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The following submission in response to Signal Gold Inc's Goldboro Gold Project EARD is on behalf of the Ecology Action Centre.

The Ecology Action Centre is a member-based environmental charity in Nova Scotia; we are the province's oldest and largest environmental NGO. Since 1971, the Ecology Action Centre has been working at the local, regional, national and international level to build a healthier and more sustainable world. This submission was completed by EAC's Wilderness Team staff and includes contributions from EAC members with subject matter expertise.

The Ecology Action Centre does not support the proposed project. Gold mining creates negative social, health, environmental and economic impacts on local communities and the natural environment. The inevitable harms and destruction from tailings, depletion of aquifers, infilling, and other pollution simply put too much pressure on the life support systems of our province.

Globally and locally, the gold mining industry contributes to the climate crisis and biodiversity collapse. In the face of these worsening crises, we desperately need intact ecosystems to be doing what they do best: sequestering carbon thereby mitigating the harm of greenhouse gases in the atmosphere, providing clean water and air for us and other living creatures, and supporting local biodiversity. Nature based climate solutions play a critical role; the most effective way to benefit from them is by protecting these ecosystems from the mass destruction and harm of these economically driven project.

We do not need open pit gold mining as it is an unnecessary industry. Gold can be recycled infinitely, and there is already more than enough mined gold to meet the needs of humans. In fact, Natural Resources Canada's list of minerals critical for the green energy transition does not include gold. Therefore, the degradation of communities and the natural environment from open pit gold mining is indefensible.

This proposed project infringes upon Treaty Rights and threatens traditional hunting grounds and gathering areas of the Mi'kmaq. Local Mi'kmaq community members rely on these important lands for food security and more; gold mining activities would severely damage these areas.

Based on existing jurisprudence and past litigation, the Province is fully aware that the Mi'kmaq have a credible, strong claim of Aboriginal title to their traditional territories, including the lands, water, and resources upon which the Mi'kmaq relied on since time immemorial. The Province is obligated to consult on the risks and impacts on Aboriginal & Treaty Rights, including the Aboriginal title. Historically, the provincial EA process has failed to appropriately address these inherent and constitutionally protected rights. Further, we understand the Province is currently refusing to engage under Sipekne'katik's self-governed, community-based consultation protocol. We are concerned that Sipekne'katik will not be meaningfully and adequately consulted under Mi'kmaq law and the United Nations Declaration on the Rights of Indigenous Peoples, a failure that could jeopardize the regulatory process and undermine Goldboro's attempt to gain a social license to operate.

In addition, jobs and economic activity associated with the open pit gold mining industry only concern the short term. However, we must also consider the long-term negative environmental and economic consequences from the legacy of the toxic waste and destruction from open pit gold mines. Those working at the mine are needed in jobs that move us all into a livable future. We need these skilled Nova Scotians to lend their efforts to adapting to climate change and reducing its impacts.

30 Day Comment Period

The Ecology Action Centre believes that the 30-day comment period is not enough time to provide a full response. Together, Signal Gold Inc's EARD, including all the appendixes, total thousands of pages. For most organizations, community groups, and individuals, 30 days is not an adequate amount of time to review these documents and submit a thorough response. In addition, many of those who are interested in reviewing the documents and submitting comments do so on a volunteer basis and must dedicate a significant amount of time outside of their work and home life to write their comments. Please extend future public comment periods to at least 60 days so that organizations, groups and members of the public have a sufficient opportunity to review the relevant documents and form comments in response. This would also bring the EA public consultation period in line with another Nova Scotia Environment and Climate Changes comment period. NSECC seeks public input on proposed Wilderness Area designation through a public consultation process that is open for 60 days.

Comments on specific sections of the EARD and Appendices

4.3.2.2 Spatial Boundaries

The EARD states that: "The PA encompasses the immediate area in which Project activities occur and are likely to cause direct and indirect effects to VCs. The PA includes the mine site and all associated infrastructure associated."

In section 5.1.5.1.1 Spatial Boundaries, the EARD states that: "The PA encompasses the immediate area in which Project activities may occur and includes infrastructure associated with the mine site plus a buffer of 100 – 200 m." The proponent should justify why a buffer of 100 – 200 m was selected for assessing the impacts on air.

The EARD states that "The LAA encompasses adjacent areas outside of the PA where Project related effects to VCs are reasonably expected to occur. Generally, the LAA is limited to the area in which Project activities are likely to have indirect effects on VCs; however, the size of the LAA can vary depending on the VC being considered, and the biological and physical variables present."

In section 5.1.5.1.1 Spatial Boundaries, the EARD states that "The LAA encompasses an area 15 km from the PA in all directions. The proponent should justify why an area of 15 km was selected for assessing impacts on air.

Environmental Effects Assessment

5.1 Air

The impacts of air quality on wildlife are not discussed by the proponent but should be.

5.2 Light

The fact that light can have effects on wildlife is only briefly mentioned. The proponent should discuss this further, including drawing on the literature about this issue.

5.3 Noise

The proponent briefly mentioned that fauna and birds can be affected by noise, but then does not discuss this further. The proponent should draw upon the literature on this subject and examine it in relation to the proposed project. Here are just two papers about the subject, although there is also research on the effects of noise in the freshwater environment on fish (at least):

1) Weilgart, L. 2018. The Impact of Ocean Noise Pollution on Fish and Invertebrates. (Available through Dalhousie University).

2) Wright, D.G., Hopky, G.E. 1998. Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters. Canadian Technical Report of Fisheries and Aquatic Sciences 2107.

All noise monitoring locations were at the base of the slope next the mine site, on the western side (near Highway 316). There should also be noise monitoring sites placed at the same level as the mine site, including to the north, east, and south of the site. Also, one noise receptor in the nearby Nature Reserve and one in the (pending) Wilderness Area should be modeled. Both of these sites, owned and managed by NSECC, seek to be havens for wildlife, and people, away from the impacts of large-scale human impacts. Baseline noise levels should be established at these sites, and then monitoring should be completed at these sites. This would provide the Province with information about whether mining activities are impacting the sites.

Wetlands

There is concern with regards to the 112 wetlands that will be impacted by this project. Globally, over 64% of wetlands have been lost due to human activity since 1900, and as we lose wetlands, we also lose their incredible benefits and services that they provide to both humans and the natural environment. A GPI Atlantic study (2000), on NS's water resource values wetlands provide an estimated $7.9 billion worth of benefits in ecosystem services to Nova Scotians annually. In addition, a recent study on Nova Scotia wetlands found that, "the value of wetlands is roughly $124-$373 ha-1 yr-1, and ranges from $5,105 to $39,795 ha-1" and that "carbon sequestration may provide benefits to Nova Scotia on the order of C$10 billion" (Gallant, Withey, Risk, Cornelis van Kooten, & Spafford, 2020).

In particular, we have concerns about the direct and indirect impacts of the mining activities and how they will contribute to the continued loss and destruction of natural wetlands. The loss or destruction of wetlands can result in: degradation, fragmentation and loss of wetland habitat and local biodiversity, deterioration of water quality from lack of natural water purification, increased sedimentation and soil erosion, changes in natural hydraulic systems and disruption to the local watershed, reduction in water supply and water storage, higher threat of flooding, and reduction in groundwater recharge and higher vulnerability to droughts. Taking into account the aforementioned estimates of wetland loss, in addition to the indirect impacts that will be caused by this project, we do not believe these proposed plans are appropriate or justified.

Furthermore, the proponent does not include carbon sequestration in their discussion on wetland function. This is not only a concern as carbon sequestration is an important wetland function as highlighted by the Nova Scotia Wetland Conservation Policy and The Federal Policy on Wetland Conservation, but also because the sequestered carbon in the wetlands can be released into the atmosphere upon alteration and destruction of these wetlands, thus contributing further to climate change. The proponent should provide a detailed discussion on the ability of the wetlands at the project site to sequester carbon, including predictions of how much carbon will be released upon wetland alteration.

5.7.5 Effects Assessment Methodology

The proponent indicates, including in Figure 5.7-1, that a significant amount of forested swamps and treed swamps are located within the Project Area. In light of this, there is concern that the discussions by the proponent do not fully consider the important value of treed swamps. The results from a recent study "strongly suggest that forested wetlands are avian diversity hotspots and, as such, key habitats for bird conservation in Nova Scotia. Forested wetlands in general had more bird species, more individuals, and higher abundance of several species and guilds of conservation concern than

mature and regenerating upland sites" (Brazner & MacKinnon, 2020). In another study on bird communities in forested wetlands in Nova Scotia, it was found that "of the 208 documented breeding bird species in Nova Scotia, [the researchers] found evidence (mainly singing males) that 95 (46%) were breeding in the 229 FWs [they] surveyed. Given that [their] surveys were restricted to a single visit at only two points within each wetland, this is no doubt a conservative estimate of the diversity of breeding birds that are using these habitats…..These results and other studies suggest that a large number of bird species depend on or at least utilize [forested wetlands] in Nova Scotia during the breeding season and that they may play important roles in the conservation of several at-risk species" (Brazner & Achenbach, 2019). However, despite their high value, these types of wetlands "are being converted to other uses at a higher rate in Nova Scotia than other 17 wetland types" (Brazner & Achenbach, 2019). These studies highlight the high value of these wetlands and the importance of conserving them.

5.7.6.1.1 Direct Impacts to Wetlands of Special Significance

There are 22 wetlands within the PA in which sessile or non-mobile SAR have been observed. This means that these 22 wetlands have been assessed to be potential Wetlands of Special Significance (WSS). Of the 22 potential WSS, 18 are proposed to be directly impacted by Project activities and infrastructure. The Nova Scotia Wetlands Conservation Policy states "Government will not support or approve alterations proposed for a WSS or any alterations that pose a substantial risk to a WSS, except 1) alterations that are required to maintain, restore, or enhance a WSS; 2) alterations deemed to provide necessary public function, based on an Environmental Assessment (if required) with public review or other approvals (e.g., Wetland Alteration Approval) as appropriate." Because this project does not appear to align with the exceptions outlined in the Nova Scotia Wetlands Conservation Policy, should any of these wetlands be confirmed to be a WSS, they cannot be altered either completely or partially by the proponent.

The proponent writes that "One additional wetland contained a confirmed observation of a mobile SAR (i.e., Canada warbler (Cardellina canadensis) in Wetland 25), but at this time, is not presented as potential WSS." The proponent should explain why this wetland is not being presented as a potential WSS.

5.7.7.1 Wetland Avoidance

The proponent writes that "while blue felt lichen has been found in relative abundance in the local area (i.e., beyond the PA, Section 5.9), the Project team has, nonetheless, worked to avoid the blue felt lichen wherever practical. However, due to the location in which some proposed Project activities can be performed (the locations of the East and West Pits are fixed by geology) the extent to which the Project can be manipulated to avoid impacts to wetland habitat is constrained." The proponent should clarify what is meant by the term "wherever practical" in this context. As we discuss elsewhere in our comments, blue felt lichen is a SAR and therefore should be avoided completely. If it is not feasible to avoid all blue felt lichen, this is then not an appropriate location for this type of project.

The proponent states that "the TMF is the largest single infrastructure impact to wetlands. Many factors were considered when determining its placement including: watershed position, direct impacts to fish and fish habitat, water quantity and quality implications resulting in indirect impacts to fish and fish habitat, noise, dust and light considerations, proximity to residences and cottages, baseline land and resource use (ATV trails, local traffic and land use), Indigenous use of the land, archaeological resources, geotechnical and other engineering considerations, dam integrity and safety, cost, and other technical considerations. As a result, siting of the TMF to further avoid wetlands was not feasible (see Section 2.8.1.8)." While we agree that it is important to take into consideration the factors above including watershed position, impacts to fish, water quality and quantity, Indigenous use of the land, and safety, we believe that if it not feasible to

also prioritize the avoidance of wetlands, this project should not be allowed to take place.

"Infrastructure with greater ability to be micro-sited (i.e., till and organic material stockpiles and WRSAs) were adjusted to reduce impacts to wetlands, specifically potential WSS (e.g., avoidance of SAR lichen occurrences) where practical." The proponent should clarify what is and is not practical in this context. Furthermore, regardless of practicality, the proponent must avoid any alterations to WSSs.

Climate Change

Effects of the Environment on the Project

On page vii, the proponent writes that "due to the relatively short duration of the Project, and the contingencies added to mine water infrastructure design, climate change is not anticipated to affect the Project." The proponent should provide detailed information about the anticipated or possible impacts and risks of climate change on the project area during the decades following the closure of the mine.

The proponent also writes that "the emergency overflow spillways connected to the settling ponds were designed to convey flows resulting from storm events up to and including Hurricane Beth as a design storm." While the proponent indicates that Hurricane Beth was chosen due to the amount of rainfall experienced, the proponent should not be using this Hurricane as its only baseline. Hurricane Beth took place over half a century ago in 1971; the impacts of climate change, including severe weather events, have worsened since this time and will continue to intensify in both frequency and severity. Furthermore, the proponent should also take into consideration both precipitation and wind when planning for the impacts of hurricanes at the project area. In the summer of 2021, the IPCC released a report with information concerning hurricanes. According to this report, in 2020, there were 30 named storms; this is the most on record and almost

three times the typical numbers. Similarly, the 2021 Atlantic hurricane season was the third-most active Atlantic hurricane season on record. The report also finds that these storms are shifting north, and becoming slower which in turn can result in more rain and cause more wind damage.

6.1 Climate Change

The proponent writes that "the Project will be designed to withstand more extreme precipitation events, including the effects of these events (e.g., flooding and erosion)." The proponent should describe in detail how they are preparing for such events, and what data they are using as a baseline for these weather events. In addition, the proponent should describe emergency plans should an extreme weather event have major impacts in the project area.

5.9 Terrestrial Environment

The EARD states that: "A significant adverse effect on the Terrestrial Environment from the Project is defined as:

A Project-related effect that is likely to cause a permanent, unmitigated, alteration to habitat that supports flora and fauna species."

Assessments of impacts, in this and other EARD, always assume that species can just go "elsewhere." There is also the assumption that habitat that is temporarily destroyed or degraded at the project site will be restored upon reclamation, and then wildlife, plants and lichen can and will return.

Elsewhere, there are other individuals of the displaced species, so migrant individuals may not be able to occupy that habitat if its already occupied. Elsewhere, habitat may be unsuitable or degraded for migrant individuals. Wildlife, plants, and lichens may not return to the site once the site is reclaimed – they may no longer be present in the larger area, or may not move back into the (now degraded) habitat at the site. The proponent has

not provided sufficient evidence that destroying habitat, displacing wildlife, or destroying individual plants or lichens does not cause permanent, unmitigated habitat loss for select species.

On page 369 the VC "Terrestrial Environment" should have also potentially been selected because effects on this VC could impact Indigenous people's activities, such as hunting and gathering.

On page 370 the EARD states: "Following completion of mainland moose surveys and during preparation of the environmental effects assessment, an updated mainland moose recovery plan: "Recovery Plan for the Moose (Alces Americana) in Mainland Nova Scotia" (NSDNRR, 2021) was released. This Recovery Plan (as described in Section 5.9.2.3.1), identifies core habitat throughout the province including the PA. Due to potential implications for the Project, and Project risk, additional surveys (e.g., winter tracks and PGI) were undertaken to increase survey effort and coverage across the LAA. The data have not been analyzed at this time and results are not carried forward in the result sections. A technical report will be provided to Signal Gold in July 2022 and the report will then be provided to NSDNRR."

This work is very relevant to the project. NSECC staff should review the technical report, and discuss it with NSDNRR, and advise the Minister on this subject, before the Minister makes a decision on the next step in this Environmental Assessment.

On page 371 the proponent describes areas survey for nesting Snapping Turtles. Snapping Turtle surveys should have also included historic mine tailings, which can be a suitable nesting substrate for turtles in Nova Scotia.

In 2017 and 2021 signs of Mainland Moose were observed in the PA. ACCDC provided data that confirms one moose observation (from their records). On page 376 the proponent identifies that the Project Area contains Mainland Moose Core Habitat as identified in the recent Mainland Moose recovery plan. The proponent argues that based on looking at

another map in the recovery plan (Figure 10) regarding Habitat Suitability, the PA does not intersect with high Habitat Suitability Index values, and therefore is not a priority area for conservation. The area is still a high priority for conservation due to the fact that it is within Core Habitat, and additionally signs of moose have been found in the Project Area.

On page 378 please update the references to the Nova Scotia's Mainland Moose Recovery Plan. The 2007 version is now outdated by the 2021 version.

On page 390 the "grouping" of major habitat and land use types doesn't seem to take into account age of a forest, which matter. For example, forests across the Mixedwood Forest Group can have very different ages, leading to different structures and typical species composition. The proponent should not group such diverse forest types. This then influences the evaluation of how much habitat is lost at the site. For example:

"The P-ELC has identified suitable habitats for all observed SOCI vascular plant species and these habitats are found widespread throughout the LAA. Given the size of the LAA and the distributions of these species within the province, it is likely other occurrences of these observed species exist elsewhere in the LAA."

This is assumption is incorrect. SOCI use specific habitat within the P-ELC, so they may not be found at the same P-ELC somewhere else in the LAA.

On page 433 the EARD states that: "79% of Blue Felt Lichen individuals (thalli) observed are predicted to be impacted by the project. The magnitude of direct impact to lichen habitat is predicted to be low."

This predict impact is not low, for either the Blue Felt Lichen at the site, or Blue Felt Lichen in the province. 50 Blue Felt Lichen locations are found within the Project Area, with 225 individuals! This is exceptional for a SAR! The proponent should revise the magnitude of this direct impact.

On page 434 the EARD states that lichens suffer from mines due to "sulfur dioxide and nitrous oxide emissions, metal mobilization, and dust generation. The haul roads and pits will lead to dust deposition around them."

"Species decline was noted at dust deposition levels of 1.0-2.5 g/m2/day. Effects to lichens were still observed at levels 0.07 g/m2/day. Modelled particulate deposition rate is expected to have a maximum dust deposition of 3.41 g/m2/day concentrated immediately adjacent to the East and West Pit and associated haul roads. Dust levels generally fall below 0.07 g/m2/day ranging from 300 m to 1,800 m from the haul roads and the East and West Pits. In general, edge effects are expected to be the primary driver to negative impacts to lichens and encompass modelled dust deposition extents."

The EARD proposed to translocate lichens directly impacted by site infrastructure construction, but leave behind lichens not directly touched. It is proposed to leave a 100 m buffer ("where practicable") around these remaining lichen, but the above-referenced research suggested that lichens within 100 m of dust-producing haul roads and pits would experience negative impacts. This supports a larger buffer (500 m) to be left around lichens.

On page 447 the EARD states: "Barred owls are associated with seven P-ELC habitats (mixedwood forests, mixedwood forested swamps, softwood forests, softwood forested swamps, hardwood forests, hardwood forested swamps, waterbodies), which accounts for 63.8% (9,864.0 ha) of the LAA. The Project is estimated to result in a loss of 331.4 ha of suitable habitat for this species, resulting in 3.4% loss within the LAA. Habitat loss for nocturnal owls within the LAA is to have predicted low magnitude of impact."

This assumes that LAA is a relevant size and shape to Barred Owls, which maintain large territories. It could be that loss of habitat results in birds trying to move into territories already established by others of their species, and so

can't move in. Evaluation of the impacts of loss of habitat for individual bird species should related to the scale and biology relevant to the species.

The following three sections (i.e., Historic Mine Tailings, Tailings Management Facility, and The Southwest Till Pile) were written by Ken Summers.

Historic Mine Tailings

The proponent's assessment of plans for the treatment of historic tailings, and for the construction and operation of the Tailings Management Facility, both raise significant concerns; and these concerns EAC has are closely related

Alternatives to the chosen method for treating the extensive historical gold mining wastes are merely mentioned, no comparisons are offered. The method chosen by the proponent is to remove identified historic tailings that are located where the open pit mines will be excavated, and to place these historic tailings in the constructed Tailings Management Facility. No details are given for the handling and disposal process or the risks involved, and there are no reasons given for choosing that method. There is no evaluation of the performance when this same method was used at the Atlantic Gold Touquoy Mine and its Tailings Management Facility (TMF). EAC further notes that the fate of those historic tailings from the Moose River Mine in turn rests on the integrity of that Atlantic Gold TMF and its problematic history.

Both the East and West Pits encompass watercourses and wetlands with identified historic tailings deposits. The wetland in the East Pit area is larger, has heavy concentrations of tailing deposits, and drains directly into Gold Creek. Yet there is no assessment or consideration of excavating those deposits out of a wetland with minimal mobilization of the materials. Gold Creek and surrounding wetlands cover the entire 150m width between the West and East Pits. The watercourses, wetlands, and minimal dry land are heavily laden with identified historical tailings. The very highest

concentrations of As and Hg found by Parsons et al are in a wetland approximately 40m from the West Pit.

As noted by the proponent Nova Scotia Lands is currently undertaking a Phase I and Phase II ESA and remedial action plan for these historic tailings. But there is no discussion of the interaction of open pit mining right up to the border of this projected remedial work. We note that the East Pit comes within 20m of Gold Brook, with its many identified tailings locations. As well as this area of highest concern between the two open pits, the south side of the West Pit comes within 20m of a wetland that is also a NSDEM identified Historic Tailing area.

Nowhere in the assessment is there a consideration of the possibility of construction through areas not identified as having significant concentrations of historic tailings, nor of remedies.

Tailings Management Facility

The location of Monitoring wells around the Tailings Management Facility suffers from a number of inadequacies. We refer to the map, Figure 5.5-1, page 153. There are no monitoring wells on the TMF eastward down slope draining to Ocean Lake. The monitoring well shown at location 53 is a critical placement, near the Polishing Pond and the TMF in the short interval to Gold Brook Lake. It does not appear to have been drilled and installed yet. It is not clear that Location 51 is outside the TMF. Nor is it clear that Location 1 is outside both the TMF and the Organic Material Pile. There must be at least one year of baseline data for each monitoring well before there is any activity on the TMF.

The *2007 Focus Report Touquoy Gold Project* devotes 21 pages to the design, operation, monitoring, contingencies, and emergency preparedness for the Tailings Management Facility there. By comparison, and not counting location and method selection in either case, Signal Gold

devotes just 3 pages to these crucial topics (which begin on pages 30 and 531 of the Registration Document).

At a minimum, the proponent should have included with their proposal for the TMF a comparison to the very similar Touquoy TMF now nearing the end of its working life. EAC notes that both Atlantic Gold in 2007, and Signal Gold now, referred to and relied on the Canadian Dam Association Dam Safety Guidelines- a publication understandably focusing on construction and operation with a view to preventing catastrophic dam failure.

The Touquoy TMF has for years been the subject of chronic infractions for seepage from the facility, culminating in numerous fines. Nowhere does the CDA Dam Safety Guidelines take up the issue of dam seepage (Appendix) https://cda.ca/sites/default/uploads/files/CDA_Dam_Safety_Guidelines_TOC-Preface.pdf

An instructive excerpt from the 2007 Touquoy Focus Report, page 203:

6.4.3 TMF Seepage Management

1. Why doesn't the tailings dam leak?
The clay core of the dam is 6 m wide and designed to inhibit seepage. The core is keyed into bedrock or low permeability soil to a depth of 1.5 m. The bottom of the key trench is slush grouted (cemented) to seal cracks and provide a continuous barrier to seepage. Tailings are deposited against the dams to reduce seepage.

Since the chronic seepage issue of that TMF is well known, at a bare minimum the proponent should have addressed this history. And since the CDA Guidelines to do not cover seepage, the proponent should have engaged a civil engineer for designing criteria of the dam.

In addition to the concerns about seepage of currently produced tailings laden water, EAC refers to our earlier point that the safety of historic tailings

containment and storage also depends on the integrity of the Tailings Management Facility.

The Southwest Till Pile

The proposed Southwest Till Pile as shown seems to encroach on the 30 meter right of way for the Maritimes and Northeast Pipeline. It appears it may be planned to be to either side of the ROW. Either way, it has a listed weight of 2.88 Mt and 95m height (p.30). If not planned to cover the M&NP, at a minimum heavy equipment has to traverse the ROW with the burdens. None of this is mentioned by the proponent, let alone are risks assessed.

A large number of mine buildings and facilities will be constructed along 2000 meters of the ROW, yet there is no assessment of risks during construction or mine operation. Nor any notation of consultations with the pipeline owner or regulator. Of particular note is that the West Pit comes within around 25m of the ROW.

Appendix I.4 – Lichen Monitoring Plan

This plan, prepared by McCallum Environmental Limited, refers to the company as Anaconda, not Signal. Was this the plan that was prepared for the previous proposed version of the gold project? If so, it should have been updated to reflect the current proposed project.

The plan commits to consulting with DNRR, but should also consult with Sean Haughian at the Nova Scotia Museum of Natural History, who has extensive expertise in lichens. The company (Signal) should also commit to engaging with the provincial Lichen Recovery Team.

The plan states: "At this time, the number of monitoring stations and the level of effort at each station has not been determined." Before the final version of the plan is approved by DNRR (which should be done before construction of the project begins), the proponent should commit to the

number of monitoring stations, their location, and the level of monitoring effort that will be carried out.

"Fifty occurrences of blue felt lichen consisting of 268 thalli, and one observation of frosted glass whiskers (+100 podetia) were observed within the PA." This statement has a different number of occurrences and thalli than other parts of the EARD. Section 5.9 states there are 225 thalli.

The Lichen Monitoring Plan proposes lichen translocation for situations where lichens would be killed by the construction of site infrastructure. This is not the first time this has been proposed in Nova Scotia, yet there is still no public results or peer-reviewed papers regarding whether translocation of Blue Felt Lichen has been successful yet in Nova Scotia. This approach should not be offered to Signal as a mitigation option until such time. A flaw within the current approach is that lichens can be translocated to Protected Areas (that's good), *or* Crown land. Translocation to Crown land with no protected status could be committing the lichens to their demise, since the Crown land they are translocated to could be altered in the future in the way that kills the lichen, such as for another mine (or a wind farm, or another Crown land use).

The setback from Blue Felt Lichen should be 500 m, which is supported by the literature, not 100 m ("where practicable"), which is the current At-risk Lichen SMP (DNRR).

Appendix J.2 - Viewshed Analysis

This analysis should have included an Observer Location within Isaacs Harbour River Wilderness Area (Pending). Part of the goal of Wilderness Areas is to provide opportunities for wilderness-based recreation (i.e., away from large-scale and usual human impacts). Creating a view from the Wilderness Area of an industrial-scale project damages the wilderness setting for those visiting the Wilderness Area.

Appendix D.5 – Noise Impact Study

Baseline noise results are from just 3 days in July in 2018. This study would be more rigorous and representative if baselines noise results were collected from other times of the year (and other noise receptor locations, as previously mentioned in these comments).

Modeling predicts noise impacts at proposed property boundary, however, the proposed project boundary will not necessarily be where sound ends. Modeling should predict noise impacts at receptor sites beyond the proposed property boundary. At least one POR (Point of Reception) should have been included and model for a location within Isaacs Harbour River Wilderness Area (Pending).

This study does not examine impacts of noise on wildlife. This is a body of research on impacts of noise on wildlife, and that should be discussed (at minimum) by the proponent in this EARD.