into the sources of arsenic and copper in Sheardown Lake NW sediments is not warranted at this time, given effects to biota are not anticipated. However, the Proponent will continue to monitor sediment chemistry and evaluate spatial and temporal patterns as part of the CREMP and LSMP in 2025 and will use these results to inform whether any additional studies or actions are necessary. Relevant findings will be summarized in the 2025 Annual Report. **References:** Minnow. 2025. Mary River Project 2024. Core Receiving Environment Monitoring Program Report. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075. Minnow. 2025b. Mary River Project – Lake Sedimentation Monitoring Program 2023/2024. Prepared for Baffinland Iron Mines Corp. March. Project 247202.0075.

Table A.5: Response to HC Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	HC Cmt. #	Reviewer's Detailed Comment	HC Recommendations	Reference Section	Baffinland's Response
AIR QUALITY DATA (NO2, SO2 & PM2.5)					
132	**HC #1**	**Data in the 2024 Air Quality, Dustfall, and Meteorology Report (AQDMR) does not allow comparison between reported results and the Canadian Ambient Air Quality Standards (CAAQS).** The 2024 AQDMR indicates that "the 2020 CAAQS would be used for comparison purposes only in agreement with the CCME objective to "keep clean areas clean" with respect to ambient air quality." However, data presented in the AQDMR for sulphur dioxide (SO2), nitrogen dioxide (NO2) or fine particulate matter (PM2.5) is not presented in the statistical form that would allow for comparison of reported results to the CAAQS. For example: 1. Hourly summary data tables in Section 2.2 of the 2024 AQDMR (Tables 2.1, 2.2, 2.3, 2.4, 2.9 & 2.10) do not include the average annual 98th or 99th percentiles that would be required to apply the 1-hour CAAQS for NO2 and SO2.; 2. 24-hour PM2.5 data was not included or summarized in Section 2.3 of the report, so reported results Sections 2.3.3.1 and 2.3.3.2 could not be verified; and, 3. Data from previous years was not provided or summarised to support the reported 3-year averages used for comparison to the CAAQS, which could also be used to illustrate multi-year trends. While incomplete, HC found information from the 1-hour summary tables for SO2 and NO2 allowed for comparisons to the annual CAAQS values, which consider the average over a single calendar year of all 1-hour average concentrations. HC notes that the 2024 annual mean 1-hour concentrations for those substances at the port and mine were not always aligned with the reported conclusions. For example, section 2.2.2.2 (AQDMR, 2024) indicated that the annual mean NO2 concentration of all 1-hour average concentrations in 2024	HC recommends 1. Implementing all economically and technologically feasible mitigation measures to limit emissions of non-threshold air contaminants to the extent possible. 2. For the 2025 AQDMR, HC recommends the following to allow a comparison between monitoring data and the CAAQS: • Adding the average annual 99th percentiles of the daily maximum 1-hour average SO2 concentrations to the summary data table for SO2 (i.e., Tables 2.1 and 2.3) • Adding the average annual 98th percentile of the daily maximum 1-hour average NO2 concentrations to the summary table for NO2 (i.e., Tables 2.2 & 2.4). • Adding 24-hour summary data tables for PM2.5, including the monthly and annual 98th percentile of the daily 24-hour average PM2.5 concentrations at the Port and Mine sites. • Including a summary of multi-year data in tables for SO2, NO2 and PM2.5 concentrations to support the calculation of 3-year averages in the 2025 AQDMR; and, adding figures to illustrate possible trends over time.	• 2024 Annual Report – Mary River (NIRB Registry ID No.: 355641) • Section 4.6.2: Air Quality (Pages 73-86 ; PDF p., 91-104) • Appendix E 1: Response to Comments 2023 NIRB Annual Report (NIRB Registry ID No.: 355520) (Pages 135-138) • Appendix G.2.1: 2024 Air Quality, Dustfall, and Meteorology Report (NIRB Registry ID No.: 355523) ○ Section 2: Ambient Air Quality Monitoring (Pages 2-1 to 2-36 ; PDF p., 33-68) Health Canda. (2023). *Guidance for Evaluating Human Health Effects in Impact Assessment: Air Quality*. • Appendix B: Canadian Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Objectives (NAAQOs) (Pages 38-40; PDF p., 40-42)	a) Baffinland remains committed to continuous improvement and as such currently implements reasonable measures to mitigate emissions of non-threshold air contaminants to the extent possible. This includes dust suppression programs on the tote road, crusher, and ore stockpiles, but also includes scheduled maintenance of combustion equipment to ensure efficient operation. Where practical and cost-effective, Baffinland will continue to assess opportunities for further reductions. b) Baffinland emphasizes that the Nunavut Ambient Air Quality Standards (NAAQS) is the applicable regulatory framework and is the basis upon which the projects air quality performance is evaluated. As stated in section 1.1 of the Air Quality, Dustfall, and Meteorology Report, the Canadian Ambient Air Quality Standards (CAAQS) are intended for regional air zone management and are not designed for project level application. Baffinland references the CAAQS only for contextual reasons as they are not applicable in this case. .

Cmt. #	HC Cmt. #	Reviewer's Detailed Comment	HC Recommendations	Reference Section	Baffinland's Response
		was 7.2 ppb, which was the same as the reported 3-year average, while Table 2.4 lists 11.44 ppb as the average for 2024. Data presented in table 2.4 allowed for validation of reported results, and illustrates the importance of including and describing this data in the report. Section 2.3 did not include a summary data table for 24-hour PM2.5 for comparison to the CAAQS. Instead, the report included Tables 2.9 and 2.10 summarizing 1-hour data for PM2.5 along with Figures 2.17 & 2.19 to illustrate 24-hour average PM2.5., that were not relevant or comparable to CAAQs. HC also noted that three years of data were not available for PM2.5 for comparison to the CAAQS this year, and recommends that comparison be made in the 2026 report once sufficient multi-year data becomes available.			
REFERENCE TO THE "MAXIMUM ALLOWABLE MERCURY CONCENTRATION IN FISH FOR COMMERCIAL SALE" GUIDELINE (0.5 PPM)					
133	**HC #2**	**Comparison of monitoring data with the maximum allowable mercury concentration in fish for commercial sale can be misleading and misinterpreted by individuals and local communities that rely on subsistence harvesting.** In Baffinland's responses to HC's comments on the 2022 and 2023 Annual Reports on use of the Canadian maximum level (ML) of 0.5 mg/kg for mercury in fish, enforced by the Canadian Food Inspection Agency (CFIA) for the sale of retail food, in the Marine Environmental Effects Monitoring Program (MEEMP) Report's assessment of "Fish Tissue Chemistry", Baffinland clarified that: "The objective of the MEEMP is to monitor for potential changes in the environment as a result of the Project and evaluate whether the marine environment is changing over time. It is not the objective of the MEEMP to assess human health risks associated with eating country foods (i.e., fish) from Milne Port."; and, "In future reports, this guideline will be clearly identified as a commercial sale guideline when referenced in the MEEMP." (Appendix E-1) The stated focus of the MEEMP is monitoring for potential project related changes to the marine environment, but it is unclear how references to the commercial sales guideline supports that objective. Its use could also be misinterpreted, leading individuals and local communities	HC recommends: 1. Describing the intent, limitations and risks of comparing monitoring results to HC's guideline value for commercial foods (i.e., 0.5 mg/kg wet weight) in the MEEMP Report's guideline comparison (Chapter 7, Section 7.3.5: Guideline Comparison), to clarify its use in the assessment. 2. Clearly identify in future reports that this guideline is applied as a commercial sale guideline, to reduce the likelihood of local individuals or communities misinterpreting its use or reported results. This could include a link to the relevant section in the MEEMP Report (i.e., Section 7.3.5-Guideline Comparison).	2024 Annual Report – Mary River (NIRB Registry ID No.: 355641) • Section 4.6.10: Marine Environment; Project T&C No.:83(a) (Pages 296-301; PDF p., 314-319) • Appendix E 1: Response to Comments 2023 NIRB Annual Report (NIRB Registry ID No.: 355520) (Page 135-138) • Appendix G 6.5: Marine Environment Effects Monitoring Report (NIRB Registry ID No.: 355566, 355567, 355568, 355569, 355570, 355571, 355572, 355573, 355574, 355575; &, 355576) • Chapter 7.0: Fish Health & Tissue Chemistry (NIRB Registry ID No.: 355573) Section 7.3.5 Guideline Comparison (Page 15; PDF p., 25)	Baffinland acknowledges and appreciates the detailed comments and recommendations from Health Canada. The potential for individual and/or local community misinterpretation of the Health Canada 2015 commercial consumption guideline is a valid concern, and clear statements of the context of this guideline in the methods and the implementation of the guideline as a screening value will be incorporated into future reports. The absence of these statements was an oversight in the 2024 MEEMP which was carried forward to the NIRB annual report. In summary, Baffinland will describe the intent, limitations, and risks of comparing monitoring results with this value, and clarify its specific application and use in assessment in future reports.

Cmt. #	HC Cmt. #	Reviewer's Detailed Comment	HC Recommendations	Reference Section	Baffinland's Response
		that rely on subsistence harvesting to believe that one of the MEEMP's objectives was the assessment of human health risk associated with eating country foods from Milne Port. The stated commitment to "clearly identified as a commercial sale guideline" would have added some clarity to annual reporting. However, HC noted that Section 4.6.10 of the Annual Report continued to reference: "Health Canada's Maximum Levels for Chemical Contaminants in Foods mercury consumption guideline of 0.5 mg/kg ww (Health Canada, 2015)" (p., 300) without clarifying the value's intended use as a commercial sales guideline, or its limitations for comparisons with monitoring data. This was repeated again in Appendix G 6.5 - Section 7.3.5: Guideline Comparison, where further clarification on the intended use of the guideline would have reduced the likelihood that individuals or local communities could misinterpret the reported results.		HC's response to the Comment Request for Baffinland Iron Mines' Mary River Project 2022 Annual Monitoring Report (NIRB Registry ID No. 346056) HC's response to the Comment Request for Baffinland Iron Mines' Mary River Project 2023 Annual Monitoring Report (NIRB Registry ID No. 350643)	
METALS IN FISH TISSUE AND SCREENING CRITERIA (I.E., CONSUMPTION BENCHMARKS)					
134	**HC #3**	**Missing data on metals in fish tissue and information on the derivation of screening criteria, limited Health Canada's review of the 2024 Freshwater Fish Health Report (FFHR) and its conclusions.** HC's review of the report was limited by the following: 1. the omission of data on metals concentrations in fish tissue referenced in section 3.2.4 (i.e., Appendix D, Tables D7 & D8); and, 2. insufficient information on the derivation of screening criteria (consumption benchmarks) in Table 2.1. HC would require Appendix D: Tables D7 & D8 to complete its review, as the data in these tables was used to estimate dietary exposure to metals in fish tissue from Qurluktuk and Ikaluit Lakes. With regard to screening criteria, HC notes that several references to "HC's [consumption] benchmarks" (i.e., p. iii, 51 and 55) incorrectly attribute the derived screening values in Table 2.1 to HC. While HC's published toxicological reference values for environmental contaminants, guidance for contaminants considered essential trace elements, and resources on nutrition are referenced, information on their	HC requests that the Proponent: 1. Provide a complete version of the 2024 Freshwater Fish Health Report, including Appendix D - Fish Data: Tables D7 and D8. 2. Correct the references to "Health Canada consumption benchmarks" and "Health Canada benchmarks" throughout the report to accurately reflect their origin. Specifically, Health Canada references should be removed, as the derived consumption benchmarks are not HC values. In addition, HC recommends: 1. Applying the HC pTDI values and local consumption patterns to assess potential human health risks from mercury in country foods, and specifically fish tissues, in future project reporting as an approach that is protective of human health.	2024 Annual Report – Mary River (NIRB Registry ID No.: 355641) ○ Section 4.6.7: Freshwater Environment Project T&C No. 48(a) (Pages 185-187 ; PDF p., 203-205) ○ Appendix G 4.3 Freshwater Fish Health Report (NIRB Registry ID No.: 355695; 355696; 355697; 395698; &, 395699) Executive Summary (Pages i-iv; PDF p., 3-6) ○ Section 2.4.6 Data Analysis (Pages 21-26; PDF p., 36-41) ○ Table 2.1: Consumption Benchmarks for Metals in Fish Tissue (mg/kg wet weight) (Page 25; PDF p., 40) ○ Section 3.2.4 Fish Tissue (Pages 43-51; PDF p., 58-66) Appendix D: Fish Data Intrinsik (2024) Country Foods Human Health Risk Assessment – Baffinland Sustaining Operations Proposal (NIRB Registry ID: 350996)	1. The Freshwater Fish Health Report was submitted to NIRB (it was broken into 5 parts due to size). Table D7 and D8 are included in Appendix D of the report.

Cmt. #	HC Cmt. #	Reviewer's Detailed Comment	HC Recommendations	Reference Section	Baffinland's Response
		specific use in deriving the listed screening values was limited and could not be verified. Additionally, the 2024 FFHR indicted that mercury concentrations in fish tissue were compared to a guideline of 0.5 mg/kg wet weight. This guideline value is applicable to commercial foods only. For species consumed by local communities, it is more appropriate to use a toxicological reference value (a provisional Tolerably Daily Intake, pTDI) of 0.47 µg of MeHg per kg body weight per day (kg-bw/day) for adults and 0.2 µg MeHg per kg-bw/day for women of childbearing age and young children up to 12 years of age (Health Canada, 2007) to assess potential risks to local consumers based on consumption patterns informed by community consultation. Baffinland's 2024 Country Foods Human Health Risk Assessment (Intrinsik, 2024) also considered toxicological reference values and consumption rates in their assessment of health risks that may be relevant to the analysis in the 2024 Freshwater Fish Health Report. Aligning the values used in both reports would allow for a comparison of relevant results and lend support to the conclusions made.	2. Using reference values and consumption estimates from the 2024 Country Foods Human Health Risk Assessment (Intrinsik, 2024) for comparison between the two reports. Alternatively, including additional information on the derivation of screening criteria (similar to the Intrinsik 2024 report) so the analysis can be evaluated.	HC's response to the Comment Request for Baffinland Iron Mines' Mary River Project 2022 Annual Monitoring Report (NIRB Registry ID No. 346056) HC's response to the Comment Request for Baffinland Iron Mines' Mary River Project 2023 Annual Monitoring Report (NIRB Registry ID No. 350643)	

Table A.6: Response to DFO Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	DFO Cmt. #	Reviewer's Detailed Comment	DFO Recommendations	Reference Section	Baffinland's Response
WORKS IMPACTING FISH HABITAT (WATERS FREQUENTED BY FISH AND CONTRIBUTING TO FISH HABITAT)					
135	**DFO #1**	Works including the replacement and maintenance of crossing structures, the removal of material from waterbodies/watercourses such as abutments, and armour around waterbodies have the potential to impact fish and fish habitat. Fisheries and Oceans Canada (DFO) recommends that Baffinland Iron Mines Corporation (BIM) review and follow DFO's Projects Near Water website that provides current guidance for avoiding impacts to fish and fish habitat including Standards and codes of practice (dfo-mpo.gc.ca) with Codes of Practice containing conditions and measures for managing risks to fish and fish habitat or Standards outlining how a specific management measure should be designed and implemented to achieve the objective.	If the Standards and Codes of Practice can not be followed, work in fish habitat or on watercourses that contribute to fish habitat should be submitted to DFO for review.	n/a	Baffinland thanks DFO for their comment and confirms that it will continue to adhere to the applicable Standards and Codes of Practice. Should any required activities be unable to fully comply with DFO's conditions or measures for the protection of fish and fish habitat, Baffinland will not hesitate to contact DFO for further guidance.
HYDROLOGY AND HYDROGEOLOGY					
136	**DFO #2**	**T&C 16, Hydrology and Hydrogeology - Water Infrastructure; T&C 19, Hydrology and Hydrogeology - Water Infrastructure Monitoring** BIM references a Letter of Advice from DFO issued to implement solutions to crossings that are not in compliance with the federal Fisheries Act. DFO would note that crossings are out of compliance with the federal *Fisheries Act*, and DFO issued a Corrective Measures Order to order BIM to remediate the crossings (fish passage and sedimentation concerns). To the date of this review, BIM has attempted only 7 of the 20 crossing rehabilitations in 2024, and of the 7 that were completed, 2 require full re-design and the others required additional remediation work in the summer of 2024. To date, many watercourse crossings on the Tote Road remain out of compliance with the federal *Fisheries Act*.	DFO is currently working with BIM to bring Tote Road crossings into compliance with the federal *Fisheries Act*.	Page 104-105 and Page 116-119, Section 4, 2024 Annual Report	Baffinland would like to thank DFO for the continued guidance. We remain committed to completing the required remediations.
2024 MARINE FISH MONITORING REPORT					
137	**DFO #3**	Forward facing or live sonar would help increase the quality of the effort for angling methods, this may increase the CPUE as it is new technology and has drastically improved the capture efficiency in the fishing industry.	Are new technologies being considered for upcoming sampling, including study design in Steensby. With changes to collection areas occurring, analysis between years for the project has already	250530-08MN053-2024 Annual Report	Sonar technology has been used for finding fish since the 1940s and as noted has increased catch rates in the fishing industry. The purpose of fish community monitoring within the Marine Environmental Effects Monitoring Program (MEEMP), however, is not to maximize fish catch per unit effort (CPUE), but to use

Cmt. #	DFO Cmt. #	Reviewer's Detailed Comment	DFO Recommendations	Reference Section	Baffinland's Response
			been modified. Can this recommendation be researched and implemented in future sampling years, especially around Steensby operation? Statistical analysis should provide guidance on the efficiency of sampling methods and significance of the effect of changing variables.		CPUE as a relative index of abundance for detection of any temporal or area-related (proximity to port operations) trends in Milne Inlet. In MEEMP, the number of samples (N, in statistical terms) is the number of fishing efforts not the number of fish captured. The goal of adjustments to the program has been to equalize N between fishing areas and maximize N in order to improve statistical power for detection of change. Again, number of fish caught by a consistently applied fishing method is the variable under consideration, rather than maximizing fish catch. Stations in the present monitoring program are situated in areas of fish habitat, with no predetermination of the presence or abundance of fish at the time of fishing. If selection of stations to be fished in a given year were based on fish-finding sonar, it would introduce bias in the statistical analysis and a skewed (overly positive) description of fish populations in Milne Inlet. This would make it harder to detect any issues that might occur in the fish populations in Milne Inlet. All relevant technologies will be considered while developing the MEEMP for Steensby Port. As noted above the use of 'fish finders' to increase CPUE would not benefit the detection of impacts on fish. Other sonar-based methods will be considered, however sonar-based methods such as hydroacoustics are also likely to be ruled out due to limitations on the utility of the data. Hydroacoustic methods, for example, do not replace physical capture methods because hydroacoustic provides limited information on species composition, size, weight, age and health, and may require extensive calibration with physical capture data to provide useful data. Collection of hydroacoustics data in the field may allow for relatively rapid collection of large amounts of data, but comes at the cost of extensive post-collection data processing and uncertainties as to species identity and numbers despite calibration with physical capture.
SHIPBOARD OBSERVER PROGRAM					
138	**DFO #4**	BIM proposes to end the Ship-Board Observer program based on lack of ice management vessel use, covid operational constraints during COVID, and concurrent monitoring.	Given the potential importance of the Shipboard Observer program to Inuit communities and during operations in ice, DFO would like to see a review of the program and BIM's proposal to end it brought to the Marine Environment Working Group for review and discussion at a minimum before BIM commits to change/end something that is in the Project Certificate and part of the decision based on the environmental assessment. This could also include discussion on how	250530-08MN053-2024 Annual Report, T&C 106, 107	Baffinland has not proposed ending the SBO program entirely but does not currently have a safe means to place observers on vessels without the Ice breakers. Baffinland will bring any changes to the program to MEWG for discussion, including options for how TC 106 & 107 may be satisfied in the future. Baffinland would like to reiterate that to date there are no known incidents of ship strick on marine mammals, and much of the intent of TC 106 and 107 stemmed from concerns during the FEIS of ship strikes.

Cmt. #	DFO Cmt. #	Reviewer's Detailed Comment	DFO Recommendations	Reference Section	Baffinland's Response
			the shipboard observer program may function on the proposed southern route to Steensby as requested by HTAs.		

Table A.7: Response to PC Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	PC Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
INTERPRETATION OF THE 2023 NARWHAL ABUNDANCE ESTIMATED IN A DELAYED SHIPPING SEASON					
139	**PC #1**	As demonstrated in 2023, Parks Canada disagrees with BIMC interpretation of the results and the 2023 BIMC PC-01 response. The single year 2023 abundance estimate for Eclipse Sound cannot be used as a reference to justify reducing the aerial survey.	Parks Canada recommends maintaining annual aerial surveys of the RSA during the open water season (leg 2) to see if there may be longer-term trends that subsequent surveys could detect.	Response to Comments on Baffinland's 2023 Annual Report to the NIRB	Baffinland provided rationale for the five-year monitoring plan throughout the 2024 and 2025 MEWG meetings. The decision to reduce the frequency of aerial surveys was not solely based on the 2023 abundance estimate. Baffinland has communicated to MEWG members, including Parks Canada, that they plan on running the leg 2 aerial survey in 2026. The 2023 Eclipse Sound narwhal abundance estimate was similar to the 2013, 2016 and 2019 abundance estimates. The presently proposed frequency of surveying (once every 3 years) is not a modification in the rate of MMASP being normally conducted. This is a return to the original scheduling of once every 3 years – 2013, 2016, 2019. The previous rate was modified (switched to more frequent surveys) based on the results observed during the 2020 aerial survey, along with a proposed change in shipping operations (introduction of larger vessels) that year. The observation of a similar abundance to that recorded pre-shipping justifies the return to sampling every 3 years. This frequency of sampling is already much more frequent that the current rate of DFO surveys for which the objective is to conduct stock assessments in order to calculate science-based hunting quotas. The observed 'increase' in 2023 does demonstrate a key point, in that narwhal numbers in the RSA can be as high as they were prior to the start of commercial ore shipping. Further, because the observed increase occurred in a year when shipping levels were near their highest levels, this information collectively indicates a lack of direct correlation between narwhal numbers in Eclipse Sound and shipping levels in Eclipse Sound. It rather indicates that there is natural exchange (and fluctuation in numbers) between Eclipse Sound and Admiralty Inlet (as supported by IQ), and this movement is either random (i.e., natural) or driven by some other primary external factor (such as prey/food availability, ice conditions, predator movements and/or hunting pressure).
MARINE ENVIRONMENT WORKING GROUPS (MEWG) DECISION-MAKING PROCESS					
140	**PC #2**	T&C 101 in the Project Certificate states that the proponent is to "Schedule for periodic surveys as recommended by the Marine Environment Working Group." **2024**	Parks Canada acknowledges the absence of an independent chair and the recent introduction of formal recommendations from members.	• Response to Comments on Baffinland's 2023 Annual Report to the NIRB	Baffinland initiated conversations about the five-year monitoring plan in May 2024 and provided MEWG members with written rationale at that time. At the request of members, this was put on the agenda at the June 2024 meeting, held in-person in Ottawa. Attendees may have missed the opportunity to further discuss the plan as many participants were remarkably late to return to the

Cmt. #	PC Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
		• The changes proposed by the proponent in 2024 regarding the frequency of marine monitoring programs at Milne Port and along the Northern shipping route were not discussed with the MEWG in a timely manner to allow for meaningful input from its members. • When MEWG members expressed their disagreement with these changes, BIMC requested that they follow the draft Terms of Reference process and dispute resolution. • In response to comments in 2023 (PC-02), Baffinland stated that it is open to working with the MEWG should they wish to put forward a formal recommendation grounded in sound rationale for continuing annual aerial surveys. **2025** • During the MEWG meeting in January 2025, members were advised to prepare recommendations for the March MEWG meeting specifically concerning the BIMC 5-Year Monitoring Plan. • MEWG members and observers (Qikiqtani Inuit Association, Fisheries and Oceans Canada, Parks Canada and Oceans North) submitted comments and recommendations to BIMC prior to the March MEWG meeting specifically concerning the BIMC 5-Year Monitoring Plan. • No discussion took place during the March MEWG meeting. BIMC did not allow questions during the presentation and abruptly ended the meeting without a question period. • None of the MEWG members' papers were discussed, and no member had the opportunity to speak. • Consequently, the schedule for periodic surveys **was not discussed nor recommended by the Marine Environment Working Group.** It was a unilateral decision from the proponent.	However, recommendations put forward by MEWG members in March 2025 concerning the schedule for periodic surveys (T&C 101) were neither discussed during the meeting (Meeting ID: M-2003025) nor taken into account (no change in the program frequency). Parks Canada do not consider the presentation of a deck as 'discussion'. The decision to reduce the program frequency for marine monitoring programs that were previously recommended by the MEWG, was imposed without discussion. This action is not in compliance with part e of T&C 101 of the Project Certificate and does not adhere to the decision-making process of the MEWG. Parks Canada recommends that the proponent adhere to the established Terms of Reference process and dispute resolution mechanisms of the MEWG before modifying the currently accepted mitigation and monitoring programs or before ignoring MEWG member recommendations. By doing so, the proponent can ensure that MEWG members are informed and have the opportunity to provide input on proposed changes to the program frequency for marine monitoring programs. This is a crucial step in fostering trust and confidence in the new MEWG Terms of Reference dispute resolution mechanisms.	• Minutes for MEWG Meeting, January 9, 2025 (Meeting ID: M-01092025) • Oceans North – Recommendations Related to Baffinland's 5-Year Monitoring Plan, March 12, 2025 • Parks Canada – Recommendations for Monitoring Plan, March 13, 2025 • Fisheries and Oceans Canada – Position Statements on Narwhal Monitoring Program Baseline and Five-Year Monitoring Program, March 14, 2025 • Qikiqtani Inuit Association – BIMC 5-Year Monitoring Plan Comments, March 14, 2025 • Minutes for MEWG Meeting on Baffinland's 5-Year Monitoring Plan, March 20, 2025 (Meeting ID: M-2003025)	afternoon session and missed the agenda item altogether. Having missed the dedicated time to discuss the 5-year plan, Baffinland agreed to hold another meeting in 2025 which the 5-year plan was again revisited. Baffinland invited members to provide their comments on the plan, in writing. Written comments on the five-year plan were not put forward or treated as formal recommendations as outlined in the Terms of Reference under section 8.2. However, Parks Canada drafted their submission as a recommendation to continue annual aerial surveys with the rationale that abundance estimates have been variable. Baffinland would like to better understand the marine mammal expertise Parks Canada brings to substantiate their recommendation. In a written memo to all MEWG members dated May 27, 2024, titled: Rationale for Changing the Frequency of Narwhal Aerial Surveys, reducing the Acoustic Monitoring Program and Update to the e MEEMP, Baffinland offered the following rationale: ***Rationale – Reducing the frequency of the Marine Mammal Aerial Survey Program*** *In support of the Mary River Project, Baffinland continues to actively monitor for potential project-related effects on marine mammals, including potential disturbance of narwhal from shipping activities that may result in changes in their distribution, abundance, and migratory movements in the North Baffin region. Marine mammal monitoring programs include aerial census surveys, underwater acoustic monitoring programs, shore-based behavioural response studies, satellite tagging programs, and ship-based marine wildlife observer programs.* *Baffinland has monitored narwhal abundance in relation to shipping activity and has not found a correlation between the population fluctuations recorded year over year and Baffinland's shipping operations. The 2023 MMASP results indicated that the most recent narwhal population estimate is similar to the 2013, 2016, and 2019 population estimates, supporting the idea that the population sees a natural fluctuation between Eclipse Sound and Admiralty Inlet.* *For this reason, Baffinland is scaling back the MMASP frequency to a three-year cycle, as was previously done from 2013 to 2019 and commensurate with other proponents in the industry. The end of shipping clearance surveys will be completed annually but the population abundance surveys will pause for 2024 and 2025, and resume in 2026.* Furthermore, with a shorter 2025 shipping season, it is not anticipated that a clearance survey will be necessary but subject to ice formation at the end of the season. A clearance survey was scheduled in 2024 but due to open water conditions, there was no risk of entrapment and the program was not required.

Cmt. #	PC Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
NO SAMPLING WAS CONDUCTED AT RAGGED ISLAND					
141	**PC #3**	• In 2017, four new benthic infauna and zooplankton sampling locations were established at Ragged Island specifically for the NIS/AIS monitoring program. • In 2019, two oblique zooplankton tow sampling locations were added to the Ragged Island component. • No sampling has been conducted at Ragged Island since 2021 due to logistical or time constraints. • During the January 2025 MEWG meeting, DFO supported PC and HTO concerns regarding the need for AIS data from Ragged Island. DFO noted that vessels were observed staging at Ragged Island for several days, increasing the potential for hull fouling. • At the same meeting, WSP explained that although sampling was planned, safety concerns prevented its execution. It was mentioned that Ragged Island was last sampled two years ago, and the risk of AIS/NIS is minimal due to the absence of discharge. BIMC vessels adhere to IMO standards, and fewer vessels anchor at Ragged Island compared to Milne Port. • Additionally, during the January 2025 MEWG meeting: ○ WSP assured that Ragged Island will be considered in future planning with a robust safety plan in place, although specific details were not provided at that time. ○ Action M-09012025-6: BIMC committed to providing data on the duration of vessel staging at Ragged Island and the proportion of vessels that transited directly to Milne Port compared to those that staged at Ragged Island during the 2024 shipping season. This data will be used to evaluate the risk of hull fouling at Ragged Island.	Parks Canada requests information regarding the specific years in which sampling occurred on Ragged Island since 2017, as well as the years during which no sampling was conducted. Additionally, Parks Canada seeks justification for the absence of sampling in each missing year and the measures implemented to address the known logistical challenges. Given the importance of obtaining accurate AIS/NIS data from Ragged Island, Parks Canada recommends that sampling be conducted as recommended during past MEWG meetings, with enhanced planning to address the anticipated logistical constraints. It is important to prioritize this effort to ensure comprehensive monitoring and evaluate the risk of hull fouling at Ragged Island.	• MEEMP reports 2017 to 2024 • Minutes for MEWG Meeting, January 9, 2025 (Meeting ID: M-01092025)	Since 2017, sampling for the NIS/AIS Monitoring Program has been conducted at Ragged Island as follows: • 2017: 4 vertical (63 µm mesh) zooplankton stations; 4 benthic infauna stations; deployment of 1 settlement substrate station (3 baskets) • 2018: 4 vertical zooplankton stations; 2 benthic infauna stations; settlement substrates could not be retrieved because the marker buoy was not recoverable. • 2019: 4 vertical zooplankton stations; 2 horizontal/oblique (250 µm mesh) stations; 2 benthic infauna stations • 2020: 4 vertical zooplankton stations; 2 horizontal/oblique zooplankton stations; 2 benthic infauna stations • 2021: 3 settlement substrate stations were deployed (3 baskets and 3 plates per station) The remote location of Ragged Island is the main obstacle to sampling, as it requires an approximately 150 km round trip in the 30 ft aluminum research vessel and for safety reasons, it should be accompanied by another vessel (in this case, a 20 ft MKV Zodiac). Under ideal conditions, travel time is a minimum of 3-4 hours each way. There is not enough room on board the research vessel to carry the zodiac, thus the zodiac would travel (under power) in convoy with the research vessel. In this circumstance, the zodiac boat operator needs to periodically switch out with the research vessel boat operator due to cold exposure issues (the vessel cabin on the research vessel is heated). Both vessels lack overnight accommodations for crew. Operating conditions for these vessels are winds up to 25 knots and waves up to 1 m. For safety, travel to Ragged Island would be scheduled only on days when the weather for the whole day is expected to remain within these limits (which is rare). In case of changes in weather or other issues preventing return to Milne Port the same day, the team carries overnight camping gear and food for a minimum of two days whenever sampling outside of Milne Port (e.g., these are also requirements for trips to Koluktoo Bay and Tugaat River). An additional issue is the ability of the research vessel to carry sufficient diesel fuel for two vessels for the round trip. Health and safety reviews conducted by both Baffinland and WSP in 2023 and subsequent years identified concerns about emergency response to this remote site. It is unlikely that the site would be sampled without availability of a Baffinland helicopter to conduct a medical evacuation in the event of an emergency.

Cmt. #	PC Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					Reasons why sampling was not conducted, and measures implemented: • 2021: The MEEMP-NIS/AIS team did not travel to Ragged Island. Settlement substrates were deployed in the first week of the program by a separate team that travelled to Ragged Island to retrieve Passive Acoustic Monitors. Shortly thereafter the heater in the research vessel's cabin failed, was repaired, and failed again, remaining inoperable for the remainder of the field program, and there were ongoing issues with the motors on the research vessel and both Zodiacs such that none could be taken safely outside of Milne Port. • 2022: Due to the chronic vessel stalling experienced in 2021, and the same fuel being on site in 2022, it was decided to cancel travel to Ragged Island due to the high health and safety risk. • 2023: Zooplankton tows, benthic grabs, and settlement substrate retrieval were planned but could not be conducted due to time constraints. A delay in the start of the MEEMP-NIS/AIS field program was caused by late breakup of ice. Additional delays were due to a precautionary quarantine of one of the divers due to illness, weather days, a mandatory 24-hr stand-down following mortality of a seal in a fishing net while causes and solutions were investigated, and sampling vessel issues, including the mooring for the research vessel being snagged on the bottom requiring planning and permission for a dive team retrieval of the mooring before the vessel could be launched, subsequent issues of hull leakage, and repairs to the motor and winch on the research vessel. Due to these delays, it was not possible to complete the program as planned, so sampling in Milne Port and fish health reference areas was prioritized over Ragged Island. • 2024, 2025: WSP conducted a health and safety review of the field program in 2023 and determined that the deployment of the field team to Ragged Island, and particularly of divers to this location which is approximately 75 km from Milne Port, required additional measures to be put in place for timely rescue and evacuation of personnel, should it be required. It has not been logistically feasible for Baffinland to provide this level of emergency support. Sampling will be considered at Ragged Island during the 2026 season only if it can be safely conducted. As discussed at the January and July 2025 MEWG meetings, Baffinland is interested in a possible collaboration to conduct sampling at Ragged Island with Parks Canada or DFO, should either of them have a suitable vessel available in the area.

Cmt. #	PC Cmt. #	Reviewer's Detailed Comment	PC Recommendations	Reference Section	Baffinland's Response
					Regarding Action M-09012025-6, of the 70 ore carriers calling at Milne Port in 2024, 37 vessels anchored at Ragged Island for an average duration of 33.52 h each. This included three vessels that anchored for extended durations in September due to a weather event, and a conveyor breakdown at Milne Port. Excluding these three vessels, the average duration of anchoring at Ragged Island for the remaining 34 vessels was 25.29 h/vessel.

Table A.8: Response to ON Comments on Baffinland's 2024 Annual Report to the NIRB

Cmt. #	ON Cmt. #	Reviewer's Detailed Comment	ON Recommendations	Reference Section	Baffinland's Response
SUBJECT					
142	**ON-1**	We have one main concern, which we have expressed during prior MEWG meetings – changes to the aerial survey program. Regional aerial surveys are used to estimate the Eclipse Sound narwhal population and provide data on population trends. Baffinland's rationale for reducing the frequency of the marine mammal aerial survey program is that other monitoring programs actively monitor for potential project-related effects on marine mammals, including acoustic monitoring, shore based visual monitoring, satellite tagging and ship-based observations. However, each of these other monitoring programs do not provide a key aspect of the aerial survey program – density estimates. Acoustic monitoring cannot provide density estimates and acoustic monitoring is proposed to be reduced to every three years under Baffinland's five-year monitoring plan. Shore based monitoring only provides a localized snap shot. Satellite tagging is not occurring in this region currently (and may not be again) and cannot provide density estimates. And finally, ship-based observations can only see animals within a few kilometers, and then only those that have not already fled the oncoming vessel.	Aerial surveys have been conducted from 2019 through to 2023 – this past summer being the first year no data was gathered. We believe that now is not the time to reduce survey effort. We must see a stabilization in narwhal numbers before further reduction in monitoring should be considered.		Baffinland has provided a detailed response to this on three (3) occasions – a technical memo providing rationale was shared with MEWG members (MEWG May 13th and June, 6th, 2024), response to IR comments submitted to NIRB (Aug 9th, 2024), and written submissions were addressed at the March 20th, 2025 MEWG meeting.

Attachment 2

Dustfall Distance Prediction

To:	Lou Kamermans, Baffinland
From:	Lyndsay Doetzel , Kerman Bajina
Date:	January 13, 2023
Project No:	22Y0273
Re:	Winter Dustfall Predictions at Distant Monitoring Sites

Objective

The analysis described here was completed in response to QIA Information Request 21D, which states:

> *Seasonally monitored dustfall sites should be compared with FEIS predictions to confirm that they meet their current low isopleth zone ranking, and to determine the spatial extent and magnitude of dust dispersion beyond the project area.*

There FEIS predictions are for annual dustfall deposition. However, dustfall monitoring stations that are greater than > 1 km distant from Project infrastructure) are not visited monthly during winter due to difficult and unsafe access. Given that year-round are not available for these distant monitoring sites, this analysis seeks to make predictions about the dustfall expected at these distant reference areas during the winter months, ultimately allowing annual dustfall estimates to be calculated for these sites.

Methods

In the absence winter season data for the 'distant' (> 1,000 m from PDA) sampling locations, a model-based approach was used to predict and extrapolate the amount of dustfall at these distant monitoring locations during the winter season. Existing dustfall monitoring data (2017–2022 [incomplete]) were used to make these predictions separately for different Project locations given differing mechanisms of dust dispersion and the range of distances from the Project footprint: the Mine Site (0–9 km), Milne Port (0–3 km), and Tote Road (0–14 km).

Linear mixed effects models were used to regress mean daily dustfall (response) against distance (predictor) at each Project location. Dustfall data were log-transformed prior to analyses. The primary covariates of interest were season (summer [June–Sept] versus winter [Oct–May]) and distance to footprint (km); both an additive effect and an interaction between those variables was assessed. The random effects structure consisted of Station ID and year (factor) to account for the variation within daily dustfall within these groupings. Models were fit to data using package 'glmmTMB' (Brooks et al. 2017) and residuals were assessed using package 'DHARMa' (Hartig 2021) in R software for statistical computing, version 4.2.1 (R Core Team 2022).

Regardless of the initial response transformation, for any Project location, the model residuals violated assumptions of normality (Shapiro Wilk test) and homoscedasticity (Levene test). Therefore, to get accurate predictions and confidence intervals around mean daily dustfall at different distances from the Project

footprint, a semiparametric bootstrapping approach was used. The approach consisted of nonparametric and parametric components. First, observations were resampled (with replacement) within each season (i.e., separately for summer and winter). Then, the model residuals were resampled (with replacement) for each random effect level (Year and Station ID) and added to the initial model predictions for each observation in the dataset. This procedure followed a similar approach to the simple semiparametric bootstrapping method outlined by Chambers and Chandra (2013). The process was iterated 999 times for each Project location (Mine Site, Milne Port, and Tote Road), and predictions were made and compiled for each of these iterations. From the set of 1,000 predictions (original plus the bootstrapped predictions), mean values and bias corrected and accelerated (BCa) 95% confidence intervals (CIs) were calculated for the range of distances monitored at each Project location.

Results

At the Mine Site (Figure 1) and Milne Port (Figure 2), there was greater amounts and variance in dustfall close to the footprint than farther away. In general, dustfall was greater during winter than during summer at all distances. At the Mine Site during winter, reference areas (9.23 km) are expected to have 0.12 mg/dm² of daily dustfall (95% CIs = 0.08–0.19). At the Milne Port during winter, reference areas (3.27 km) are expected to have 0.09 mg/dm² of daily dustfall (95% CIs = 0.06–0.14). In contrast, the predicted amount of dustfall at the Tote Road reference areas (14 km) during winter was lower and much less variable, 0.01 mg/dm² of daily dustfall (95% CIs = 0.01–0.02). Table 1 summarizes the expected daily dustfall (including CIs) for summer and winter at each Project location.

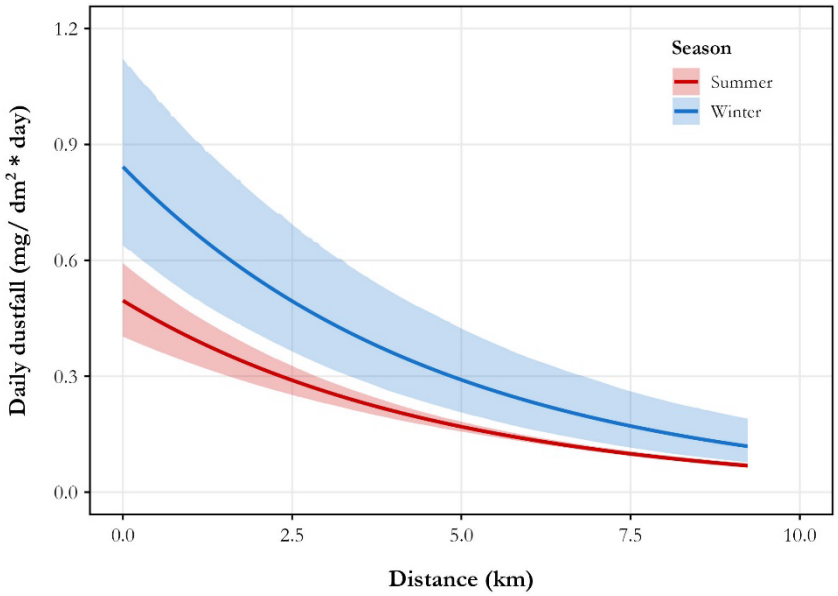


Figure 1. Mean daily dustfall and 95% confidence intervals at dustfall collectors at various distances from the Mine Site footprint.

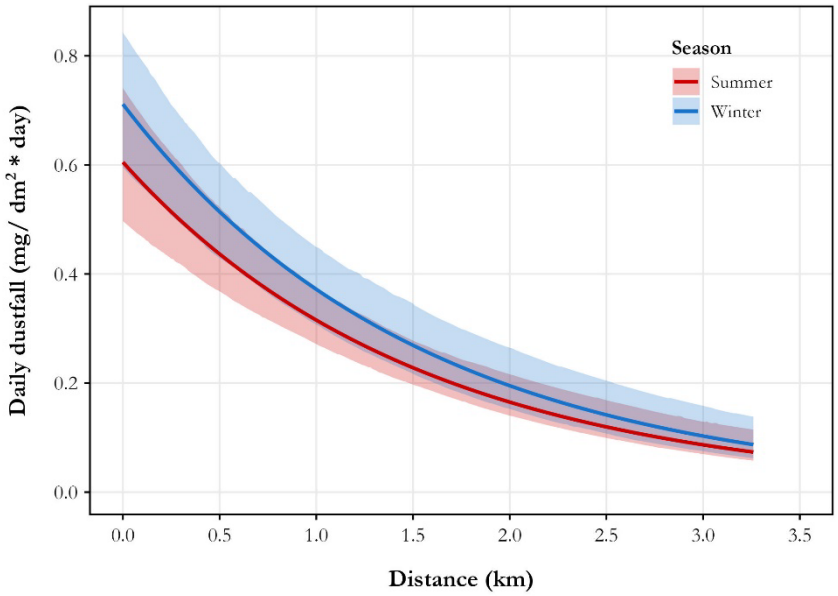


Figure 2. Mean daily dustfall and 95% confidence intervals at dustfall collectors at various distances from the Milne Port footprint.

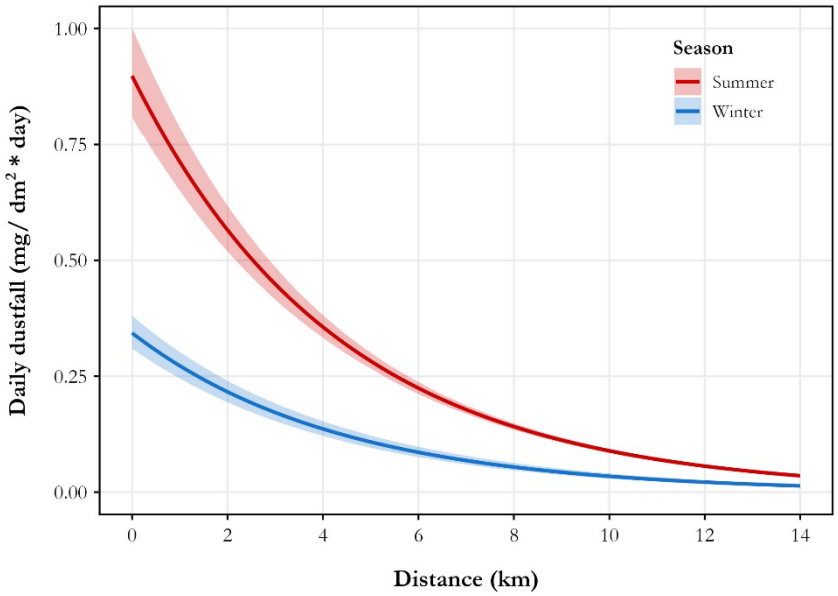


Figure 3. Mean daily dustfall and 95% confidence intervals at dustfall collectors at various distances from the Tote Road footprint.

Table 1. Mean daily dustfall predictions and 95% confidence interval values at various distances from the Mine Site, Milne Port, and Tote Road.

Location	Season	Distance (km)	Mean Dustfall (mg/dm² * day)	95% LL	95% UL
Mine Site	Summer	0	0.50	0.40	0.59
	Winter	0	0.84	0.64	1.12
	Summer	1	0.40	0.33	0.47
	Winter	1	0.68	0.51	0.92
	Summer	3	0.26	0.23	0.29
	Winter	3	0.44	0.32	0.63
	Summer	4	0.21	0.19	0.23
	Winter	4	0.36	0.26	0.51
	Summer	9	0.07	0.07	0.08
	Winter	9	0.12	0.08	0.20
Milne Port	Summer	0	0.60	0.50	0.74
	Winter	0	0.71	0.60	0.84
	Summer	1	0.32	0.27	0.38
	Winter	1	0.37	0.31	0.45
	Summer	3	0.09	0.07	0.13
	Winter	3	0.10	0.07	0.16
Tote Road	Summer	0	0.90	0.81	1.00
	Winter	0	0.34	0.31	0.38
	Summer	0.5	0.80	0.73	0.89
	Winter	0.5	0.31	0.28	0.34
	Summer	1	0.71	0.65	0.79
	Winter	1	0.27	0.25	0.30
	Summer	4.5	0.32	0.30	0.34
	Winter	4.5	0.12	0.11	0.14
	Summer	5.5	0.25	0.24	0.27
	Winter	5.5	0.10	0.09	0.11
	Summer	6	0.22	0.21	0.24
	Winter	6	0.09	0.08	0.10
	Summer	6.5	0.20	0.19	0.21
	Winter	6.5	0.08	0.07	0.09
	Summer	13.5	0.04	0.04	0.04
	Winter	13.5	0.02	0.01	0.02
	Summer	14	0.04	0.03	0.04
	Winter	14	0.01	0.01	0.02

References

Brooks, M., Kristensen, K., van Benthem, K., Magnusson, A., Berg, C., Nielsen, A., Skaug, H., Maechler, M., and Bolker, B. 2017. glmmTMB Balances Speed and Flexibility Among Packages for Zero-inflated Generalized Linear Mixed Modeling. The R Journal 9(2):378–400.

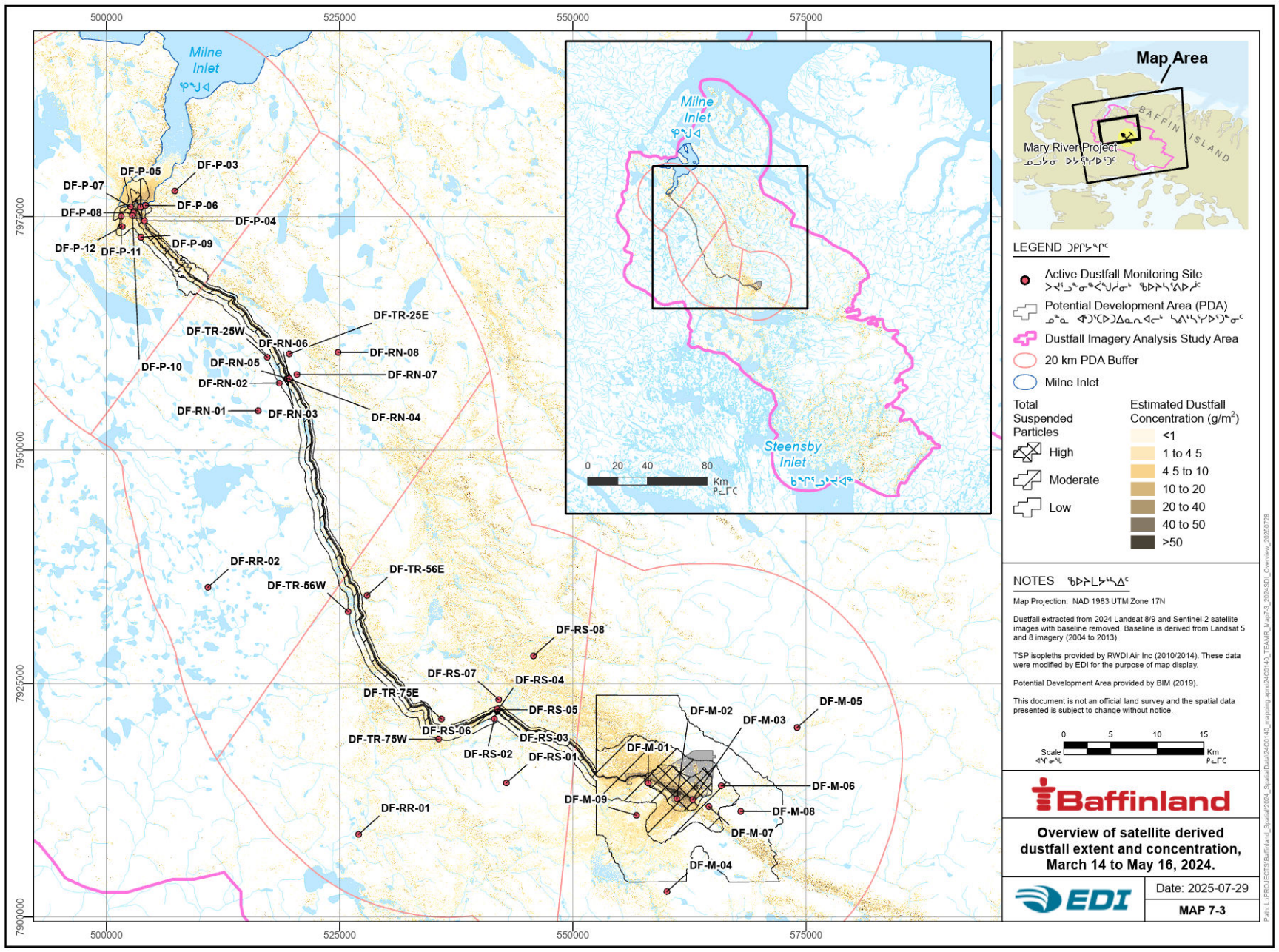
Chambers, R. and Chandra, H. 2013. A Random Effect Block Bootstrap for Clustered Data. Journal of Computational and Graphical Statistics 22(2):452–470. DOI: 10.1080/10618600.2012.681216

Hartig, F. 2021. DHARMa: Residual diagnostics for hierarchical (multi-level/mixed) regression models. (https://CRAN.R-project.org/package=DHARMa)

R Core Team. 2022. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. (https://www.R-project.org/)

Attachment 3

Terrestrial Environment Annual Monitoring Report Map 7-3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Map Area
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Dustfall Imagery Analysis Study Area
20 km PDA Buffer
Milne Inlet
Total Suspended Particles
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Moderate
Low
Estimated Dustfall Concentration (g/m²)
<1
1 to 4.5
4.5 to 10
10 to 20
20 to 40
40 to 50
>50
NOTES ᖃᐅᔨᓪᓚᖅᓴᖅᑐᑦ
Map Projection: NAD 1983 UTM Zone 17N
Dustfall extracted from 2024 Landsat 8/9 and Sentinel-2 satellite images with baseline removed. Baseline is derived from Landsat 5 and 8 imagery (2004 to 2013).
TSP isopleths provided by RWDI Air Inc (2010/2014). These data were modified by EDI for the purpose of map display.
Potential Development Area provided by BIM (2019).
This document is not an official land survey and the spatial data presented is subject to change without notice.
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Overview of satellite derived dustfall extent and concentration, March 14 to May 16, 2024.
EDI
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MAP 7-3
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Attachment 4

Tote Road Monitoring Pilot Investigation Summary

Baffinland

Technical Memorandum

Date: **August 10, 2025**

To: **Qikiqtani Inuit Association (QIA)**

From: **Baffinland Iron Mines Corporation (Baffinland)**

Re: **Additional Monitoring along the Tote Road; Pilot Programs Summary**

Baffinland Iron Mines Corporation (Baffinland) implements an Aquatic Effects Monitoring Plan (AEMP) at the Mary River Project (the Project) in accordance with Term and Condition 21 of Project Certificate 005 issued by the Nunavut Impact Review Board (NIRB). Among other programs, the AEMP includes a lake sedimentation monitoring program designed to assess potential effects of dustfall, runoff, and erosion from the Project on a representative freshwater environment located near the mine site. Subsequent to development of the AEMP, the NIRB recommended that a long-term monitoring program be developed and implemented to assess potential effects of dustfall and sediment deposition on fish-bearing streams located along the Tote Road within the Phillips Creek watershed. The Tote Road Monitoring Program (TRMP) was developed to monitor the water quality of surface water flows at select water crossing (culverts, bridges) along the Tote Road with a primary focus on total suspended solids (TSS) concentrations upstream and downstream, as TSS is the most likely parameter of concern. Parameters sampled under the TRMP are shown in Table 1.

Table 1 – Parameters monitored at locations during the TRMP

Parameter Type	Method[1]	Units
pH	3	pH units
Total Suspended Solids (TSS)	3	mg/L
Total Dissolved Solids (TSS)	3	mg/L
Conductivity	3	µS/cm
Oil & Grease	3	mg/L
Hardness	3	mg/L as $CaCO_3$
Alkalinity	3	mg/L as $CaCO_3$
Chloride (Cl^-)	3	mg/L
Ammonia	3	mg/L N
Total Phosphorus	3	mg/L N
Nitrate (NO_3^-)	3	mg/L N
Nitrite (NO2)	3	mg/L N
Dissolved Organic Carbon (DOC)	3	mg/L N
Total Organic Carbon (TOC)	3	mg/L N
Total and Dissolved Metals	3	mg/L

[1]Method 3–analytical testing of water samples by an accredited third party laboratory.

Results from the TRMP are presented in the NWB-QIA Annual Report for Operations.

As part of the Project Increase Proposal Renewal (PIPR) PC 189 states that commitments in Appendix B be carried out and evaluated by the project monitor; commitment number 065 states 'Baffinland commits to additional monitoring at representative streams that lead into Phillips Creek along the Tote Road. Baffinland will develop a draft methodology for this additional monitoring by December 31, 2022 for review by the QIA and subsequent implementation of the agreed upon program during the 2023 open water season". In 2022, Baffinland provided the QIA with a draft design for a pilot investigation aimed at determining an effective study approach and methodology to assess the potential influences of Project-generated dustfall and sediment deposits on streams that cross and/or are near the Tote Road. Since initiation of the trials in 2022, the methodologies used have proven to be difficult to replicate, and the data that has been collected have been of limited use. This technical memorandum summarizes the approach, results, and progress of the Pilot Investigations executed between 2022 and 2024.

6PPD-Q Monitoring Pilot Program

In response to 2022 NIRB and NWB-QIA annual reports intervener comments, *(QIA recommends that Baffinland sample representative road sediment to assess the potential risk to fish in Tote Road streams from chemicals released by rubber particulates worn from the tires of vehicles traveling the Tote Road)*, the QIA requested that Baffinland assess 6PPD-Quinone (6PPD-Q) concentration on the Tote Road. Screening of literature indicated the current research on 6PPD-Q is limited to concentrations in water and that commercial labs are set up to assess 6PPD-Q in water, not sediment. Based on this, Baffinland was restricted to assessing the concentration in water.

Baffinland conducted a pilot sampling program for the chemical 6PPD-Q at HADD sampling sites along the Tote Road after reviewing project specifications with Markus Brinkmann (USask) in 2022, to assess for the potential for chemicals from rubber tires entering the receiving streams along the Tote Road. In 2022 Baffinland monitored the concentration of 6PPD-Q in water at the eight (8) crossings along the Tote Road in August (BG-24, CV-217, CV-040, BG-50, CV-078, CV-099, CV-128, CV-093) where water quality analytes are currently collected as per the TRMP. These fish-bearing crossings represent various areas along the Tote Road, across all three (3) watersheds. As per the TRMP, water samples were collected 100 metres downstream and 50 metres upstream of each monitored water crossing. The sampling frequency followed the same schedule as Table D-5 – Monitoring Frequency for Additional Parameters (Group 4) in the TRMP. Analytical results (Attachment 1) from the August 2022 sampling event were all non-detect (<0.0020 ug/L).

In early 2023, Baffinland provided the following update regarding this sampling program:

"Baffinland will continue to develop a guidance framework for this monitoring, while consulting with academics and subject matter professionals, into the 2023 season when we gain additional analytical data. In the Brinkmann et al. (2022) study, no mortalities were observed for Arctic char at 6PPD-Quinone concentrations as high as 14.2 ug/L. As noted in the Brinkmann et al. (2022) study, there's currently no published studies on potential subchronic or chronic impacts on Arctic char. Baffinland reviewed literature for typical 6PPD-Quinone concentrations found in streams, and found concentrations to be around, or higher than, 1 µg/L (i.e.; Johannessen et al (2022) study). With our preliminary data showing we can expect our concentration to be less than this, and with the lack of known trigger action limits, Baffinland is proposing to use an upstream versus downstream comparison over the course of this monitoring plan to inform any future monitoring or required actions, and will ensure to use any future published documentation to provide better understanding of potential effects."

Throughout 2023 Baffinland continued to review literature and to consult with third party experts and it was determined that due to the remoteness of the mine site, as well as high dissolved oxygen concentrations in the water, 6PPD-Q was likely to degrade very quickly and would not be able to be measured. For reference and comparison of Tote Road traffic vs. Southern Ontario highway traffic, the Don River in the Toronto area was found to have minimum 1 µg/L concentrations during sampling events.

Baffinland feels strongly that additional monitoring of 6PPD-Quinone not be considered as one of the "additional monitoring" parameters described in QIA ID-24A. This position has been arrived at following program planning discussions between Markus Brinkmann (USask) and Baffinland personnel, including these key points:

1. 6PPD-Q exhibits very fast degradation in water samples:
    a. By the time the sample reaches the lab, 6PPD-Q would be undetectable
    b. Research is so new, labs like SGS and ALS don't have official guidance yet on this.
2. 6PPD-Q exhibits fast degradation/dissolution in streams:
    a. It is very water soluble and highly reactive with oxygen in water.
3. Generally, 6PPD-Q is only relevant for levels that trigger acute lethality:
    a. It is unrealistic to have mortality events for Arctic Char like you see for Coho Salmon in southern locations.
    b. USask researchers could not define an acute level for Char. The highest concentration that could be maintained due to continual degradation of the 6PPD-Q was 14.2µg/L over 96 hours and this did not trigger mortality in Arctic Char.
    c. Typical levels seen in streams with very heavy traffic are in the range of 2µg/L.

Due to the numerous limitations for obtaining relevant or value-added results from the program as-designed, and without an established guideline or protocol for sampling 6PPD-Q; Baffinland did not proceed with additional sampling. Furthermore, Baffinland has reverted back to the original ERP limit of approved hauling and shipping of 4.2 million tonnes; therefore, the intent of the request is no longer relevant, as Baffinland is not looking to increase haulage and therefore traffic along the Tote Road.

Tote Road Sediment Trap Monitoring

Background Information

Since 2019 Baffinland has completed effects monitoring along the Tote Road under the TRMP. The objective of the TRMP is to identify potential Project-related impacts to surface water as a result of operation and maintenance of the Tote Road throughout freshet and the remainder of the flowing water season, by comparing upstream of the Tote Road TSS concentrations to downstream of the Tote Road TSS concentrations at defined distances and sampling intervals. A potential Project-related change is defined as a greater than 50 mg/L increase in TSS concentrations in the downstream sample when upstream concentrations are less than 250 mg/L. When concentrations are greater than 250 mg/L in the upstream sample, a potential Project-related change is defined as a greater than 20% increase in TSS concentrations in the downstream sample.

In 2024, a total of 420 water quality samples were collected, of which no sampling events reported Project-related impacts to surface water as a result of the operation and maintenance of the Tote Road. In addition to the TRMP, Baffinland conducts an aquatic monitoring program developed to ensure that all

measures and works specified in the No Net Loss and Monitoring Plan, as well as the Fisheries Act Authorization and amendments have been implemented and are functioning as intended. Details of aquatic monitoring conducted to date are provided in annual NIRB reports, from 2007-2024. Aquatic monitoring in 2024 focused on assessing any changes to fish habitat and fish passage at all fish-bearing crossings.

Pilot Investigation Approach

Habitat at the Tote Road stream crossings are consistently described as erosional (boulders interspaced with gravel/cobble). As per general EEM guidelines, sediment sampling is generally not completed in erosional habitat. Nevertheless, the QIA recommended Baffinland proceed to plan and implement a pilot program to assess the potential influences of Project-generated dustfall and sediment deposits on streams that cross and/or are near the Tote Road.

The Tote Road Sediment Monitoring Pilot Investigation was developed to assess whether a control-impact study using sediment traps as the basis for determining dustfall/sediment deposition amounts, like the approach used for the Lake Sedimentation Monitoring Program, could be conducted effectively at fast-flowing streams within the Phillips Creek catchment. An unnamed stream that crosses the Tote Road at kilometre 37, referred to as crossing CV-099, was selected for the pilot investigation due to its moderate size, occurrence of continuous flow during open-water periods, and presence of fish. Within the CV-099 crossing stream, sediment traps were deployed upstream and downstream of the Tote Road, referred to as Station ST-U/S and Station ST-D/S, respectively.

In 2023 and 2024, sediment traps were deployed over three (3) separate periods that chronologically included the 2023 open-water period, the 2023-2024 ice-cover period, and the 2024 open-water period (Table 2). Among study periods, efforts were made to deploy sediment traps at the same locations taking into consideration environmental factors that may have contributed to ineffectual capture of sediment for individual sediment traps over the previous deployment period. In the case of the latter, individual sediment traps were relocated as minimal distance as possible to maintain consistency among the deployment periods.

Table 2: Sediment Trap Replicate Station Coordinates and Deployment and Retrieval Information, 2023 to 2024

Station Replicate	Coordinates (NAD83)		Open-Water Season 2023		Ice - Cover Season 2023 to 2024		Open-Water Season 2024	
	Latitude	Longitude	Date Deployed & Retrieved	Set Duration	Date Deployed & Retrieved	Set Duration	Date Deployed & Retrieved	Set Duration
ST-U/S-1	71.63919	-80.37284	August 24 to September 22	29 days	September 22, 2023 to July 22, 2024	304 days	July 22 to October 5	75 days
ST-U/S-2	71.63918	-80.37301						
ST-U/S-3	71.639291	-80.37438						
ST-D/S-1	71.63936	-80.37284	August 24 to September 22	29 days	September 22, 2023 to July 22, 2024	304 days	July 22 to October 5	75 days
ST-D/S-2	71.63936	-80.38025						
ST-D/S-3	71.63934	-80.38059						

Three (3) replicate sediment traps were deployed at each upstream and downstream station. Each sediment trap was constructed of a 30 centimetre (cm) long, 5 cm inside diameter, acrylonitrile butadiene

styrene (ABS) pipe (i.e., 19.6 cm^2 surface area) that had been capped at the bottom. Each individual sediment trap provided an aspect ratio of approximately 6:1, which meets the ≥ 5:1 aspect ratio generally recommended for cylindrical sediment traps to effectively monitor sediment deposition.

For initial sampling conducted in 2023, the sediment traps were deployed in an upstream to downstream direction. At each replicate location, the sediment traps were embedded within the stream substrate such that only the top 2 to 3 cm of the sediment trap was positioned above the substrate surface. For the initial deployment, supporting documentation for each station replicate included recording of Global Positioning System (GPS) coordinates, station and/or replicate photographs, and a written description to aid in the locating of replicate sediment traps at the time of retrieval. For sediment trap retrieval, replicates were collected in a downstream to upstream direction. Sediment trap retrieval involved pulling the unit from the substrate, emptying the entire contents of the trap into a plastic container pre-labelled with pertinent sampling details, sealing the container, and shipping to ALS Canada Ltd. (Waterloo, ON) for analysis of sediment total dry weight. Upon complete removal of all material within the sediment trap, the sediment traps were redeployed at approximately the same locations of retrieval to allow collection of information for the next deployment period.

The intent of the pilot investigation was to evaluate whether the sediment traps could effectively capture detectable amounts of material from erosional stream habitats to allow calculation of sediment deposition rate. Provided sufficient volumes of material were able to be collected, the amount of sediment accumulation (e.g., millimetres of sediment deposited per unit time extrapolated using sediment dry bulk density) was also considered as a secondary endpoint. The primary endpoint assessed for the pilot investigation was total dry weight amount of sediment captured per square centimetre area for each sediment trap.

For the pilot investigation, a 'physical effect' related to sediment deposition was defined as a significantly greater sediment dry weight per cm^2 area at the downstream station compared to upstream station for the CV-099 watercourse.

2023 Open-Water Season Summary

For the 2023 open-water season, sediment traps were deployed on August 24 and retrieved on September 22, resulting in a total deployment period of 29 days (Table 2). Although each of the sediment traps were effective in capturing sediment, the openings of some sediment traps were exposed above the waterline at the time of sediment trap retrieval. Sediment observed within the sediment traps at both the upstream and downstream stations was visually described as fine sand. The laboratory-determined total dry weight of material and calculated dry weight per cm^2 area for each sediment trap were as follows are provided in Table 3.

Table 3: Sediment Trap Laboratory Determined Dry Weight

Replicate	Status of Opening at Time of Retrieval		Dry Weight (g)		Dry Weight per Unit Area (mg/cm^2)	
	ST-U/S	ST-D/S	ST-U/S	ST-D/S	ST-U/S	ST-D/S
Rep 1	exposed	exposed	0.11	1.12	5.61	57.14
Rep 2	exposed	under water	0.17	1.37	8.67	69.90
Rep 3	exposed	exposed	0.92	0.51	46.94	26.02
Average	-	-	0.40	1.00	20.41	51.02
SD	-	-	0.45	0.44	23.03	22.57

Since the duration in which the openings of sediment traps were exposed above the waterline was unknown, the sediment deposition rate (e.g., dry weight of material deposited per day) was not able to be determined for the 2023 open-water season sediment traps. Assessment of absolute dry weight of material deposited per cm^2 unit indicated that although a greater average weight of material was deposited per unit area at the downstream station compared to the upstream station (i.e., 51.0 mg/cm2 compared to 20.4 mg/cm2, respectively), there was no statistically significant difference in the weight of sediment deposited per unit area between the downstream and upstream stations ($p = 0.175$; $F = 2.70$). It was unclear whether greater average weight of sediment collected in sediment traps at the downstream station were related to greater duration of time that the openings of sediment traps were submerged under water compared to sediment traps at the upstream stations. However, from photographic documentation taken at the time of sediment trap retrieval, it appeared that openings of sediment traps deployed at the upstream station occurred at a greater elevation above the waterline than those at the downstream station, suggesting a longer duration of inundation at the downstream station.

Photos of Sediment Trap at Station ST-U/S-1 at the Time of Deployment (left) and Retrieval (right)

Photos of Sediment Trap at Station ST-D/S-2 at the Time of Deployment (left) and Retrieval (right)

Photos of Downstream Station ST-D/S at the Time of Trap Deployment (left) and Retrieval (right)

The main takeaways from the 2023 open-water season pilot investigation were that sediment traps deployed for the open-water period were successful in capturing sediment. However, a key challenge for employing an in-stream sediment monitoring program using sediment traps for the open-water season is ensuring that the sediment trap openings remain submerged below the water surface over the duration of the season so that results are comparable between/among stations. High flows experienced during and/or shortly following freshet present safety concerns for personnel deploying sediment traps that in turn may preclude deployment of individual sediment traps at locations deemed to likely remain submerged for the duration of the sampling season. Therefore, endpoints for a long-term monitoring program may be limited to comparison of sediment weight per unit area between/among stations.

2023-2024 Ice-Cover Season Summary

For the 2023-2024 ice-cover season, sediment traps were deployed on September 22, 2023, and subsequently retrieved following freshet on July 22, 2024, resulting in a total deployment period of 304 days (Table 2). Upon retrieval of the sediment traps, it was discovered that the sediment traps at both stations had largely or completely been filled with sediment, descriptions of which are provided in Table 4.

Table 4: Summary of Sediment in Ice-Cover Season Sediment Traps

Replicate	Sediment Trap Fullness	Description of Sediment in Trap
ST-U/S-1	70% full	fine and coarse sand material, some gravel
ST-U/S-2	100% full	opening exposed, coarse sand and gravel
ST-U/S-3	100% full	fine and coarse sand material
ST-D/S-1	100% full	fine and coarse sand material
ST-D/S-2	60% full	fine and coarse sand material
ST-D/S-3	60% full	coarse sand, some gravel

Observations during sediment traps retrieval suggested that some material had been 'scoured' from the surficial portion of the stream bed. Due to the occurrence of sediment scouring seen in some sediment traps as well as the unknown date for which sediment traps had been filled completely, the sediment deposition rate was not able to be determined for the 2023-2024 ice-cover season. The presence of gravel was observed in some sediment traps which indicated that the source of sediment in sediment traps included bedload rather than deposits of suspended material originating from dustfall and/or Tote Road runoff/erosion. As a result of the occurrence of sediment trap overfilling and presence of gravel that suggested a bedload source, material deposited into the sediment traps over the course of the 2023-2024 ice-cover season was not submitted to the analytical laboratory for analysis of dry weight.

The main takeaway from the 2023-2024 ice-cover season pilot investigation is that although the sediment traps were successful in capturing sediment, field observations suggested that material was scoured from some sediment traps and that material in the sediment traps was of bedload origin rather than from a Project-generated source. These unintended outcomes were deemed to be the result of very fast water velocities encountered naturally during the freshet period.

2024 Open-Water Season Summary

For the 2024 open-water season, sediment traps were deployed on July 22 and attempted to be retrieved on October 5, resulting in a total deployment period of 75 days (Table 2). At the time of retrieval, it was discovered that only two (2) sediment traps from the downstream station were intact and contained representative sediment material. Two (2) of the remaining four (4) sediment traps from the 2024 open-water season had been dislodged from the streambed and deposited on the streambank, whereas the remaining two (2) sediment traps could not be located and were presumed to have been transported downstream to an unknown location. The dislodged and/or lost sediment traps were believed to be the result of an extreme 1-in-1,000 year precipitation event that occurred from September 20-21. Unfortunately, the loss of sediment trap data precluded meaningful interpretation of sediment trap data for the 2024 open-water season.

The main takeaway from the 2024 open-water season pilot investigation was: The use of sediment traps for monitoring sediment deposition in streams associated with the Tote Road appears to be possible only under flows *typically* experienced during periods of open-water (as per data collected in the 2023 pilot trial). However, a monitoring program involving sediment traps is susceptible to extreme weather events that confound collection of representative samples and thus limit the ability to investigate effects of Project-generated sediment deposits in streams associated with the Tote Road in years for which extreme weather events occur.

Conclusion

The intent of the original commitment has been met. Through consultation with QIA two (2) novel trials were implemented along the Tote Road. The need to establish additional monitoring no longer applies since Baffinland is no longer seeking authorization to increase production to 12 mtpa and ship out of Milne Port and has returned to the original approved ERP limit of 4.2 mtpa.

Monitoring conducted along the Tote Road to monitor the quality of surface water flows at select water crossings (culverts, bridges), in accordance with the TRMP is ongoing. Upstream and downstream water quality is monitored for pH, TSS, Total Dissolved Solids (TDS) and turbidity. In 2024, no sampling events reported Project-related impacts to surface water as a result of the operation and maintenance of the Tote Road. Since the increased efforts to monitor water quality that may be impacted from the use of rubber tires, and sediment deposition in an erosional stream based environment did not result in the collection of meaningful data, Baffinland concludes that the data collected through its established TRMP and HADD monitoring programs provides sufficient data to confirm that Baffinland is not significantly impacting water quality from the operation of the Tote Road.

References

Brinkmann et al. 2022. *Acute Toxicity of the Tire Rubber-Derived Chemical 6PPD-quinone to Four Fishes of Commercial, Cultural, and Ecological Importance.* Environ. Sci. Technol. Lett. 2022, 9, 333−338.

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Hiki and Yamamoto. 2022. *Concentration and leachability of N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD) and its quinone transformation product (6PPD-Q) in road dust collected in Tokyo, Japan*. Environmental Pollution 302 (2022) 119082.

Johannessen et al. 2021. *Detection of selected tire wear compounds in urban receiving waters*. Environmental Pollution 287 (2021) 117659.

Johannessen et al. 2022. *The Tire Wear Compounds 6PPD-Quinone and 1,3-Diphenylguanidine in an Urban Watershed.* Environmental Contamination and Toxicology (2022) 82:171–179.

Attachments

1) Certificate of Analysis – WO L2731222

Baffinland Iron Mine's Corporation
(Oakville)
ATTN: Connor Devereaux/Kendra Button
2275 Upper Middle Rd. E.
Suite #300
Oakville ON L6H 0C3

Date Received: 01-SEP-22
Report Date: 23-SEP-22 16:04 (MT)
Version: FINAL

Client Phone: 647-253-0596

Certificate of Analysis

Lab Work Order #: L2731222

Project P.O. #: 4500106851
Job Reference: TRMP
C of C Numbers: 1, 2
Legal Site Desc:

Rick Hawthorne
Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-1 BG-24-DS_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:00 Matrix: WATER							
Physical Tests							
Conductivity	487		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	200		0.50	mg/L		06-SEP-22	
pH	8.40	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	260	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	162		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	0.011		0.010	mg/L		06-SEP-22	R5854056
Chloride (Cl)	41.7		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	0.116		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.093		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Organic Carbon	1.80		0.50	mg/L		20-SEP-22	R5866147
Total Organic Carbon	3.21		0.50	mg/L		08-SEP-22	R5856676
Total Metals							
Aluminum (Al)-Total	0.0150		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.0107		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	0.028		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	40.2		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00080		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.032		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0051		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	24.2		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00628		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000165		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	1.58		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00079		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-1 BG-24-DS_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:00 Matrix: WATER							
Total Metals							
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.93		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	28.7		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0478		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	8.25		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	0.00050		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00192		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	0.00028		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.0107		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	0.027		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	40.2		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00073		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0057		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	24.3		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00611		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000154		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-1 BG-24-DS_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:00 Matrix: WATER							
Dissolved Metals							
Potassium (K)-Dissolved	1.61		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00077		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.936		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	28.6		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0472		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	8.41		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00185		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	0.0021		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	02-SEP-22	02-SEP-22	R5854716
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-2 BG-24-US_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:20 Matrix: WATER							
Physical Tests							
Conductivity	490		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	197		0.50	mg/L		06-SEP-22	
pH	8.35	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	239	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	159		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	43.7		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	0.138		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.094		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Organic Carbon	1.71		0.50	mg/L		20-SEP-22	R5866147

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-2 BG-24-US_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:20 Matrix: WATER							
Organic / Inorganic Carbon							
Total Organic Carbon	2.70		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00960		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	0.031		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	38.1		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00076		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0053		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	23.5		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00062		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000145		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	1.63		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00050		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	1.00		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	30.3		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0481		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	8.65		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00195		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-2 BG-24-US_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:20 Matrix: WATER							
Total Metals							
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.0104		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	0.030		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	38.7		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00074		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0055		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	24.3		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00061		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000140		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	1.72		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00053		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	1.01		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	31.6		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0511		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	8.98		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00193		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-2 BG-24-US_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:20 Matrix: WATER							
Dissolved Metals							
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	02-SEP-22	02-SEP-22	R5854716
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-3 CV-217-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 09:35 Matrix: WATER							
Physical Tests							
Conductivity	86.9		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	37.6		0.50	mg/L		06-SEP-22	
pH	7.53	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	46	DLDS	13	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	23.1		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	6.03		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.108		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	02-SEP-22	R5853521
Dissolved Organic Carbon	2.58		0.50	mg/L	29-AUG-22	12-SEP-22	R5858660
Total Organic Carbon	2.34		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	0.0142		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00438		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	6.73		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-3 CV-217-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 09:35 Matrix: WATER							
Total Metals							
Copper (Cu)-Total	0.00068		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.025		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	5.05		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00282		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000092		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.655		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00101		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.31		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	3.47		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0093		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	0.51		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	0.00036		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.000392		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00428		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	7.18		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-3 CV-217-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 09:35 Matrix: WATER							
Dissolved Metals							
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00062		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	4.78		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00088		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000077		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.655		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00099		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.277		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	3.45		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0087		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.000366		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	02-SEP-22	02-SEP-22	R5854716
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-4 CV-217-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 10:10 Matrix: WATER							
Physical Tests							
Conductivity	88.6		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	39.7		0.50	mg/L		06-SEP-22	
pH	7.55	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-4 CV-217-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 10:10 Matrix: WATER							
Physical Tests							
Total Dissolved Solids	48	DLDS	13	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	24.4		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	5.90		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.151		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	02-SEP-22	R5853521
Dissolved Organic Carbon	2.40		0.50	mg/L	29-AUG-22	12-SEP-22	R5858660
Total Organic Carbon	2.44		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	0.0092		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00439		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	7.32		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00075		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	5.24		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000097		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.680		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00100		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.33		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-4 CV-217-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 10:10 Matrix: WATER							
Total Metals							
Sodium (Na)-Total	3.47		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0094		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	<0.50		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.000328		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	0.0134		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00451		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	7.30		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00074		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	0.021		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	5.21		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00163	DTC	0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000088		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.688		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00094		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-4 CV-217-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 10:10 Matrix: WATER							
Dissolved Metals							
Silicon (Si)-Dissolved	0.307		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	3.47		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0089		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.000368		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	02-SEP-22	02-SEP-22	R5854716
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-5 CV-040-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 12:15 Matrix: WATER							
Physical Tests							
Conductivity	436		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	219		0.50	mg/L		06-SEP-22	
pH	8.45	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	229	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	192		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	21.3		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.178		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	02-SEP-22	R5853521
Dissolved Organic Carbon	3.47		0.50	mg/L	29-AUG-22	12-SEP-22	R5858660
Total Organic Carbon	3.62		0.50	mg/L		09-SEP-22	R5857777
Total Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-5 CV-040-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 12:15 Matrix: WATER							
Total Metals							
Aluminum (Al)-Total	0.0178		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.0112		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	47.5		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00078		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.026		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0022		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	24.4		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00210		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000208		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	1.17		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00109		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	1.59		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	10.4		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0365		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	2.42		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	0.00096		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00394		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-5 CV-040-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 12:15 Matrix: WATER							
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.0114		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	48.3		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00073		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0023		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	23.9		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00179		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000216		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	1.19		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00100		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	1.58		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	10.2		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0368		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	2.44		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00360		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	0.0023		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-5 CV-040-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 12:15 Matrix: WATER							
Dissolved Metals							
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	02-SEP-22	02-SEP-22	R5854716
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-6 CV-040-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 12:35 Matrix: WATER							
Physical Tests							
Conductivity	443		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	226		0.50	mg/L		06-SEP-22	
pH	8.48	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	226	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	192		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	22.5		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.146		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	02-SEP-22	R5853521
Dissolved Organic Carbon	3.71		0.50	mg/L	29-AUG-22	12-SEP-22	R5858660
Total Organic Carbon	3.70		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.0112		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	47.1		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00074		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-6 CV-040-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 12:35 Matrix: WATER							
Total Metals							
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0021		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	24.9		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00097		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000212		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	1.20		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00096		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	1.55		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	11.1		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0358		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	2.54		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00413		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.0119		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	48.5		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-6 CV-040-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 12:35 Matrix: WATER							
Dissolved Metals							
Copper (Cu)-Dissolved	0.00074		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0024		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	25.4		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00083		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000206		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	1.24		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00096		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	1.58		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	11.8		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0357		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	2.69		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00393		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-7 BG-50-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:00 Matrix: WATER							
Physical Tests							
Conductivity	191		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	102		0.50	mg/L		06-SEP-22	
pH	8.19	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	98	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-7 BG-50-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:00 Matrix: WATER							
Physical Tests							
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	104		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	4.11		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	0.021		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.092		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	02-SEP-22	R5853521
Dissolved Organic Carbon	2.38		0.50	mg/L	29-AUG-22	12-SEP-22	R5858660
Total Organic Carbon	2.54		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	0.0186		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00587		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	21.7		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.025		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0012		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	10.6		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00063		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000096		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.714		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00096		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.46		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	2.33		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0165		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-7 BG-50-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:00 Matrix: WATER							
Total Metals							
Sulfur (S)-Total	0.72		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	0.00063		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.000625		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	0.0053		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00602		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	23.0		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00044		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0014		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	10.7		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000091		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.706		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00092		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.422		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-7 BG-50-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:00 Matrix: WATER							
Dissolved Metals							
Sodium (Na)-Dissolved	2.33		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0159		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	0.68		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.000564		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-8 BG-50-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:20 Matrix: WATER							
Physical Tests							
Conductivity	183		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	96.5		0.50	mg/L		06-SEP-22	
pH	8.23	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	87	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	87.8		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	3.26		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.086		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	02-SEP-22	R5853521
Dissolved Organic Carbon	2.80		0.50	mg/L	29-AUG-22	12-SEP-22	R5858660
Total Organic Carbon	2.51		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-8 BG-50-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:20 Matrix: WATER							
Total Metals							
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00523		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	20.2		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.027		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	10.3		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00104		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853360
Molybdenum (Mo)-Total	0.000083		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.618		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00068		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.43		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	2.37		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0160		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	0.68		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.000523		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					01-SEP-22	R5852836
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-8 BG-50-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:20 Matrix: WATER							
Dissolved Metals							
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00530		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	21.1		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00044		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	0.016		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0013		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	10.6		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5853378
Molybdenum (Mo)-Dissolved	0.000076		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.631		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00064		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.414		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	2.40		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0153		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	0.63		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.000466		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-8 BG-50-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 14:20 Matrix: WATER							
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-9 CV-78-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 15:50 Matrix: WATER							
Physical Tests							
Conductivity	317		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	178		0.50	mg/L		06-SEP-22	
pH	8.42	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	168	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	161		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	1.89		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	0.046		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.060		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	2.31		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	1.93		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00418		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	46.3		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0014		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-9 CV-78-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 15:50 Matrix: WATER							
Total Metals							
Magnesium (Mg)-Total	14.4		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	0.000112		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.372		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00034		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.79		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	1.08		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0387		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	2.23		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.000561		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00410		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	47.3		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00023		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-9 CV-78-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 15:50 Matrix: WATER							
Dissolved Metals							
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0017		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	14.6		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	0.000101		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.379		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00034		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.782		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	1.08		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0376		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	2.12		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.000551		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	0.0020		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-10 CV-78-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 16:15 Matrix: WATER							
Physical Tests							
Conductivity	316		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	178		0.50	mg/L		06-SEP-22	
pH	8.39	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	169	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	162		1.0	mg/L		09-SEP-22	R5857617

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-10 CV-78-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 16:15 Matrix: WATER							
Anions and Nutrients							
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	1.73		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	0.043		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.070		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	1.80		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	1.88		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00398		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	47.2		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0015		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	14.6		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	0.000104		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.370		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00026		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.82		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	1.09		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0370		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	2.08		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-10 CV-78-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 16:15 Matrix: WATER							
Total Metals							
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.000552		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00410		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	47.1		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00024		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0017		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	14.6		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	0.000108		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.377		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00026		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.798		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	1.07		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-10 CV-78-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 16:15 Matrix: WATER							
Dissolved Metals							
Strontium (Sr)-Dissolved	0.0392		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	2.14		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.000526		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	06-SEP-22	R5855178
L2731222-11 QP-BT5_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:00 Matrix: WATER							
Physical Tests							
Conductivity	<1.0		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	<0.50		0.50	mg/L		06-SEP-22	
pH	5.50	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	13		10	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	<1.0		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	<0.50		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	<0.050		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	<0.50		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	0.57		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-11 QP-BT5_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:00 Matrix: WATER							
Total Metals							
Barium (Ba)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	3.28		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	<0.50		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-11 QP-BT5_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:00 Matrix: WATER							
Dissolved Metals							
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	3.34		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	0.137		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-11 QP-BT5_2022-08-28 Sampled By: BM/LM on 28-AUG-22 @ 15:00 Matrix: WATER							
Miscellaneous							
6PPD-Quinone	<0.0023	DLB	0.0023	ug/L	02-SEP-22	07-SEP-22	R5855178
L2731222-12 QP-CC5_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 10:10 Matrix: WATER							
Physical Tests							
Conductivity	88.8		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	38.2		0.50	mg/L		06-SEP-22	
pH	7.52	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	47	DLDS	13	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	32.9		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	5.90		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.092		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	2.34		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	2.34		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	0.0152		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00439		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	6.87		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00077		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.025		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	4.94		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00165		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-12 QP-CC5_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 10:10 Matrix: WATER							
Total Metals							
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	0.000086		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.659		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00103		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.34		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	3.27		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0090		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	<0.50		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	0.00043		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.000405		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00435		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	7.13		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00069		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-12 QP-CC5_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 10:10 Matrix: WATER							
Dissolved Metals							
Magnesium (Mg)-Dissolved	4.95		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	0.000076		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.674		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00099		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.304		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	3.37		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0090		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.000378		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	07-SEP-22	R5855178
L2731222-13 CV-099-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 17:10 Matrix: WATER							
Physical Tests							
Conductivity	362		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	199		0.50	mg/L		06-SEP-22	
pH	8.46	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	190	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	170		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	9.87		0.50	mg/L		09-SEP-22	R5857959

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-13 CV-099-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 17:10 Matrix: WATER							
Anions and Nutrients							
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.144		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	0.0094		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	3.73		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	3.06		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	0.00011		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00646		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	40.5		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00052		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0020		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	22.8		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	0.000147		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.684		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.62		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	4.52		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0267		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	2.87		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-13 CV-099-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 17:10 Matrix: WATER							
Total Metals							
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00140		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	0.00021		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00662		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	40.7		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00048		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0024		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	23.6		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	0.000127		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.717		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00062		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.609		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	4.52		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0260		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	2.85		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-13 CV-099-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 17:10 Matrix: WATER							
Dissolved Metals							
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00128		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	0.0016		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	07-SEP-22	R5855178
L2731222-14 CV-099-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 17:35 Matrix: WATER							
Physical Tests							
Conductivity	360		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	196		0.50	mg/L		06-SEP-22	
pH	8.47	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	184	DLDS	20	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	170		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	9.65		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.118		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	2.76		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	2.99		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	0.00011		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00641		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-14 CV-099-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 17:35 Matrix: WATER							
Total Metals							
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	41.3		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	0.00052		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	0.0021		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	24.0		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	0.000138		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.710		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.63		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	4.65		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0259		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	2.65		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00126		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	0.00022		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	0.00011		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-14 CV-099-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 17:35 Matrix: WATER							
Dissolved Metals							
Barium (Ba)-Dissolved	0.00644		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	39.8		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00050		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	0.0023		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	23.5		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	0.000137		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.714		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00052		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.615		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	4.64		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0269		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	2.75		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00124		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	07-SEP-22	R5855178

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-15 CV-128-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 18:25 Matrix: WATER							
Physical Tests							
Conductivity	159		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	84.6		0.50	mg/L		06-SEP-22	
pH	8.10	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	77	DLDS	13	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	77.4		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	1.68		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.067		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	0.0059		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	1.54		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	2.01		0.50	mg/L		09-SEP-22	R5857777
Total Metals							
Aluminum (Al)-Total	0.0052		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00597		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	18.3		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.011		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	9.68		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00097		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	0.000159		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.544		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-15 CV-128-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 18:25 Matrix: WATER							
Total Metals							
Rubidium (Rb)-Total	0.00107		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.35		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	1.13		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0116		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	0.56		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00236		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00611		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	18.4		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00043		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	9.39		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00073		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	0.000157		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-15 CV-128-DS_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 18:25 Matrix: WATER							
Dissolved Metals							
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.551		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00109		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.336		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	1.11		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0121		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	0.51		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00210		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	07-SEP-22	R5855178
L2731222-16 CV-128-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 18:50 Matrix: WATER							
Physical Tests							
Conductivity	158		1.0	umhos/cm		08-SEP-22	R5857598
Hardness (as CaCO3)	86.6		0.50	mg/L		06-SEP-22	
pH	8.14	PEHT	0.10	pH units		08-SEP-22	R5857598
Total Suspended Solids	<3.0		3.0	mg/L	02-SEP-22	03-SEP-22	R5854057
Total Dissolved Solids	77	DLDS	13	mg/L		06-SEP-22	R5854696
Turbidity	<1.0		1.0	NTU		01-SEP-22	R5853790
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	75.5		1.0	mg/L		09-SEP-22	R5857617
Ammonia, Total (as N)	<0.010		0.010	mg/L		02-SEP-22	R5854056
Chloride (Cl)	1.69		0.50	mg/L		09-SEP-22	R5857959
Nitrate (as N)	<0.020		0.020	mg/L		09-SEP-22	R5857959
Nitrite (as N)	<0.010		0.010	mg/L		09-SEP-22	R5857959
Total Kjeldahl Nitrogen	0.055		0.050	mg/L	02-SEP-22	06-SEP-22	R5855402
Phosphorus, Total	<0.0030		0.0030	mg/L	02-SEP-22	06-SEP-22	R5854576
Organic / Inorganic Carbon							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-16 CV-128-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 18:50 Matrix: WATER							
Organic / Inorganic Carbon							
Dissolved Carbon Filtration Location	FIELD				29-AUG-22	06-SEP-22	R5854617
Dissolved Organic Carbon	2.20		0.50	mg/L	29-AUG-22	15-SEP-22	R5861599
Total Organic Carbon	1.96		0.50	mg/L		09-SEP-22	R5857778
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Barium (Ba)-Total	0.00587		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Boron (B)-Total	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Calcium (Ca)-Total	17.1		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Iron (Fe)-Total	0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854017
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Magnesium (Mg)-Total	9.37		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854017
Manganese (Mn)-Total	0.00095		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		02-SEP-22	R5853764
Molybdenum (Mo)-Total	0.000152		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Potassium (K)-Total	0.536		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Rubidium (Rb)-Total	0.00105		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Silicon (Si)-Total	0.34		0.10	mg/L	01-SEP-22	02-SEP-22	R5854017
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854017
Sodium (Na)-Total	1.14		0.050	mg/L	01-SEP-22	02-SEP-22	R5854017
Strontium (Sr)-Total	0.0112		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854017
Sulfur (S)-Total	0.55		0.50	mg/L	01-SEP-22	02-SEP-22	R5854017
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854017
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854017
Uranium (U)-Total	0.00234		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854017

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-16 CV-128-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 18:50 Matrix: WATER							
Total Metals							
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854017
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-SEP-22	02-SEP-22	R5854017
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854017
Dissolved Metals							
Dissolved Mercury Filtration Location	FIELD					02-SEP-22	R5853100
Dissolved Metals Filtration Location	FIELD					01-SEP-22	R5852997
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Barium (Ba)-Dissolved	0.00629		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Boron (B)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Calcium (Ca)-Dissolved	18.6		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Chromium (Cr)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Copper (Cu)-Dissolved	0.00044		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	01-SEP-22	02-SEP-22	R5854016
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Magnesium (Mg)-Dissolved	9.75		0.0050	mg/L	01-SEP-22	02-SEP-22	R5854016
Manganese (Mn)-Dissolved	0.00082		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Mercury (Hg)-Dissolved	<0.0000050		0.0000050	mg/L	02-SEP-22	02-SEP-22	R5853520
Molybdenum (Mo)-Dissolved	0.000153		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Phosphorus (P)-Dissolved	<0.050		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Potassium (K)-Dissolved	0.562		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Rubidium (Rb)-Dissolved	0.00112		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silicon (Si)-Dissolved	0.311		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Silver (Ag)-Dissolved	<0.000050		0.000050	mg/L	01-SEP-22	02-SEP-22	R5854016
Sodium (Na)-Dissolved	1.17		0.050	mg/L	01-SEP-22	02-SEP-22	R5854016
Strontium (Sr)-Dissolved	0.0119		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Sulfur (S)-Dissolved	0.54		0.50	mg/L	01-SEP-22	02-SEP-22	R5854016
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	01-SEP-22	02-SEP-22	R5854016

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2731222-16 CV-128-US_2022-08-29 Sampled By: BM/LM on 29-AUG-22 @ 18:50 Matrix: WATER							
Dissolved Metals							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	01-SEP-22	02-SEP-22	R5854016
Uranium (U)-Dissolved	0.00223		0.000010	mg/L	01-SEP-22	02-SEP-22	R5854016
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	01-SEP-22	02-SEP-22	R5854016
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	01-SEP-22	02-SEP-22	R5854016
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	01-SEP-22	02-SEP-22	R5854016
Aggregate Organics							
Oil and Grease, Total	<5.0		5.0	mg/L	06-SEP-22	06-SEP-22	R5855439
Miscellaneous							
6PPD-Quinone	<0.0020		0.0020	ug/L	02-SEP-22	07-SEP-22	R5855178

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	6PPD-Quinone	MB-LOR	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Dissolved Organic Carbon	MS-B	L2731222-3, -4, -5, -6, -7, -8
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Uranium (U)-Dissolved	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Total	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Total	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Total	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Total	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfur (S)-Total	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Uranium (U)-Total	MS-B	L2731222-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Total Organic Carbon	MS-B	L2731222-16

Sample Parameter Qualifier key listed:

Qualifier	Description
DLB	Detection Limit Raised. Analyte detected at comparable level in Method Blank.
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
6PPD-QUINONE-LCMS-WT	Water	6PPD-Quinone in Water by LCMS/MS	Inhouse Developed

This is a Solid Phase Extraction procedure for water samples. 60mL DI water was spiked with Internal Standard 6PPD-Quinone-d5 then loaded into the SPE cartridge followed by methanol elution and evaporation to 2.5mL 2.5mL UHPLC water is added for a final volume of 5mL Extract ready for LCMS analysis in ESI mode.

ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP

Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Reference Information

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

DOC-WT	Water	Dissolved Organic Carbon	APHA 5310B

Sample is filtered through a 0.45um filter, then injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic carbon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-WT	Water	Dissolved Mercury in Water by CVAAS	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

HG-T-CVAA-WT	Water	Total Mercury in Water by CVAAS	EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-D-CCMS-WT	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

OGG-TOT-WT	Water	Oil and Grease, Total	APHA 5520 B

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

P-T-COL-WT	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is deteremined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, TDS is determined by evaporating the filtrate to dryness at 180 degrees celsius.

SOLIDS-TSS-LOW-WT	Water	Total Suspended Solids to 0.5 mg/L	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

TKN-F-WT	Water	TKN in Water by Fluorescence	J. ENVIRON. MONIT., 2005,7,37-42,RSC

Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection

TOC-WT	Water	Total Organic Carbon	APHA 5310B

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic cabon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

TURBIDITY-WT	Water	Turbidity	APHA 2130 B

Sample result is based on a comparison of the intensity of the light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension under the same conditions. Sample readings are obtained from a Nephelometer.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

1 2

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2731222 Report Date: 23-SEP-22

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
6PPD-QUINONE-LCMS-WT	**Water**							
Batch R5855178								
WG3760928-3 DUP		**L2731222-1**						
6PPD-Quinone		<0.0020	<0.0020	RPD-NA	ug/L	N/A	50	06-SEP-22
WG3760928-2 LCS								
6PPD-Quinone			117.1		%		50-150	06-SEP-22
WG3760928-1 MB								
6PPD-Quinone			0.0025	MB-LOR	ug/L		0.002	06-SEP-22
WG3760928-4 MS		**L2731222-2**						
6PPD-Quinone			98.7		%		50-150	06-SEP-22
ALK-WT	**Water**							
Batch R5857617								
WG3762130-4 DUP		**WG3762130-3**						
Alkalinity, Total (as CaCO3)		162	162		mg/L	0.4	20	09-SEP-22
WG3762130-2 LCS								
Alkalinity, Total (as CaCO3)			99.0		%		85-115	09-SEP-22
WG3762130-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	09-SEP-22
C-DOC-HTC-WP	**Water**							
Batch R5866147								
WG3764094-7 DUP		**L2731222-1**						
Dissolved Organic Carbon		1.80	1.76		mg/L	2.0	20	20-SEP-22
WG3764094-6 LCS								
Dissolved Organic Carbon			92.4		%		80-120	20-SEP-22
WG3764094-5 MB								
Dissolved Organic Carbon			<0.50		mg/L		0.5	20-SEP-22
WG3764094-8 MS		**L2731222-2**						
Dissolved Organic Carbon			88.8		%		70-130	20-SEP-22
CL-IC-N-WT	**Water**							
Batch R5857959								
WG3761907-4 DUP		**WG3761907-3**						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	09-SEP-22
WG3761907-2 LCS								
Chloride (Cl)			100.7		%		90-110	09-SEP-22
WG3761907-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	09-SEP-22
WG3761907-5 MS		**WG3761907-3**						
Chloride (Cl)			100.3		%		75-125	09-SEP-22
DOC-WT	**Water**							

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DOC-WT	**Water**							
Batch R5858660								
WG3761051-3 DUP		**WG3761051-5**						
Dissolved Organic Carbon		12.2	13.1		mg/L	6.5	20	12-SEP-22
WG3761051-2 LCS								
Dissolved Organic Carbon			108.0		%		80-120	12-SEP-22
WG3761051-1 MB								
Dissolved Organic Carbon			<0.50		mg/L		0.5	12-SEP-22
WG3761051-4 MS		**WG3761051-5**						
Dissolved Organic Carbon			N/A	MS-B	%		-	12-SEP-22
Batch R5861599								
WG3761357-3 DUP		**L2731222-9**						
Dissolved Organic Carbon		2.31	2.53		mg/L	8.8	20	15-SEP-22
WG3761357-2 LCS								
Dissolved Organic Carbon			118.2		%		80-120	15-SEP-22
WG3761357-1 MB								
Dissolved Organic Carbon			<0.50		mg/L		0.5	15-SEP-22
WG3761357-4 MS		**L2731222-9**						
Dissolved Organic Carbon			126.4		%		70-130	15-SEP-22
EC-WT	**Water**							
Batch R5857598								
WG3761808-4 DUP		**WG3761808-3**						
Conductivity		191	194		umhos/cm	2.0	10	08-SEP-22
WG3761808-2 LCS								
Conductivity			100.1		%		90-110	08-SEP-22
WG3761808-1 MB								
Conductivity			<1.0		umhos/cm		1	08-SEP-22
HG-D-CVAA-WT	**Water**							
Batch R5853378								
WG3760846-3 DUP		**L2731222-1**						
Mercury (Hg)-Dissolved		<0.0000050	<0.000005(	RPD-NA	mg/L	N/A	20	02-SEP-22
WG3760846-2 LCS								
Mercury (Hg)-Dissolved			97.2		%		80-120	02-SEP-22
WG3760846-1 MB								
Mercury (Hg)-Dissolved			<0.000005(		mg/L		0.000005	02-SEP-22
WG3760846-4 MS		**L2731222-2**						
Mercury (Hg)-Dissolved			86.9		%		70-130	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-CVAA-WT	**Water**							
Batch R5853520								
WG3760930-3 DUP		**L2731222-9**						
Mercury (Hg)-Dissolved		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	02-SEP-22
WG3760930-2 LCS								
Mercury (Hg)-Dissolved			96.0		%		80-120	02-SEP-22
WG3760930-1 MB								
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	02-SEP-22
WG3760930-4 MS		**L2731222-10**						
Mercury (Hg)-Dissolved			88.7		%		70-130	02-SEP-22
HG-T-CVAA-WT	**Water**							
Batch R5853360								
WG3760842-3 DUP		**WG3760842-5**						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	02-SEP-22
WG3760842-2 LCS								
Mercury (Hg)-Total			96.7		%		80-120	02-SEP-22
WG3760842-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	02-SEP-22
WG3760842-4 MS		**WG3760842-6**						
Mercury (Hg)-Total			85.9		%		70-130	02-SEP-22
Batch R5853764								
WG3760929-3 DUP		**L2731222-9**						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	02-SEP-22
WG3760929-2 LCS								
Mercury (Hg)-Total			97.5		%		80-120	02-SEP-22
WG3760929-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	02-SEP-22
WG3760929-4 MS		**L2731222-10**						
Mercury (Hg)-Total			80.2		%		70-130	02-SEP-22
MET-D-CCMS-WT	**Water**							
Batch R5854016								
WG3760898-4 DUP		**WG3760898-3**						
Aluminum (Al)-Dissolved		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	02-SEP-22
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Arsenic (As)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Barium (Ba)-Dissolved		0.0107	0.0107		mg/L	0.1	20	02-SEP-22
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Boron (B)-Dissolved		0.027	0.028		mg/L	3.2	20	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R5854016								
WG3760898-4 DUP		**WG3760898-3**						
Cadmium (Cd)-Dissolved		<0.0000050	<0.000005(	RPD-NA	mg/L	N/A	20	02-SEP-22
Calcium (Ca)-Dissolved		40.2	39.7		mg/L	1.2	20	02-SEP-22
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-SEP-22
Chromium (Cr)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-SEP-22
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Copper (Cu)-Dissolved		0.00073	0.00072		mg/L	0.7	20	02-SEP-22
Iron (Fe)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	02-SEP-22
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Lithium (Li)-Dissolved		0.0057	0.0055		mg/L	2.6	20	02-SEP-22
Magnesium (Mg)-Dissolved		24.3	24.4		mg/L	0.7	20	02-SEP-22
Manganese (Mn)-Dissolved		0.00611	0.00585		mg/L	4.3	20	02-SEP-22
Molybdenum (Mo)-Dissolved		0.000154	0.000148		mg/L	4.0	20	02-SEP-22
Nickel (Ni)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-SEP-22
Phosphorus (P)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	02-SEP-22
Potassium (K)-Dissolved		1.61	1.59		mg/L	1.5	20	02-SEP-22
Rubidium (Rb)-Dissolved		0.00077	0.00081		mg/L	4.9	20	02-SEP-22
Selenium (Se)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Silicon (Si)-Dissolved		0.936	0.934		mg/L	0.1	20	02-SEP-22
Silver (Ag)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Sodium (Na)-Dissolved		28.6	29.3		mg/L	2.6	20	02-SEP-22
Strontium (Sr)-Dissolved		0.0472	0.0481		mg/L	1.9	20	02-SEP-22
Sulfur (S)-Dissolved		8.41	8.52		mg/L	1.4	20	02-SEP-22
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	02-SEP-22
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-SEP-22
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Titanium (Ti)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	02-SEP-22
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Uranium (U)-Dissolved		0.00185	0.00189		mg/L	2.1	20	02-SEP-22
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-SEP-22
Zinc (Zn)-Dissolved		0.0021	0.0022		mg/L	3.9	20	02-SEP-22
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	02-SEP-22
WG3760898-2 LCS								

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R5854016								
WG3760898-2 LCS								
Aluminum (Al)-Dissolved			107.9		%		80-120	02-SEP-22
Antimony (Sb)-Dissolved			99.4		%		80-120	02-SEP-22
Arsenic (As)-Dissolved			102.4		%		80-120	02-SEP-22
Barium (Ba)-Dissolved			99.5		%		80-120	02-SEP-22
Beryllium (Be)-Dissolved			100.2		%		80-120	02-SEP-22
Bismuth (Bi)-Dissolved			101.9		%		80-120	02-SEP-22
Boron (B)-Dissolved			99.0		%		80-120	02-SEP-22
Cadmium (Cd)-Dissolved			101.0		%		80-120	02-SEP-22
Calcium (Ca)-Dissolved			97.8		%		80-120	02-SEP-22
Cesium (Cs)-Dissolved			100.6		%		80-120	02-SEP-22
Chromium (Cr)-Dissolved			102.8		%		80-120	02-SEP-22
Cobalt (Co)-Dissolved			99.2		%		80-120	02-SEP-22
Copper (Cu)-Dissolved			99.2		%		80-120	02-SEP-22
Iron (Fe)-Dissolved			100.5		%		80-120	02-SEP-22
Lead (Pb)-Dissolved			103.1		%		80-120	02-SEP-22
Lithium (Li)-Dissolved			104.1		%		80-120	02-SEP-22
Magnesium (Mg)-Dissolved			116.2		%		80-120	02-SEP-22
Manganese (Mn)-Dissolved			101.0		%		80-120	02-SEP-22
Molybdenum (Mo)-Dissolved			97.3		%		80-120	02-SEP-22
Nickel (Ni)-Dissolved			101.1		%		80-120	02-SEP-22
Phosphorus (P)-Dissolved			106.5		%		80-120	02-SEP-22
Potassium (K)-Dissolved			104.8		%		80-120	02-SEP-22
Rubidium (Rb)-Dissolved			105.5		%		80-120	02-SEP-22
Selenium (Se)-Dissolved			103.6		%		80-120	02-SEP-22
Silicon (Si)-Dissolved			99.0		%		60-140	02-SEP-22
Silver (Ag)-Dissolved			94.2		%		80-120	02-SEP-22
Sodium (Na)-Dissolved			107.2		%		80-120	02-SEP-22
Strontium (Sr)-Dissolved			105.8		%		80-120	02-SEP-22
Sulfur (S)-Dissolved			97.9		%		80-120	02-SEP-22
Tellurium (Te)-Dissolved			95.2		%		80-120	02-SEP-22
Thallium (Tl)-Dissolved			101.9		%		80-120	02-SEP-22
Thorium (Th)-Dissolved			101.4		%		80-120	02-SEP-22
Tin (Sn)-Dissolved			101.4		%		80-120	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R5854016								
WG3760898-2 LCS								
Titanium (Ti)-Dissolved			99.8		%		80-120	02-SEP-22
Tungsten (W)-Dissolved			101.9		%		80-120	02-SEP-22
Uranium (U)-Dissolved			105.5		%		80-120	02-SEP-22
Vanadium (V)-Dissolved			104.0		%		80-120	02-SEP-22
Zinc (Zn)-Dissolved			102.1		%		80-120	02-SEP-22
Zirconium (Zr)-Dissolved			97.4		%		80-120	02-SEP-22
WG3760898-1 MB								
Aluminum (Al)-Dissolved			<0.0050		mg/L		0.005	02-SEP-22
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	02-SEP-22
Boron (B)-Dissolved			<0.010		mg/L		0.01	02-SEP-22
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	02-SEP-22
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	02-SEP-22
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	02-SEP-22
Chromium (Cr)-Dissolved			<0.00050		mg/L		0.0005	02-SEP-22
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	02-SEP-22
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	02-SEP-22
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	02-SEP-22
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	02-SEP-22
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	02-SEP-22
Manganese (Mn)-Dissolved			<0.00050		mg/L		0.0005	02-SEP-22
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	02-SEP-22
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	02-SEP-22
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	02-SEP-22
Potassium (K)-Dissolved			<0.050		mg/L		0.05	02-SEP-22
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	02-SEP-22
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	02-SEP-22
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	02-SEP-22
Silver (Ag)-Dissolved			<0.000050		mg/L		0.00005	02-SEP-22
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	02-SEP-22

Quality Control Report

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Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R5854016								
WG3760898-1 MB								
Strontium (Sr)-Dissolved			<0.0010		mg/L		0.001	02-SEP-22
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	02-SEP-22
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	02-SEP-22
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	02-SEP-22
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	02-SEP-22
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	02-SEP-22
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	02-SEP-22
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	02-SEP-22
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	02-SEP-22
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	02-SEP-22
WG3760898-5 MS		**WG3760898-6**						
Aluminum (Al)-Dissolved			104.4		%		70-130	02-SEP-22
Antimony (Sb)-Dissolved			97.3		%		70-130	02-SEP-22
Arsenic (As)-Dissolved			106.6		%		70-130	02-SEP-22
Barium (Ba)-Dissolved			90.2		%		70-130	02-SEP-22
Beryllium (Be)-Dissolved			102.9		%		70-130	02-SEP-22
Bismuth (Bi)-Dissolved			84.2		%		70-130	02-SEP-22
Boron (B)-Dissolved			95.0		%		70-130	02-SEP-22
Cadmium (Cd)-Dissolved			100.4		%		70-130	02-SEP-22
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	02-SEP-22
Cesium (Cs)-Dissolved			102.4		%		70-130	02-SEP-22
Chromium (Cr)-Dissolved			99.8		%		70-130	02-SEP-22
Cobalt (Co)-Dissolved			94.5		%		70-130	02-SEP-22
Copper (Cu)-Dissolved			93.1		%		70-130	02-SEP-22
Iron (Fe)-Dissolved			97.2		%		70-130	02-SEP-22
Lead (Pb)-Dissolved			101.5		%		70-130	02-SEP-22
Lithium (Li)-Dissolved			102.1		%		70-130	02-SEP-22
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	02-SEP-22
Manganese (Mn)-Dissolved			99.4		%		70-130	02-SEP-22
Molybdenum (Mo)-Dissolved			101.9		%		70-130	02-SEP-22
Nickel (Ni)-Dissolved			95.5		%		70-130	02-SEP-22
Phosphorus (P)-Dissolved			112.3		%		70-130	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R5854016								
WG3760898-5 MS		**WG3760898-6**						
Potassium (K)-Dissolved			110.2		%		70-130	02-SEP-22
Rubidium (Rb)-Dissolved			102.4		%		70-130	02-SEP-22
Selenium (Se)-Dissolved			114.3		%		70-130	02-SEP-22
Silicon (Si)-Dissolved			N/A	MS-B	%		-	02-SEP-22
Silver (Ag)-Dissolved			93.5		%		70-130	02-SEP-22
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-SEP-22
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	02-SEP-22
Sulfur (S)-Dissolved			N/A	MS-B	%		-	02-SEP-22
Tellurium (Te)-Dissolved			103.7		%		70-130	02-SEP-22
Thallium (Tl)-Dissolved			99.4		%		70-130	02-SEP-22
Thorium (Th)-Dissolved			98.3		%		70-130	02-SEP-22
Tin (Sn)-Dissolved			99.8		%		70-130	02-SEP-22
Titanium (Ti)-Dissolved			101.1		%		70-130	02-SEP-22
Tungsten (W)-Dissolved			102.0		%		70-130	02-SEP-22
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-SEP-22
Vanadium (V)-Dissolved			103.7		%		70-130	02-SEP-22
Zinc (Zn)-Dissolved			98.9		%		70-130	02-SEP-22
Zirconium (Zr)-Dissolved			103.0		%		70-130	02-SEP-22
MET-T-CCMS-WT	**Water**							
Batch R5854017								
WG3760888-4 DUP		**WG3760888-3**						
Aluminum (Al)-Total		0.0150	0.0157		mg/L	4.4	20	02-SEP-22
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Arsenic (As)-Total		<0.00010	0.00011	RPD-NA	mg/L	N/A	20	02-SEP-22
Barium (Ba)-Total		0.0107	0.0105		mg/L	1.6	20	02-SEP-22
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Boron (B)-Total		0.028	0.029		mg/L	2.5	20	02-SEP-22
Cadmium (Cd)-Total		<0.0000050	<0.000005(	RPD-NA	mg/L	N/A	20	02-SEP-22
Calcium (Ca)-Total		40.2	41.1		mg/L	2.2	20	02-SEP-22
Chromium (Cr)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-SEP-22
Cesium (Cs)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-SEP-22
Cobalt (Co)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5854017								
WG3760888-4 DUP		**WG3760888-3**						
Copper (Cu)-Total		0.00080	0.00079		mg/L	0.6	20	02-SEP-22
Iron (Fe)-Total		0.032	0.033		mg/L	1.5	20	02-SEP-22
Lead (Pb)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Lithium (Li)-Total		0.0051	0.0052		mg/L	0.5	20	02-SEP-22
Magnesium (Mg)-Total		24.2	24.0		mg/L	0.9	20	02-SEP-22
Manganese (Mn)-Total		0.00628	0.00623		mg/L	0.8	20	02-SEP-22
Molybdenum (Mo)-Total		0.000165	0.000157		mg/L	4.8	20	02-SEP-22
Nickel (Ni)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-SEP-22
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	02-SEP-22
Potassium (K)-Total		1.58	1.58		mg/L	0.1	20	02-SEP-22
Rubidium (Rb)-Total		0.00079	0.00080		mg/L	1.6	20	02-SEP-22
Selenium (Se)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Silicon (Si)-Total		0.93	0.95		mg/L	2.7	20	02-SEP-22
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-SEP-22
Sodium (Na)-Total		28.7	28.1		mg/L	2.2	20	02-SEP-22
Strontium (Sr)-Total		0.0478	0.0484		mg/L	1.3	20	02-SEP-22
Sulfur (S)-Total		8.25	8.20		mg/L	0.6	20	02-SEP-22
Thallium (Tl)-Total		<0.000010	0.000010	RPD-NA	mg/L	N/A	20	02-SEP-22
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	02-SEP-22
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Titanium (Ti)-Total		0.00050	0.00055		mg/L	8.3	20	02-SEP-22
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-SEP-22
Uranium (U)-Total		0.00192	0.00194		mg/L	1.0	20	02-SEP-22
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-SEP-22
Zinc (Zn)-Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	02-SEP-22
Zirconium (Zr)-Total		0.00028	0.00028		mg/L	0.8	20	02-SEP-22
WG3760888-2 LCS								
Aluminum (Al)-Total			105.8		%		80-120	02-SEP-22
Antimony (Sb)-Total			102.2		%		80-120	02-SEP-22
Arsenic (As)-Total			102.1		%		80-120	02-SEP-22
Barium (Ba)-Total			98.1		%		80-120	02-SEP-22
Beryllium (Be)-Total			105.8		%		80-120	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5854017								
WG3760888-2 LCS								
Bismuth (Bi)-Total			104.1		%		80-120	02-SEP-22
Boron (B)-Total			103.0		%		80-120	02-SEP-22
Cadmium (Cd)-Total			101.3		%		80-120	02-SEP-22
Calcium (Ca)-Total			101.9		%		80-120	02-SEP-22
Chromium (Cr)-Total			102.2		%		80-120	02-SEP-22
Cesium (Cs)-Total			102.0		%		80-120	02-SEP-22
Cobalt (Co)-Total			97.7		%		80-120	02-SEP-22
Copper (Cu)-Total			98.4		%		80-120	02-SEP-22
Iron (Fe)-Total			102.3		%		80-120	02-SEP-22
Lead (Pb)-Total			106.8		%		80-120	02-SEP-22
Lithium (Li)-Total			109.2		%		80-120	02-SEP-22
Magnesium (Mg)-Total			117.0		%		80-120	02-SEP-22
Manganese (Mn)-Total			103.5		%		80-120	02-SEP-22
Molybdenum (Mo)-Total			100.3		%		80-120	02-SEP-22
Nickel (Ni)-Total			99.6		%		80-120	02-SEP-22
Phosphorus (P)-Total			102.4		%		80-120	02-SEP-22
Potassium (K)-Total			103.1		%		80-120	02-SEP-22
Rubidium (Rb)-Total			99.8		%		80-120	02-SEP-22
Selenium (Se)-Total			104.2		%		80-120	02-SEP-22
Silicon (Si)-Total			100.3		%		60-140	02-SEP-22
Silver (Ag)-Total			95.9		%		80-120	02-SEP-22
Sodium (Na)-Total			108.5		%		80-120	02-SEP-22
Strontium (Sr)-Total			103.4		%		80-120	02-SEP-22
Sulfur (S)-Total			96.9		%		80-120	02-SEP-22
Thallium (Tl)-Total			105.6		%		80-120	02-SEP-22
Tellurium (Te)-Total			98.8		%		80-120	02-SEP-22
Thorium (Th)-Total			107.4		%		80-120	02-SEP-22
Tin (Sn)-Total			101.1		%		80-120	02-SEP-22
Titanium (Ti)-Total			101.4		%		80-120	02-SEP-22
Tungsten (W)-Total			102.8		%		80-120	02-SEP-22
Uranium (U)-Total			107.5		%		80-120	02-SEP-22
Vanadium (V)-Total			103.7		%		80-120	02-SEP-22
Zinc (Zn)-Total			98.8		%		80-120	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5854017								
WG3760888-2 LCS								
Zirconium (Zr)-Total			98.2		%		80-120	02-SEP-22
WG3760888-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	02-SEP-22
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	02-SEP-22
Arsenic (As)-Total			<0.00010		mg/L		0.0001	02-SEP-22
Barium (Ba)-Total			<0.00010		mg/L		0.0001	02-SEP-22
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	02-SEP-22
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	02-SEP-22
Boron (B)-Total			<0.010		mg/L		0.01	02-SEP-22
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	02-SEP-22
Calcium (Ca)-Total			<0.050		mg/L		0.05	02-SEP-22
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	02-SEP-22
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	02-SEP-22
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	02-SEP-22
Copper (Cu)-Total			<0.00050		mg/L		0.0005	02-SEP-22
Iron (Fe)-Total			<0.010		mg/L		0.01	02-SEP-22
Lead (Pb)-Total			<0.000050		mg/L		0.00005	02-SEP-22
Lithium (Li)-Total			<0.0010		mg/L		0.001	02-SEP-22
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	02-SEP-22
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	02-SEP-22
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	02-SEP-22
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	02-SEP-22
Phosphorus (P)-Total			<0.050		mg/L		0.05	02-SEP-22
Potassium (K)-Total			<0.050		mg/L		0.05	02-SEP-22
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	02-SEP-22
Selenium (Se)-Total			<0.000050		mg/L		0.00005	02-SEP-22
Silicon (Si)-Total			<0.10		mg/L		0.1	02-SEP-22
Silver (Ag)-Total			<0.000050		mg/L		0.00005	02-SEP-22
Sodium (Na)-Total			<0.050		mg/L		0.05	02-SEP-22
Strontium (Sr)-Total			<0.0010		mg/L		0.001	02-SEP-22
Sulfur (S)-Total			<0.50		mg/L		0.5	02-SEP-22
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	02-SEP-22
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	02-SEP-22
Thorium (Th)-Total			<0.00010		mg/L		0.0001	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5854017								
WG3760888-1 MB								
Tin (Sn)-Total			<0.00010		mg/L		0.0001	02-SEP-22
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	02-SEP-22
Tungsten (W)-Total			<0.00010		mg/L		0.0001	02-SEP-22
Uranium (U)-Total			<0.000010		mg/L		0.00001	02-SEP-22
Vanadium (V)-Total			<0.00050		mg/L		0.0005	02-SEP-22
Zinc (Zn)-Total			<0.0030		mg/L		0.003	02-SEP-22
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	02-SEP-22
WG3760888-5 MS		**WG3760888-6**						
Aluminum (Al)-Total			108.5		%		70-130	02-SEP-22
Antimony (Sb)-Total			103.2		%		70-130	02-SEP-22
Arsenic (As)-Total			105.1		%		70-130	02-SEP-22
Barium (Ba)-Total			97.1		%		70-130	02-SEP-22
Beryllium (Be)-Total			105.4		%		70-130	02-SEP-22
Bismuth (Bi)-Total			102.5		%		70-130	02-SEP-22
Boron (B)-Total			106.7		%		70-130	02-SEP-22
Cadmium (Cd)-Total			104.3		%		70-130	02-SEP-22
Calcium (Ca)-Total			N/A	MS-B	%		-	02-SEP-22
Chromium (Cr)-Total			105.5		%		70-130	02-SEP-22
Cesium (Cs)-Total			102.8		%		70-130	02-SEP-22
Cobalt (Co)-Total			101.2		%		70-130	02-SEP-22
Copper (Cu)-Total			99.3		%		70-130	02-SEP-22
Iron (Fe)-Total			102.5		%		70-130	02-SEP-22
Lead (Pb)-Total			104.7		%		70-130	02-SEP-22
Lithium (Li)-Total			103.3		%		70-130	02-SEP-22
Magnesium (Mg)-Total			N/A	MS-B	%		-	02-SEP-22
Manganese (Mn)-Total			103.6		%		70-130	02-SEP-22
Molybdenum (Mo)-Total			103.8		%		70-130	02-SEP-22
Nickel (Ni)-Total			101.0		%		70-130	02-SEP-22
Phosphorus (P)-Total			111.4		%		70-130	02-SEP-22
Potassium (K)-Total			111.8		%		70-130	02-SEP-22
Rubidium (Rb)-Total			105.0		%		70-130	02-SEP-22
Selenium (Se)-Total			108.3		%		70-130	02-SEP-22
Silicon (Si)-Total			N/A	MS-B	%		-	02-SEP-22
Silver (Ag)-Total			95.7		%		70-130	02-SEP-22

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5854017								
WG3760888-5 MS		**WG3760888-6**						
Sodium (Na)-Total			N/A	MS-B	%		-	02-SEP-22
Strontium (Sr)-Total			N/A	MS-B	%		-	02-SEP-22
Sulfur (S)-Total			N/A	MS-B	%		-	02-SEP-22
Thallium (Tl)-Total			99.8		%		70-130	02-SEP-22
Tellurium (Te)-Total			97.6		%		70-130	02-SEP-22
Thorium (Th)-Total			107.7		%		70-130	02-SEP-22
Tin (Sn)-Total			102.4		%		70-130	02-SEP-22
Titanium (Ti)-Total			104.0		%		70-130	02-SEP-22
Tungsten (W)-Total			103.6		%		70-130	02-SEP-22
Uranium (U)-Total			N/A	MS-B	%		-	02-SEP-22
Vanadium (V)-Total			108.2		%		70-130	02-SEP-22
Zinc (Zn)-Total			97.8		%		70-130	02-SEP-22
Zirconium (Zr)-Total			105.3		%		70-130	02-SEP-22
NH3-F-WT	**Water**							
Batch R5854056								
WG3760913-3 DUP		**L2731222-3**						
Ammonia, Total (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	02-SEP-22
WG3760913-2 LCS								
Ammonia, Total (as N)			102.0		%		85-115	02-SEP-22
WG3760913-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	02-SEP-22
WG3760913-4 MS		**L2731222-3**						
Ammonia, Total (as N)			105.8		%		75-125	02-SEP-22
NO2-IC-WT	**Water**							
Batch R5857959								
WG3761907-4 DUP		**WG3761907-3**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	09-SEP-22
WG3761907-2 LCS								
Nitrite (as N)			101.4		%		90-110	09-SEP-22
WG3761907-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	09-SEP-22
WG3761907-5 MS		**WG3761907-3**						
Nitrite (as N)			97.6		%		75-125	09-SEP-22
NO3-IC-WT	**Water**							

Quality Control Report

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Oakville ON L6H 0C3
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-WT	**Water**							
Batch R5857959								
WG3761907-4 DUP		**WG3761907-3**						
Nitrate (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	09-SEP-22
WG3761907-2 LCS								
Nitrate (as N)			98.2		%		90-110	09-SEP-22
WG3761907-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	09-SEP-22
WG3761907-5 MS		**WG3761907-3**						
Nitrate (as N)			98.6		%		75-125	09-SEP-22
OGG-TOT-WT	**Water**							
Batch R5854716								
WG3760911-2 LCS								
Oil and Grease, Total			98.7		%		70-130	02-SEP-22
WG3760911-4 LCS								
Oil and Grease, Total			98.7		%		70-130	02-SEP-22
WG3760911-1 MB								
Oil and Grease, Total			<5.0		mg/L		5	02-SEP-22
WG3760911-3 MB								
Oil and Grease, Total			<5.0		mg/L		5	02-SEP-22
Batch R5855439								
WG3761246-2 LCS								
Oil and Grease, Total			95.7		%		70-130	06-SEP-22
WG3761246-1 MB								
Oil and Grease, Total			<5.0		mg/L		5	06-SEP-22
P-T-COL-WT	**Water**							
Batch R5854576								
WG3760912-3 DUP		**L2731222-2**						
Phosphorus, Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	06-SEP-22
WG3760912-2 LCS								
Phosphorus, Total			102.5		%		80-120	06-SEP-22
WG3760912-1 MB								
Phosphorus, Total			<0.0030		mg/L		0.003	06-SEP-22
WG3760912-4 MS		**L2731222-2**						
Phosphorus, Total			90.8		%		70-130	06-SEP-22
PH-WT	**Water**							

Quality Control Report

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Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R5857598								
WG3761808-4 DUP		**WG3761808-3**						
pH		8.19	8.16	J	pH units	0.03	0.2	08-SEP-22
WG3761808-2 LCS								
pH			7.04		pH units		6.9-7.1	08-SEP-22
SOLIDS-TDS-WT	**Water**							
Batch R5854696								
WG3761044-3 DUP		**L2731222-1**						
Total Dissolved Solids		260	238		mg/L	8.8	20	06-SEP-22
WG3761044-2 LCS								
Total Dissolved Solids			103.1		%		85-115	06-SEP-22
WG3761044-1 MB								
Total Dissolved Solids			<10		mg/L		10	06-SEP-22
SOLIDS-TSS-LOW-WT	**Water**							
Batch R5854057								
WG3761021-6 DUP		**L2730434-1**						
Total Suspended Solids		5.1	4.7		mg/L	9.5	20	03-SEP-22
WG3761021-5 LCS								
Total Suspended Solids			90.0		%		85-115	03-SEP-22
WG3761021-4 MB								
Total Suspended Solids			<3.0		mg/L		3	03-SEP-22
TKN-F-WT	**Water**							
Batch R5855402								
WG3760922-3 DUP		**L2731222-4**						
Total Kjeldahl Nitrogen		0.151	0.145		mg/L	4.1	20	06-SEP-22
WG3760922-2 LCS								
Total Kjeldahl Nitrogen			101.6		%		75-125	06-SEP-22
WG3760922-1 MB								
Total Kjeldahl Nitrogen			<0.050		mg/L		0.05	06-SEP-22
WG3760922-4 MS		**L2731222-4**						
Total Kjeldahl Nitrogen			102.4		%		70-130	06-SEP-22
TOC-WT	**Water**							
Batch R5856676								
WG3760915-3 DUP		**L2731222-1**						
Total Organic Carbon		3.21	2.64		mg/L	19	20	08-SEP-22
WG3760915-2 LCS								
Total Organic Carbon			104.9		%		80-120	08-SEP-22
WG3760915-1 MB								

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TOC-WT	**Water**							
Batch R5856676								
WG3760915-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	08-SEP-22
WG3760915-4 MS		**L2731222-1**						
Total Organic Carbon			116.6		%		70-130	08-SEP-22
Batch R5857777								
WG3760921-3 DUP		**L2731222-5**						
Total Organic Carbon		3.62	3.59		mg/L	1.1	20	09-SEP-22
WG3760921-2 LCS								
Total Organic Carbon			105.5		%		80-120	09-SEP-22
WG3760921-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	09-SEP-22
WG3760921-4 MS		**L2731222-5**						
Total Organic Carbon			112.0		%		70-130	09-SEP-22
Batch R5857778								
WG3760927-3 DUP		**WG3760927-5**						
Total Organic Carbon		8.60	10.4		mg/L	19	20	09-SEP-22
WG3760927-2 LCS								
Total Organic Carbon			107.9		%		80-120	09-SEP-22
WG3760927-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	09-SEP-22
WG3760927-4 MS		**WG3760927-5**						
Total Organic Carbon			N/A	MS-B	%		-	09-SEP-22
TURBIDITY-WT	**Water**							
Batch R5853790								
WG3761139-2 LCS								
Turbidity			93.5		%		85-115	01-SEP-22
WG3761139-1 MB								
Turbidity			<1.0		NTU		1	01-SEP-22

Quality Control Report

Workorder: L2731222 Report Date: 23-SEP-22

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2731222 Report Date: 23-SEP-22

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Total Dissolved Solids							
	1	28-AUG-22 15:00	06-SEP-22 00:00	7	8	days	EHT
	2	28-AUG-22 15:20	06-SEP-22 00:00	7	8	days	EHT
	3	29-AUG-22 09:35	06-SEP-22 00:00	7	8	days	EHT
	4	29-AUG-22 10:10	06-SEP-22 00:00	7	8	days	EHT
	11	28-AUG-22 15:00	06-SEP-22 00:00	7	8	days	EHT
	12	29-AUG-22 10:10	06-SEP-22 00:00	7	8	days	EHT
Turbidity							
	1	28-AUG-22 15:00	01-SEP-22 00:00	48	81	hours	EHTR
	2	28-AUG-22 15:20	01-SEP-22 00:00	48	81	hours	EHTR
	3	29-AUG-22 09:35	01-SEP-22 00:00	48	62	hours	EHTR
	4	29-AUG-22 10:10	01-SEP-22 00:00	48	62	hours	EHTR
	5	29-AUG-22 12:15	01-SEP-22 00:00	48	60	hours	EHTR
	6	29-AUG-22 12:35	01-SEP-22 00:00	48	60	hours	EHTR
	7	29-AUG-22 14:00	01-SEP-22 00:00	48	58	hours	EHTR
	8	29-AUG-22 14:20	01-SEP-22 00:00	48	58	hours	EHTR
	9	29-AUG-22 15:50	01-SEP-22 00:00	48	56	hours	EHTR
	10	29-AUG-22 16:15	01-SEP-22 00:00	48	56	hours	EHTR
	11	28-AUG-22 15:00	01-SEP-22 00:00	48	81	hours	EHTR
	12	29-AUG-22 10:10	01-SEP-22 00:00	48	62	hours	EHTR
	13	29-AUG-22 17:10	01-SEP-22 00:00	48	55	hours	EHTR
	14	29-AUG-22 17:35	01-SEP-22 00:00	48	54	hours	EHTR
	15	29-AUG-22 18:25	01-SEP-22 00:00	48	54	hours	EHTR
	16	29-AUG-22 18:50	01-SEP-22 00:00	48	53	hours	EHTR
pH							
	1	28-AUG-22 15:00	08-SEP-22 00:00	4	10	days	EHTL
	2	28-AUG-22 15:20	08-SEP-22 00:00	4	10	days	EHTL
	3	29-AUG-22 09:35	08-SEP-22 00:00	4	10	days	EHT
	4	29-AUG-22 10:10	08-SEP-22 00:00	4	10	days	EHT
	5	29-AUG-22 12:15	08-SEP-22 00:00	4	9	days	EHT
	6	29-AUG-22 12:35	08-SEP-22 00:00	4	9	days	EHT
	7	29-AUG-22 14:00	08-SEP-22 00:00	4	9	days	EHT
	8	29-AUG-22 14:20	08-SEP-22 00:00	4	9	days	EHT
	9	29-AUG-22 15:50	08-SEP-22 00:00	4	9	days	EHT
	10	29-AUG-22 16:15	08-SEP-22 00:00	4	9	days	EHT
	11	28-AUG-22 15:00	08-SEP-22 00:00	4	10	days	EHTL
	12	29-AUG-22 10:10	08-SEP-22 00:00	4	10	days	EHT
	13	29-AUG-22 17:10	08-SEP-22 00:00	4	9	days	EHT
	14	29-AUG-22 17:35	08-SEP-22 00:00	4	9	days	EHT
	15	29-AUG-22 18:25	08-SEP-22 00:00	4	9	days	EHT
	16	29-AUG-22 18:50	08-SEP-22 00:00	4	9	days	EHT
Leachable Anions & Nutrients							
Nitrate in Water by IC							
	1	28-AUG-22 15:00	09-SEP-22 11:59	7	12	days	EHT
	2	28-AUG-22 15:20	09-SEP-22 11:59	7	12	days	EHT
	3	29-AUG-22 09:35	09-SEP-22 11:59	7	11	days	EHT
	4	29-AUG-22 10:10	09-SEP-22 11:59	7	11	days	EHT
	5	29-AUG-22 12:15	09-SEP-22 11:59	7	11	days	EHT
	6	29-AUG-22 12:35	09-SEP-22 11:59	7	11	days	EHT
	7	29-AUG-22 14:00	09-SEP-22 11:59	7	11	days	EHT
	8	29-AUG-22 14:20	09-SEP-22 11:59	7	11	days	EHT
	9	29-AUG-22 15:50	09-SEP-22 11:59	7	11	days	EHT

Quality Control Report

Workorder: L2731222 Report Date: 23-SEP-22

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Connor Devereaux/Kendra Button

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Leachable Anions & Nutrients							
Nitrate in Water by IC							
	10	29-AUG-22 16:15	09-SEP-22 11:59	7	11	days	EHT
	11	28-AUG-22 15:00	09-SEP-22 11:59	7	12	days	EHT
	12	29-AUG-22 10:10	09-SEP-22 11:59	7	11	days	EHT
	13	29-AUG-22 17:10	09-SEP-22 11:59	7	11	days	EHT
	14	29-AUG-22 17:35	09-SEP-22 11:59	7	11	days	EHT
	15	29-AUG-22 18:25	09-SEP-22 11:59	7	11	days	EHT
	16	29-AUG-22 18:50	09-SEP-22 11:59	7	11	days	EHT
Nitrite in Water by IC							
	1	28-AUG-22 15:00	09-SEP-22 11:59	7	12	days	EHT
	2	28-AUG-22 15:20	09-SEP-22 11:59	7	12	days	EHT
	3	29-AUG-22 09:35	09-SEP-22 11:59	7	11	days	EHT
	4	29-AUG-22 10:10	09-SEP-22 11:59	7	11	days	EHT
	5	29-AUG-22 12:15	09-SEP-22 11:59	7	11	days	EHT
	6	29-AUG-22 12:35	09-SEP-22 11:59	7	11	days	EHT
	7	29-AUG-22 14:00	09-SEP-22 11:59	7	11	days	EHT
	8	29-AUG-22 14:20	09-SEP-22 11:59	7	11	days	EHT
	9	29-AUG-22 15:50	09-SEP-22 11:59	7	11	days	EHT
	10	29-AUG-22 16:15	09-SEP-22 11:59	7	11	days	EHT
	11	28-AUG-22 15:00	09-SEP-22 11:59	7	12	days	EHT
	12	29-AUG-22 10:10	09-SEP-22 11:59	7	11	days	EHT
	13	29-AUG-22 17:10	09-SEP-22 11:59	7	11	days	EHT
	14	29-AUG-22 17:35	09-SEP-22 11:59	7	11	days	EHT
	15	29-AUG-22 18:25	09-SEP-22 11:59	7	11	days	EHT
	16	29-AUG-22 18:50	09-SEP-22 11:59	7	11	days	EHT

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2731222 were received on 01-SEP-22 09:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

L2731222-COFC

COC Number: 20 -

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Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	Baffinland Iron Mine Corporation
Contact:	Connor Devereaux / Kendra Button
Phone:	647-253-0596
	Company address below will appear on the final report
Street:	2275 Upper Middle Rd E, Suite 300
City/Province:	Oakville, Ontario
Postal Code:	L6H 0C3
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Baffinland Iron Mine Corporation
Contact:	Accounts Payable

Project Information	
ALS Account # / Quote #:	23642, Q88297
Job #:	TRMP
PO / AFE:	4500108651
LSD:	

ALS Lab Work Order # (lab use only): L2731222 AP

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	environment.labresults@baffinland.com
Email 2	bim.equissa@baffinland.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@baffinland.com
Email 2	environment.superintendents@baffinland.com

Oil and Gas Required Fields (client use)	
AFE/Cost Center	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: Rick Hawthorne

Sampler: BM/LM

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the TAT requested, you will be contacted.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification (fills automatically) (SYS_SAMPLE_CODE)	Sample Location (SYS_LOC_CODE)	Sampling Date (dd-mmm-yy)	Time (hh:mm)	Field Matrix	NUMBER OF CONTAINERS	F/P	HADD & 6PPD-Quinone	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	BG-24-DS_2022-08-28	BG-24-DS	28-Aug-22	15:00	WS	13	R				
	BG-24-US_2022-08-28	BG-24-US	28-Aug-22	15:20	WS	13	R				
	CV-217-DS_2022-08-29	CV-217-DS	29-Aug-22	9:35	WS	13	R				
	CV-217-US_2022-08-29	CV-217-US	29-Aug-22	10:10	WS	13	R				
	CV-040-DS_2022-08-29	CV-040-DS	29-Aug-22	12:15	WS	13	R				
	CV-040-US_2022-08-29	CV-040-US	29-Aug-22	12:35	WS	13	R				
	BG-50-DS_2022-08-29	BG-50-DS	29-Aug-22	14:00	WS	13	R				
	BG-50-US_2022-08-29	BG-50-US	29-Aug-22	14:20	WS	13	R				
	CV-78-DS_2022-08-29	CV-78-DS	29-Aug-22	15:50	WS	13	R				
	CV-78-US_2022-08-29	CV-78-US	29-Aug-22	16:15	WS	13	R				
	QP-BT5_2022-08-28	QP-BT5	28-Aug-22	15:00	WS	13	R				
	QP-CC5_2022-08-29	QP-CC5	29-Aug-22	10:10	WS	13	R				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (lab use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			
			13.4			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Matt Weaver	30-Aug-22	16:00

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by:	Date:	Time:
AP	1-Sep-22	9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS 2020 FRONT

L2731222-COFC

COC Number: 20 -

Page 2 of 2

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Report To	Contact and company name below will appear on the final report
Company:	Baffinland Iron Mine Corporation
Contact:	Connor Devereaux / Kendra Button
Phone:	647-253-0596
	Company address below will appear on the final report
Street:	2275 Upper Middle Rd E, Suite 300
City/Province:	Oakville, Ontario
Postal Code:	L6H 0C3
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of invoice with Report ☐ YES ☑ NO
Company:	Baffinland Iron Mine Corporation
Contact:	Accounts Payable

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	environment.labresults@baffinland.com
Email 2	bim.equissa@baffinland.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@baffinland.com
Email 2	environment.superintendents@baffinland.com

Turnaround Time (TAT) Requested
☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 3 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests
Date and Time Required for all E&P TATs:
For tests that can not be performed according to the TAT requested, you will be contacted.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information	
ALS Account # / Quote #:	23642, Q86297
Job #:	TRMP
PO / AFE:	4500106851
LSD:	
ALS Lab Work Order # (lab use only):	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact: Rick Hawthorne	Sampler: BM/LM

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification (fills automatically) (SYS_SAMPLE_CODE)	Sample Location (SYS_LOC_CODE)	Sampling Date (dd-mmm-yy)	Time (hh:mm)	Field Matrix	NUMBER OF CONTAINERS	HADD & 6PPD-Quinone	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	CV-099-DS_2022-08-29	CV-099-DS	29-Aug-22	17:10	WS	13	R			
	CV-099-US_2022-08-29	CV-099-US	29-Aug-22	17:35	WS	13	R			
	CV-128-DS_2022-08-29	CV-128-DS	29-Aug-22	18:25	WS	13	R			
	CV-128-US_2022-08-29	CV-128-US	29-Aug-22	18:50	WS	13	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (lab use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				13.4			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by: AP	Date: 1-Sep 22	Time: 9:02
Matt Weaver	30-Aug-22	16:00						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

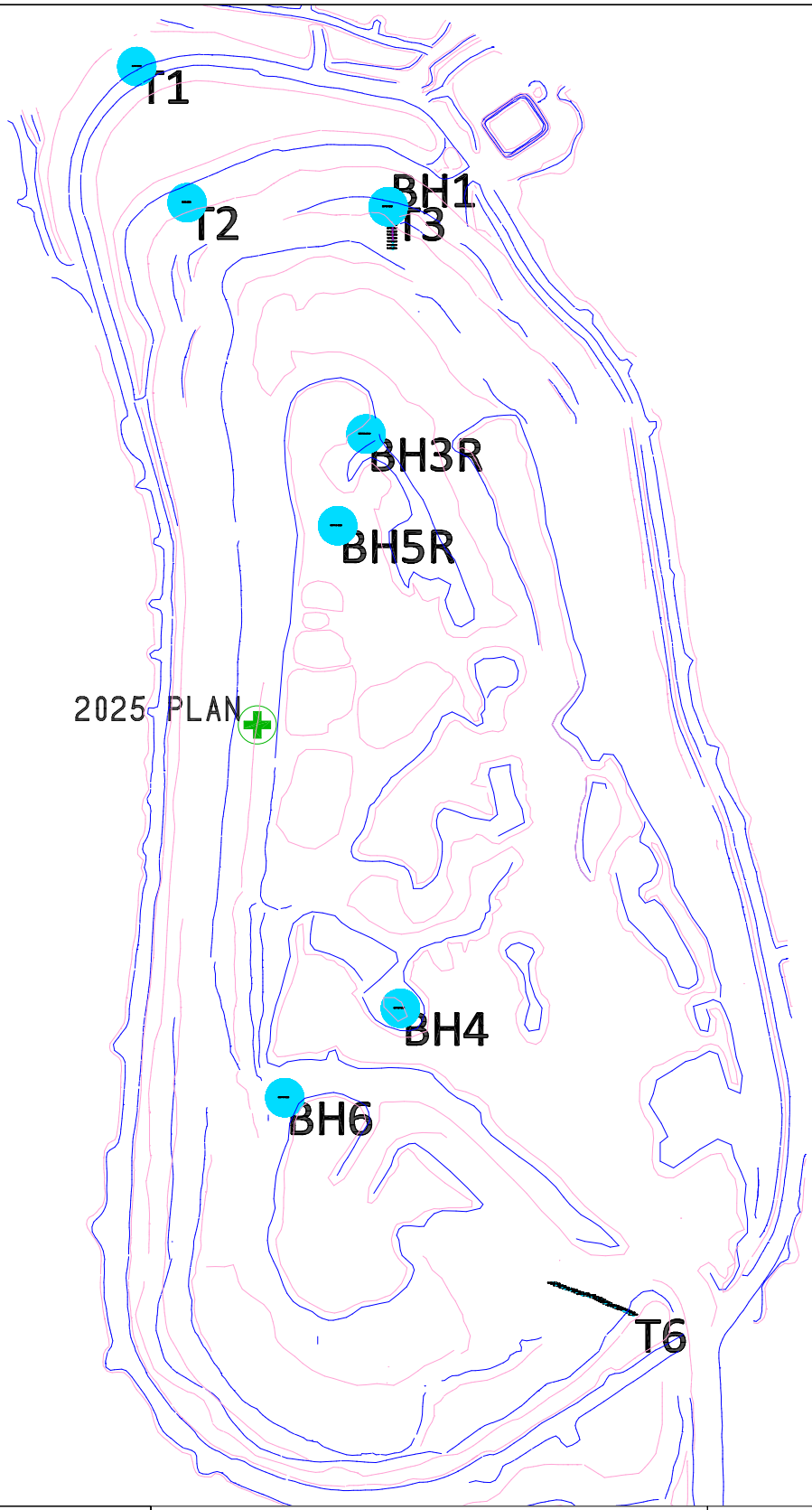
Attachment 5

July 2025 Waste Rock Facility Thermistor Monitoring

WRD Instrumentation Status, Thermistor Location Map & 2025 Installation Plan

Waste Rock Facility Instrumentation Status – July 2025			
Station / Sensor	**Sensor Status**	**Last Data Download**	**Damaged Sensors / Missing Data / Comments**
BH1 - Thermistor	Up	June 2025	• No known damage • Data missing between Nov 2021 and April 2022 (dead battery replaced) • Data missing between Dec 2024 and February 2025 (dead battery replaced)
BH1 - Vibrating Wire Piezometer	Up	June 2025	• No known damage • Same records as BH1 - Thermistor
BH1 - Oxygen	Permanently Down	May 2020	• Permanently down May 2020
BH3R - Thermistor	Up	June 2025	• New install October 2024 in similar location to replace previously damaged BH3 • No known damage
BH4 - Thermistor	Up	June 2025	• New install April 2024 • Nodes at 608.96m, 606.96m damaged since April 2025
BH5R - Thermistor	Up	June 2025	• New install April 2024, damaged July, reinstalled October 2024 similar location.
BH6 - Thermistor	Up	June 2025	• New Install in PAG cell October 2024 • No known damage
T1 - Thermistor	Up	June 2025	• No known damage • Data missing between July – Aug 2019 (disconnected for pond raise) • Data missing between April 2022 and July 2022
T2 - Thermistor	Up	June 2025	• Bead at 0.93m damaged since August 2019 • Missing data between April 2020 and August 2020 • Bead at 1.93m functioning inconsistently between February 2021 and June 2021. • Bead at 2.93m damaged since May 2021. • Beads at 3.93 and 4.93m functioning inconsistently since May 2021
T3 - Thermistor	Up	June 2025	• No known damage. • Data missing between June 2023 and January 2024 (dead battery replaced) • Data missing between November 2024 and February 2025 (dead battery replaced)
T6 - Thermistor	Up	June 2025	• New install October 2024 • No known damage

WASTE ROCK FACILITY: THERMISTOR LOCATION MAP



SURVEY DATE	JUNE 2025
PRINT DATE	JULY 2025

1 : 6000

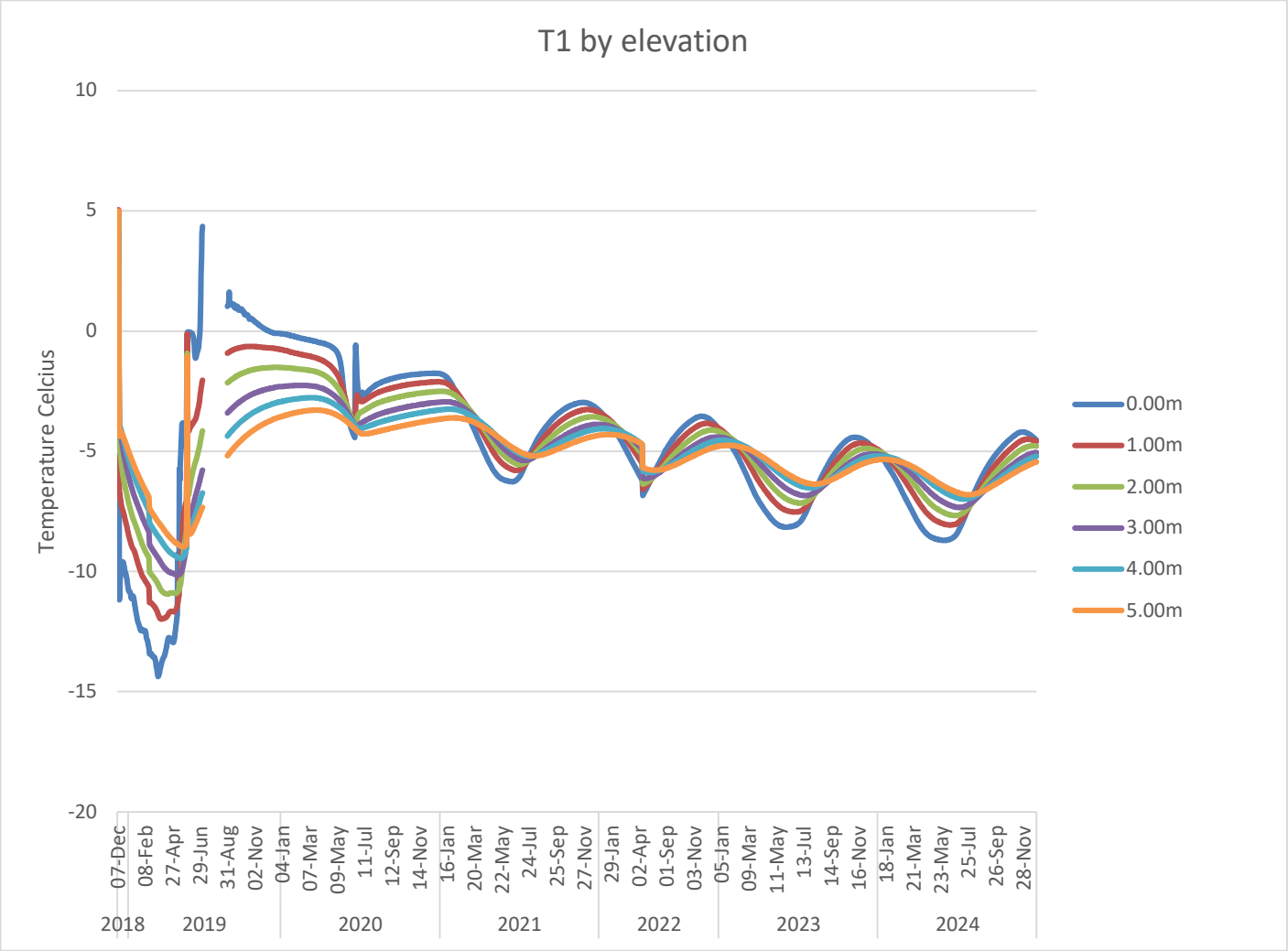
0 100 200 300

LEGEND

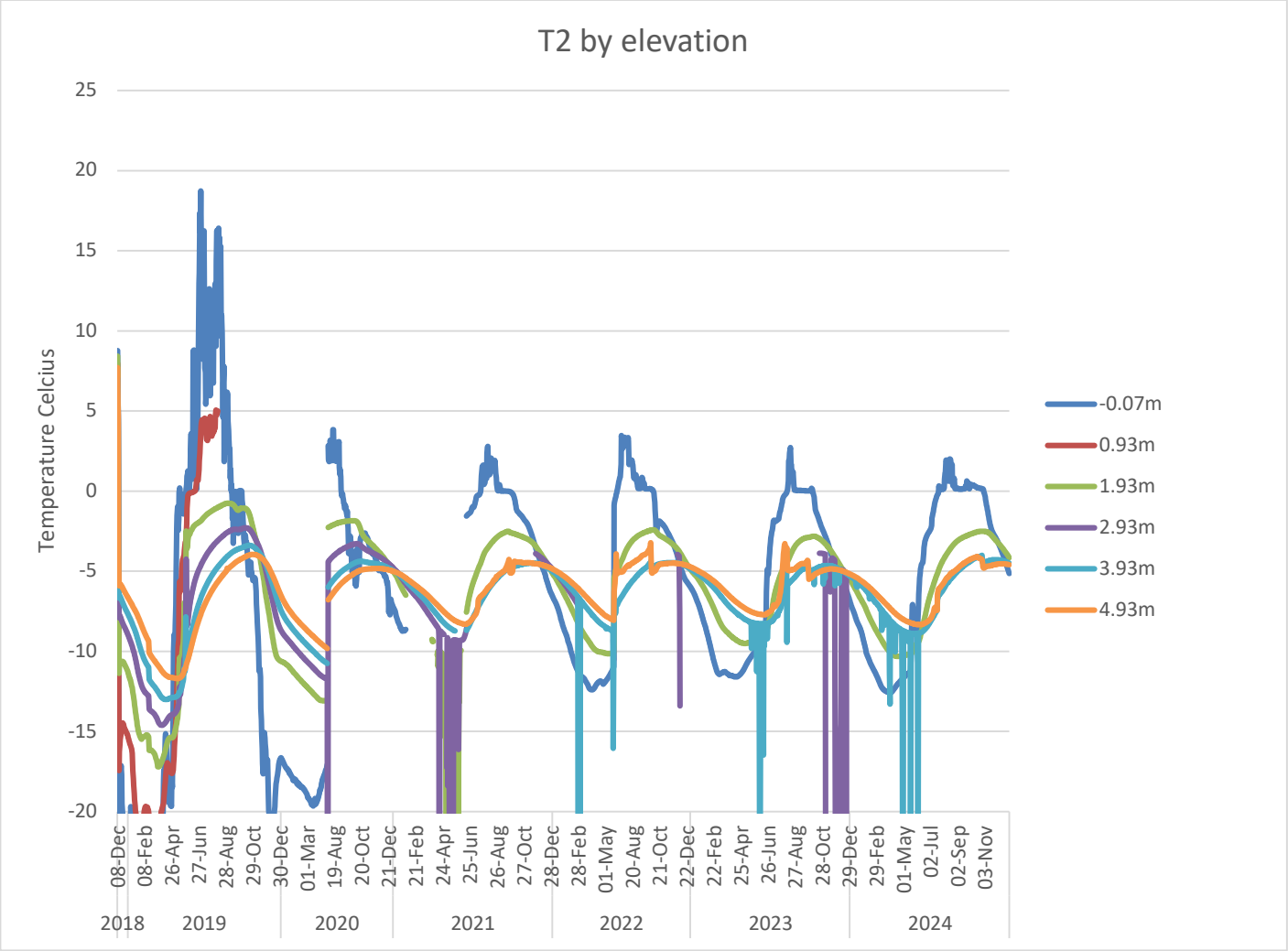
- Vertical Thermistor
- Horizontal Thermistor
- Proposed Thermistor
- Crest
- Toe

Baffinland

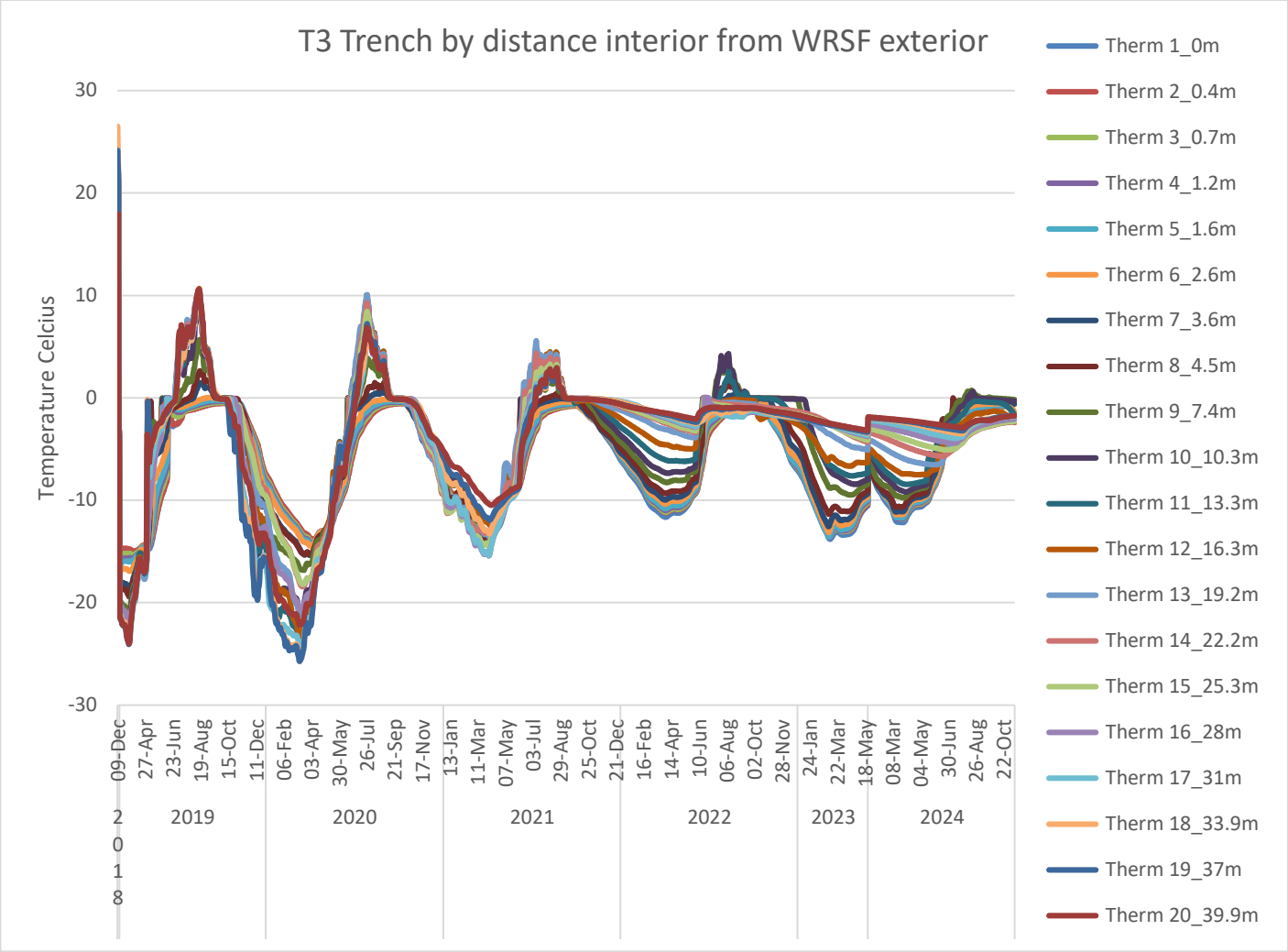
Thermistor Results for 2024



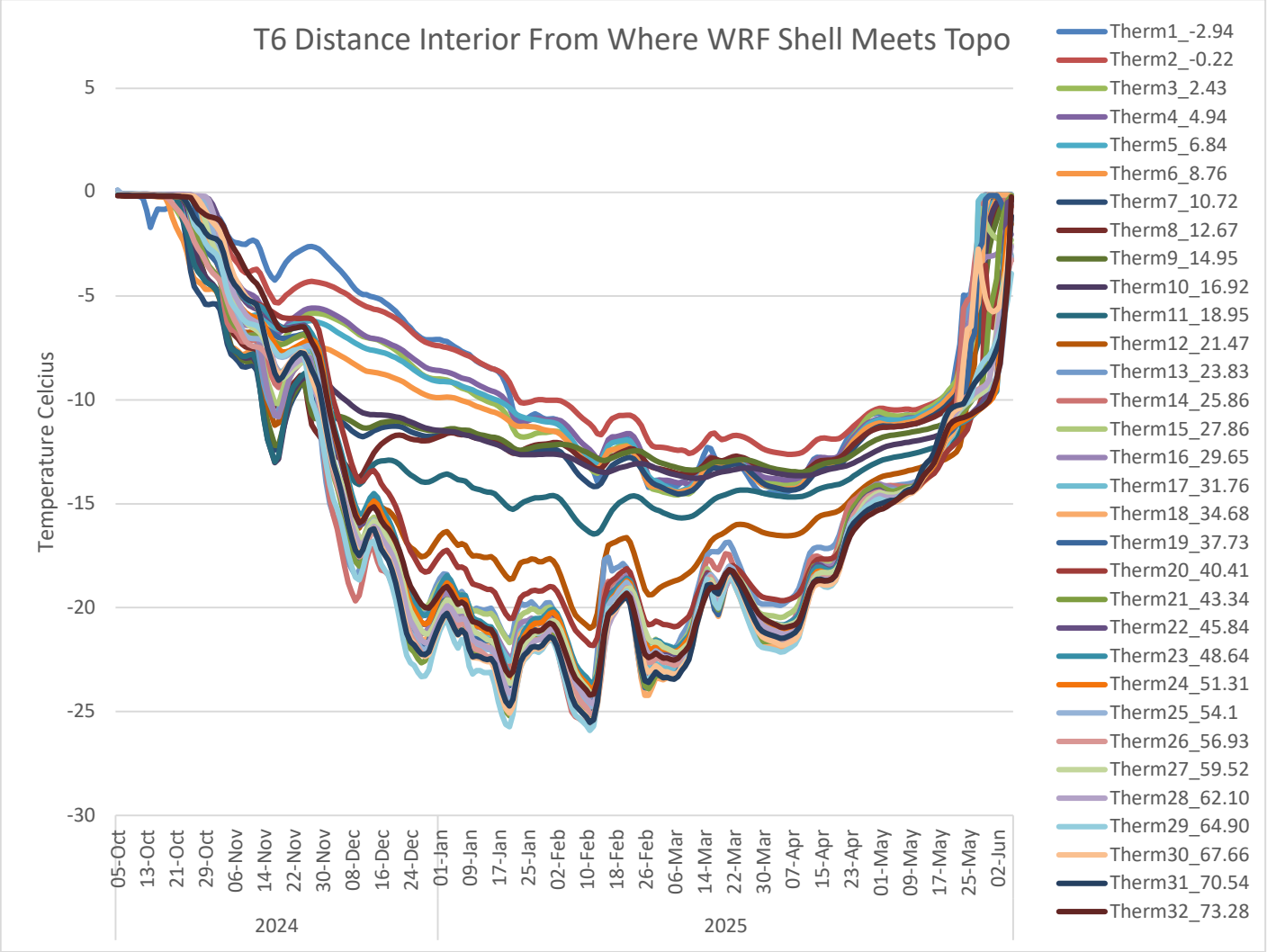
T1: (Legend provides thermistor node depths, presented in m below ground surface (mbgs) at time of installation). Waste rock temperatures at T1 have generally continued to cool over time along the thermistor stringsince additional rock was placed in the area in September 2019. The slight increase near surface during Q3 of 2024 compared to Q3 of 2023 can be attributed to warmer air temperatures and precipitation.



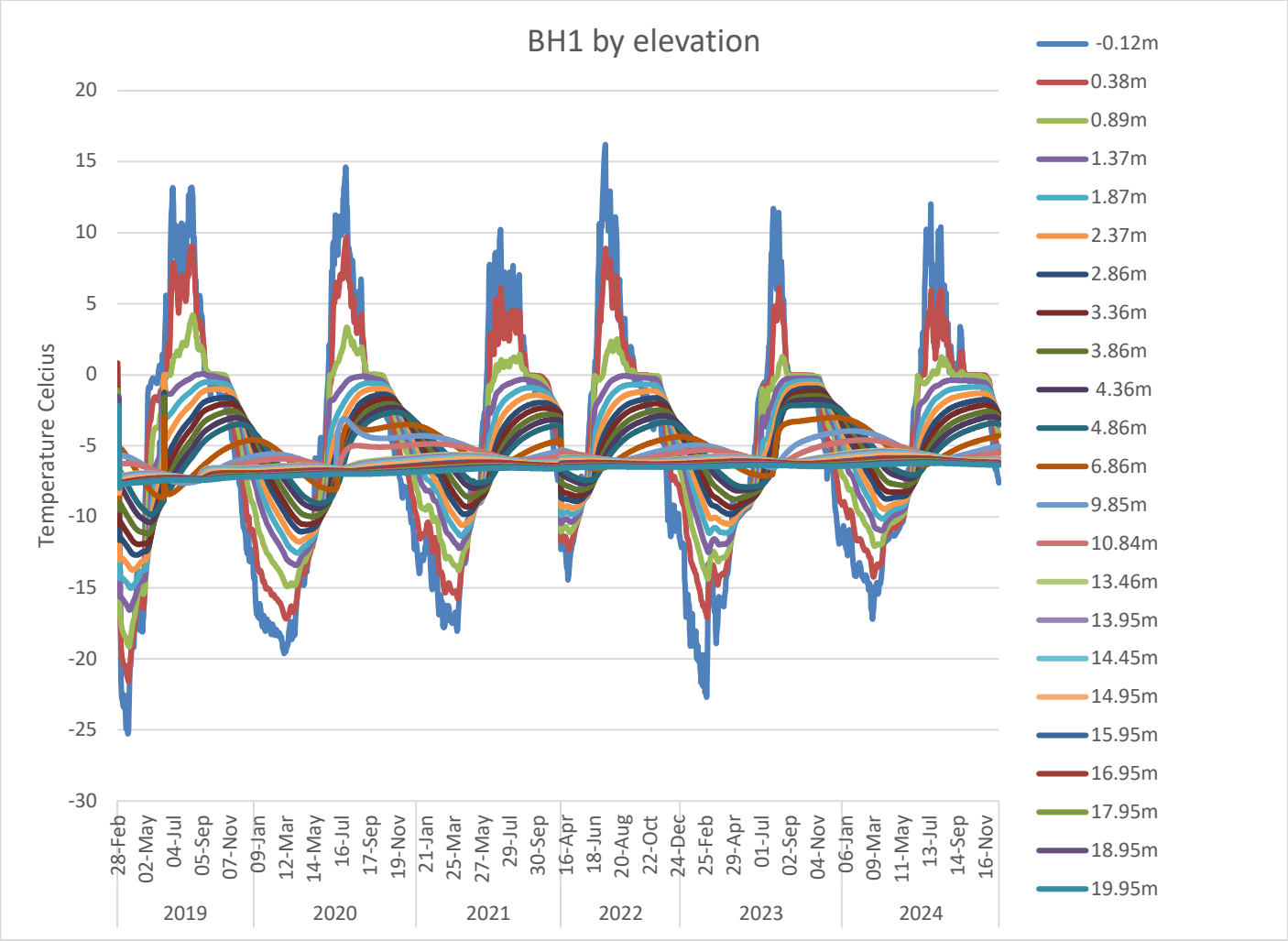
T2: (Legend provides thermistor node depths, presented in m below ground surface (mbgs) at time of installation). Data gaps and errors are consistent in T2 after April 2020. Data provided at internals without errors indicate that rockfill ≥ 1.93 mbgs remains frozen year-round. Waste rock temperatures at T2 have cooled since the addition of ~ 0.8 m of waste rock placed in the area in summer 2020.



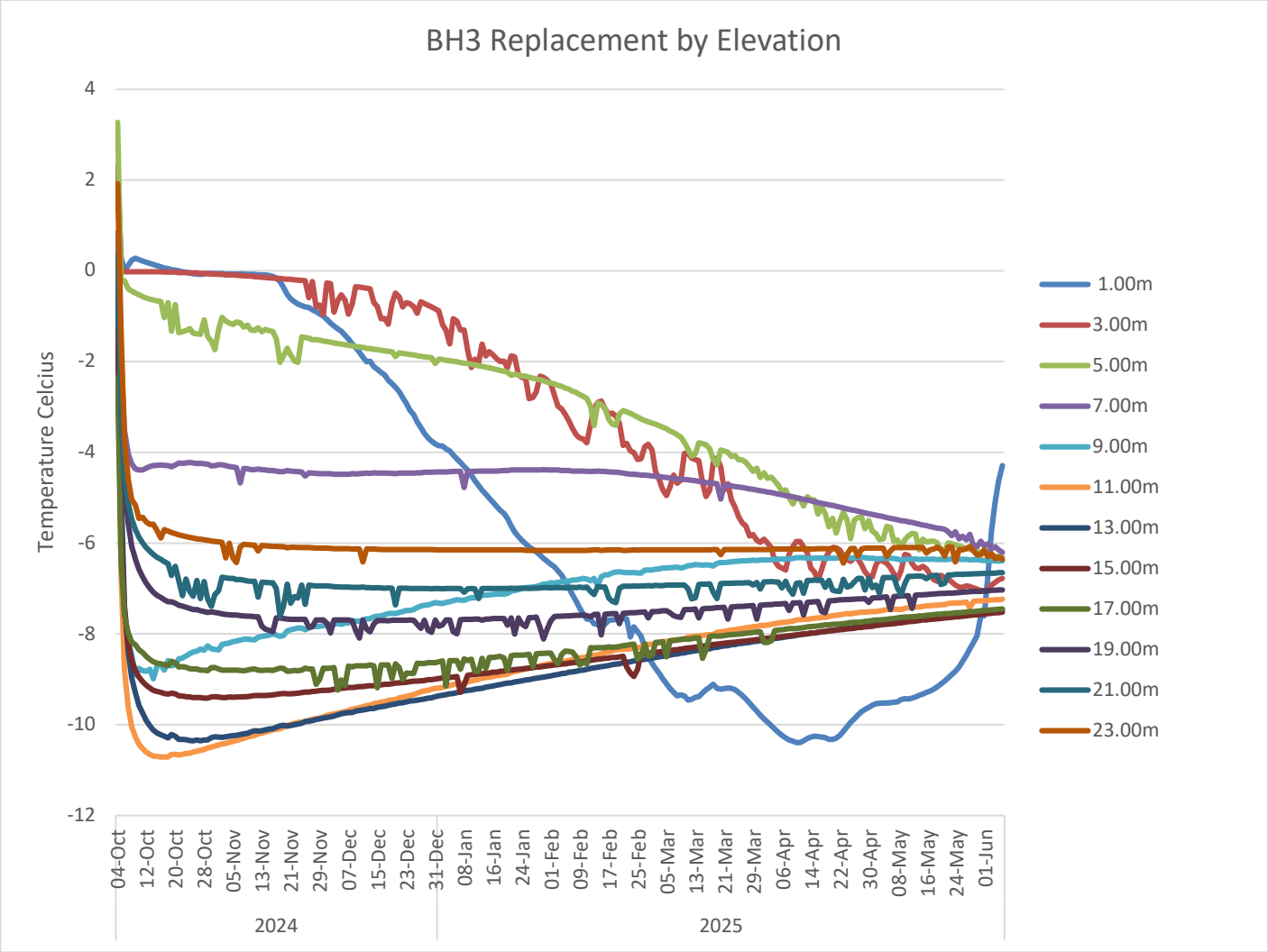
T3: (Legend provides node distance, in meters, along the thermistor string, where zero is at the edge of the pile). Waste placement occurred in 2021 between 16.3 m and 40 m along the length of the thermistor string, and the timing of this waste placement correlates with much of the thermistor data remaining below 0°C and exhibiting much smaller seasonal variations. Overall material placement is allowing the pile to freeze and remain frozen, supporting the overall objective of the WRMP.



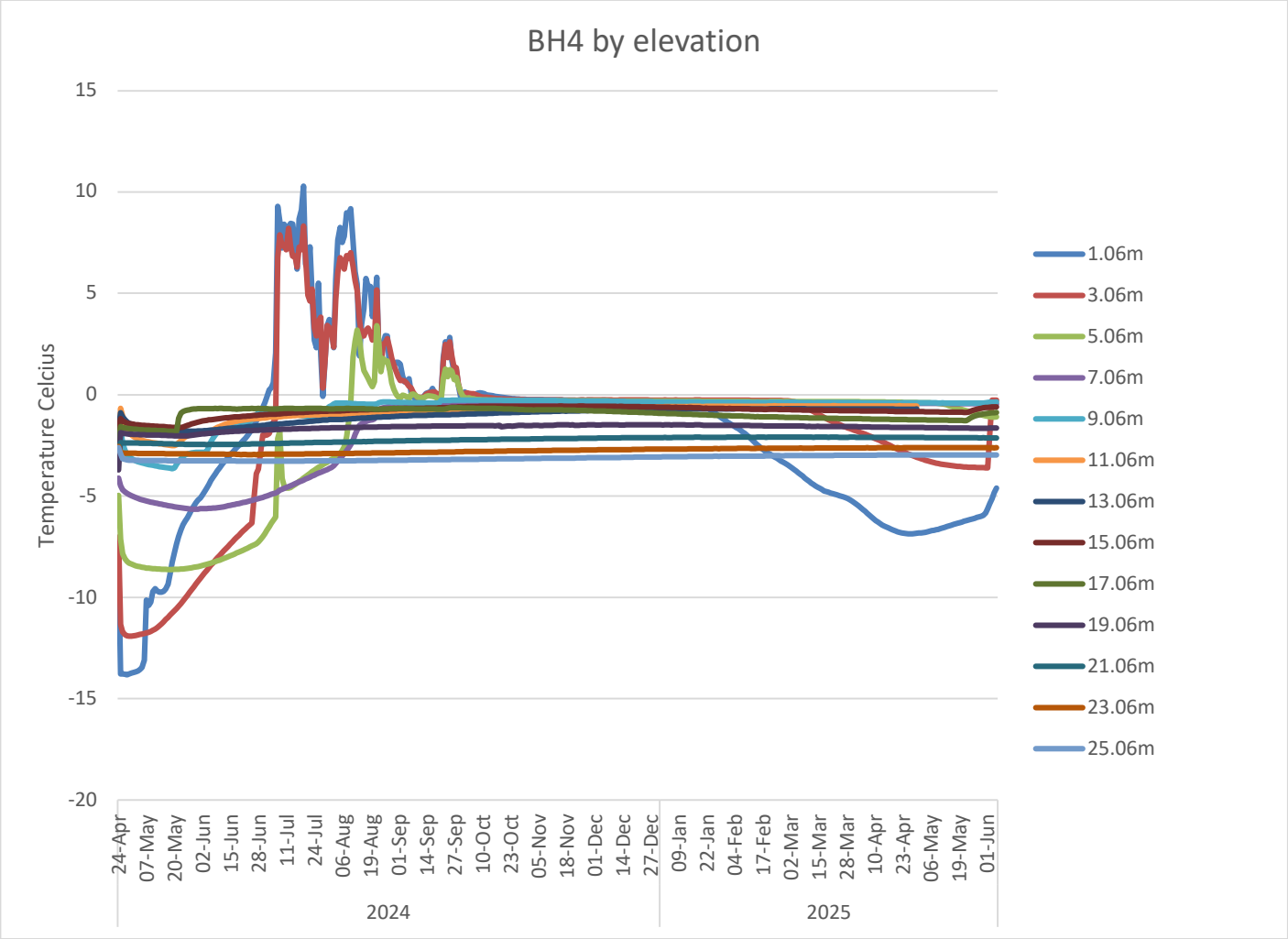
T6: (Legend provides node distance, in meters, along the thermistor string, where zero is at the edge of the pile). Installed in October 2024. The majority of nodes are within the active layer due to frozen ground and the inability to dig below the active layer at the time of installation (this itself points to the success of the WRMP). Additional lifts will be placed during 2025 to provide more valuable data.



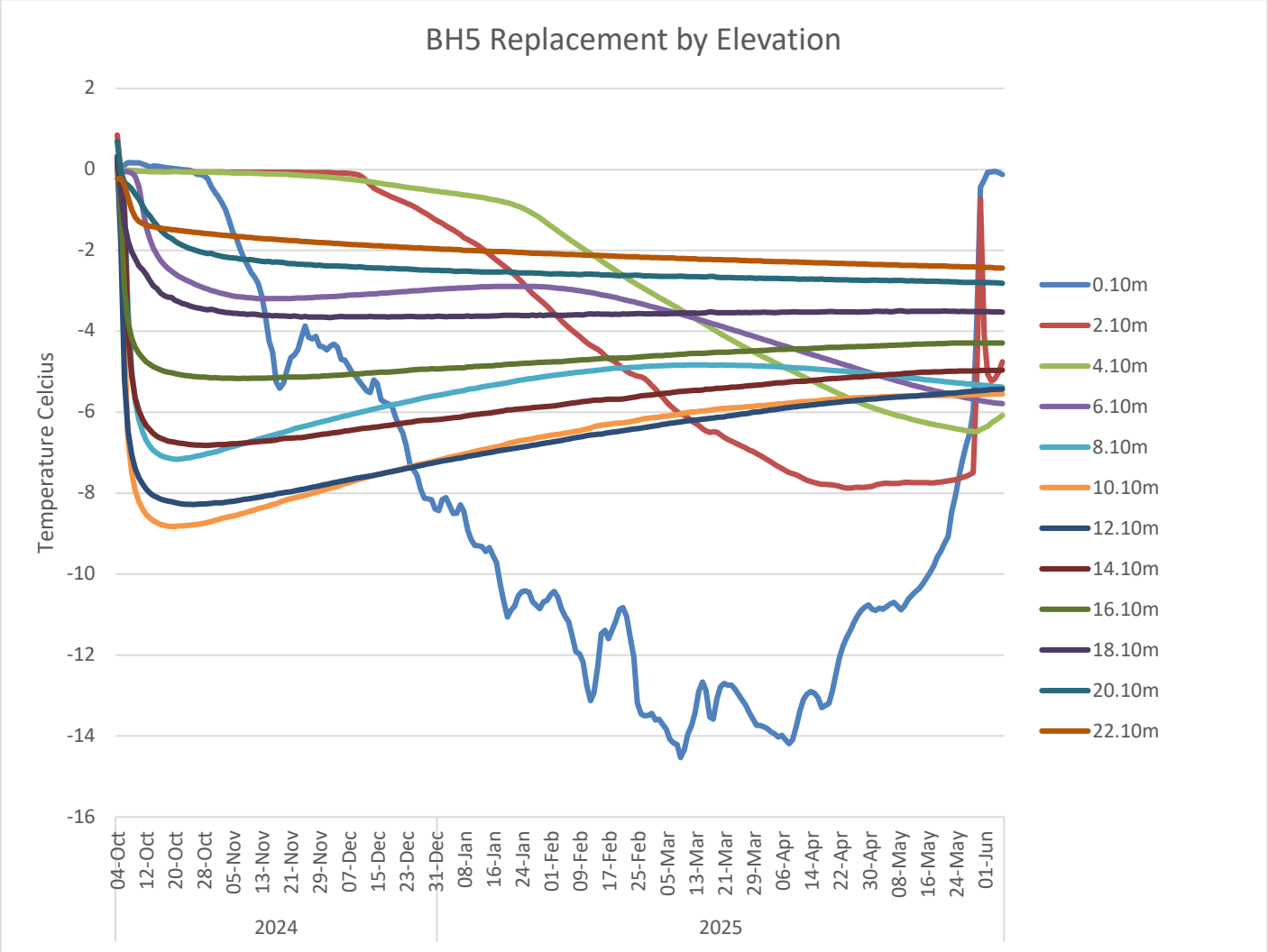
BH1: (Legend provides thermistor node depths, presented in m below ground surface (mbgs) at time of installation). No material placement has occurred on top of BH1 since its installation. Thermistor data at BH1 continues to support the conclusion that the active layer subject to seasonal freezing and thawing is < 3 m, with BH1 data indicating everything below 2 m is frozen year-round.



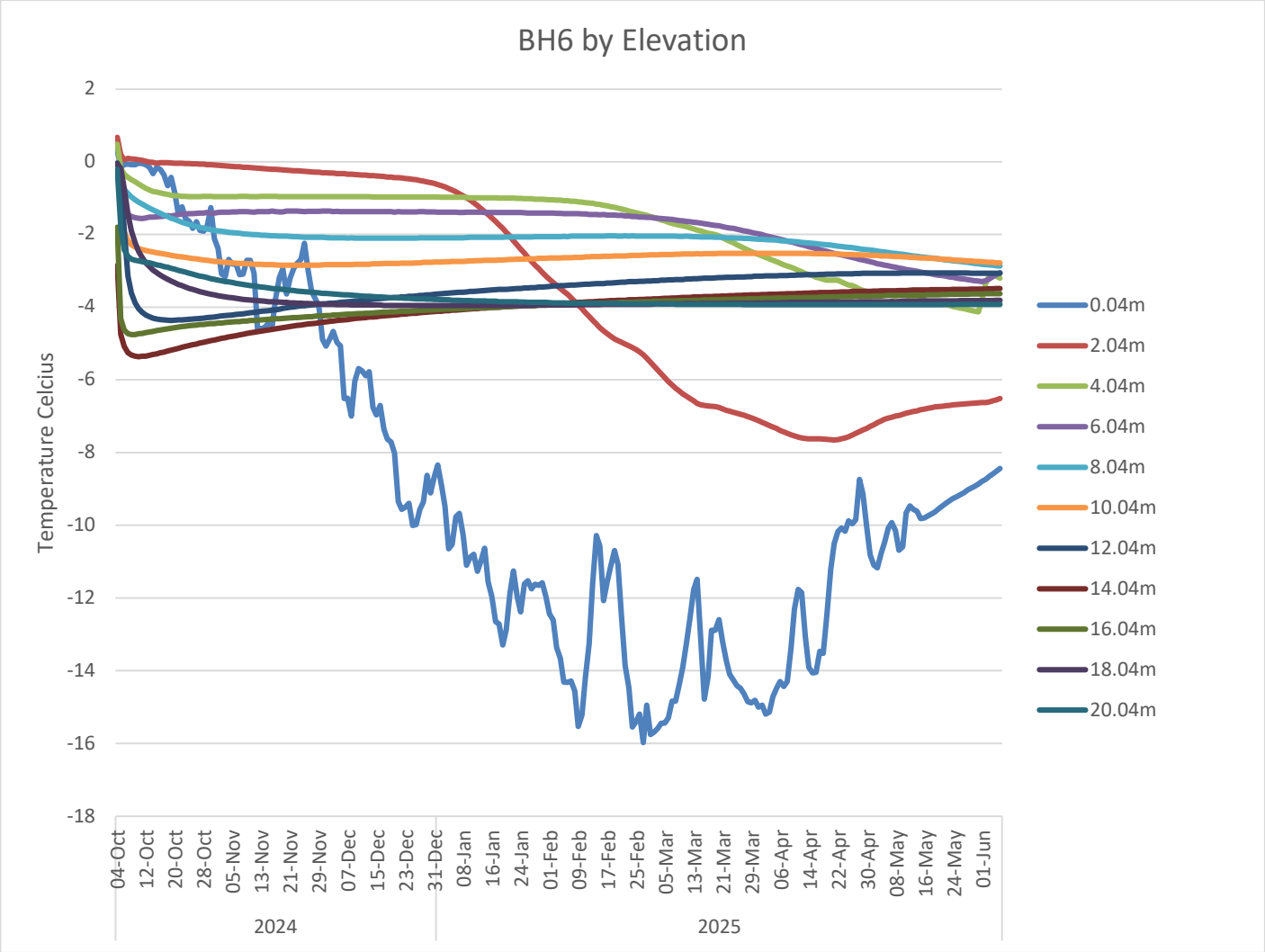
BH3R: (Legend provides thermistor node depths, presented in m below ground surface (mbgs) at time of installation). Installed in October 2024. No material placement has occurred on top of BH3R since its installation. Thermistor data at BH3R is in its infancy, data collection will continue throughout 2025.



BH4: (Legend provides thermistor node depths, presented in m below ground surface (mbgs) at time of installation). Installed in April 2024. Material has been placed on top of BH4 during Q2 of 2025. The thermistor is still stabilising, data collection will continue throughout 2025.



BH5R: (Legend provides thermistor node depths, presented in m below ground surface (mbgs) at time of installation). Installed in October 2024. No material placement has occurred on top of BH5R since its installation. Thermistor data at BH5R is in its infancy, data collection will continue throughout 2025.



BH6: (Legend provides thermistor node depths, presented in m below ground surface (mbgs) at time of installation). Installed in October 2024, solely in Potentially Acid Generating rock, as an additional test. No material placement has occurred on top of BH6 since its installation. Thermistor data at BH6 is in its infancy, data collection will continue throughout 2025.