

Baffinland Dust Audit

2024 Annual Report

February 28, 2025

Prepared for:
Baffinland Iron Mines Corporation

Prepared by:
Nunami Stantec Limited
Independent Dust Audit Committee
Members



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This report was verified virtually with members of the Dust Audit Committee on October 31, 2024 and February 13, 2025.

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Executive Summary

Baffinland Iron Mines Corporation (Baffinland) produces direct shipping iron ore at the Mary River Mine located on Baffin Island, Nunavut. The iron ore is loaded onto bulk carrier ships at Milne Port during the shipping season (typically July to October) and primarily shipped to European ports for use by steel makers in continental Europe. Baffinland's Mary River Mine is one of the most northern mines in the world.

In June 2021, Baffinland submitted a Notice and Request to five (5) North Baffin communities of Pond Inlet, Clyde River, Arctic Bay, Sanirajak, and Igloolik regarding a commitment to the Nunavut Impact Review Board (NIRB) to resolve outstanding issues with the Phase 2 Proposal identified by a Pond Inlet Hamlet Council, including dust-related issues. The Dust Audit Committee was formed in response to a commitment outlined in Appendix C – Final Table of Post Phase 2 Approval/Regulatory Phase Commitments for the Mary River Project Phase 2 Proposal issued on January 24, 2022. This commitment was later integrated into Amendment No 4 to Project Certificate 005 as term and condition 187, which allowed for the operation to continue at a transportation rate of 6 million tonnes per annum (mtpa) for 2022. Since 2022, Nunami Stantec has conducted third-party audit involving the five (5) Inuit communities on North Baffin to identify the greatest sources of fugitive dust at the Mary River Mine and any modifications or controls that could effectively reduce the generation or spread of dust.

The Dust Audit Committee is comprised of nominated representatives from the hamlets and their Hunter and Trappers' associations including Pond Inlet, Igloolik, Clyde River, Sanirajak and Arctic Bay, as well as representatives from the Qikiqtani Inuit Association (QIA), and facilitators and engineering subject matter experts from Nunami Stantec and CWA Engineers Inc (CWA).

The following report presents an update on the status of the Committee's recommendations provided to Baffinland based on what was observed and discussed during the field trip to Baffinland Mary River Mine Site in April 2024.

The Dust Audit Committee requests that Baffinland continue to provide updates on the implementation of the recommendations through ongoing engagement with the Committee.

1.2 Definitions

As first presented in the recommendations report, the following definitions are used by the Committee to define each of these terms:

Dust: fine particulate matter generated by drilling, blasting, materials handling, and the transporting of materials. The Dust Audit Committee defines dust as any particles dispersed as a result of Project activities.

Dust Source: sources evaluated by the Dust Audit Committee include drilling, blasting crushing, screening, mine haul roads, Tote Road, material handling, stockpiling, shiploading, and other workspace areas at the Mary River Mine.

Mary River Mine Site: “Baffinland’s Mary River Mine site on Baffin Island, Nunavut, Canada, is one of the most northern mines in the world. It has among the richest iron ore deposits ever discovered, consisting of nine-plus high-grade iron ore deposits that can be mined, crushed, and screened into marketable products” (Baffinland 2022b). Currently, activities are occurring at the Mine Pit (Deposit 1).

Blasting: Mining activity that involves chemical and physical processes to break iron ore and waste rock into smaller pieces for loading and hauling. Involves the use of explosives, boosters, and detonators based on a blast design.

Tote Road: An approximately 100km road on which ore is transported from the crushing facility at Mary River Mine site to Milne Inlet for stockpiling and subsequent shipping.

Mine Haul Roads: Roads which connect the Mine Pit (Deposit 1) to the Ore Pad (including the crushing area), waste rock storage area, and mine operation areas.

2 Data Collection

Data used to inform the Recommendations Report came from Dust Audit Committee members over the course of 14 months (beginning September 2021), including two site visits, committee interviews and workshops, and regular bi-weekly ZOOM meetings. Nunami Stantec and CWA conducted technical interviews with Baffinland staff and relayed this information to the Dust Audit Committee. A summary of these data collection methods is provided in the subsections below.

2.1 2024 Field Site Visit

A field trip took place from April 23 to April 26, 2024 (including travel), with members of the five North Baffin communities participating in the Dust Audit including Arctic Bay, Clyde River, Sanirajak, Igloodik, and Pond Inlet. Also participating in the field visit was a member of Nunami Stantec and a member from CWA Engineers Inc. During the site visit, Committee members had the opportunity to visit targeted areas within the mine site such as the crushing facility, active mining areas, and the locations of dust monitor stations.

The 2024 field site visit itinerary is included as Appendix B.

2.2 Committee Interviews and Workshops

Workshops with the Dust Audit Committee were held in person and virtually to facilitate discussions and record feedback, concerns, and comments regarding dust, dust sources, and pathways.

3 Status of Recommendations

Throughout the duration of the Dust Audit Committee, members have stated the importance of collaborative and ongoing discussions with Baffinland to ensure their concerns regarding dust are heard, considered, and mitigated.

The Dust Audit Committee recommendation report identified concerns for dust and its impacts to water and water sources (specifically, water transporting dust, and snow and ice they have observed melting faster due to dust, and lack of clean water), wildlife and wildlife habitat (including wildlife health), human health, the cumulative effects of mining and dust, and stressed the impact that all industrial activity has on the environment and subsequently on communities on Baffin Island.

The Committee remains interested in understanding more about dust mitigation implemented by Baffinland, and has reiterated their concerns for dust and its impacts.

“When the dust spreads to the land, it affects the land animals like birds, caribou...would like to know if it is safe to eat...would like it to be confirmed if it is safe to consume.” (Committee member, January 2024)

Intrinsic’s assessment (Section 4.2) indicated that contributions from mine dust to safety of country foods is small, as risks associated with consuming specific organs or meats (such as caribou organs, seal liver, and narwhal) are not related to Project dust.

During the site visit, a member of the Committee indicated that they had noticed improvements since their last visit, and stated that they saw a fox and ptarmigan, both of which did not have red-coated fur or wings, and to the Committee, this was seen as confirmation that Baffinland has been taking steps to fulfill the mitigation recommendations.

Subsequently, 16 recommendations were proposed by the Committee for implementation by Baffinland. In August 2023, Baffinland provided a response to the recommendations, and in 2024 a site visit (April 2024) and virtual meetings (January 2024, March 2024, October 2024, December 2024, and February 2025) were conducted to provide additional response to the Committee from Baffinland.

3.1 Blasting ᐅᑦᑲᑦᑲᑦᑲᑦᑲᑦ

Baffinland’s current operations of the Mary River Mine continue to be focused on Deposit No. 1 in 2023/2024. Blasting remains a dust source of concern for the five North Baffin Island communities, including the dispersion of dust from blasts, as well as nitrogen oxide from blasts. Table 3.1 provides an overview of the recommendations as submitted to Baffinland in February 2023.

Table 3.1 Blasting Recommendations

#	Recommendation
1	Work with explosives supplier and drill and blast engineer to identify dust control measures during the blasting process and to refine blasting protocols to reduce dust and nitrogen oxide (NOx) fumes (seen as yellow dust during the blast) for implementation. This includes studying the viability of using dust suppression cannons or fog prior to and during blasting, including looking at truck mounted as well as pit edge mounted machines.
2	Continue conversations with the Dust Audit Committee regarding atmospheric winds during the new moon to integrate IQ into the program under development regarding conditions of high-risk dusk dispersion and to determine conditions where additional mitigations to reduce dust can be implemented or, where outlined by the wind thresholds report, blasting may be paused until wind speeds are within identified thresholds.
3	Practice heightened monitoring and vigilance for the 4 days following a new moon and be prepared to delay or re-schedule blasting activities based on forecast or observed pressure/wind relative to established thresholds.
4	Conduct a blast fragmentation size study with explosive supplier and blasting specialists that can be incorporated into the program under development regarding conditions of high-risk dust dispersion.
5	Update draft explosives management plan once the explosive suppliers and drill and blast engineer’s have determined the blasting protocols to develop a Standard Operating Procedure (SOP) for blasting, including thresholds for conditions when/where blasting can occur, blast pattern designs parameters to help reduce dust, explosive type and usage to help reduce dust, stemming material specifications to help reduce dust, and any other blasting related recommendations that the drill and blast engineer determines would help reduce dust generation.

3.1.1 Status Update from Baffinland

Baffinland noted that through their work with the TEWG they continue to develop a program for identification of conditions with high risk for dust dispersal and plan for additional mitigation measures that may be applied at the times the conditions are present is ongoing and acknowledges its importance.

Baffinland acknowledged their learning that certain factors like humidity may have an influence on the amount of dust generated by certain activities from their use of air monitors. For example, Baffinland noted that water use for dust suppression can be implemented based on observations from personnel in the field. During trials of Purple Air monitors, it was noted that decreased humidity may increase the amount of dust generated. If this is confirmed by observations in the field, the operation may increase the frequency that water is applied to the road.

During the site visit, Baffinland stated that their goal to reduce dust generation at the source is intended to result in consistent dust reduction during all potential conditions, 24 hours a day, 7 days a week. Baffinland indicated that monitoring dust levels in real time provides more detailed results than just trying to correlate dust levels with specific environmental conditions. However, during specific environmental conditions, Baffinland would initiate existing protocols that may dictate operational shutdown. Baffinland reported that when wind speeds reach above 80 km/h, mining, hauling and crushing activities stop. When wind speeds are between 60-80 km/h, a review of activities on a case-by-case basis is initiated and mining, hauling and crushing activities may stop or be reduced. Baffinland provided aerial photos with locations of monitors from fall/winter 2023/2024 studies at crushing area and Milne port and deposit 1 blasting areas for both ore and waste (Figure 1). The Committee was able to observe loading of haul trucks at Deposit 1 as well (Figure 2).

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Baffinland provided an update on their blasting review and blast optimization program study. Baffinland monitored five blasts in 2023, with plans to continue in 2024, with a range of blast sizes and other factors. Baffinland deployed up to nine air monitors and collected dust data before, during, and after blasts. Baffinland also monitored wind speed and direction, temperature, precipitation, and other factors from the nearby weather station and with collected video. Baffinland reiterated their commitment to control dust under all weather conditions.

Baffinland reported that as new blasting parameters are introduced, the effects on dust generation will be evaluated. The current blasting parameters evaluated include:

- 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.

Baffinland's preliminary results indicated that at stations located in close proximity to the blasts, the dust emitted by the blasts dissipated quickly, and was of limited extent. Other stations located farther from the blast area showed peaks after a period of time from the blast, which is indicative the spikes were due to traffic rather than the blast.

Baffinland also provided an update on their blasting review and blast optimization program (BOP) study. Baffinland monitored 5 days of blasts in 2023, and an additional 2 days of blasts in early 2024, with a range of blast sizes and other factors.



Figure 1 Blast Monitoring - PurpleAir Map 2023. Provided by Baffinland.



Figure 2 At Deposit 1, Haul Truck being loaded (April 25, 2024)

3.1.2 Dust Audit Committee Feedback

The following questions were asked by the Committee and include Baffinland's responses below each:

- In underground mines they had vacuum (dust collection) systems to prevent workers from breathing dust. It would be good vacuum up piles of fine dust left by drilling to prevent them from becoming airborne during blasting. It would be good to view the drilling.
 - Baffinland confirmed that there are vacuum systems at drill holes to collect drilling dust and drill operators sit in pressurized cabs to protect them from exposure to dust.
- The Committee inquired about the elevations of monitors used to detect and track dust?
 - Baffinland indicated that there was some variation to the elevations of each PurpleAir device.
- The Committee noted that the dust close to the blast is less of a concern than dust farther away, and asked if there were some of the monitors in places where dust is more of a concern?
 - Baffinland indicated that each blast is from a different location within the pit, and locations of monitors is also different for each blast. Baffinland noted that this is in addition to regional monitoring locations which have been monitored since 2014 and reported on annually.

#	Recommendation
7	Examine areas where water treatment can be increased to reduce the amount of dust and particles that enter the drainage basin to reduce the potential effect of dust on the environment, and the reduction of dust that enters the drainage outside of the Project boundaries.

3.3.1 Status Update from Baffinland

3.3.1.1 *Dust Fall Monitoring*

Members of the Committee reiterated that Baffinland’s use of PurpleAir monitoring devices was positive and inquired about additional places where PurpleAir could be deployed regionally to understand dustfall in areas of importance. Baffinland noted their use of satellite imagery to understand dustfall extent. As reported by EDI 2024, Baffinland examined satellite images to characterize dustfall extent and to verify Inuit land users’ reports of seeing dust beyond what was predicted (Figure 3). The satellite imagery also provided a visual representation of the extent of dustfall in areas where it is below detection in dust monitors. In Baffinland’s 2023 Annual Report, Baffinland noted that the extent of dustfall on the landscape was similar from 2014 to 2023 for all areas, with the highest concentrations near the Project and dustfall extending northeast along Milne Inlet, west and south of the Mine Site, and southwest of the Tote Road south crossing (km 78) in the direction of prevailing and/or strong winds (EDI 2024).

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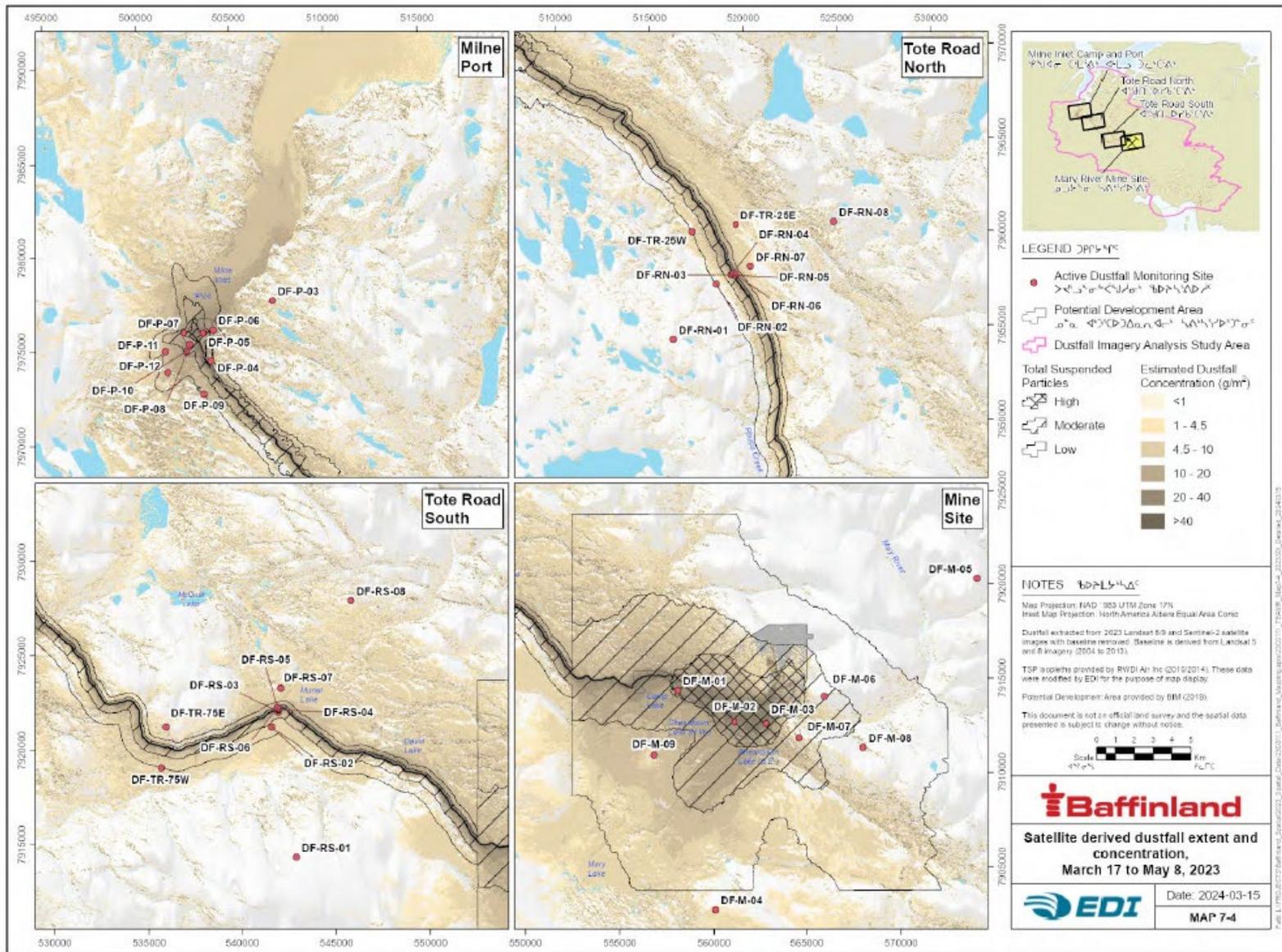


Figure 3 Satellite Imagery of dustfall extent and concentration (from EDI 2024)

3.3.1.2 *Dust Suppression 1: Amount of Watering and Road Maintenance Equipment Required for Current Operations.*

In 2023, Baffinland converted a 777-haul truck into a water truck to improve the dust suppression capacity on the Mine Haul Road (MHR). Water for this truck was sourced as much as possible from compliant water discharge locations within the mine area to reduce driving times to freshwater sources to increase the effectiveness of dust suppression during dry periods.

Baffinland measured dust before and after the application of water on the MHR to inform the resourcing of equipment and operators for road watering in 2024. Additionally, videos were taken (14 hrs) to correlate visual observation with measured dust. The Committee understand that more of this effort is planned for 2024.

3.3.1.3 *Dust Suppression 2: Viability of Applying Sea Water*

In the August 2023 response, Baffinland committed to initiating a review and evaluation of the viability of applying sea water as a dust suppression, as well as continue trialing other dust suppression products.

In January 2024, Baffinland provided an update to their review. Baffinland stated that the seawater would more precisely be described as brackish water, due to the natural mixture of seawater and fresh water at Milne Inlet. Brackish water, therefore, would not be considered a significant contributor of "salt" as a dust suppressant and would require frequent re-application. In addition, Baffinland stated that seawater is not listed as an approved dust suppressant with the Government of Nunavut and may not provide significant benefits over fresh water or calcium chloride (CaCl₂) usage. Baffinland also noted that sea water may have an increased risk of negative environmental impacts, due to the need for frequent re-application. For example, the potential impacts of salt from the continuous re-application of seawater on roads adjacent to sensitive freshwater habitats has not been assessed in detail. Baffinland noted that fresh water and CaCl₂ as dust suppressants have been extensively studied and for CaCl₂, appropriate environmental application procedures have been developed across industry and government which mitigate the environmental risks of its use.

Baffinland indicated that, for those reasons, they do not consider sea water to be a viable option for dust suppression.

3.3.1.4 *Dust Suppression 3: SOPs for Dust Suppression Products*

Baffinland has developed SOPs for dust suppression activities on mine haul roads including the Tote Road that were implemented in 2024, including:

- Mine operations dust management
- Tote Road dust management
- DusTreat system SOP (crusher operations)
- Ore Stockpile dust management (DusTreat)
- Dust suppression tanker trailer (Airstrip)

Part of Baffinland’s goal with the trial of PurpleAir monitors is to monitor dust emissions during applications of different types of dust suppressant along the Tote Road. (Figure 4, Figure 5).

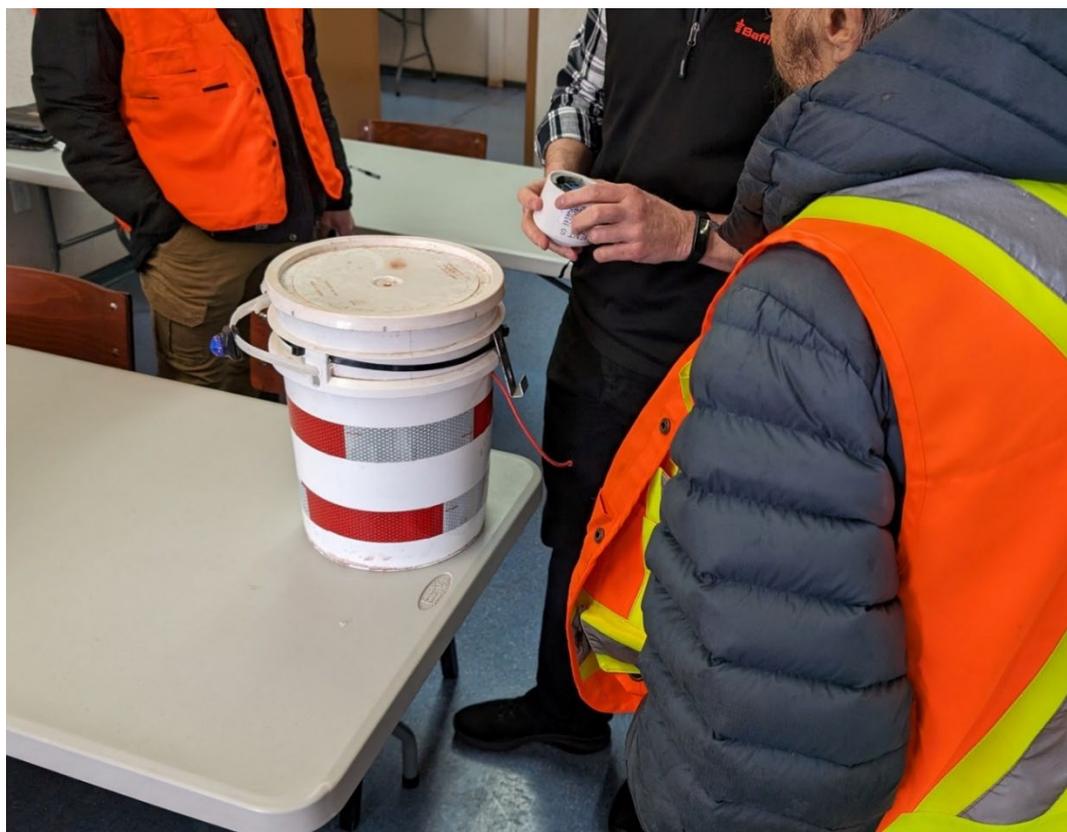


Figure 4 Baffinland showing members of the Committee the PurpleAir device and how it is deployed currently with the pails (April 2024)



Figure 5 Maps of various sites where PurpleAir devices are being used (maps provided by Baffinland, January 2025).

3.3.1.5 *Dust Suppression 4: Use of Suppressants Along Material Handling/Crushing/Screening Lines*

Baffinland introduced the dust suppressant trial at Crusher C (Figure 6, Figure 7) to the Committee during the April 2024 site visit. The trial first ran between December 2 to December 14, 2023. During this time, Baffinland applied a dust suppressing product through a spray system at two locations along one of the three material handling/crushing/screening lines. Spraybars were placed at the conveyor drop (transfer point) to apply spray to the ore as hit the belt after falling from the conveyor above (Figure 8). The application rate was adjusted by Baffinland to determine quantity of suppressant required without over-applying.

Another trial was initiated on April 1, 2024, with similar methodology to the above. Baffinland's goal is to look at production of dust from material handling/crushing/screening lines with and without product applied using real time monitoring of dust. During the site visit, Baffinland showed videos from April 22, 2024, of crushing, screening, and conveying with and without dust suppressant, and reported that there was more dust produced without the dust suppressant. Baffinland stated that they are also monitoring dust generation during loading and offloading from OHT's at the ore pad and the port.

Along the Tote Road, Baffinland ran a trial of two dust suppressants, DUST/BLOKR® and CaCl₂ between July 30 to August 4, 2023. DUST/BLOKR® was applied between km 97-100, while CaCl₂ was applied from km 91-97. Baffinland showed graphs during the site visit with micrograms per cubic meter on the vertical axis and time on the horizontal axis to demonstrate the effectiveness of each dust suppressant.

PurpleAir monitors were deployed along the Tote Road in multiple locations to monitor the difference between CaCl₂, DUST/BLOKR® and water only for dust suppression. The monitoring stations were on a similar stretch of road, on both the downwind and upwind side.

In the trial, Baffinland reported that DUST/BLOKR® applied on the Tote Road was less effective after 8 days than the CaCl₂. This finding appears to be supported by the targeted qualitative observations documented by the road maintenance department. A similar test was done where water only application was compared to calcium chloride and water. Baffinland stated that their results from the trial showed that CaCl₂ was a more effective dust suppressant than water. Baffinland noted that following their trial, CaCl₂ and increased water application continued into 2024, and would continue in 2025 along the Tote Road.



Figure 6 Crusher Trial - PurpleAir Monitor Map 2024 (provided by Baffinland, January 2025).



Figure 7 Crusher Line C during April 24, 2024, site visit.



Figure 8 Visual of Crusher Dust Suppressant Nozzles at Crusher Line C trial (provided by Baffinland, January 2025)

3.3.1.6 *Dust Suppression 5: Dust Suppression at the Runway*

Baffinland noted that this evaluation is still underway. A water tanker was commissioned in spring 2023 and from June through early September, water was applied as a dust suppressant to the airstrip before the arrival and departure of 737 passenger and cargo aircrafts. During that time, water was applied as needed when dry conditions were observed. Baffinland reported that this concentrated effort resulted in the lowest concentrations recorded at the dust fall monitor adjacent to the airstrip since monitoring began (EDI 2024).

Two PurpleAir monitors were deployed in April 2024 at two locations near airstrip (no data shown yet) (Figure 9).



Figure 9 PurpleAir Monitor (labelled A) near airstrip connected to device (labelled B) that shares data to Baffinland on demand (April 2024)

3.3.1.7 *Dust Suppression 6: Wind Fencing Feasibility*

A Feasibility Review was provided by Baffinland to QIA on September 25, 2023. A version of this report for the Committee's review has been received and will be reviewed.

Baffinland showed a map with current WeatherSolve (identified vendor of wind fences, mostly for coal mines) installation locations, noting that there was no data on use in an Arctic environment and only a few locations where snow or ice buildup is an issue. Baffinland indicated its concerns about challenges related to ongoing maintenance and operation as well as initial installation. Based on the feasibility study conducted, Baffinland reported that about 2 km would be required for the ore pad, and that the height would need to be 22 m (74'). Baffinland stated that the main technical constraint around the wind fencing included "ice fog" or "rim ice", which could cause significant weight to be applied to structure. Baffinland also stated that blowing snow would be blocked by the wind fence as well. Baffinland stated that a more practical, more cost-effective alternative to wind fences would be to use sprays on stockpiles to prevent dust from blowing away.

3.3.1.8 *Dust Suppression 7: Water Treatment Areas*

The Dust Audit Committee will continue to discuss water treatment areas with Baffinland and to review areas where water treatment can be increased to reduce the amount of dust and particles that enter the drainage basin to reduce the potential effect of dust on the environment, and the reduction of dust that enters the drainage outside of the Project boundaries.

3.3.2 *Dust Audit Committee Feedback*

The Committee noted that they were pleased to see that Baffinland has taken their concerns seriously. A member of the Committee noticed that on a previous visit his window was dripping with red dust, and that this time it was not. With respect to the materials used as dust suppressant for the road, they stated that they are okay with CaCl₂ as it doesn't appear to be harming the fish.

The following questions were asked (with Baffinland's responses below each):

- How long is the tote road and is the road watered for the whole length? Are you monitoring the effect of sprays on surrounding lakes and streams?
 - Baffinland reported that the road is approximately 100 km and that they apply CaCl₂ and have tried other products. Baffinland confirmed that water monitoring occurs, and that erosion and sediment controls are used to prevent sediment from going to the lakes and streams.
 - Baffinland reiterated that very little dust suppressant should run off the road as the amount applied is optimized to avoid over-application.
- Has the CaCl₂ sprayed on the roads been reviewed?
 - Baffinland stated that the products marketing department and environment department review chemicals applied for impact and for customer impact/selling the product.
- Does CaCl₂ interfere with fish's protective coating?
 - Baffinland's biologist noted that fish (specifically Trout Salmon and Char) have the ability to regenerate the protective film (mucus membrane) on the surface of their bodies. Because of how

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it is applied to Baffinland roads, and the level of dilution lowers after rainfalls, Baffinland noted that there should be no concern to fish health.

- Of the water testing completed in 2024, sample concentrations averaged 5.66 mg/L, with a peak at one site at 14.4 mg/L and a low at one site at 0.94 mg/L.
- Were there background levels taken at both locations to measure dust in absence of any dust suppressant?
 - Baffinland confirmed that monitors were set up during the trial.
 - Baffinland and the Dust Audit Committee to continue discussions regarding baseline dust levels prior to dust suppressant trials.
- The Committee asked if the PurpleAir work differently in windy weather than in calm weather?
 - Baffinland stated that PurpleAir specifications indicate they can be used in windy conditions. The PurpleAir monitors are set up in multiple locations to capture measurements of dust from multiple directions (up wind and downwind)
- Possibility of spraying the ore in the trucks to prevent the dust from the trucks from escaping along the tote road?
 - Baffinland stated the dust from the trucks is primarily from the wheels rather than the ore in the truck, based on their visual observations and chemical analysis of dust on vegetation near the road.

The following questions were asked regarding the Crushing line C trial (with Baffinland's responses below each:

- What was the dust suppressing product?
 - Baffinland stated that it is a glycerin-based material handling product designed to provide freeze protection and also reduce fugitive dust. Baffinland provided the MSDS for review
- Are there silt fences to keep sediments from going into the environment and where is the silt from?
 - Baffinland indicated that not all of the sediment is from dust, rather some of it is from disturbed soil, grading, etc. Baffinland provided information regarding their use of silt fences which will be discussed with the Committee in future meetings.
- Is there anything such as a membrane, around crushing line C to prevent the chemical from seeping into streams and lakes?
 - Baffinland stated that the crusher area is surrounded by a ditch that collects the run-off, which is treated and then sampled prior to discharge. Baffinland displayed the MSDS again to show the ecological information and explained that tests are done on both invertebrates and fish to show that it is not harmful to either.
- At what concentration is it applied to the ore?
 - Baffinland confirmed that it is applied at 100% concentration, not diluted with water.
- What's next in the crushing line C trial, and what are the plans for Crusher A and Crusher B?
 - Baffinland is looking at the data now to make sure they are optimizing the dosage, after which they will decide how much they need to buy to treat to be shipped on the next sea lift.

3.4.1 Response from Baffinland

In August 2023 (Baffinland 2023), Baffinland committed to the following in response to the recommendations submitted to NIRB in 2023 (Nunami Stantec 2023):

- Baffinland will maintain the Dust Audit committee to continue to meet and receive updates with respect to dust and dust sources, performance of mitigation measures and to solicit input regarding potential refinements or improvements.
- Baffinland will report back to the dust audit committee on the implementation and results of the recommendations.
- Baffinland will facilitate ongoing site visits to allow the committee to see the implementation of recommendations.
- Baffinland will enhance communications via its existing website with respect to environmental monitoring and mitigations on a more frequent basis than is currently available. The website will be accessible to the five Northern communities.

Baffinland reiterated their commitment to the Dust Audit Committee.

3.4.2 Dust Audit Committee Feedback

The Dust Audit Committee continues to be committed to engage with Baffinland. The committee looks forward to hearing updates on recommendation as they are researched and implemented to continue to be part of the process and provide feedback throughout the process.

4 Guest Presentations

The Dust Audit Committee also welcomed presentations from Natural Resources Canada (NRCan) and Intrinsic in 2024. In preparing the document, Nunami Stantec did not verify information supplied to it by NRCan and Intrinsic but has provided a summary below.

4.1 NRCan Presentation

NRCan provided a presentation to the Committee in 2024 related to their dustfall monitoring program. NRCan noted during the presentation that they are proposing a tri-lateral project (between NRCan, Mittimatalik Community Members and Baffinland) to investigate the dust at Mary River, with the goal to bridge western science, industry monitoring and Inuit Qaujimagatuqangit. The presentation can be found in Appendix C.

At the time of the presentation, NRCan applied for a Nunavut Review License, which has been approved by Nunavut Planning Commission (NPC) and Nunavut Research Institute (NRI). Access to Inuit Owned Lands was under review. As part of the program, NRCan is trialing two dust monitoring devices: dust canisters and passive dry deposition collectors. In addition, using the passive dry deposition collectors, NRCan can determine the source of metals or elements of concern. NRCan shared with the committee that in addition to the program monitoring and supporting the evaluation of environmental effects, remote sensing is being used to provide increased detail on dust dispersion. NRCan shared with the Committee the proposed sampling location zones and noted that they will deploy passives and collect snow samples at 15 of Baffinland's 43 dust sampling locations in addition to 12 community-based sampling locations in the Milne Inlet, Koluktoo Bay and Robertson River.

The Committee looks forward to additional updates from NRCan and Baffinland regarding this dustfall monitoring program.

4.2 Intrinsic Presentation

The Committee invited Intrinsic to present on their Human Health Risk Assessment. Studies completed by Intrinsic to date included a Country Foods Human Health Risk Assessment and an assessment of monitoring data, such as surface water data and snow meltwater data. Intrinsic's country foods assessment species including arctic hare, caribou, ptarmigan, arctic char, narwhal, and ringed seals. Intrinsic's focus during country food studies was on the potential changes associated with dust. Findings were consistent with results and conclusions from other researchers in the region. Intrinsic's assessment indicated that contributions from mine dust to safety of country foods is small, as risks associated with consuming specific organs or meats (such as caribou organs, seal liver, and narwhal) are not related to Project dust. The presentation can be found in Appendix D.

5 Next Steps

Regarding QIA Technical Comment # AE-4 (as accepted as part of Term and Condition 187), the Committee would like to complete the one-time review of the Air Quality and Noise Abatement Management Plan and have requested that Baffinland also present the meeting. At the time of confirmation of the review, the Committee did not have quorum in attendance and therefore will discuss it during the following meeting. The Committee will review the publicly available version of the report and provide comments for consideration.

6 Conclusion

The Dust Audit Committee has reviewed, and endorsed the Annual Report and status of recommendations outlined in this report. The Dust Audit Committee also understands that this committee will continue to provide ongoing evaluations of the effectiveness of current dust mitigation measures as well as to provide further options to reduce the spread and impacts of dust from project activities.

As indicated in the above report, through the Dust Audit Committee meetings, site visits, and discussions with Baffinland, the committee has reiterated the importance of Baffinland listening to Inuit voices and the concerns identified. While the concerns associated with dust and impacts of dust have been noted throughout the mine's lifetime through various engagement activities, the Dust Audit Committee is eager to continue working with Baffinland to mitigate impacts of dust.

6.1 Acknowledgements

The authors of this report would like to recognize and thank all members of the Dust Audit Committee and for their contribution and knowledge which informed this report. We would also like to thank the Qikiqtani Inuit Association participating as observers of the Dust Audit Committee.

The Dust Audit Committee would like to thank Baffinland for their support of the committee, coordination and tours, and receptiveness to answering questions both within and out of scope. The Dust Audit Committee would also like to thank subject matter experts who were consulted during the production of this report, including mining sector leads and air quality specialists at Nunami Stantec, CWA and dust suppression specialists.

7 References

- Baffinland (Baffinland Iron Mines Corporation). 2019. Draft Explosives Management Plan, Phase 2 Proposal revisions. Copy on File
- Baffinland. 2020. Baffinland Iron Mines Corporation Roads Management Plan. Available at: https://www.baffinland.com/resources/document_portal/BAF-PH1-830-P16-0023-r7-Roads-Management-Plan-Feb2020.pdf
- Baffinland. 2022a. Mary River Project Phase 2 Proposal. Appendix C – Final Table of Post Phase 2 Approval/Regulatory Phase Commitments. Public Registry Identification: 337783. Available at: https://www.nirb.ca/portal/dms/script/dms_download.php?fileid=337783&applicationid=124701&sessionid=v58n83ptc0qshotsu7f3kbata2.
- Baffinland. 2022b. Mary River Mine. Available at: <https://www.baffinland.com/operation/mary-river-mine/>.
- Baffinland. 2023. Baffinland Iron Mines Corporation (Baffinland) Response to 2022 Dust Audit Report Prepared by Nunami Stantec Limited and Independent Dust Audit Committee Members. August 1, 2023. Available at: https://www.nirb.ca/portal/dms/script/dms_download.php?fileid=346510&applicationid=125710&sessionid=jjja62mpd776ploias4lff64b1
- Environmental Dynamics Inc. (EDI), 2024. 2023 Terrestrial Environment Annual Monitoring Report - Prepared for Baffinland Iron Mines Corporation. Available at: Part 1: https://www.nirb.ca/portal/dms/script/dms_download.php?fileid=349734; Part 2: https://www.nirb.ca/portal/dms/script/dms_download.php?fileid=349735; Part 3: https://www.nirb.ca/portal/dms/script/dms_download.php?fileid=349736
- National Collaborating Centre for Aboriginal Health. n.d. Inuit Qaujimagajatuqangit: The role of Indigenous knowledge in supporting wellness in Inuit communities in Nunavut. Prepared by: Shirley Tagalik, Educational Consultant, Inukpaujaq Consulting. Available at: <http://www.nccah-ccnsa.ca/docs/fact%20sheets/child%20and%20youth/Inuit%20IQ%20EN%20web.pdf>.
- Nunami Stantec (Nunami Stantec Limited). 2023. Baffinland Dust Audit Final Recommendations Report. February 8, 2023. Available at: https://www.nirb.ca/portal/dms/script/dms_download.php?fileid=342950&applicationid=125710&sessionid=esdcej1dpojgvvfhrr618rekh1.

Appendix A Consent Forms

Dust Audit Committee Interview/Fieldwork Consent Form

**Baffinland Iron Mine Corporation
Mine Mary River Project**

Interviewee: _____

Interviewer: _____

Date: _____

Nunami Stantec Limited has been contracted by Baffinland Iron Mine Corporation (Baffinland) to participate in an audit of present and potential future dust sources at the Mine Site, Milne Inlet Tote Road Corridor, and Milne Port to identify sources of dust and recommend actions and mitigation that can be used to reduce dust production and dispersion.

Your name has been put forward by your community or Hunter Trapper Organization to participate in this work.

You will be asked questions about community concerns with fugitive dust emissions, sources of dust emissions, and mitigation options to reduce dust emissions.

Information compiled in the final report, and figures created for the report, will be submitted to the Dust Audit Committee for verification and approval prior to release. The intent is that information you share, and the maps created will be shared with Baffinland.

Your participation in this study is voluntary and your identity will not be disclosed in the final report. Nunami Stantec recognizes that the information you share belongs to you and is provided only for the purposes set out above. You have the right to withdraw from the committee at any time before the report is submitted to Baffinland, without penalty and have all your information deleted.

Informed Consent signatures:

I agree to be interviewed by a representative of Nunami Stantec Limited so that information about present and potential future dust sources and recommendations for mitigation at the Mine Site, Milne Inlet, Tote Corridor and Milne Port can be recorded.

I understand that the interview will be recorded by audio recorder or video camera, and that photos may be taken.

Signature of Interviewee _____

Date _____

Signature of Interviewer _____

Date _____

Appendix B 2024 Site Visit Itinerary

Baffinland Dust Audit Itinerary: Site Visit – DRAFT

Dates April 23 - 26.

Day 1 - Travel	
Various times	<ul style="list-style-type: none"> Stantec arrive at the Mine Site Community Participants arrive on Dornier and Community Flights BIM escort and bus pickup at airport for Dornier flight
Day 2	
7:00 – 8:00 am	<i>Breakfast at Sailivik Camp</i>
8:30 – 9:15 am	Dust Audit Committee Kick-Off Meeting and Safety Review
<i>Location:</i> MSC Training Room	<ul style="list-style-type: none"> Review Itinerary, confidentiality, purpose of audit. Size and fit all for PPE.
9:15-9:30 am	<i>Break</i>
9:30 - 10:30 am	Dust Audit Committee
<i>Location:</i> MSC Training Room	<ul style="list-style-type: none"> Presentation from Baffinland: Steensby Update.
10:30 - 11:30 am	Dust Audit Committee
<i>Location:</i> MSC Training Room	<ul style="list-style-type: none"> visuals to outline current mitigations and updates as per recommendations
11:30 am-1:00 pm	<i>Lunch at Sailivik Camp</i>
1:15-3:30 pm	Dust Audit Committee
<i>Location:</i> Site	<ul style="list-style-type: none"> Site tour around crushing facility. <i>Travel by small bus and trucks to complete visit.</i>
3:30-3:45 pm	<i>Break</i>
3:45-5:00 pm	Dust Audit Committee
<i>Location:</i> MSC Training Room	<ul style="list-style-type: none"> Discussion of site tour / questions regarding current mitigations and updates.
5:00 pm	<i>Wrap up / Dinner at Sailivik</i>
Day 3	
7:00 – 8:00 am	<i>Breakfast at Sailivik Camp</i>
8:30-10:30 am	Dust Audit Committee
<i>Location:</i> MSC Training Room	<ul style="list-style-type: none"> Internal discussion regarding recommendations.
10:30-10:45 am	<i>Break</i>
10:45 - 11:45 am	Dust Audit Committee
<i>Location:</i> MSC Training Room	<ul style="list-style-type: none"> Discussion of implemented recommendations seen thus far
11:45 am-1:00 pm	<i>Lunch at Sailivik Camp</i>
1:15-3:15 pm	Dust Audit Committee
<i>Location:</i> Mine Site	<ul style="list-style-type: none"> Site Tour: visit the nearest dust monitoring station. Also see any other implemented recommendations. <i>Travel by small bus and trucks to complete visit</i>
3:15-3:30 pm	<i>Break</i>

3:30-5:00 pm	Dust Audit Committee • Technical team update and close out meeting; update on status of other in-progress recommendations as responded to by Baffinland August 2023
<i>Location: MSC Training Room</i>	

5:00 pm *Wrap up / Dinner at Sailivik*

Day 4 – Travel

Flight out Schedule

Various Times	Community Participants and Stantec to fly home
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Appendix C NRCan Presentation

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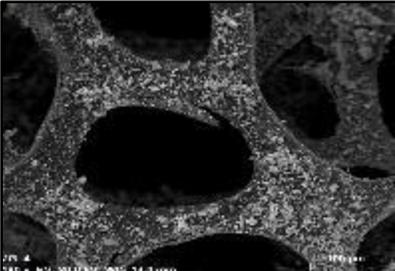
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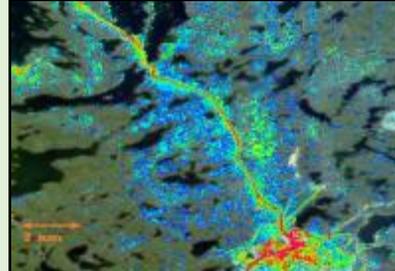
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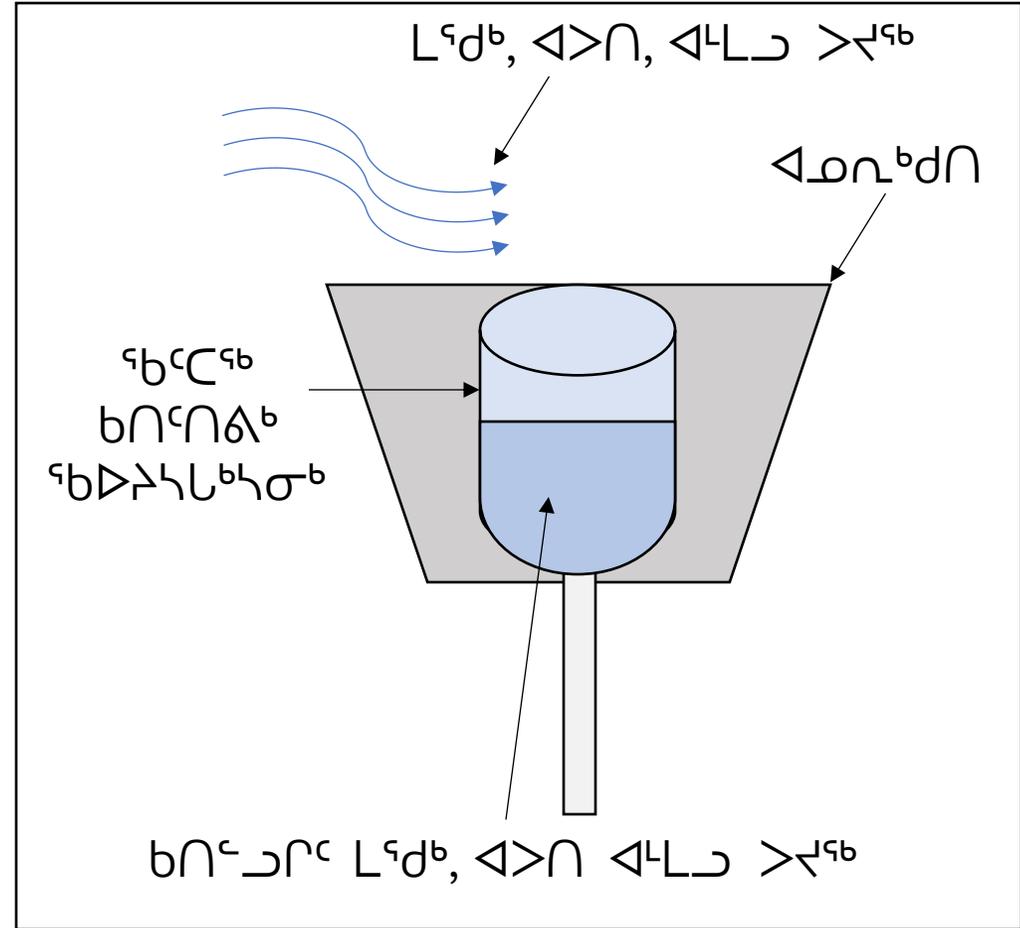
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Proposed Field Work for April 2024

- NRCan will deploy passives and collect snow samples at 15 of Baffinland's 43 dust sampling locations
- Additionally, 12 community-based sampling locations in the Milne Inlet, Koluktoo Bay and Robertson River will be targeted with a local guide for snow sampling
- Passives at these community-based sites will be installed in the Summer
- Pictures of the area will be taken for Satellite Imagery Validation

Proposed Community Sites



We are seeking feedback and thoughts from community members on these locations



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