

**Nova Scotia  
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Touquoy Gold Project Site Modifications:  
Decision Date September 08, 2021**

**Government Reviewers**

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August 4, 2021

**To:** NS Department of Environment and Climate Change

**From:** Department of Municipal Affairs

**Subject: ATLANTIC MINING NS CORP - TOUQUOY GOLD PROJECT, MOOSE RIVER**

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As requested, the Department of Municipal Affairs has reviewed the Environmental Assessment Registration Documents for the proposed Touquoy Gold Mine, Moose River, Nova Scotia.

Although we have found nothing of concern respecting the Department's areas of mandate, we would like to remind the proponent to ensure that they have undertaken adequate consultation with the Municipality in order to confirm conditions for compliance with municipal planning policies and by-law provisions.

Thank you for the opportunity to review the Registration Documents for the above-noted project.

## Environment and Climate Change

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Date: August 10<sup>th</sup>, 2021

To: Bridget Tutty, Nova Scotia Environment and Climate Change

From: Air Quality Protection Advisor, Air Quality Unit

Subject: Touquoy Gold Project Site Modifications Environmental Assessment  
Registration Project

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Further to your request, the Air Quality Unit provides the following comments on the Touquoy Gold Project Site Modifications Environmental Assessment Registration Project. Specifically, the comments relate to the air quality and noise assessments presented in the registration documents.

Figure 2.1 of the registration document shows the proposed extensions to existing site components. All proposed development is within the site boundary. Table 2.1 provides proposed timescales for the construction, operation and decommissioning of the proposed extended components. It is noted that the construction of the component extensions is proposed to occur between Fall 2021 and Spring 2022, with commissioning required by June, 2022.

Monitoring for the assessment of air and noise impacts is currently undertaken in accordance with IA Approval #2012-084244-08. For air quality, sampling is undertaken in July and August at six locations around the site. Monitoring in 2017, 2018, 2019 and 2020 identified exceedances of the TSP 24 hour standard and adjustments to the site management were made in an attempt to mitigate elevated emissions (Section 3.3.5). For noise, the IA covers air concussion and ground vibration as a result of blasting. Atlantic Gold reports that the sampling has been consistently within the limits of the IA and that *'there have been no public complaints regarding blasting to date'* (Section 3.3.6).

Following the screening exercise, air quality and noise were not identified as valued components. The decision is justified in the following paragraph, which is taken from Table 5.1 of the Registration Document:

*'Construction will result in the temporary release of particulate and combustion emissions, noise and artificial lighting associated with construction equipment. No changes to existing air, noise or light emissions are predicted for operation. Predicted air, noise and light emissions will be consistent with those identified for the Project as previously assessed. Greenhouse gases from vehicle emissions will be managed according to the GHG Management Plan. Dust will be mitigated by*



*implementing the Fugitive Dust Control Plan for the Touquoy Gold Project (Appendix 5 of the Air Quality Management Plan). Ambient air quality monitoring will continue to be conducted annually in accordance with IA Approval (#2012-084244-08) requirements for the Approved Project. No new mitigation or monitoring is required.'*

The terms and conditions of the IA apply at all times during the operation of an activity. Consequently, no air quality or noise limits should be exceeded as a result of the construction, operation, or decommissioning phases.

For air quality, this means that emissions from the construction phase should be carefully observed in line with the site's Air Quality Management Plan, and appropriate action taken accordingly. This is of particular importance for the construction, and operation, of the extension of the waste rock storage area (WRSA), which extends the existing WRSA close to the site boundary and Square Lake. While the Fall to Spring scheduling of the construction phase may provide natural attenuation of any additional emissions, observation by site personnel should ensure that this is the case. If the construction phase extends into Summer, further active mitigation may be required.

For noise, construction activity should only occur during the regular hours of operation, and the sound levels identified in the Pit and Quarry Guidelines should be adhered to, as proposed in Section 9.6.

## MEMORANDUM

**To:** Bridget Tutty, Environmental Assessment Officer, Nova Scotia Environment and Climate Change

**From:** Robert Cameron, Ecologist, Protected Areas and Ecosystems Branch, Nova Scotia Environment and Climate Change

**Date:** 16 August, 2021

**Subject:** Touquoy Gold Project Modifications – Environmental Assessment Registration Document

The most significant and missing aspect of this analysis is that protected areas are not included as a valued component (VC). "VCs are biophysical and/or socio-economic environments that, if altered by the Project, may be of concern to regulatory agencies, the Mi'kmaq of Nova Scotia, scientists, and/or the general public." Given that Ship Harbour Long Lake wilderness area boundary is only 100m from the edge of the operation and that this wilderness area is downstream of the mine and therefore any impacts to the ground or surface water will flow into the wilderness area, it is negligent not to consider the wilderness area as a VC. Further, potential impacts to fauna as outlined in the EA are likely to be impacts to the adjacent wilderness area. It is highly likely that most fauna discussed in the EA, including most species at risk and especially endangered mainland moose, that use habitat in or near the mine also use habitat in the wilderness area. Any impacts to fauna very likely affect fauna within the wilderness area. This is particularly evident with avifauna and aquatic fauna who can readily travel from the mine area to the wilderness area. Further, noise, light and activity of the mine will affect the recreation use of the wilderness area which is a secondary purpose of this protected land.

It is difficult to assess the impacts of the proposed activities to the adjacent protected areas without proper analyses as a VC. None the less I feel compelled to respond with at least some comments because of the obvious potential impacts to the adjacent protected area.

Below are 20 statements on surface and ground water and 4 statements on air quality impacts taken from the EA document which suggest potential current impacts from the mine to the adjacent wilderness area. Also cited below are 27 statements taken from the EA document suggesting potential impacts to the wilderness area from the proposal. Since there were no thorough analyses of potential impacts to the wilderness area, it must be inferred from the statements cited below that the mine is currently impacting the wilderness area and that these impacts are likely to increase with the new proposal. The extent of the impacts is undetermined.

**Summary: the below points from the EA document indicate:**

- 1. there have been changes to ground and surface water quality and quantity as well as impacts on fish habitat as a result of the mine;**

2. **There are Projected impacts affecting ground and surface water quality and quantity as well as impacts to fish habitat and wetland habitat; and**
3. **Because Ship Harbour Long Lake wilderness area is downstream of these impacts, the protected area could be affected by these impacts;**
4. **Changes in air quality could also affect the protected area.**

The primary purpose of the Wilderness Areas Protection Act:

2 The purpose of this Act is to provide for the establishment, management, protection and use of wilderness areas, in perpetuity, for present and future generations, in order to achieve the following primary objectives:

- (a) maintain and restore the integrity of natural processes and biodiversity;
- (b) protect representative examples of natural landscapes and ecosystems;
- (c) protect outstanding, unique, rare and vulnerable natural features and phenomena,

Section 17 (2) Except as provided in this Act or the regulations, within a wilderness area no person shall (j) introduce a substance or thing that may destroy or damage existing flora, fauna or ecosystems;

Given the potential and likely impact and the provisions of WAPA, it is incumbent on the proponent demonstrate they are not in contravention of the Act.

I suggest three actions that need to happen:

1. Thorough analysis of protected areas as Valued Components;
2. Monitoring program fro potential impacts be established within Ship Harbour Long Lake wilderness area with a monitoring system designed in consultation with Protected Areas and Ecosystems staff; and
3. Compensation for impacts to protected areas in form of land purchase for protection.

### **Statements from the EA Document which may indicate current potential impact on Ship Harbour Long Lake wilderness area:**

#### 3.3.4 Surface Water and Groundwater Monitoring

“A depressed groundwater table was observed at OPM-2A/B in 2019 and continued in 2020, and appears to have a minor influence on stream flows in Moose River during low-flow.”

Multiple “Siltation events in Watercourse #4”

“effluent exceeded the Tier I EQS and CCME guidelines for several parameters”

“increasing trends were observed for several indicator parameters (arsenic, cobalt, copper, ammonia, sulphate, conductivity, sodium, and chloride) at various groundwater wells across the site,”

#### 3.3.5 Ambient Air Quality Monitoring

“The 2017 monitoring found eight TSP exceedances out of 38 samples collected over an eight-day sampling period (AMNS 2018)”

“2018, with three TSP exceedances out of 41 samples collected over a seven-day sampling period (AMNS 2019).”

“Monitoring in 2019 resulted in 13 TSP exceedances out of 42 samples collected over the seven-day sampling period (AMNS 2020c).”

“Results of the 2020 ambient air quality monitoring found four TSP exceedances out of 41 samples collected over the seven-day sampling period (AMNS 2021a).”

### 3.3.7 Metal Leaching and Acid Rock Drainage Monitoring

“increase in PAG proportion in 2019 compared to 2017-2018 and 2020 (AMNS 2019, 2020c, 2021a).”

#### 6.4.2.1 Groundwater Quantity and Flow

“A declining trend [in ground water quantity] has been observed at OPM-2B, and to a lesser degree at OPM-2A, throughout 2017, 2019, and 2020 operation; this trend is attributed to dewatering of the Open Pit (Stantec 2020c, 2021f).”

“The dewatering of the fully developed Open Pit is anticipated to reduce the baseflow in Moose River at SW-2 by 49 m<sup>3</sup>/d on a mean annual basis, and 29 m<sup>3</sup>/d on a summer flow basis.”

#### 6.4.2.2 Groundwater Quality

the mean concentrations of manganese, and the maximum concentrations of arsenic exceed parameters the GCDWQ and IA Column B criteria.

- Well OPM-3A had a copper concentration above the Threshold 2 action level in Q4 2020
- Well OPM-7B had conductivity and chloride concentrations above the Threshold 2 action level in Q3 and Q4 2020
- Well WRW-4A had chloride concentrations above the Threshold 2 action level throughout 2020
- Well WRW-5A had sulfate concentrations above the Threshold 2 action level in Q3 and Q4 2020, and conductivity, and chloride and sodium concentrations throughout 2020
- Well WRW-5B had arsenic concentrations above the Threshold 2 action level in Q4 2020, and conductivity and chloride concentrations in Q3 and Q4 2020

### 7.4.9 Summary of Local Surface Water Quality

NSECC Tier 1 EQS and CCME guidelines for the protection of freshwater aquatic life. Exceedances of aluminum, arsenic, cadmium, and iron were reported at the majority of sampling locations. Exceedances of lead, manganese, mercury, silver, vanadium, and zinc were reported at individual monitoring stations for a select few events.

The observed increase in sulphate is suspected to represent the discharge of seepage from the WRSA.

#### 8.4.1.2 Existing Conditions

As part of the existing mine development there have been reductions in the catchment area of Watercourse #4 which may have resulted in changes in flow (Section 7.0, Surface Water VC).

There have been changes in the substrates in Watercourse #4 as a result of siltation events associated with the haul roads between 2018 and 2020 (Stantec 2019c).

Based on water quality monitoring at SW-3, SW-19 and SW-23 in Watercourse #4 and fish habitat surveys conducted in 2019, the surface water pH in Watercourse #4 ranged from 3.97 to 8.52 from November 2017 to March 2021 and was sometimes below the CWQG FAL recommended minimum of 6.5

Lower dissolved oxygen concentrations have been noted during intermittent flow conditions in the upper reaches of Watercourse #4

Seepage from the existing WRSA appears to be a source of elevated sulphate concentrations within Watercourse #4 (Stantec 2021f; SD 19a).

### **Statements from the EA Document which may indicate project proposal potential impacts:**

#### 6.5.1 In-Pit Tailings Disposal

deposition of tailings into the exhausted Open Pit has the potential to interact with groundwater quality around the Open Pit, as well as water quality in Moose River from groundwater seepage into the river. Groundwater in the filled Open Pit has the potential to seep to Moose River during the post-closure phase of the Project.

#### 6.5.2 Waste Rock Storage Area Expansion

Thus, groundwater seepage from the expanded WRSA may result in changes to groundwater quality.

Closure of water management facilities will result in the removal of contact water collection systems that may result in changes to the fate and flow of groundwater originating from the WRSA.

As shown in Table 6.5, the groundwater seepage for the expanded WRSA is estimated to be 133% greater than that for the current WRSA, based on the current WRSA seepage ditch design

#### 6.7.2 Change in Groundwater Quality

##### 6.7.2.1 In-pit Tailings Disposal

This lower quality water has the potential to migrate toward Moose River via groundwater.

the average concentrations of arsenic are predicted to stabilize after approximately 150 years; this is also anticipated to be the case for the POPCs.

##### 6.7.2.2 Waste Rock Storage Area Expansion

a portion of the groundwater flow from the WRSA is predicted to travel through the bedrock beneath the TMF, and arrive at the seepage collection ditches around the perimeter of the TMF or to the watercourses downgradient of the TMF.

WRSA expansion, or the in-pit disposal of tailings and will not result in groundwater quality that exceeds the GCDWQ for consecutive period of 30 days or more at existing or future groundwater users located outside of the PDA. – this is a drinking water standard, what about ecosystems

### 7.5.1 In-pit Tailings Disposal

Open Pit will seep towards the Moose River. When the Open Pit infilling is complete, surface flow will be directed to Moose River via a constructed spillway or discharge structure.

### 7.5.2 WRSA Expansion

Runoff associated with the WRSA is considered to be mine-contact water and has the potential to contain increased TSS, nutrients and possible contaminants of potential concern

### 7.5.3 Clay Borrow Area

Runoff generated over the exposed clay has the potential to contain elevated TSS, aluminum and other parameters associated with clay soil and could affect the water quality of Watercourse #4

### 7.7.1 Surface Water Quantity

“high level of ecological protection is provided when flow alterations are within 10% of the natural flow“ in table 7.20 Changes in Mean Monthly Flow to Catchment 1, Watercourse #4 - each month difference is 9%

reduction in total annual flow to Scraggy Lake of approximately -2.8%, or 1,060,000 m<sup>3</sup>. This reduction is attributed the portion of Scraggy Lake drainage area that will continue to be diverted to the Open Pit.....lowering of the normal lake level by 16 cm.

### 7.7.2 Surface Water Quality

major ions are expected to increase under Project conditions (proposed WRSA expansion) Aluminum and arsenic exceed CCME FAL and NSECC Tier 1 EQS and cadmium exceeds NSECC Tier 1 EQS in Watercourse #4 during Project conditions (WRSA expansion);

After flow is returned to Watercourse #4 from the WRSA, nitrate and nitrite concentrations are predicted to increase in the watercourse

### 8.4.1.2 Existing Conditions

there is the potential for slight reductions in flow as a result of groundwater drawdown

### 8.5.1 Change in Fish Habitat Quantity

WRSA and Clay Borrow Area and overflow from the in-pit disposal area to Moose River have the potential to result in changes in fish habitat quantity or changes in the timing, duration, and frequency of stream flows.

Alterations in the water balance of Scraggy Lake associated with the Project could affect water level and discharge and result in indirect loss of fish habitat quantity within the littoral zone of the lake or downstream in the downstream portion of lower Fish River.

### 8.5.2 Change in Fish Habitat Quality

During construction of the engineered discharge, an increase in erosion due to removal of riparian vegetation, exposed soils, and changing slopes could increase sediment deposition in fish habitat, thus reducing habitat quality

Watercourse #4 during high flow or increased rainfall events could increase the potential for runoff and the amount of sediment entering fish habitat.

During operation and rehabilitation and closure, runoff, seepage and discharges from the new water management pond and in-pit tailings disposal area into the aquatic environment could affect fish habitat quality (i.e., water and sediment quality)

Some of the metals (i.e., aluminum, arsenic, and iron) are already elevated above the CWQG-FAL or NS Tier 1 EQS as a baseline condition in the receiving watercourses (i.e., Watercourse #4, upper Fish River, Moose River), and therefore the assimilative capacity of watercourses to receive seepage or discharge is limited for these parameters.

With regards to the outflow from the new water management pond, the capacity of Watercourse #4 to assimilate aluminum, arsenic, and iron is limited because these parameters are elevated above the CWQG-FAL and cadmium is elevated above NSECC Tier 1 EQS as a baseline and existing condition. Modelling (described in Section 7.0) suggests that major ions are expected to increase following discharge,

nitrate concentrations are predicted to increase in the watercourse for a period of time

Release of treated effluent from the in-pit disposal area and the new water management pond have the potential to be warmer than the receiving waters

#### 9.5.2 Change in Wetland Habitat

change in hydrology (water quantity) in riparian wetlands along the Moose River may occur during post-closure because of Open Pit filling and discharge.

#### 9.7.2 Change in Wetland Habitat

Riparian wetlands along the Moose River west of the Open Pit, and wetlands located south of the Open Pit within the LAA may be affected by direct groundwater seepage discharge during Open Pit re-filling because of tailings deposition.

### **Other comments**

#### **9.5.1 Change in Vegetation and Vegetation Communities including Priority Species**

Direct impacts to interior forest and indirect impacts from edge effects are expected to be low as the PDAs and surrounding LAA have largely been affected by previous disturbances, such as historic mining and timber harvesting. The LAA are dominated by cutover and early to mid-successional forested communities, which commonly develop after timber harvesting and other disturbances – this is a different kind of edge effect, one that ameliorates over time unlike the permanent edge created by mine development

An example of this significant omission is Table 1.1 where wilderness areas protection act is omitted from applicable acts and legislation nor is protected areas in Table 5.1 Selection of Valued Components nor Figure 6.1 Local and Regional Assessment Area of Groundwater Resources or other maps



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Date: August 16, 2021.

To: Bridget Tutty, Nova Scotia Environment

From: Beth Lewis, Consultation Division  
Nova Scotia Office of L'nu Affairs

Subject: **Touquoy Gold Project Site Modifications Project**

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The Nova Scotia Office of L'nu Affairs (OLA) has reviewed the Environmental Assessment Registration Document (EARD) for the **Touquoy Gold Project Site Modifications Project** dated July 16, 2021. The following review considers whether the information within the submitted EARD will assist the Province in assessing the potential of the proposed project to adversely impact established and/or asserted Mi'kmaq Aboriginal and Treaty Rights.

- OLA staff reviewed Sections 4.0 ENGAGEMENT and 10.0 CULTURAL & HERITAGE RESOURCES of the EARD.
- In section 4.1. Indigenous Engagement, AMNS provides an overview chart of issues raised by the Mi'kmaq during engagement and how the company responded. One item in the chart references a Mi'kmaq concern regarding the loss of traditional species habitat and the loss of access for to those species for traditional purposes.
  - In response to this issue raised by the Mi'kmaq, AMNS references "Previous EA (CRA 2007a) and Section 10.0 Cultural and Heritage Resources" for details on how this concern was addressed. OLA could not locate the previous EA (as it was not included in the submission) and therefore was unable to review it for additional context regarding this specific issue.
  - Section 10.0 focuses on archaeological and cultural resources, how they were studied, and how the risks of disturbing resources will be mitigated. Therefore, section 10.0 did not provide adequate additional information or clarity on if AMNS confirmed the risk of adverse impacts to traditional species habitat and/or AMNS's intentions for accommodating any negative impacts.
  - Therefore, OLA would consider the issue "Loss of traditional species habitat and loss of access for traditional purposes" unaddressed by the sections referenced in AMNS's response.
- AMNS references information from the 2005 MEKS, however it was not part of the EARD submission.

**M E M O R A N D U M**

**TO:** Bridget Tutty, NS Department of Environment and Climate Change

**FROM:** NS Department of Lands and Forestry

**DATE:** August 16, 2021

**RE:** Atlantic Mining NS Corp— Touquoy Gold Mine Modifications:  
EA Comments

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The Department of Lands and Forestry (herein the Department) provides the following comments on the above project:

**Crown Lands:**

This project would not require approvals/permits/authorities from the Land Administration Division.

**Wildlife, Wildlife Habitat and Species-at-Risk:**

The mine site where the proposed activities will take place underwent an environmental assessment and approval in 2007. That assessment addresses and mitigates some of the potential interactions between the proposed activities and biodiversity values under the legislative mandate of the Department. Further efforts are required to ensure the proposed activities consider the current state of biodiverse values both on and near site.

**1. Wildlife:** The document indicates the potential presence of snapping turtles and mainland moose within the footprint of the active mine site. Further, there is the possibility various bird and turtle species will create habitats on site.

**The department has the following recommendations as conditions for approval:**

- a) **An updated Wildlife Management Plan (WMP) is required, to be developed in consultation with the Wildlife Division of the Department. The 2017 plan lacks information on provincial Acts and Regulations to protect wildlife and Species at Risk; does not provide management and monitoring of invasive species; and should provide for increased reporting of Mainland moose observations (within 24hrs, not as part of a yearly report). The WMP is to be implemented as approved by the Department.**
- b) **The site will need to be managed to prevent the creation of habitat for species such as, but not limited to, Common nighthawk, Bank swallow, and native turtle species.**
- c) **The Local Assessment Area (LAA) indirect impact extent shows overlap with a Snapping turtle observation (Figure 9.5). Mitigation measures to protect Snapping turtles are required.**
- d) **Section 9.4.1.3 *Birds* indicates four different owl species were observed—**

one near the Moose River during groundwater sampling and three within the 2007 EARD project site by the breeding bird surveyor. Raptors and owl species are protected under the Nova Scotia *Wildlife Act*. Mitigations for the protection of these species are required, dependent upon the circumstances of observations (e.g., migratory, transient, nesting).

2. **Vegetation:** Measures to protect, conserve and restore vegetation that occurs locally and in proximity to the site will need to take place.

The Department has the following recommendations as conditions for approval:

- a) To mitigate risk for breeding birds, no vegetation clearing should occur between April 15th -August 31<sup>st</sup> unless approved by the Department. Subject to approval, additional requirements may be necessary and will be developed in consultation with the Department.
- b) Re-vegetation measures will need to be done with local naturally occurring seed or plant sources. Where possible, soil removed for site prep should be stored in a manner where the seed source remains viable and can be reused for revegetation on site.
- c) One occurrence of Blue felt lichen is within the expansion LAA in wetland 15. Another is in wetland 40 within 500m of the clay borrow expansion area and within 50m of an access road and other infrastructure. Monitoring and mitigation measures for protection of Blue felt lichen must be developed in consultation with the Department.
- d) The lichen monitoring plan identified by the proponent in Section 9.6 *Mitigation* will need to be developed in consultation with the Department and only implemented following approval.

3. **Further Detail Required:** The document is informed by surveys that underpin the 2007 application, but the details of these surveys are not provided. Without that information, it is not possible to evaluate the validity of the work or results. Surveys in question include the Habitat and Vegetation Surveys, the 2004 Herptile-Specific Survey, and the Lichen Survey work.

The Department has the following recommendations as conditions for approval:

- a) Provide detailed information on the surveys associated with the 2007 EA that support decisions within this EA application. Additional field surveys may be required if this information is deemed by the Department to be inadequate to support decisions concerning wildlife and associated habitats.
- b) Provide information to indicate surveys took place in Wetland 15 to confirm the presence or absence of Snapping Turtles. Without data to suggest otherwise, it is assumed turtles are present in this wetland and associated mitigation measures will have to be developed in consultation with the Department.

In addition, the Department is requesting further detail on several sections and statements in the document. The pieces of the document which require further explanation are outlined in the table below:

Document Section	Statement	Direction
5.2.2 Selection of Valued Components— Table 5.1. Selection of Valued Components: Scoping considerations for Candidate Valued Components Wildlife (Mammals, Birds, Herptiles)	“No identified areas of defined wildlife habitat.”	<b>Explain in more detail what is meant by this statement.</b>
	“There are also no known incidences of wildlife SAR/SOCC at the Touquoy Mine Site”	<b>Clarify what is meant by “incidence” as information presented in section 9.0 suggests the presence of Mainland moose on site.</b>
8.4.1. Fish Habitat 8.4.1.1. Predevelopment Conditions		<b>Explain why no pre-development water quality monitoring data exists for Watercourses #12, #13, #3 and Square Lake.</b>
8.4.3 Species at Risk	“There have been no species-specific targeted surveys completed in the LAA for SAR or SOCC species; however, fish SOCC have been identified within the LAA during water course assessments and EEM programs, including American eel and Atlantic Salmon.”	<b>Explain why no fish surveys were conducted for watercourses occurring within the LAA.</b>
9.4.1.2 Wetlands Table 9.4 Baseline (2015/16) Wetland Characteristics Overview		<b>Explain why WL 6.3 is the only wetland without a soil pit.</b>
9.4.1.3 Birds		<b>Provide Figure 5.1 of CRA 2007a within this EA as it provides context for bird surveys.</b>

**It is recommended that the proponent work with the Department to finalize the conditions/guidance related to wildlife, wildlife habitat and Species at Risk that will be included in their Environment Protection Plan or final ERCP.**

**Fisheries and Aquaculture**

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Date: August 16<sup>th</sup>, 2021

To: Bridget Tutty, Nova Scotia Environment and Climate Change

From: Executive Director, Policy and Corporate Services  
Nova Scotia Department of Fisheries and Aquaculture

Subject: Touquoy Gold Project Site Modifications – Environmental Assessment

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Thank you for the opportunity to review the Touquoy Gold Project Site Modifications documents.

There are eight shellfish aquaculture sites and one rockweed lease within 25km radius of the proposed project.

The Department of Fisheries and Aquaculture does not have any significant concerns with this project given that:

- this is an expansion to an existing mine site, and no additional watercourses are to be impacted by the proposed expansions; and
- the purposed project is not near any known commercial harvesting, or processing/buying facilities.

## **Agriculture**

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Date: August 16<sup>th</sup>, 2021

To: Bridget Tutty, Nova Scotia Environment and Climate Change

From: Executive Director, Policy and Corporate Services,  
Nova Scotia Department of Agriculture

Subject: Touquoy Gold Project Site Modifications – Environmental Assessment

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Thank you for the opportunity to review the Touquoy Gold Project Site Modifications documents.

The Department of Agriculture has no concerns about this proposal, given that:

- The soils around the site are Class 7 or poorer and not suitable for agriculture.
- No farms were identified within a 5 km buffer zone of the proposed project except for a small (1.8 acre) blueberry farm.

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**MEMORANDUM**

**To:** Bridget Tutty  
Environmental Assessment Officer

**From:** George MacPherson  
Director, Mineral Management

**Date:** August 16, 2021

**Subject:** *Comments on the Environmental Assessment Registration Document  
Touquoy Gold Project Site Modifications  
Atlantic Mining NS Inc.  
Moose River Gold Mines, Halifax County*

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Staff of the Geoscience and Mines Branch have reviewed selected sections of the Environmental Assessment Registration Document submitted by Atlantic Mining NS Inc., dated July 2021, for the proposed Touquoy Gold Project Site Modifications. The following comments are provided regarding the project:

- 1) The Geoscience and Mines Branch confirms that the project will support the continued development of mineral resources for the Province and will provide economic and social benefits to the Province. The Department of Energy and Mines supports the development of the Province's mineral resources when such development is conducted in an environmentally and socially responsible manner as outlined in this document.
- 2) The proposed modifications will allow gold production from the Touquoy Gold Project to be extended for more than two years, and potentially bridge a gap until the company's next project comes onstream.

The project will contribute to the Province's mineral industry, maintaining employment in rural Nova Scotia. As well, typically two to three indirect and induced jobs are maintained for each direct position. Expansion of the WRSA will allow mining of the open pit to be completed, during which time direct employment of approximately 300 people will be maintained. Once the open pit has been mined out, employment levels will be reduced, however the processing and site management activities will continue for a further two year period during which the stockpiled low and medium grade ore will be processed.

- 3) The Department strongly supports the plan to place the tailings in the mined-out Touquoy Open Pit. Such sub-aqueous disposal of tailings is an optimal approach for tailings disposal.
- 4) The Department of Energy and Mines is not supportive of deferring reclamation of the Touquoy tailings management facility in order to maintain its availability for water treatment once tailings deposition and surface water management have been changed over to the open pit.

The Geoscience and Mines Branch would like to reiterate that the Department of Energy and Mines supports the continued development of the Province's mineral resources. The proponent has demonstrated that their gold mining project is providing tangible benefits and the proposed extension of the project life will be beneficial for both the Province and the proponent.

These comments are provided to assist in the evaluation of this project. If you have any questions, please feel free to contact me.

Regards,



George MacPherson

Director, Mineral Management

cc D. T. James (by pdf)  
S. Hearn  
T. Lamb  
D. Webber



**Touquoy Gold Project Site Modification EA Registration Document**  
**Environment and Climate Change Review Comments August 16, 2021**

Water Quality

Project Description and Operations

- In the Project Overview, it states “AMNS is proposing modifications to the Approved Project that are required to support ongoing operations.” A more clear definition of “ongoing operations” should be provided. For example, it should be made clear whether ongoing operations refers to the extraction and processing of the ore from the Touquoy location only or if it also includes an expanded operation for future processing of ore from other remote pits (Beaver Dam Mine Gold Project, Fifteen Mile Stream Gold Project, and the Cochrane Hill Gold Project). There are references to the expanded operation scenario with ore from remote pits elsewhere in the report and in some of the supporting documents but in the introduction to the project this is not clear.
- It is recommended that the assessment of alternatives consider scenarios of Touquoy operations processing its own ore (from that site), as well as scenarios where processing of ore from one or more satellite mines will be conducted at Touquoy.
- It should also be confirmed whether the pit lake formed by the end of the project will have the capacity to receive all mine waste from all potential mines that may come to Touquoy for processing?

Applicability of Metal and Diamond Mining Effluent Regulations

- Section 5.5 of the reclamation plan states that “the Touquoy Mine became subject to MDMER including EEM in July 2018 and EEM requirements will continue until the mine receives recognized closed mine (RCM) status under MDMER (Section 32).”

Although the proponent has stated their intention to pursue RCM status, they do not indicate at which stage/time of the project this is expected.

- The proponent should be reminded that, in general, effluent from Recognized Closed Mines may be subject to the General Prohibition of the deposit of deleterious substances of the Fisheries Act (Section 36(3)) rather than the MDMER effluent limits, and that this should be considered in the development of any post closure water management plan.

- The report (Appendix D3) states that “the final effluent discharge point for tailings-contact water would be relocated to the Moose River; noting that effluent discharge into the Moose River would start during post-closure once the water quality of the pit lake meets regulatory discharge requirements.”

The proponent should note that any new FDP would require a notice under section 9 of the MDMER. Also, for a new proposed FDP and exposure area at Moose River after the pit lake has filled, proponents are encouraged to develop and conduct applicable components of EEM studies as required in Part 2 of Schedule 5 of the Regulations before any new discharge of mine effluent. Such baseline monitoring (BACI, Before-After-Control-Impact) can provide valuable comparisons of conditions before and after the beginning of mining operations and therefore aid in the interpretation of any observed effects in the exposure area during operations.

- The proponent should be aware that, under the MDMER, the definition of “effluent” can include untreated seepage and surface drainage to surface water bodies.
- In section 7, the report states that “Surface water quality and quantity are provincially regulated through various legislative avenues within the Environment Act – these regulations help protect ecological components, as well as the health of the general public.” It should be noted that deposits into these waters would also be subject to the MDMER and/or the Fisheries Act, depending on the stage of the mining operation.
- In section 7.4.8 (Surface Water Quality) the report states that “Surface water has been monitored in watercourses and waterbodies in proximity to the Touquoy Mine Site since 2016. Site operation began in 2017 and TMF discharge to Scraggy Lake in 2018. Monitoring that took place prior to commencement in October 2017 is considered representative of pre-development conditions.” The proponent should provide commentary to support the inference that the dataset compiled prior to October 2017 was adequate to characterize baseline water quality conditions for this site.
- In section 8, the report states “changes in water quality associated with the discharge of effluent containing COPC could result in a change in fish habitat quality through changes in sediment quality. Given that metals will meet the CWQG-FAL, NSECC Tier 1 EQS, baseline concentrations or SSWQO by the end of the mixing zone, effects to sediment quality are not expected”.

Concentrations of contaminants in surface water at a given point in time may not reflect concentrations in sediments that may accumulate over time. The proponent should confirm whether any modelling of sediment contamination been conducted. If so, it may be useful to summarize the results of sediment sampling in receiving water bodies. Also, it should be confirmed that SSWQOs been approved for use at this site (e.g. in an Industrial Approval).

- In section 8.7.2, the report states “With regards to the outflow from the new water management pond, the capacity of Watercourse #4 to assimilate aluminum, arsenic, and iron is limited because these parameters are elevated above the CWQG-FAL and cadmium is elevated above NSECC Tier 1 EQS as a baseline and existing condition.” Have there been any assimilative capacity studies (similar to the study completed for Moose River) completed for watercourse #4 to support this statement or is it based solely on the baseline data?
- In section 7, the report states “a significant adverse residual effect on surface water quality is defined as a measurable change in water quality that results in:
  - A repeated or sustained exceedance of MDMER limits
  - A repeated or sustained exceedance NS Tier 1 EQS thresholds applied in an Industrial Approval or a site-specific water quality guideline for the protection of aquatic life, except in cases where baseline water quality is already exceeding one or more thresholds.
  - Contravention of a watershed management target including:
    - degradation of water quality that causes acute toxicity to aquatic life
    - changes the trophic status of a lake or stream, or
    - exceedance of the generally accepted total suspended solids (TSS) monitoring guideline (Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines – Freshwater Aquatic Life [CCME CWQG-FAL]) applied to Project activities”

Are effects considered to be significant when any one of the conditions in the primary bullets are met (i.e. should there be an “or” inserted in this list)?

In general, regulatory limits have different goals and serve a different purpose than effects based concentrations and the two should be considered separately. There should not be a need to include regulatory limits in the definition of effects based thresholds.

## Wildlife and Wildlife Habitat

### Existing Project. Modifications and Satellite Mines

The Proponent proposes modifications to the existing Touquoy Gold Project consisting of:

- use of the exhausted open pit for tailings disposal, once the existing approved Tailings Management Facility (TMF) reaches capacity;
- expansion of the Waste Rock Storage Area (WRSA) - ~7.1 ha;
- expansion of the Clay Borrow Area – ~5.9 ha; and
- relocation of the road to access the Mill Plant and new collection ponds.

The Proponent indicates that these modifications are required for the current Touquoy Gold Project. There is no discussion regarding potential cumulative effects associated with the proposed Beaver Dam, Fifteen Mile Stream or Cochrane Hill satellite mines, even though ore from these mines would be trucked to the Touquoy facility for processing. The assumptions regarding temporal boundaries in the EARD are made solely based on the Touquoy Project modifications, despite the fact that activities at the site would continue for a number of additional years and reclamation delayed if the satellite mines are approved. In summary, the EARD does not include a detailed cumulative effects assessment, of the satellite mines on the Touquoy Valued Components (VCs).

ECCC recommends that the EARD for Touquoy Gold Mine Modifications be expanded to include direct and indirect effects of the proposed activities including the indirect and cumulative effects of the proposed satellite mines including trucking processing activities. This EARD should include a detailed analysis of the capacity of the proposed open pit tailings disposal area, proposed expanded WRSA, and proposed expanded Clay Borrow Area considering not only the waste from the Touquoy mine but also the anticipated waste resulting from the processing of ore from the proposed satellite mines. Predictions of potential changes to habitats at the Touquoy Study Area (i.e. both the Touquoy mine modifications and the satellite mines), be presented in the EA documentation.

### Bird Surveys

The proposed modifications are expected to result in additional loss of habitat and disturbance. While some biophysical surveys (e.g. wetlands, watercourses, habitat) were conducted in 2020, breeding bird surveys have not been conducted in the Local Assessment Area for the EARD. Bird survey data is required in order to adequately evaluate the potential effects and cumulative effects of the Project on migratory birds, including migratory bird species at risk (SAR) and Species of Conservation Interest (SOCI), and to develop mitigation and monitoring plans.

ECCC recommends that bird surveys be conducted during the breeding season and that EARD Terrestrial Environment sub-sections be updated based on the results of these surveys.

### Terrestrial Species at Risk

The Proponent states that five bird SAR are predicted to occupy habitats in the LAA: Barn Swallow, Canada Warbler, Common Nighthawk, Olive-sided Flycatcher, and Eastern Wood-pewee (Section 9.4.2.4).

Two lichen SAR were observed in the LAA: Blue Felt Lichen and White-rimmed Shingle Lichen (Section 9.4.2.2).

Incidental observations of Snapping Turtles have been made and suitable habitat has been observed within the Touquoy Mine Site (Section 9.4.2.5).

For species which are not listed under the federal Species At Risk Act, but are listed under provincial legislation or that have been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), it is best practice to consider these species in EA as though they were listed under SARA.

For species-specific technical information for terrestrial SAR not protected under the *Migratory Birds Convention Act* (MBCA), ECCC recommends that the Nova Scotia Department of Lands and Forests be consulted. For this project, these include: Blue Felt Lichen, White-rimmed Shingle Lichen, Snapping Turtle, and Mainland Moose.

The SARA contains several prohibitions to protect species listed on Schedule 1 of the Act. Under Sections 32 and 33 of SARA, it is an offence to:

- kill, harm, harass, capture or take an individual of a species listed as extirpated, endangered or threatened under SARA
- possess, collect, buy, sell or trade an individual (or any part or derivative of such an individual) of a species listed as extirpated, endangered or threatened under SARA
- damage or destroy the residence of one or more individuals of a listed endangered, threatened or extirpated species if a recovery strategy has recommended its reintroduction into the wild in Canada

General prohibitions only apply automatically:

- on all federal lands in a province,
- to aquatic species anywhere they occur, to migratory birds protected under the *Migratory Birds Convention Act* (MBCA) 1994 anywhere they occur.

a. Wetland-associated migratory bird SAR

Wetland-associated migratory bird SAR (e.g. Canada Warbler, Olive-sided Flycatcher) are predicted to occupy habitats in the LAA (section 9.4.2.4). The Proponent further states in Section 9.5.3 that “Direct loss of habitat that supports wildlife, including SAR and SOCI, is expected within all PDAs as result of clearing, except for the in-pit disposal (realignment of the tailing line will occur within the existing Touquoy Mine Site operational footprint).”

Vegetation conditions of forested wetlands removed or altered by the project will not be re-established for the life of the project, and will result in a loss of wetland habitat

function. For those wetlands that cannot be avoided and for those where direct and indirect effects cannot be entirely minimized, conservation allowances for affected wetland habitat for landbird SAR would be an important element to consider. It is recommended that the Proponent clarify whether there are instances where avoidance of habitat for landbird SAR is not technically feasible. If so, it is recommended that conservation allowances be considered in these cases where loss of wetland habitat for landbird SAR is unavoidable.

b. Migratory bird SAR potentially attracted to the project area by habitat alterations

It is recommended that activities related to vegetation removal be scheduled to avoid the breeding season of birds found in the project area. Habitat alterations related to mine construction and operation may result in the creation of habitat for migratory bird SAR. Landbird SAR may nest in the Project Area, including on project infrastructure. It is recommended that the proponent implement a migratory bird monitoring program throughout the lifespan of the Project to verify attraction and use of the project area by migratory bird SAR, including modified habitats and infrastructure.

The proponent is encouraged to implement beneficial management practices and mitigation measures to reduce the potential for migratory birds and species at risk to nest in the Project Area. Additional information on these measures should be provided, including the process to be followed in the event that a migratory bird or SAR is found nesting in modified habitats or on project infrastructure in the Project Area.

c. SAR monitoring

It is recommended that the proponent provide plans to monitor effects and effectiveness of mitigation measures on SAR and their habitat. In instances where success of proposed mitigation has a measure of uncertainty, it is recommended that the proponent provide a discussion of proposed adaptive management measures that could be implemented in a timely manner in the event that adverse effects are detected, and a commitment to adaptive management.

Deterrent Program

In Section 9.6, the Proponent states that “A deterrent system will be considered at the Touquoy Mine Site for the in-pit tailings disposal, like the existing deterrents currently used at the TMF. This will deter wildlife from using the Open Pit during and after filling which may have deleterious effects resulting from long-term exposure.”

It is recommended that the Proponent describe the current deterrent system used at the TMF, and results of monitoring showing the system’s effectiveness at keeping birds and wildlife out of the existing TMF. If the current system is successful, the Proponent

should consider implementing a similar system and monitoring plan at the Open Pit Tailings Management Facility.

### Spills

In the case of fuel and tailings spills into waterbodies, there is no consideration of effects on the birds that use them and no suggested mitigation for the effects of spills on birds.

A spill (fuel or tailings) could have significant impacts on the survival of these birds in the project area. Any adverse effect to fish can also be an adverse effect to migratory bird species that use wetlands, rivers and lakes. It is recommended that the Proponent provide a discussion of detailed mitigation measures to avoid harm to migratory birds in the project area in the event of spills, and provide a spill response plan.

### Avoiding harm to migratory birds

The *Migratory Birds Convention Act* (MBCA) protects most bird species in Canada however, some families of birds are excluded. A list of species under MBCA protection can be found at:

<https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/list.html> .

It is the responsibility of the proponent to ensure that activities comply with the MBCA and regulations. It is recommended that the Proponent consult the following website (Avoiding harm to migratory birds):

<https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds.html>

The Proponent has provided its Environmental Protection Plan (EPP) and Wildlife Management Plan (WMP) for the existing approved Touquoy facility; however, some measures listed in those plans are contrary to measures and best management practices that would support avoiding harm to migratory birds, their eggs and nests.

- In both the EPP and the EMP, the dates provided for the regional nesting periods for migratory birds are incorrect.
- In the EPP, the Proponent only commits to avoidance of clearing and grubbing activities during the nesting season “Whenever possible”.

- In both the EPP and the WMP, the Proponent proposes to do nest surveys in instances that it cannot avoid clearing during the regional nesting period for migratory birds. Nests in complex habitat are difficult to locate and adult birds avoid approaching their nests in a manner that would attract predators to their eggs or young. Except when the nests searched are known to be easy to locate without disturbing them, active nest searches are generally not recommended by ECCC; there is a low probability of locating all nests, and searches are likely to cause disturbance to nesting birds. In many circumstances, harm to migratory birds is likely to still occur during industrial or other activities even when active nest searches are conducted prior to these activities. Therefore, Environment and Climate Change Canada (ECCC) does not recommend nest searches in vegetation.
- Some species of migratory birds, including the SARA-listed (Threatened) Common Nighthawk, may be attracted to cleared areas for nesting. Should there be a delay between clearing and operational activities, ground nesters may be attracted to previously cleared areas for nesting. In such a case, nest surveys may be carried out successfully by skilled and experienced observers using appropriate methodology. Should any nests or unfledged chicks be discovered, these would need to be protected by an appropriate-sized buffer determined in consultation with ECCC.
- Between the EPP and the WMP, conflicting information is provided on who to contact in the event that a nest is found, and no clear direction is provided in the event that an active nest or an adult with chicks are discovered. Furthermore, no information is provided on steps to take in the event that dead birds are found.

It is recommended that the Proponent update the EARD, as well as the EPP and EMP, to include clear measures to avoid harm to migratory birds and who is responsible for implementation. The EPP and EMP should also include any additional measures identified for the protection of birds and their habitat during the EIA process.





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August 16, 2021

*Our file*      *Notre référence*  
21-HMAR-00410

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**Subject: Environmental Assessment Registration Document (EARD) – Touquoy Gold Project Site Modifications**

Dear Ms. Tutty:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your request to review the EARD for the proposed Modifications of the Touquoy Gold Project on July 12, 2021. We understand that the proponent is proposing the following:

- use of the exhausted Open Pit for tailings disposal in addition to the existing approved Tailings Management Facility (TMF);
- expansion of the Waste Rock Storage Area (WRSA) by 7.1 ha to a total area of 42.1ha which includes redirection of surface flow for approximately 20 ha back to WC#4 to mitigate project related effects;
- expansion of the Clay Borrow Area by 5.9 ha to a total area of 14.3 ha; and
- relocation of the road used to access the Mill Plant.

DFO has reviewed the EARD, select appendices and acknowledges the extensive supporting documentation that was submitted by the proponent as well. Due to the limited time period allocated to DFO for review and the extent of the material submitted, the Department could not conduct an extensive review of the entire submission package. Our review focused on sections of the EARD, appendices and supporting documents most relevant to the conservation and protection of fish and fish habitat. DFO offers the following comments for consideration:

## **General**

- Section 1.4.1 of the EARD states that the Touquoy open pit will be exhausted in 2022, the TMF will reach capacity in March 2022, and that expansion of the TMF would create an expedient solution for tailings management that would enable mining operation to continue. The EARD does not adequately explain why in-pit tailings disposal is required as a “longer term and therefore more viable solution”.
- Section 2.2.1 of the EARD states that “Once water quality meets the regulatory reclamation criteria without treatment, the site is prepared for closure in accordance with the Touquoy Reclamation and Closure Plan.” The proponent should indicate the estimated time period for this phase.
- Section 2.2.3: this section of the document should provide more information related to the depth / height of excavation for the clay pit. Will excavation extend below the water table such that dewatering will be required? If so, what are the potential effects on fish habitat (e.g., Watercourses #3 and 4).
- Section 2.3.4: In addition to scarifying, will reclamation of the site access road include regrading and sloping of the road side ditches prior to revegetation?
- Section 3.3.4 also states that “An investigation in 2020 determined that the reductions in flow rates in Moose River are greater than the dewatering rates from the Open Pit and therefore cannot be solely attributed to baseflow reductions to Moose River associated with the Open Pit”. DFO has reviewed this information, identified inconsistencies and issues with the proponent’s assessment and daily flow monitoring data for Moose River, and the Department has low confidence in the proponent’s conclusions based on this information. Additional information and studies are needed to understand whether project activities have resulted in flow reductions in Moose River.
- Section 3.3.4, Table 3.3 does not include additional monitoring recommendations to assess effects on Moose River.

## **Section 7.0 Surface Water Resources**

- Section 7.2.1 – The document defines the spatial boundaries for the assessment. The Local Assessment Area (LAA) is specifically defined; however, no rationale is provided for boundary limits selected / indicated. The proponent must describe how the limits of the LAA were established (logical and rationale) and provide evidence that they are reasonable (e.g. any assumptions made are reasonable).
- Section 7.3 – Definition of Significant Effect for Surface Water Quantity includes the following “Reduction of mean monthly flow (MMF) greater than 10% and where environmental maintenance flows cannot be sustained.” DFO’s Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada has recommended the following thresholds for potential impacts to fish and fish habitat:
  - Cumulative flow alterations <10% in amplitude of the actual (instantaneous) flow in the river relative to a “natural flow regime” have a low probability of

detectable impacts to ecosystems that support commercial, recreational or Aboriginal fisheries.

- Cumulative flow alterations that result in instantaneous flows < 30% of the mean annual discharge (MAD) have a heightened risk of impacts to fisheries.
- Use of average flows to assess ecological flow requirements is not appropriate because it does not adequately capture actual flow conditions in a watercourse such as the extreme low periods in the summer when even the natural flow regime of a watercourse could potentially inhibit fish from carrying out life processes. As per DFO's framework, flow alterations should be assessed using actual (instantaneous) flow. Having daily flow data would allow an assessment of the potential effects of the project during actual flow conditions.
- Section 7.4.6 states that additional surface water monitoring for WC#4 was initiated in the spring of 2021. If monitoring was conducted, where are the results and what conclusions can be reasonably derived from the monitoring? The proponent should provide this data.
- However, section 7.4.6 of the current EARD states that: "Current operations have primarily altered the catchment area boundaries of Watercourse #4..." and that these were approved and permitted as part of the original EA. DFO reviewed and participated in the original EA and is not aware of any predicted changes in the flow to this watercourse. It is important to note that the original EARD for the Touquoy Mine (Section 7.2.1, CRA 2007) indicated that WC#4 would remain unaltered. Table 7.6 of this EARD specifically quantifies the reduced catchment areas and stating that the total catchment area for WC#4 has been reduced from 279.7 ha to 180.1 ha as a result of current operations; a reduction of 99.8 ha or approximately 35%.
- The proposed modifications will result in an additional reduction of 12.9 ha of the WC#4 catchment area; however, the proponent proposes to redirect flow from 20.4 ha of the new and existing WRSA back to WC#4 which is expected to effectively achieve no net change in surface water quantity to WC#4 associated with the proposed project modifications. This mitigation does not account for the flow that has been lost due to existing operations.
- Section 7.6 states that "To avoid further Project effects to flows in Watercourse #4, a new WRSA sediment pond and treatment system designed for nitrate removal will be constructed at the water return location in Watercourse #4 to provide treatment for the portion of WRSA runoff returned to the watercourse." Further, Section 7.7.2 describes the estimated effects to water quality in WC#4 associated with the Project. DFO recommends that the proponent consult with Nova Scotia Environment and Climate Change (NSECC) and Environment and Climate Change Canada (ECCC) to discuss potential water quality concerns and establish the water quality monitoring requirements and individual parameter limits for the Project.
- Section 7.6 states that "A FDP will be established in Watercourse #4 to provide a control point for sampling of returned flow in accordance with MDMER regulation. The water quantity design goals of the new WRSA sedimentation pond will be to replace anticipated flow losses to Watercourse #4 from the WRSA and Clay Borrow

Area and to do so through hydrograph matching such that future instantaneous flows are maintained within 10% of existing flows.” DFO recommends that the proponent consult with ECCC regarding the new FDP.

- DFO recommends that the proponent consider the potential effects of all proposed Projects (Beaver Dam, Fifteen Mile Stream, Cochrane Project) in order to fully understand the potential effects to surface water resources, as well as fish and fish habitat, in the PDA, LAA, and RAA.

### **Section 8.0 Fish and Fish Habitat**

- Table 8.1 identifies Area (m<sup>2</sup>) of habitat loss as the only measurable parameter for Change in Fish Habitat Quantity. Area (m<sup>2</sup>) of fish habitat alteration and disruption are additional measurable parameters for both Change in Fish Habitat Quantity and Quality that are required for DFO to assess the proposed project activities under section 35 of the *Fisheries Act*.
- With respect to significance criteria, and as discussed with the proponent on a number of occasions, the significance determination as defined cannot be made during an environmental assessment process. In the event that DFO receives an application for *Fisheries Act* authorization for the proposed project works, undertakings, or activities, DFO cannot make a decision whether to issue a *Fisheries Act* authorization until an EA decision has been made. The decision whether to issue an authorization depends on the receipt of a complete and adequate application, considerations set out under section 2.5 of the *Fisheries Act*, and factors set out under section 34.1(1) under the Act.
- Baseline fish and fish habitat conditions for Watercourse #4 have not been provided (see comments below). It is not possible to determine the likelihood of recovery to baseline without detailed information on baseline conditions.

### **Section 8.4 Baseline Conditions**

- DFO recommends that proponents conduct fish habitat assessments, fish sampling surveys, and hydrological studies to understand and characterize fish and fish habitat and natural flow regimes in potentially affected watercourses and waterbodies to inform environmental assessments. Without this information, it is difficult to assess potential effects and any assessment conclusions will have a moderate to high degree of uncertainty.
- Pre-development baseline fish and fish habitat conditions in Watercourses #3, #4 and #12 have not been provided.
  - Were fish habitat assessment or fish sampling surveys performed prior to 2016/2017? Is there is information on the natural flow regime in these watercourses prior to 2016/2017?
  - DFO recommends that all relevant information available should be provided to inform the effects assessment.

- The proposed expansion of the WRSA has potential to result in effects to fish and fish habitat in Square Lake given that it will be in very close proximity to the lake. No baseline fish and fish habitat information for Square Lake has been provided. DFO recommends that additional fish and fish habitat surveys be conducted to characterize present fish and fish habitat conditions in Square Lake in the vicinity of the expansion.
- No baseline fish and fish habitat information is provided for Upper Fish River and Watercourse #14 beyond a high level description based on aerial imagery and speculative comments based on unspecified surveys in nearby areas.
- The proponent has not conducted fish sampling in Moose River since 2005/2006 and the data from these surveys has not been provided. DFO recommends that fish sampling in Moose River be conducted to update the baseline data from over 15 years ago. In particular, DFO is interested in the relative abundance and distribution of Atlantic Salmon, Brook Trout, and American Eel.
- The EA states that there have been no noted changes associated with fish or fish habitat in Square Lake, Upper Fish River, Watercourse #14, Watercourse #13, and Watercourse #3 following the development of the Touquoy Mine. In order to make this conclusion, fish and fish habitat studies would need to have been conducted in these waterbodies and watercourses before and after development of the mine. Based on information provided in the EA, it does not appear that any such studies have been conducted in these watercourses since development of the mine and information about pre-development conditions is very limited. DFO recommends the proponent provide additional information to support this conclusion.
- The EA states that there have been reductions in the catchment area of WC#4 which may have resulted in changes in flow, and that these were approved and permitted as part of the original EA. DFO reviewed and participated in the original EA and is not aware of any predicted changes in the flow to this watercourse. Section 7.1.2 Fish Habitat of the original EA Registration Document ([https://novascotia.ca/nse/ea/MooseRiver/MooseRiver\\_Registration.pdf](https://novascotia.ca/nse/ea/MooseRiver/MooseRiver_Registration.pdf)) states that Watercourse #4 “...will remain unaltered and a 30 m buffer be left intact.”
- Many watercourses in Nova Scotia experience moderate to extreme low flows during summer. Fish and fish habitat in these watercourses are sensitive to impacts from any reductions in flows from project activities. Any potential changes in flow from project works, undertakings, and activities have potential to result in a harmful alteration and disruption of fish habitat and should be reported and characterized in environmental assessments and subsequent permitting processes.
- Recent information from summer 2019 about Watercourse #4 has been provided in this section and in Supporting Document #14. This document shows that:
  - portions of Watercourse #4 were observed to be generally dry or have little to no flow due to low water levels; and
  - siltation from the haul road was observed in WC#4 and had affected fish habitat.

- Siltation of fish habitat has potential to cause a variety of impacts to fish and fish habitat, particularly salmonids such as Brook Trout. Additional quantitative baseline data and analysis on fish and fish habitat in Watercourse #4 prior to the siltation events is required to support the proponent's conclusion that it is unlikely the siltation events have resulted in a substantial change in spawning, overwintering, rearing or migratory use by the fish species that reside within Watercourse #4.
- DFO is concerned about potential impacts to fish and fish habitat in Watercourse #4 from siltation from the mine site, and a reduction in flows. The Department recommends that the proponent take immediate measures to prevent further release of silt into fish habitat from the mine site.
- DFO does not agree with the proponent's assessment that the habitat in Moose River is not suitable for Atlantic Salmon spawning. Fish surveys conducted for the original EA found that numerous juvenile Atlantic Salmon in Moose River in the vicinity of the mine site and concluded that the area provides good juvenile and rearing habitat and potential spawning habitat. DFO staff have conducted site visits in 2008 and 2020, and there are areas of habitat that may be suitable for Atlantic Salmon spawning.
- During range-wide electrofishing surveys conducted by DFO Science in 2008/2009, juvenile Atlantic Salmon were found in only 22 of 54 river systems in the Southern Upland Region. The Ship Harbour (Fish River -L. Charlotte) watershed, where the project is located, was one of these 22 river systems where juvenile salmon were detected (Bowlby et al 2014). DFO's Recovery Potential Assessment recommends that all of these 22 rivers can be considered the highest priority for habitat allocation and protection given they contain wild populations of Atlantic Salmon and their presence demonstrates that the freshwater habitat is of sufficient quality to support spawning and potentially the establishment of a wild self-sustaining population (Bowlby et al. 2014, DFO 2013).
- The EA states that low pH in Moose River may reduce habitat quality for Atlantic Salmon. The proponent measured pH of 5.5 and 5.9 in Moose River in 2020. DFO Science has identified rivers in the Southern Upland region with pH >5.0 as being mildly or un-impacted by acidification and suitable for Atlantic Salmon production (DFO 2013, Bowlby et al. 2014).
- The information provided by the proponent in Section 7 of the EARD and supplementary document #24 does not support the conclusion that groundwater drawdown to the open pit has only resulted in slight reductions in flow in Moose River. DFO has identified inconsistencies and issues with the proponent's assessment and daily flow monitoring data for Moose River, and the Department has low confidence in the proponent's conclusions based on this information. Additional information and studies are needed to understand whether project activities have resulted in flow reductions in Moose River.
- DFO recommends that additional information be provided to support the proponent's conclusion that the Atlantic Salmon observed in Moose River in 2005/2006 were likely to be landlocked salmon, including: the original fish sampling dataset, a

description of the sampling methodology and locations, photos of the juvenile salmon, and specific scientific information on exactly how colouring and size can be used to distinguish between anadromous and landlocked salmon.

- There is an abundance of scientific information regarding the population status of Southern Upland Atlantic Salmon and American Eel which has not been incorporated into the assessment (e.g., Bowlby et al. 2014, DFO 2013, DFO 2014, DFO 2020):
  - Indices show that the present abundance of Southern Upland Atlantic salmon is critically low and adult returns to the Lahave index river remain among the lowest returns on record. Region-wide comparisons of juvenile density data from 54 Southern Upland rivers indicate significant ongoing declines between 2000 and 2008/2009 and provide evidence for river-specific extirpations. Electrofishing surveys measured juvenile Atlantic Salmon density in the Ship Harbour (Fish River -L. Charlotte) watershed to be 4.54 fish per 100 m<sup>2</sup> in 2000 and 4.17 fish per 100 m<sup>2</sup> in 2008/2009.
  - Freshwater abundance of American Eel declined approximately 39% in the Scotia-Fundy Region from the late 1990s to 2013.
- Southern Upland Atlantic Salmon and American Eel are currently under consideration for listing under the *Species at Risk Act*. Upon listing of an endangered or threatened species, prohibitions under sections 32 and 33 of the Act come into force and a permit is required for any activities that are likely to result in a prohibited effect to listed species.
- The EARD states that “Connecting the engineered spillway with Watercourse #4 may result in a very small quantity of direct loss of fish habitat within the riparian area and below the ordinary high-water mark.”. DFO requires additional information (e.g., description of affected habitat, area of habitat affected, nature of effects, engineering design, etc.) to determine whether this activity is likely to result in a HADD requiring authorization under the *Fisheries Act*.
- Depending on the magnitude, changes in flows from project activities can result in a seasonal or permanent change in fish habitat quantity. For example, the very low water levels and minimal flow that have been observed in Watercourse #4 during summer indicate that this habitat is unlikely to support fish during such conditions, and that there has been a change in habitat quantity relative to pre-development conditions and/or seasonal high flow periods.
- It is DFO’s understanding that development of the clay borrow pit to the east of the mine site has resulted in sedimentation of fish habitat in an adjacent watercourse. This suggests there is a potential for similar impacts to occur to nearby watercourses (e.g., Watercourse #4) from the development of the proposed clay borrow area.
- The EARD states that the use of explosives may be required to construct the engineered discharge. DFO needs additional information regarding the use of explosives to determine whether this activity is likely to result in the death of fish and/or a HADD of fish habitat requiring authorization under the *Fisheries Act*.

## Section 8.6 Mitigation

- The EARD references the application of “proven mitigation measures”. DFO recommends the proponent provide information to support this statement and the likely effectiveness of the mitigation measures.
- As described in the EARD, sedimentation of fish habitat from the mine site has occurred on a number of occasions which suggests limited effectiveness of erosion and sediment control measures.
- The EARD states that “work operation will be conducted at a time and in a manner to protect watercourses from siltation and disturbance.” The proponent should describe the specific temporal period and manner and explain how they will protect watercourses.
- How will erodible material be stabilized from the clay borrow area? Small sediment particles are easily mobilized during precipitation events.
- Section 7 of the EARD indicates that daily flow monitoring in Watercourse #4 in March 2021. DFO recommends all information and data associated with this monitoring be provided to NS ECC and DFO prior to commencement of the work to ensure it is sufficient for effects monitoring. Ongoing monitoring of flows in Watercourse #4 is recommended so that NS ECC and DFO can verify the effect predictions.
- If connecting the engineered spillway to Watercourse #4 may result in a direct loss of fish habitat, then residual effects to fish habitat will not be avoided as suggested in the EARD.
- The EARD states that changes in watershed area or discharges associated with flows in other watercourses and waterbodies within the LAA were below the level where detectable changes to the ecosystem could be measured. An assessment of effects (e.g., changes in flows) to watercourse #3 from the clay borrow pit was not provided. DFO recommends the proponent provide an assessment of effects to this watercourse.
- DFO recommends the proponent discuss requirements under section 36 of the *Fisheries Act* and the MDMER with Environment and Climate Change Canada for the proposed project activities.
- When is “recovery to baseline” for the various affected watercourses anticipated?
- While discharges to Moose River from the open pit may meet the MDMER concentration limits, results of ECCCC’s Third National Assessment of Environmental Effects Monitoring Data from Metal Mines shows that effluent from mines meeting the MDMER concentration limits are often associated with a variety of adverse effects to fish and fish habitat downstream, including effect levels that are considered to pose a higher risk to the environment (ECCC 2017).
- Should Southern Upland Atlantic Salmon and/or American Eel be listed under the *Species at Risk Act*, the proponent may require a permit under the Act for any prohibited effects to these species from the planned discharges.
- DFO recommends the proponent provide more empirical data to support the conclusion that water temperature in waterbodies and watercourses receiving discharges



from the mine site will not be affected. DFO recommends a follow up monitoring program to verify these predictions.

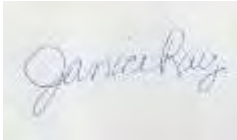
- Additional information is need to support the conclusion that fish in Watercourse #3 will not be affected by stranding. Any changes in flow to this watercourse will not be mitigated by discharge from the sediment pond.
- The EARD states that there is the potential for sublethal effects to fish, however these are unlikely to result in changes in the existing productivity or sustainability of fish populations within the LAA. The proponent should identify the potential sub-lethal effects that could occur, and explain how they will not change productivity of fish populations using scientific information.

## References

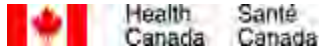
- Bowlby, H.D., Horsman, T., Mitchell, S.C., and Gibson, A.J.F. 2014. Recovery Potential Assessment for Southern Upland Atlantic Salmon: Habitat Requirements and Availability, Threats to Populations, and Feasibility of Habitat Restoration. DFO Can. Sci. Advis. Sec. Res. Doc. 2013/006. vi + 155 p. Available here: <https://waves-vagues.dfo-mpo.gc.ca/Library/359664.pdf>
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- Environment and Climate Change Canada. 2017. Third national assessment of environmental effects monitoring data from metal mines. <https://www.canada.ca/en/environment-climate-change/services/managing-pollution/publications/third-national-assessment-monitoring-data.html>

If you have any questions with the content of this letter, please contact Janice Ray at our Dartmouth office at (902) 494-3508 or by email at [Janice.Ray@dfo-mpo.gc.ca](mailto:Janice.Ray@dfo-mpo.gc.ca) or Chris Burbidge at 902-233-9731 or by email at [Christopher.Burbidge@dfo-mpo.gc.ca](mailto:Christopher.Burbidge@dfo-mpo.gc.ca). Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

A rectangular box containing a handwritten signature in cursive script that reads "Janice Ray".

Janice Ray  
Senior Regulatory Reviews Biologist  
Ecosystems Management  
Maritimes Region



Environmental Health Program  
Regulatory Operations and Enforcement Branch  
1505 Barrington Street, Suite 1817  
Halifax, NS B3J 3Y6

August 16, 2021

Bridget Tutty  
Nova Scotia Environment and Climate Change  
Suite 2085 1903 Barrington St  
Halifax, NS

Subject: Health Canada's Comment(s) – Review of the Touquoy Gold Project Modifications –  
Environmental Assessment Registration Document<sup>1</sup>

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Dear Bridget Tutty,

Thank you for your e-mail dated July 12, 2021 requesting Health Canada's review of the above-mentioned Environmental Assessment (EA) Registration document<sup>1</sup> with respect to issues of relevance to human health. Health Canada has reviewed the document and is providing the following information with respect to receptor location(s), noise, air quality, water quality, and country foods.

**Project Location and Characteristics:**

The Touquoy Gold Project is an open pit gold mine operated by Atlantic Mining NS Inc (AMNS). The Touquoy Gold Mine is located in Moose River, Nova Scotia, approximately 63 km northeast of Halifax and 19 km southeast of Middle Musquodoboit. A public road (Mooseland Road) bisects the Mine Site. The nearest First Nation land is Beaver Lake Reserve No. 17, which is approximately 13 km from the Touquoy Mine Site, and is associated with the Millbrook First Nation. The Touquoy Gold Project was approved in 2008, started mining operations in 2017 and attained commercial production in March 2018, with an estimated life of four to six years. The Proponent (AMNS) is proposing modifications to the approved Touquoy Gold Project (IA #2012-084244-08) that are required to support ongoing mining operations. These modifications are listed below and represent the Project to be assessed in the EA Registration document. The proposed modifications include use of the exhausted open pit for tailings deposition, expansion of the waste rock storage area and clay borrow area, and the

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<sup>1</sup> Atlantic Mining NS Inc. Environmental Assessment Registration for the Touquoy Gold Project Modifications. July 2021.

realignment of the plant access road used to access the mill facility and administrative buildings. The approved development area of the mine site is approximately 271 ha, the proposed project modifications will add approximately an additional 18 ha.

### **Receptor Location(s):**

The EA Registration document does not clearly identify the locations of the nearest receptors that may be impacted by the proposed project. The EA Registration document states:

*“The nearest permanent full-time occupied residences are located approximately 5.8 km to the north of the Open Pit, along Caribou Road. The next closest permanent residences to the Touquoy processing plant and TMF are located approximately 7.4 km to the northwest and 11.7 km to the southeast.”*

and:

*“Other land uses in the area have included residential and recreational land use. Recreational land use includes hunting, trapping, fishing, canoeing, camping and cottage use (particularly on Scraggy Lake and Lake Charlotte). Camp Kidston, which operates only in the summer months, is located on Long Lake, approximately 3.5 km northeast of the Mine Site.*

However, the Registration document does not identify the distance to any other individuals that may be impacted by the proposed Project activities currently and in the future. These would be human receptors that are temporarily present or expected to be present in the future at traditional or recreational use areas within close proximity to the Project.

- It is important to clearly identify and describe all existing and reasonably foreseeable human receptors in the Project areas. The characterization of all potential human receptors typically includes the location(s) in the project’s local assessment area (LAA) and regional assessment area (RAA) and distance(s) to the project site(s) and activities for each receptor - including a description of how the receptors were identified (e.g. recent land use maps, verification in person). Such human receptors include individuals that are present or expected to be present in the future within the spatial boundaries of the project and/or could be affected by the project as well as individuals with permanent residences or temporary use areas (e.g., cabins, campsites, recreational use, seasonal occupancy, transient use for traditional land and resource activities).
- When identifying potential human receptors, consideration should be given to potentially sensitive and/or unique receptors that may be exposed to increased levels of risk due to physiology, health status, behaviour, and/or lifestyle. Examples include seniors, pregnant or nursing mothers and infants (particularly where contaminants of potential concern [COPC] are known to biomagnify or exhibit potential neurotoxic or fetotoxic effects), and consumers of higher quantities of local country foods (Indigenous peoples, fishers,

hunters, trappers) that may receive greater exposure to COPCs. Note that types of human receptors (permanent, seasonal or temporary) in a particular area will depend on land and resource use.

- If there are human receptors (permanent, seasonal or temporary) within the vicinity of the proposed project, impacts to human health should be considered.

### **Noise:**

The EA Registration document states:

*“Construction vehicles and machinery associated with the Project activities will generate air emissions (including greenhouse gases and dust) and noise emissions. These emissions will be localized, temporary, managed in accordance with existing management plans and IA conditions.”*

and:

*“As per the EPP for the Touquoy Gold Project, sound levels measured at stations situated at or beyond the Project property boundaries will not exceed the following equivalent sound levels (Leq – Equivalent Continuous Sound Pressure Level): 65 dBA 0700-1900 hours (Days); 60 dBA 1900-2300 hours (Evenings); 55 dBA 2300-0700 hours (Nights).”*

and:

*“In all areas of the site, bands of trees will remain to provide a natural barrier to view, noise, and dust.”*

- Given that the project involves the expansion of the Waste Rock Storage Area and Clay Borrow Area, construction of the relocated Plant Access Road and an area required for ancillary features associated with these Project components (e.g., ditching, monitoring wells, parking lots) resulting in approximately 18 ha of direct impact within the existing mine property and in close proximity to recreational use areas, there may be an increase in noise in the Project area. For instance, during the construction phase of the Project, noise will consist of the following activities: overburden removal activities, tree cutting and mulching, blasting and excavating, equipment mobilization and roadbed construction, and transportation. There is a potential for cumulative impacts associated with noise levels from all sources (existing and future).
- The Proponent has been conducting blast monitoring for air concussion and ground vibration at the Project site since 2017. However, it is not clear if monitoring of sound levels due to background sources or other operational activities at the Project property boundaries is being undertaken as baseline noise data was not provided in the document

submitted for review. In order to determine whether noise levels may increase to such an extent that it may affect nearby receptors (e.g. annoyance), the noise levels should be modelled or measured and compared to the historical noise monitoring (if available) or baseline noise modelling results. Health Canada advises that a discussion providing updated locations and proximity(ies) of the nearest human receptors to the mine be done to determine if noise could be an issue with the Project.

- Health Canada's approach to noise assessment is to consider a variety of internationally recognized standards for acoustics (i.e. United States Environmental Protection Agency (U.S. EPA 1974), CAN/CSA ISO standards). Health Canada considers the following noise-induced endpoints as health effects: noise-induced hearing loss, sleep disturbance, interference with speech comprehension, complaints, and change in percent highly annoyed (%HA). The approach advised by Health Canada to noise assessment is based on the best possible characterization of baseline and project-related noise and its impact on potential noise-sensitive receptors<sup>2</sup>.
- In general, Health Canada suggests that impulsive noise sources (e.g. hammering, pile driving, blasting) be avoided at night and in the early morning. Further, Health Canada suggests that noise management and noise monitoring plans, including complaint resolution, as appropriate, be included as part of an Environmental Management Plan. Given the uncertainties in modelling noise, if actual noise levels exceed predicted levels at the nearest receptor, noise monitoring and/or additional mitigation may be required, particularly in the event of public complaints.
- While Health Canada suggests the use of natural landforms (earth berms) as a noise barrier, the presence of vegetation should not be considered a significant means of reducing noise levels given that vegetative shields do not absorb much sound as per ISO 9613-2 1996<sup>3</sup>.

For additional information, please review Health Canada's guidance on human health risks related to noise.

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<sup>2</sup> International Standards Organization (ISO). 2003. Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures. ISO 1996-1:2003.  
ISO. 2002. Acoustics – Description, measurement and assessment of environmental noise – Part 2: Determination of environmental noise levels. ISO/CD 1996-2.  
U.S. EPA. 1974. Office of Noise Abatement and Control. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.

[www.nonoise.org/library/levels74/levels74.htm](http://www.nonoise.org/library/levels74/levels74.htm)

WHO. 1999. Berglund, B., Lindvall, T. and Schwela, D.H., eds. Guidelines for Community Noise.  
[www.who.int/docstore/peh/noise/guidelines2.html](http://www.who.int/docstore/peh/noise/guidelines2.html)

<sup>3</sup> International Organization for Standardization (ISO). 1996. ISO 9613-2: Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation.

Health Canada. 2016. *Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise*. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. <http://publications.gc.ca/pub?id=9.832514&sl=0>

### **Air Quality:**

The EA Registration document states:

*“Fuel combustion from construction vehicles and machinery will result in the emission of greenhouse gases (GHG) and air contaminants, including carbon dioxide, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, and particulate matter (PM, PM10, PM2.5)...*

and:

*“Construction activities, including clearing and site preparation and movement of equipment and vehicles, will also result in fugitive dust emissions.”*

- In general, mining operations create several sources of atmospheric emissions, including greenhouse gases and particulate emissions, from fuel burning vehicles and equipment, and dust emissions generated from extraction, crushing, material handling, and transportation of the waste rock and other unconsolidated material (e.g., sand and gravel).
- In addition to dust, heavy equipment used for construction and tailings disposal can also lead to increased levels of particulate matter (PM) and fuel combustion by-products such as diesel engine exhaust, which is a mix of gases and particles, including criteria air pollutants and air toxics.
- As no historical air quality monitoring data was provided in the report to indicate the current ambient levels of criteria air pollutants and air toxics, it is not possible to evaluate whether there may or may not be adverse effects on human health as a result of air emissions from the project in the future, and also from future project activities including emissions from existing projects (cumulative impacts). In order to evaluate the potential emissions from the Project, Health Canada advises that a review of Health Canada’s air guidance be undertaken with a discussion providing locations and proximity(ies) of the nearest human receptors and predicted air contaminant concentrations at these receptors.
- If there is the potential for impacts to human receptors from air quality changes (dust or fumes including NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, and VOCs), the proponent may need to establish mitigation measures as well as a process to ensure that any complaints are collected and addressed. If complaints are received additional mitigation measures may be required.

- Health Canada prefers that all projects attempt to minimize air emissions to the greatest extent possible. To this end, Health Canada encourages the use of all available mitigation measures that are technically and economically feasible to limit negative impacts to air quality. Health Canada prefers that mitigation measures also be used in instances when project-related human health impacts are considered minor (in keeping with the Canadian Ambient Air Quality Standards principles of Keeping-Clean-Areas-Clean and Continuous Improvement). If a low-cost mitigation measure exists and its ability to reduce harmful air emissions is well established, Health Canada encourages the implementation of the measure. It is good practice to describe in the EA documentation the mitigation measures to be employed to address any exceedances or near-exceedances of common ambient air pollutants.

For additional information, please review Health Canada’s guidance on human health impacts related to air quality.

*Health Canada. 2016. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. <http://publications.gc.ca/pub?id=9.802343&sl=0>*

### **Water Quality:**

The EA Registration document outlines several potential project activities that may negatively impact water quality in the area, including drinking water sources (groundwater or surface water) and recreational water uses characterized by multiple contaminant exposure pathways (ingestion, inhalation and/or dermal contact). The Registration document states:

*“The deposition of tailings into the exhausted Open Pit has the potential to interact with groundwater quality around the Open Pit, as well as water quality in Moose River from groundwater seepage into the river. Groundwater in the filled Open Pit has the potential to seep to Moose River during the post-closure phase of the Project.”*

and:

*“Of the 6.3 ha area of WRSA expansion, 5.1 ha is in the Watercourse #4 catchment and 1.2 ha is in the Scraggy Lake catchment (reporting specifically to Square Lake which drains via the Fish River to Scraggy Lake). Runoff associated with the WRSA is considered to be mine-contact water and has the potential to contain increased TSS, nutrients and possible contaminants of potential concern.”*

- Environmental water pollution from gold mines is associated mainly with the release of harmful elements from the tailings and other mine wastes into water. The infiltration of water through tailings piles and ponds, ore, and waste rocks may lead to leaching of large volumes of metals and sulphate ions into watercourses.



- Nearby drinking and/or recreational water quality may also be impacted by accidents or malfunctions, such as a fuel spill, by dust and increased sediment runoff, and by the other potential interactions associated with the deposition of tailings, related associated surface water management activities, and metal leaching/acid rock drainage management activities.
- If surface water and groundwater monitoring indicate concentrations for potential contaminants above applicable guidelines and standards (such as the Guidelines for Canadian Drinking Water Quality [GCDWQ], Guidelines for Canadian Recreational Water Quality [GCRWQ], or provincial standards), the proponent should consider establishing additional monitoring (spatially and temporally), mitigation or other risk management measures.
- The document states that Camp Kidston, which is located on Long Lake 3.5 km northeast of the Touquoy Mine Site, is the only potential groundwater well user known to occur nearby the Project Development Area (PDA). If other sources of drinking water are determined to exist in the LAA, baseline sampling of these wells for quantity and bacteriological and chemical quality may be necessary. Health Canada prefers that private well owners affected by a project be notified of potential changes in their water quality.
- To adequately assess the potential for human health impacts associated with changes to recreational water resources resulting from the Project, it is important to collect baseline information regarding type, location and duration of recreational water activity. To identify all potential exposure pathways, this should include a description of the types of activities practiced on or in these waters (Long Lake and the Fish River-Lake Charlotte watershed [Moose River, Fish River, Square Lake, Scraggy Lake and Lake Charlotte]). If recreational water quality could be subjected to an environmental effect due to the Project, Health Canada prefers that the appropriate authorities be notified and recreational users be informed.
- The document indicates that water quality monitoring will determine if the in-pit tailings disposal water can be directly discharged to Moose River or whether it must be treated before it is discharged. Predictions of in-pit water quality and downstream concentrations in Moose River are provided in Table 7.27. However, the effects assessment appears to use average predicted concentrations. Using baseline 95<sup>th</sup> percentile concentrations plus maximum predicted concentrations (baseline + project) would result in a more conservative assessment. Furthermore, The Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (CWQGFAL) and the Metal and Diamond Mining Effluent Regulations (MDMER) are not intended to be used as criteria to screen contaminants in groundwater and surface water that may pose a risk to human health.

For additional information, please review Health Canada's guidance on human health impacts related to water quality.

*Health Canada. 2016. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Drinking and Recreational Water Quality. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.*  
<http://publications.gc.ca/pub?id=9.832511&sl=0>

### **Country Foods:**

The registration document states:

*“(...) a Mi'kmaq Knowledge Study (MKS) was also commissioned in 2005 to evaluate the cultural and heritage resources in the Musquodoboit Valley and Shubenacadie region to inform planning for the Touquoy Mine Site. The MKS included the study of current and historic Mi'kmaq Land and resource use, evaluated the potential impact and significance of project activities, and made recommendations to proponents and regulators for mitigation measures. The MKS also recommended further study or consultation with Mi'kmaq, where necessary (CMM 2005). The MKS concluded that historic land use occurred pre- and post-contact in the region and is ongoing with Mi'kmaq using the region for hunting, collecting of medicinal plants, ceremonial purposes, gathering or habitation purposes.”*

- Section 10 of the registration document discusses potential impacts of the mine expansion to cultural and heritage resources, however, there is no discussion in the document concerning the potential for contamination of the country foods harvested in the area. As noted previously, recreational land use includes hunting, fishing, and trapping; and traditional Mi'kmaq land use includes hunting and the collection of medicinal plants. However, no specific information is provided on the country foods consumed from the vicinity of the project. If the potential for country food contamination exists, the proponent should consider additional mitigation measures.
- Contamination of country foods may occur through the deposition of airborne contaminants during construction and/or operation of the mine expansion, increased sediment runoff from the larger mine area footprint, accidents (e.g. fuel spill) during construction and/or operation, discharge of mine effluent to the aquatic environment, and interactions between groundwater and the surrounding aquatic environment.
- The potential for country food contamination may be greatest in Moose River and Scraggy Lake due to the discharge of collected water from the mine and effluent from the in-pit tailing disposal to these waterbodies, and migration of groundwater from the open pit. Table 6.6 shows predicted average groundwater concentrations discharging to Moose River, Table 7.16 shows the surface water quality seasonal mean at the Scraggy Lake outlet, and Table 7.27 shows the predicted water quality in effluent and Moose River downstream of the open pit spillway during the active closure phase. Many of the

contaminants present in the impacted groundwater and/or surface water have the potential to bioaccumulate in the food chain (e.g. mercury, arsenic). If the potential exists for bioaccumulation of COPCs from mine effluent/discharge in country foods (e.g. fish), the proponent should consider additional mitigation and monitoring of country foods.

- While Health Canada does not provide advice on possible changes in country foods abundance, it is nevertheless recognized that projects may damage habitat and disperse wildlife, altering abundance and availability; therefore this aspect should also be considered when assessing environmental impacts on fish and fish habitat of the proposed project, in accordance with current federal and provincial legislation.

For additional information, please review Health Canada's guidance on human health impacts related to country foods.

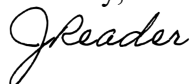
*Health Canada. 2018. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Country Foods. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. <http://publications.gc.ca/pub?id=9.855584&sl=0>*

Health Canada's mandate with respect to EAs is to provide specialist or expert information or knowledge in its possession to support the Responsible Authority under the federal EA process. Health Canada reviews potential impacts on human health and proposed mitigation measures related to air and water pollution, contamination of country foods, and exposure to noise and radiation. Health Canada does not approve or issue licenses, permits or authorizations in relation to the EA of proposed major resource and infrastructure development projects (such as mines).

As such, Health Canada advises that additional information related to the above topics be provided to Nova Scotia Environment (NSE) for review. Health Canada would then be available to provide further support to NSE only if specific concerns regarding potential risks to human health related to this project arise in the future.

If you have any comments/questions, please contact the undersigned at your convenience.

Sincerely,



Jeff Reader, M.Sc.

Environmental Assessment Specialist  
Health Canada, Atlantic Region  
email: [jeffrey.reader@canada.ca](mailto:jeffrey.reader@canada.ca)

cc: Beverly Ramos-Casey, Manager, Environmental Health Program, Health Canada, Atlantic Region

Date: August 16, 2021

To: Bridget Tutty, Nova Scotia Environment & Climate Change - EA Branch

From: Wetland & Water Resources Specialist, Water Resources Management Unit

Subject: Touquoy Gold Project Modifications EA - Wetlands

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**Scope of Review:**

The following review of the AMNS Touquoy Gold Project Modifications Environmental Assessment Registration Document (EARD) (AMNS, July 2021) is specific to the mandate of the NS ECC Wetlands Program within the Sustainability and Applied Sciences (SAS) Division. The review considers whether the environmental concerns associated with wetlands and the proposed mitigation measures to be applied have been adequately addressed within the EARD. The recommendations provided below are meant to supplement the actions outlined in the EARD.

**Reviewed Documents:**

- Stantec. 2021. *Touquoy Gold Project Modifications - Environmental Assessment Registration Document*. Atlantic Mining Nova Scotia Limited.

**General Comments:**

*Summary of Wetland Findings:*

- Twelve wetlands exist partially or fully within the Local Assessment Area (LAA) associated with this EARD, as follows:
  - Wetlands 6, 28 and 35 are within the Clay Borrow Area expansion LAA
  - Wetlands 15 and 17 are within the WRSA expansion LAA
  - Wetlands 22, 25, 27, 40 and 49 are within the Open Pit LAA
  - Wetlands 32 and 29 are within the Plant Access Road LAA

*Wetlands of Special Significance:*

- One *Wetland of Special Significance* (WSS) was identified (Wetland 15), based on the presence of Blue Felt Lichen (*Pectenium plumbeum*) within its boundaries.
- Any mitigation or permitting related matters for addressing occurrences of blue felt lichen within the WSS will require coordination with the appropriate staff at NSDLF Wildlife Division.
- Within the EARD, Wetland 15 appears to be proposed for alteration, based on the

statement quoted below (Section 9.7.1). The proponent presupposes that permit applications will be entertained for altering this Wetland of Special Significance. Insufficient rationale is provided as to why this WSS is considered to be exempt from the normal permitting restrictions for WSS – i.e., that no permits will be issued for WSS alteration unless the Project activities meet the definition of ‘Necessary Public Function’ per the *NS Wetland Conservation Policy*. As described in the EARD, the current undertaking does not meet the definition of ‘Necessary Public Function’.

*“Wetland 15, which has one blue felt lichen occurrence (SAR), is expected to be partially altered by the WRSA expansion (Figure 9.4). However, the blue felt lichen occurrence is over 125 m from the PDA, on the western wide of Watercourse #4 and is therefore not expected to be indirectly impacted by the edge effects. Due to the proximity of the occurrences to existing mine developments (~50 m), it is not expected that new Project activities because of this EARD (waste rock storage) will further impact this occurrence of blue felt lichen through dust deposition.”*

- It should be noted by the proponent that all wetlands within the Ship Harbour Long Lake Wilderness Area (located downstream of Touquoy Project Area) are considered Wetlands of Special Significance. Any Project activities that influence either quality or quantity of the hydrologic inputs to these wetlands could be considered a wetland alteration, and would not be permitted. Potential for decreased quality of outflow waters from the Touquoy pit lake into Moose River has been identified in the EARD, and could be in turn influence the conditions in some of these WSS. Maintenance of water quality and quantity shall be considered by the proponent in their Project design, and addressed in their wetland monitoring plans.

#### *Wetland Impacts:*

- *Avoidance:* Avoidance of impacts to the WSS at Wetland 15 has not been well demonstrated in the EARD. Avoiding unnecessary impacts to any WSS should be considered a top priority in Project design, as permit approvals may not necessarily be granted without full consideration of avoidance.
- *Direct Impacts:* It is indicated in Table 9.18 of the EARD that Wetlands 15 and 17 will be partially altered during the Project development, for a total infilled area of approximately 0.99 ha.
- *Indirect Impacts:* It is stated within the EARD that no indirect impacts are predicted; however, in regards to the statement below (Section 9.7.2), whether indirect impacts are realized or not must be determined based on the outcomes of the ongoing monitoring programs at the Touquoy site. There are apparently no established monitoring methods to evaluate groundwater quality impacts, either short-term or long-term.

*“Riparian wetlands along the Moose River west of the Open Pit, and wetlands located south of the Open Pit within the LAA may be affected by direct groundwater seepage discharge during Open Pit re-filling because of tailings deposition. The quality of this groundwater seepage has been predicted to support this EARD and presented in Appendix D.1 (Stantec 2021b). This modelling effort has predicted that groundwater*

*seepage may discharge to surface water and wetlands within the defined LAA including WL22, WL27, WL40, WL49 and WL56.”*

*Wetland Evaluation:*

- *Plant Communities:* General wetland plant communities are well documented in text form, and cross-referenced to appropriate existing vegetation classification schemes, where these exist. Wetland plant communities are not mapped in any way in the EARD or appendices, whereas they are for the upland plant communities.
- *Functional Assessment:* Functional evaluation of wetlands within the EARD are provided using the NovaWET evaluation technique, which remains a valid approach for the purposes of the EARD; however, for future regulatory applications for any wetlands to be altered, it is recommended that WESP-AC be used to evaluate those wetlands.

*Mitigation and Monitoring:*

- Mitigation of impacts to wetlands on the Project site is proposed by the proponent to be addressed within the context of the various plans indicated in section 9.6 of the EARD. Any additional wetland impacts resulting from the proposed undertaking shall be evaluated within the context of the current and ongoing monitoring program at the Touquoy mine site.
- In consideration of the values presented in Appendix D1, Table 5.4: details are lacking on how long-term changes (i.e., beyond the period of time required to fill the pit lake) in groundwater quality may effect wetlands, and how any potential indirect impacts are to be addressed.

**Conclusions & Recommendations:**

Beyond the estimates of wetland area removal, there is insufficient information provided in the EARD to predict whether adverse environmental effects on wetland function will occur. A series of recommendations are provided below.

*Planning/Design Issues:*

- The proponent, in their Project design, shall make every effort to avoid impacting the WSS at Wetland 15. As it stands, the proposed Project does not meet the definition of ‘Necessary Public Function’ per the *NS Wetland Conservation Policy*, and as such permit approvals may not necessarily be granted for alteration of the proposed 0.62 ha of alteration to Wetland 15.
- The proponent shall ensure that those wetlands identified in Table 9.18 in the EARD are incorporated into their current wetland management and monitoring framework, including (but not necessarily limited to) the *Wetland Protection Plan*, *Wetland Compensation Plan*, and *Wetland Monitoring Plan* indicated in section 9.6 of the EARD.

*Operational Issues/Other Permitting Processes:*

- Should the Project receive EA approval, the proposed activities will be subject to the NSE Wetland Alteration Approvals process prior to any wetland impacts.
- Should the Project receive EA approval, the results of WESP-AC functional assessments for any wetlands to be altered shall be submitted as a component of the ensuing NSE Wetland Alteration Approvals process.

- Should the Project receive EA approval, the *Wetland Monitoring Plan* shall be updated to address indirect impacts related to the foreseeably decreased long-term water quality in WL22, WL27, WL40, WL49 and WL56. Likewise, far-field monitoring approaches shall be proposed for representative WSS within the Ship Harbour Long Lake Wilderness Area, in order to determine the magnitude of downstream indirect impacts resulting from the proposed undertaking.

**Environment and  
Climate Change**

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Date: August 16, 2021

To: Bridget Tutty, Nova Scotia Environment & Climate Change

Cc: Manager, Water Resources Management Unit

From: Surface Water Quality Specialist, Water Resources Management Unit

Subject: Touquoy Gold Project Modifications

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**Scope of Review:**

As Surface Water Quality Specialist with the Nova Scotia Environment and Climate Change (NSECC) Sustainability and Applied Science Division, the following Touquoy Gold Project Modifications Environmental Assessment (EA) review focuses on surface water quality, with additional commentary on the following subjects: surface water quantity and groundwater quantity and quality.

The following review considers whether the environmental concerns associated with the above subjects and the proposed mitigation measures have been adequately addressed in the EA Registration Document (EARD) and its Appendices. The recommendations provided below are meant to supplement the actions outlined in the EARD.

While general comments on fish and fish habitat, wetlands, surface water quantity, and groundwater quality and quantity may be included below, applicable technical specialists should be consulted for specific review and comment.

**Reviewed Documents**

The following documents formed the basis for this review:

1. Stantec Consulting Ltd. 2021. *Environmental Assessment Registry Document, Touquoy Gold Project Modifications. Dartmouth, Nova Scotia.*

**Comments:**

General to the Project

- The EARD and Appendices / Supplementary Documents are intended to serve as the sole basis for the evaluation of the proposed activities. However, the report refers to dozens of additional reports without summarizing the relevant content presented therein. The majority of these additional are not presented to reviewers and therefore compromise the reviewers' ability to comprehensively review the adequacy or accuracy of information presented and conclusions reported.



- Example: Section 12.1, WRSA Slope Failure: “Additional information on slope stability and the surveillance program associated with the WRSA is included in Golder (2020).” In this instance, the reviewers’ ability to assess the adequacy of the slope stability assessment and associated surveillance program limit the reviewers’ ability to determine if the planned surveillance represents an adequate mitigation against the risk of WRSA slope failure.

#### Water Resources

- The proposed project modifications (Waste Rock Storage Area and Clay Borrow Area) will impact 17.68ha of wetlands, directly and indirectly, and will require the submission of an application for a new wetland alteration approval.
- It is noted that the current project directs all tailings to a specifically designed TMF with liner materials along its margins, and that the proposed project will redirect future tailings disposal to an flooded (exhausted) open pit with no geengineered features to limit groundwater flow to the surrounding environment. The proposed modification, by design, will increase the risk of tailings materials leaving the pit lake through subsurface flow to the receiving environment, at concentrations and flow rates that, although modeled, are subject to model limitations and errors.
- It is noted that the applicant intends to stop dewatering operations approximately five months before starting tailings deposition in the exhausted Open Pit, allowing sufficient time for surface water and groundwater inflow and precipitation to create subaqueous conditions for said disposal. The proposal does not indicate a minimum acceptable water depth for safe and sustainable subaqueous flow, provide model results to indicate whether this depth will likely be achieved, or indicate if any monitoring activities have been planned to ensure satisfactory depth exists prior to tailings deposition.
- It is noted that the Open Pit is modeled to have capacity to receive all projected tailings disposal from the Touquoy Mine after the Tailings Disposal Facility closes, as well from associated Gold Mines located elsewhere in the area, for which project approvals remain in the application stages. The applicant’s demonstrated experience at the Touquoy Mine suggests, however, they significantly underestimated the volume of tailings disposal due to variation in ore yield from original projections. There is an unstated risk that such experience could occur at other Gold Mines operated by the applicant, which could lead to increased tailings generation. The EARD does not adequately characterize the risk that the Open Pit does not have the capacity to hold possible increases in tailings generated, should other proposed projects proceed.
- The applicant identified several criteria to determine if project modifications would cause significant changes to surface water quality: i) sustained exceedance of (Metal and Diamond Mine Effluent Regulations (MDMER) limits; ii) sustained exceedance of NS Tier 1 EQS levels applied in Industrial Approvals); iii) water quality degradation causing acute toxicity to aquatic life; iv) changing trophic status of a watercourse, and v) exceeding CCME FAL TSS guideline.
  - It is noted that changes in the trophic status of watercourses are not effectively measured at this time – all reported TP concentrations were based on a high-level TP detection limit (100 ug/L) which precludes the possibility of detecting any differences between trophic status other than hyper-eutrophic and below.
  - Three sets of water quality guidelines apply to the proposed Project Modifications: MDMER, NS EQS, and any additional parameters / guidelines specified in the proponent’s Operating Approval – principally derived from the CCME PAL (FW). It is noted that, in many cases, the applicant’s proposal indicates that modeled water quality will meet MDMER criteria and exceed others. These comments may indicate disregard for applicable water quality criteria other than (federally regulated) MDMER.

- It is noted that a tailings line breach was detected in the line from the Mill Pond to the TMF in January 2019, and that lessons learned from the event will be applied to the design, operation, and maintenance of the new tailings line to the Open Pit.
- The volume of tailings released during the event, at 300,000 to 400,000L, is quite high. Although the duration of the spill / release event was not disclosed, it seems unreasonable to infer that it was instantaneous, and therefore the release occurred over (an unknown) extended period of time.
- It is noted that the proponent developed a site-specific water quality objective for arsenic (SD 21, Evaluation of potential for aquatic effects as a result of effluent releases related to Beaver Dam Mine) and has relied on this SSWQO in its interpretation of modeled effluent quality and environmental impacts. It is further noted that this SD has not previously been submitted or reviewed by NS ECC and the SSWQO developed for arsenic by this approach has not been approved by the Department as of the time of this review.
- It is noted that the construction of the Project reportedly began in June 2016, and that the pre-development time period is prior to 2016 when construction was initiated (EARD, S.8.4.1.1). It is further noted that pre-development water quality conditions were considered to have continued through to October 2017, after construction activities had begun. This explanation was restated (earlier) in S.7.48 as follows: “Monitoring that took place prior to commencement in October 2017 is considered representative of pre-development conditions”. This conclusion is inappropriate, because “pre-development conditions” can only be captured by a series of measurements captured entirely before the onset of development activities – which did not occur in the case of this project. Consequently, there is no reliable basis on which to claim that modeled water quality parameters are “consistent with baseline conditions” – as no such conditions are reliably known.
  - It is further noted that several modeled surface water parameters are predicted to exceed regulatory guidelines, which the applicant interpreted to be consistent with baseline (pre-development) conditions and thus represent no change in surface water quality. Since 2017 WQ data do not reliably represent baseline conditions, ECC should be very careful to accept such claims and should consider, instead, requiring the treatment of water such that no parameters exceed guideline values
- It is noted that the applicant indicated that Sulphate concentration in Watercourse 4 has been of concern, and that follow-up monitoring has determined that the mean sulphate concentration at SW-19 is below the British Columbia Sulphate Water Quality Guideline for the protection of freshwater aquatic life.
  - The BC Sulphate Water Quality Guideline is valid for a minimum of five samples collected within 30 days.
  - Sample collection dates and individual analytical results, for sulphate or hardness, are not published within the main EARD or associated reports referenced within the EARD (SD 19a and Appendices D.3 and D.4).
  - In the absence of sample collection metadata (collection dates), it is not possible to verify the applicant’s claim that observed sulphate concentrations meet BC’ Sulphate guideline.
- It is noted that, in Appendix D.5, the applicant predicted that water quality would exceed guidelines for six parameters (maximum and/or average concentrations; Aluminum, Arsenic, Cobalt, Copper, Cyanide (WAD) and Nitrite (as N)). The EARD indicated that treatment would only be required for the expected Arsenic exceedance, in compliance with MDMER requirements of these parameters -
- It is noted that an assessment of effects of siltation concluded effects appeared to be minor and reversible if further siltation events are prevented”. The basis of this conclusion is not offered within the body of the report and no reference is given for further details within Appendices or

Supporting Documents. It is therefore uncertain that this conclusion is warranted, and that water management infrastructure is or can be relied on to eliminate siltation from project areas.

- It is noted that Table 7.26, Predicted WRSA Effluent Chemistry, refers to the maximum authorized monthly mean concentration as specified in the MDMER, Schedule 4 Table 2. It is further noted that the numbers presented in this table do not correspond with those published in the current version of the MDMER (SOR/2002-222, Last amended June 18, 2020).
- It is noted that, according to EARD S. 7.7.2 the applicant expects elevated nitrate concentrations in the runoff from the Waste Rock Storage Area (WRSA) and intends to construct a surface water quality treatment facility to remove nitrate before the runoff discharge to Watercourse #4. It does not present any data to support the basis for its expectations of elevated nitrate runoff, the designed or modeled treatment effectiveness, or the resulting treated effluent quality. Consequently, it is impossible to verify the need for treatment, its expected effectiveness or the adequacy thereof.

## **Recommendations**

### Planning/Design Issues of Significant Importance

It is noted that the proponents intend to redirect tailings from the current Tailings Management Facility (TMF) to the exhausted Open Pit, and have directed considerable effort to ensure the secure, safe, and sustainable use of the Open Pit for this purpose. It is also noted, however, that the existing TMF will continue to house tailings in perpetuity even after tailings are redirected to the Open Pit, and that the proposed modifications will result in two tailings management facilities on-site rather than one. The applicant has not provided indication or evidence that the use of exhausted open pits for tailings disposal is common and/or accepted industry practice, or that such practice has an acceptable record for meeting environmental targets.

The project proposed will impose new impacts on the Moose River as the receiving watercourse of the Open Pit after it has filled, received tailings discharge, and been assessed to meet the requirements for discharge into the River via an engineered spillway. An approval for these proposed activities must be based on a sound understanding of the current impacts on this watercourse, with a high level of confidence in both the current understanding and the predicted effects.

The level of information presented in the EARD does not provide adequate information about the current impacts of project operations on the Moose River (in particular, surface water flow and groundwater contribution to the watercourse). Modeled impacts of water quality impacts to the watercourse, directly from the Pit Lake and from groundwater impacts, are unverified, in that the modeling report did not demonstrate validation of model assumptions or satisfactorily describe critical elements of model reliability, such as calibration, sensitivity, and uncertainty.

### Operational Issues / Other Permitting Processes

Insufficient information is provided to assess the impact of the proposed undertaking on surface water quantity and management. Therefore, the following recommendations are made:

- An updated Environmental Effects Monitoring program (plan) should be provided to ECC for review and acceptance prior to implementation of any approved project modifications.
- Water quality monitoring activities inclusive of Total Phosphorus shall be analyzed at a Low Level detection limit (typically  $\leq 0.005$  mg/L).

- Lessons learned from this breach also be applied to the construction of the new line, along with maintenance of water management infrastructure associated with the new line.
- Best Applicable Practices (BAPs) for tailings facility management (in particular, the Open Pit) should be reviewed to ensure that either manual surveillance or automated systems adequately guard against future tailings line spill events.
- Treatment requirements should be considered for any waters that are expected to be reach receiving environments (lakes or rivers), with water quality parameters exceeding guideline values (based on models or other predictions), regardless of whether they exceed or fall below 2017 water quality monitoring results, referred to as baseline within applicant reports.

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Date: August 16, 2021

To: Bridget Tutty, Environmental Assessment Officer

Cc: Kevin Garroway, District Manager  
Melissa Douglas, Inspector Specialist

From: Christine Hynes, Mining Engineer, ICE Division

Subject: Touquoy Gold Project Modifications – Environmental Assessment  
Registration Document

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The scope of this review from ECC-ICE Department is to assess the potential environmental impacts and proposed mitigations of the proposed modifications to the Touquoy Gold Project. Please note, the report titled *“Touquoy Gold Project Modifications – Environmental Assessment Registration Document”* dated July 2021 prepared by Stantec Consulting Ltd. was used to complete this review.

**General Comments:**

WRSA Expansion:

The application is inconsistent with the information presented for the Waste Rock Storage Area (WRSA) expansion. The applicant refers to the 2007 EARD and Focus Report for the potential environmental interactions of the WRSA and states the Phase I and Phase II ditches are functioning as designed. Yet, in Appendix A.1, it states a test pit was completed at the North end of Phase 1 ditch system and was concluded that a section of the ditch does not meet the design standards and states the work presented within the document titled *“MEM-059-900.400-B-23Mar18”* should be completed prior to construction of the Phase 3 ditch design.

Clay Borrow Expansion

The proposed expansion of the Clay Borrow is for an additional 5.9 ha. The application states this area was assessed within the study area of the 2007 EA and that a biophysical (wetlands, watercourses, habitat, rare species) survey was conducted in October 2020. The ownership of this land (PID 00642793) was transferred from Forrest C. Higgins Jr. to AMNS in 2020 and this property was **not** included in the “Assessment Boundary” shown in the November 8, 2016 Wetland Alteration Application, please refer to Appendix A for a copy of this figure.

**Please note:** this comment was provided to AMNS while reviewing the December 20, 2020 Amendment Application which went through EA review. The applicant has not addressed this comment in the July 2021 EARD submission.

## Technical Questions:

### Clay Borrow Expansion:

1. The application discussed that Sediment and Erosion Control Plan was created for the new Administration Road but does not discuss a plan for the Clay Borrow Expansion.

**Please note:** this comment was provided to AMNS while reviewing the December 20, 2020 Amendment Application which went through EA review. The applicant has not addressed this comment in the July 2021 EARD submission.

### In-pit Tailings Disposal:

1. Two different total capacities of the exhausted Open Pit were presented:
  - EARD Section 2.2.1, page 2.3 states 8.962 Mm<sup>3</sup> at 108 masl.
  - Appendix A.1 Section 3.0, page 12 states 12.276 Mm<sup>3</sup> at 108 masl.

**Question:** what is the totally capacity of the exhausted Open Pit?
2. Two different estimated volumes of Touquoy tailings were proposed to be deposited in the exhausted Open Pit were presented:
  - EARD Section 2.2.1, page 2.3 states 6.03 Mt.
  - Appendix A.1 Section 3.0, page 12 states 6.5 Mt.
  - Appendix A.1 Section 7.2, page 39 states 6.03 Mt.

**Question:** what is the estimated volume of Touquoy tailings to be deposited into the exhausted Open Pit?
3. The applicant is proposing to maintain water levels below the spill elevation of 108 masl until water in the Open Pit lake meets the MDMER discharge limits. Upon discharge, the proposed Final Discharge Point is located approximately 70 meters downstream of the current SW-2 monitoring station.

**Question:** Has the applicant applied for an additional discharge point with ECCC required under MDMER?
4. The applicant states that the Open Pit water will not be released to the environment until it meets water quality requirements or site-specific criteria and is estimated that treatment will be required for 28 years from the commencement of depositing tailings in the exhausted Open Pit.

**Question:** From the start of tailings deposition into the exhausted Open Pit, what year will water start discharging from the spillway?

## WRSA Expansion:

1. The application states that seepage to Square Lake will be reduced however there are no proposed groundwater wells or surface water monitoring stations around Square Lake or in the areas that may receive water impacts resulting from the WRSA expansion.
2. One addition well is proposed for the replacement of WRW-1A/B however the design details were not provided (single or nested, etc).
3. The drainage design includes a buried culvert along the North section. What is the purpose of this culvert and how will it be maintained if it is buried? Will this culvert be there indefinitely?

**Please note:** the above three comments were provided to AMNS while reviewing the December 20, 2020 Amendment Application which went through EA review. The applicant has not addressed these comments in the July 2021 EARD submission.

4. The application is proposing to release the water from the Western section of the WRSA to Watercourse #4 to “reduce environmental effects on water quantity”.  
**Comment:** ICE is unaware that there are water quantity issues within Watercourse #4.  
**Question:** Has the applicant applied for an additional discharge point with ECCC required under MDMER?

## **Conclusions:**

Based on the documents reviewed, I cannot fully determine the degree of potential environmental risks should the Touquoy Gold Project Modifications be permitted. To have a better understanding of the potential environmental risk, in addition to answering the above questions, I recommend requesting the following information:

### In-pit Tailings Disposal

1. The applicant states that water within the Open Pit will be treated *in situ* or pumped to the adjacent treatment plant or to the existing Touquoy ETP.  
**Submission:** Present the proposed plan for the *in situ* treatment process and adjacent treatment plant.  
Please note, the proposed adjacent treatment plant does not appear on any of the Figures.
2. The applicant states that there is potential for slight flow reductions in Moose River as a result of groundwater drawdown to the Open Pit however these changes will not negatively affect fish populations.  
**Submission:** Present the information that led to the conclusion that fish habitat will not be affected.

3. The proposed spillway is located near historic tailings.  
**Submission:** Update Figure 2.2 in Appendix A.1 to include the location of the historic tailings within and outside of the Open Pit.
4. The exhausted Open Pit walls are permeable.  
**Submission:** Please discuss the permeability of the tailings and relationship with local hydrogeology.

### Waste Rock Storage Area

1. Regarding potential impacts to Watercourse #4, the EARD Table 3.3 states the following:  
*“Geotechnical Investigations  
If the water quality modelling demonstrates that water quality impacts from other parameters of concern are likely to occur, develop a remedial action plan to manage seepage that would otherwise impair the water quality in Watercourse #. 4.”*  
and  
*“Aquatic toxicity analysis for sulphate  
If the evaluation concludes that there is the potential for adverse effects associated with sulphate concentrations, remedial actions will be developed in consultation with NSECC.”*  
**Submission:** Present the water quality modelling findings if impacts from other parameters of concern, and sulphate, are likely to occur. If yes, present the proposed remedial actions.
2. Regarding potential impacts to Square Lake, the EARD Section 6.7.1.2 states the following:  
*“This deeper ditch is predicted to intercept the small volume of water that was predicted to migrate toward Square Lake under the current IA conditions.”*  
And Section 8.4.2 states:  
*Fish species present in Square Lake has not been confirmed, although limited sampling in August 2007 did not return any fish (CRA 2007b). Given the connectivity between Square Lake and Scraggy Lake via upper Fish River, it is anticipated that the fish species in Scraggy Lake are also present in upper Fish River and Square Lake for at least some portion of the year.*  
**Submission:** Conduct a fish study in Square Lake and present the potential impacts the WRSA expansion will have to Square Lake.
3. The applicant states the following in Appendix A.1  
*“The Phase 1 ditch/berm should be investigated further and modified/replaced as required to meet the design as presented in our document MEM-059-900.400-B-23Mar18. **This should be completed prior to the initiation of the Phase 3 ditch construction.**”*  
**Submission:** Present the Phase 1 ditch/berm investigation results and proposed mitigation actions.



Please do not hesitate to contact me if you would like to discuss this further.

Regards,

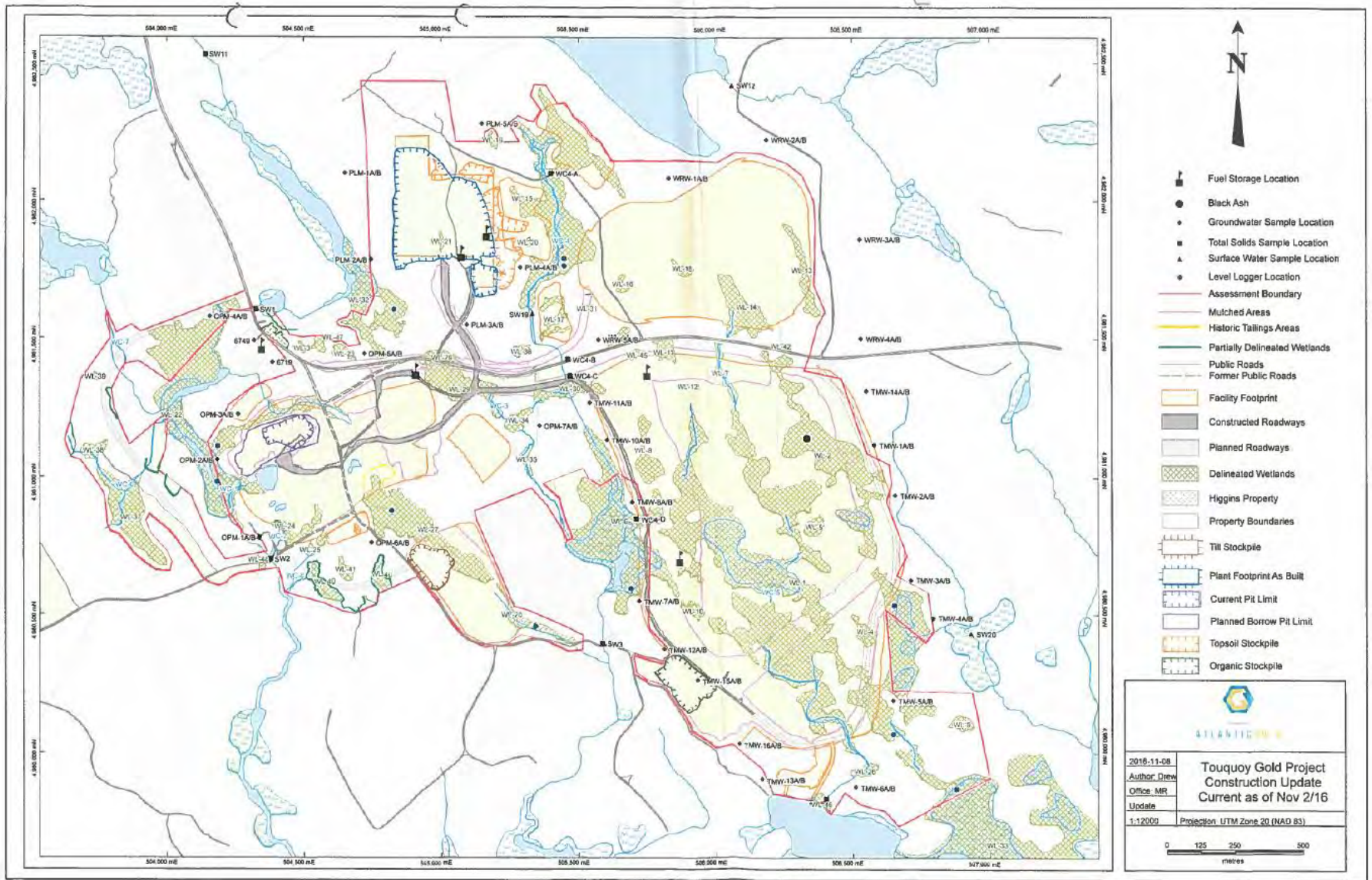
A handwritten signature in blue ink that reads "Christine Hynes". The signature is written in a cursive style and is positioned above the typed name.

Christine Hynes

cc: Kevin Garroway  
Melissa Douglas

# Appendix A

## 2016 Wetland Alteration Application Assessment Boundary



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**Project Name: Touquoy Mine Modifications**

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**PROCESS OVERVIEW**

Department of Inclusive Economic Growth (IEG) is requested to provide comment on the Environmental Assessment (EA) Registration of the proposed Touquoy Mine Modifications. Once comments (below) are approved, the DOB comments will be submitted to Nova Scotia Environment. EA Registration comments are made publicly available.

**BACKGROUND**

<b>Proponent</b>	Atlantic Mining Nova Scotia Inc (Atlantic Gold)
<b>Project</b>	The proposed project involves modification to the existing Touquoy Mine operations.
<b>Location</b>	The Touquoy Gold Mine located in Moose River, Nova Scotia, 63km Northeast of Halifax and 19 km southeast of Middle Musquodoboit.
<b>EA Class</b>	Class 1
<b>Description</b>	These modifications include use of an exhausted open pit for tailings deposition, expansion of the waste rock storage area and clay borrow area; and the realignment of the plant access road used to access the mill facility and administrative buildings. The approved development area of the mine site is approximately 271 ha, the proposed project modifications will add approximately an additional 18 ha.

**DOB ENVIRONMENTAL ASSESSMENT REVIEW COMMITTEE COMMENTS**

<b>DoB Mandate</b>	IEG aligns and coordinates government activities behind a common agenda of economic growth.
<b>Analysis</b>	<ul style="list-style-type: none"><li>• The Touquoy Gold Mine has been in operation since October 2017.</li><li>• The proposed modifications will extend the operation of the Touquoy mine.</li><li>• The Touquoy mine and processing facility are part of future plans to develop the proposed Beaver Dam, 15 Mile Stream and Cochrane Hill mines sites.</li><li>• The Touquoy Gold Mine is one of the largest employers on the Eastern Shore.</li><li>• There are a number of tourism assets located in the area surrounding the Touquoy Mine.</li><li>• Recreational fishing opportunities exist in the area surrounding the Touquoy Mine.</li></ul>
<b>Comments</b>	<p>The mandate of the Department of Inclusive Economic Growth (IEG) is to lead and align provincial government efforts behind a common agenda for inclusive economic growth. This mandate focuses on strategic priorities and opportunities that encourage Nova Scotia's innovation, competitiveness, entrepreneurship, and export orientation.</p> <p>Fulfilling this mandate involves working collaboratively with our Crown corporations (Develop Nova Scotia, Halifax Convention Centre Corporation (Events East Group), Innovacorp, Invest Nova Scotia, Nova Scotia Business Inc. and Tourism Nova Scotia), key partners in other levels of</p>

# ENVIRONMENTAL ASSESSMENT RESPONSE

## Inclusive Economic Growth

	<p>government, entrepreneurs, large businesses, post-secondary institutions, venture capital investors and Nova Scotians.</p> <p>After reviewing the Environmental Assessment Registration Document for the proposed Touquoy Mine Modification, IGE has the following comments to provide:</p> <ul style="list-style-type: none"> <li>• The Touquoy Gold Mine is one of the largest employers on the Eastern Shore.</li> <li>• There are watercourses and protected areas surrounding the Touquoy mine which are considered important assets to the tourism industry in Nova Scotia.</li> </ul>
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**APPROVAL** (please review, provide any additional comments and sign)

<b>DoB Senior Management Comments</b>	Executive Director
	Associate Deputy Minister
	Deputy Minister

<b>PREPARED BY</b>	David Mitchell, Corporate Strategist, 902-424-0909	<b>DATE:</b> August 9, 2021
<b>CONTACT</b>	David Mitchell, Corporate Strategist, 902-424-0909	

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Date: August 16, 2021

To: Bridget Tutty  
Environmental Assessment Officer

Cc: Manager, Water Resources Management Unit

From: Senior Hydrogeologist, Sustainability and Applied Science Division

Subject: Atlantic Gold Touquoy Gold Mine Site Modifications Project EA Submission

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Environmental Assessment (EA) reviews from the NSE Sustainability and Applied Science Division Senior Hydrogeologist focus primarily on groundwater resources. This includes the potential for the proposed undertaking/project to adversely affect groundwater resources, including general groundwater quality, quantity, municipal water supplies, local water supply wells and groundwater contributions to stream baseflow, groundwater recharge and wetlands. The review is conducted of materials provided by the proponent during the EA registration process.

As described by the Proponent in the EA Registration Document (Introduction, Page. 1.1):

*The Touquoy Gold Project (the Approved Project) is an open pit gold mine operated by Atlantic Mining NS Inc (AMNS) under Industrial Approval (IA) No. 2012-0824244-08. The Mine Site is located in Moose River, Nova Scotia, approximately 63 km northeast of Halifax and 19 km southeast of Middle Musquodoboit (Figure 1.1). Production for the Touquoy Gold Project is estimated at 8,400 tonnes of ore per day (tpd) with an anticipated total ore production of 9.35 million tonnes for the recovery of 0.4 million ounces (oz) of gold. The Touquoy Gold Project started the mining operation in October 2017 and attained commercial production in March 2018.*

As described by the proponent, the proposed modifications to the project consists of a four main components:

- Use of the exhausted Open Pit for tailings disposal instead of the existing approved Tailings Management Facility (TMF)
- Expansion of the Waste Rock Storage Area (WRSA)
- Expansion of the Clay Borrow Area
- Realignment of the Plant Access Road used to access the Plant Site

It is noted that the proponent anticipates the proposed modifications to extend the operations at the Touquoy mine site by approximately 3 years (2022 to 2025). The changes would allow for increases in waste rock volumes, filling and closure of the TMF and placement of additional tailings after 2022 into the Open Pit area. The proponent is also anticipating potential use of the Open Pit for much more mine tailings deposition from other proposed mines with an anticipated end date of 2033 (Table 2.1, p. 2.12 EA Registration Document).

### Water Resource Supply Comments

- The location of the undertaking is not within a municipal Wellfield Protection Area (WHPA) or Protected Water Area (PWA). The nearest PWA is the St. Andrew's River Watershed, 20 km to the northwest of the project site.
- The nearest Municipal Drinking Watershed is the Middle Musquodoboit River Watershed located approximately 6 km to the northwest of the project site.
- The nearest Registered Public Drinking Water Supply is at the Arthur Kidston Memorial Camp on the upper side of Long Lake, located about 4 km northwest of the site. This location is hydraulically upgradient from the site. There are a couple of RPDWS located 20 km downgradient of the project site, in Ship Harbour and one in Upper Lakeville. However, there are no downgradient Municipal supplies.
- The communities of Upper Lakeville, Lake Charlotte and Ship Harbour all rely for the most part on private drinking water wells. As noted above, these communities are >20 km hydraulically downgradient from the project site.
- The project area is relatively isolated with few residences. The proponent makes the following statements about use of wells. "Only one potential groundwater well user is known to occur within 5 km of the PDA: Camp Kidston, which operates only in the summer months, is located 3.5 km northeast of the Touquoy Mine Site. The nearest permanent full-time occupied residences are located approximately 5.8 km to the north of the Open Pit, along Caribou Road. The next closest permanent residences to the Touquoy processing plant and TMF are located approximately 7.4 km to the northwest and 11.7 km to the southeast." (Registration Document page 6.14).
- The Nova Scotia Well Logs Database was accessed during this review to confirm this finding. It confirms few drilled water supply wells in the area with only two very near or on the site (within 3 km) and as indicated by the proponent's knowledge these are most likely no longer in use. It has been noted previously that the Well Logs Database Records and any mapping based on these records need to be considered in terms of locational errors/accuracy of the original data. In addition, the Well Logs Database does not contain a complete listing of every water supply well in the province and some areas may contain water supply wells not reported. Field truthing and field surveys for water supply well locations is necessary.
- Based on the information provided the proponent has a thorough understanding of the hydrogeology of the site area including groundwater levels, flow (quantity) and

groundwater quality.

- Much of the rationale for proposed modifications relies on showing that future environmental impacts from the work are either negligible, or able to be mitigated (e.g. by water treatment). For this, several detailed hydrogeological and hydrogeochemical modelling studies have been conducted to predict future conditions.

## Discussion

- The following discussion relates to the main modifications presented in the Registration Document and potential concerns regarding surface water and groundwater chemistry as well as surface water/groundwater seepage flow interactions.

### **Open Pit**

- The plan suggests underwater deposition of tailings in the open pit (after mining exhausted) and then allowing the pit to fill with groundwater/surface water. Ultimately the plan includes a spillway from the filled open pit lake into the Moose River.
- The request to use the Open Pit for mine tailings deposition should be considered a fundamental and significant change to the project. This needs to be considered with a similar level of scrutiny as for the engineered design of any tailings management facility (ie. TMF). While the underwater deposition in an open pit lake of potentially acid producing or metals leachate generating wastes may be reasonable in some circumstances, it has certain implications. One of these is the potential for two (2) points of compliance to exist for mine tailings discharge (instead of the current one (1)), and the effects this may have for site management in the long term. Another is the suggestion made in the documents that the proponent may wish to subsequently use an approved open pit for mine tailings discharge from a number of other potential mine sites in development along the Eastern Shore. This adds to the potential for adverse effects.
- Concerns relate to the continued depression of the water table in the pit and the potential or actual effects this may have on flow in the Moose River for some years. The proponent notes several monitoring locations where groundwater is being negatively impacted by the open pit. The proponent notes on page 6.1.5 of the Registration Document “A declining trend has been observed at OPM-2B, and to a lesser degree at OPM-2A, throughout 2017, 2019, and 2020 operation; this trend is attributed to dewatering of the Open Pit”. The pit will likely remain with depressed water levels for some time. This will occur following the cessation of open pit ore extraction and the proponent notes that filling of the Open Pit will take for up to 9 years or so until it is filled enough for surface water discharge (EA Registration Document p. 7.37). Note also that other documentation submitted (SD 06 Reclamation Plan Nov 2020) has stated double amount of time necessary for refilling the Open Pit, with perhaps the diverted TMF tailings slurry disposal and other drainage water making up the difference.



*“Based on modelling, the open pit will flood to its ultimate water level in approximately 18 years postclosure if allowed to recharge naturally under climate normal conditions.” (SD 06 p. 14).*

Surface water seepage losses from the Moose River to groundwater are particularly concerning during the dry summer periods when water levels are already low. The proponent has provided average summer base flow reductions to the Moose River based on modelling in the EA registration document. However, in Supporting Document 24 (SD 24) they also have evaluated groundwater conditions and state: *“Increasing the baseflow reductions by 10% does not alter the conclusions that baseflow reductions from pit dewatering are no more than 4.5% of the lowest streamflow rates observed at SW-2.”*

There is a concern that worst case low flow conditions could be significantly impacted by groundwater baseflow declines due to the Open Pit. The degree of these impacts however will need to be evaluated by others with expertise in that area. It should be noted however that all predictions made by modelling are subject to uncertainties and error and the predicted results may be more or less than that shown. Actual field observations and measurements should be used to verify model predictions over time and recalibrate if necessary.

The proponent does mention a plan for mitigation of these losses that could help by grouting of fractures causing the subsurface flow path. This could also potentially help when the pit is eventually flooded and seepage flow is reversed, by reducing groundwater flow back into the river (which will likely contain some metals/chemicals of concern).

- The proponent notes modelling uncertainties related to potentially increased flow pathways from the Open Pit to the Moose River from previously unaccounted for fracture zones. These fracture zones are depicted on Figures 5.11 and 5.12 of the Appendix D.1.

*“The presence of preferential pathways, such as fractures and faults not characterized in previous field assessment, were assessed with sensitivity analyses in the model to predict the potential migration of solutes from the Open Pit into the receiving environment. The results of the sensitivity analyses indicated that should the faults have higher hydraulic conductivity, solute transport to Moose River would occur more quickly. Therefore, the potential for higher permeability faults should be considered in the development of management, mitigation and contingency plans.” Appendix D1, p. 6.1.*

These uncertainties have potential significance on both flow quantity and groundwater seepage quality as shown. This is addressed by the proponent by a recommendation to conduct monitoring of Open Pit water quality.

- It appears based on the document, that although most of the volume seepage flow from the open pit lake back into the Moose River at the end of life of the mine would be groundwater (5.5 L/s), this compares with a similar value for surface water (3.0 L/s). Based on the water quality predictions (discussed below), the surface water has a higher potential for adverse effect.



- Water quality is of concern as the proponent's modelling predicts a number of parameters likely to exceed water quality objectives (WQO) of CCME-FAL for discharge of surface water from the open pit. In particular, Aluminum, Arsenic, Cobalt, Copper, Cyanide and Nitrate theoretically exceed predicted WQO and MDMER criteria (Appendix D.5, Table 5, p. 10) at the point of discharge for up to 9 years in the future. However, the proponent states that except for Arsenic, these values would meet criteria 100 m downgradient in the Moose River after mixing dilution has occurred (Appendix D.5 p. 14 Mixing Zone Study), although it is noted they are still order of magnitude predictions which likely have some predictive error. Arsenic, however, is predicted to exceed the even higher MDMER criteria up to at least Year 9 and the proponent suggests treatment will be necessary.
- The EA registration document states on p. 7.43 that:  
*"Using the CCME protocol for development of water quality guidelines (CCME 2003), an SSD approach was used to develop a site-specific water quality objective (SSWQO) for arsenic (Intrinsik 2019, attached as SD 22). The value developed is 0.030 mg/L (30µg/L) and concentrations predicted in the receiving environment of Moose River are below this value."*

This proposed guideline is a significant change from the current CCME criteria (5 µg/L). It is not clear if this proposed developed guideline has been formally reviewed and accepted by NSECC. The review of the guideline development is beyond the scope of this EA review.

- A quantitative description of acceptable predictive error and sensitivity analyses for the WRSA Groundwater Modelling (Appendix D.2) and the Water Quality Prediction modelling (Appendix D.3) were not presented. The proponent states (Appendix D.3, p.10) "The excellent model fit provides a relatively high degree of certainty with respect to the model inputs applied." It is noted that the flow modelling (Appendix D.1) for the Open Pit has much better exposition of model calibration, uncertainties and sensitivities. This is important as the modelling work for this submission requires a high degree of reliance and all modelling will be subject to methodological errors and bias. A better understanding of the water quality model sensitivities and limitations is very important.

Better representation of the water quality modelling calibration, uncertainties and sensitivities is expected. Additional third-party review of the water quality modelling is recommended.

- For groundwater seepage, the proponent finds (Appendix D.5, Table 6, p. 12) that "no parameters in the seepage are predicted to exceed the MDMER or WQOs." The large differences between the modelled surface water and groundwater quality findings are not explained in the text. This should be better explained in order to verify the groundwater quality predicted to seep into the Moose River.
- One contextual scenario not presented is baseline water quality modelling without the proposed activity – what would water quality predictions look like if mine tailings are not deposited in the open pit? Will surface discharge treatment still be necessary at

some point even with a different scenario?

- This design for open pit deposition of mine tailings relies primarily on both groundwater and surface water quality geochemical interactions and predictions through modelling. In the present case, deposition of contaminated mine tailings with potential to cause water quality inputs exceeding WQO are being shown through the modelling work to have impacts essentially not exceeding regulatory criteria. The design is basically underwater deposition and reliance on the environment to attenuate impacts. There is mention of potential for fracture grouting of the open pit walls, and a potential for surface water discharge treatment, but no real plans presented for these. The modelling work that goes into this design is highly technical, extends well into the future and is subject to a number of data variables, environmental factors, methodological bias and predictive errors.

Although the proponent appears to address in a Concordance appendix the prior regulator review comments made by NSECC, DFO and NRCan on a previous (Nov 2020) groundwater model submission (not as part of this EA submission), it does not appear that a verified third-party review has been conducted of the currently submitted modelling work. The groundwater modelling work was prepared by and submitted under the signature of one Stantec professional and there is no mention of either internal or external technical review of this highly detailed and complex hydrogeoscience work.

**Additional third-party technical review of the submitted water quantity and water quality modelling work is highly recommended.**

#### **Expansion to Waste Rock Storage Area (WRSA)**

- It should be noted the proponent discusses observations of an increasing sulphate trend in groundwater around the TMF (Registration Document Section 3.3.4 Surface and Groundwater Monitoring p. 3.8-3.9). They note in Table 3.3 (p. 3.9) the current lack of a Nova Scotia WQO for sulphate, but that one exists in BC. In such cases, a review by the proponent of a specific water quality parameter currently without NS guidelines may be necessary to determine if adverse effects are in fact potentially occurring, and that they can correspond with appropriate criteria setting and mitigation measures.
- The documents states, for the WRSA groundwater monitoring wells, “The mean concentrations of manganese, and the maximum concentrations of arsenic exceed the GCDWQ and IA Column B criteria.” (Registration Document p. 6.21). In addition, a number of other groundwater parameters are noted to be exceeding the proponents internal “action levels”. These include copper, conductivity, chloride and sulphate in addition to arsenic. These conditions are apparently being reviewed.
- Groundwater modelling was used by the proponent for the WRSA to better understand groundwater flow and quality.
  - “The infiltration through the base of the WRSA has the potential to migrate

through groundwater to surface water features, including the perimeter ditches for the WRSA and TMF, or to nearby watercourses or lakes. The groundwater flow model was used to better understand the fate of groundwater that originates from the WRSA and to estimate discharge rates to the receiving environment. A forward particle tracking approach was used, where a particle was released from each model node within the WRSA. The travel paths of the particles were simulated through the model domain until they arrived at a receptor, such as a lake or stream.” (Registration Document, p. 6.30).

- It is evident by the current observed WRSA monitoring results and the modelling results that migration of contaminants from the WRSA is occurring and is predicted to discharge to watercourses (if not already). As shown by the modelling (Appendix D.2, Waste Rock Storage Area, Groundwater Modelling Update, Figure 3 and Figure 4) the theoretical flow path end-point of discharge for many of these are site surface water features - Watercourse #4, Watercourse #14 and the Upper Fish River.
- In Appendix D.3 Water Quality Predictions, p. 14 the proponents conclude that:  
*”based on the water quality modelling, there are no substantial changes to the water quality of Watercourse No.4 [similarly Scraggy Lake] that are associated with the proposed operational changes at Touquoy.”* They make these findings, in particular, with reference to changes relative to “base case” or baseline conditions of historically elevated parameters (such as Arsenic).
- Similar flow path modelling work to that done for the WRSA is not presented for the actual TMF. However, Table 3.7a in Appendix D.3, does provide a tabulation of TMF Seepage Chemistry Inputs. As many WRSA flow paths extend under the TMF before discharging to surface water location this can be an important factor in the observed and predicted water chemical quality.
- The Appendix D.3 Water Quality Predictions focus on Watercourse #4 and Scraggy Lake. It is not clear in the documents if Watercourse #14 or the Upper Fish River have been evaluated. However, as noted above (in Appendix D2) the modelling results seem to show that Watercourse #14 and the Upper Fish River are also groundwater discharge flow path endpoints from flow originating in the WRSA.
- The proponent notes that “Through subsurface flow pathways and seepage discharge, a minor percentage of the seepage from the WRSA may bypass the seepage collection system and report to adjacent surface water features. Thus, groundwater seepage from the expanded WRSA may result in changes to groundwater quality.” (Registration Document, page 6.25). This is an important statement and an estimation of seepage from the WRSA and TMF would be useful information for determining overall environmental impacts.

## **Additional**

- Mitigations Section (EA registration document, Section 7.6, pp. 7.29-7.31)

In the Mitigations Section, the proponent presents their measures to reduce the potential for negative effects of the activity on the environment. The following general

review comments are made:

- The facility was not designed to completely eliminate groundwater or surface water discharges. The TMF, WRSA, ponds and Open Pit all have some degree of “leaky” hydraulic conditions. While mitigation measures focus on surface water management, groundwater discharges and contaminant flow have very few measures for containment. One such measure is grouting of fractures of bedrock walls within the Open Pit. This could reduce drawdown effects to the Moose River as well as later groundwater contaminant transport out of the Open Pit.
- Areas such as groundwater under the TMF and the WRSA are modelled showing potential flow and contaminant transport to surface water receptors (Appendix D). However, no particular groundwater mitigation strategies are presented for these areas.
- The proponent acknowledges that even with mitigation measures undertaken there will be release of effluent discharge into the environment.
- The proposed diversion of TMF ponded water, polishing ponds, runoff and seepage water into the Open Pit provides for no comparable treatment of that water such as the TMF currently provides prior to discharge. The Open Pit is proposed to be filled with untreated effluent discharge water. The only provision elsewhere in the document is in 9 years, if required, the proponent allows that surface water being discharged to the Moose River may be treated. Treatment in that case is not specified, however the proposal seems to be relying on the “assimilative capacity” of the Moose River to accommodate contamination by mixing within a 120 m zone downriver.
- o Decommissioning and Reclamation (EA Registration Document Section 2.3)
  - The EA Registration Document provides approximate timeframes for the decommissioning phase. Depending on whether additional ore processing is approved site decommissioning could take place as early as 2025 or up to 2033 (after all tailings processing end). (EA Registration Document p. 2.12)
  - The scope of monitoring and inspections necessary following decommissioning are not clear in the document. It is stated in SD 06 Reclamation Plan that “periodic inspections by a professional engineer will be completed” for such things as the Open Pit engineered spillway. Also that pit water quality discharges would be monitored. (SD 06, p. 10).
  - In addition, it is likely that groundwater quality will need to be monitored for some period into the future, to ensure groundwater plume stability surrounding the Open Pit, the WRSA and the TMF facility. However, no recommendations on timeframes for monitoring were provided

#### **Expansion of the Clay Borrow Area**

- o Anticipate no specific groundwater issues as long as monitoring locations are

not affected. Affected monitoring locations require replacement.

### **Realignment of the Plant Access Road**

- Anticipate no specific groundwater issues as long as monitoring locations are not affected. Affected monitoring locations require replacement.

## **Recommendations**

The following recommendations are suggested for the Atlantic Gold Touquoy Gold Mine Site Modifications Project based on the groundwater effects environmental assessment review:

### **Planning/Design Issues of Significant Importance**

Much of the environmental design of the facility EA modifications relies on groundwater and surface water modelling to make reliable long-term predictions related to important potential water quality and quantity environmental impacts. However detailed and numerous the various modelling studies are, it is noted that the technical verifications for the models' development and use are not always equally rigorous or comparable. No additional technical reviews are reported that could provide assurance (not counting prior regulator comments).

- Additional independent third-party technical review of the submitted groundwater quantity and groundwater quality modelling work is needed to better have reliance with the models and understand their limitations/predictive error bounds as applied to the site.
- Better representation of the surface water quality modelling calibration, uncertainties and sensitivities is expected. Additional independent third-party review of the surface water quality modelling is also recommended.

### **Operational Issues/Other Permitting Processes**

- Based on the submitted documents mitigation of the hydraulic connection between the Moose River and the Open Pit should be conducted as suggested by grouting of bedrock fractures causing the subsurface flow paths. This could also potentially help when the pit is eventually flooded and seepage flow is reversed, by reducing groundwater flow back into the river (which will likely contain some metals/chemicals of concern).
- Monitoring of Open Pit water quality should be conducted.
- The proponent predicts Arsenic from the Open Pit discharge water to exceed criteria for a number of years and thus treatment should be included in the design. Treatment should be specified and not rely on the "assimilative capacity" of the Moose River to accommodate contamination by mixing. Such mixing should be considered a secondary feature should there be issues with primary treatment
- The proposed site specific Arsenic surface water guideline (of 30 µg/L) is a significant

change from the current CCME criteria (5 µg/L). This proposed developed guideline should require separate (outside of the EA process) formal review and acceptance by NSECC prior to implementation, if found appropriate.

- Groundwater under the TMF and the WRSA are modelled showing potential flow and contaminant transport not entirely collected by surface drainage features that may impact surface water receptors surrounding them. Groundwater quality mitigation strategies should be presented for these areas.
- Groundwater quality will need to be monitored for some period into the future, to ensure groundwater plume stability (stable size and lack of migration) surrounding the Open Pit, the WRSA and the TMF facility. Timeframes for long-term monitoring should be provided

### **Other Observations**

- “Groundwater seepage from the expanded WRSA may result in changes to groundwater quality.” (Registration Document, page 6.25). This is an important statement and an estimation of seepage from the WRSA and TMF and a mass balance of chemical contamination would be useful information for determining overall long-term environmental impacts.

## MEMORANDUM

**To:** Bridget Tutty, EA Branch

**From:** Water Resources Engineer, Water Resource Management Unit,  
Sustainability and Applied Science Division

**CC:** Jennifer Rocard, Manager, Water Resource Management Unit

**Date:** August 16, 2021

**Subject:** Touquoy Gold Project Modifications EA Application Review  
Comments

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### **Scope of review:**

The scope of this review from the NSE Sustainability and Applied Science Division Water Resources Engineer is to assess the potential environmental impacts and proposed mitigations of the proposed undertaking on surface water quantity and management and assess them for significance. While comments may also include considerations for impacts on general surface water quality, groundwater, freshwater fish habitat, and wetlands, appropriate technical specialists for these areas should be consulted for specific review and comment.

### **Limitations of Review:**

Due to the limited time provided for review and complexity of this file, the comments and conclusions/recommendations below are based upon review of only the most relevant sections/appendices of the current submission related to surface water, specifically the sections within the EA submission, Appendices A and D, and certain Supporting Documents provided with the submission. Limited to no review has been conducted of other related volumes of information (e.g., original EIS submission, etc).

### **Review re: Touquoy Gold Project Modifications EA Application:**

**General:**

- Operations are currently under an Industrial Approval
- Proposing to complete the following modifications:
  - use of the exhausted Open Pit for tailings disposal instead of the existing approved Tailings Management Facility (TMF)
  - expansion of the Waste Rock Storage Area (WRSA)
  - expansion of the Clay Borrow Area
  - relocation of the road used to access the Mill Plant
- The report states “However, the TMF is expected to reach its capacity for tailings in March 2022. The Open Pit is anticipated to be exhausted in 2022. AMNS is proposing to use the exhausted Open Pit for tailings disposal when the TMF reaches its design capacity.”
  - A description of the rationale for this is provided in Section 1.4 of the submission
- Environmental Assessment was originally approved in 2008, with mining of the current open pit at Touquoy commencing in October 2017
- It is stated that “The estimated total volume of Touquoy tailings to be deposited in the exhausted Open Pit is approximately 6.03 Mt.”
  - Mt is a unit of mass, not volume. Is this intended to be 6.03 Mm<sup>3</sup>?
- It is reported that “The Open Pit is 65 m from the bank of the Moose River at the nearest location and is actively dewatered during operation, with flow directed to the TMF.” (pg 7.9)
- “The total capacity of the expanded Open Pit at the proposed spillway elevation of 108.0 m is 12.276 million cubic metres (Mm<sup>3</sup>) is sufficient to store Touquoy low grade ore processing tailings using subaqueous (i.e., in water) deposition. Considering subaqueous deposition, the exhausted Open Pit can accommodate the estimated tonnage of 6.5 million tonnes (Mt) from Touquoy ore processing.” (App A, pg. 12)
  - How will this proposed activity impact what has currently been proposed and reviewed for the Beaver Dam and Fifteen Mile Stream sites?
- SD 21 appears to be a document related to the Beaver Dam mine and not this proposed activity – only reference I could find in the EA submission to it referred to it as the 2020 Wetland post Construction Monitoring Report?
- A general comment – a comment you’ll see repeated below is the challenges associated with finding the justification for the conclusions presented in the EA submission document. Please use references in text to direct the reader to where they can find details to support the conclusions – otherwise it is difficult to know whether this justification has been included or not. In some cases, comments follow where I’ve found the information, but I’ve left some of these original comments in to highlight this feedback

### **Water quantity: Site Drainage**

- The report states “Currently, during operation of the Approved Project, site drainage and runoff is directed to the TMF. The Project essentially replaces the TMF with the exhausted Open Pit; accordingly, water management features will be modified to direct surface runoff to the pit instead of the TMF. Water will continue to be managed in the TMF until fully reclaimed.” (pg. 2.4)
- Report states “Phase 3 of the design includes the addition of perimeter ditching along the north and northwest of the WRSA. The ditches are to be excavated into native till/bedrock or lined on



the exterior slope and bottom with clay till liner to reduce seepage from the ditches to the surrounding environment.” (pg 2.7)

- “Drainage ditches and ponds associated with the current WRSA collect and convey surface water runoff and shallow seepage from the WRSA stockpile to the TMF. Runoff from the western area of the WRSA is currently collected via perimeter ditching and diverted to a western storage pond before being pumped to the TMF, as described in the attached design memo (Appendix A.3). However, based on the results of this of this EA, a design that relays flow to Watercourse #4 has been developed in order to reduce environmental effects on water quantity. With the proposed expansion of the WRSA, approximately 21 ha of the western area of the WRSA (16 ha of existing and 5 ha of the expanded WRSA area) will be diverted via the planned perimeter ditching described above and in Appendix A.3 to a newly constructed pond for sediment removal before being drained to Watercourse #4 in the headwater area upstream of Mooseland Road (Figure 2.1).” (pg. 2.7)
  - What about concerns re: water quality? Table 3.1 outlines that the EEM will not be updated as a result of the proposed activities?
- The report states “Perimeter ditching will be constructed to collect runoff from the expanded Clay Borrow Area and direct it to the Open Pit.” (pg. 2.8)
- “The design includes a berm along the western side of the road, with surface grading to a ditch which will run along the eastern side of the road conveying stormwater runoff to a clay lined containment pond located at the low point along the road. The pond will be fitted with pumping infrastructure to convey storm water to the TMF or the Open Pit.” (pg. 2.9)
- It is stated that “A Surface Water Management Plan (Stantec 2017) has been developed as a requirement of the current IA and will be updated to reflect the proposed modifications to the Approved Project. Engineered water management systems will be constructed to collect runoff and seepage from the WRSA, Clay Borrow Area, and Plant Access Road during the operational phase and closure phases.” (pg. 7.29)
  - From a review of the Water Management Plan provided, it still reflects 2017 conditions. As a result, it is not possible to assess the effectiveness of the water management systems alluded to here
- “Groundwater recharge over the WRSA designs was assigned based on net annual precipitation (total precipitation less evaporation) and runoff. Assuming the runoff coefficient of 30% of the net precipitation, the infiltration rate into the WRSA is estimated to be 70% of net precipitation.” (App D.2, pg 2)
  - How were these values chosen and validated? What value was used for evaporation, and why? To note: the runoff coefficient here differs from previously submitted information (Water Balance Revision #14 dated December 23, 2020, which states “As summarized in Table 4.2, the runoff coefficient of the waste rock pile to match measured pump volumes to the TMF was 0.43.” (pg 9/42).)
- “As shown in Table 1, the total groundwater seepage for the expanded WRSA (Scenario 2) is estimated to be 32% greater than that for the current WRSA (Scenario 1). This results in increased flows to the downgradient water features except Square Lake.” (App D.2, pg 6)
- “The expansion of the WRSA to the north results in the movement of the WRSA seepage collection ditch closest to Square Lake at a deeper depth than the current IA design. This deeper

ditch is predicted to intercept the small volume of water that was predicted to migrate toward Square Lake under the current IA conditions.” (App D.2, pg 6)

- “The design of the western portion of the seepage collection ditch for the WRSA expansion limits the amount of groundwater seepage collected on the western portion because the water table is simulated to be below the bottom of the ditch. However, deepening the WRSA seepage collection ditch along the western portion of the WRSA can reduce the seepage to Watercourse #4, should the groundwater seepage need to be mitigated in future.” (App D.2, pg 6)
  - In addition, SD23 states that “Further investigation onto the Phase 1 west berm should be completed and if required modifications should be completed to meet the original design” (SD23 pg 4.2)
  - With these considerations in mind, what is proposed to be done for the western seepage collection ditch and berm?
- The groundwater modelling results indicate that the groundwater seepage from the expanded WRSA will increase about 32% from that designed for the current Approved Project and will discharge primarily to the WRSA seepage collection ditches and the associated collection ponds, or to Watercourse #4.... The implications of the seepage on water quality in the receiving environment are being assessed separately by Minnow Environmental.” (App D.2, pg 9)

#### Water Resources

- “Water quality modelling was recommended to be conducted to evaluate the change in water quality in Watercourse #4 that may be associated with continued seepage from the WRSA to Watercourse #4.” (pg. 3.8)
  - Please provide reference to where this can be found in the submission
- The report states “Water levels in the pit will be maintained below the spill elevation of 108 m until water in the Open Pit lake meets MDMER discharge limits. Surplus water in the Open Pit will be treated in situ or pumped and treated in an adjacent treatment plant or existing Touquoy ETP (Effluent Treatment Plant) at a rate of approximately 400 m<sup>3</sup>/hr.” (pg. 2.4)
- “...there is one wetland where a predicted effect (a reduction in surface hydrology resulting in a potential change in wetland functionality) from the Touquoy operation has been identified (WL22).” (pg. 3.14)
  - Was WL15 assessed from this perspective? It is noted in the submission to have a reduction in drainage area as a result of the proposed works – what are the impacts on it as a result?
- The report highlights “...the total approved area of wetland alteration is greater than initially identified in the original EA due to ongoing changes in project design and further wetland delineation of wetlands for wetland alteration permitting...Unintended wetland alteration has occurred; however, this has been relatively small, has been addressed by implementation of corrective actions, and is being captured during annual wetland monitoring, and covered under alteration amendments and compensation requirements.” (pg. 3.14)
  - What is the scale of unintended wetland alteration that has taken place?
- It is noted that the measurable parameter(s) and units of measurement for Changes to surface water quantity includes mean annual and mean monthly stream flows (m<sup>3</sup>/s), and waterbody water levels (masl)

- What is the rationale/justification for not assessing changes to instantaneous flows resulting from proposed activities?
- “A significant adverse residual effect on surface water quantity is defined as a measurable Project-related change in hydrological regime that results in: Reductions of mean monthly flow (MMF) greater than 10% and where environmental maintenance flows can not be sustained. Contravention of a watershed management target including: - changes to flow greater 10% that increase erosion and sedimentation above regulatory guidance in waterbodies receiving surface water runoff - changes to flows that cause flooding downstream of the Project beyond existing conditions, or - changes to water levels outside the Project Area to a point that it affects the support of existing ecological functions (i.e., fish passage)” (pg. 7.4)
  - Assessing some of these targets requires an understanding of the proposed activities on instantaneous flows, which are not listed in Table 7.1
- Table 7.4 (pg. 7.8) outlines stations included in regional regression analysis. It is reported that “This means that watershed area, and by extension, change in watershed area can be used to estimate change in annual flow and does not require the addition of a lake attenuation factor sometimes included in empirical relationships to improve area to flow correlations.” (pg. 7.9)
  - What criteria were used to determine which stations would be used in this analysis? How were these stations assessed for appropriateness for this exercise? For example, station 01EJ004 represents a catchment with significant development, 01EK001 is significantly larger than the watersheds related to the project, certain stations like 01ED013 and others that are a significant distance from the project area are included, but others are not, etc.
  - The results shown in Figure 7.3 relate to the Mean Annual Flow – what is the level of confidence in this approach when used on a different timescale (e.g., mean monthly flows) and for watershed areas of much smaller size than what is represented in the regional regression analysis (e.g., watercourse #4 and Catchments)? What validation of these estimations has taken place?
  - Without additional information related to these questions, it is difficult to have confidence in the estimations that are provided
- It is reported that “The ETP is operated as required to maintain water levels in the TMF, typically with minimal discharge during low flow summer months. There is no specific flow supplementation requirement from the ETP to Scraggy Lake as part of the IA.” (pg 7.10)
- Table 7.6 outlines the changes to Watercourse #4 and Fish River Headwater catchment areas as a result of development, correct? Does Existing Area (ha) refer to post-development area including areas proposed for development under this submission? It is unclear (pg. 7.13)
- It is noted that “The methodology used to conduct stream flow monitoring was in accordance with ISO 748:2007E Hydrometry – Measurements of liquid flow in open channels using current meters or floats.” (pg. 7.13)
  - This standard relates to single measurements – what approach was taken for the installation and maintenance of the continuous monitoring stations?
- Table 7.9 – what is the period of record that is noted here?
- It is reported that “Regional regression methods and prorated data sets are used to assess mean monthly flows and changes in flow regime based on the lack of adequate measured data record at these watercourses.” (pg. 7.13)

- As mentioned in comments above, it is difficult to have confidence in results of regional regression analysis without more information and justification for the approaches taken
- “Flow data for Moose River is estimated using the regional regression outlined in Section 7.4.4.1. The catchment area is associated with SW-11 and represents the contributing area to Moose River upstream of this location.”
  - The values in Table 7.9 are much different than those obtained through monitoring – please discuss/clarify
- “Regional regression flow data for Moose River is prorated to the Watercourse #4 catchment area to estimate mean monthly flows for the watercourse (Table 7.10).”
  - As discussed above - no discussion surrounding the effectiveness of the regional regression methods developed in representing mean monthly flows, or the limitations and level of confidence in using this method in the calculation of flows for watersheds several orders of magnitude lower than those used in the regional regression analysis
  - As a result and when combined with other comments above (e.g., differences between measured and calculated flows that are not discussed), difficult to have confidence in the results reported
- It is reported that “Accordingly, a 10% change in flow is used as an initial screening in the assessment of changes in water quantity to determine if further analysis is required.” (pg. 7.31)
  - Please note that expertise and considerations specific to each site are typically needed to determine what analysis is appropriate to support an effective understanding of impacts related to a proposed activity, including (but not limited to) evaluations of site specific impacts on fish and fish habitat, existing water users, an assessment of cumulative impacts, other potential environmental impacts, etc. A 10% change in flow as a screening metric may not be universally applicable or valid to all involved in a review
- “The pre-development time period is prior to 2016 when construction was initiated (June 2016), with the exception of water quality which is considered prior to October 2017.”
  - Why?
- “There have been no noted changes associated with fish or fish habitat in Square Lake, upper Fish River, the Watercourse #14, the Watercourse #13, and Watercourse #3 following the development of the Touquoy Mine.” (pg 8.10)
  - What assessments have been completed to validate these claims?
- “Water will be discharged via subsurface discharges on water management ponds which flow into fish bearing waters.” (pg. 8.20)
  - What does this mean exactly? Please clarify.
- “Based on the current interpretation in Nova Scotia, Wetland 15, within the WRSA expansion LAA, is identified as a WSS.” (pg. 9.51)
- “Wetland 15, which has one blue felt lichen occurrence (SAR), is expected to be partially altered by the WRSA expansion (Figure 9.4). However, the blue felt lichen occurrence is over 125 m from the PDA, on the western wide of Watercourse #4 and is therefore not expected to be indirectly impacted by the edge effects.” (pg. 9.65)
  - What about indirect impacts related to reduction in contributing watershed area to WL15? Although a level of assessment has been completed from the perspective of

changes on water quantity within watercourse #4 from this perspective, I cannot find any recognition or discussion of impacts on Wetland 15 related to this change.

- “Extreme precipitation and associated surface water runoff could potentially cause flooding, erosion, washout of site roads, overload of the site water management infrastructure, and failure of erosion and sedimentation controls. These effects could, in turn, lead to further erosion, sedimentation of surface waterbodies, and unplanned release of contact water potentially affecting the quality of surface water resources, fish and fish habitat, terrestrial environment (e.g., wetlands, rare plants) and wildlife which depend on these resources. Alternatively, reduced precipitation (e.g., drought) could affect water balances and require additional water input (including lake water withdrawal) for operational use (e.g., Open Pit infilling for tailings disposal) and dust suppression.” (pg. 13.2)
  - “Water management structures will be designed to attenuate the design storm event, thus preventing flooding. The design storm events consider climate change. Overflow weirs are constructed in water management pond embankments to facilitate safe discharge of flows exceeding the design flows of the ponds.” (pg. 13.4)
    - What potential risks to the surrounding environment exist related to the discharge of these flows and what will be done to mitigate?

#### Scraggy Lake:

- The report states “Discharge of treated effluent began on July 20th, 2018 to Scraggy Lake (the receiving environment) via the constructed wetland; a total of 812,250 m<sup>3</sup> of treated effluent was discharged to Scraggy Lake in 2018, 1,760,674 m<sup>3</sup> was discharged in 2019, and 1,641,669 m<sup>3</sup> in 2020.” (pg. 3.6)
- “Flow from the ETP to Scraggy Lake will cease as this flow is diverted to the Open Pit to supplement process water supply in operation. After operation, flow will be returned to Scraggy Lake from the rehabilitated TMF and WRSA. Flow return is contingent on closure design and will begin during the period when the Open Pit is filling with water and extend to post-closure.” (pg. 7.36)
- “Residual effects associated with the in-pit tailings disposal will result in a low magnitude change in surface water quantity to Scraggy Lake during the operational phase but will be reversed after the operation when runoff is returned from previously diverted drainage areas, and excess water is no longer required to augment process water demand. This effect will be temporary as changes in surface water flows to Scraggy Lake will be restored during the mine closure and post-closure phase.”
  - To clarify - ‘temporary’ in this case is a period of 9 years?
- “Maintain perimeter ditching to capture toe seepage from the TMF and waste rock storage area until water quality meets reclamation regulatory water quality requirements as described in the reclamation plan for Touquoy (Stantec 2017b).” (App. A, pg. 9)
  - To confirm, where does this water go in the proposed case? Open pit?

#### Moose River:

- “A declining trend has been observed at OPM-2B, and to a lesser degree at OPM-2A, throughout 2017, 2019, and 2020 operation; this trend is attributed to dewatering of the Open Pit (Stantec 2020c, 2021f). The GWCP was triggered in 2019 (and 2020) based on the depressed water table at OPM-2A/B. A review of the water levels and streamflow rates in Moose River indicated that the depressed water table appears to have a minor influence on stream flows in Moose River during the low-flow period. This minor influence is attributed to the interception of groundwater in the Open Pit that would have otherwise discharged to Moose River. Additional investigations were conducted in 2020, including the characterization of fish habitat in Moose River, continued monitoring of stream flows, and updating the groundwater flow modelling to quantify the volume of groundwater intercepted during mean annual and mean summer conditions. The reductions in flow rates in Moose River are greater than the dewatering rates from the Open Pit, and therefore cannot be solely attributed to baseflow reductions to Moose River associated with the Open Pit. Uncertainty in flow measurements at the upstream station SW-11 due to aquatic vegetation, and heavy evapotranspiration losses in the summer months may account for a portion of the additional flow reductions observed at SW-2. Project-related effects to surface water flows are predicted to be less than 5%, therefore no adverse effects to the aquatic environment were identified.” (pg 6.15)
  - Where is the analysis to support these conclusions including the ‘additional investigations’ referenced above – can they be found in the submission, and if yes, where specifically? I was able to find some information through review, but a significant quantity of documents are provided and this must be made more clear where critical information to support these conclusions can be found. Please reference.
  - Through a review of Figure 6.7, a decreasing trend is also visible for OPM1A/1B that is not discussed here – please provide justification
  - It is further stated in SD19A “As shown on Figure 3.6, there are periods when the stream flows observed at SW-2 were lower than the estimated reduced stream flows. The magnitude of the reduction is greater than the pit dewatering rates presented in Section 3.2.2.” (SD19A, pg 3.7)
    - Please provide the magnitude of the reductions observed in the report
  - It is further stated that “As indicated in correspondence from NRCAN (2020), flow observed in rivers during the warm summer months is subject to heavy evapotranspiration losses (20-50% of the flow).” (SD19A, pg 3.7)
    - To clarify – how would this relate specifically to the differences observed between estimated and observed values? As I understand from reviewing SD19A, estimated values were developed through the addition of flows from HM-1 and a pro-rated SW-11 value, which is then compared against flows measured at SW-2. Is this statement proposing that heavy evapotranspiration losses are occurring specifically between measurements at SW-11 and at SW-2 that haven’t been captured through the measurements at SW-11 or HM-1? Without further justification, this does not seem like a plausible explanation for the losses observed.
  - “The depressed water table at OPM-1A/B and OPM-2A/B appears to have a minor influence on stream flows in Moose River during the low-flow period. This effect is not

- directly attributable to the dewatering rates of the open pit, and there is no evidence of direct inflows from Moose River to the open pit.” (SD19A, pg. 4.1)
- Please provide details as to how the conclusion of no evidence of direct inflows from Moose River to the open pit was reached
  - “However, the reduced baseflow in Moose River is the result of intercepted groundwater flow that would have otherwise discharged to Moose River.” (SD19A, pg 4.1)
    - The language used earlier in the SD19A document was “Although interactions with surface water were noted (see section 3.1.2), the interactions appear to be the result of the open pit intercepting baseflow that would otherwise have reached Moose River.” (pg 3.16)
      - What changed between the sections and what is the justification for the definitive conclusion presented on pg. 4.1?
  - “The simulated baseflow rates at SW-2 (Drawing 1; attached) from the groundwater modelling are presented on Table 3, for pre-development (i.e., no pit) conditions, the calibrated conditions based on the extent of the August 2019 pit shell, and the predicted conditions upon development of the ultimate extent of the open pit.” (SD24, pg. 4)
    - Additional information surrounding if/how pre-development conditions were calibrated/validated and the level of confidence in the model is required to support results provided
  - Please provide a summary of the surface water and groundwater monitoring results presented in all of the annual reports submitted to ECCC so that a more thorough understanding can be developed
  - “The deposition of tailings into the exhausted Open Pit has the potential to interact with groundwater quality around the Open Pit, as well as water quality in Moose River from groundwater seepage into the river. Groundwater in the filled Open Pit has the potential to seep to Moose River during the post-closure phase of the Project.” (pg. 6.25)
  - It is reported that “Mean monthly flows at the Moose River surface water monitoring locations are presented in Table 7.8, below, as average daily flow rates over the period of record. Data are shown for the seasonal measurement period of May through October using measured water level data captured over the gauged period of 2017 - 2020.” (pg. 7.14)
    - What about November through April – please describe the rationale for this from the perspective of assessing impacts to Moose River that may result from the project in the submission
  - “A comparison of calculated and estimated daily flows at SW-2 during the 2020 monitoring period of May through October are shown Figure 7.5, below.”
    - What assessments and conclusions are drawn from this comparison?
  - “The Open Pit is expected to reach ultimate capacity and overflow in Year 9 (after the commencement of in-pit tailings disposal) based on the elevation of the spillway overflow (108 m elevation) to Moose River. Once the Open Pit has reached capacity, discharge from the Open Pit to Moose River will become active. Flow will be conveyed to Moose River via an engineered spillway provided water quality is acceptable for direct discharge.” (pg. 7.37)
  - “Spillway discharge represents less than 4% of the MMF in Moose River during the high flow month of April and approximately 1% of the MMF during the low flow month of July.”

- To confirm, the MMF's are those developed through use of the regional regression method?
- "Maintain the top of tailings 2m below the spillway elevation to protect the bed sediments from disturbances due to wave action and ice entrainment (i.e. approximately 10% deeper than the maximum ice thickness, MEND 1998)" (App A, pg 9)
  - Further justification and analysis to support this is required, including details surrounding the wave action and ice thickness assessments completed to support this number
- "Evapotranspiration was assumed as zero for the lower 75 m elevations of the Open Pit." (App A, pg 20)
  - Please clarify this – is it saying that losses from evaporation are not considered when the Pit water level is less than 75m?
- A water balance has been presented in Appendix A, along with assumptions to support:
  - "Infiltration factors described by the Ontario Ministry of the Environment (OMOE 1995 and 2003) are used to determine the fraction of water surplus (excess of precipitation over evapotranspiration, P-ET) that infiltrates into the ground and the fraction that runs off to the nearby streams." (App A, pg 20)
  - "As a result of this convention, the water balance can be further simplified into ET and streamflow which includes all overland flow, interflow and groundwater discharge." (App A, pg. 20)
  - "It was assumed that runoff, evapotranspiration and infiltration are negligible in months with average monthly temperatures below 0°C." (App A, pg. 20)
    - How was this assumption tested or validated? This assumption from perspectives of runoff and infiltration requires justification within the context of what is typically observed in Nova Scotia
  - "Model input runoff coefficients were adjusted based on the operational responses for the Touquoy TMF to match measured parameters for natural ground, prepared ground and pile/pit/dam or beach surfaces." (App A, pg 24)
    - Can you please describe how this was completed? A 2021 calibrated water balance is mentioned but not provided here
    - In the calibration of the existing water balance, how well did the assumptions work and the model perform? Was the model also validated?
  - "Tailings was assumed to be deposited by end of pipe from the surface of the Open Pit. This would result in tailings running down the pit face and depositing sub- aqueously at the bottom of the pit from CDGV 2013 Elev. -25.0 up to 74.3 m." (App A, pg 26)
    - I believe 'sub-aqueously' is a typo in the above – please confirm or clarify how tailings would be deposited 'sub-aqueously' using this approach
    - It is reported earlier in this document that "Subaqueous tailings deposition under a water cover is the chosen method of disposal at Touquoy." (App A, pg. 13)
    - Does this difference potential impact the results of the water balance?
  - Table 4.11 – have losses due to evaporation been included, and where?
  - What is the purpose of the 'Environmental Water Balance' and how is it used to support recommendations and conclusions for the proposed works?



- Considering the high-level assumptions completed as part of the development of the model, it is unclear how much confidence there can be in the model and its results. Please confirm what the results of this water balance are used for in the submission
- Appendix D.1 presents a groundwater flow and solute transport model
  - What type of review was completed on the model? The sign-off sheet associated with the report lists only one author, with no senior or technical review taking place, unlike several of the other reports submitted where a reviewer is also a signatory. This exercise is used to support many conclusions stated in the report and additional review is justified
- Table 4.2 water level calibration residuals and statistics for average summer 2019 conditions show that the model significantly overestimates water levels for the OPM-1A/B and OPM-2A/B wells between the open pit and moose river (between 1.1 - 2.9 m difference from measured) (App D.1, pg 4.12)
  - What is the impact of these overestimations/model uncertainty in the area between the open pit and Moose River on the information presented in the report, including modelled drawdown contours?
- “Evapotranspiration was also assigned to the model domain, using a uniform rate representing average annual and average summer conditions. An extinction depth of 1 m was specified for the evapotranspiration rates. Evapotranspiration was adjusted with the recharge rate during the model calibration.” (App D.1, pg. 4.4)
  - “These parameters were adjusted automatically using PEST over the ranges determined from field observations or literature values. A total of 38 parameters were adjusted during the calibration process.” (App D.1, pg 4.7)
  - Were these values reviewed for appropriateness after auto calibration was completed? From a review of the results in Table 4.6, the evapotranspiration numbers require clarification and justification. For example, why is annual evapotranspiration less than summer evapotranspiration? An expected range is provided for annual groundwater recharge, but none for evapotranspiration – these values would not fall within expected range for evapotranspiration values in Nova Scotia
- “Baseflow in Moose River was estimated at SW-2 (see Figure 4.5) using a recursive filtering algorithm (Arnold et al. 1995) to determine baseflow indices for the observed summer and annual river flow rates at SW-2.” (App D1, pg. 4.15)
  - To confirm, what data was used to support this calculation? My understanding from Reviewing Table 7.8 is that Moose River stations are only monitored from May – October – is this the dataset that was used to support the ‘annual’ flow rates at SW-2?
  - Why is only 2019 data used to support assessment of the model? The model is used to support significant decisions surrounding the proposed works – sufficient validation of the performance of the model is required to support an understanding of the level of confidence to consider in reviewing the results.
- “Groundwater inflow rates to the open pits were calculated based on the observed pit dewatering rates at the Open Pit. Groundwater inflow rates for the summer months (i.e., July to September 2019) were estimated based on the dewatering rates, and are presented on Table 4.4.” (App D1, pg 4.15)
- “As shown on the table, the groundwater baseflow rates to Moose River are slightly (2%) underpredicted for the average annual condition, but slightly (5%) overpredicted for the

summer baseflow period. The average annual pit inflow rates were underpredicted by 3% for the annual conditions, and were overpredicted by 13% for the summer conditions. These are considered good matches the complete set of flow targets and water levels.” (App D.1, pg. 4.15)

- “The model was used to estimate the groundwater discharge to Moose River and its tributaries upstream of surface water monitoring location SW-2. The net baseflow to Moose River at SW-2 is simulated to be 29,845 m<sup>3</sup>/d under average annual conditions, and 9,689 under summer conditions. The baseflow rates are used to quantify changes to groundwater discharge during the baseline, operation and closure phases, as presented in Sections 5.2 to 5.4.”
- “The net baseflow to Moose River at SW-2 under pit full conditions is simulated to be 29,608 m<sup>3</sup>/d. Compared to the existing conditions, the groundwater inflows to the Touquoy pit filled to 108 m CGVD2013 is anticipated to increase the baseflow in Moose River at SW-2 by 249 m<sup>3</sup>/d.” (App D1 pg 5.5)
  - Hard to assess the changes related to the proposed works when compared to ‘existing’ conditions and not the conditions that are expected without the proposed change (i.e., what was approved in the original EA)
- “In order to assess the potential impacts from the faults on the predicted water quality loadings to Moose River, the groundwater flow model was modified to include these fault features. The hydraulic conductivity of the fault alignments presented on Figure 2.4 was assigned to be an order of magnitude higher and an order of magnitude lower than the native bedrock, and the flow and transport simulations were re-run to predict the extent of the plume originating from the open pit.” (App D.1, pg 5.10)
  - What impact on the flow simulation results did this have?
- “The groundwater flow modelling was conducted using a model calibrated to water levels, and baseflow targets to establish baseline conditions. Predictions made using the model are based on several conservative assumptions to reduce the influence of uncertainty in the predictions. Therefore, the confidence in the predictions made using the model is considered high.” (App D.1, pg 5.21)
  - What does this mean in terms of uncertainty present in the results presented and potential ranges of values that should be considered in the assessment of impacts from what is proposed?
- “The groundwater modelling approach can be used to estimate the “worst-case” by reducing the “lowest flows” in the streams by the average summer baseflow reductions calculated using the model.” (App D.1, A.1)
  - Was this analysis completed? If yes, where?
- “An environmental water balance was used to predict the Open Pit effluent overflow to Moose River at mine closure (Stantec 2021b). Figure 4 shows the average predicted monthly Open Pit overflow under climate normal conditions. As shown in the figure, average monthly effluent flow will vary seasonally from 0.9 litres per second (L/s) in July to 48.3 L/s in April. The average monthly effluent flow rate to Moose River will be 16.9 L/s. The Open Pit seepage rate to the river was simulated using a groundwater flow model (Stantec 2021a). Average daily seepage rate to Moose River was estimated at 258 cubic metres per day, or 3.0 L/s.” (App D.5, pg 8)
- “Table 7 presents the dilution ratios of the effluent with the receiver water assuming full mixing. The dilution ratios were calculated as a ratio of flow in the receiver to the effluent flow for the same month.” (App D.5, pg 13)

- Where did the values in Table 7 come from? If I understand this correctly, the 'Receiver Flow' is Moose River, and 'Effluent Flow' is discharge from the Open pit via spillway. If I do understand this correctly, why do these values differ from what has been reported as the average monthly effluent rates shown in Figure 4, or from the measured Moose River flows shown in Table 7.8 of the submission? The measured Moose River flow at SW-2 is significantly less than what is reported in Table 7 of the appendix (124 L/s vs. 450 L/s)
- Please comment on the validity of using the approach in Section 8 to determine inputs to support a 'worst-case' assessment of mixing, and not an approach using 7Q10 or other typical low flow metrics.

Watercourse #4:

- Surface water quality above predictions were noted at monitoring stations in Watercourse #4; however, this was also observed in upstream surface water monitoring stations in Watercourse #4, which is not attributed to tailings seepage or mine site effluent. (pg. 3.8)
  - How was this concluded?
- It is stated that "Expansion of the Clay Borrow Area will increase the existing site from approximately 7.6 ha to 13.5 ha and will alter the topography and vegetative cover of the drainage area associated with Watercourse #4, potentially resulting in a reduction of surface water quantity to the watercourse." (pg. 7.29)
- "To avoid further Project effects to flows in Watercourse #4, a new WRSA sediment pond and treatment system designed for nitrate removal will be constructed at the water return location in Watercourse #4 to provide treatment for the portion of WRSA runoff returned to the watercourse. A FDP will be established in Watercourse #4 to provide a control point for sampling of returned flow in accordance with MDMER regulation. The water quantity design goals of the new WRSA sedimentation pond will be to replace anticipated flow losses to Watercourse #4 from the WRSA and Clay Borrow Area and to do so through hydrograph matching such that future instantaneous flows are maintained within 10% of existing flows." (pg. 7.30)
  - It is further stated that "Effluent from the new WRSA sediment pond and treatment system supplementing flow in Watercourse #4 will meet MDMER effluent limits and aquatic toxicity requirements prior to being discharged to the environment." (pg 7.30)
- "The expansion of the WRSA is expected to increase the area of the existing WRSA by approximately 6.3 ha, affecting existing watershed areas, and associated surface water quantity. Of the 6.3 ha expansion, 1.2 ha is located within the catchment 4 area draining the Fish River headwaters of Square Lake and. 5.1 ha is located within the catchment 1 area of Watercourse #4 (Figure 7.4). The area reduction in catchment 4 represents 0.37% of the catchment 4 area and 0.22% of the overall Fish River headwaters catchment area." (pg 7.31)
  - These values only reflect the additional area. How about the cumulative area impacted by the project?
- "With the proposed expansion of the WRSA, approximately 21 ha of the western area of the WRSA (16 ha of existing and 5 ha of the expanded WRSA area) will be diverted to a newly

constructed treatment system for sediment and nitrate removal before being gravity drained to Watercourse #4 in the headwater area upstream of Mooseland Road.” (pg 7.32)

- “Flow returned to Watercourse #4 via the newly constructed WRSA sedimentation pond and treatment system is intended to mitigate both the WRSA expansion (5.1 ha) and the Clay Borrow Area expansion (7.8 ha). A total of 12.9 ha would be affected from the Watercourse #4 drainage area as a result of these proposed modifications. As runoff coefficients change between the existing and modified scenario, a WRSA area of approximately 20.5 ha is required to make up the anticipated instantaneous to annual flow volume loss resulting from proposed expansion of the WRSA and Clay Borrow Area.” (pg. 7.32)
  - The report goes on to say that “Returning flow from a 20.5 ha section of the WRSA drainage area would return approximately 12,198 m<sup>3</sup> to the watercourse on an annual basis, thus achieving no net change in surface water quantity to Watercourse #4.” (pg. 7.33). The previous page had outlined that this approach would “make up the anticipated instantaneous to annual flow volume loss...”, but discussion related to the impacts of the proposed settling pond/treatment approach on instantaneous flows is not provided
  - A new methodology for determining flows to watercourse #4 is presented here that differs from the pro-rated approaches used earlier. It is unclear what drainage area is being used to support Table 7.22 – it is stated that “Using the areas and runoff coefficients shown in Table 7.21, above, a summary of monthly flow volumes is provided in Table 7.22, below.”, but I don’t believe that is correct as Table 7.22 outlines several months whose monthly runoff exceeds the annual runoff values provided in Table 7.21. Regardless of what drainage area from Table 7.10 is being used, significant differences between these values and those previously provided exist. For example, the Mean Monthly Flow calculated from the Monthly Runoff in Table 7.22 is 4.33 L/s, where the Mean Monthly Flows in Table 7.10 range from 12.99 – 54.86 L/s. Where the runoff coefficients to support these calculations have been “empirically refined for the site using flow data collected during mine operation”, these results provide further questions to the comments provided above re: level of confidence in the regional regression values calculated for the site
- It is reported that “Without avoidance or mitigation, the reduction in contributing watershed area in catchment 1 upstream of Mooseland Road would result in a reduction of mean annual flow (MAF) to Watercourse #4 of 1.51 L/s from 17.49 L/s and MMF reductions as indicated in Table 7.20, below.” (pg. 7.32)
  - Please confirm how were these numbers developed - are these based on the regional regression pro-rating that is discussed on pg. 7.16?
- “Importantly from a water quality perspective, when a new runoff or melt event flows into the pond, it begins an outlet flow event of water from the permanent pool. As a result, the sediment pond discharge will match the runoff/melt event hydrograph, while reducing the peak to reduce erosion potential.” (pg. 7.34)
- To confirm, what reductions of peak values are expected? It is previously stated in the report that “The water quantity design goals of the new WRSA sedimentation pond will be to replace anticipated flow losses to Watercourse #4 from the WRSA and Clay Borrow Area and to do so

through hydrograph matching such that future instantaneous flows are maintained within 10% of existing flows.” – to confirm, are the peak flows to be reduced within 10% of existing flows?

- “There have been changes in the substrates in Watercourse #4 as a result of siltation events associated with the haul roads between 2018 and 2020 (Stantec 2019c). Grey silt, consistent with what accumulates on the mine roads, was observed in depositional areas of Watercourse #4 and was most evident in areas immediately downstream of the WRSA haul road at Culvert 4A and TMF haul road at Culvert 4B and within the slow-moving sections of Watercourse #4, where it flows through Wetland 6. Grey silt appeared to have replaced the fine substrates (i.e., organics) between coarser substrates in swift-flowing sections (Stantec 2019c).” (pg. 8.11)
- “Watercourse #4 will be supplemented with flow from a newly constructed water management pond so that there is no loss of water quantity to Watercourse #4 from the existing condition. The outflow of the water management pond will be located near the transition zone between intermittent and perennial flow in Watercourse #4. The location of the pond is in the upper portion of the watershed where reductions in flow are anticipated in the absence of mitigation (i.e., water management pond). The water management pond will attenuate peak discharges to Watercourse #4. With mitigation, changes in flow are not anticipated to result in adverse effects to fish habitat quantity.” (pg. 8.21)
- “Average monthly baseline flow data for Watercourse No.4 were derived based on estimated average watershed flows (Stantec 2021d; Table 3.2).” (App D.3, pg 8)
  - From a review of Table 3.2, it is unclear where these values have been obtained, and what ‘baseline’ is intended to represent? From a review of the references in Appendix D.3, it is difficult to determine and review exactly where this information came from (i.e., personal email correspondence). Please confirm that these values align with the values provided in the EA submission

### **Conclusions & Recommendations:**

It is my opinion that the information that has currently been provided in the submission is insufficient for developing a clear understanding of the impacts associated with the proposed modifications to the works, and as such it is difficult to gauge their overall significance. Comments to support this are provided above, with a high-level summary of broad findings found below:

- Additional information to support assessment of current impacts of the mine on Moose River is required to support the conclusions outlined in the submission. The original Moose River EA submission outlined that no impacts to Moose River were to occur as a result of the works – this report states that impacts have been observed, and questions remain related to the stated significance of these impacts currently presented in the EA submission. It is strongly recommended that a clear understanding and level of confidence in the current impacts of the approved activity exist prior to the approval of additional works so that both cumulative and additive impacts can be effectively evaluated.
- Information to support the conclusions reached on several items in the submission require more detail and clarification, as outlined more specifically in the comments provided above.

Date: August 20, 2021

To: Environmental Assessment Branch

Cc: Chuck McKenna, Manager, Sustainability & Applied Science (Resource Management Unit)

From: Staff within the Resource Management Unit of Nova Scotia Environment and Climate Change

Subject: Reviewer Comments on Touquoy Gold Project Modifications – Environmental Assessment Registration Document; July 2021

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### Introduction

The following reviewer comments have been developed by technical staff within the Resource Management Unit of NSECC based on review of the Touquoy Gold Project Modifications – Environmental Assessment Registration Document; July 2021

### Comments

- Regarding the Conceptual Tailings Deposition Plan presented in the EARD, sufficient details have not been provided on how in-pit tailings disposal will be isolated from groundwater to prevent leaching of contaminants into the environment

The proponent has indicated that the objectives of the ongoing groundwater monitoring program are to: 1) verify effects predicted in the original EARD and Focus Report, 2) confirm the continuing effectiveness of mitigation measures, 3) allow for adaptive management and identify the need for any new mitigation measure, and 4) confirm compliance with regulatory approvals/requirements; with exceedances reported according to the requirements of the Industrial Approval and the GWCP. While it is indicated that these monitoring and reporting activities will continue following the proposed modifications to the Approved Project; this provides little assurance in the way of prevention or protection. In terms of maintaining groundwater quality and preventing impacts, monitoring is not the correct tool to employ. Rather, the process design must be sufficient as to provide protection against potential groundwater impacts.

No management controls/engineered structures (e.g., liners, secondary containment, leachate collection, underdrainage systems) have been proposed to prevent migration of contaminants to the surrounding environment. Typically, most jurisdictions today do not allow wastes to be deposited on a property without an appropriate cap, liner, and leachate collection system.

As presented, there is too much uncertainty and potential risk to support the Conceptual Tailings Deposition Plan proposed in the EARD

- Regarding other proposed activity components (e.g., Open Pit spillway construction within the areas of identified historic tailings, expansion of the Waste Rock Storage Area, expansion of the Clay Borrow Area, and relocation of the road used to access the Mill Plant), sufficient details have not been provided on how historic tailings disturbed within the Project Area will be managed in accordance with the Nova Scotia Contaminated Site Regulations.

According to the Contaminated Sites Regulations, concentrations of contaminants above the Tier 1 Environmental Quality Standards (or established background), that are ineligible for an exemption, require notification, assessment, and remediation/management under the Contaminated Sites Regulations.

Any areas with confirmed soil, sediment, groundwater, or surface water impacts above the applicable criteria must be delineated and managed in accordance with the Nova Scotia Contaminated Sites Regulations, including historic tailings and waste rock which could potentially be impacted by the Project, either directly or indirectly.

The historical tailings and waste rock management plan should demonstrate adherence to the Contaminated Sites Regulations in the assessment and remediation/risk management of historic tailings and waste rock for all aspects of the Project; Albeit alternate timelines than those prescribed in the Regulations may be applied under Environmental and/or Industrial approval, as warranted.

End





Kwilmu'kw Maw-klusuaqn Negotiation Office  
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Our Rights. Our Future.

August 17, 2021

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**RE: Continuing Consultation on the Touquoy Gold Project Site Modifications – Atlantic Mining NS Inc.**

Mrs. Tutty,

I am writing in response to your letter dated July 13, 2021 with respect to continued consultation under the *Terms of Reference for a Mi'kmaq-Nova Scotia-Canada Consultation Process (ToR)* as ratified on August 31, 2010 on the above noted project.

The Mi'kmaq Nation in Nova Scotia has a general interest in all lands and resources in Nova Scotia as the Mi'kmaq Nation has never surrendered, ceded, or sold the Aboriginal title to any of its lands in Nova Scotia. The Mi'kmaq have a title claim to all of Nova Scotia and as co-owners of the land and its resources it is expected that any potential impacts to rights and title shall be addressed. Clearly, this project will impact Mi'kmaq Rights and Title. Should any unplanned environmental impacts and/or environmental accidents occur during the development, operations, and reclamation of the proposed Project it is our expectation that the Mi'kmaq of Nova Scotia will be compensated thoroughly.

We have attached CBCL's review of Atlantic Gold's environmental assessment, as part of our comment submission. This review highlights information gaps in Atlantic Gold's supporting documents and stresses the need for further oversight and engagement. We request to designate the proposed Touquoy Mine Expansion Project for an impact assessment under the Impact Assessment Act (IAA). This will allow for more in depth consultation and further engagement with the Mi'kmaq communities. The engagement on Atlantic Gold's Fifteen Mile Stream has been successful in keeping the Mi'kmaq involved therefore our office recommends a similar level of oversight.

It is our expectation that a Mi'kmaq Ecological Knowledge Study (MEKS) be completed in accordance to the Mi'kmaq Ecological Knowledge Protocol. Should this project be approved, it is strongly advised the completion of a MEKS by the proponent be incorporated into the terms and conditions of the approval.



The Kwilmu'kw Maw-Klusuaqn Negotiation Office (KMKNO) does not represent the communities of Millbrook or Sipekne'katik. We do however encourage further consultation with these communities as they may have interest in the proposed project area.

We kindly request that all information and continued correspondence be forwarded to KMKNO to facilitate the flow of the process and communication. Please contact Patrick Butler, Mi'kmaw Energy and Mines Advisor at KMKNO for any further questions.

Yours in Recognition of Mi'kmaw Rights and Title,

Director of Consultation  
Kwilmu'kw Maw-klusuaqn Negotiation Office

c.c.:

Melanie Cameron, Nova Scotia Department of Lands & Forestry.

Chris Burbidge, Department of Fisheries and Oceans.

Office of L'nu Affairs.



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# Chapter 1 Introduction

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CBCL Limited (CBCL) was retained by the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) to review the proponent's Environmental Assessment Registration Document (EARD) for the Touquoy Gold Project Modifications (the Project). The Project is located in Moose River, Nova Scotia, 63 km Northeast of Halifax and 19 km southeast of Middle Musquodoboit.

The aim of the review was to evaluate scientific and technical information for completeness; identify information gaps; and when warranted, provide recommendations on how the proponent may address the information gaps in determining the environmental risk of the Project to the Mi'kmaq of Nova Scotia. The information presented herein on the proponent, the Project, and the environmental assessment is based on the information contained within the proponent's EARD.

## 1.1 The Proponent

The proponent of the Touquoy Gold Project Modifications is Atlantic Mining NS Inc. (AMNS), a wholly owned subsidiary of St. Barbara Limited. The Touquoy Mine (Figure 1) is a fully permitted and approved facility currently operating as part of the Touquoy Gold Project since 2017, attaining commercial production in March 2018.

The proponent is focused on growing gold production in Nova Scotia and currently holds four gold development projects in Nova Scotia.

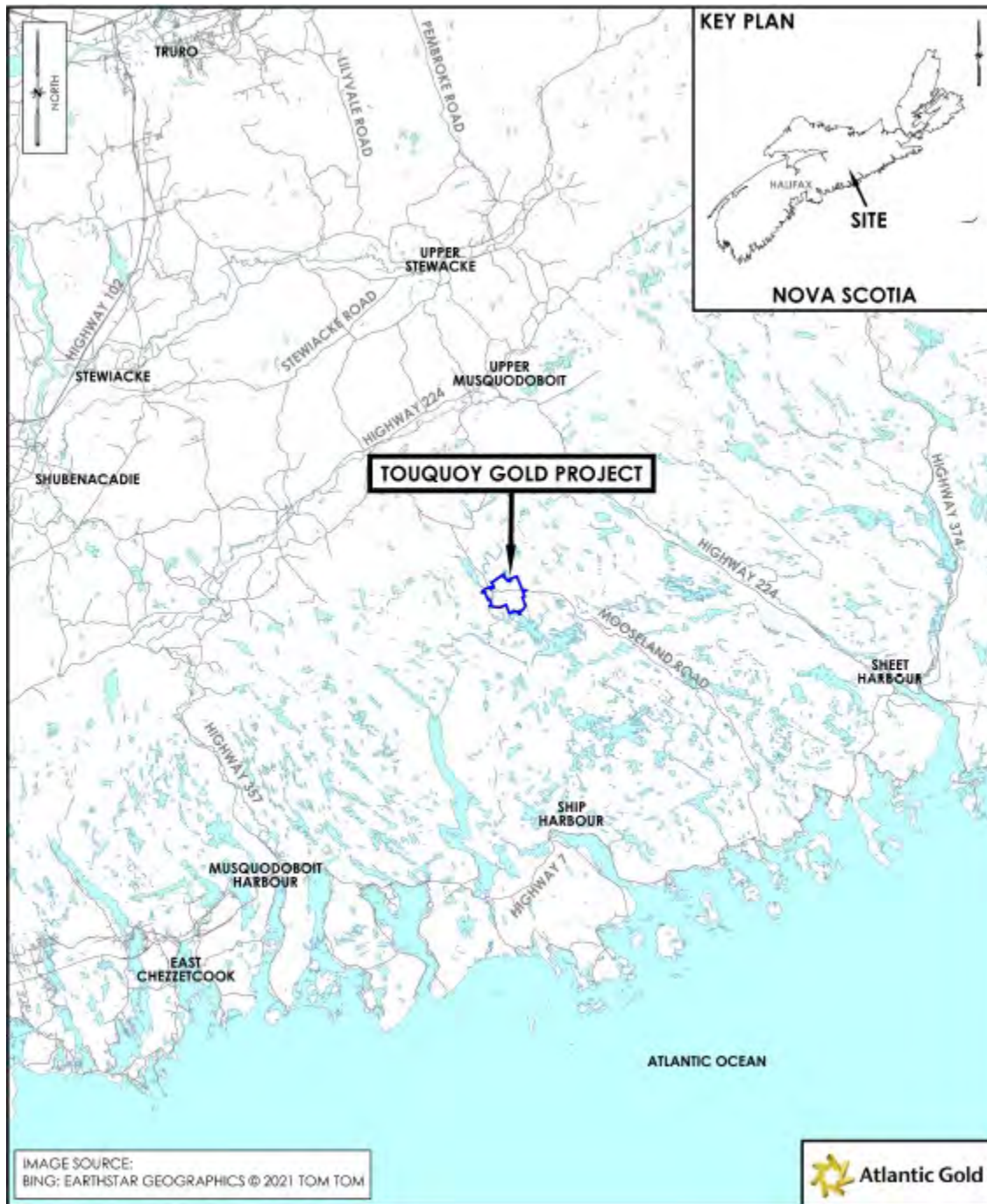
- 1 Touquoy Mine (Moose River, Nova Scotia)
- 2 Beaver Dam Mine Project (Marinette, Nova Scotia)
- 3 Fifteen Mine Stream Gold Project (near Trafalgar, Nova Scotia)
- 4 Cochrane Hill Gold Project (Melrose, Nova Scotia)

The proponent also has exploratory or drilling permits in other areas of the province, such as the Pleasantfield Exploration located in Pleasantfield, Nova Scotia. This area has known cultural significance to the Mi'kmaq.

The Touquoy Gold Project has an estimated life of eight to ten years (CRA, 2007); with this schedule and the construction in 2017, the decommissioning would be completed around 2025 to 2027. With the proposed Touquoy Gold Project Modifications, the decommissioning would occur in 2025; however, if tailings from the other gold



development projects are also disposed in the pit, then the decommissioning would occur in approximately 2033 (Stantec, 2021).



**Figure 1: Location of the Touquoy Gold Project (mine) (Source: Stantec, 2021 [adapted by CBCL]).**

## 1.2 Summary of Existing Operations for the Approved Project

The existing mine currently mills an average of 8,400 tonnes per day of ore. The Mine Site is approximately 271 hectares. Within the Mine Site, there is an Open Pit that occupies an area of approximately 13 hectares, a Mill Facility that occupies approximately 60 hectares, an approximately 130-hectare Tailings Management Facility (TMF), and a Waste Rock Storage Area (WRSA) (approximately 35 hectares). There are also roads that occupy approximately 13 hectares and other ancillary features such as overburden stockpiles, and Plant Access Roads.

Ore is mined from the Touquoy Pit (Open Pit) and delivered to the Mill Facility for processing (crushing, grinding and recovery of the gold through mechanical and chemical processes). Tailings are pumped by pipeline from the Mill Facility to the Tailings Management Facility (TMF). Water recovered from the Touquoy tailings is reused in processing.

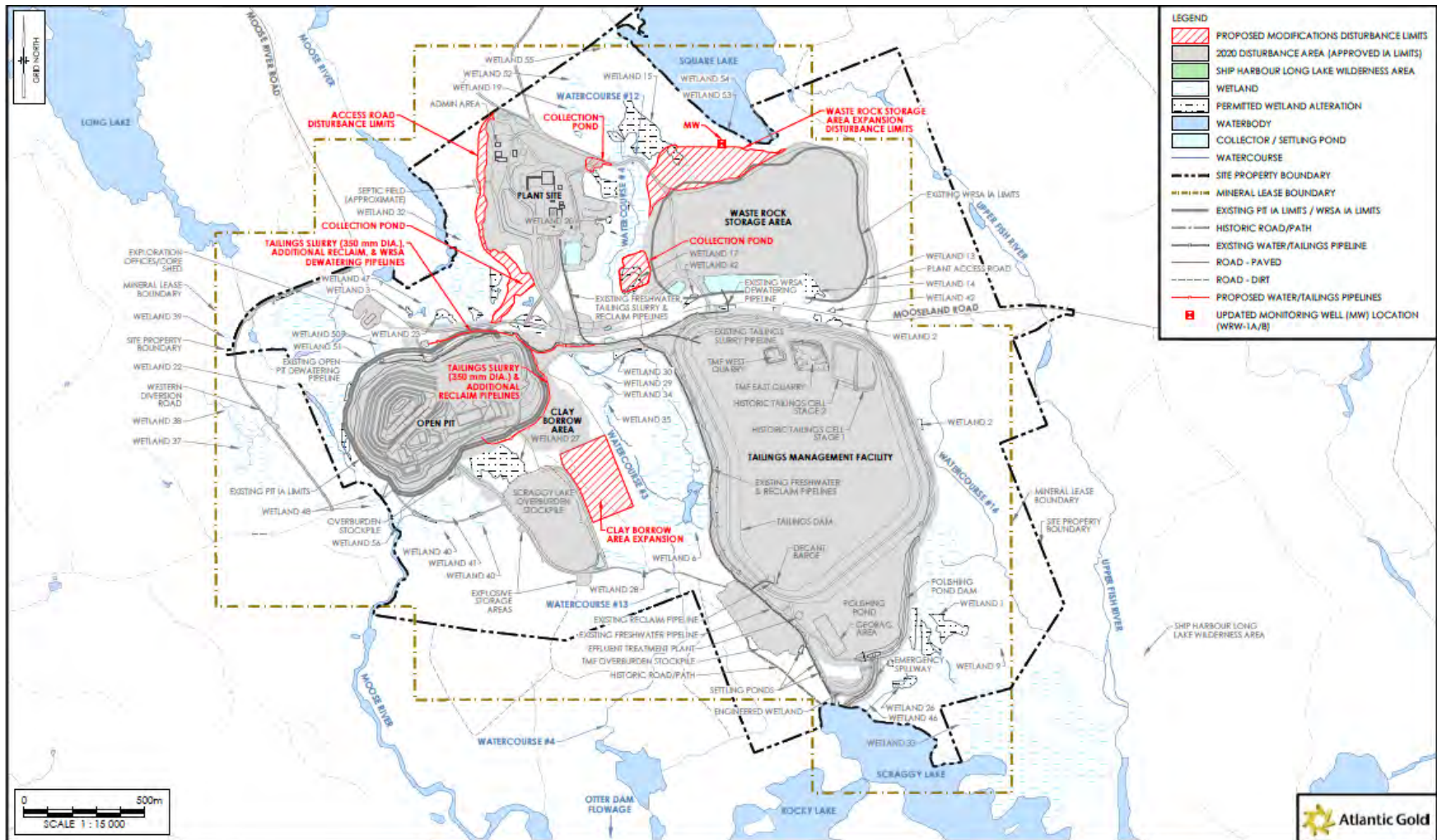
The TMF consists of a tailings pond, polishing pond, a constructed wetland, and associated facilities. Waste rock is generated during Open Pit development and is used during operation for grading and construction of embankments and other infrastructure if it meets regulated environmental criteria. Waste rock not used for site development is stored permanently in the WRSA, which will be reclaimed at site closure. Topsoil and overburden stockpiles around site were created during development and will be reused for site reclamation.

## 1.3 Project Description

As outlined in Section 1.4 and 2.0 of the EARD, the Project will add approximately 18 hectares to the approved current mine footprint of 271 hectares for a total footprint of approximately 290 hectares. The Project consists of the following proposed components (modifications) to support ongoing operations (Figure 2):

- ▶ In-pit disposal of tailings
- ▶ Expansion of the WRSA
- ▶ Expansion of the Clay Borrow Area
- ▶ Relocation of the Mill Plant Access Road

The EARD discusses construction activities and decommissioning and reclamation activities associated with each Project component.



**Figure 2: Touquoy Gold Mine site with proposed modifications (Project components) and infrastructure outlined (Source: Stantec, 2021).**



## 1.3.1 Construction

### 1.3.1.1 In-pit Tailings Disposal

This component includes the use of the exhausted Open Pit for tailings disposal instead of the existing approved TMF as there is not enough storage capacity in the existing TMF. The Open Pit is anticipated to be exhausted in 2022, while the TMF is predicted to reach capacity by March 2022. AMNS is proposing to use the exhausted Open Pit as a depository for tailings.

Material that was originally considered to be waste rock is now being considered as potential medium grade ore. Approximately 22% more ore is being processed to achieve the same number of ounces of gold and more than twice the quantity of medium grade ore has been identified for processing than originally forecasted, resulting in more tailings.

Currently, the Open Pit is actively dewatered during operation as water from the pit is pumped to the TMF. The dewatering operations would be discontinued approximately five months prior to start-up of tailings deposition in the exhausted Open Pit. Once the dewatering operations cease, the inflow of groundwater, surface flow and precipitation into the Open Pit will create subaqueous conditions for tailings disposal (i.e., discharge below the surface of the water). Water management features will be modified to direct surface runoff to the pit instead of the TMF.

Tailings deposition will be performed using subaqueous deposition of a conventional tailings slurry through a barge. Subaqueous deposition during the winter months will involve mitigation strategies to continue deposition, such as depositing at deeper depths, single point deposition below the ice depth, etc. The Open Pit has a conical shape and a total depth (below the spillway) of 132 metres (m). The total capacity of the exhausted Open Pit at the proposed spillway elevation of 108 m is 8.962 Mm<sup>3</sup> (cubic megametre). The estimated total volume of Touquoy tailings to be deposited in the exhausted Open Pit is approximately 6.03 Megatonnes.

Tailings may be deposited via a redirected tailings slurry pipe as a thickened slurry that is less permeable than the Open Pit. The tailings line from the Mill Facility to the exhausted Open Pit will be double walled with leak detection controls and shutdown procedures.

Once water quality meets regulatory reclamation criteria without treatment, the site is prepared for Closure in accordance with the Closure Plan. Excess water that meets regulatory criteria will be discharged to Moose River via the proposed spillway/conveyance channel.

### 1.3.1.2 WRSA Expansion

As originally designed in 2017, the WRSA had a storage capacity of 10.8 Mm<sup>3</sup> but reached its storage capacity in the spring of 2021 due to capacity reduction because of environmental controls and the delineation of a wetland in the planned development area.

The current approved design of the WRSA has a surface footprint of 35 hectares. To date, it is understood that a portion of the waste rock material is potentially acid generating but the potential for onset of acid rock drainage (ARD) in the WRSA is considered low. AMNS has developed and implemented a Metals Leaching and ARD Management Plan to mitigate risk of ARD development.

The WRSA requires an additional 2.5 Mm<sup>3</sup> of storage capacity, which would be achieved through the proposed WRSA expansion of approximately 7.1 ha, increasing the total footprint of the WRSA to 42.1 ha. The proposed expansion includes area outside of the existing approved IA limits to the north/northwest (Figure 2). The proposed WRSA height is designed to an elevation of 170 metres above sea level (same as the existing).

Approximately 7.1 hectares of land will be cleared to make room for the WRSA expansion. Surface topsoil and peat will be removed to deposit waste rock directly on the existing clayey till layer for the required construction stability.

Wetland 15 is a natural 9.46-hectare coniferous and shrub swamp located to the west of the proposed WRSA expansion and is the source water of Watercourse # 4 which flows through other wetlands. The WRSA Expansion will require alteration to this wetland at two locations (Figure 2), for an approximate total of 0.6 hectares; 0.32 hectares of the 0.6 hectares has not been previously permitted for alteration. This alteration will require an amendment to the existing Approval for Wetland Alteration (Approval # 2016-095967-04).

To enhance drainage and reduce environmental effects on water quantity, alterations to drainage are planned on the western area of the WRSA to divert water to a newly constructed pond for sediment removal before being drained into Watercourse #4, in the headwater area upstream of Mooseland Road (Figure 2).

The WRSA expansion also requires the relocation of the Plant Access Road and a groundwater monitoring well within the expansion footprint.

#### 1.3.1.3 Clay Borrow Area

Clay from the Clay Borrow Area, located in the southeastern corner of the Mine Site, is used during construction and maintenance/management of surface water (ditching, drainage, seepage etc.). The clay is considered low quality and clay for construction and maintenance purposes typically needs to be hauled in. The WRSA expansion and the Plant Access Road will require more clay than what is currently available in the existing Clay Borrow Area. The expansion of the Clay Borrow Area along the centre line of the Drumlin to the southeast will provide clay for on-site construction and maintenance needs. The expansion of the Clay Borrow Area aims to avoid environmentally sensitive features (e.g., wetlands, watercourses, rare vegetation) (Figure 2).

Site preparation will be required for the use of the expanded Clay Borrow Area. Site preparation will consist of incremental clearing and grubbing on a seasonal basis. Clay will be extracted from the Clay Borrow Area on an as-needed basis and borrow excavation will be terminated at or above bedrock.

#### 1.3.1.4 Relocation of the Plant Access Road

The existing Plant Access Road will need to be relocated to allow for the expansion of the WRSA. The existing Plant Access Road runs north of the WRSA into the proposed expansion area. The Plant Access Road currently provides access to the Plant Site which includes the Mill Facility, run-of-mine stockpile, warehouse, truck shop, and several administration buildings.

A new proposed Plant Access Road will be approximately 1,278 m long and 14.6 m wide (4.45 hectares) and will be constructed to maintain access to the Plant Site from Mooseland Road. When the new road is operational, the existing Plant Access Road will be decommissioned, with the exception of the public section of BillyBell Way. This section will be kept open (from Mooseland Road north to Square Lake) to maintain access to other crown land properties north of the Mine Site.

The new Plant Access Road has been designed to avoid sensitive environmental features and to include sediment control features in the accordance with the Erosion and Sediment Control Plan for the Touquoy Gold Project. Drainage and ditching associated with the relocated Plant Access Road are shown on Figure 2.

### 1.3.2 Decommissioning and Reclamation

The goal of reclamation is to return the physical, chemical, and biological qualities of the land and water regimes disturbed by the Touquoy Gold Project to a state that is safe, stable, and compatible with the surrounding landscape and final land use. A Reclamation Plan has been prepared to provide details of the proposed decommissioning and reclamation activities at the Touquoy Gold Project.

Initial land use activities identified by stakeholders for the post-mining landscape included outdoor recreation and commercial forestry. Continued engagement and dialogue with the public regarding the mine's operational and closure planning is completed via the Community Liaison Committee (CLC). The final land use concepts during post-closure will be finalized once consultation is completed.

The Reclamation Plan was revised in November 2020 in response to comments received from NSECC and NSDEM. The Reclamation Plan will be updated if regulatory approval is obtained for the proposed modifications.

### 1.3.2.1 Open Pit

The general closure concept for the Open Pit will allow for natural flooding over time with a combination of groundwater inflow, direct precipitation, and surface run-off to create a permanent lake with a shallow shoreline and a spillway to Moose River. There will be vegetative cover above the final water elevation. Pit ramps will be maintained with the addition of safety berms for safe vehicular access to the pit lake during pit flooding and for post-closure monitoring.

Open Pit filling will be accelerated by directing a portion of the WRSA flows. In addition, the expanded Clay Borrow Area will be directed to the pit until reclamation of this feature. The proposed closure shoreline geometry will ensure all water draining through the till/bedrock interface is directed to the lake. The barrier berm may be breached in locations to allow the surface runoff from nearby site areas to similarly drain into the Open Pit.

### 1.3.2.2 WRSA

The current approved Reclamation Plan describes the following closure activities for the WRSA:

- ▶ Progressive re-sloping and vegetation of the WRSA slopes
- ▶ Re-sloping of the final lift of the WRSA
- ▶ Contouring the ultimate top surface of the WRSA
- ▶ Providing a vegetated cover for closure
- ▶ Grading and contouring the collection ditches and ponds

The re-sloping of the final lift, placement of a soil cover and revegetation treatments will be completed following end of mining. A portion of surface water runoff from the west WRSA will be directed to Watercourse #4 as to not reduce the flow to the watercourse due to the WRSA and Clay Borrow Area expansion. The runoff will be released through a water management pond prior to gravity drainage to the Watercourse #4. At closure, collection ditches and ponds will be removed, and areas graded and vegetated.

Erosion modelling and field vegetation trials are currently underway at the site. Outcomes of these studies and trials will be used to complete detailed design of re-sloping and vegetation requirements.

### 1.3.2.3 Clay Borrow Area

At mine closure, all disturbed areas within the Clay Borrow Area will be regraded and re-vegetated as per the Reclamation Plan. Where practical, surface water runoff will be graded toward pre-development areas.

### 1.3.2.4 Plant Access Road

Following mine closure, the relocated Plant Access Road will be maintained as necessary to provide ongoing access for closure activities. Upon decommissioning and removal of buildings at the Mill Facility and Admin Area, the Plant Access Road will be reclaimed. To

facilitate vegetation, the road surface will be scarified, capped with a layer of salvaged soil, and seeded.

## 1.4 Regulatory Context

The existing Touquoy Gold Project was approved under the Nova Scotia Environmental Assessment Regulations and is operating under IA #2012-084244-08. An EARD was submitted by DDV Gold Ltd to NSE for the Touquoy Gold Project on March 15, 2007. During the review process, a Focus Report was requested by the Minister of Environment and Labour to provide additional detail. A Focus Report was submitted on November 19, 2007 and on February 1, 2008, the Touquoy Gold Project was approved by the Minister of Environment and Labour with conditions.

In December 2020, AMNS submitted an application to NSECC seeking an IA amendment to permit expansion of the TMF. The IA amendment application also included a request to expand the WRSA and Clay Borrow Area. Upon review of the application, NSECC informed AMNS that an EARD would be required to address proposed modifications to the Approved Project. AMNS has since determined that while expansion of the TMF would create an expedient solution for tailings management that would enable mining operation to continue, a longer-term and therefore more viable solution is to permit in-pit tailings disposal.

In accordance with Schedule A of the Environmental Assessment Regulations, the Touquoy Gold Project Site Modifications was determined to be a Class I Undertaking and required registration for environmental assessment (EA). In December 2020, AMNS submitted an application to Nova Scotia Environment and Climate Change (NSECC) for an amendment to existing IA (#2012-084244-08) to accommodate proposed modifications to the Approved Project. These modifications included the proposed the WRSA expansion, expansion of the Clay Borrow Area, relocation of the Plant Access Road, and expansion of the TMF. Upon review of the proposed modifications, the Minister of Environment and Climate Change determined that an EA would be required before the existing IA could be amended. The EA was registered on July 16, 2021.

The Minister of Environment will advise Atlantic Gold in writing on the EA decision within 50 day following the date the EA was registered. The following additional approvals may be required under the *Environment Act*, administered by Nova Scotia Environment & Climate Change (ECC):

- ▶ Wetland Alteration Approvals
- ▶ Watercourse Alteration Approval

Other potential permits and approvals would include:

- ▶ Crown Land lease and/or acquisition

## 1.5 Mi'kmaq Engagement

The proponent states that they began engaging with the Mi'kmaq of Nova Scotia during the Touquoy Gold Project over a decade ago and also states a commitment to maintain Mi'kmaq engagement throughout the Touquoy Gold Project's life. The EARD identifies key concerns raised during Mi'kmaq engagement as summarized in Table 1.

**Table 1: Summary of Key Issues, Questions and/or Concerns Raised During Mi'kmaq Engagement (adapted from the EARD)**

Key Issue	Summary of Proponent Response
Potential impacts or changes in surface water quality in lakes and streams	<ul style="list-style-type: none"> <li>► Site water is managed to a single point of discharge, where possible. Water is treated prior to discharge when necessary, and, that a robust monitoring program is in place to confirm water quality.</li> <li>► This program is open to Indigenous participation including Environmental effects monitoring in receiving waters.</li> </ul>
Potential impacts to fish and fish habitat	<ul style="list-style-type: none"> <li>► No impacts are predicted that that the already robust monitoring program currently in place will be updated.</li> </ul>
Dust from operations impacting traditional practices	<ul style="list-style-type: none"> <li>► Dust suppression strategies are employed on site and are functioning well and that no changes to dust are anticipated. AMNS also mentioned that the existing monitoring program will be updated.</li> </ul>
Elevated levels of noise and light impacting hunting near the mine	<ul style="list-style-type: none"> <li>► No increase in noise or light levels are expected.</li> </ul>
Loss of traditional species habitat and loss of access for traditional purposes	<ul style="list-style-type: none"> <li>► The proposed modifications include an increase in mine footprint of 7 ha which represents an overall 3% increase. The area to be impacted has previously been assessed for ecological value and cultural resources and are updated in the EARD.</li> </ul>
TMF safety and stability	<ul style="list-style-type: none"> <li>► No expansion of the current TMF is planned and that deposition of current tailings into the open pit is considered a safe method of tailings disposal. AMNS has stated that the existing monitoring plan will address long term surface and groundwater quality.</li> </ul>
Site management during closure and reclamation	<ul style="list-style-type: none"> <li>► Reclamation bonds will support long term monitoring and remediation efforts are financed</li> </ul>

Key Issue	Summary of Proponent Response
	by the company. AMNS has invited Millbrook to participate in a Reclamation Working Group being formed for the Touquoy operation.
Mine water management, treatment, and discharge	▶ AMNS described the function of onsite water management including the stages of TMF, the duration of water retention and the monitoring of discharge flows.
Indigenous employment and community benefits	▶ AMNS will continue to identify opportunities for improvement by working with the human resources teams from indigenous communities.
Impacts to cultural resources and the role of archaeology	▶ AMNS described the various levels of screening and surveying undertaken and detailed the stipulations in the environmental protection and the reporting requirements associated with an archaeological discovery on site.
The necessity and role of a TMF	▶ AMNS described the functions and stages of the TMF while also discussing alternatives including in-pit tailings deposition.
Potential risks and mitigation strategies related to in pit tailings storage	▶ AMNS responded that in-pit tailings disposal is a safe and effective tailings deposition strategy and that there is an extensive monitoring system.

## Chapter 2 Environmental Assessment Registration Document Review

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Section 5.0 of the EA outlines the environmental assessment scope and methods used to conduct the EA and predict the effects of the Project.

The assessment of the Project environmental effects was restricted to the proposed modifications and did not include current operation and existing infrastructure or the proponent's proposed use of the Touquoy Mine Site for their other mining operations.

Table 5.1 in Section 5.2.2. of the EARD presents a preliminary issues screening exercise using potential Project-environment interactions to identify appropriate Valued Components (VCs) upon which the EARD is focused on.

Based on the screening exercise, only the following VCs were selected for the effects assessment:

- ▶ Groundwater Resources
- ▶ Surface Water Resources
- ▶ Fish and Fish Habitat
- ▶ Terrestrial Environment
- ▶ Cultural and Heritage Resources

Based on consultation with KMKNO, the following topics were selected for further consideration and analysis:

- ▶ Groundwater quality and quantity
- ▶ Fish and fish habitat
- ▶ Cumulative effects

Although not a topic of specific focus, it was noted during the review of the EARD that in the screening of potential interactions, Indigenous Peoples was screened as a VC and dismissed without a clear rationale for the decision. It is common practice in Canadian environmental assessment processes to assess the potential environmental effects of a proposed development on Indigenous and treaty rights, including current use of lands and resources for traditional purposes. The Impact Assessment Agency of Canada (IAAC) provides guidance on how to evaluate impacts on Indigenous rights, including guidance on how to identify those rights through consultation with Indigenous communities (IAAC, undated). It is not clear whether these rights were identified through consultation or



engagement with the Mi'kmaq communities or whether the effect to those rights was considered.

The following subsections include a review of the assessment of each identified key topic. Each section provides general comments and a summary of the assessment results, and outlines identified gaps, potential monitoring programs, and recommendations.

In general, many of the mitigation measures are described very briefly, if at all. Many VCs would benefit from more tailored and specific mitigation measures.

## 2.1 Groundwater Review

### 2.1.1 General Comments

Changes to operation of the Touquoy Mine have the potential to affect groundwater in two primary areas.

- ▶ Expansion of the Waste Rock Storage Area will increase the area affected by water seeping through waste rock, with associated effects on the underlying groundwater.
- ▶ Storage of tailings in the excavated open pit mine will affect groundwater flow patterns and create a new potential source of contaminants originating in the pit area.

The increased area of the clay material borrow pit and the expanded haulage route are expected to have relatively minor influences on groundwater. The mine completed monitoring work between submission of the original EA and the current amendment, and the new data was added to the EA to update the current understanding of groundwater flow paths and the potential for underground movement of contaminants. The new data shows increasing concentrations of some mining-related parameters in select areas.

In general, the EA predicts that the proposed changes to mine operations will not have an adverse effect on groundwater flow rates or quality. CBCL has identified potential issues related to storage of tailings in the open pit; this is the same issue that was identified in relation to the proposed trucking of tailings from the Fifteen Mile Stream Gold Mine to the Touquoy Pit.

### 2.1.2 Summary of Results

#### 2.1.2.1 Groundwater Model: Waste Rock Storage Area

As rainwater infiltrates through stored waste rock, it can release contaminants into surface water run off and to the underlying groundwater. A groundwater model was completed to show the flow paths that could carry contaminated groundwater to other areas, and this model was updated to show the new flow paths to be created by the larger storage area.

- ▶ The new model included deeper collection ditches and assumed that 100% of water flowing toward Square Lake will be intercepted.
- ▶ Modelling showed a 32% increase in flow from the WRSA to surrounding features.

- ▶ The model showed an increase in discharge to Watercourse #4, from 54 to 126 m<sup>3</sup>/d.
- ▶ The model showed flow paths travelling to the perimeter ditch of the Tailings Management Facility within a 10-year time frame.

This work used a method called particle tracking, which traces groundwater flow paths and assumes that contamination will move at the same speed as the groundwater. This is different from the type of modelling used for the pit mine, discussed below.

#### 2.1.2.2 Groundwater Model: Tailings Stored in Excavated Pit Mine

The model of the pit mine used contaminant transport modelling, which includes considerations of the way that contamination spreads out when moving with groundwater ('dispersion'). In this case the contamination forms a plume, and not all parts of the plume move at the same speed as the groundwater. Plumes can be represented using concentration contours. The model used to evaluate the storage of tailings in the pit mine was also used for the EARD of Fifteen Mile Stream, since tailings from that site are proposed to be stored at Touquoy. The results of the model were reported as follows.

- ▶ Treated effluent will no longer be discharged to Scraggy Lake which is expected to lead to overall stabilization of water quality.
- ▶ Infilling of the pit is expected to increase baseflow to Moose River by 250 m<sup>3</sup>/d.
- ▶ The model predicts very low concentrations of contaminants travelling between the mine and Moose River, 1,000,000 times lower than the source concentration in the tailings.

#### 2.1.2.3 Groundwater Contingency Plan

Proposed actions to address contaminated groundwater include the following (when and as needed):

- ▶ Drilling and grouting to reduce seepage into the open pit
- ▶ Direct pumping/dewatering of abandoned mine workings
- ▶ Construction or deepening of groundwater collection ditches (shallow groundwater only)
- ▶ Interceptor Wells (contaminated groundwater to be pumped away and diverted/treated)
- ▶ Barrier Walls (contaminated groundwater to be blocked / redirected)
- ▶ Permeable Reactive Barrier (a treatment technology intended to treat contaminated groundwater as it flows through a trench filled with iron filings and/or mulch)

#### 2.1.3 Identified Gaps

The groundwater models at Touquoy used different methodologies and produced notably different results. Contaminants at the WRSA were predicted to travel a considerable distance over a period of 10 years, whereas contaminants in the closed pit appear to show no movement at all. This may be related to different types of geologic material at each site, but further discussion of these differences is warranted.

In general, the groundwater model of the Touquoy mine effectively shows no movement of contaminants over a 500-year period. This may be related to the extremely low bulk hydraulic conductivity assigned to the bedrock units. Individual faults and fractures do not appear to have been modelled. Government reviewers have noted numerous issues and questions concerning this model, listed in the concordance table. Not all issues raised appear to be addressed by the mine. For example, the difference in dispersivity between the shallow and deep bedrock was not adequately discussed. In addition:

- ▶ Cross-sectional flow paths and concentration contours were not presented or discussed.
- ▶ Differences between the model results and advective flow were not discussed.
- ▶ The assessment of faults was based on a bulk hydraulic conductivity ten times greater than the formation, but the resulting properties do not appear to be representative of fracture flow.
- ▶ Monitoring work has shown increases in contaminant concentrations in monitoring wells near the open pit, and reporting has attributed these changes to increased rates of groundwater flow toward the pit—this implies that groundwater flow rates are high enough to affect groundwater quality over a period of several years, and this is not consistent with the modelling results which imply that no significant transport will occur over a period of 500 years.
- ▶ It would be of benefit to provide a detailed cross-section from the model, showing concentration contours within 10 metres of the western pit wall.

Pending more detailed reporting, there are indications that the computer model of the closed Touquoy pit is not a reasonable representation of the future groundwater flow system. More detailed reporting on the computer model is needed, including additional cross-sections showing 3D groundwater flow paths from the tailings pit to the river, a detailed description of the boundary conditions in and around the pit, including the Moose River, recharge and/or hydraulic boundary conditions applied to the top and walls of the tailings pit, a local water budget showing the origin and fate of all flow entering and exiting the pit and surrounding features, a detailed conceptual model and analysis of field data supporting the modelled hydraulic conductivity of the till unit and the tailings unit, and a discussion of advective transport, and how the model treats and represents advective transport between the tailings pit and the Moose River. The concentration contours that have been presented are suggestive of an artefact of numerical dispersion and are not consistent with expected patterns of advective transport/dispersion.

#### 2.1.4 Monitoring Programs

New groundwater monitoring data were collected between the submission of the original EA and the current amended EA. Monitoring showed increasing trends, exceedances of Action Levels, and exceedances of predicted concentrations in some locations:

- ▶ Water levels near the dewatered pit are lower, showing the effects of pit dewatering.
- ▶ Flows in the river decreased slightly; In the EARD this decrease was interpreted to be the result of the lowered water table, in connection with pit dewatering.

- ▶ Wetland WL 22 is drying out, most likely due to the lowered water table caused by pit dewatering – additional compensation measures are being considered.
- ▶ Watercourse #4 was impacted by silt from the haul road and further measures are needed to control silt.
- ▶ Contaminant concentrations in discharged effluent exceeded the Tier 1 EQS and CCME guidelines but were below the MDMER.
- ▶ The concentrations of several parameters increased in some areas (cobalt, copper, sulfate, conductivity, sodium, and chloride), triggering the mine's Tier 1 Action levels and which should lead to increased monitoring.
- ▶ The arsenic concentration exceeded the Tier 2 action level in at least one location near the Waste Rock Storage Area, triggering the need for mitigation work.
- ▶ The water quality in Watercourse #4 showed increased concentrations of several parameters (nitrate, arsenic, cadmium, iron, manganese), and modelling work has been recommended to assess the level of impact.
- ▶ The surface water concentrations of some parameters exceeded the predictions of the mixing model (calcium, magnesium, nitrate, sulfate), but did not exceed guideline concentrations.
- ▶ The concentration of arsenic in the effluent was measured at 0.616 mg/L, which exceeds the guideline limit of 0.3 mg/L, showing that treatment is needed before this water is discharged to receiving water courses.

### 2.1.5 Recommendations

Monitoring reports indicated that follow-up work is needed. KMKNO may wish to follow up with the mine to determine how the following issues are being resolved, and to request an update on actions as they are implemented:

- ▶ Reporting on locations where Tier 1 Action Levels were exceeded, and resulting recommendations for further work / results of additional monitoring.
- ▶ Recommended compensation work for Wetland 22, and the results of this work when completed.
- ▶ Silt controls implemented to reduce impacts to Watercourse #4.
- ▶ Action plan for arsenic (Tier 2 Action Level).
- ▶ Regular updates on work completed to identify faults and fractures, locations of fractures that were located, whether fractures were sealed, how they were sealed, resulting changes in flow, etc.

## 2.2 Fish and Fish Habitat Review

### 2.2.1 General Comments

The fish and fish habitat information provided in the EARD is a summary of baseline and existing conditions information from waterbodies associated with the modifications to the Touquoy Gold Project Site. In general, the fish and fish habitat information in the EARD is

provided by location (e.g., waterbody) and not by species and provides a reasonable summary of the conditions. Indigenous fish species and fish species at risk (SAR) are briefly mentioned but are not the focus of the document, also detailed information on habitat is available for a select number of watercourses in the supporting documents. Water quality and stream flow information is available in supporting documents and summarized in the EARD. Physical and temporal boundaries of the Project, potential effects on fish and fish habitat, applicable mitigation measures, and anticipated residual effects are also presented in suitable detail, with some minor exceptions where additional details and clarification would help in understanding the effects of the project. Follow-up monitoring for effects to fish and fish habitat are indicated in the EARD.

Overall, the information provided in the EARD allows a high-level review of the Project and provides sufficient detail to understand that the effects to fish are anticipated to be minimal; however, additional details are required to have confidence that the methods used and data provided reflect the effects on fish and fish habitat appropriately.

### 2.2.2 Summary of Fish and Fish Habitat Information

Brook Trout, American Eel, Gaspereau, and Atlantic Salmon are all species of conservation concern, are important fish species to the Mi'kmaq, are considered to be Indigenous fish species, and are found in or near the Project Development Area. Impacts on Indigenous fish and fish habitat and fish that support these species were considered in this review, as these species provide valuable food sources.

The following 13 fish species, and three SAR fish species, have been confirmed or expected in the upper Fish River Watershed Study Area, the applicable watershed for the Project, based on the background data and fish sampling presented in the EARD and supporting documents:

Fish Species Confirmed in Study Area	Fish Species at Risk in Study Area
<ul style="list-style-type: none"> <li>▶ American Eel</li> <li>▶ Atlantic Salmon/ouananiche</li> <li>▶ Gaspereau (Alewife)</li> <li>▶ Banded Killifish</li> <li>▶ Brown Bullhead</li> <li>▶ Brook Trout</li> <li>▶ Golden Shiner</li> <li>▶ Lake Chub</li> <li>▶ Ninespine Stickleback</li> <li>▶ Northern Redbelly Dace</li> <li>▶ White Perch</li> <li>▶ White Sucker</li> <li>▶ Yellow Perch</li> </ul>	<ul style="list-style-type: none"> <li>▶ American Eel</li> <li>▶ Atlantic Salmon (sea-run)</li> <li>▶ Brook Trout</li> </ul>

Baseline fish habitat conditions for the Project were described, by location (e.g., waterbody), in the EARD document. Information provided for each waterbody included: general fish habitat present, substrates, a baseline water quality summary, and contaminant concentrations. Fish habitat information was generally not provided in the EARD for individual species, with a few exceptions, but was given for a group of fish with similar habitat requirements (e.g., cold-water species). Species of importance to the Indigenous community were not identified or described in the EARD.

The following baseline and supplemental studies were identified in the EARD that related to fish and fish habitat, water quality, or works affecting fish within the proposed Project site:

- ▶ Baseline Environmental Effects Monitoring in 2017 and 2018.
  - Fish Habitat Survey (Adults)
  - Fish Community Survey
  - Fish Tissue Study
  - Benthic Invertebrate Community Assessment
  - Water and Sediment Quality Assessment
- ▶ Fish Tissue Study (Supplemental)
- ▶ Watercourse Fish Habitat Assessment (Moose River near Existing Pit)
- ▶ Watercourse Fish Habitat Assessment (Moose River near Pit Expansion)
- ▶ Wetland and Watercourse Assessment (Watercourse #4)
- ▶ Square Lake Wetland Delineation Report
- ▶ Scraggy Lake Dam Breach Study
- ▶ Touquoy Gold Project Assimilative Capacity Study of Moose River – Touquoy Pit Discharge

As previously mentioned, fish and fish habitat studies completed for the Project modifications did not include studies focused on the effects to fish or fish habitat of importance to Indigenous communities.

#### 2.2.2.1 Loss of Fish and Fish Habitat

The EARD indicates that the Project is not anticipated to result in the death of fish or result in a change in water quality from the existing condition within fish bearing watercourses that could have an adverse residual effect on fish. Changes in contaminants due to Project modifications are not anticipated as water quality is not anticipated to exceed guidelines. Water quality in Project watercourses is summarized in the EARD and supporting documents.

The Project is however anticipated to result in the direct loss of less than 20 m<sup>2</sup> of fish habitat below the ordinary high-water mark in Watercourse #4 (or Moose River (to be clarified)), where the engineered spillway will be installed and connected to the

watercourse. A loss of riparian habitat due to construction of the spillway has not been quantified.

There are no predicted effects on Indigenous fish or harvesting of Indigenous fish in, or near the Project area; however, this was not addressed directly in the EARD.

Changes in flows are not predicted to exceed the pre-set DFO guidelines of a change of 10% of monthly mean flows (MMF), or flows decreasing below the 30% Mean Annual Discharge (MAD). No flow related changes are anticipated for the Project and no effects to fish or fish habitat are anticipated from changes in flows.

#### 2.2.2.2 Migration and Access to Fish Habitat

The site modifications will not require the placement of additional culverts or result in the change in access to, or within, existing watercourses. Therefore, no changes in migration or fish access to existing habitat is anticipated, as no changes in flows or passage as part of this Project are anticipated.

### 2.2.3 Identified Gaps

CBCL has identified several data or information gaps in relation to into the following categories indicated. These gaps are discussed in detail in the following sections:

- ▶ Assessment of Existing Conditions
- ▶ Indigenous Fish Species and Species at Risk
- ▶ Fish Species Health and Survival
- ▶ Mitigation Measures
- ▶ Residual Effects
- ▶ Monitoring Program
- ▶ Climate Change

#### 2.2.3.1 Assessment of Existing Conditions

Existing and baseline conditions are summarized in the EARD, with the raw data/information provided in supporting documentation. As this document is a summary document the level of habitat and water quality detail provided is sufficient to understand the baseline or existing conditions and suitability for fish; however, CBCL has identified several areas where additional information would aid in the review of the EARD, these are as follows:

- ▶ A summary of baseline and existing conditions for fish habitat, including substrates and water quality, are provided in Section 8.4; however, the document does not provide a list of known or expected fish species in each watercourse based on the existing conditions / habitat, rather there are statements about groups of species with similar habitat requirements (e.g., “cold-water species”) that are not species specific. The EARD should clearly identify all species known to occur, or that could potentially occur, in each watercourse, including those considered to be Indigenous fish species, or species at risk. A summary table for fish species in each watercourse should be included.



- ▶ There is a lack of species-specific habitat information for each watercourse. The location of important habitat for Indigenous species or SAR found in the watercourses within or adjacent to the Project should be provided.
- ▶ Fish species at risk are identified in Section 8.4.3 (Table 8.2), but as stated in the EARD, none of the species listed are on Schedule 1 of SARA, therefore no further consideration of SAR fish species was given. Despite the lack of protections or prohibitions related to these fish species, these fish species are of concern for the Indigenous community and the information provided, including mitigation measures, should allow for a clear understanding of how the Project will specifically protect these species and their habitat.
- ▶ In Section 8.5 of the EARD it is indicated that the Project will construct an engineered spillway discharge channel from the Open Pit to Watercourse #4; however, this has not been identified on the proposed modification / disturbance figures. Additionally, the Executive Summary of the EARD, along with other sections of the EARD (e.g., Section 7) and figures provided in Appendix D.5 (Section 2; Figures 1 and 2) indicate the location of the spillway as connecting to Moose River, not Watercourse #4. Clarification is required for the location of the spillway and habitat associated with the location of the connection.
- ▶ The fish habitat to be lost within the Moose River (or Watercourse #4 (to be clarified)) and the riparian habitat to be cleared for the construction of the spillway has not been described in detail. There is no clear statement of how that habitat is used by fish.
- ▶ There is no calculation in the document providing the exact amount of riparian habitat to be cleared or lost for the construction and connection of the engineered spillway, along with no indication of the value of the riparian habitat or fish habitat in the area.
- ▶ Flow changes from Project modifications are addressed in a supporting document (SD-24) and are indicated to be below the thresholds required for protection of the ecological flow requirements. This information should be referenced and summarized clearly in the EARD. Additionally, the flow requirements for the different life stages of the fish species using the watercourses where flow changes are predicted should be accounted for in the assessment.

#### 2.2.3.2 Indigenous Fish Species and Species at Risk

The following statements identify data gaps or where additional information is required for Indigenous fish species and Species at Risk:

- ▶ The EARD does not specifically identify Indigenous fish species, or areas of importance for Indigenous harvest within the Project boundaries. This information should be referenced or provided in the Fish and Fish Habitat section.
- ▶ The EARD does not state if the fish and fish habitat in the watercourses being impacted by the proposed development is habitat used by Indigenous fish species. The engineered spillway to be constructed will have below high-water level impacts to existing fish habitat, but there is insufficient information to determine which species may use that habitat; additional clarification is required.



- ▶ Atlantic Salmon Confirmed Presence or Absence: Confirmation of two Atlantic salmon captured in Scraggy Lake, within the Local Assessment Area (LAA). The EARD indicates that Scraggy Lake is stocked with Atlantic Salmon (ouananiche) (Section 8.4.2). Additionally, Moose River has been identified as having good rearing habitat for Atlantic Salmon, along with potentially good spawning habitat. American Eels are known to occur throughout the LAA, and many streams are suitable for Brook Trout. Additional mapping or information around the location of the habitat in the watercourses would be useful to understand potential effects on fish and fish habitat.
- ▶ Cumulative Effects on Fish Habitat: The EARD does not identify cumulative effects on fish or fish habitat. Avoidance of cumulative indirect loss in flow as a result from changes in watershed area and diversion of site contact water from the WRSA and new Clay Borrow Area will be avoided by supplementing flow in Watercourse #4 from a newly constructed water management pond, as per guidance from DFO.
- ▶ Priority Species: Gaspereau (alewife) are missing as a considered priority species from Table 8-2 of the EARD. This species is ranked as S3 according to the AC CDC.

### 2.2.3.3 Fish Species Health and Survival

Exceedances of metals and contaminants in baseline sediment and in future water quality could impact Indigenous fish species as further mining activities from the proposed Project could have an additive or synergistic cumulative effect on fish health. The EARD states that these baselines, predicted, and cumulative exceedances will not have significant impacts to fish. Based on these findings and statements, the following data gaps were identified for Indigenous fish health:

- ▶ *Fish Tissue Analysis.* Baseline fish tissue analysis was conducted to determine impacts of mercury and selenium on fish health. Trace amounts of many metals, including mercury, and selenium in fish can cause sub-lethal impacts to fish such as reduced growth (Rowe, 2003), disruption of gills and the olfactory system (Price, 2013) and can bioaccumulate through the food web and be introduced to humans through consumption of contaminated fish. Elevated concentrations of these metals and contaminants in Indigenous fish tissue could have an impact on human health if ingested.
- ▶ Use of explosives for constructing the engineered spillway may be required. There is minimal information on the type or extent of blasting required. Additional details are required as this has the potential to cause fish mortality.
- ▶ Identification of potential effects on fish health from changes in water quality and contaminants does not address the potential differences in effects for different life stages of fish. If this is provided in a supporting document it should be referenced or stated.
- ▶ White Sucker and Yellow Perch were chosen as the sentinel species for the Project; however, it was not indicated in the EARD supporting documents (SD13: Supplemental Fish Tissue Study) why these species were chosen, and others, including Brook Trout or American Eel, Indigenous fish species, were not. Clarification on the selection of these species to represent the fish population in tissue sampling is required.

#### 2.2.3.4 Potential Effects

A clear understanding of project potential effects is required to define the mitigations that will be implemented to prevent or minimize residual effects to fish and fish habitat. The following statements are the identification of gaps or requests for additional information about the potential effects chosen for the Project:

- ▶ Potential effects to fish and fish habitat are identified in the EARD (Section 8.1, Table 8.1) and the effect pathways are based on “similar projects in Nova Scotia and other parts of Canada, and professional judgment.” These projects were not identified further to allow for confirmation they are of similar scope, activity, size, contain similar habitat or species, or other characteristics that would confirm they are acceptable as a basis for determination of effects. Additional details should be provided on selection of potential effects.
- ▶ While the EARD is not a *Fisheries Act* Authorization request, assessment of potential project effects often follow, or reference, the DFO Pathways of Effects (PoEs) guidance information (DFO, 2019), as the effect pathways are well defined based on project activities which provides a framework of how a project can cause a harmful alteration, disruption or destruction (HADD) of fish habitat, or death of fish, as defined by the *Fisheries Act* (Sections 35(1) and 34.4(1), respectively). CBCL found that the EARD does not define the project activities that are anticipated occur until Section 8.5 (Table 8.3), after the identification of the potential effects. The EARD also does not provide an explanation of the link between the activity and the potential effect, as the activities listed are generally broad descriptions of project components which could include a number of sub-activities. The activity listed should connect directly to the potential effect through a well known or explained pathway.

#### 2.2.3.5 Mitigation Measures

The EARD provides a list of applicable mitigation measures that will be implemented during the Project construction and operation phases, these are listed in Section 8.6 (p. 8.20). The following statements are the identification of gaps or questions about the mitigation measures provided in the EARD:

- ▶ Mitigation measures listed are generally industry standard construction mitigation measures which are typically implemented by the construction contractor in coordination with the environmental monitor.
- ▶ The mitigation measures provided appear appropriate for the predicted potential effects, but they should be linked directly to a project activity or component to provide a clear link and understanding in how the mitigation will be effective at preventing or minimizing effects to fish and fish habitat.
- ▶ The Project indicates that works will be planned to respect the DFO timing windows, however, no further details are provided. Provide details based on species-specific timing windows to protect fish and fish habitat.
- ▶ Blasting mitigation is indicated as potentially required, however, it was only briefly mentioned in the potential effects for fish health. The blasting or explosive program

needs to be identified, with specific location of blasting, and more details on the mitigation measure should be provided.

- ▶ Flow management infrastructure mitigation measures require additional information. DFO has identified flow as a concern in a previous information request document (SD-24) and sufficient details in the mitigation measures should be provided to be certain that appropriate flow management measures are implemented to maintain flows within the ecological requirements for the species present in watercourses where flows have the potential for change.
- ▶ Species specific mitigation measures, for species at risk or Indigenous fish species (e.g., Atlantic Salmon) should be provided and adhere to the species-specific timing window.

#### 2.2.3.6 Residual Effects

Based on the location of the Project modifications in relation to fish habitat and the implementation of mitigation measures, residual effects on fish and fish habitat are only expected to occur during the connection of the engineered spillway. The details on anticipated residual effects are presented in Section 8.7; however, there are several details that were not fully addressed in the EARD and require additional clarification or information, these are listed below:

- ▶ The EARD does not clearly define Indigenous fish species, nor does the EARD address potential residual effects in context of fish species or Indigenous fish species. Residual effects should clearly indicate where there is the potential to affect fish or fish habitat of importance to the Indigenous community or SAR.
- ▶ The EARD indicates that the Project will result in a direct loss of less than 20 m<sup>2</sup> of existing fish habitat overall and will avoid residual effects to fish; however, as there is no indication of the function or quality of the habitat to be lost, nor an indication of the species that may use that habitat, additional information is required. Also, there is no indication if riparian habitat has been accounted for in the residual effects, as the construction of the spillway appears to require the removal of functional riparian habitat. Additionally, the location of the spillway and habitat loss needs to be clarified, is it in Watercourse #4 or the Moose River, as there is uncertainty in the document.
- ▶ Section 8.7.1 of the EARD indicates a loss of less than 20 m<sup>2</sup>, but no residual effects to fish habitat quantity. Although small in area, the loss of fish habitat of unknown quality is a residual effect and should be classified as such. SD-16 contains information related to a habitat survey of Moose River, but the information and photos are not organized in a manner that allows for a straightforward review and understanding of existing habitat.
- ▶ EARD does not indicate if any compensatory actions will be required for the loss of 20 m<sup>2</sup>. As the habitat loss is small, a substantive restoration program is unlikely to be required, however, as the quality of the habitat to be lost is not stated, the plan to manage the habitat loss should be provided.
- ▶ Indication that management and treatment of potential water quality issues will occur to avoid residual effect, but no indication how this will be accomplished. Additional information or mitigation measures are required.

- ▶ The EARD indicates (Section 8.5.3) that there is the potential for acute lethality and sublethal effects to fish if they can access the in-pit disposal area via the constructed spillway; however, minimal details are available on prevention of fish access in the mitigation measures (Section 8.6). This should be clarified based on the latest available guidance or regulations on fish screen sizes and fish barriers, along with the location of the barrier and if any other effects are anticipated from the use of the barrier.
- ▶ Residual effects do not clearly describe the effects of the flow changes from the Project. Section 8.7.1 provides values for percent (%) change in streamflow for Watercourse #4; however, there is no indication if it is an increase or decrease in flows. Additionally, there is no indication of the measurement / flow that the change is based upon (e.g., Mean Annual Discharge, Mean Monthly Flow, Mean Annual Flow).
- ▶ Additional details on mitigation measures to be implemented to prevent or minimize residual effects should be provided. Provide a clear example of what mitigation measure(s) is/are applicable to avoid the potential effect.
- ▶ Provide additional details on species-specific mitigation measures implemented avoid residual effects to the habitat of fish species at risk or Indigenous fish species.
- ▶ Fish and Fish Habitat Supporting Documentation was referenced in the EARD and provided in the supporting documents; however, minimal details were provided within the EARD related to fish habitat or fish capture locations in relation to the Project modifications. The addition of this information in the form of a map or figure, or a clear reference to exact location in the supporting documentation, would help in the review and understanding of potential and residual effects.

#### 2.2.3.7 Monitoring Programs

As indicated in Section 8.8, surface water quality and quantity will be completed as per Section 7.8 (Surface Water Follow-up and Monitoring). The following monitoring programs are suggested for the protection of fish and fish habitat:

- ▶ Follow-up monitoring associated with the release of treated effluent from the in-pit disposal area and water management pond, in accordance with MDMER, if required.
- ▶ Monitoring for value comparison for water temperature at locations upstream, within, and downstream of the engineered drainage channels when effluent is being released.
- ▶ Continuation as per the Phase 1 EEM program. The program will be updated and implemented based on the proposed project components.
- ▶ Additional monitoring will occur as per the MDMER and IA requirements.
- ▶ Closure/Post-closure monitoring will be completed in accordance with Closure Planning approvals.
- ▶ Downstream monitoring will continue in Watercourse #4 at two locations (SW-19 and SW-3) to characterize water quality downstream of the WRSA FDP.
- ▶ A new monitoring location is proposed for Moose River, downstream of the Open Pit spillway discharge location, after activation of the spillway in Year 9.
- ▶ No additional monitoring was identified related to Indigenous fish species, or species of conservation concern.
- ▶ No flow related monitoring was recommended or provided in the EARD.

### 2.2.3.8 Climate Change

Climate change in the Project area was addressed in other sections of the EARD and was not reviewed for this assessment, as there were no identified project effects on fish and fish habitat due to climate change.

### 2.2.4 Recommendations

Based on the review of the EARD, several recommendations were made for the protection of Indigenous and other fish within the proposed Project area. The recommendations are provided below:

- ▶ Updated fish habitat mapping is recommended in Moose River, at and downstream of the connection with the engineered spillway to better understand the habitats that are being lost and/or modified, to better assess cumulative effects on fish and fish habitat in the Study Area. Fish habitat mapping can also quantify and qualify the habitats in these areas to better understand the impacts on fish populations. Information is available in supporting documents but is not presented in a visual and easily understood manner. As suggested by KMKNO, when updating the fish habitat mapping, request that the proponent work collaboratively with a First Nation Science Organization (e.g., Mi'kmaw Conservation Group).
- ▶ Include information on Indigenous fish within the EARD.
- ▶ If the EARD indicates that predicted exceedances of metals and other contaminants are not significant to fish, it is recommended to ask for literature to support this statement. There should be literature to support that these exceedances should not have sublethal impacts on fish and that these effects are considered not to be significant. If the literature does not exist, then a toxicity study such as sediment bioassays is recommended according to ECCC protocols.
- ▶ Provide a monitoring plan for fish passage within the construction spillway and details on the fish barrier to be installed. The information is to provide additional certainty that fish will not be able to access the upstream mining areas where lethal effects to fish can occur.
- ▶ Turbidity or TSS monitoring is recommended during all instream works where flowing water is present.
- ▶ Assessment and monitoring of fish habitat, riparian habitat, and water quality in or near Moose River, at and downstream of the proposed spillway connection should be completed post construction and activation of the spillway. The assessment and monitoring are recommended to determine if impacted watercourses and riparian areas have returned to pre-construction conditions or better.
- ▶ A master summary table is recommended for every drainage, waterbody, and/or watercourse impacted by the proposed development, the fish habitat results and fish survey results including the time of year the fish were sampled.

## 2.3 Cumulative Effects Review

### 2.3.1 General Comments

Cumulative environmental effects occur when the environmental effects resulting from a project combine with the environmental effects of other projects and activities and have a combined effect on a VC. The proponent's EARD provides a cursory discussion of other undertakings in the area but does not consider potential cumulative environmental effects of the Touquoy Gold Project Modifications. On page 6.2 of the EARD, the Regional Assessment Area (RAA) for groundwater resources is described as "the area within which potential cumulative effects—the residual effects from the Project in combination with those of past, present, and reasonably foreseeable projects—are assessed." However, no further discussion of cumulative effects on groundwater resources is provided in the proponent's EARD.

An effective cumulative effects assessment should consider the timeframe of the effects of the project (not just the timeframe of the project phases) as well as the timeframe of other projects and activities when establishing the temporal boundaries.

The EARD identifies other undertakings within 30 km of the Project. This approach risks failing to consider other projects and activities that are not physically located within that area but have environmental effects that overlap that area. The EARD lists three other undertakings within 30 km, but specifically excludes the proponent's other proposed mining projects at Fifteen Mile Stream, Beaver Dam, and Cochrane Hill. Other included activities discussed in the proponent's EARD are mining (a sub-set of the regional mining activities), forestry, and residential and recreational land use.

### 2.3.2 Summary of Results

The proponent's EARD identified potential residual effects on groundwater quantity and quality, surface water quantity and quality, fish habitat quantity and quality, vegetation, wetland habitat, and wildlife habitat.

The potential for cumulative environmental effects on these environmental components from the Touquoy Gold Project Modifications in combination with other projects and activities, in particular the proposed use of the Touquoy site to dispose of tailings from other mining sites, was not addressed.

### 2.3.3 Identified Gaps

► Nova Scotia Environment's 2009 *Guide to Preparing an EA Registration Document for Mining Developments in Nova Scotia* suggests that an EARD for a mining project should include a description of cumulative effects with other undertakings, such as water withdrawal or additional trucking traffic. Although the process and methods are not prescribed, of seven EARDs and/or Focus Reports completed for proposed mining



projects in Nova Scotia over the past 15 years, all but one—the Goldboro Gold Project that was withdrawn from the environmental assessment process—included at least a cursory or integrated assessment of cumulative effects. The EARD does not assess cumulative effects and has limited information on other projects and activities. Some of the other projects that are included in the assessment are also owned by the same proponent and it is expected that detailed information on these other projects could have been incorporated into this EARD to allow a more robust and quantitative assessment.

- ▶ As discussed in Section 2.2.3, monitoring programs at the Touquoy mine site suggest that current and past mining activities have had a measurable effect on fish and fish habitat; however, there is no discussion of the potential cumulative environmental effect of the proposed Project in combination with those effects that are already observed.
- ▶ Other undertakings were identified only within 30 km of the Touquoy Gold Project Modifications. There is no discussion of cumulative effects that could occur through aggregate impacts or through overlapping environmental effects.
- ▶ There is no assessment of the cumulative loss of access to lands for the Mi'kmaq. Justification for not considering cumulative loss of use for traditional purposes should be provided.
- ▶ The EARD does not consider the longer-term impacts to the availability of traditional resources and does not consider them in the context of other past activities or proposed undertakings that may also affect the same resources, or access to those resources.

#### 2.3.4 Monitoring Programs

No additional monitoring programs are identified in the EARD beyond those identified for each VC for the project-related environmental effects.

#### 2.3.5 Recommendations

- ▶ Cumulative effects on Mi'kmaq communities should be considered. For a meaningful assessment of cumulative effects, consideration should be given to spatial boundaries that extend into the past and into the future beyond the project closure. This is particularly important for assessing the cumulative effects on Indigenous peoples to consider the historical context of the lands that they have traditionally used and how that has been affected over generations.
- ▶ The loss of use of traditional resources should consider the loss during the project phases, plus the long-term impact that extend into the future after closure, plus the historical disturbances, plus other present and future projects and activities.
- ▶ Request that the proponent provide a quantitative assessment of cumulative effects, where it is available, and clearly demonstrate and justify the assessment methods applied to support the conclusions of the assessment.
- ▶ Request that the proponent consider temporal boundaries that extend into the past and into the future to appropriately consider cumulative effects on the Mi'kmaq of Nova Scotia.

- ▶ Consider requesting that the Touquoy Gold Project Modifications be designated under the *Impact Assessment Act* to initiate a detailed assessment of cumulative environmental effects of the Project, in combination with all other past, current, and planned projects and activities, including the proponent's ongoing and planned mining activities.

## 2.4 Conclusion

The Touquoy Gold Project Modifications EARD provided additional information however, as outlined throughout this report, several gaps have been identified and clarification, additional baseline information, and established monitoring plans are required for key topics areas reviewed. The gaps and concerns identified herein are in line with concerns that have been raised by and discussed with KMKNO. Given the interests and rights of the Mi'kmaq with respect to the land and waters and given their current land use within and surrounding the Project area, these concerns are justified.



## Chapter 3 Closure

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This report has been prepared for the sole benefit of KMKNO. The report may not be relied upon by any other person or entity without the express written consent of CBCL and KMKNO.

Any use which a third party makes of this report and any reliance on decisions made based on it, are the responsibility of such third parties. CBCL Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions or actions made based on this report. Information presented in this report was provided through existing documents and interviews conducted with KMKNO personnel.

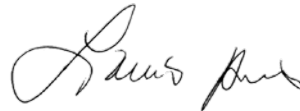
The conclusions presented represent the best judgement of the assessors based on the information provided, and the current environmental legislation and regulation at the time of the assessment.

Yours truly,

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# Appendix A

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## Technical Background on Open Pit Mines and Impacts to Groundwater

## Appendix A: Technical Background

Open pit mines can affect groundwater in two ways:

### 1. Quantity

Dewatering of the active mine will lower the water table and cause some of the groundwater that normally flows into streams to flow into the open pit mine. Wetlands and lakes may be affected too. The Touquoy monitoring program has confirmed that these effects are taking place.

This means that local waterways may not be able to sustain fish and other wildlife at current levels.

### 2. Quality

Mining activity will generate dust that settles into waterways, waste materials, and wastewater that need to be collected and stored. Although the mine will use a variety of techniques to control these waste streams, experience shows that there will be changes to the environment surrounding the mine. Two types of waste are being generated at Touquoy:

#### a) Waste Rock

- Some of the rock that is extracted from the pit mine is being stored in piles before processing, and some of this rock is becoming a permanent waste pile;
- Some types of waste rock can make rainwater acidic as it seeps down through the rock pile;
- The resulting 'Acid Rock Drainage' needs to be collected and neutralized, as it is harmful to the environment.
- Waste rock is being separated into two separate piles:
  - One for 'Potential Acid Generating (PAG)' rock;
  - One for waste rock that is not predicted to have any harmful effects; and
- The waste rock piles will be covered with soil when the mine is closed, which will reduce the amount of acidic water that can be generated.
- The current EA amendment is seeking to increase the size of the Waste Rock Storage Area (WSRA).

#### b) Tailings

- Rock containing the gold ore is crushed and separated into a waste stream and a gold ore concentrate;
- The waste material is referred to as the tailings, and has the consistency of slippery, sticky mud, often similar to clay;

- Tailings from the crusher at Touquoy is being deposited in the Tailings Management Facility, a large area flooded by ore processing water and contained by large berms;
- The gold ore concentrate undergoes additional chemical processing to extract the gold metal.
- Water that flows over or down through the tailings will tend to enter the environment with high concentrations of heavy metals; when concentrations are high enough this contamination can seep slowly back into surface water where it could affect wildlife.
- The current EA amendment is seeking permission to store some of the tailings in the open pit mine, after all of the ore has been excavated.
- The tailings would be in direct contact with the fracture networks intersected by the pit; and
- These fractures represent an open pathway between the tailings and the Moose River, 100 metres from the pit.

Gold mining activities tend to degrade the quality of water near the mine:

- Arsenic, which is naturally present in gold-bearing rock, may become concentrated by ore processing, or it may be leached by rainfall from waste rock piles;
- Cyanide, which is used to leach the gold, needs to be destroyed chemically before release of the process water into the environment;
- Ammonium is present in blasting agents, and can enter the groundwater;
- If the rock contains sulphide minerals, exposure to air and water can cause the groundwater to become acidic; and
- Current reporting cites existing or predicted elevated concentrations of aluminum, arsenic, bismuth, cadmium, cobalt, copper, iron, manganese, selenium, silver, zinc, cyanide, ammonium, and nitrate; and
- The computer model used to determine the risk of contaminated groundwater flowing away from the open pit did not include a complete evaluation of fractures and faults (contamination 'hot spots').

The affected groundwater can flow from the mine and discharge into nearby surface water, with negative consequences for the environment, and potentially for the health of people in direct contact with these waterways and the life that they support. Moose River is less than 100 metres from the open pit, but the current groundwater model suggests that groundwater will not flow this far within 500 years.



# Native Council of Nova Scotia

The Self-Governing Authority for Mi'kmaq/Aboriginal Peoples residing Off-Reserve in Nova Scotia throughout traditional Mi'kmaq Territory

*"Going Forward to a Better Future"*

August 16, 2021

P.O. Box 1320  
Truro, Nova Scotia  
B2N 5N2

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[www.ncns.ca](http://www.ncns.ca)

Aboriginal/Treaty Rights  
Negotiations Facilitating  
Directorate

NCNS Citizenship  
Information Office

Education & Student  
Services

Rural & Native  
Housing Group

Aboriginal Peoples  
Training & Employment  
Commission (APTEC)

Netukulimkewe'l  
Commission

Wenjkwom Housing  
Commission

Social Assistance  
Recipient Support for  
Employment & Training  
(SARSET)

Micmac Language  
Program

Native Social  
Counselling Agency

Child Help Initiative  
Program (CHIP)

E'pit Nuji Ilmuet  
Program (Prenatal)

Reaching Home  
Indigenous Program

Parenting Journey  
Program

Youth Outreach Program

Mi'Kma'ki Environments  
Resource Developments  
Secretariat (MERDS)

Aboriginal Connections  
in Trades & Apprenticeship  
(ACITA)

General Manager Atlantic Operations  
Atlantic Mining NS Inc  
409 Billybell Way  
RR# 2 Middle Musquodoboit, Nova Scotia  
B0N 1X0

## **RE: Environmental Assessment Registration Document, Touquoy Gold Project, Moose River, Nova Scotia**

The Native Council of Nova Scotia was organized in 1974 and represents the interests, needs, and rights of Off-Reserve Status and Non-Status Section 91(24) Indians/Mi'kmaq/Aboriginal Peoples continuing on our Traditional Ancestral Homelands throughout Nova Scotia as Heirs to Treaty Rights, Beneficiaries of Aboriginal Rights, with Interests to Other Rights, including Land Claim Rights.

The Native Council of Nova Scotia Community of Off-Reserve Status and Non-Status Indians/Mi'kmaq/Aboriginal Peoples supports projects, works, activities and undertakings which do not significantly alter, destroy, impact, or affect the sustainable natural life ecosystems or natural eco-scapes formed as hills, mountains, wetlands, meadows, woodlands, shores, beaches, coasts, brooks, streams, rivers, lakes, bays, inland waters, and the near-shore, mid-shore and off-shore waters, to list a few, with their multitude of in-situ biodiversity.

Our NCNS Community has continued to access and use natural life within those ecosystems and eco-scapes where the equitable sharing of benefits arising from projects and undertakings serve a beneficial purpose towards progress in general and demonstrate the sustainable use of the natural wealth of Mother Earth, with respect for: the Constitutional Treaty Rights, Aboriginal Rights, and Other Rights of the Native Council of Nova Scotia Community continuing throughout our Traditional Ancestral Homeland in the part of the Mi'kma'ki now known as Nova Scotia.

After careful review of the Touquoy Gold Project Site (TGP) Modifications Registration Document and Appendices, it appears that it is a well composed and thought-out document. However, the NCNS has major concerns regarding: the cumulative effects that are not being considered within this and related Atlantic Mining Nova Scotia Inc (AMNS) projects in the area, the expansion of the Waste Rock Storage Area (WRSA), and the lack of meaningful Indigenous consultation on the part of the Provincial Government.

### **Cumulative Effects**

At the time of this document's preparation, in addition to the TGP, AMNS holds three other gold development projects within Nova Scotia. These projects, all in various stages of planning and regulatory review, are: Fifteen Mile Stream Gold Project (FMS), Beaver Dam Mine Project (BDM), and Cochrane Hill Gold Project (CH). FMS and BDM are both currently undergoing joint Federal and Provincial environmental assessment review. Both FMS, BDM, and expectedly CH, mirror the mandate held within the TGP Registration document; these satellite mines intend to "use the Touquoy Mine Site infrastructure for processing ore from Beaver Dam and Fifteen Mile Stream Gold Projects and disposal of associated tailings".<sup>7</sup> Paradoxically, AMNS states that,

The use of the Touquoy Mine Site for processing and in-pit tailings disposal for those projects is not assessed in this EARD (Environmental Assessment Registration Document). Should those undertakings be approved and AMNS decides to proceed with their development, required permit amendments for the Touquoy Gold Project site will be sought at that time.<sup>7</sup>

While these EARDs are generally well-prepared documents, the capability to competently comprehend the cumulative effects across all of the current and proposed EARDs is rapidly becoming inaccessible. It is our understanding that these projects in their current state will ultimately result in a four-part cumulation of impacts, though they are still being submitted as separate projects. AMNS's choice to assess the environmental effects of all of the listed projects over an undetermined amount of time, and through a superfluous number of EARDs and amendments, is ultimately obscuring the cumulative effects, and periphrastically achieving a "foot in the door" disposition, favouring review of the AMNS projects.

The obscurity of the cumulative effects is only emphasised by the lack of mention of the close proximity of the gold development projects. The only mention of their proximity is to explicitly acknowledge the roadways that will be used to transport ore material. Due to their proximity and the nature of the unavoidable environmental effects, the sum of these environmental effects will be much larger when considered collectively, rather than separately. Of particular concern is the level of water draw down for each of the gold development project. The nature of open face gold mines requires that there be temporary, though significant, draw down of the water table for the duration of the mine's lifetime. It is worthy of note that within the previous FMS EARD, NCNS voiced a concern regarding oversights within the hydrogeological model. These oversights could significantly harm or destroy a greater than anticipated number of wetlands, and other sensitive habitats, that were originally deemed safe from impact. Separately these unintentional impacts may appear negligible, though in conjunction and in such close proximity to each other, the

quantity of these cumulative effects may become more consequential. This is only one example of the cumulative impacts that could occur due to these projects.

Having attended AMNS's meeting regarding the TPG, held on May 31<sup>st</sup>, it became promptly apparent that the AMNS representatives were unwilling to discuss the cumulative effects of the satellite mines on the TGP, or in a holistic sense. To our knowledge, there has been no follow up meeting to address said issues, even in a preliminary format. We believe it a misstep on the part of AMNS to not submit the EARD's in a more consolidated, accessible, and interpretive format so that the potential cumulative effects can be adequately assessed by the public, Indigenous Peoples, the Province, and the IAAC.

It is an undeniable fact that that it is AMNS's intention to inherently link TPG, FMS, BDM, and most likely CH as projects. Within the *Operational Guide: Designating a Project under the Impact Assessment Act*<sup>3</sup>, listed under "Process for Designation Requests",<sup>3</sup> there is a number of considerations by which the Impact Assessment Agency of Canada (IAAC) may develop a recommendation for the Minister to induct a project into a Federal Impact Assessment. The consideration we would like to draw your attention to is in the event "there are proposals for multiple activities within the same region that may be a source of cumulative effects"<sup>3</sup>. It is our concern that a provincial impact assessment alone is insufficient to recognize the potential, and already occurring environmental ramifications of this project. Further more, by assessing one of the four projects solely through a provincial assessment, the IAAC will be unable to consider the full sum of cumulative effects linked with the remaining three projects.

### **Expansion of the Waste Rock Storage Area**

In order to extend the lifetime of the TGP, AMNS has applied for the expansion of the WRSA to accommodate the additional waste rock and low/medium grade ore the mine will be generating. While the expansion is necessary to the project, we feel that the: environmental effects have not been properly considered, alternative locations for the expansion have not been adequately explored, and the potential for offsetting has not been addressed. Of particular concern is the expansion's direct intersection with what is referred to by AMNS as "Wetland 15".<sup>7</sup>

The proposed expansion is "approximately 7.1 ha, increasing the total footprint of the WRSA to 42.1 ha".<sup>7</sup> While AMNS notes that "the effects of this proposed wetland alteration would be consistent with those assessed previously for the Touquoy Gold Project",<sup>7</sup> we find this downplays the reality of what is occurring. It is a slippery slope to justify the destruction of valuable wetlands by claiming that there is similar habitat and priority plants in the region, or by asserting that the expected disturbance is "consistent" with previously allowed disturbance. This is how habitat loss is allowed to happen, it chips away at a few hectares at a time, until one day there is no longer similar habitat in the region. It is a tale of the Tragedy of the Commons, similar to the passenger pigeon's extinction in North America, it is picked away by everyone until it is gone.

Detected within Wetland 15 is Blue Felt Lichen (*Degelia plumbea*), a species that has been given the status of Special Concern under COSEWIC. AMNS notes that while Wetland 15 does possess blue felt lichen, its "occurrence is over 125 m from the PDA... (and) is therefore not



expected to be indirectly impacted by the edge effects”.<sup>7</sup> We find this statement is contradicted later within the EARD, when it is noted that “one occurrence of blue felt lichen, in Wetland 15, is within the current WRSA expansion LAA (Local Assessment Area)”.<sup>7</sup> How is it that the Blue Felt Lichen will not be impacted by the edge effects, when it occurs within the LAA?

In addition to the occurrence of Blue Felt Lichen within the affected area, we were unsatisfied with the largely missing proposed alternatives for the WRSA expansion within the EARD. We understand that the WRSA already exists, and an expansion will be less likely to cause greater environmental damage than the construction of an entirely new WRSA. Currently though, the WRSA does not directly intersect Wetland 15. With the presence of Blue Felt Lichen, we feel it is necessary to explore additional options in the chance there is a more ecologically friendly solution that is less likely to affect potential habitat for this species of Special Concern.

### **Indigenous Engagement**

It is important for everyone to understand that the Off-Reserve Aboriginal Community represented by the NCNS is included within the definition of the word “Indian” of Section 91(24) of the *Constitution Act*, 1867. The Supreme Court of Canada in a landmark decision on April 14th, *Daniels v. Canada (Indian Affairs and Northern Development)*, 2016 SCC 12, declared that “the exclusive Legislative Authority of the Parliament of Canada extends to all Indians, and Lands reserved for the Indians”, and that the “word ‘Indians’ in s. 91(24) includes Métis and non-Status Indians”.<sup>1</sup> Since 2004, in multiple decisions passed by the Supreme Court of Canada regarding: *Haida Nation*<sup>2</sup>, *Taku River Tlingit First Nation*<sup>8</sup>, and *Mikisew Cree First Nation*<sup>5</sup>, has established that,

Where accommodation is required in making decisions that may adversely affect as yet unproven Aboriginal rights and title claims, the Crown must balance Aboriginal concerns reasonably with the potential impact of the decision on the asserted right or title and with other societal interests.<sup>2</sup>

We would like to assert that the Off-Reserve Aboriginal Communities are undeniably heirs to treaty rights and beneficiaries of Aboriginal rights as substantiated by Canada’s own Supreme Court jurisprudence. As such, there is absolutely an obligation to consult with the NCNS and the community we represent, just as there is an obligation to consult with the Indian Act Bands in regards to the “Crown’s duty to consult with and accommodate **Aboriginal communities**”,<sup>6</sup> known in Nova Scotia as **the Mi’kmaq**. While the Office of L’nu Affairs (previously known as the Office of Aboriginal Affairs) continues not to honor its constitutional obligations to consult with the NCNS as an Aboriginal Community, we would like to draw your attention to the *Proponents’ Guide: The Role of Proponents in Crown Consultation with the Mi’kmaq of Nova Scotia*, produced by the Office of Aboriginal Affairs (2012).<sup>6</sup> Within this guidance document, it is clearly outlined that an essential first step in a proponent’s engagement process with the Mi’kmaq of Nova Scotia should be to “contact the Native Council of Nova Scotia”.<sup>6</sup> Though this is written in the Proponents Guide, the Office of L’nu Affairs has repeatedly ignored their own advice, and has excluded the NCNS from the honorable process of Crown consultation.

In future dealings with Atlantic Mining NS Inc, we trust that your organizations will continue to go above and beyond the superficial recommendations of the Office of L'nu Affairs, and include the NCNS where these sorts of consultations are necessary.

Going Forward To  
A Better Future

Habitat and Impact Assessment Manager  
Maritime Aboriginal Peoples Council

C, Chief and President, NCNS  
Commissioner, Netukulimkewe'l Commission  
Director of Intergovernmental Affairs, MAPC  
Chief and President of the Congress of Aboriginal Peoples

<sup>1</sup>*Daniels v. Canada* (Indian Affairs and Northern Development), 2016 SCC 12, [2016] 1 S.C.R. 99

<sup>2</sup>*Haida Nation v. British Columbia* (Minister of Forests), (2004), 3 S.C.R. 511.

<sup>3</sup>Impact Assessment Agency of Canada. (2020). *Operational Guide: Designating a Project under the Impact Assessment Act*. Published. <https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/designating-project-impact-assessment-act.html>

<sup>4</sup>Huber, B. (2010, March). *The Duty to Consult with non-Status Indians: Mi'kmaq Politics and Crown Responsibilities in Nova Scotia*. McGill University.

<sup>5</sup>*Mikisew Cree First Nations v. Canada* (Minister of Canadian Heritage), (2005), 3 S.C.R. 388.

<sup>6</sup>Office of Aboriginal Affairs. (2012, November). *Proponents' Guide: The Role of Proponents in Crown Consultation with the Mi'kmaq of Nova Scotia Office of Aboriginal Affairs*. <https://novascotia.ca/nse/ea/docs/ea-proponents-guide-to-mikmaq-consultation.pdf>

<sup>7</sup>Stantec Consulting Ltd. (2021, July). *Touquoy Gold Project Modifications – Environmental Assessment Registration Document*. [https://www.novascotia.ca/nse/ea/Touquoy-Gold-Project-Site-Modifications/Touquoy-Gold-Project\\_EARD\\_main\\_report.pdf](https://www.novascotia.ca/nse/ea/Touquoy-Gold-Project-Site-Modifications/Touquoy-Gold-Project_EARD_main_report.pdf)

<sup>8</sup>*Taku River Tlingit First Nation v. British Columbia* (Project Assessment Director), (2004), 3 S.C.R. 550.

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 6:47:17 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Gold mining is one of the most destructive industries in the world. It can displace communities, contaminate drinking water, hurt workers, and destroy pristine environments. It pollutes water and land with mercury and cyanide, endangering the health of people and ecosystems. Tailings are the major wastes produced from gold extraction and they contain high amounts of heavy metals HM. These metals leach out in an uncontrolled manner into surrounding environments on exposure to water or through dispersal by wind. The presence of elevated concentrations of HM in the environment is a serious health issue worldwide due to their non-degradative nature which makes them persistent and thereby exert long-term effects on the ecosystem [7]. Heavy metals affect the natural population of bacteria in the soils. This leads to loss of bacterial species responsible for nutrient cycling with a consequent negative effect on ecosystem functioning [8]. Environmental pollution from gold mines is associated mainly with the release of harmful elements from the tailings and other mine wastes. The infiltration of water through sulphide-containing tailings piles and ponds, surface and underground workings, waste and development rock leads to leaching of large volumes of metals like Zn<sup>2</sup>, Ni<sup>2</sup>, Pb<sup>2</sup>, AS<sub>2</sub>, Cu<sub>2</sub> and sulphate ions into stream and river ecosystems [36,37]. This results in acid mine drainage AMD with severe detrimental effect on the receiving water bodies. Heavy metal pollution and acid mine drainage is a very important environmental concern where waste materials containing metal-rich sulfides from mining activity have been stored or abandoned [38]. Tailings and rock dumps are associated with the surface impacts which greatly affect surface and ground water quality. Nova Scotia government needs to be more environmentally savvy and to care about this gorgeous province we inhabit. I am proud of our lead on windmills. I think the multi million cruise ship berth in Sydney will be great economically for NS once the pandemic eases and allows ships entry again. tourism is key to our economy too. but activities like open pit gold mining and forest clear cutting and pulp and paper mills that are not being stringently observed cause us serious and irreversible harm. I am opposed to this dangerous type of economic gain. Name: Email: @bellaliant.net Address:

Municipality: Albert Bridge email\_message: Privacy-Statement: agree x: 69

y: 22

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 6:59:30 AM

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**Project:** touquoy-gold-project-site-modifications **Comments:** With what we see going on around the world I think it is time for our elected officials, both federal and provincial to stop the madness regarding open pit mining. **Name:** **Email:** **Address:**  
**Municipality:** email\_message: **Privacy-Statement:** agree x: 55 y: 22

From: [@outlook.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 7:22:55 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Enough! What will gold mining do to help the people? Nothing. Stop tearing up the planet. Get rid of these gold diggers.

Name:                      Email:                      @outlook.com Address:

Municipality: Halifax email\_message: Privacy-Statement: agree x: 67 y: 25

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 7, 2021 6:01:36 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I support the Touquoy gold project 100. It will be very good for the economy. It keeps jobs in Nova Scotia which is what we need. Otherwise, we will lose more Nova Scotians to other provinces. I know people are worried about it being harmful for the environment, but this seems to be a responsible company and from what I understand, they have appropriate measures in place to ensure the environment is being protected. Name: Email:

@gmail.com Address:

Municipality:

Halifax NS email\_message: Privacy-Statement: agree x: 60 y: 18

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 7:35:55 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Please consider closing down the mine once there is no room for tailings and mine waste in the effluent pond. The environment is too precious to hope that extras dumped into the open mine won't contaminate the area at some point. So much damage from mine waste has already occurred. And it is so difficult to reverse once the damage is done. I would implore you to close it down once it is at capacity.

Name:                      Email:                      @gmail.com Address:                      Municipality: River  
John email\_message: Privacy-Statement: agree x: 71 y: 23



From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 7:56:41 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: The pit would be allowed to fill with groundwater and precipitation, and when the water level reaches a certain elevation, it will seep out into Moose River. I dont know how they could have the nerve to propose this. We all know what is quite likely to happen. This is a no-brainer and should never be allowed to happen. Name:                      Email:                      @gmail.com Address: Municipality: Pleasantville email\_message: Privacy-Statement: agree x: 60 y: 6

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 8:13:14 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: absolutely NOT allowed to expand tailings site. impacts too risky re groundwater, and effect on adjacent wetlands. Name:

Email: [@gmail.com](#) Address: ingonish beach, ns Municipality: ingonish beach  
email\_message: Privacy-Statement: agree x: 54 y: 27

From: @eastlink.ca  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 8:14:55 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: To use existing storage sites as storage for tailings makes sense. However, to destroy wetlands and build roads in the process is not acceptable. Either expand the tailings dump in another direction or call it a day and close the mine. Name: Email: @eastlink.ca Address:

Municipality: Dartmouth email\_message: Privacy-Statement: agree

x: 51 y: 26

From: [@ns.sympatico.ca](mailto:@ns.sympatico.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 8:37:47 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Hopefully a way can be found to continue this project. There are not a lot of bright economic lights in NS. This is one as it creates employment. The last time I checked, about 8 years ago, the provincial debt was at 16 Billion dollars. Bills have to be paid. Please find a way to let this go ahead. Name:

Email: [@ns.sympatico.ca](mailto:@ns.sympatico.ca) Address:

Municipality: Fall River, NS email\_message: Privacy-Statement: agree x: 49 y: 28

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 9:05:29 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I have driven through the public road running through this gold mine and I am NOT in favor of any type of expansion of this operation. Name: Email: @gmail.com Address:

Municipality: Westville email\_message: Privacy-Statement:

agree x: 53 y: 20

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 9:27:04 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: No to the proposed modifications as the risk to the river, and by extension the residual environmental effects is too great. Name:

Email: :

Municipality: Spencers Island email\_message: Privacy-Statement: agree x: 54 y: 31

From: [@ns.sympatico.ca](mailto:@ns.sympatico.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 9:36:13 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold is a very good corporate citizen and provides employment, tax revenue and royalty payments to the province which is much needed. Responsible and regulated development of all of Nova Scotias natural resources needs to continue and be encouraged in all sectors to provide employment and economic benefits to all Nova Scotians. I support granting the modifications to the companys environmental approval permit to enable the completion of the Touquoy project and for the site restoration as approved. Nova Scotia needs more positive, responsible resource development to create benefits for all Nova Scotians and not to be mis-led by bias, mis-informed, aggressively vocal anti everything activists. Name: Email:

@ns.sympatico.ca Address: Municipality: Bible Hill

email\_message: Privacy-Statement: agree x: 55 y: 20





From: \_\_\_\_\_@gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 10:10:20 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: - Choose - Comments: They should have been allowed to come to NS from Australia and rape our land. Shame on all involved. We have a small area of land and they are asking for more hectares to pillage? No. I have a hunting camp very which is on Ferry lake which links up with Moose river, and cannot imagine how the beautiful nature has been displaced.

Aquifers in those wetlands have already been destroyed - fossil water which has been there for millennia has been eradicated. Make them stop mining and force them to remediate

immediately. Name: \_\_\_\_\_ Email: \_\_\_\_\_@gmail.com Address: \_\_\_\_\_

Municipality: Truro email\_message: Privacy-Statement: agree x: 49 y: 22

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 10:31:01 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: The environmental record of our provincial governemnet is abhorrent. Stop tearing up our environment in the name of a handful of jobs and a bunch of money for a billionaire. Close the mine. Learn from sydney steel, the tidal bore project, northern pulp and Cabot links to name just a few of the political environmental disasters that Nova Scotians are no longer interested in your backroom deals and bullshit public consultations to make it appear as if you really give a shit. Close the mine. Its killing our one of a kind habitat to pay some politically tied money man to destroy the only true currency we have. Our environment. Name: Email:

@gmail.com Address:

Municipality: Sampsonville

sage: Privacy-Statement: agree x: 69 y: 22

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 10:34:10 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I do not believe that waste water from tailings ponds should be released into the river until it is completely neutralized and free from contaminants. Name:                      Email:                      @hotmail.com Address:

Municipality: Dartmouth email\_message: Privacy-Statement: agree x: 67 y: 21

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 25, 2021 10:59:36 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I am 100 against any and all proposed expansion of this gold mine and generally destructive and environmentally unfriendly industry in general. You should be protecting our lands and wildlife and not seeking them out to the highest bidder. Too many time Nova Scotians are left on the hook to clean up the poisoned lands once the profits are extracted and the company's gone. Maybe try to focus on progressive industry and not prop-up dying abusive practices and industries like mining. Name:                      Email:                      @gmail.com Address: Nova Scotia Municipality: Halifax email\_message: Privacy-Statement: agree x: 48 y: 13

From: [gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 25, 2021 11:16:26 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Wow, what a surprise. An international gold mining Company renegeing on promises already made and pressuring government and citizens to lower environmental standards. Shame on the NS government for ever thinking that these absolutely needless, low job prospects, nil royalties, environmental nightmare, vast open pit moonscapes in invaluable boreal forest and watersheds have place in 2021 at all. No, No, No, No to playing this mugs game with this company. Name:

mail: @gmail.com Address: Municipality: Gaetz Brrok  
email\_message: Privacy-Statement: agree x: 68 y: 22

From: @ncf.ca  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 11:24:13 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Thank you for the opportunity to contribute. I am against Atlantic Gold discharging pond tailings or heavy metals into open pits the Moose River system for health environmental reasons. Please see link:<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5129257/> These gold tailings contain As, Cd, Cr, Mn, lead and other toxic elements. They are known to cause cancer and to target the bodys cardiovascular, renal, gastrointestinal, neurological, reproductive, and respiratory systems. Atlantic Golds claim that there may be some affect on water quality, groundwater and fish habitat, but does not expect there to be significant residual environmental effects is unacceptable. ANY affect on water quality, groundwater and fish habitat IS an ENVIRONMENTAL CONSEQUENCE. One only has to look at the ongoing, over 50yr catastrophe of Ontarios Grassy Narrows of environmental health impacts of toxic elements in ground and river waterways. I say absolutely NO to storing tailings in open pits and allowed seepage into the Moose River system. This is also an area where many Indigenous People live off the land and make their livelihoods from their immediate environments. This is upheld by the Supreme Court of Canada. Gold Mining is a business which must take responsibility for its toxic waste management as a business expense. It can no longer be permitted to shirk its responsibilities. Name:                      Email:              @ncf.ca Address:  
Municipality: Ottawa, ON email\_message: Privacy-Statement: agree x: 52 y: 24

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 11:35:46 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I think at minimum they should have to pay for an environmental impact study, and only be permitted to proceed if that shows no significant impact to local or endangered wildlife. Also if this is being caused by unplanned remediation of old tailing, this should have been addressed when that was done, not years later. This failure of planning is entirely of their own making, and they should be wholly responsible for it. Name: Address:

Municipality: Halifax email\_message: Privacy-Statement: agree x: 84 y: 29

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 12:08:45 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Sickening go back to Australia.  
Name: Email: @gmail.com Address:  
Municipality: Clam Harbour email\_message: Privacy-Statement: agree x: 61 y: 27



From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 12:20:53 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: What I see is complete destruction of land which will not be used ever again just like the oil fields. What will be worth more than gold will be just uninhabited land with no human interference. Can't you see what is happening with the climate change? When will things change? Name: Email: address: Quebec Municipality: Boisbriand email\_message:  
Privacy-Statement: agree x: 76 y: 11

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 12:44:56 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: It saddens me that beautiful wetlands will be destroyed just to increase the profits of a few. Is allowing further damage to our groundwater and natural environment really worth it? Name: Email:

@gmail.com Address: Municipality: Musquodoboit Harbour email\_message: Privacy-Statement: agree x: 62 y: 47

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 12:54:12 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This gold mine is already such a negative impact on the environment of moose River and its surrounding area that I believe the entire mine should be shut down immediately! Nova Scotia does not need this project to continue any longer .. instead it needs a government that cares more about salvaging our already damaged ecosystems than about lining the pockets of foreign companies like Scotia gold. Get this company out of our province now!!! Name: Email:  
@hotmail.com Address: Municipality: Meaghers grant  
email\_message: Privacy-Statement: agree x: 68 y: 22

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 12:54:52 PM

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**Project: - Choose - Comments: Please do not take any more land for your mining !! There is too much land being used for mining, pulp and paper and we can't afford to lose any more!!**  
Name: Email: Address: Municipality: email\_message: Privacy-Statement: agree x: 76 y: 42

From: [@hotmail.ca](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 1:37:36 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I believe that there should be no gold mining in Nova Scotia. The environmental damage is unacceptable, and besides, we do not need more gold. Name: Email: @hotmail.ca Address: 4

Municipality: Brookside email\_message: Privacy-Statement: agree x: 55 y: 17

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 1:57:17 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: fifteen-mile-stream-gold-project Comments: Im sending an emphatic NO to the proposed gold mine in this area. An area as amazing as this does not deserve to be raped, and capitalized upon. This ecosystem is home to thousands of species. Do not trade our gorgeous, fragile, ecosystem for a quick profit. This area is priceless! Name: Email:  
@gmail.com Address: Municipality: Meaghers Grant  
email\_message: Privacy-Statement: agree x: 16 y: 34

From: [@eastlink.ca](mailto:@eastlink.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 2:06:19 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I cannot understand why we are letting operations like this continue. We, the taxpayer are paying millions of dollars to clean up the mess from decades of gold mining that we have been left holding the bag for. Do you really think that this mining operation will be any different. ALSO, LOOK AT THE GOLD MINING RECORDS AROUND THE WORLD. THE COMPANIES JUST VANISH WHEN CLEAN-UP TIME COMES. THIS PROJECT WILL BE NO DIFFERENT IN SPITE OF WHAT THE PROPONENT PROMISES. Name: \_\_\_\_\_ Email: \_\_\_\_\_@eastlink.ca  
Address: \_\_\_\_\_ Municipality: Halifax email\_message: Privacy-Statement:  
agree x: 48 y: 22

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 2:08:18 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Stop raping our province! This is the pulp mill all over again. Stop all mining operations and Dont approve anymore. Our earth is an endangered species. You need to stop killing it, and killing us in the process. Name:

Email: @gmail.com Address:

Municipality: Prospect email\_message: Privacy-Statement: agree x: 77 y: 30



From: @live.ca  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 2:55:30 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I am totally against any changes in the companys proposal that was approved at the beginning. This is a major problem that the government needs to address when first approving. Gold mining is NOT environmentally friendly and any changes later can cause major damage. Name: Email:  
@live.ca Address: Municipality: Shelburne email\_message: Privacy-Statement:  
agree x: 49 y: 29

From: [@google.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 3:15:48 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold says the changes could affect water quality, groundwater and fish habitat, but it does not expect there to be significant residual environmental effects. Pretty sure air quality, groundwater and fish habitat falls under environmental. Mind blowing that this is even being considered Name:  
Email: [@google.com](#) Address: Municipality: email\_message: Privacy-Statement: agree x: 82 y: 28

From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 3:33:06 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This company does NOT have a clean track record for environmental integrity in their operations within Nova Scotia. They are facing over 30 charges related to their present inability to maintain their mine site as initially agreed. The expansion proposed will interfere with wetlands. Totally unacceptable. They have stated that it is possible that waterways, groundwater and and fish habitat could be affected. That would more correctly read WILL BE affected. Totally unacceptable. By permitting this project expansion the government of NS would be entering into the same long slippery slope they have been in with Northern Pulp. Gold mining projects bring only extremely short term benefits to an area in the form of employment. The damage they cause is a long term issue with the potential health of residents beyond the site itself being at stake as well as significant environmental degradation. Disturbing groundwater is not a small issue to rectify. This company should not be permitted to expand this site nor should it be permitted to open any other gold mines in NS. Name: : @hotmail.com Address:

Municipality: Harmony email\_message: Privacy-Statement: agree x:

64 y: 31

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 3:46:26 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Absolutely NO to any expansion that is going to effect wetlands eventually habitat No to more open pits and under no condition open pits for storage zero. Not one ounce of untreated water goes in to ANY waterway/river or wetland. If mine is planning on releasing any water READ ONE DROP, every drop is monitored and meets exceeds a Class 1 environmental reassessment. They have taken enough from the lands period. Name:                      Email:                      @gmail.com Address: Municipality: Devon Nova Scotia email\_message: Privacy-Statement: agree x: 47 y: 24



From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 4:05:24 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: No more dumping toxic waste in our pristine NS environment for private profit. The company should cease and desist it's gold extraction. Full stop. Name: Email: @gmail.com  
Address: . Municipality: Halifax email\_message: Privacy-Statement: agree x:  
53 y: 35

From: @GMAIL.COM  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 25, 2021 4:10:21 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: PLEASE STOP RUINING OUR ENVIRONMENT AND QUIT MINING PERIOD. MINING IS BAD FOR THE ENVIRONMENT AND THE REMEDIATION OF TAILINGS NEVER HAPPENS. IT WILL NEVER BE CLEANED UP. LOOK AT THE ISSUES WITH NORTHERN PULP AND THEY WILL CONTINUE FOR MAY YEARS TO COME HERE AND WITH PLACES LIKE NORTHERN PULP. WE HAVE BETTER OPTIONS FOR RESOURCES. Name:

Email: @GMAIL.COM Address:

Municipality: SAMPSONVILLE email\_message:

Privacy-Statement: agree x: 62 y: 18

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 4:26:34 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Honestly, i dont like the idea of damaging the fish and nature just so the gold company can make a fake lake. Please consider properly disposing of the waste. Name: Email:

@gmail.com Address: Municipality: Mount Uniacke  
email\_message: Privacy-Statement: agree x: 33 y: 17



From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 4:29:59 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I could not be more opposed to this project. This province has a history of bending over backwards to accommodate large businesses that produce harmful waste and when it gets to the end of viable gold being produced the company disappears with their bundle of cash and suddenly there is a massive cleanup bill and what a shock the company has since ceased trading so tax payers get to cover the bill. Name: Email: @gmail.com Address:

Municipality: Simms Settlement email\_message: Privacy-

Statement: agree x: 57 y: 24

From: [@yahoo.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 4:31:42 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This has been nothing but an eyesore from the get go, with some short term jobs and our province will be left with an environmental timebomb and ruination of what was a pristine, excellent trout fishing area. I know, because my father was born in Moose River Gold Mines in 1924 and my brothers and I, along with our Dad, who has since passed enjoyed many wonderful trips fishing in Shay Lake Brook, Scraggy lake and other spots. The mine will leave its mercury and arsenic in these tailings ponds to pollute the water shed all the way down to the ocean. What a great legacy to have for a small amount of quick money, while the Aussie backers are laughing all the way to the bank at the greedy, short-sighted Nova Scotians. Shame on our politicians who allowed this to happen. Name: \_\_\_\_\_ Email: \_\_\_\_\_@yahoo.com Address: \_\_\_\_\_ Municipality: Bedford email\_message: \_\_\_\_\_

Privacy-Statement: agree x: 43 y: 23

From: @eastlink.ca  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 4:52:25 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I fully support Atlantic Golds plan to use the mined out open pit for future storage of waste rock. Name:

Email: @eastlink.ca Address:

Municipality: Pictou email\_message: Privacy-Statement: agree x: 76 y: 27

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 4:56:48 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I am against all changes to site modifications that could cause further pollution to this area. Name: Email:

@gmail.com Address: ns Municipality: Pictou

email\_message: Privacy-Statement: agree x: 80 y: 28

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 5:14:06 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: If at ANY TIME, the waste product from mining or any business is, or could effect, the environment, wildlife, fish, ground water or any thing related to life in general, then it shouldnt be allowed. Especially if this ore is not a necessary requirement for life. Unless the company or government can prove that the tailings or waste have been cleaned or filtered, etc. 100 and environmentally safe it, as in the product being manufactured, should not be allowed. No political posturing, no bribes, no word manipulation. Just NO! Name:                      Email:                      @hotmail.com Address:  
Municipality: Lantz email\_message: Privacy-Statement: agree x: 55 y: 24

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 6:26:26 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: It's a radical insulting insurgence of these self righteous elites who don't care about their damage to our pristine way of life. I am incredibly incensed by the government's support of this untenable bullshit. What about the birds who return from their southern migration to see once again what these selfish assholes have done to THEIR homes. Disgusting. How about the deer, otters, raccoons, martins, bobcats,lynx,beavers,minks, and possibly mainland moose. I am appalled by greedy politicians who don't have the spine to do the right thing. As long as they waste our resources to destroy our province, these syncopated losers will always be a shame to the proud people of Nova Scotia. I am truly saddened by my representatives. Name:

Email: @gmail.com Address: Halifax Municipality: Halifax email\_message:

Privacy-Statement: agree x: 64 y: 3

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 6:53:33 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold admits that the changes will affect groundwater, water quality and fishing habitat. They admit it. This is a no-brainer. Stop this expansion. Gold mines are an environmental disaster. Name:

Email: [@hotmail.com](#) Address:

Municipality: Halifax email\_message: Privacy-Statement: agree x: 86 y: 18

From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 6:56:30 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: fifteen-mile-stream-gold-project Comments: Gold mines are a very bad idea. They are environmental disasters and give almost nothing back to the community. A few jobs and a huge tax bill for cleanup. Not for this voter. Name: Email:

@hotmail.com Address:

Municipality:

Halifax email\_message: Privacy-Statement: agree x: 78 y: 25



From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 25, 2021 7:34:01 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I am an environmental professional and have done both water quality testing on Scraggy Lake located south of the Touquoy Gold Mine, adjacent to the holding ponds and research on the mines processing. The water chemistry shows patterns of increasingly high levels over the past 50 years and high pH, which is still really high once it has already moved down the lake to the far south where the main river outlet exists. We cannot allow wetlands to be destroyed, period. The request to allow any alterations to wetlands should be prohibited as they are one of the most effective ecosystems on our planet. So many diverse animal habitats exist in wetlands. Is it really worth the few million dollars of gold to ruin more and more wetlands? It most definitely is not!! We need to be very vigilant on what we allow mining companies to do to the land, which greatly affects groundwater quality and land stability. Once the naturally occurring land is disturbed, it will never go back to how it was. Name: Email: @gmail.com Address: NS Municipality: Truro email\_message: Privacy-Statement: agree x: 67 y: 22

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 25, 2021 7:50:42 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: It appears that Atlantic Gold has submitted all of the required studies and reports to facilitate this project. The Minister should rely on his scientific staff to evaluate the material presented and make a decision based on the scientific merits of this material. There is often a negative emotional response by individuals who dont understand this type of project. Projects like this one are important to the economy of Nova Scotia. If this project fails, the powers-to-be might as well close the doors to any mining activity in the province. Denying this project would up the financial risk level to a point that it would be difficult or impossible to attract any mining investment capital, either individual or corporate, to the province. Name: Email:

@gmail.com Address:

Municipality: Three Mile Plains email\_message: Privacy-Statement: agree x: 64 y: 23

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 9:05:58 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Im opposed to any expansion to the current tailings storage. Dumping the tailings into the previous open or guarantees a toxic waste dump, tainted ground water. Name: Email: @gmail.com  
Address: Municipality: Big Pond email\_message: Privacy-Statement:  
agree x: 70 y: 20



From: [\\_gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 25, 2021 9:12:40 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I oppose gold mining. I wish it werent so but there it is. I cant agree with extractive processes that put profit ahead of the inherent integrity and value of the land, the water and all the lifeforms that depend on their health. How could ethical human decide that damaging ecosystems for money is acceptable. If gold extraction cant be done without causing harm, Ill never support it. If businesses want to make money in Nova Scotia, how about securing our food supply sustainably. Or generating sustainable energy. Or building homes for those who dont have one. Name:

Email: @gmail.com Address: Municipality: East

Lawrencetown email\_message: Privacy-Statement: agree x: 45 y: 26

From: \_\_\_\_\_@hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 9:48:34 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: No more raping the land in Nova Scotia. We are burning for god sakes. STOP. For once put the climate first. Name:

Email: \_\_\_\_\_@hotmail.com Address: \_\_\_\_\_ Municipality: \_\_\_\_\_  
Dartmouth email\_message: Privacy-Statement: agree x: 77 y: 25

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 10:05:54 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: The proposed changes should not occur to protect the water and ecosystem. I live in a former gold mining area and we have arsenic in our water. Please do not approve. Name: Email:

@hotmail.com Address: Municipality: Fall River  
email\_message: Privacy-Statement: agree x: 61 y: 20

From: [@eastlink.ca](mailto:@eastlink.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 25, 2021 8:14:55 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: To use existing storage sites as storage for tailings makes sense. However, to destroy wetlands and build roads in the process is not acceptable. Either expand the tailings dump in another direction or call it a day and close the mine. Name:                      Email:                      eastlink.ca Address:

Municipality: Dartmouth email\_message: Privacy-Statement: agree

x: 51 y: 26



From: [@ns.sympatico.ca](mailto:@ns.sympatico.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 12:33:42 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Very disappointing. As a local citizen I have seen the true damage open pit mining does. This company is now needing yet more land to continue their vision. I would like to see their current reclamation work on the lands they are already finished with before our government even considers granting any further acreage. Show us your commitment to leaving the land as you found it before! All sides have a huge responsibility to the citizens and most importantly the environment. What is the price of progress? Name: Email: @ns.sympatico.ca Address: Municipality: Popes Harbour, N.S. email\_message: Privacy-Statement: agree x: 55 y: 12

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 26, 2021 8:05:58 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold is not a reputable company. I have read nothing about them that inspires confidence in the safe and fair management of their mining industry. I see no benefit to Nova Scotians that couldnt be answered instead by projects with NO enduring impact on the environment. We should have said No. And now we must say no. The disposal pits must not be permitted to increase in size and disrupt wetlands and water contamination. Until this project is Name:

Email: [@gmail.com](#) Address: Municipality: Halifax

email\_message: Privacy-Statement: agree x: 57 y: 15

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 8:39:48 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: We support the mines proposal to store tailings in the open pit provided they are committed to monitoring ground water runoff and will treat the ground water accordingly to protect the health of Moose River. Name:

Email: @gmail.com Address: Municipality:  
Dartmouth email\_message: Privacy-Statement: agree x: 54 y: 21

From: [\\_gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 9:14:47 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I am deeply concerned with the plan to allow the pit to fill with water and seep into Moose River. They say they plan to treat the water by adjusting pH in the pit. However, tailings pond water is currently treated for cyanide which is used in the extraction process and allowed to settle for a period of time before discharge at a regulated valve that can be controlled. This discharge is frequently monitored for water quality and toxicity as required by federal MDMER legislation. How will the tailings water in the pit be properly treated for cyanide if it is allowed to simply seep out instead of monitored? How does this process meet MDMER requirements? There are more issues in tailings pond water than pH. Arsenic levels, cyanide, ammonia, nitrates, selenium and other heavy metals are a concern, yet they do not have a plan to treat these. They only say "If testing shows it needs more treatment, it would be pumped to a treatment facility before it is released". How will they pump it to a treatment facility if the original tailings pond is full? The original tailings pond also contains seepage ponds to hold any seeps that come out of the dam, so their plan to allow tailings water to seep out through the ground into Moose River a river that is currently not being discharged to from the Mine is a problem waiting to happen. Second, relating to the expansion of the waste rock area, the company says they do not expect significant residual environmental effects. However, they will be further encroaching on Square Lake, sensitive wetlands that contain protected species of vegetation, and a fish bearing watercourse. How would this expansion affect the flow of water to these areas, sediment runoff, and groundwater? What is their plan to address this? Name: \_\_\_\_\_ Email: \_\_\_\_\_

@gmail.com Address: \_\_\_\_\_  
Municipality: Halifax email\_message:  
tatement: agree x: 21 y: 21

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 26, 2021 9:22:54 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Concern that this will affect wetlands. The report says they will use a marsh which is important to the environment. Marshes help filter and clean water, they are also home to many plants which many don't think are important but they are. Marshes also help maintaining and protecting surrounding areas as well as being home to birds, animals and insects. They should be required to provide money to ensure that the marsh will be protected for numerous years. We required these regulations when uranium was mined and stored and the companies are still ensuring the lands are safe for all, even many years after the mines closed. We are in an environmental emergency and we must ensure it doesn't get worse but work to improving. Name:

Email: [@gmail.com](#) Address: Municipality:

Antigonish email\_message: Privacy-Statement: agree x: 67 y: 16

From: @outlook.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 9:35:27 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I do not support the expansion of this mine because they company has proven it cannot follow the basic environmental guidelines in only 2 short years of operations in NS. The company has 32 environmental infractions and 3 Federal violations . Their employees joined a union due to unsafe and poor operating practises which is a good indication of what to expect from this company if it were to expand. Please deny this application since it provides no true economic benefit to our natural resources or our province. We are baring all of the burden and risk for an australian owned company. When they are long gone, NS will still be on the hook for the environmental damage that lasts a life time. Name:                      Email:                      @outlook.com Address:                      Municipality: New Glasgow email\_message: Privacy-Statement: agree x:

y: 26

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 9:36:59 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I fully support the objections to the Touquoy Gold Project Site Modifications described in the open letter of May 20, 2021, to Honourable Sean Fraser, from the St. Marys River Association. Atlantic Gold has repeatedly shown itself to be an untrustworthy scofflaw, and it nor any of its subsidiaries should be granted any leeway on the restrictions that govern them. Do not approve their request. Name:

Email: @gmail.com Address: Municipality: Halifax  
email\_message: Privacy-Statement: agree x: 50 y: 26

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 9:42:24 AM

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**Project:** touquoy-gold-project-site-modifications **Comments:** I am strongly opposed to the Fifteen Mile Stream gold mine project proposal. I am in complete agreement with the points made by the Ecology Action Centre concerning damage to water and wetlands, bio-diversity, and the overall cumulative contribution to climate change. The damage and loss involved will hugely outweigh any benefits. Do not approve this project. Thank you. **Name:**  
**Email:** Address: Municipality: Halifax email\_message: Privacy-Statement: agree x: 52 y: 26



From: [\\_\\_\\_\\_\\_@eastlink.ca](mailto:_____@eastlink.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 10:34:34 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I say let them , applying remediation for the extra waste, and a larger percentage of tax for it. Name:

Email: \_\_\_\_\_@eastlink.ca Address: \_\_\_\_\_ Municipality: Florence email\_message: Privacy-Statement: agree x: 55 y: 39

From: [@hotmail.ca](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 1:32:12 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Totally against any changes in favour of the companies proposal. The upper portion of Scraggy lake was full of spawning Alewife and other ocean origin species of fish this June of 2021. Is there no consideration being given to the natural inhabitants of the local forests and wetlands? Probably not and par for the environmental course in NS these environmental law breakers will get what they want. All in the name of gold profits leaving Nova Scotia. Name: Email:

@hotmail.ca Address:

Municipality: Hants County email\_message: Privacy-Statement: agree x: 61 y: 24

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 1:32:53 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: No no no. There is no justifiable reason for permitting a storage expansion. That mine should not even be operating. It is a disgusting rape of the earth. And so is all the twinning of highways in this province. Name:

Email: [@gmail.com](#) Address:

NS Municipality: Martins Brook email\_message: Privacy-Statement: agree x: 73 y: 37

From: @dal.ca  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 2:13:59 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: It is not worth the risk to the environment. I recommend against it. Name:                      Email:                      @dal.ca Address:  
Municipality: Owls Head email\_message: Privacy-Statement: agree x: 58 y: 21

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 26, 2021 2:20:29 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: It is obvious that from the beginning of this operation Atlantic Gold misled those monitoring this operation. Now that they are fully entrenched in Nova Scotia the truth leaks out. Not enough space for their contaminated waste. Need to destroy more forest to pile their rock. I am sure that this comes as no surprise to this company. Simply the way they sway governments and public opinion when launching their schemes. There have been numerous violations of safety and environmental laws already and with two more expansion sites we are only seeing the tip of the environmental iceberg. This companys operations must be stopped immediately. No more destructive mining operations in Nova Scotia. Name: Email:

@gmail.com Address:

Municipality: Halifax email\_message: Privacy-Statement: agree x: 39 y: 28

From: [@eastlink.ca](mailto:@eastlink.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 2:46:56 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: The company knew or ought to have known what it needed in the beginning stages. It like a service station getting a permit to operate and then after getting the permit they want extra pumps and underground storage tanks built on a wetland. The application should be denied. Name: \_\_\_\_\_ Email: \_\_\_\_\_  
@eastlink.ca Address: \_\_\_\_\_ Municipality: \_\_\_\_\_  
Halifax email\_message: Privacy-Statement: agree x: 53 y: 24

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 3:26:24 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I dont support the expansion of tailing facilities. Name: Email: Address:

Dr Municipality: Antigonish email\_message: Privacy-Statement: agree x: 48 y: 21

From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 3:50:38 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I am trusting that the government of Nova Scotia has done a cost-benefit analysis on this project, as all I could find in this report was that the company pays \$210,000.00 for every 7 hectares of destroyed land. Will this company be required to pay additional royalties for additional destruction/pollution of the land they are exploiting. The environmental assessment describes clearly that the mine operations are detrimental, the question is what is the payoff. I was unable to find taxes or revenue paid other than some articles posted by saltwire that the return so far has been minimal. Name:

Email: @hotmail.com Address:

Municipality: Eastern Passage email\_message: Privacy-Statement: agree x: 63 y:



From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 3:58:04 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: - Choose - Comments: What is wrong with the government of this province This is nightmare every times it rains fish river is mud in the Copes lake. Brook dead waters drying up Scraggy lake has dropped dramatically. Between clear cutting and this mine it looks like a war zone For Gods sake Shutt it down. Speeding cars the smell of diesel and now mine trucks will soon be coming through the haul road litter dumping Whatâ?Ts next will be a fire it is not worth it SHUTT IT DOWN Wildlife trout etc are disappearing ATV s racing on the back roads. I have lived here off and on for fifty years and retired here after thirty five years in the Military. It was paradise now it is hell Name:                      Email:                      @gmail.com  
Address:                      Municipality: Mooseland email\_message: Privacy-Statement:  
agree x: 67 y: 25

From: [@yahoo.ca](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 4:56:28 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: CLOSE FOREVER .  
EVERYTHING YOU TOUCH YOU DESTROYED. NOT FOR ALL THE GOLD IN NOVA  
SCOTIA SHOULD ONE INCH OF HABITAT EVER BE DESTROYED. JUST  
STOP.CLEAN UP THE MESS YOU MADE AND LEAVE. Name: Email:  
@yahoo.ca Address: Municipality: Dartmouth email\_message:  
Privacy-Statement: agree x: 77 y: 26

From: [\\_gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 5:52:29 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Id like to know the names of the politicians who approved an open pit mine INSIDE the boundaries of a Provincial Park?? Last year the province laid multiple charges against this company for environmental crimes. Now they want to expand? Are you serious? Name: Email: @gmail.com  
Address: Municipality: Mount Uniacke email\_message: Privacy-Statement: agree x: 66 y: 21

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 26, 2021 7:03:24 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Open pit mining is banned around the world because of the environmental impact and should be banned here as well. The Moose River and whole area of St Marys River is home to the spawning grounds of Atlantic Salmon why risk out animals and environment. I am opposed to this and all open pit mining operations in NS. Name:                      Email:                      gmail.com Address:  
Municipality: Halifax email\_message: Privacy-Statement: agree x: 54 y: 31

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 7:29:08 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I do not support the storage of tailings in an open pit. I also do not support the expansion of the pit. The effects on surrounding wetland ecosystem and the local environment are too significant. Name:

Email: [@gmail.com](#) Address: Municipality: Grand Desert email\_message:  
Privacy-Statement: agree x: 37 y: 27





From: \_\_\_\_\_@gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 26, 2021 9:36:24 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: fifteen-mile-stream-gold-project Comments: Please, we all know this is a bad company. Look at the past cases that have gone to court. The environmental damage has been noted time and time again. This is an easy NO. Thank you for standing up for our nature and wildlife by reiecting this and similar projects. Name: \_\_\_\_\_ Email: \_\_\_\_\_  
\_\_\_\_\_@gmail.com Address: \_\_\_\_\_ Municipality: \_\_\_\_\_  
Lawrencetown email\_message: Privacy-Statement: agree x: 96 y: 21



From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 27, 2021 6:41:51 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: This new plan for tailings storage will pollute the nearby area, harming the land for decades. We should be asking the company to do a better job of managing their tailings, rather than polluting our dwindling fragile ecosystems with toxic chemicals. Name:                      Email:                      @gmail.com Address: Municipality: Halifax email\_message: Privacy-Statement: agree x: 97 y: 28

From:  
To: [Environment Assessment Web Account](#)  
Subject: re: Torquay gold mine  
Date: July 27, 2021 9:38:32 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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I object to this mine and its expansion. As a citizen of the Eastern Shore, I moved here to live by the ocean in pristine nature. My family and I pay taxes, contribute to society, and work here. What right does this company have to wage war on our backyards? The government should not allow this despoilation of our lands and waterways for the sake of a few blue collar jobs. How much royalty is it paying the province? Very little I IMAGINE. IT IS NOT PUBLIC KNOWLEDGE. THESE TAILING PITS WILL END UP POLLUTING OUR GROUNDWATER, MAYBE EVEN GETTING INTO THE BAYS AND HARBOURS THAT NURTURE OUR FISHING INDUSTRY. And the government is also encouraging open pen fish farms to wage war on our front yards. For heaven's sake, wake up politicians and bureaucrats. Don't you have children and grandchildren too?

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*In civilizations without boats, dreams dry up, espionage takes the place of adventure, and the police take the place of pirates. - Michel Foucault*

From:  
To: [Environment Assessment Web Account](#)  
Subject: Re- Torquay gold mine  
Date: July 27, 2021 11:02:45 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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To whom it may concern

Please do not permit the Torquay mine's further expansion. The Nova Scotia government must now allow more lands and waterways to be destroyed for this mine. There are many better ways for this area and for the province to work with nature and create jobs that ensure there is a future for our citizens; to ensure that the existing jobs in tourism, fisheries, forestry etc can continue; and, that citizens are ensured of the peaceful right to safely enjoy their homes.

**Last year Nova Scotia paid ~\$48 million to clean up two former gold mines sites.**  
<https://www.cbc.ca/news/canada/nova-scotia/gold-mining-remediation-environment-government-funding-1.5224766>. This is a very small portion of the abandoned mines that already exist.

Similarly this mining company will be long gone leaving citizens confronted with the task of paying and cleaning up the pollution it leaves behind-if that's even possible,

I recommend that your EA team view the film The Shadow of Gold  
<https://theshadowofgold.com> to really understand how truly unnecessary and harmful mining for gold is and how as part of a world-wide-racket, Nova Scotia is being played by the gold mining corps to gamble on futures that have no stock only harm.

I also recommend you read excellent writing by Joan Baxter from the Halifax Examiner to help fully understand how bad the Nova Scotia government's record is on negotiating proper royalties, proper taxation, proper clean-ups, proper worker wages and health and safety and proper process with the mining corporations.

Please remember as a bureaucrat who pays your salary and who you are responsible to in your approvals. And especially that you too will be left behind with the mess as part of the legacy you may or may not chose to create.

Thank you,

From: [@eastlink.ca](mailto: @eastlink.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 27, 2021 1:19:59 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold wants to store tailings in the open pit, once the pit is finished being mined next year. The pit would be allowed to fill with groundwater and precipitation, and when the water level reaches a certain elevation, it will seep out into Moose River. The company says it plans to treat the water by adjusting the pH in the water-filled, open-pit lake so it meets the standards for water quality to be discharged into the river. If testing shows it needs more treatment, it would be pumped to a treatment facility before it is released. Sure, sure it will. As is well known, Atlantic Gold is facing 32 environmental charges for alleged infractions at and around its Moose River mine. And the company has still not fulfilled a provision of its 2008 Environmental Approval that gave it four years to "develop and implement a plan" to procure conservation land "256 hectares for protection with high biodiversity value, according to Nova Scotia Environment spokesperson Rachel Boomer" in the vicinity of the Touquoy mine. Why on earth would anyone believe any assurances and pinky-promises made by this company?

Name:                      Email:                      @eastlink.ca Address:  
Municipality: Kingsburg email\_message: Privacy-Statement: agree x: 55 y: 21

From: [2013@hotmail.com](mailto:2013@hotmail.com)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 27, 2021 3:04:37 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: No more land area should be used for storage. NS cannot continue to allow companies to do business here which impacts, or continues to impact the ground water, wetlands, coastlines, or any more land. The climate crisis continues to grow due to these environmental travesties. NS needs to look at supporting businesses that prevents or reduces the impact the business has , or could have, on our lands, waterways, and air quality. We cannot allow or approve, or turn our heads anymore, to the environmental damage and destruction taking place in this province!! You need to say NO!!

Name:                      Email:                      @hotmail.com Address: Municipality:

email\_message: Privacy-Statement: agree x: 67 y: 21

From: @gmail.com  
To: Environment Assessment Web Account  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 28, 2021 8:32:35 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: My concern is o the changes could affect water quality, groundwater and fish habitat with the plan to dilute and release tailings into the river. I think the Precautionary Principle must prevail in mining processes. Expect the worst case scenario of environmental risk then design the facility to address those risks considering too the risks of climate change weather extremes to affect the current mining footprint and proposed footprint. What has the potential to pollute waterways must be scrutinized and those worst case scenario risks be made public. Rivers in Canada in this world and in our modern era of loss of healthy potable water is environmentally and economically the important responsibility of governance. The proposal could have nefarious affects might lead to ~Coulda woulda shoulda plan for worst case scenario but too little too late?T. Name:

Email: @gmail.com Address:

Municipality: Arichat email\_message: Privacy-

Statement: agree x: 55 y: 29

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 11:59:36 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address:

Municipality: Middle Musquodoboit email\_message: Privacy-Statement: agree x: 56 y:  
24

From: [atlanticgold.ca](mailto:atlanticgold.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 12:08:22 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these proposed project modifications are. We have operated safely since 2017 and these proposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@atlanticgold.ca Address:

Municipality: Mooseland email\_message:

Privacy-Statement: agree x: 66 y: 19



From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 12:09:14 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality:

Elmsdale email\_message: Privacy-Statement: agree x: 63 y: 39

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 12:17:49 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address:

Municipality: Middle Musquodoboit email\_message: Privacy-Statement: agree x: 64 y: 32

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 12:26:21 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: Sheet Harbour

email\_message: Privacy-Statement: agree x: 58 y: 28

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 12:31:09 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: Dean\_email\_message:  
Privacy-Statement: agree x: 64 y: 18

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 12:43:51 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these proposed project modifications are. We have operated safely since 2017 and these proposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I am looking forward to the expansion of the gold mine in NS and the job opportunities and revenue that will arise from this for future generations to come. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: St.Andrews email\_message: Privacy-

Statement: agree x: 67 y: 23

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 12:44:50 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@hotmail.com Address: Municipality: Wyse Corner  
email\_message: Privacy-Statement: agree x: 52 y: 26







From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 1:54:14 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: email\_message: Privacy-Statement: agree

x: 60 y: 17

From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 2:16:49 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@hotmail.com Address:

Municipality: Mooseland

email\_message: Privacy-Statement: agree x: 52 y: 14

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 2:29:34 PM

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Project: touquoy-gold-project-site-modifications Comments: As a life long resident of the Musquodoboit Valley and Mooseland, I am very concerned about the long term effects this mining operation could have on the environment. Our provincial government has a responsibility to protect the environment for future generations. While I acknowledge the economic spinoff from the mine, we need to ensure the environmental costs do not outweigh the economic benefits. One would hope that we will not be dealing with another Boat Harbour or Sydney Tar Ponds in a few years when the mining company is done reaping its benefits. Let us not forget this is a foreign company in the business of making the most money possible. Given the two environmental disasters mentioned above, our provincial government does not have a history of putting the environment first. Hopefully we have all gained some valuable foresight from these disasters and recognize the importance of protecting the environment. Hind sight is a valuable learning tool. I would encourage the government to hold local meetings to inform the public and solicit their feedback. The pristine lakes and watershed in this area must be preserved. Name: \_\_\_\_\_ Email: \_\_\_\_\_ Address: \_\_\_\_\_ Municipality: HRM email\_message: Privacy-Statement: agree x: 62 y: 31

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 2:35:30 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Mine industry brings high paid jobs and supports the people of this province. Atlantic Gold also cares for environment and communities. Name: Email: @hotmail.com Address: Municipality: TRURO email\_message: Privacy-Statement: agree x: 71 y: 16

From: [.gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 29, 2021 5:10:02 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed projectmodifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@gmail.com Address: Municipality: River Lake email\_message:  
Privacy-Statement: agree x: 68 y: 26

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 1:07:19 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: email\_message: Privacy-Statement:

agree x: 55 y: 19

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 7:22:56 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: Halifax email\_message: Privacy-

Statement: agree x: 82 y: 18

From: [t@gmail.com](mailto:t@gmail.com)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 7:56:42 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@gmail.com Address: 36

Municipality: Wolfville

email\_message: Privacy-Statement: agree x: 33 y: 34



From: [@atlanticgold.ca](mailto:@atlanticgold.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 8:03:18 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@atlanticgold.ca Address: Municipality: email\_message: Privacy-Statement: agree  
x: 80 y: 23

From: [@mun.ca](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 8:04:42 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Company has a track record of good self regulation and has strong environmental practices Name: Email:

@mun.ca Address:

Municipality: Halifax

email\_message: Privacy-Statement: agree x: 80 y: 32

From: [n@gmail.com](mailto:n@gmail.com)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 8:48:03 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a current employee of Atlantic Gold, I care deeply about the continuity of the Touquoy Mine operation. I have a family of 6 Nova Scotians who are all reliant on my job at Atlantic Gold. I have personally worked very hard on environmental management and protection at the Touquoy Mine and I know from experience that our employees and management team care very much about continuing to operate responsibly and about protecting the environment. I am proud to say that the company is committed to respecting the environment and I have observed demonstration of this commitment first hand. I am confident that the Touquoy Mine has the management system in place as well as the technical experts and resources needed to implement the proposed project modifications in a manner that will be protective of our employees safety, the environment, and the community. Thank you for considering my opinion as you evaluate the proposed project modifications. Name: Email:

@gmail.com Address:

Municipality: Antigonish Co. email\_message: Privacy-Statement: agree x: 49 y: 17

From: [@stbarbara.ca](mailto:@stbarbara.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 9:12:00 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Email:

l @stbarbara.ca Address: Municipality: email\_message: Privacy-Statement: agree x:  
40 y: 26

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 9:16:26 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@gmail.com Address: Municipality: Halifax  
email\_message: Privacy-Statement: agree x: 37 y: 17

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 9:16:52 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided

Address:  
email\_message: Privacy-Statement: agree x: 60 y: 26

Municipality: Carrolls Corner

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 9:23:26 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a province, we need this project to go forward. there are too many jobs at stake and the company has done a great job at controlling the risks to the environment. Name: Email: @hotmail.com  
Address: Municipality: Oakbank email\_message: Privacy-Statement: agree x: 55  
y: 17

From: [1@gmail.com](mailto:1@gmail.com)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 30, 2021 10:37:45 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I do not approve of further expanding storage needs of toxic materials due to gold mining at Moose River location. I believe we should STOP DENIGRATING our precious land for the profit of private business or anyone and value the land and its natural renewable resources raping the land for gold.

Name:                      Email:                      @gmail.com Address:

Municipality: Halifax email\_message: Privacy-Statement: agree x: 51 y: 27



From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 12:44:43 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these proposed project modifications are. We have operated safely since 2017 and these proposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications will be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Atlantic Mining NS Corporation

Municipality: Middle

Musquodoboit email\_message: Privacy-Statement: agree x: 64 y: 24

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 12:51:42 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@gmail.com Address: , Canada

Municipality: Upper Tantallon email\_message: Privacy-Statement: agree

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 1:02:15 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@stbarbara.ca Address: Municipality:  
email\_message: Privacy-Statement: agree x: 77 y: 24

From: [Environment Assessment Web Account](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 1:07:12 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address:

Municipality: Brookside

email\_message: Privacy-Statement: agree x: 64 y: 27

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: July 30, 2021 3:17:15 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: We all support protection of the environment, and industry these days, in addition to being strictly regulated, takes all measures to ensure protection of the environment. Its in their best interest to do so. Nova Scotia is not a wealthy province and we need a BALANCED approach to resource management if we expect to be able to provide the health care, education and social needs we all demand in the 21st century. Mining provides well paying jobs in rural areas that help sustain communities and support the province through royalties and taxes corporate, municipal, personal income. The modifications that Atlantic Gold are requesting are not significant with respect to the current mine site, but are very significant with respect to continued operation and the economic benefits future projects will provide. Name: Email:  
@gmail.com Address: Municipality: Dartmouth  
email\_message: Privacy-Statement: agree x: 49 y: 22

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 3:23:47 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I work at the Touquoy operation and wholeheartedly support the application. We work to very high standards for safety and environmental protection and are closely monitored by the Nova Scotia regulators to ensure that we are in compliance. The mine is part of having a diverse economy in rural Nova Scotia. Its a great opportunity for the province. Name: Email: Municipality:  
@gmail.com Address:  
Bedford email\_message: Privacy-Statement: agree x: 61 y: 23

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 30, 2021 7:05:43 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@gmail.com Address:

Municipality: Meaghers Grant email\_message: Privacy-Statement: agree x: 46 y: 23

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: July 31, 2021 12:29:47 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Upon touring the mine and discussing the environmental practices, I observed Environmental protections are in place. There is a high degree of preventative measures in place coupled with a high degree of monitoring taking place daily at all locations on Atlantic Golds footprint. Name:

Email: [@gmail.com](#) Address:

Municipality: Onslow email\_message: Privacy-Statement: agree x: 47 y: 27



From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 1, 2021 8:06:28 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Hello, I am not very educated nor have ever worked at or operated a mine. I do follow news and have eyes and ears. I have seen the utter devastation that a mine creates in wild areas. I also know the NS government will follow the money and continue to destroy our woods and streams. I have to assume the mine will as well, and when they are gone nothing will be the same. I have also seen the economic benefit of the mine in Middle Musquodoboit. The Village is doing very well. If the mine is not allowed to store tailings in the pit , what is the alternative ? Please do not destroy any more of the forest. Name:                      Email:                      @hotmail.com Address:

Municipality: Elderbank email\_message: Privacy-Statement: agree x: 67 y: 17

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 1, 2021 1:16:54 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I would like to take the time to write about my experience working at Atlantic gold/ St Barbara for the last 3 years. We have operated safely from our opening in 2017 and I have witnessed first hand how not only the environmental team and management but everyone on site works to keep the environment safe and Im confident in my colleagues that have submitted the documents to the government for modification and that we can complete these modifications to the highest standard. Not only do we take our environmental footprint seriously, the company also provides plenty of high paying jobs and opportunities that extend far past just the staff on site, it also spreads into the local communities. Name: \_\_\_\_\_ Email: \_\_\_\_\_@gmail.com Address: \_\_\_\_\_

Municipality: Debert email\_message: Privacy-Statement: agree x: 83 y:

From: @aol.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 1, 2021 1:24:22 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: For me this is absolutely a must for Nova Scotia it's so important that we keep the Touquoy mine going at full capacity. My family has lived in this province for 4 generations and I would like to continue to raise my kids here however if this project has to gear down because of government slowdowns or not getting permits on time Nova Scotian tax payers like my self will be Forced to move. I would really love if the government officials, Would come to site and see what a great job the group of us 300 plus I believe are doing in making sure we don't have a negative impact on our environment we love. I believe we are such a positive thing for Nova Scotia. So please let's keep are hard working tax paying men and women in Nova Scotia. Name:

Email: @aol.com Address: Municipality: Halifax

email\_message: Privacy-Statement: agree x: 68 y: 20

From: [@ns.simpatico.ca](mailto:@ns.simpatico.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 1, 2021 11:08:13 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: This company will keep jobs in Nova Scotia . This company also looks after the safety of its employees as well as the safety of the environment surrounding its mines. Name: Email:

@ns.simpatico.ca Address: Municipality: Belnan email\_message:  
Privacy-Statement: agree x: 52 y: 30

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 2, 2021 7:55:15 AM

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. Name:           Email: Address: Municipality: email\_message: Privacy-Statement: agree x: 52 y: 34

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 2, 2021 7:55:18 AM

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name:                      Email: Address:  
Municipality: email\_message: Privacy-Statement: agree x: 71 y: 19

From: \_\_\_\_\_@hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 2, 2021 8:34:28 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: \_\_\_\_\_ Email: \_\_\_\_\_

\_\_\_\_\_@hotmail.com Address: \_\_\_\_\_ Municipality: milford email\_message: \_\_\_\_\_

Privacy-Statement: agree x: 65 y: 22

From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 2, 2021 12:37:37 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Let the mine make their planned changes. Name: Email: @hotmail.com Address:  
Municipality: Mineville email\_message: Privacy-Statement: agree x: 57 y: 20



From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 2, 2021 4:23:50 PM

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Project: touquoy-gold-project-site-modifications Comments: It disturbs and saddens me that in times where the results of the human caused destruction and pollution of ecosystems and with it the changes towards more extreme climate conditions have become so blatant and un-ignorable, that the extractive industry and in particular the mining of a metal that has hardly any essential necessity beyond the use for jewelry and investment besides gold could be recycled!! is even considered! Not even to mention environmental racism and corruption, the connection of arsenic and cancer in humans as well as devastation of aquatic life is scientifically proven. The full costs of the mining never fully carried by the cooperation that often leaves without cleaning anything up. What is it? Is it power or money or...? Or is it that the imagination has become so limited that it is now impossible to envision an economy that allows for beautiful, healthy and prosperous livelihoods without the exploitation of Earth and BIPOC? 289ha of land destr oyed and polluted for 7years worth of employment for 200 people?? A serious shift in perspective and priorities and a truthful cost-analysis involving all damaging outcomes is needed! Excuse my language but anyone in their right mind would not even have allowed for another gold mine in NS - as if we dont have enough left to heal and restore!! Name: Email: Address: Municipality: Tatamagouche email\_message: Privacy-Statement: agree x: 82 y: 25

From: [@icloud.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 3, 2021 2:57:31 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: If these modifications donâ?Tt get approved my family and I are packing up and moving out west as there is no work in this province. I support Atlantic Golds Tuquoy Mine. Name: Email:  
@icloud.com Address: Municipality: Belmont email\_message:  
Privacy-Statement: agree x: 52 y: 28

From: [@stbarbara.ca](mailto:@stbarbara.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 3, 2021 10:32:42 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

[@stbarbara.ca](mailto:@stbarbara.ca) Address: Municipality: email\_message: Privacy-Statement:  
agree x: 57 y: 32

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 5:36:59 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address:

Municipality: Fall River email\_message:

Privacy-Statement: agree x: 66 y: 26

From: [@outlook.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 9:33:19 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold is a good corporate citizen of NS and has been since 2017. Health, Safety and Environment are always top of mind with this company. This site is an example of responsible mining done right for everyone...NS has incredible potential in resources but it will not be realized without support.  
Name:                      Email:                      @outlook.com Address:                      Municipality:  
Cambridge email\_message: Privacy-Statement: agree x: 81 y: 13

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 9:45:01 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. Name: Email:

Address: Municipality: Dartmouth NS

email\_message: Privacy-Statement: agree x: 45 y: 39

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 9:55:28 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I would very much like to see this project go ahead. We desperately need the jobs, the boost to our economy and the trickle down effect this has on the local businesses. I am sure proper precautions with regard to the environment will be taken and when these projects are complete the area will be in excellent condition for the local habitat. Name:                      Email:                      @motioncanada.com  
Address:                      Municipality: Dartmouth email\_message: Privacy-Statement: agree  
x: 69 y: 16

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 10:12:09 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality:

Halifax email\_message: Privacy-Statement: agree x: 63 y: 27



From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 2:21:47 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: St Barbaras Atlantic Operations are focused on not just mitigating environmental impact but on sourcing innovative cutting edge technology to lead the mining industry. One such innovation they have embraced is use of deep cryogenic treatment - a means to increase the wear life of consumable metal items. In doing so, they reduce the re-supply of short life components, shorten the logistics tail and roadway impact, lower diesel consumption and directly reduce terrestrial impact via new technology adoption. Their focus on environmental stewardship reflects a strong, proactive commitment to Canadian values. Name:                      Email:  
Address:                      . Municipality: Lunenburg email\_message: Privacy-Statement: agree  
x: 64 y: 29



From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 4:48:41 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@gmail.com Address: St. Andrews Municipality: Fall River email\_message:  
Privacy-Statement: agree x: 55 y: 20

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 4:51:53 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: \_\_\_\_\_ Email: \_\_\_\_\_

@gmail.com Address: \_\_\_\_\_ Municipality: Halifax email\_message:  
Privacy-Statement: agree x: 54 y: 25

From: @outlook.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 4:55:00 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@outlook.com Address:

Municipality: Halifax

email\_message: Privacy-Statement: agree x: 86 y: 26

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 7:27:35 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: \_\_\_\_\_ Email: \_\_\_\_\_

@seprosystems.com Address: \_\_\_\_\_ Municipality: Langley email\_message:  
Privacy-Statement: agree x: 46 y: 26

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 4, 2021 7:59:39 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: halifax email\_message: Privacy-

Statement: agree x: 59 y: 24

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 5, 2021 8:35:56 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Hello, I started working at Atlantic gold in 2018. I have learned the ins and outs completely of the operation and I understand fully how important our project modifications are to ensuring we continue operating in a safe and sustainable manner while showing the upmost respect for the environment. I fear that if our project modifications are not granted, myself and hundreds of my colleagues will be unable to continue working towards our goals and will have to seek gainful employment outside the province of Nova Scotia. Mining is a big impact industry, our proposed changes are aiming to reduce the impact and lessen the footprint, while continuing to operate in a environmentally friendly and productive way. Thank you for your consideration.

Name:                      Email:                      @hotmail.com Address:

Municipality: Stewiacke email\_message: Privacy-Statement: agree x: 59 y: 32



From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 7, 2021 11:35:38 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Hope this projects gets approved.

It means a lot of positive impacts to Nova Scotia. Name: Email:

@hotmail.com Address: Municipality: Bedford

email\_message: Privacy-Statement: agree x: 61 y: 15

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 7, 2021 6:01:36 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the Touquoy gold project 100. It will be very good for the economy. It keeps jobs in Nova Scotia which is what we need. Otherwise, we will lose more Nova Scotians to other provinces. I know people are worried about it being harmful for the environment, but this seems to be a responsible company and from what I understand, they have appropriate measures in place to ensure the environment is being protected. Name: Email:

@gmail.com Address:

Municipality:

Halifax NS email\_message: Privacy-Statement: agree x: 60 y: 18

From: @live.ca  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 8, 2021 1:22:17 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I dont see any problems with expanding the mine. The mining company has the right to expropriate any land that they may need to use ,I know this true because property was Expropriated , with the help of he noted in his letter to please note ,that it is the sole responsibility of the mining company to ensure that it meets its obligations under the Expropriation Act . The Department of Natural Resources will not accept any responsibility should the mining company fail to comply with its obligations under the Expropriation Act., the mining company took property and he hasnt been paid a penny. So again Ill say ,I dont see any problems with expanding the mine . The Mining company will do whatever they want to do and the Department of Natural Resources will help them do it .  
Name: Email: @live.ca Address: Municipality: email\_message:  
Privacy-Statement: agree x: 52 y: 27

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 8, 2021 4:15:29 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Rural NS is in dire need of good paying jobs . This is a safe environmental industrial site. We need to get these industrial projects approved all over Nova Scotia before theres no industrial company That will invest in this province . if industrial goods are not processed here it will be done somewhere else with no environmental laws . Get this mine the permits it needs to run. Name:

Email: [@hotmail.com](#) Address: Municipality: westville  
email\_message: Privacy-Statement: agree x: 44 y: 22

From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 8, 2021 4:21:58 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@hotmail.com Address: Municipality: westville  
email\_message: Privacy-Statement: agree x: 53 y: 23

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 8:02:39 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email: Address: Municipality: Halifax email\_message: Privacy-Statement: agree x: 63 y: 32

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 8:24:49 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

[@gmail.com](#) Address: Municipality: Truro  
email\_message: Privacy-Statement: agree x: 59 y: 32





From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 11:13:28 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Well considered and professional proposal. If this proposal is rejected - it sends a clear message to those that would seek to invest in the province that the Govt of Nova Scotia is either incapable or unwilling to engaging in sustainable, environmentally responsible resource development. Name:  
Email: Address: Municipality:  
LAKEFIELD email\_message: Privacy-Statement: agree x: 49 y: 31

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 11:54:22 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Great for all involved as Atlantic Operations Touquoy project brings many jobs to the province and the small community of Middle Musquodoboit. Atlantic Operations Enviro team keeps an eye on all aspects of operations to ensure proper environmental testing/needs are met. Name: Email:  
@gmail.com Address: Municipality: Fall River  
email\_message: Privacy-Statement: agree x: 55 y: 28



From: @live.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 4:05:45 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As one of the many team members at Atlantic Operations, I know how important these proposed project modifications are. We have operated safely since 2017 and these proposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. As a recently married , it is of the utmost importance to us that for us, our future children, as well as the family's of the many employees and contractors that work here, to continue to live and raise our families in this beautiful province. That is still a possibility, and I believe that this environmentally conscious and safe mine is that start to that. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. We are not your backyard gold mine searching for gold at no expense. We are a professional team made up of people with a diverse set of backgrounds from Nova Scotia and who live in Nova Scotia looking to continue to add to our reputation by continuing to operate safely, sustainably and in a respectable way to the environment. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@live.com Address: Municipality: Belnan email\_message:  
Privacy-Statement: agree x: 76 y: 24

From: @me.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 5:19:21 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I would like to express my concern and opposition to Atlantic Golds request to enhance and expand its project at Moose River Gold Mine due to the potential to create further environmental damage. I believe that the footprint that exists at the site to date far exceeds the understanding that the general public had with respect to environmental changes and that the risk to the water supply in the neighbouring lakes Scraggy, river lake and outward to the ocean is too risky to entertain. It would appear that Atlantic Gold acknowledges that there would be more additional environmental damage to the water supply, habitat and living organisms. I also have serious concerns that there is a risk the company will abdicate responsibility to any damages it leaves behind and that the province will be left to deal with the issue much like other companies have done in the past. As a landowner from the area, I strongly oppose allowing the company to proceed without a guarantee that there will be NO further risk to the environment and water supply. This needs to be a guarantee in writing that can be delivered to the people of Nova Scotia. I urge public opinion and openness with regard to any decision on the future plans at this mining site. Name: Email: @me.com Address:

Municipality: Truro email\_message: Privacy-Statement:

agree x: 55 y: 24

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 5:33:02 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This activity in Moose River is very disruptive to the environment and is a major contributor to climate change, which is now out of control. The province tries to sell this mining activity by talking jobs. I think the real reason is to stuff more money into the hands of greedy investors, many of whom already have too much money. I am extremely disappointed in the politicians who talk green but do nothing. We witnessed temperatures of 50 degrees in Lytton ,BC. Start taking some action. If your house was burning down, would you sit around and drink a coffee? That's equivalent to the action we've seen. Sad that it's come to this. I am currently sitting in a beautiful area in Guysborough County, possibly the most beautiful county in NS. It sickens me to think of a mine a few kms from here. What a tragic legacy to leave behind when young kids are waiting their turn. Our politicians are paid to make tough decisions yet some feel that they are picked on when asked to take a stand. Cry me a river. Protect the St Mary's. A Name:

Email: Address: Municipality: Middle

Musquodoboit email\_message: Privacy-Statement: agree x: 68 y: 23

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 9, 2021 6:02:07 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address:

Nova Scotia Municipality: Nova Scotia email\_message: Privacy-Statement: agree x: 33 y: 29

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 9, 2021 6:11:31 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Tailing ponds will require constant maintenance and monitoring for eternity and they pose a serious risk to the environment and the population of Nova Scotia. It is very likely that the mine will close in 2024 and just leave a giant mess behind for the taxpayer and future generations will be on the hook for the bill. Atlantic Mining NS inc. already faces 32 charges under the province's Environment Act related to its gold mining operation in eastern Nova Scotia that allegedly took place between February 2018 and May 2020. The company is accused of failing to comply with the conditions of an approval and releasing substances into the environment in amount, concentration or level in excess of approval level or regulation. Gold mine tailings contain large amounts of toxic substances including arsenic and mercury which are harmful to human health and the environment. An open pit lake is likely unsuitable for storage of such tailings as there is a high risk of leaching into the Moose River and the environment due to Nova Scotia's climatic conditions such as: Hurricanes as well as common storms and periods of excessive rain causing the tailing pond to fill up and overflow or in worst case leading to structural damage of the walls Freezing and thawing in winter could lead to structural damage of the tailing pond walls Dry and windy summers leading to drying of the tailings and the toxic fine dust being released into the environment including urban and agricultural areas. Once a mine has been exhausted it will have to be monitored forever to avoid contamination of water and soil and the taxpayer is very likely to be on the hook for the cleanup costs as well. The cost of cleaning up two former mining sites, Montague Gold Mines and Goldenville mine site is estimated to cost the province \$ 48 million. There are more than 60 other former gold mine sites on Crown land potentially requiring clean-up. According to an auditor general's 2019 report the cleanup is the province's responsibility and there is a significant unknown financial liability associated with the work.

**WE NEED A GOVERNMENT WHO STOPS THIS ONGOING POLLUTION AND CARES FOR THE ENVIRONMENT. WE DONT NEED ANOTHER FUTURE CLEANUP PROJECTS COSTING MILLIONS OF DOLLARS!** Name: Email:  
@gmail.com Address: Municipality: New Albany  
email\_message: Privacy-Statement: agree x: 54 y: 18





From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 10, 2021 11:58:26 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: The proposed project modifications are very important to me as a team member of Atlantic Operations. I believe Atlantic has operated in a safe and environmentally responsible manner since starting operation in Nova Scotia. I am confident the company has undertaken all due diligence required to ensure the continued safe and environmentally responsible operation of the facility and all project modifications meet or exceed all federal and provincial regulatory requirements. Name:            Email:            @gmail.com Address:  
Municipality: Waverley email\_message: Privacy-Statement: agree x: 59 y: 23

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 10, 2021 12:42:30 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This job brings millions of dollars into Nova Scotia with thousands of jobs in the past four years. Nova Scotia needs jobs and we need your help to help us, we take every precaution with hundreds of thousands of tests to make sure we take every safe step for our environment. Please realize how much we've helped the community. And many many jobs to raise families in, this has brought thousands of Canadians back home to our own Province instead of flying back and forth for work out west. Please help us extend our future in gold mining industry. They have brought many new hands from labourers right into trade apprenticeship to red seal with many many more important ways to show their appreciation to us for succeeding in the mine industry. With your help you won't help a few hundred workers you will help thousands of hard working women and men in this industry and I ask for your help and let us get these permits

Name:           Email:                           @gmail.com Address: Municipality: New Glasgow  
email\_message: Privacy-Statement: agree x: 66 y: 35

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 10, 2021 2:48:06 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I believe that the modifications that are being done/purposed at the Touquoy project is a great idea, it will help keep jobs in Nova Scotia and also keep Nova Scotians home with their families instead of having to do a fly in and fly out situation which can be very hard for some. I think it is also best to keep young people in Nova Scotia as well but also As an employee at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. I have confidence that these modifications can be completed to the highest standard. As listed in the Project Registration Document that was submitted, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences.

Thank for your time and consideration. Name: Email: @gmail.com  
Address: Municipality: Upper Stewiacke email\_message: Privacy-Statement: agree x: 59 y: 15

From: [@yahoo.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 10, 2021 2:57:43 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences Name: Email:  
@yahoo.com Address: Municipality: tangier email\_message: Privacy-  
Statement: agree x: 49 y: 10

From: [@hotmail.ca](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 10, 2021 3:50:59 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a former team member at Atlantic Operations I know how important these proposed project modifications are. We have operated safely since 2017 and these proposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

[@hotmail.ca](#) Address: Municipality: Brookefield  
email\_message: Privacy-Statement: agree x: 79 y: 18

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 10, 2021 4:07:02 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Having a gold mine in Atlantic Canada allows me to see my daughter quite frequently. , she had to leave for employment and worked internationally for years, however now she lives in Nova Scotia. I no longer have to worry about her being so far from home and working offshore in international waters. She now has a safety oriented position in a province with a high health and safety standard. I am so happy to have such an industry close to home and will be forever grateful. Name: Email: @gmail.com Address: Municipality: Torbay email\_message: Privacy-Statement: agree x: 55 y: 28

From: @eastlink.ca  
To: Environment Assessment Web Account  
Subject: Proposed Project Comments  
Date: August 10, 2021 4:34:13 PM

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Project: touquoy-gold-project-site-modifications Comments: Support for the Touquoy Gold Mine project Modification, I am writing to express my support for the Moose River Gold Mine project and join 76 of Nova Scotians that support environmentally responsible gold mining in the province. I am asking that you and your government allow the project modifications at the Touquoy mine to proceed in an environmentally responsible way. Atlantic Gold has embraced participating in a stringent Environmental Assessment process for the Touquoy mine modifications in good faith and has developed a plan to assess and mitigate any environmental impacts that may result. To not allow these modifications to proceed would not be in keeping with the science-based assessment process and could put hundreds of Nova Scotians's jobs at risk, particularly in rural Nova Scotia where jobs are most needed. Nova Scotia is blessed with an abundance of natural resources and minerals, including gold. Based on polling completed by Narrative Research in January/February 2020, the people of Nova Scotia and the province's Eastern Shore know this and see the opportunity ahead of them with Touquoy and future proposed sites. We have an opportunity to continue to develop this resource in an environmentally responsible way while making a positive economic impact in our communities. I encourage you to approve these modifications so that I and my family can continue to succeed in Nova Scotia. Thank you for your attention to this very important matter. I look forward to hearing more about how this government is supporting much needed rural economic development in Nova Scotia. Supporter of responsible mining in Nova Scotia

Name:

Email: @eastlink.ca Address:

Municipality: email\_message: Privacy-Statement: agree x: 57 y: 28



From: @icloud.com  
To: Environment Assessment Web Account  
Subject: Proposed Project Comments  
Date: August 11, 2021 9:50:51 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: At one time I used to hike, canoe and fish in different parts of the Tangier Grand Wilderness area. The Granite cliffs of Squirrel lake will be forever in my mind. Even though I love this area passionately, I tell my partner that I cannot drive by the Moose River Touquany mine and he respects that. Hiking , canoeing, kayaking, fly fishing are activities that develop passion and respect for our environment and our passions I feel that expansion for this project is unwise. Evidence of our destructive activities on our planet are increasingly it by the day climate crisis, fires, droughts ,pandemics and record heat. It is time for politicians to show a little courage , show a little passion, think pass the money, do the right thing. Protect the beautiful Eastern Shore. Protect the beautiful St. Maryâ?Ts River. Show a little love for the generations not yet born.

Respectfully, Name: Email: @icloud.com Address:  
: Middle Musquodoboit NS email\_message: Privacy-

Statement: agree x: 77 y: 26



From:  
To: [Environment Assessment Web Account](#)  
Subject: Comments on Touquoy Gold Project Site Modifications- Environmental Assessment Registration Document  
Date: August 11, 2021 1:48:55 PM  
Attachments: [image001.png](#)  
[Ecology Action Centre- Comments on Touquoy Gold Project Site Modifications.pdf](#)

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Hello,

Please find attached the Ecology Action Centre's comments on the Touquoy Gold Project Site Modifications- Environmental Assessment Registration Document.

Kind regards,

**Mimi O'Handley** (she/her), Wetlands and Water Officer  
Kjipuktuk, Unceded Mi'kmaw Territory  
2705 Fern Lane, Halifax, NS, B3K 4L3  
[ecologyaction.ca](http://ecologyaction.ca)

Ecology Action Centre



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*\*Our Fern Lane office is currently closed to the public due to COVID-19, and our staff is working remotely.*

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## Ecology Action Centre's Comments on Touquoy Gold Project Site Modifications

The following submission in response to the Touquoy Gold Project Site Modifications- Environmental Assessment Registration Document is on behalf of the Ecology Action Centre (EAC). The EAC is a member-based environmental charity in Nova Scotia; we are the province's oldest and largest environmental NGO. Since 1971, the EAC has been working at the local, regional, national and international level to build a healthier and more sustainable world. The EAC does not support the proposed modifications. Below we have outlined our concerns. In our comments, we include requests for additional information and questions that we ask the proponent to address.

### Mistakes in figures or text

In Figure 2.1 (Site Layout Showing Proposed Modifications), the Legend indicates that Ship Harbour Long Lake Wilderness Area will be shown in light green. Instead, there is an arrow pointing to a portion of it on the map. **Please show the Wilderness Area in green.** The problem occurs again in Figure 8.2.

Acronyms and Abbreviations - **Missing "Pit" from definition of OPM.**

On page xiii, the proponent writes "Ship Harbour Wilderness Area." **This is not the correct name for the Wilderness Area, it is Ship Harbour Long Lake Wilderness Area.**

### Local Assessment Area (LAA)

The LAA is defined slightly differently in different parts of the document. In one case it is defined as "the area in which both: a) project-related effects (direct or indirect) can be predicted or measured with a level of confidence that allows for assessment; and b) there is a reasonable expectation that those potential effects in the LAA will be an issue of public interest." LAAs are then delineated for different VCs. The map of the LAA for Surface Water is shown in Figure 7.1. The boundary of the LAA at times follows property boundaries but at other times follows physical features (e.g., watercourses, rivers).

**If the LAA is defined by VC, its boundary should actually follow where there may be effects for that VC and should not stop at property boundaries. This inconsistency should be remedied and then modeling and monitoring adjusted to accommodate the new LAA boundaries.**

### Life of the Mine

On page 32, the proponent writes that "the original estimated life of mine was **five** years, based on a **9.3 Mt** mineable reserve with potential to lengthen the life of mine through ongoing mineral exploration activities

---

at the Touquoy Gold Project as well as on the nearby mineral claims if approvals are received (Beaver Dam, Fifteen Mile Stream, Cochrane Hill).”

This **amount** matches with the life of the mine estimate from the Moose River Gold Project EARD and Focus Report (“least 9 million tonnes”). However, both Moose River reports estimated the production life of the mine to be **six** years. It started production in October 2017 and is predicting to be done in 2022... that’s 5 years.” The reserve was last updated in March 2019 with the revised estimate at **12.91 Mt.**”

**Does that mean the mine will mine more ore than previously approved?**

**Will the mine be operational longer than the original timeframe (five/six years)?**

**If the mine life may be extended, this should be stated with regards to predicting the temporal extent of potential effects, and impacts on monitoring should be discussed.**

On page 33 the proponent writes that ore that was previously considered waste rock is now considered medium-grade ore, based on “...additional data collected during mining and influenced by fluctuating economic factors. Approximately 22% more tonnes of ore are now being processed to achieve the same number of forecasted ounces of gold, and over twice the quantity of medium grade ore has been identified for processing.”

**It seems that additional data may lead AMNS to request more modifications to the project.**

**Please discuss whether the current request will be the last modifications of the WRSA and Clay Borrow Area.**

## Climate Change

### 13.1.1 Climate and Climate Change

The proponent includes a discussion about the growing impacts of climate change writing that “the Project will be designed to accommodate extreme precipitation (rain and snow) events and high wind ranges.”

**Please provide more detailed information discussing how the project will accommodate extreme precipitation (rain and snow) events and high wind ranges. What constitutes extreme precipitation (rain and snow) events and high wind ranges? How were the impacts of climate change projected?**

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## Protected Areas

The nearby Wilderness Area is used for wilderness recreation. One aspect of the wilderness recreation experience is relative quiet compared to urban areas, and the experience of seeing less urban infrastructure.

It is stated that “areas of Scraggy Lake and Mooseland Road may have a viewshed that includes the WRSA depending on the observation location, although limited visibility of the WRSA is not expected to affect the use or enjoyment of recreational areas.”

**Please describe how this conclusion was reached. Also, please describe the effect of new traffic flows on sound receptors in the two closest Wilderness Areas.**

## Water

### 6.5.1 In-Pit Tailings Disposal

The proponent writes that “the deposition of tailings into the exhausted Open Pit has the potential to interact with groundwater quality around the Open Pit, as well as water quality in Moose River from groundwater seepage into the river. Groundwater in the filled Open Pit has the potential to seep to Moose River during the post-closure phase of the Project.”

**There is considerable concern about the impacts of the potential interaction of the tailings in the exhausted Open Pit with groundwater quality around the Open Pit, and the potential seepage into Moose River.**

**Please use studies and research from the post-closure phases of other mining sites to describe the impacts and consequences of this. Please describe what steps the proponent will take to mitigate these risks.**

**Please describe how the proponent will continue to monitor water quality during the post closure phase.**

**Please describe what actions the proponent will take should these potential interactions take place.**

### 6.5.2 Waste Rock Storage Area Expansion

The proponent writes that “through subsurface flow pathways and seepage discharge, a minor percentage of the seepage from the WRSA may bypass the seepage collection system and report to adjacent surface water features.”

**Please provide more information about how much seepage may bypass the seepage collection system, and the potential consequences of this.**

---

**Please provide information for how the proponent plans to monitor the bypass.**

Table 7.1 outlines the potential effects, effects pathways and measurable parameters for surface water resources and includes information about the potential impacts to both surface water quality and quantity.

**Please discuss the effect pathways outlined in the table in relation to other similar mining sites across Canada; that is, how have there been changes to surface water quantity and quality at other sites due to mining activity and what have been the consequences of these changes?**

**Please provide detailed information about how the proponent plans to mitigate these potential effects.**

#### 7.5.1 In-pit Tailings Disposal

The proponent states that “discharge from the TMF is not anticipated, but could occur under extreme climate events.”

**As Nova Scotia continues to experience the growing impacts of climate change, the province will face an increase in extreme weather events (e.g., hurricanes) in both frequency and severity. Please provide detailed information about how the proponent is preparing for the increase of extreme climate events during the operations and post-closure phases.**

**Please provide information outlining what actions the proponent will take should discharge from the TMF occur.**

#### 12.2 Failure of Water Management Infrastructure

The proponent states “failure of water management infrastructure could include a breach of retaining embankment through overflow or an embankment structure failure, resulting in an unintended discharge of sediment-laden water into the surrounding environment including watercourses, wetlands, and downstream terrestrial habitats containing rare plants.”

**Please provide more detailed information about the impacts (both direct and indirect) and consequences of the failure of water management infrastructure. Draw upon examples from other mine sites.**

**How will the water management infrastructure be monitored and/or decommissioned during the post closure phase of the mine? If they are to be monitored, who will conduct this monitoring, how often, and for how many years? What actions will the proponent take should the water management infrastructure fail?**

---

The proponent writes that “water management ponds and associated infrastructure are designed to attenuate the design storm event, thus preventing flooding. The design storm events consider climate change.”

**Please describe, in detail, how the design storm events consider climate change.**

The proponent mentions that there have been reportable instances of siltation affecting onsite wetlands.

**How many wetlands have been affected by these instances of siltation? What is the extent of the harms caused to these wetlands? Has the proponent compensated for the alteration of these wetlands (i.e. the compensation that is required under the Nova Scotia Wetland Conservation Policy)?**

### 12.3 Tailings Line Failure

The proponent describes a failure that resulted in the release of approximately 300,000L to 400,000 L of tailings in January 2019. There is concern that even though the overall stewardship of the TMF met its expectations of good practice, this failure still occurred.

**Given this information, there is concern that while the proponent has outlined their intentions to engage in best practices, another failure will happen causing significant impacts to the natural environment.**

**Please provide more detailed information about this incident. This information should include who discovered the failure, how long after the failure occurred that it was discovered, and why up to 400,000 L of tailings were released before it was stopped.**

**Please provide information for how the short term and long-term impacts of this failure are being measured. Please provide information for what the known short term and long-term impacts of this failure are.**

### Migratory birds

No new bird surveys were completed in the LAA. **A migratory bird survey should be completed in the area during nesting season. A least one other bird survey should be completed to document non-migratory birds that also use the area outside of breeding season. It is not acceptable to make assumptions about how birds will be impacted within the LAA without current data about birds that are using that specific area, especially because the area may host migratory birds protected under the *Migratory Birds Convention Act*.**

**Rusty Blackbird should be considered a priority bird species.** It “was assessed to have a moderate likelihood of using habitat within the project site, specifically treed wetlands, and adjacent uplands.” These habitat types occur in the areas proposed for modification.



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Table 9.9 states that the Upland Community of Spruce Pine Forest Group is present within the LAA, including in a Late Successional Stage (**this is missed in the first paragraph of page 9.33**). **Because of this, Northern Goshawk should also be included as a priority bird species**, because Northern Goshawk “had a high likelihood of using habitat within the 2007 EARD project site, specifically mature forest stands.”

## Wildlife (other than birds)

**If the modifications to the project are approved, the Wildlife Management Plan (last updated 2017) should be updated to reflect the potential impacts from the modifications to species within the LAA (i.e., don't just keep the 2017 version).**

Section 9.6 proposed mitigation measures to reduce potential impacts on wildlife. **Please describe mitigation measure implemented since the mine opened in 2017 and describe any evidence of whether these measures are working or not. This analysis should then inform mitigation measures for the proposed expansion.**

## Lichens

Figure 9.4 shows locations of SOCI lichen. There are 3 locations within the LAA where previously observed lichens are “No Longer Extant.” These are very close to the location of Blue Felt Lichen in WL 15.

**Why did these lichens disappear? How can impacts that might have led to the disappearance of these lichens be reduced in order to no cause the Blue Felt Lichen nearby to also become extant?**

Some of the research associated with edge effects on lichen, and effects of dust deposition on lichen, are discussed (pages 278 – 279). Although this research and additional research could support the delineation of an appropriate LAA for lichen, it is not used in this way. **The proponent should redefine the LAA for lichen based on research.**

The Lichen Monitoring Plan is described by the proponent on page 276. **This plan should monitor lichen SAR, but should also monitor lichen SOCI. SOCI may be impacted at the same time or while SAR are being impacted, which could provide a warning to reduce impacts before the SAR is impacted.**

The Plan will monitor within the “operational footprint of the Touquoy Mine Site.” **It should instead monitor within the LAA for lichen since this is where potential impacts to lichen have been predicted to occur.**

**Will there be benchmarks for knowing when monitoring results indicate a decline in lichen health? What will be the steps in the plan for action when a decline in lichen health is detected?**

---

Lichen collection is described on page 279. **How will “direct impacts to priority lichen be mitigated through species collection prior to development”? Removing a species from the wild is not a form of mitigation.**

#### 9.4.1.1 Habitat and Vegetation

The proponent writes that the Touquoy Mine Site project site was surveyed for lichens in 2004 and 2005, and that during that time, Blue Felt Lichen, a species listed as Special Concern (COSEWIC and SARA) and Vulnerable (NSES), was found in several locations.

**There is concern that this survey is outdated, and Blue Felt Lichen, could now be present in other locations throughout the site.**

The proponent also mentions in the discussion of Wetland Communities that other areas that could support Blue Felt Lichen were found.

**Please provide more recent survey information about locations of this species throughout the site.**

## Wetlands

#### 3.3.8 Wetland Monitoring

The proponent states that “while the total approved area of wetland alteration is greater than initially identified in the original EA due to ongoing changes in project design and further wetland delineation of wetlands for wetland alteration permitting, no significant habitat loss has been identified, and the principle of minimization of impacts is still applied, all wetland habitat loss is being compensated, and mine site reclamation mitigation measures will also be applied upon project completion.”

**Please describe how the term “no significant habitat loss” is being understood in this context. Please provide information about any habitat loss that has occurred due to the wetland alteration.**

The proponent also writes that, “unintended wetland alteration has occurred; however, this has been relatively small, has been addressed by implementation of corrective actions, and is being captured during annual wetland monitoring, and covered under alteration amendments and compensation requirements.” There is concern that more unintended wetland alteration will continue to occur during the expansion of the mine site.

**There is concern that additional unintended wetland alteration will occur should the proposed modifications be approved.**

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**Please describe the scope of the unintended wetland alteration. Please provide information about how and why these alterations occurred. What is meant by the term “relatively small”? What corrective actions have been taken?**

## 7.6 Mitigation

The proponent writes that work operation will be conducted in a manner to protect watercourses and wetlands from siltation and disturbance.

**Please provide more detailed information regarding how watercourses and wetlands are to be protected from siltation and disturbance. Please use research and studies from other mine sites to demonstrate the success of the proposed protection measures.**

## 9.1 Potential Effects, Pathways and Measurable Parameters

Table 9.1 outlines the potential effects, effects pathways and measurable parameters for the terrestrial environment.

**There is concern about the potential effects related to the change in wetland habitat including both the direct and indirect impacts.**

**Please discuss the effect pathways outlined in the table in relation to other similar mining sites across Canada; that is, how have there been changes to wetland habitat at other sites due to mining activity and what have been the consequences of these changes?**

### 9.2.1 Spatial Boundaries

The proponent states that, “for the purposes of the terrestrial environment, the LAA has been defined for each portion of the PDA based on expected maximum indirect impact to ecosystem habitats, vegetation communities and fauna, specifically from predicted edge effect and/or dust, and also based on the maximum indirect impact to wetland habitat from surface water management of mine contact water which may affect the hydrology of nearby wetlands.”

**Please clarify how the expected maximum indirect impacts were determined.**

### Table 9.14 Wetland Monitoring Conditions

With respect to Wetland 22, the proponent states that there was indirect alteration (0.06 ha) identified in the 2020 wetland monitoring annual report.

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**Please provide more information about this alteration including why it occurred, why this occurrence was not prevented, and how the proponent plans to protect wetlands from similar indirect alterations from happening in the future.**

With respect to Wetland 49 and 56 the proponent explains that there is no monitoring proposed at this time. Monitoring requirements will be reviewed upon EARD regulatory approval.

**Please provide information about monitoring requirements and what they entail.**

### 9.6 Mitigation

The proponent writes that, “intact forest stands and wetlands will be avoided wherever practicable during detailed Project planning and design in favor of previously disturbed areas (e.g., stands disturbed by timber harvesting, roads, or other development). Where natural, intact habitat cannot be avoided, maintain existing vegetation cover whenever practicable and minimize overall areas of disturbance.”

**Please describe what is meant by “wherever practical” in this context. Please provide an example describing a time when it may not be practical to disturb wetland and maintain existing vegetation cover.**

### 9.7.1 Change in Vegetation and Vegetation Communities including Priority Species

The proponent states that “Wetland 15, which has one blue felt lichen occurrence (SAR), is expected to be partially altered by the WRSA expansion (Figure 9.4).” The Nova Scotia Wetlands Conservation Policy states “Government will not support or approve alterations proposed for a Wetland of Special Significance (WSS) or any alterations that pose a substantial risk to a WSS.”

**Because this project does not appear to align with the exceptions outlined in the Nova Scotia Wetlands Conservation Policy, this wetland cannot be altered by the proponent.**

From: @gmail.com  
To: Environment Assessment Web Account  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 11, 2021 4:22:56 PM

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Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold proposes to store the tailings in the open pit which would be allowed to fill with groundwater and precipitation, and when the water level reaches a certain elevation, it will seep out into Moose River. This proposition is extremely concerning and should be rejected. Bedrock formations in the Moose River area where the Touquoy Gold Project Site is located are part of what is known as the  $\hat{a}$ ? ~Meguma Terrane $\hat{a}$ ?T, which contains particularly high level of arsenopyrite, a critical gold-bearing sulfide mineral which often serves as an indicator of gold bearing reefs. Arsenopyrite-rich tailings have been associated with many former gold mining districts situated throughout Nova Scotia. Unfortunately, arsenopyrite is a relatively soluble mineral. It therefore breaks down easily, liberating relatively mobile arsenic species, such as arsenite and arsenate, and iron and sulphur into surface water and groundwater and contaminating water supplies. Currently, arsenic is the most common natural groundwater contaminant exceeding recommended drinking water guidelines i.e. 10  $\hat{A}$  $\mu$ g/L in Nova Scotia. We also know that arsenic is a class 1 human carcinogen and has been associated with a broad range of health effects including cancer of the bladder, kidney, lung and skin. As about 40 of the Nova Scotia population sources its water from unregulated private wells, exposure to arsenic from contaminated water is a real public health concern. Between 1991 and 1997 the Environmental Chemistry Laboratory in Halifax tested over 21,000 private well water samples province-wide and found that 9 had arsenic levels 25  $\hat{I}$  $\frac{1}{4}$ g/L i.e. levels 2.5 times greater than Health Canada recommended guidelines . That same proportion was estimated to be about 20 in areas where the local geology suggested a high probability of arsenic contamination. Allowing Atlantic Gold to store potentially arsenopyrite-rich tailings in the open pit that would fill with groundwater and precipitation and eventually sip out into Moose River would further increase drinking well-water contamination in Nova Scotia. This is unethical given the established body of evidence in support of health effects, including increased cancer risk at levels near and below current regulatory limits of 10  $\hat{A}$  $\mu$ g/L. In fact, based on my research, I have estimated that currently, approximately 115,000 Nova Scotians may increase their risk of developing bladder and, possibly, kidney cancer by living in areas where arsenic concentrations in wells exceed 5  $\hat{I}$  $\frac{1}{4}$ g/L. Do we really want to perpetuate this pattern knowing that Nova Scotia has already amongst the highest rates of both bladder and kidney cancers in Canada ? Should you wish to know more about my research, please do not hesitate to contact me. You may also want to consult the following publications: <https://pubmed.ncbi.nlm.nih.gov/24889821/> <https://pubmed.ncbi.nlm.nih.gov/29089168/> <https://pubmed.ncbi.nlm.nih.gov/24613511/>

Thank you kindly for seeking public consultation on this very important topic. Name:  
Email: @gmail.com Address: Municipality:  
Halifax\_email\_message: Privacy-Statement: agree x: 50 y: 25

From: @icloud.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 11, 2021 5:14:02 PM

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Project: touquoy-gold-project-site-modifications Comments: The problem I have with this , directory behind the area in question for the second tailings pond there is a beautiful river that runs by this area , Iâ?Tm not sure exactly how close but we are talking about maybe 30 to 50 feet away , this river has trout that travels through fish river , a natural breeding ground for trout !! There is no way possible to protect this river if this is approved and by far nature and the environment must be protected at all costs , we have seen in the past with 32 charges that Atlantic gold / St, Barbara does not protect our environment!! Name: Email:

@icloud.com Address:

Municipality:

Dartmouth email\_message: Privacy-Statement: agree x: 71 y: 32

From: [\\_gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 11, 2021 7:26:07 PM

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Project: touquoy-gold-project-site-modifications Comments: This is my second mine site I have worked at and I can proudly say we have very high standards for both the wildlife and environment in the surrounding areas. ST Barbara has never once put production over environment and im proud to say im part of the team at Touquoy mine site. This is a good job that supports many local families and businesses with incomes that cant be found elsewhere in the surrounding communities and its essential for all of us that we can continue to operate as a safe and environmental friendly mine site. Name: Email:

@gmail.com Address:

Municipality: Judique email\_message: Privacy-Statement: agree x: 47 y: 22

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 11, 2021 9:56:17 PM

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Project: touquoy-gold-project-site-modifications Comments: I am in favour of this project as it provides well paying jobs and careers to direct employees and many supporting businesses and contractors as well as royalties to the Province. Ongoing site modifications will ensure the successful continuation of the Touquoy Gold project. However, the permit approval of site modifications must ensure that all work is done in a manner that protects the environment and provides for site remediation at project end of life. Name: Email:

@gmail.com Address:

Municipality:

Lawrencetown email\_message: Privacy-Statement: agree x: 73 y: 23





From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 12, 2021 6:02:36 AM

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Project: touquoy-gold-project-site-modifications Comments: Nova Scotia needs jobs, Where at a cross roads in nova scotia all I here is if we dont change the way we do things regarding the environment there will be no future for our children, We got to understand our government holds new companys to the highest standards regarding the environment, are we perfect no but we try. Maybe as a province we should look at other countries to see how their doing, we breath all the same air. Without jobs, There is no future for our children. Name:  
Email: @gmail.com Address: Municipality: pictou  
email\_message: Privacy-Statement: agree x: 60 y: 25

From: [\\_yahoo.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 12, 2021 8:44:31 AM

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Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: \_\_\_\_\_ e Email:

\_\_\_\_\_@yahoo.com Address: \_\_\_\_\_ Municipality: Enfield email\_message:  
Privacy-Statement: agree x: 52 y: 20



From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 12, 2021 4:44:34 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I worked at this project, and have witnessed first hand that the company is 100 committed to doing their very best to meet all requirements to protect the environment, their workers and the local community. The environmental team is involved in every decision and change that happens at the mine regardless of the area or division involved. Everyone has worked hard with steadfast dedication to ensure a safe and successful operation for all stakeholders. I believe that they will continue to do so with the proposed site modifications and that this project will provide a ripple of economic opportunities for years to come.

Name: @hotmail.com Address: Email: Municipality: Dartmouth

email\_message: Privacy-Statement: agree x: 53 y: 24



From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 13, 2021 9:08:27 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@hotmail.com Address:

Municipality: Dartmouth

sage: Privacy-Statement: agree x: 94 y: 29

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 13, 2021 9:17:51 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have the greatest confidence these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Municipality: email\_message: Privacy-Statement: agree

x: 67 y: 24



From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 13, 2021 10:05:20 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these proposed project modifications are. We have operated safely since 2017 and these proposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

Address: Halifax, NS Municipality: Halifax email\_message:

Privacy-Statement: agree x: 54 y: 12

From:  
To: [Environment Assessment Web Account](#)  
Subject: Touquoy Gold Project Site Modifications - Letter of support  
Date: August 13, 2021 3:33:04 PM  
Attachments: [Touquoy Gold Project Site Modifications Letter of Support - MacGregors Industrial Group.pdf](#)

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Please see attached letter of support with regards to the current EA on the Touquoy Gold Project Site Modifications at Atlantic Gold.

Best regards,

**MacGregors Industrial Group**

140 Coalburn MacLellan's Brook Road  
MacLellan's Brook, NS, CANADA B2H 5C7  
Office: (902) 922-2029 x.242

**Fabrication – Machining – Site Services – Ind. Sales – Prefabricated Buildings**

[www.macgregors.ca](http://www.macgregors.ca)





MacGregor's Custom Machining Ltd.  
140 Coalburn MacLellan's Brook Rd., MacLellan's Brook, NS B2H 5C7

Phone (902) 922-2029

Fax (902) 922-2324

13 August 2021

Environmental Assessment Branch  
Nova Scotia Environment

To whom it may concern.

In response to public feedback for the proposed changes to the Atlantic Gold's storage areas.

At MacGregors, we fully support the responsible changes to Atlantic Gold's tailing and waste rock storage. The gold industry has been a part of Nova Scotia's mineral extraction for over a century dating back to the 1900's. In that time, we have come a long way in regard to safe and responsibly mining methods. This modern-day Nova Scotia gold rush has brought about many opportunities for the everyday Nova Scotian. Understandably we have been moving away from the fossil fuel-based resource extraction (coal and natural gas) and the growth of our gold industry has been a suitable replacement. Mining is one of our country's largest industry and Canada is a leader in the global mining market.

Personally, I have been a part of all Nova Scotia gold projects as a hard rock miner and project manager since the restarting of Dufferin as Resource Appalache, then as Maritime Gold Corp., as well Anaconda's Goldboro bulk sample and now Atlantic Golds Moose River project, and the exploration program for Aureus Minerals. I know the opportunities and benefits these projects have provided to many individuals and companies in and around Nova Scotia. As a company, MacGregors Industrial Group directly employs an average of 10 FTE positions directly due to our business in the Gold mining industry.

There is a fine balance between environment and industry that must be managed to allow us to move forward. Atlantic Gold's environmental track record has been up to standard, with past incidents having been self-reported and were immediately focused on for mitigation.

With responsible planning, design and reclamation / remediation programs in place, these operations should have support from the province and elected officials.

We would like to see the provincial government help companies find solutions to move forward on these project that support our local economy; otherwise it will send a message to others that their investment is not welcome in our Province.

Sincerely Yours;

**MacGregors Industrial Group**

From: @icloud.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 13, 2021 11:42:59 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Please do not allow this gold mining operation to expand any further than it already has! Gold mining is inherently bad for the environment, the water and the wildlife that surround it! Their chemical can leach into the earth and cause irreparable damage for years to come! Please deny their application! Thank you so much for your time and consideration on this urgent and important matter! ~ The time is always right to do what is right. Dr. Martin Luther King Jr. Name:

Email: @icloud.com Address:

Municipality: Halifax email\_message: Privacy-Statement: agree x: 70 y: 18

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 14, 2021 4:53:42 AM

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**Project:** touquoy-gold-project-site-modifications **Comments:** I agree with the EAC's concerns regarding the gold mine. I do not support its expansion due to concerns about impact on the environment. **Name:** Anonymous **Email:** Address: Municipality: **email\_message:** Privacy-Statement: agree x: 74 y: 25

From: [@icloud.com](mailto:)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 14, 2021 7:25:31 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This is my second comment , as I stated in the first comment I am concerned about the river running dirt behind the open pit that now Atlantic Gold wants to use as a tailings pond , we have asked Atlantic Gold in the past about a issue you could see on a visit one day on site that it looked like water draining over the land into the pit , when asked they could not explain this to where the water was coming from I believe the water is draining and seeping out of the river if you need any info please contact me , I would love to take someone there to show what we are taking about !! Name:

Email: @icloud.com Address:

Municipality: Dartmouth email\_message: Privacy-Statement: agree x: 63 y: 28

From: [@personainternet.com](mailto:@personainternet.com)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 14, 2021 11:34:01 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: The Touquoy operations brings jobs to the rural area of middle musquidoboit. The company is performing at a minimum the environmental management required and performs a science based approach to permitting.

Name:                      Email:                      @personainternet.com Address:  
Municipality: Stellarton email\_message: Privacy-Statement: agree x: 63 y: 18

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 14, 2021 2:50:55 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: When you hear the word mining, the first thought that normally enters your mind is not good for the environment. Since starting here at the Touquoy site in moose river I have been continuously shown, that certainly is not the case. We have strict guidelines that we have to follow in regards to the environment. Not much different then farmers. They too have to follow environmental guidelines in regards to run off from fields when using fertilizers to produce crop, to then feed animals, which in turn feed us. This place puts money in the pockets of people so they can afford to eat. There are a lot of eyes always on watch to make sure we continue to follow these guidelines. We take it very seriously. We have to do so in order to keep operating and to keep building the economy. A lot of jobs have been created through this site and there could potentially be a lot more to come. Not only did these jobs come from within the company, they also came externally as well. More than a hand full of companies have been contracted in to work here and they continue to be contracted in for work. I would venture to say that a high number of these jobs have been filled by younger people of nova scotia who we want to keep here in our beautiful province. So often we lose them to other provinces due to job shortages, why not try and keep them around. In the future, I do not see anything changing. We will continue to operate safely and in a way that respects the environment around us. Name: Email:

@gmail.com Address:

Municipality: truro email\_message:

Privacy-Statement: agree x: 56 y: 19



From: [@hotmail.com](mailto:)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 14, 2021 8:40:46 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: As someone from the area, I find all the harsh criticisms of the mine and its proposed expansion to be coming from misinformed uneducated individuals from outside of the area and from outside of their expertise. They hand pick their experts to back their narrative instead of basing their comments on facts. The community as a whole is glad that there is economic development in the area. The company stays on top of all environmental issues, invests in the community and supports the people who live and work here. It's time that the vocal minority is not taken as the majority opinion. I hunt and fish in the area and there have been no adverse affects on wildlife or the habitat in the area and any statement saying otherwise is false. Name:

Stewart Email: [hotmail.com](mailto:) Address: Municipality: Elmsvale  
email\_message: Privacy-Statement: agree x: 52 y: 23

From: \_\_\_\_\_@hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 14, 2021 8:48:14 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: i believe what Atlantic gold has done for the province and community is huge and something we cant afford to lose.there a great company to work for very safe place to work and when it comes to the environment thats the number 1 concern and they do a really good job at it. Name: Email:  
@hotmail.com Address: Municipality: Middle Musquodobit  
email\_message: Privacy-Statement: agree x: 51 y: 25

From: @outlook.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 14, 2021 11:11:59 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I am for allowing Atlantic Gold to continue to operate. Its essential for the economy to have such a large company willing to operate and employ locals in our province. We need good companies like this to keep the money in our communities, keep hard working local people employed with a good wage, and to allow more money too be spent in the communities to help bolster other sectors. Name:

Email: @outlook.com Address: Municipality:

Trenton email\_message: Privacy-Statement: agree x: 68 y: 29

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 15, 2021 1:17:14 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Mining needed for the economy boost and recourses. Without mining we wouldnt have most of our everyday needs. It also goes beyond that, the good paying jobs that everyone has been begging for in Nova Scotia are finally here and now people are wanting to shut it down. I think that if the job can be done safely do it. Name: Email: @gmail.com Address: 1

Nova Scotia Municipality: Stewiacke email\_message: Privacy-Statement: agree x: 71 y: 23

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 15, 2021 2:17:17 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: There has been a lot of negativity and opposition from the general public on the gold mining industry in Nova Scotia. With just cause, as to how mining was done years ago. It was a dirty and environmentally destructive process. That is not the case in today's mining industry. There are strict environmental protocols in place that are constantly monitored and enforced by the provincial and federal government. The mine has met or exceeded these standards with up to date technology and planning. The gold mine employs roughly 340 people with an above average yearly income for N.S. not to mention the buying/providing income for other local businesses as well as helping the local community that doesn't get recognized by people outside of the community. There is also money set aside for environmental reclamation when the mine is done its life span. The ones that speak against the mine and how bad it is for the environment are giving the general public false fears and inadequate and distorted information to sway people against the positive effect gold mining can have for Nova Scotians and their province as a whole. Name:  
Email: [@gmail.com](#) Address: Municipality: westville email\_message:  
Privacy-Statement: agree x: 58 y: 22

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:36:57 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: - Choose - Comments: The Touquoy Gold Project is a very important project in Nova Scotia. The province should be backing projects like this one especially after the proposed Goldboro LNG project was cancelled. Just the other day a man had to wait for 3 hours for an ambulance to pick him up from his driveway until the police took him to the hospital, we need tax dollars to fix things like this. Nova Scotia is a HAVE NOT province and this will not change until the province helps projects instead of hindering them. Canada has some of the strictest regulations when dealing with our natural resources and as long as these regulations are followed there should be no reason to not approve the assessment. This mine employs a fair number of people as direct employees, contractors and suppliers. It has apprenticeships currently under way, brought and kept workers home and has given some young people their first job and the experience that comes with it. If this assessment isn't approved then this will just be another big blow to the province, no assessment, no future mine expansions. Late last year I watched the Ontario Premier and the Prime Minister at the ground-breaking ceremony for a new mine in Ontario Cote Gold Project and the Prime Minister stated that This project shows that our economy is getting back on its feet. International investors know that Canada is a good place to do business. Also stated by the Ontario Premier was And those people are going to be able to put a pay cheque in their pocket and pay their bills and support the economy. With every shovel in the ground, were taking another step towards recovery, another step towards ensuring no part of Ontario is left behind. Those statements were taken from CBCNEWS at cbc.ca. We need this type of leadership in Nova Scotia so we are not left further behind. Please make the decision that is best for the province and not the vocal minority. Name: Email: @gmail.com Address:

: Dartmouth email\_message: Privacy-Statement: agree x: 90 y: 13

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 15, 2021 12:55:43 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I support Ecology Action Centres submission dated August 13th that lists numerous comments around the wildlife, water and climate change impacts associated with this mines operations. Please review their comments in detail: <https://ecologyaction.ca/sites/default/files/images-documents/Ecology20Action20Centre-20Comments20on20Touquoy20Gold20Project20Site20Modifications.pdf> Name:  
Email: @gmail.com Address: Municipality: Tantallon  
email\_message: Privacy-Statement: agree x: 60 y: 11

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 4:21:11 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Mineral exploration and mine development are important, both in Nova Scotia and globally, because mining supplies most of the raw materials society uses to manufacture the products we use in our daily lives. I am a mineral rights holder in Nova Scotia and I support mineral exploration and mine development as an economic development opportunity in the province. However, my support for mining is conditional. It hinges on mining companies doing the best possible job to protect the natural environment and regulators doing their jobs to ensure policy and regulations, that prevent long term risks to the environment and communities, are both written and enforced. When a mine closes, Nova Scotia taxpayers, and local communities should not be left with contaminated sites that become their responsibility to monitor and cleanup. St. Barbara-Atlantic Gold appear to be striving to do the right thing, but after reading the documents provided for the proposed EA changes, I was left with some thoughts and questions which I provided below for consideration. The company may already have the data on hand to answer my questions and may have explored some of the opportunities identified below, but I could not locate the information and answers in the reports they provided. I must say there was a large volume of information to digest. I can see how individuals and communities could be overwhelmed in their efforts to read and understand it. Many of the reports are technical and require translation into plain language to be useful to many Nova Scotians. 1 There was a great deal of effort and expense put into compilation of a detailed deposit gold geochemical database. This is logical of course because gold is the commodity of interest for the mine. The gold geochemical database is front loaded. The drill core samples are analyzed in detail for gold before mining commences. It is my belief that if a similar quality of geochemical database was compiled for all the other metals present in the ore that a reasonably accurate estimate could be made for the concentrations of these elements in the tailings. There are some metallic elements, like arsenic, that are considered deleterious elements in the environment, so it is important to track their concentrations and mineral phases in the tailings to properly evaluate the risks associated with them. My perception, after reading the documents, is the geochemical database for potential deleterious elements associated with the gold mineralization is primarily back-loaded from samples collected out of the mill tailings stream. However, I was unable to determine in the reports provided, where the samples used to estimate the arsenic concentrations in the tailings are collected, the sampling rate and frequency, and what elements are included in the analyses. I understand that compiling a deleterious elements database, comparable in quality to the gold geochemical database, has a significant price tag, but I struggle to understand how tailings risk can be properly evaluated without it. Does this database exist, and was not included in the reports? If it was not compiled, I expect it is too late to prepare one because the drill core was probably consumed in the gold analyses. It would be beneficial if consideration is given to requiring compilation of this database for future mines. Perhaps a front-loaded deleterious elements database should be a regulation requirement under either the Environment Act or Mining Act. 2 While not included in the EA documents, it is interesting to look at the data collected from the legacy mine tailings assessment to see if there is knowledge that can be used in the current mines to reduce environmental risks. The legacy gold mine tailings geochemical



dataset is provided in Geological Survey of Canada Open File 7150 which can be downloaded online. The data tables show there are other metallic elements present in the tailings which might pose an environmental hazard if deposited in a tailings management facility. While these elements do not appear in every tailings sample collected, they are present in every gold district sampled. So, they may be present in the Touquoy Mine or one of the other 3 proposed mines. There is no data provided that suggests the company has evaluated this possibility or the environmental risks associated with their presence. While I believe the risk posed by these other elements is low, it should still be considered. Some of the elements found in the legacy tailings analyses are also on Canada's Critical Mineral List. Is there a possibility that critical minerals are being discarded? If they are, is there a pathway to recover them before they are deposited in the tailings management facility? Arsenic was included on the USA 2018 critical minerals list. Perhaps there is a market for the arsenic found in the gold deposits. Has the company explored that potential opportunity? If the Fifteen Mile Stream and Cochrane Hill Mines proceed, the arsenic and other metals will already be mined and processed into a concentrate. What other steps could be taken to recover these metals instead of dumping them in the Touquoy Pit. Perhaps a study could be developed under the Mineral Resource Development Fund to evaluate this opportunity.

3 While the permitting discussed here is focussed on changes to the Touquoy Mine, I think consideration must be given at this point to the impacts of the tailings additions from the other 3 proposed mine sites into the Touquoy open pit. The gold ore from Fifteen Mile Stream and Cochrane Hill Mines will be a gold-sulphide concentrate from the gravity and flotation mill circuits. This is much different from the tailings that will be placed in the pit from the Touquoy and Beaverdam mines. In those two tailings streams the whole mined ore is processed in the mill and sent to the tailings. The concentrations of any "deleterious" elements in the tailings from these deposits will likely be in the same proportions as the raw ore. The carbonate minerals that act as natural ARD buffering will also be present. In the case of the Fifteen Mile Stream and Cochrane Hill Mines, any "deleterious" elements will be significantly concentrated, and the carbonate minerals will be left behind in their respective mine tailings so they will not be available in the Touquoy pit to buffer ARD. Much of the tailings produced from these two mines will also be crushed to a finer grain size than Touquoy and Beaverdam Mines. This smaller grain size increases the risk for oxidation and mobilization of deleterious elements. The groundwater model demonstrated there will be water flow from the pit into Moose River. While the model showed low arsenic concentrations, this could change with the addition of the tailings from Fifteen Mile Stream and Cochrane Hill into the pit. The risk this poses should probably be evaluated at this time, because this is the only time that any efforts can be made to seal groundwater flow pathways in the pit should it be required to reduce the risks associated with these concentrated tailings.

4 A research study conducted by aquatic researchers at Saint Mary's University, that was funded by a Mineral Resource Development grant, showed some promising results in their use of a thin cap on tailings to reduce the transmission of arsenic and mercury into the aquatic environment. I believe they used zeolites and some other ingredients. Is it worth considering adding these materials to the tailings stream to reduce the mobility of As and other elements that might be contained in the tailings? A local source of zeolites can be found in the North Mountain basalts.

5 There is an abundance of environmental monitoring data collected by the company, and kudos to them for that work. In a perfect world, where "full transparency" is practiced by both industry and government, this data would be posted on a website for community members to view and have access to for independent assessment. However, as far as I am aware, the data does not get released to the local communities and public for review. While I worked for Energy and Mines, I asked a question in one of the many meetings I attended. The question was: Who in government regularly reviews the mine monitoring data to determine if there are any developing issues? While I expect there is

someone undertaking that work, it surprised me, with the number of people in the room, and their level of mine regulatory management, that no one had an answer for the question. I still assume there is someone within the provincial government monitoring this data, and I expect the company is tracking any changes in the data for their own due diligence. It would be useful for Department of Energy and Mines and Department of Environment to provide an information sheet on their respective web pages describing their roles and procedures in reviewing the mine monitoring data, and procedures they would follow should changes signalling an increased environmental risk be identified in the data. In the interest of transparency, is it possible for the company or provincial government to provide a public web-based portal for the monitoring data, updated monthly, with observations of any changes noted and QA/QC assessments of the data? I expect this might reduce community concerns about contamination, particularly if the data is compared to national water standards and background levels in the local area. It would also provide communities a better understanding of the volume of monitoring data the company is collecting. For community risk assessment the portal should include well water monitoring and tailings sampling data used to define the deleterious element concentrations and ARD risk. The company is asking the community to accept the long-term risks associated with the mine, but this data is an integral part of their risk assessment. In that regard, it should be available for community review and independent assessment. Thank you for considering these thoughts. I am hoping the data and answers to my questions already exist and can be easily provided to regulators so the mine can proceed with its requested changes. Name: \_\_\_\_\_ Email: \_\_\_\_\_@hotmail.com Address: \_\_\_\_\_

Municipality: Mount Uniacke email\_message: Privacy-Statement:

agree x: 59 y: 28

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 4:30:48 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: As a team member at Atlantic Operations I know how important these purposed project modifications are. We have operated safely since 2017 and these purposed modifications will aid us in continuing to operate safely, sustainably and in a respectable way to the environment. Many of my colleagues worked hard on the numerous documents and studies that were completed and submitted to the government, I have confidence that these modifications can be completed to the highest standard. I am confident that, as listed in the Project Registration Document, that potential effects of the Project on groundwater resources, surface water resources, fish and fish habitat, terrestrial environment, and cultural and heritage resources will be avoided or reduced through regulatory compliance, adherence to existing management plans for the Touquoy Gold Project, implementation of best management practices, and implementation of site-specific design features. Existing contingency and emergency response plans for the Touquoy Gold Project will be implemented to reduce risk and consequences. I thank you for your time and consideration of the consultation I have provided. Name: Email:

@hotmail.com Address: Municipality: Hantsport email\_message:  
Privacy-Statement: agree x: 65 y: 19

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 4:49:21 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the gold mine Name:  
Email: [@gmail.com](#) Address:  
Municipality: Waverley email\_message: Privacy-Statement: agree x: 37 y: 22

From: [\\_hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 4:52:35 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I am supportive of this initiative.  
Good paying jobs and the development is environmentally sustainable. Name:

Email: @hotmail.com Address: Municipality: Salmon

River email\_message: Privacy-Statement: agree x: 57 y: 26

From: [@hotmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 4:55:05 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: The Gold project is a fantastic use of NS resources and comes at a time when use of natural resources by environmental conscious companies is strongly supported. This project employs young talented professionals and labourers so they can raise families in NS. No question, this is a relevant project Name:

Email: [@hotmail.com](#) Address: Municipality:  
Salmon River email\_message: Privacy-Statement: agree x: 58 y: 25

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:12:55 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This is a prosperous project for Nova Scotians that has due care for all environmental impacts and has a full environmental remediation plan upon asset mortality. The risk to all Nova Scotians would be greater to not proceed in exploiting our natural assets especially when it will be executed by a company with such sound environmental policies. Name: Email:

@gmail.com Address: Halifax, NS

B3J3L8 Municipality: Halifax email\_message: Privacy-Statement: agree x: 63 y: 19





From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:16:50 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: . Name:

Email: [@gmail.com](#) Address: Municipality: email\_message: Privacy-

Statement: agree x: 59 y: 26

From: @rogers.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:22:08 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the Tourquoy Gold Project in Nova Scotia. I think this is an important endeavour and the community needs it!  
Name: Email: @rogers.com Address: , Moncton,  
3 Municipality: Moncton email\_message: Privacy-Statement: agree x: 50 y: 22

From: [~gmail.com](mailto:~gmail.com)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:38:12 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Gold mine is an excellent project and must continue. Name: r Email: @gmail.com Address:

Municipality: Mount pearl,nl email\_message: Privacy-Statement: agree x: 58

y: 17

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:39:40 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Please do not extend this mining operations and do not use the pit for tailings. The environmental damage from gold mining and risk to surrounding communities, drinking water which will become increasingly sparse with climate change and watersheds incl fish as food source is very high. In the face of climate crisis we cannot afford to poison any more of our drinking water or food sources or nature! Gold mining operations should be stopped and damages already done repaired, not extended! As a local citizen I will not support a government who allows this! If you do allow it at least require better tailings clean up eg through projects like bacox/bactech in Manitoba. Name:

Email: Address: Municipality: Wolfville  
email\_message: Privacy-Statement: agree x: 82 y: 26

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:46:28 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: The Gold Mine is a good idea  
Name: Address: Municipality:  
Kitchener email\_message: Privacy-Statement: agree x: 50 y: 7

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:50:17 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: It is my opinion that the company already knew how much material would be removed when they original application was submitted. Thus the sudden urgency to use the pit as a tailings pond is not acceptable. They still have 2 years of production. The real reason is that they have another site that will be going into production and yet another site propped. As a resident of the valley who draws water from a well I do not support this plan. Particularly when the application states that there is a possibility of leaching into the Moose River. This puts our watershed in danger. I am down river and the natural aquifer is the Musquodoboit River which the Moose River flows into. I do not favour a plan that will affect future generations when the mine is long gone. I point to Montague as a example. No job is worth it. Name: Email:  
@gmail.com Address: Municipality: Elderbank  
email\_message: Privacy-Statement: agree x: 43 y: 29

From: \_\_\_\_\_@gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:50:22 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the Touquot Gold mine  
project Name: \_\_\_\_\_ Email: \_\_\_\_\_@gmail.com Address: \_\_\_\_\_  
Municipality: Church Point email\_message: Privacy-Statement: agree x: 45 y: 28

From: [@nf.sympatico.ca](mailto:@nf.sympatico.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:50:41 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I think the gold mine is a good idea. It will help grow the economy and also help support our young people by providing jobs

Name: Email: [@nf.sympatico.ca](mailto:@nf.sympatico.ca) Address:

Municipality: Torbay email\_message: Privacy-Statement: agree x: 81 y: 25



From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:50:59 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: There are no scenarios where we should be continuing to extract metals from Nova Scotia at the potential cost of further contamination of our waters because of gold mining and adding to our CO2 emissions. We are in a climate emergency and need to transition jobs to Green New Deal jobs that will actually be sustainable on all levels. Name:                      Email:                      @risingtidens.ca Address:  
Municipality: Wolfville email\_message: Privacy-Statement: agree x: 57 y: 18

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:54:15 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the gold mine project, it's great for the economy and keeps needed quality jobs in the province. Name:

Email: [@gmail.com](#) Address: Municipality: Halifax email\_message:

Privacy-Statement: agree x: 67 y: 23

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:56:29 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: In favor of the Gold Mine, it provides jobs and also it provides us with important limited resources. Name:

Email: @gmail.com Address:

Municipality: Berwick email\_message: Privacy-Statement: agree x: 41 y: 24

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 5:59:42 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the gold mine Name:  
Email: @gmail.com Address: Municipality:  
Kanata email\_message: Privacy-Statement: agree x: 64 y: 22

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:11:41 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I agree with the site  
modifications so mining of gold can continue Name: Email:  
@gmail.com Address: Municipality: Halifax email\_message:  
Privacy-Statement: agree x: 55 y: 26

From: [@eastlink.ca](mailto:@eastlink.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:14:54 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I am in favour of the modifications. Name: Email: @eastlink.ca Address:  
Municipality: Saulnierville email\_message: Privacy-Statement: agree x: 73 y: 20

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:16:24 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: We need to be preserving our natural environment for long-term species preservation and slowing of climate change for the many, not exploiting it for short-term financial gain for the few. Name: Email: @gmail.com Address: Municipality: Middle Sackville email\_message: Privacy-Statement: agree x: 86 y: 14

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:21:39 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This is good. Name:  
Email: @gmail.com Address: Municipality: Halifax  
email\_message: Privacy-Statement: agree x: 54 y: 21



From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:26:44 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This is a wonderful project for Nova Scotia and Canada. Name: Email: @gmail.com Address: Municipality: Ottawa email\_message: Privacy-Statement: agree x: 74 y: 39

From: @hotmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:46:24 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Mining is a great industry for the Atlantic provinces! Keeps Atlantic Canadians close to home and support their families. Name:

Email: @hotmail.com Address: Municipality:

Torbay email\_message: Privacy-Statement: agree x: 66 y: 24

From: [@outlook.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:48:18 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: Mining is a great industry for the Atlantic provinces! Keeps Atlantic Canadians close to home and support their families. Name:

Email: @outlook.com Address:

Municipality: Torbay email\_message: Privacy-Statement: agree x: 76 y: 33

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 6:52:14 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the gold mine. Name:  
Email: @gmail.com Address: Municipality: Dartmouth  
email\_message: Privacy-Statement: agree x: 81 y: 32

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 7:03:14 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I feel that the company is taking in consideration of the environment as well as their staff. They have been operating since 2017 and hope the company as well as all staff will continue to be employed for years to come.

Touquoy has made the proper steps to protect the environment and surrounding residents.

Name:                      Email:                      @gmail.com Address:                      Municipality:

Tangier email\_message: Privacy-Statement: agree x: 62 y: 14

From: [environment@novascotia.ca](mailto:environment@novascotia.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 7:03:26 PM

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**Project:** touquoy-gold-project-site-modifications **Comments:** I am in total agreement with this project. It is extremely beneficial to Nova Scotians as well as all Canadians. **Name:**  
**Email:** **Address:** **Municipality:** email\_message: x: 0 y: 0

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 7:39:09 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I support the gold mine. Name:  
Email: Address: Municipality: Ottawa  
email\_message: Privacy-Statement: agree x: 55 y: 24

From: [@bellaliant.net](mailto:@bellaliant.net)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 7:54:56 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: For a number of years this mine has provided opportunities for employment for our Nova Scotia communities and has offered a decent wage. The outpouring of our youth to far away jobs in other places drains our province of young workers. Any mine comes with some negative impacts. However the positives that this mine has provided through job creation must also be considered. If proper precautions are in place to prevent environmental damage and remediation is required and enforced, the expansion of this mine could result in long term benefit to our community. Therefore I think if the company has demonstrated care and consideration for the wildlife and groundwater protection continues to be a priority, the expansion should be supported. Name:

Email: [@bellaliant.net](mailto:@bellaliant.net) Address: Municipality:  
Waverley email\_message: Privacy-Statement: agree x: 52 y: 23



From: [.gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 9:28:06 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: I support the goal mines Name:  
Email: @gmail.com Address: Municipality:  
Moncton email\_message: Privacy-Statement: agree x: 78 y: 31

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 10:09:24 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I read about the proposed changes and do not agree that the mine should be allowed to expand. We are talking about short term gain in forms of gold for long term consequences in forms of pollutants in our environment, and destruction of crucial habitat especially now with climate change on our doorsteps. Wetlands are very important to help our fight against global warming, so should not be allowed to be destroyed. Also increasing the size of the mine now would allow them to try bring product from their new proposed mines to the same sites. If the environment is really as important to Mr Rankin as he says this should not be allowed. Name: Email:

Address: . Municipality: Halifax email\_message: Privacy-  
Statement: agree x: 61 y: 29

From: [@yahoo.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 10:12:08 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I support the this project. Name:  
Email: @yahoo.com Address: Municipality: Meteghan  
email\_message: Privacy-Statement: agree x: 57 y: 38

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 10:21:03 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: I would like to express my grave concern over the proposed changes to the Touquay open-pit gold mine. These changes endanger the health and well-being of Nova Scotians as well as our environment. Of greatest concern are the following: the risk of contamination of ground water, risk of contamination of drinking water, risk to fish habitat, and the destruction of wetlands. These risks all run diametrically counter to what the NS government says must happen to secure a future that is healthy and sustainable. By this point especially in light of IPCC's latest report last week Aug 2021 there should be total clarity on the need to protect our water systems, wetlands, and other habitats from further destruction and toxicity. It's clear that this must be the lens through which all decisions are made. The company that has proposed these changes, Atlantic Gold, appears to be acting in their own interests and the interests of their shareholders. They are certainly not acting in the best interests of Nova Scotians, as they are putting our life-sustaining natural resources at risk of irreversible damage. I trust that the NS Department of the Environment will do the right thing and prioritize the health of our environment and the health, well-being, and safety of Nova Scotians. The health of our environment is our most precious asset. Protecting it must be the very top priority for the NS government. There is nothing more basic and foundational than this. To put our ground waters, drinking water, wetlands, and fish habitats at risk would be reprehensible, and if done would leave the most shameful legacy to future generations. Please prioritize the health and safety of NS's waters and wetlands, and the viability of a healthy future in NS for the next generations. Name: Email: Address:

Municipality: Halifax, NS email\_message: Privacy-Statement: agree x: 58 y: 20

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 15, 2021 11:59:04 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Watercourse #4 SW-3 2020 Surface Water Quality exceeded the predicted mean concentrations by nearly 10 times Total Calcium 50,100 µg/L compared with the predicted 5610 µg/L, Total Magnesium 9410 µg/L, compared with the predicted 925 µg/L, Total Nitrate 0.5 mg/L, compared with the predicted 0.0586mg/L and Dissolved Sulphate 133 mg/L, compared with the predicted 17.5 mg/L. The elevated sulphate concentrations triggered an investigation in 2020 and appeared to be due to seepage of contact water from the WRSA. In the 2020 Annual Report, it is suggested that the proponent conduct water quality modelling to evaluate the change in water quality in Watercourse #4 that is associated with continued seepage from the WRSA to Watercourse #4. Instead, the proponent has proposed another Collector Pond directly on top of Wetland 17 and Wetland 42. There are already 2 collector ponds present at the WRSA which have failed to contain the contaminated runoff and seepage from the WRSA. The seepage of the Waste Rock Storage Area is not mentioned in the modifications report, nor are the elevated concentrations of calcium, magnesium, nitrates, sulphates, or other detrimental seepage elevated arsenic, cadmium, iron, etc How does an expansion become a priority when you are having such clear issues containing the toxic runoff from the WRSA entering one of the last remaining wetland areas on site. 2020 Annual Report " Surface Water and Groundwater Monitoring, Stantec

Name:                      Email:                      @gmail.com Address:                      Municipality:  
Glenelg email\_message: Privacy-Statement: agree x: 62 y: 14

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 12:27:24 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: The final result of these modifications are mentioned in the other gold mine proposals beaver dam and 15 mile stream depending in large part upon the use of the Touquoy Mine for processing of ore and for the disposal of the tailings from these processes. The massive volumes of tailings and waste rock from multiple projects should trigger the requirement of a federal impact assessment. An IA would clarify the inconsistencies between proposal documents and will lead to more trust in the community through transparency. The provincial EA just doesnt connect the big picture of all the projects and doesnt address the massive volume of spent ore and contaminated tailings that the whole mega project will produce. All modifications should be assessed using a collaborative impact assessment under the IAA. Name: Email:  
@gmail.com Address: Municipality: Glenelg email\_message:  
Privacy-Statement: agree x: 77 y: 32



From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 9:52:13 AM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: So....only thirty plus documents to review in approximately a month! I find it difficult to understand why a request for any modifications to the mine's current footprint would be considered while the proponent still has 32 environmental charges pending in the courts. I will admit that when this gold mine was in its initial stages and Mr. Wally Bucknell and his project management team were endearing themselves to the families who still lived in the village of Moose River and surrounding communities, I thought it might be a good thing. Not so much now. It saddens me to see the devastation to the wilderness spaces, wildlife including the endangered Mainland moose, water ways and overall environment that this company has committed on this land. I expect that a very limited number of people had any idea just how big the footprint would be for this mine. I have watched and endured this mine site evolve from day one and I could proceed with personal experiences related to the employees commuting each day to the mine...instead I will only suggest this: To those who sit in offices and read technical reports, impact assessments, studies, requests for permits, etc. related to this mine - you need to get in a vehicle and drive on a rainy day when the muck run-off is 4 to 6 inches deep and running across the only public highway or maybe observe that the brook near the latest clay excavation operation is running thick with mud or see the air so laden with dust from the haul truck traffic and the blasting that the trees and other vegetation are covered with dust until the next rain to this site and really see what is going on. Then, take a drive on some of the roads that have been used for years by the local population, cottage owners and others for recreational purposes that the proponent wants to eliminate from public use. A point in fact I would like to make concerning the refurbishment of the dam at the outlet to Fish River. In the document SD17: Scraggy Lake - Withdrawal Rate with Potential Breach Considerations, Section 2-2.1 Site Description, it states that dam construction was never approved. The fact is that approval was granted on July 8th 1997 by the NS Department of Fisheries and Oceans and on July 23rd, 1997 by the NS Department of Environment. So, this is one incorrect statement observed while reading through approximately 6 of more than 30 documents prepared by the proponent for this recent request. I wonder how many more there could be? Because the proponent has been endearing itself to local businesses and community organizations and contributing a donation here and a donation there, thus giving the economy a short-term boost, does not make everything OK for the wilderness, wildlife, and waterways in Moose River and surrounding area. This mine and any other mine sites being planned by the proponent need to see an "End of Life" EOL plan instead of "Life of Mine" LOM plan as soon as possible. I hate to think what kind of fallout the current activity is going to have on the area in twenty or thirty years' time when the proponents have taken what they came for and left the devastation for the tax payers to deal with. Federal and Provincial governments should never allow to happen what is currently happening in Moose River to any other lands of our Province. Name: Email:

Address:

Municipality: Mooseland

email\_message: Privacy-Statement: agree x: 54 y: 16



From: [@ns.sympatico.ca](mailto:@ns.sympatico.ca)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 10:17:48 AM

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Project: touquoy-gold-project-site-modifications Comments: I support the continuation of this project to help with the economy in our area Name: Email:

@ns.sympatico.ca Address:

Municipality: Dartmouth N

S email\_message: Privacy-Statement: agree x: 61 y: 32

From:  
To: [Environment Assessment Web Account](#)  
Subject: Save Caribou's submission re Touquoy Mine Class I EA  
Date: August 16, 2021 10:20:44 AM  
Attachments: [Touquoy Modification EA, Save Caribou submission, August 16, 2021.pdf](#)

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Dear Environmental Assessment staff,

Please see the attached public submission from Save Caribou, concerning the Class I EA of the Touquoy Mine modification.

Best regards,  
on behalf of the Save Caribou group

--

Barrister and Solicitor, Juniper Law  
[www.juniperlaw.ca](http://www.juniperlaw.ca)



Barrister & Solicitor  
3441 Purcells Cove Rd  
Fergusons Cove, NS B3V 1G3  
902 817 1737

Environmental Assessment Branch  
NS Environment and Climate Change  
PO Box 442  
Halifax, NS B3J 2P8  
Email: EA@gov.ns.ca

August 16, 2021

Dear NSE&CC Environmental Assessment Staff:

**RE: Atlantic Mining Nova Scotia Inc.: Class I EA of Touquoy Gold Mine Expansion**

Please accept the following as Save Caribou's public submission regarding Atlantic Mining Nova Scotia's Class I Environmental Assessment of their proposed modification to the Touquoy gold mine.

Save Caribou, formed in 2004, is a citizens engagement group located in Caribou Gold Mines, NS, 6 kms from the Touquoy Mine at Moose River. The families belonging to Save Caribou have inhabited this area for six generations. For over 70 years the members of Save Caribou have lived with and witnessed the toxic impacts of gold mining, and noted the lack of both monitoring and reclamation. Save Caribou members have first-hand knowledge of living beside a gold mine, past and present, and know the negative impact of the boom-and-bust cycle from unsustainable industries.

Save Caribou members have extensive first-hand knowledge of the impact to the residents within the footprint of the Touquoy mine at Moose River, including the upheaval and displacement of residents of Moose River. Over the past 17 years, members have monitored industry practices, documented animal and plant sightings, changes in watercourses, vegetation and wildlife, and reported these findings to NSE and NS Lands and Forestry when appropriate.

Save Caribou's collection of information and firsthand knowledge is crucial to the Environmental assessment process for the Touquoy Gold Project.

**Issues:**

**1. Mainland Moose Habitat**

Save Caribou is concerned that an approval of the Touquoy Mine modifications by the province will allow additional destruction of mainland moose habitat. Until candidate mainland moose core habitat has been identified for potential designation as such, as required by the *Endangered Species Act*, s.15(4) (h), the province must not approve additional destruction of mainland moose habitat.

**2. Rare Lichens**

Atlantic Mining suggests it can save rare lichens by moving them by hand, without providing evidence that this is a feasible strategy to save these lichens. Save Caribou requests that the Province require Atlantic Mining to purchase a significant tract of rare lichen habitat and donate the land to a land trust or the Province to be protected (working in conjunction with NSECC or a land trust to choose an appropriate piece of land).

### **3. Existing Access Road**

Atlantic Mining plans to keep the existing access road open, despite it no longer being needed by the company. Roads are a significant threat to biodiversity, and in this particular context roads pose a threat to Mainland Moose (as noted in the Mainland Moose recovery strategy). Recreational roads also increase the risk of accidental forest fires. We note NSECC's recent efforts to close roads in protected areas for ecological reasons. NSECC must require Atlantic Mining to close the current access road and return it to natural vegetation.

### **4. Water Quality**

Atlantic Mining does not appear to have a water quality monitoring plan in place. Atlantic Mining appears to have a number of outstanding water quality infractions at the Touquoy site.

Furthermore, Atlantic Mining intends to use waste rock for road construction, yet does not appear to have a monitoring strategy for potential release of deleterious substances from the waste rock into surface water. NSECC must require Atlantic Mining to monitor for potential release of harmful substances associated with its road-building activities.

As well, Atlantic Mining intends to allow its open pits to flood naturally; we are concerned that deleterious substances may be released into surface water during the flooding process.

### **5. Air Quality**

Atlantic Mining needs to prepare a new Fugitive Dust Control Plan. The plan proposed is the same as it appeared in the company's original Touquoy Mine EARD. Our first-hand experiences are that the current dust control plan is seriously inadequate, given that air-borne dust produced by the operation is so thick that driving through the area is difficult and dangerous. Increased trucking at the mine site will only make the situation worse.

### **6. Community Engagement**

In our experience Atlantic Mining has not been transparent and has not engaged with the local communities. Attempts to communicate and even to inquire about the appropriate person to contact at Atlantic Mining have largely been ignored. There is very little public awareness of the Community Liaison Committee. It has not held a meeting in three years. In our view, Atlantic Mining's lack of active community engagement has been a disturbing failure.

Sincerely,

Save Caribou

From: [\\_gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 16, 2021 10:51:02 AM

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Project: touquoy-gold-project-site-modifications Comments: I do not support this project or any other devastating/illegal activity Atlantic Gold does in NS or on a global scale. They are raping the Eastern Shore with no regards for wildlife and species at risk. It is also disheartening and corrupt the Liscombe Game Sanctuary has been abolished so this crooked Australian company can destroy our Province. Atlantic Gold pays little in taxes and give ZERO benefit/incentives towards our Province. I am involved with the community on the Eastern Shore and I have yet to speak to an individual who is in support of this shady Australian organization. Employees are bound by contract and those who left the company are scared to speak out? Why is that? Must be a stand-up corporation when coercion is used to silence staff. This company has broken copious laws and follow little regulations or safety guidelines. I also spoke to a provincial employee with the province who was so upset with the devastation Atlantic Gold has caused they refused to return to the site. Department of Environment and Natural Resources are doing very little to hold this company accountable. I actually had an Atlantic Gold employee brag about how inadequate forestry technician was during a survey. It is also said their tailing ponds are already leaking and the company is attempting to patch them with clay. Everything about this operation is entirely wrong! The rivers on the Eastern Shore to this day have arsenic levels from past gold mining, given that , this deviant, unethical, immoral company has no place in Nova Scotia. Theyll go under like every other gold company has in this Province and leave a disaster behind. Name:

Email: @gmail.com Address: Municipality: Belnan email\_message: Privacy-Statement: agree x: 58 y: 16

From: \_\_\_\_\_@gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 11:01:26 AM

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Project: touquoy-gold-project-site-modifications Comments: A resource project like this is what the Atlantic Provinces need! Name: \_\_\_\_\_ Email: \_\_\_\_\_

\_\_\_\_\_@gmail.com Address: \_\_\_\_\_

Municipality: Moncton

email\_message: Privacy-Statement: agree x: 49 y: 19

From: [@rogers.com](mailto:@rogers.com)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 1:23:54 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

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Project: touquoy-gold-project-site-modifications Comments: Minister Keith Irving Nova Scotia Environment PO Box 442 Halifax, NS B3J 2P8 CC: [energyminister@novascotia.ca](mailto:energyminister@novascotia.ca) [premier@novascotia.ca](mailto:premier@novascotia.ca) Dear Minister Irving, Support for the Touquoy Gold Mine project Modification, Atlantic Gold, owner of the Touquoy Gold Mine has been active in Nova Scotia as an explorer since 2003. The small, gold company, was managed by highly experienced and successful technical and corporate staff. It raised more than \$160 million dollars from its shareholders and bankers and conducted 14 years of responsible work before one ounce of gold was produced from its Touquoy Gold Mine. Throughout this period, the company operated under three different elected NS parties Liberal, Progressive Conservative and NDP. The company received the full support of each administration during this period. The company's belief and determination, risked many millions of dollars in its exploration, evaluation, environmental base line and other studies to create an environmentally and socially responsible mining operation. As a result many hundreds of jobs were created. In addition to creating jobs for locals, the mine has assisted many highly educated and trained Nova Scotians to return home to work and raise their families. As a locally recognized good corporate citizen, the company has financed environmental studies, various types of research, community support programs, and education support programs such as those at St. Mary's University. In addition, the company's success and the responsible administration has encouraged a boom in gold exploration in Nova Scotia which will likely lead to more gold mine developments providing unreasonable impediments do not deter the companies and their ability to raise funds from shareholders and banks. The current proposal for mine site modifications has been instigated as a result of the company's responsible attitude towards mine development. At its own cost and use of its various earlier permitted storage facilities, the company supported the Department of Energy and Mines initiative to clean up local historic gold mining sites. The company has undertaken many comprehensive studies which, among other factors, considered limiting environmental disturbance at its three future mine sites which, over a 20 year period will create 700 additional jobs. As a result of these studies, the company has decided that processing of future deposits at the Touquoy Gold Mine site would be an optimal environmental approach to their development and has thus requested the current mine site modifications. Nova Scotia is blessed with an abundance of natural resources and minerals, including gold. Based on polling completed by Narrative Research in January/February 2020, the people of Nova Scotia and the province's Eastern Shore know this and see the opportunity ahead of them with Touquoy and future proposed sites. Nova Scotia has, not only an opportunity, but an obligation under the Mineral Resources Act clause 2.1. which states as an objective to encourage and facilitating mineral exploration, development and production to continue to support this responsible mining operation. I am writing to express my support for the Moose River Gold Mine project and join 76 of Nova Scotians that support environmentally responsible gold mining in the province. I am asking that you and your government allow the project modifications at the Touquoy Gold Mine to proceed in an environmentally responsible way. For the DOE, as a representative of the Government of Nova Scotia to not approve these

responsible modifications is to abdicate its sovereign right and legal responsibility under the Mineral Resources Act of NS. I encourage you to approve these modifications so Nova Scotia's mining and quarrying industry can continue to grow and to employ Nova Scotians in useful and responsible vocations. Yours Sincerely, Name:

Email: @rogers.com Address: Municipality: email\_message: Privacy-Statement: agree x: 61 y: 19



From:  
To: [Environment Assessment Web Account](#)  
Subject: Touquoy Gold Project Site Modifications  
Date: August 16, 2021 1:28:14 PM  
Attachments: [Touquoy Support Letter.pdf](#)

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See attached letter of support.

Minister Keith Irving  
Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

**CC:**

[energyminister@novascotia.ca](mailto:energyminister@novascotia.ca)  
[premier@novascotia.ca](mailto:premier@novascotia.ca)

Dear Minister Irving,

**Support for the Touquoy Gold Mine project Modification,**

Atlantic Gold, owner of the Touquoy Gold Mine has been active in Nova Scotia as an explorer since 2003. The small, gold company, was managed by highly experienced and successful technical and corporate staff. It raised more than \$160 million dollars from its shareholders and bankers and conducted 14 years of responsible work before one ounce of gold was produced from its Touquoy Gold Mine. Throughout this period, the company operated under three different elected NS parties (Liberal, Progressive Conservative and NDP.) The company received the full support of each administration during this period.

The company's belief and determination, risked many millions of dollars in its exploration, evaluation, environmental base line and other studies to create an environmentally and socially responsible mining operation. As a result many hundreds of jobs were created. In addition to creating jobs for locals, the mine has assisted many highly educated and trained Nova Scotians to return "home" to work and raise their families. As a locally recognized "good corporate citizen", the company has financed environmental studies, various types of research, community support programs, and education support programs such as those at St. Mary's University. In addition, the company's success and the responsible administration has encouraged a "boom" in gold exploration in Nova Scotia which will likely lead to more gold mine developments providing unreasonable impediments do not deter the companies and their ability to raise funds from shareholders and banks.

The current proposal for mine site modifications has been instigated as a result of the company's responsible attitude towards mine development. At its own cost and use of its various earlier permitted storage facilities, the company supported the Department of Energy and Mines initiative to "clean up" local historic gold mining sites. The company has undertaken many comprehensive studies which, among other factors, considered limiting environmental disturbance at its three future mine sites which, over a 20 year period will create 700 additional jobs. As a result of these studies, the company has decided that processing of future deposits at the Touquoy Gold Mine site would be an optimal environmental approach to their development and has thus requested the current mine site modifications.

Nova Scotia is blessed with an abundance of natural resources and minerals, including gold. Based on polling completed by Narrative Research in January/February 2020, the people of Nova Scotia and the province's Eastern Shore know this and see the opportunity ahead of them with Touquoy and future proposed sites. Nova Scotia has, not only an opportunity, but an obligation under the *Mineral Resources Act (clause 2.1. which states as an objective "(b) encouraging and facilitating mineral exploration, development and production;"* to continue to support this responsible mining operation.

I am writing to express my support for the Moose River Gold Mine project and join 76% of Nova Scotians that support environmentally responsible gold mining in the province. I am asking that you and your government allow the project modifications at the Touquoy Gold Mine to proceed in an environmentally responsible way.

For the DOE, as a representative of the Government of Nova Scotia to not approve these responsible modifications is to abdicate its sovereign right and legal responsibility under the Mineral Resources Act of NS. I encourage you to approve these modifications so Nova Scotia's mining and quarrying industry can continue to grow and to employ Nova Scotians in useful and responsible vocations.

Yours Sincerely,

2021 08 09

From:  
To: [Environment Assessment Web Account](#)  
Subject: Gold mine  
Date: August 16, 2021 4:43:37 PM

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I do not support expansion of the gold mine.

Regards,

Sent from my iPhone

From: [Environment Assessment Web Account](#)  
To: [Environment Assessment Web Account](#)  
Subject: East Coast Environmental Law Submission on the Proposed Touquoy Gold Project Modifications Environmental Assessment Registration Document  
Date: August 16, 2021 4:45:31 PM  
Attachments: [East Coast Environmental Law TGPM EARD Submission 16 August 2021.pdf](#)

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Good afternoon,

Attached, please find a submission by East Coast Environmental Law on the Environmental Assessment Registration Document for Atlantic Gold's proposed Touquoy Gold Project Modifications.

Kind regards,

Staff Lawyer

East Coast Environmental Law  
6061 University Ave., PO Box 15000  
Halifax, NS B3H 4R2  
K'jipuktuk, Mi'kma'ki

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East Coast Environmental Law Association  
6061 University Ave., PO Box 15000  
Halifax, NS B3H 4R2

Environmental Assessment Branch  
Nova Scotia Environment and Climate Change  
PO Box 442  
Halifax, NS B3J 2P8

SENT VIA EMAIL  
EA@novascotia.ca

August 16, 2021

To Whom It May Concern,

**Re: Comments on the Touquoy Gold Project Modifications Proposed by Atlantic Gold**

Enclosed are East Coast Environmental Law's comments on the Environmental Assessment Registration Document that Atlantic Mining NS Inc. submitted to Nova Scotia Environment and Climate Change in July 2021 for the proposed Touquoy Gold Project Modifications.

For your reference, we have also attached a joint letter that was delivered to the federal Minister of Environment and Climate Change on July 23, 2021.

Sincerely,

Staff Lawyer

## **East Coast Environmental Law Comments on the Touquoy Mine Project Modifications Proposed by Atlantic Gold**

East Coast Environmental Law wishes to make the following comments on the Environmental Assessment Registration Document (“EARD”) that Atlantic Mining NS Inc. (“Atlantic Gold” or “the corporation”) submitted to Nova Scotia Environment and Climate Change (“NSECC”) in July 2021 for the proposed Touquoy Gold Project Modifications (“TGPM”).

We are aware of concerns and questions that other environmental organizations in Nova Scotia are raising in response to the TGPM EARD, and we share many of those concerns. In particular, we share the concerns being raised by the Ecology Action Centre and others regarding:

- adverse effects on groundwater and surface water that may be caused by the proposed use of the exhausted Touquoy Mine pit as a tailings impoundment area;
- adverse effects to species that are protected under Nova Scotia’s *Endangered Species Act* and *Wildlife Act*;
- adverse effects caused by the further alteration of wetlands, including the proposed alteration of a Wetland of Special Significance as characterized under Nova Scotia’s *Wetland Conservation Policy*; and,
- significant environmental effects of the proposed TGPM when its effects are considered cumulatively along with those of the three additional open-pit gold mining operations that Atlantic Gold has proposed to conduct nearby.

Additionally, we are concerned about matters that fall more strictly within the federal government’s jurisdiction but that the environmental assessment of the proposed TGPM must nevertheless take into account, including:

- adverse effects on migratory birds that are protected under the *Migratory Birds Convention Act* and federal *Species at Risk Act*; and,
- adverse effects on fish, fish habitat, and aquatic species that are protected under the *Fisheries Act*.

Our comments in this submission focus mainly on the cumulative effects of the proposed TGPM and the three additional open-pit gold mining projects that Atlantic Gold has proposed to create nearby and, in particular, on the adverse effects to groundwater and surface water that may be caused by the proposed use of the exhausted Touquoy Mine pit as a massive tailings impoundment area.

We are focusing on these issues because we do not have sufficient time and capacity to address all of our concerns in detail. Notably, the absence of participant funding to support public engagement in Nova Scotia’s environmental assessment process means that the environmental non-governmental organizations and community groups who engage in environmental

assessments like this one typically do so with limited resources and often as volunteers. This significantly limits the level of public engagement that NSECC could receive if participant funding was available. We trust that NSECC will give careful consideration to the other issues of concern that we have mentioned and, in particular, will coordinate as necessary with other provincial and federal government departments to ensure that wetlands are preserved and that species in peril such as the American Eel, Atlantic Salmon, Mainland Moose, and Blue Felt Lichen—all of which stand to be affected by the proposed TGPM—will be protected from direct destruction or disturbance and from further harm to and diminishment of their habitats.

### **(1) Cumulative Impacts May Cause Significant Environmental Effects**

On July 23, 2021, East Coast Environmental Law joined a number of individuals, community groups, and environmental organizations in asking the Minister of Environment and Climate Change Canada (“the federal Minister”) to exercise his power under subsection 9(1) of the *Impact Assessment Act* to designate the proposed TGPM for a federal impact assessment. A copy of our joint letter to the federal Minister follows this submission for your reference.

As NSECC is aware, Atlantic Gold has proposed to develop three new open-pit gold mining projects in Nova Scotia. Those proposed new projects are the Beaver Dam Mine Project, the Cochrane Hill Gold Project, and the Fifteen Mile Stream Gold Project. All three proposed projects are currently undergoing joint federal and provincial environmental assessments under the *Canadian Environmental Assessment Act, 2012* and Nova Scotia’s *Environment Act and Environmental Assessment Regulations* (“EAR”). As is clear from the environmental assessment documents that Atlantic Gold has submitted to date, all three of these proposed new projects depend in large part upon plans to use the existing Touquoy Mine facilities to process ore from the new sites and dispose of massive volumes of tailings that will remain when that processing is complete. A recent response by NSECC to Atlantic Gold’s Environmental Impact Statement (“EIS”) for the proposed Fifteen Mile Stream Gold Project calculates that Atlantic Gold proposes to use the exhausted Touquoy Mine pit as the permanent tailings impoundment area for at least 14 million tonnes of tailings that will be generated from operations at the existing Touquoy Mine and the proposed new projects at Beaver Dam and Fifteen Mile Stream.<sup>1</sup> That figure does not account for the additional tailings that Atlantic Gold would generate through the proposed Cochrane Hill Gold Project, as those numbers are not yet available. Notably, NSECC’s recent comments on the Fifteen Mile Stream EIS demonstrate that there are significant inconsistencies and gaps in the information that Atlantic Gold has provided to date about its cumulative plans for the tailings impoundment pit.<sup>2</sup>

We are aware that Atlantic Gold has characterized the proposed TGPM as modifications that are necessary to continue the current operations at the Touquoy Mine site,<sup>3</sup> and we note that [NSECC’s online description of the proposed project](#) echoes this characterization. Nevertheless, our understanding is that Atlantic Gold’s proposed “modifications” to the Touquoy Mine pit will

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<sup>1</sup> Nova Scotia Environment and Climate Change, “Fifteen Mile Stream Gold Project Round 1 Information Requirements” (22 June 2021) at comment ECC 160 [“NSECC IRs”].

<sup>2</sup> *Ibid.* Our joint letter to the federal Minister (attached) describes those inconsistencies and gaps in more detail at pages 3-5.

<sup>3</sup> See for example Atlantic Mining NS Inc, “Touquoy Gold Project Modifications – Environmental Assessment Registration Document” (July 2021) at pages 4.4 and 5.2 [“TGPM EARD”].



not exclusively enable the pit to store tailings from the processing of ore that is currently stockpiled at the Touquoy Mine site but will also set the stage for Atlantic Gold's proposed use of the pit as the final repository for tailings generated by the proposed new operations at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream. In our view, any environmental assessment that does not take into account the connectedness of the proposed TGPM and the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream will fail to fully consider and prevent the significant environmental effects that the proposed TGPM may cause.

We are aware that Nova Scotia's *Environment Act* and *EAR* do not expressly require cumulative effects assessment in environmental assessments; however, the *EAR* section 12 factors that must inform decisions by the Minister of Environment and Climate Change ("the provincial Minister") include the following:

(a) the location of the proposed undertaking and the nature and sensitivity of the surrounding area;

[...]

(g) planned or existing land use in the area of the undertaking;

(h) other undertakings in the area; [and]

[...]

(i) such other information as the Minister may require.

In general terms, cumulative effects assessments consider the cumulative impacts of past, present, and future projects in areas in question, taking relevant assessment factors (such as valued environmental components, human health concerns, etc.) into account. Read together, the *EAR*'s mandatory section 12 factors can be interpreted as creating a regulatory requirement for cumulative effects assessment.

The existing Touquoy Mine is located in an area of Nova Scotia that includes sensitive ecological features such as forests and wetlands that provide habitats for species in peril (factor 12(a): nature and sensitivity of the surrounding area). Just as importantly, the Touquoy Mine is located in an area that many consider to be ripe for further mining developments, and prospective land use in the area of the existing Touquoy Mine includes Atlantic Gold's proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream. Those proposed projects could be characterized as planned land use in the area (factor 12(g)) or as "other undertakings in the area" (factor 12(h))—either way, they bear directly on the environmental assessment of the proposed TGPM.

Additionally, subsection 12(i) of the *EAR* gives the provincial Minister considerable discretion to require whatever information is necessary to help him formulate his decision under subsection 34(1) of the *Environment Act*.

As we stated above, our view is that the provincial Minister cannot properly determine whether the proposed TGPM will cause adverse effects or environmental effects that cannot be mitigated

(the requirement imposed by paragraph 34(1)(f) of the *Environment Act*) if he does not consider the connectedness and prospective cumulative effects of the proposed TGPM and the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream.

**(2) Unpredictable Adverse Effects to Groundwater and Surface Water May Cause Significant Environmental Effects**

The public interest in seeing the prospective effects of the proposed TGPM assessed cumulatively with those of Atlantic Gold's proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream is due in large part to the fact that Atlantic Gold's proposed use of the exhausted Touquoy Mine pit to store massive volumes of tailings will clearly affect groundwater and surface water in the local watershed.

The TGPM EARD explicitly contemplates groundwater seepage from the tailings impoundment pit and, eventually, direct discharge from the tailings impoundment pit to the adjacent Moose River.<sup>4</sup> As the document acknowledges at various points, groundwater seepage, surface runoff, and direct discharge from the tailings impoundment pit all have the potential to interact with groundwater and surface water resources in the watershed. The TGPM EARD's conclusions that such interactions will not cause significant environmental effects are difficult to credit in light of NSECC's recent comments on Atlantic Gold's Fifteen Mile Stream EIS, which indicate that Atlantic Gold's calculations of the pit's capacity and the corporation's projections of the global tailings that the pit will store are "not adding up".<sup>5</sup> NSECC's own calculations, based on the inconsistent numbers that Atlantic Gold has provided to date, indicate that the proposed tailings impoundment pit would either be "[a]lmost at capacity with tailings only" if the proposed TGPM, Beaver Dam, and Fifteen Mile Stream tailings were combined ("not including any water" and not including the additional tailings from the proposed Cochrane Hill Gold Project) or that the pit might even be incapable of accommodating the total estimated tailings from the proposed TGPM, Beaver Dam, and Fifteen Mile Stream projects alone (again without factoring in the water that Atlantic Gold says will cover the tailings in the pit and without factoring in additional tailings from the proposed project at Cochrane Hill).<sup>6</sup> In light of this assessment from NSECC, it is difficult to countenance Atlantic Gold's assurances that groundwater seepage, surface runoff, and direct discharge from the tailings impoundment pit can be predicted and managed as needed to prevent significant environmental effects. As things stand now, Atlantic Gold has not even demonstrated clearly that the pit can hold the volumes of tailings that the corporation proposes to generate.

It would be inappropriate for the provincial Minister to permit Atlantic Gold to move forward with the proposed TGPM on the understanding that future planning and water monitoring would shape the design features and mitigation measures that would be required to operate and manage the tailings impoundment pit as the corporation proposes.<sup>7</sup> The Government of Nova Scotia has a

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<sup>4</sup> See for example TGPM EARD at pages xi, 6.25, 6.32, 7.27, 7.38.

<sup>5</sup> NSECC IRs at comment ECC 160.

<sup>6</sup> *Ibid.*

<sup>7</sup> Currently, the TGPM EARD proposes that water quality monitoring will be conducted in the future to determine whether surplus water from the tailings impoundment pit once the pit is full can be discharged

responsibility to ensure that Nova Scotians can trust that the provincial environmental assessment will take the potential ramifications of the tailings impoundment pit fully into account well in advance of any approval. We therefore reiterate again that a robust cumulative effects assessment is necessary for the provincial Minister to properly consider and determine if the proposed TGPM will cause adverse effects or environmental effects that cannot be mitigated.

**(3) The Minister of Environment and Climate Change Should Require a Focus Report or Environmental Assessment Report for the Proposed Touquoy Mine Project Modifications**

In our view, the provincial Minister should require a focus report or environmental assessment report that enables him to fully consider Atlantic Gold's cumulative plans for the exhausted Touquoy Mine pit.

As we noted above, the information that Atlantic Gold has provided to date about its cumulative plans for the exhausted Touquoy Mine pit has been incomplete and inconsistent, raising serious concerns as to whether decision-makers will be fully apprised of the corporation's plans before determining whether or not one or more of the proposed projects can proceed. A focus report or environmental assessment report that requires Atlantic Gold to account fully for its cumulative plans for the exhausted Touquoy Mine pit would help to ensure that the provincial Minister has all of the information he needs to properly consider and determine if the proposed TGPM will cause adverse effects or environmental effects that cannot be mitigated.

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directly to Moose River or whether it will need to be pumped to a treatment facility first before discharge to the environment. See the TGPM EARD at page xi.



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The Honourable Jonathan Wilkinson  
Minister of Environment and Climate Change Canada  
House of Commons  
Ottawa, ON K1A 0A6

SENT VIA EMAIL  
ec.ministre-minister.ec@canada.ca  
cc: ceaa.information.acee@canada.ca

July 23, 2021

Dear Minister Wilkinson,

**Re: Letter Requesting Ministerial Designation of Proposed Modifications to the Touquoy Gold Project in Nova Scotia**

The Eastern Shore Forest Watch Association is a community organization that was founded in 1998 to address forestry practices and environmental issues that affect the health of the forests, wildlife, and human inhabitants of Nova Scotia's eastern shore.

We are aware that under subsection 9(1) of the *Impact Assessment Act* ("the *IAA*" or "the Act"), the Minister of Environment and Climate Change Canada ("ECCC") is empowered to designate for impact assessment a physical activity that is not prescribed by the *Physical Activities Regulations* if, in the Minister's opinion, either:

- (a) the carrying out of that activity may cause adverse effects within federal jurisdiction or adverse direct or incidental effects; or,
- (b) public concerns related to those effects warrant the designation.

We are writing to you on behalf of our membership and on behalf of the undersigned individuals, community groups, and environmental organizations to request that you exercise your power under subsection 9(1) of the *IAA* to require an impact assessment of activities that the corporation Atlantic Mining NS Inc ("Atlantic Gold") is proposing to carry out at the site of its existing Touquoy Gold Project in Moose River Gold Mines, Nova Scotia.

**1.0 Description of the Proposed Activities: Proposed Modifications to the Touquoy Gold Project**

The existing Touquoy Gold Project is an open-pit gold mining operation located in Moose River Gold Mines in Halifax County, Nova Scotia. Throughout this letter, we sometimes refer to the existing mine and its facilities as the Touquoy Mine.

The Touquoy Gold Project underwent a provincial environmental assessment in 2007 and was approved under Nova Scotia's *Environment Act* and corresponding *Environmental Assessment Regulations* ("EAR") in 2008. At the time, the project proponent was DDV Gold Limited ("DDV Gold"). The Touquoy Mine is now owned and operated by Atlantic Gold.

In addition to owning and operating the Touquoy Mine, Atlantic Gold has proposed to develop three new open-pit gold mining projects in Nova Scotia. Those proposed new projects are the Beaver Dam Mine Project, the Cochrane Hill Gold Project, and the Fifteen Mile Stream Gold Project. All three proposed projects are currently undergoing joint federal and provincial environmental assessments under the *Canadian Environmental Assessment Act, 2012* ("CEAA 2012") and Nova Scotia's *Environment Act* and *EAR*.

As is clear from the environmental assessment documents that Atlantic Gold has submitted to date, all three of the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream depend in large part upon plans to use the existing Touquoy Mine facilities to process ore that Atlantic Gold proposes to extract at the proposed new project sites and dispose of massive volumes of tailings created by that processing.

Based on the information that is currently available to the Impact Assessment Agency of Canada ("IAAC"), Nova Scotia Environment and Climate Change ("NSECC"), and the public, it appears that Atlantic Gold proposes to use the exhausted open pit at the Touquoy Mine ("the Touquoy Mine pit") as the permanent tailings impoundment area for at least 14 million tonnes of tailings generated from operations at the Touquoy Mine, the proposed Beaver Dam Mine Project, and the proposed Fifteen Mile Stream Gold Project.<sup>1</sup> Those 14 million tonnes of tailings do not yet factor in the tailings that Atlantic Gold proposes to generate through the Cochrane Hill Gold Project, as those numbers are not yet available.

On July 16, 2021, NSECC notified the public that Atlantic Gold had registered proposed Touquoy Gold Project Modifications for a Class I environmental assessment under Nova Scotia's *Environment Act* and *EAR*. The Environmental Assessment Registration Document for the proposed modifications ("the TGPM EARD") is available online, and the window for public commentary will close on August 16, 2021.

NSECC has advised the public that Nova Scotia's Minister of Environment and Climate Change will render his decision on the proposed modifications on or before September 5, 2021.

The TGPM EARD summarizes the proposed modifications as follows:

AMNS [Atlantic Gold] is proposing modifications to the Approved Project to support the ongoing operation. These modifications include: use of the exhausted Open Pit for tailings disposal instead of the existing approved Tailings Management Facility (TMF); expansion of the Waste Rock Storage Area (WRSA); expansion of the Clay Borrow Area; and realignment of the Plant Access Road used to access the Plant Site. These proposed modifications will increase the current approved development area, or, in the case of the in-pit tailings disposal, present a new activity not previously assessed in the original Environmental Assessment (EA) process for the Touquoy Gold Project conducted in 2007.<sup>2</sup>

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<sup>1</sup> See Nova Scotia Environment and Climate Change, "Fifteen Mile Stream Gold Project Round 1 Information Requirements" (22 June 2021) at comment ECC 160 ["NSECC IRs"].

<sup>2</sup> Atlantic Mining NS Inc, "Touquoy Gold Project Modifications – Environmental Assessment Registration Document" (July 2021) at page 1.1 ["TGPM EARD"].

The TGPM EARD provides the following overview of the proposed use of the Touquoy Mine pit as a tailings impoundment area:

Currently, tailings from the processing of ore are deposited in the TMF [Tailings Management Facility]. However, the TMF is expected to reach its capacity for tailings in March 2022. The Open Pit is anticipated to be exhausted in 2022. AMNS [Atlantic Gold] is proposing to use the exhausted Open Pit for tailings disposal when the TMF reaches its design capacity. Once the Open Pit has been exhausted, it will be allowed to fill with groundwater, surface runoff and precipitation, creating the necessary conditions for tailings disposal. When the water level in the pit reach [*sic*] an elevation of 108 m, water will start to seep out to Moose River. The pit lake will be treated as a batch reactor with the objective of adjusting the pH to precipitate metals thus improving discharge quality. Water quality monitoring will determine if the surplus water can be directly discharged to Moose River via a constructed spillway or whether the surplus water must be pumped first to a treatment facility before it is suitable for discharge to the environment.<sup>3</sup>

The TGPM EARD describes the proposed expansion of the existing Waste Rock Storage Area (“WRSA”) as being approximately 7.1 hectares,<sup>4</sup> and it describes the proposed expansion of the existing Clay Borrow Area as being approximately 5.9 hectares.<sup>5</sup> Although our comments in this letter focus mainly on the proposed new use of the Touquoy Mine pit as a tailings impoundment area, we are concerned about adverse environmental effects and adverse direct and incidental effects that could be caused by all four of the proposed modifications that the TGPM EARD describes.

As regards the proposed new use of the Touquoy Mine pit as a tailings impoundment area, we are aware that in the TGPM EARD, Atlantic Gold describes the proposed modifications as being necessary solely for ongoing operations at the Touquoy Mine and as being unrelated to Atlantic Gold’s plans for its proposed “satellite” mines at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream.<sup>6</sup> Notwithstanding Atlantic Gold’s characterization of its new plans for the Touquoy Mine pit, our view is that the proposed modifications to the pit will not exclusively enable the pit to store tailings from the processing of ore that is currently stockpiled at the Touquoy Mine site but will set the stage for Atlantic Gold’s proposed use of the pit as the final repository for tailings generated by the proposed operations at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream.

The ongoing environmental assessments of Atlantic Gold’s proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream have split Atlantic Gold’s comprehensive plans for the Touquoy Mine pit into three parts of what will ultimately be a four-part cumulation. The Environmental Impact Statement (“EIS”) Guidelines that the Canadian Environmental Assessment Agency (“CEAA”) and Nova Scotia Environment (“NSE”) issued to Atlantic Gold for the proposed Beaver Dam Mine Project in January 2016 state that the scope of the proposed project includes “changes to processes and infrastructure at the Touquoy Mine site related to the Beaver Dam Project”, including, among other things, “changes at the Touquoy Mine pit (if any) to accommodate the storage of tailings from the Beaver Dam Mine”, “storage of tailings in the Touquoy Mine pit and related water management”, and “any other changes in project components or activities from those previously assessed in the EA of the Touquoy Mine” (emphasis added).<sup>7</sup> The EIS Guidelines that CEAA and NSE issued to Atlantic Gold for the

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<sup>3</sup> TGPM EARD at page xi.

<sup>4</sup> *Ibid.*

<sup>5</sup> *Ibid* at page xii.

<sup>6</sup> See for example *ibid* at pages 4.4 and 5.2.

<sup>7</sup> Canadian Environmental Assessment Agency and Nova Scotia Environment, “Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* and Nova Scotia

proposed Cochrane Hill Gold Project and Fifteen Mile Stream Gold Project include substantially the same language but focus on changes associated specifically with each of those proposed projects, respectively.<sup>8</sup>

In other words, each of the three environmental assessments that are currently being conducted for Atlantic Gold's proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream are attempting to address, separately and respectively, the changes to the existing Touquoy Mine facilities that each project will require. Although attention is being paid to the cumulative effects associated with Atlantic Gold's comprehensive plans for the Touquoy Mine pit, so far it appears to be proving difficult for IAAC and NSECC to get a complete picture of Atlantic Gold's comprehensive plans for the site.

This apportioned assessment of Atlantic Gold's comprehensive plans for the Touquoy Mine pit is already generating confusion and inconsistencies, as we address in more detail below. If Atlantic Gold's proposed modifications to the Touquoy Mine pit are assessed through a provincial environmental assessment alone instead of through a federal impact assessment, the assessment of Atlantic Gold's comprehensive plans for the pit will look like this:

- apportioned assessment of changes necessary for the proposed Beaver Dam Mine Project (joint federal and provincial environmental assessment with IAAC oversight);
- apportioned assessment of changes necessary for the proposed Cochrane Hill Gold Project (joint federal and provincial environmental assessment with IAAC oversight);
- apportioned assessment of changes necessary for the proposed Fifteen Mile Stream Gold Project (joint federal and provincial environmental assessment with IAAC oversight);
- apportioned assessment of changes necessary for the continued operation of the Touquoy Gold Project and proposed new use of the Touquoy Mine pit (provincial environmental assessment without IAAC oversight).

Given the fundamental interconnectedness of these proposed projects and proposed changes, we are concerned that allowing the apportioned assessment of the proposed modifications to the Touquoy Gold Project to proceed as a provincial environmental assessment instead of a collaborative impact assessment under the *IAA* will exacerbate the confusion and inconsistencies that are already becoming apparent.

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Registration Document pursuant to the *Nova Scotia Environment Act*: Beaver Dam Mine, Atlantic Gold Corporation" (January 2016) at page 4.

<sup>8</sup> See Canadian Environmental Assessment Agency and Nova Scotia Environment, "Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* and Nova Scotia Registration Document pursuant to the *Nova Scotia Environment Act*: Fifteen Mile Stream Gold Project, Atlantic Mining NS Corp" (August 2018) at page 4. These EIS Guidelines include within the scope of the proposed Fifteen Mile Stream Gold Project "changes at the Touquoy Mine pit (if any) to accommodate the storage of tailings from the Fifteen Mile Stream Gold Project", "storage of tailings in the Touquoy Mine pit and related water management", and "any other changes in project components or activities from those previously assessed in the EA of the Touquoy Mine" (emphasis added). See also Canadian Environmental Assessment Agency and Nova Scotia Environment, "Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* and Nova Scotia Registration Document pursuant to the *Nova Scotia Environment Act*: Cochrane Hill Gold Project, Atlantic Mining NS Corp" (January 2019) at page 4. These EIS Guidelines include within the scope of the proposed Cochrane Hill Gold Project "changes at the Touquoy Mine pit (if any) to accommodate the storage of tailings from the Cochrane Hill Gold Project", "storage of tailings in the Touquoy Mine pit and related water management, including water and wastewater treatment", and "any other changes in project components or activities from those previously assessed in the EA of the Touquoy Mine" (emphasis added).

Last month, NSECC delivered Information Requirements (“IRs”) to Atlantic Gold that we believe are worth reproducing at length:

I compiled the tailings numbers that AMNS is proposing to deposit in the exhausted Touquoy Pit in the following table:

Site	Tailings Tonnes (Mt)	Tailings Volume (Mm <sup>3</sup> )	Reference
Touquoy	6.5	4.629 <sup>1</sup>	Jim Millard from April 13, 2021 EA Scoping Meeting
Beaver Dam	7.25	5.577	Beaver Dam EIS Document, Appendix G.2
FMS	0.534	0.411	FMS EIS Document, Appendix I.6
<b>Total Tailings</b>	<b>14.284</b>	<b>10.617</b>	
<b>Total Water</b>		<b>8.589</b>	FMS EIS Document, Appendix I.6 (Figure 4.5)
<b>Total Water + Tailings</b>		<b>19.206</b>	

<sup>1</sup> Density of 1.404 t/m<sup>3</sup> reported in the Water Balance Revision #14 dated December 23, 2020.

<sup>2</sup> Total number does not include concentrate from the Cochrane Hill project which is also planned to be deposited into the Touquoy exhausted pit.

The FMS EIS Document states the following volumes (please note they presented two different capacities for the Touquoy exhausted pit, I have this as one of comments):

- Exhausted Touquoy Pit Capacity 1: **11.83 Mm<sup>3</sup>** (at the spillway elevation of 108 masl), EIS Document Section 8.5.4.2.2.4
- Exhausted Touquoy Pit Capacity 2: **8.962 Mm<sup>3</sup>** (at the spillway elevation of 108 masl), EIS Document, Appendix L.1
- Estimated total deposited tailings from all sites into exhausted Touquoy Pit: 7.91 Mm<sup>3</sup>, EIS Document Section 8.5.4.2.2.4

The numbers are not adding up, the exhausted pit will either be:

- Almost at capacity with tailings only (not including any water) or
- Cannot accommodate the total estimated tailings to be deposited in the exhausted Touquoy Pit (again, not including water and concentrate from Cochrane Hill)

I suggest requesting the Touquoy exhausted pit water balance for all 4 projects (Touquoy stockpile processing, FMS, BD and CH) because the numbers submitted separately are not adding up.<sup>9</sup>

These comments highlight concerning inconsistencies and gaps in the information that Atlantic Gold has provided to date concerning its comprehensive plans for the Touquoy Mine pit.<sup>10</sup> Additionally, IRs that IAAC delivered to Atlantic Gold last month identify other unanswered questions and issues that have not yet been addressed.<sup>11</sup>

<sup>9</sup> NSECC IRs at comment ECC 160.

<sup>10</sup> See also NSECC IRs at comments ECC 150, ECC 151, ECC 153. It is also worth noting that in the TGPM EARD, Atlantic Gold describes the total capacity of the Touquoy Mine pit “at the proposed spillway elevation of 108 m” as being 8.962 Mm<sup>3</sup>, and it describes the estimated total volume of tailings from the Touquoy Mine to be deposited in the pit as being 6.03 Mt: see TGPM EARD at page 2.3. These numbers add further inconsistencies to the numbers cited above.

<sup>11</sup> See for example Impact Assessment Agency of Canada, “Fifteen Mile Stream Gold Project – Information Requirements (Round 1, Part 1)” (15 June 2021) at comments IR-42, IR-46, IR-47, IR 53 [“IAAC IRs”].



These recent IRs issued by IAAC and NSECC illustrate the confusion and uncertainties that are arising through the apportioned assessment of Atlantic Gold’s comprehensive plans for the Touquoy Mine pit. We believe that this situation is concerning enough to merit an impact assessment of the proposed modifications to the Touquoy Gold Project which Atlantic Gold has registered for a provincial environmental assessment.

We understand Atlantic Gold’s proposed modifications to the Touquoy Gold Project as being inherently connected to the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream, and we are therefore concerned that assessing the proposed modifications through a provincial environmental assessment alone would exacerbate the problems that are already emerging in the environmental assessments that the proposed new projects are undergoing. We are also concerned that the mitigation measures currently being proposed and assessed in connection with Atlantic Gold’s plans for the Touquoy Mine pit may not be addressing Atlantic Gold’s plans comprehensively because they are being assessed in an apportioned manner as components of several “separate” projects.

Information about Atlantic Gold’s comprehensive plans for the Touquoy Mine pit is already coming to IAAC in a piecemeal manner through the three separate environmental assessment processes that have been triggered federally. A provincial environmental assessment conducted without IAAC oversight will make it even more difficult for IAAC to form a clear and complete understanding of Atlantic Gold’s comprehensive plans for the Touquoy Mine pit. Without that understanding, IAAC cannot properly assess the adverse effects within federal jurisdiction, adverse direct or incidental effects, and cumulative effects that Atlantic Gold’s comprehensive plans for the Touquoy Mine pit may cause.

## **2.0 Detailed Reasons for Designation: Relevant *IAA* and IAAC Policy Factors**

### **2.1 The Project May Cause Adverse Effects within Federal Jurisdiction**

For the purposes of subsection 9(1) of the *IAA*, “effects within federal jurisdiction” are defined by section 2 of the Act. The following subsections of this letter address the effects within federal jurisdiction that we believe are most relevant to our request. Other effects within federal jurisdiction may be relevant as well.

#### *2.1.1 The Project May Adversely Affect Fish, Fish Habitat, and Aquatic Species*

For the purposes of subsection 9(1) of the *IAA*, effects to fish, fish habitat, and aquatic species are effects within federal jurisdiction. In this context, the word “fish” includes parts of fish, shellfish, crustaceans, marine animals, and any parts of shellfish, crustaceans, or marine animals, as well as the eggs, sperm, spawn, larvae, spat, and juvenile stages of fish, shellfish, crustaceans, and marine animals.<sup>12</sup> “Fish habitat” means “water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas”.<sup>13</sup> An “aquatic species” is either a fish, as defined above, or a marine plant, including all benthic and detached algae, marine flowering plants, brown algae, red algae, green algae, and phytoplankton.<sup>14</sup>

The EARD and Focus Report that were prepared for the Touquoy Gold Project when it underwent a provincial environmental assessment in 2007 suggest that using the Touquoy Mine pit to store tailings

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<sup>12</sup> See *Impact Assessment Act*, SC 2019, c 28, s 1 at section 2 and *Fisheries Act*, RSC 1985, C F-14 at subsection 2(1).

<sup>13</sup> *Ibid.*

<sup>14</sup> See *Impact Assessment Act*, SC 2019, c 28, s 1 at section 2, *Species at Risk Act*, SC 2002, c 29 at subsection 2(1), and *Fisheries Act*, RSC 1985, C F-14 at section 47.

may adversely affect fish, fish habitat, and aquatic species. The EARD noted several watercourses in the vicinity of the Touquoy Gold Project, including Fish River and Moose River.<sup>15</sup> Appendix K of the EARD, which provided wetland evaluations, repeatedly described Fish River and Moose River as having “sensitive fish habitat”.<sup>16</sup>

Multiple sections of the TGPM EARD indicate that Atlantic Gold’s proposed modifications to the Touquoy Gold Project could adversely affect fish, fish habitat, and aquatic species. As the document states:

Fish and fish habitat have the potential to be affected by Project-related changes to groundwater resources (Section 6.0), surface water resources (Section 7.0) and terrestrial environment (e.g., wetlands) (Section 9.0) through effects such as the removal of riparian vegetation, alterations to stream flow, introduction of sediments and contaminants of potential concern (COPC), alteration of groundwater quantity and quality, and water management activities that result in changes in water levels in surrounding waterbodies.<sup>17</sup>

Notably, the TGPM EARD acknowledges that Atlantic salmon are “known to occur in Moose River”,<sup>18</sup> and it lists 13 species of fish that are “confirmed to be present in the upper Fish River Watershed”, all of which are also “assumed to be present in Moose River”.<sup>19</sup> Those species include the American eel. While all of the species identified are ecologically valuable, it is worth emphasizing that American eel and Atlantic salmon have special cultural significance for the Mi’kmaq of Nova Scotia and are also species of conservation concern.

Section 6.0 of the TGPM EARD addresses potential changes to groundwater resources and notes, among other things, that proposed activities are expected to reduce the baseflow to Moose River and may result in changes to groundwater quality as well as quantity.<sup>20</sup> The document states:

The deposition of tailings into the exhausted Open Pit has the potential to interact with groundwater quality around the Open Pit, as well as water quality in Moose River from groundwater seepage into the river. Groundwater in the filled Open Pit has the potential to seep to Moose River during the post-closure phase of the Project.<sup>21</sup>

The TGPM EARD goes on to state:

During the post-closure period, the deposition of tailings in the Open Pit will affect the water quality in the pit, including the pore water quality in the tailings within the Open Pit. This lower quality water has the potential to migrate toward Moose River via groundwater.

According to the TGPM EARD, groundwater modelling conducted by Stantec indicates that average concentrations of arsenic and “parameters of primary concern” would not stabilize in Moose River until

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<sup>15</sup> DDV Gold Limited, “Environmental Assessment Registration Document for the Touquoy Gold Project, Moose River Gold Mines, Nova Scotia” (March 2007) at pages 96-102 [“Touquoy Gold Project EARD”].

<sup>16</sup> Touquoy Gold Project EARD, Appendix K – Wetland Evaluations: “Wetland 1 Report” at page 8, “Wetland 2 Report” at page 9, “Wetland 3 Report” at page 7, “Wetland 4 Report” at page 8, and “Wetland 5 Report” at page 8.

<sup>17</sup> TGPM EARD at page 8.1.

<sup>18</sup> *Ibid* at page 8.13; see also page 8.15, which states that sea-run (as opposed to land-locked) Atlantic salmon are “known to occur in Moose River”.

<sup>19</sup> *Ibid* at page 8.14.

<sup>20</sup> *Ibid* at pages 6.16 and 6.24.

<sup>21</sup> *Ibid* at page 6.25.

after approximately 150 years.<sup>22</sup> Notably, after Atlantic Gold provided similar figures in its EIS for the proposed Fifteen Mile Stream Gold Project, IAAC IRs commented:

Section 6.5.6.2 of the EIS indicates that the concentrations of all parameters at the property line after 500 years of travel are predicted to be less than the Canadian Drinking Water Guidelines. The average concentrations in the discharge to Moose River stabilize after about 150 years. Based on this definition it would seem that the effects could be considered significant as 500 years to return to baseline is well beyond a reasonable amount of time [*sic*] to monitor the site.

Section 7.0 of the TGPM EARD addresses potential changes to surface water resources and notes, among other things, that proposed activities could result in changes to surface water quality and quantity.<sup>23</sup> For example, the document states:

In-pit tailings disposal will potentially interact with surface water resources through alterations of water quality and quantity associated with the deposition of tailings, related associated water management activities, and reclamation and decommissioning activities. [...] As the Open Pit starts to fill with tailings and water, the groundwater flow gradients to the Open Pit will lessen and eventually reverse, at which time water in the Open Pit will seep towards the Moose River. When the Open Pit infilling is complete, surface flow will be directed to Moose River via a constructed spillway or discharge structure.<sup>24</sup> [emphasis added]

These potential changes to groundwater and surface water quality and quantity in Moose River clearly have the potential to adversely affect fish, fish habitat, and aquatic species.

The potential threats to fish, fish habitat, and aquatic species that we have addressed in this part of our letter are intended to serve as illustrative examples only: the TGPM EARD raises several other concerns about other adverse effects to these important species and habitat areas.

### 2.1.2 *The Project May Adversely Affect Migratory Birds*

The TGPM EARD identifies five avian species at risk that are “predicted to occupy lands” that are within the Local Assessment Area of the proposed project.<sup>25</sup> Those species are: Barn Swallow (which is designated as “endangered” under Nova Scotia’s *Endangered Species Act* [“*ESA*”] and “threatened” under the federal *Species at Risk Act* [“*SARA*”]), Canada Warbler (*ESA* “endangered”; *SARA* “threatened”), Common Nighthawk (*ESA* “threatened”; *SARA* “threatened”), Olive-sided Flycatcher (*ESA* “endangered”; *SARA* “threatened”), and Eastern Wood-pewee (*ESA* “vulnerable”; *SARA* “special concern”).<sup>26</sup> All five of these species are migratory birds that are protected under the *Migratory Birds Convention Act* (“*MBCA*”), and adverse effects on these species and other relevant avian species mentioned within the TGPM EARD are effects within federal jurisdiction.

### 2.1.3 *The Project May Adversely Affect Mi’kmaq in Nova Scotia*

For the purposes of subsection 9(1) of the *IAA*, effects within federal jurisdiction include effects occurring in Canada and resulting from any change to the environment on the physical and cultural heritage, current use of lands and resources for traditional purposes, and health, social, or economic conditions of the

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<sup>22</sup> TGPM EARD at page 6.32.

<sup>23</sup> *Ibid* at page 7.27.

<sup>24</sup> *Ibid* at page 7.28.

<sup>25</sup> *Ibid* at page 9.52.

<sup>26</sup> *Ibid*.

Indigenous peoples of Canada, as well as effects on structures, sites, or things that are of historical, archaeological, paleontological, or architectural significance to the Indigenous peoples of Canada.

Mi'kmaw rights and interests do not appear to have been considered substantively in the EARD and Focus Report that were produced during the environmental assessment of the Touquoy Gold Project in 2007. The TGPM EARD indicates that recent engagement with Mi'kmaw communities and representatives in Nova Scotia identified several concerns raised by Mi'kmaq, including concerns about potential impacts on local water resources, potential impacts to fish and fish habitat, and potential impacts on traditional practices such as harvesting and hunting.<sup>27</sup> Importantly, these potential impacts could adversely affect Mi'kmaw Aboriginal and treaty rights that are protected under section 35 of the *Constitution Act, 1982* and could adversely affect other Mi'kmaw rights and interests that are protected under Canadian and international law.

## 2.2 The Project May Cause Adverse Direct or Incidental Effects

Under subsection 9(1) of the *IAA*, the Minister may designate a physical activity that is not prescribed in the *Physical Activities Regulations* if, in his opinion, the carrying out of that activity may cause adverse direct or incidental effects. Section 2 of the *IAA* defines “direct or incidental effects” as meaning:

[...] effects that are directly linked or necessarily incidental to a federal authority’s exercise of a power or performance of a duty or function that would permit the carrying out, in whole or in part, of a physical activity or designated project, or to a federal authority’s provision of financial assistance to a person for the purpose of enabling that activity or project to be carried out, in whole or in part. (emphasis added)

The creation of the tailings impoundment area that Atlantic Gold envisions in its comprehensive plans for the Touquoy Mine pit would implicate ECCC’s duties and functions under Canada’s *Metal and Diamond Mining Effluent Regulations* (“the *MDMER*” or “the regulations”), which exist under the *Fisheries Act*. It is our understanding that Atlantic Gold’s proposed use of the Touquoy Mine pit may fall within the scope of paragraph 5(1)(b) of the *MDMER*, which authorizes the deposit of prescribed substances into a tailings impoundment area that is “a disposal area that is confined by anthropogenic or natural structures or by both, other than a disposal area that is, or is part of, a natural water body that is frequented by fish”.<sup>28</sup> Importantly, subsection 5(2) of the *MDMER* makes it clear that the authorization granted by paragraph 5(1)(b) is conditional on the proponent complying with sections 7 to 28 of the regulations, which list several monitoring and reporting obligations with which proponents must comply. Proponents’ monitoring and reporting obligations under sections 7 to 28 of the *MDMER* necessarily invoke corresponding oversight and enforcement duties and functions for ECCC.

Atlantic Gold’s proposed modifications to the Touquoy Mine pit are activities that, if carried out, may cause adverse direct or incidental effects—namely, adverse effects that would be directly linked or necessarily incidental to the ECCC’s performance of oversight and enforcement duties and functions under the *MDMER*. Within the legal regime that exists under the *Fisheries Act*, the Touquoy Mine pit cannot lawfully be used to store tailings unless that use conforms with the *MDMER*. As regards Atlantic Gold’s proposed use of the Touquoy Mine pit to store tailings, ECCC’s oversight and enforcement duties and functions under the *MDMER* would effectively give Atlantic Gold licence to use the Touquoy Mine

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<sup>27</sup> TGPM EARD at page 4.2.

<sup>28</sup> Given the groundwater connectivity described in the TGPM EARD, the anticipated seepage to Moose River, and the anticipated discharge to Moose River, the application of paragraph 5(1)(b) of the *MDMER* is questionable, as the “confinement” provided by the proposed disposal area will apparently not prevent escape, and as, ultimately, an established connection between the “pit lake” and Moose River is planned.

pit as a tailings impoundment area so long as all relevant monitoring and reporting requirements were being met. In other words, ECCC's performance of oversight and enforcement duties and functions under the MDMER is fundamental to enabling the use of the Touquoy Mine pit to store tailings.

Although ECCC may not need to exercise a power or perform a duty or function to enable physical modifications to the Touquoy Mine pit, Atlantic Gold's proposed "modifications" to the pit are not simply physical changes to the structure of the pit itself. What the TGPM EARD is proposing as a "modification" to the Touquoy Mine pit is in large part—it may even be fair to say *is primarily*—the actual use of the pit to store massive volumes of tailings. The potential adverse effects of that aspect of the proposed project (that is, the actual use of the Touquoy Mine pit as a permanent tailings impoundment area—a use that was never contemplated in the original environmental assessment of the project) are discussed at length throughout the TGPM EARD. As such, the TGPM EARD illustrates the kinds of adverse direct and incidental effects that could flow from ECCC's role in licencing the use of the Touquoy Mine pit as a tailings impoundment area by virtue of performing its oversight and enforcement duties and functions under the *MDMER*.

As our comments in earlier sections of this letter suggest, the adverse effects about which we are especially concerned are the adverse effects to local groundwater and surface water that could be caused by using the Touquoy Mine pit as the permanent disposal site for massive volumes of tailings. Those adverse effects include adverse effects on fish, fish habitat, and aquatic species.

### **2.3 Public Concerns Related to Adverse Effects within Federal Jurisdiction and Adverse Direct or Incidental Effects Warrant the Designation**

Under subsection 9(1) of the *IAA*, the Minister may designate a physical activity that is not prescribed in the *Physical Activities Regulations* if, in his opinion, public concerns related to adverse effects within federal jurisdiction or adverse direct or incidental effects warrant the designation. Importantly, this power to designate is distinct from the other power that is granted by subsection 9(1), under which the Minister is also empowered to designate a physical activity if, in his opinion, the carrying out of that physical activity may cause adverse effects within federal jurisdiction or adverse direct or incidental effects. The difference between the two powers is that whereas one requires the Minister to be of the opinion that the physical activity in question may cause relevant adverse effects, the other enables the Minister to designate an activity in order to address public concerns about relevant adverse effects, whether or not it is clear that such effects may actually occur.

As IAAC is aware, the documents that have been generated to date for the ongoing environmental assessments of Atlantic Gold's proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream number in the thousands of pages, and many of the documents are highly technical. The TGPM EARD is more than 300 pages long, not counting its appendices. Concerned members of the public who participate in environmental or impact assessment processes rarely have the resources required to review such vast materials comprehensively and assess, on a technical basis, the accuracy and completeness of the information provided by the proponent. The Minister's authority under subsection 9(1) of the *IAA* to designate an activity in order to address public concerns about relevant adverse effects reduces the burden that concerned members of the public might otherwise bear if they were required to convince the Minister that one or more proposed activities may actually cause relevant adverse effects.

Eastern Shore Forest Watch and the other signatories to this letter are deeply concerned about the adverse effects within federal jurisdiction and the adverse direct or incidental effects that could be caused by Atlantic Gold's proposed modifications to the Touquoy Gold Project. We are especially concerned about the relevant adverse effects that could result from Atlantic Gold's proposed use of the Touquoy Mine pit to store massive volumes of tailings generated by the processing of ore from the existing Touquoy Mine

and the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream. Our request for Ministerial designation is not restricted to those proposed modifications alone, however, and we ask that IAAC and the Minister determine whether any or all of the other proposed modifications to the Touquoy Gold Project should be included in a federal impact assessment.

Additionally, in our view, the numerous comments that IAAC, NSECC, and Atlantic Gold have received from the settler public and from Mi'kmaq in Nova Scotia concerning the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream illustrate significant public concerns about the individual and cumulative impacts of Atlantic Gold's activities in this province. We therefore ask that you also take those comments into account in your consideration of this request for Ministerial designation of the proposed modifications to the Touquoy Gold Project.

### **3.0 Additional Factors for Consideration**

#### **3.1 Cumulative Effects**

##### *3.1.1 Atlantic Gold's Comprehensive Plans for the Touquoy Mine Pit Should Be Assessed in Their Entirety with IAAC Oversight*

IAAC's *Operational Guide: Designating a Project under the Impact Assessment Act* states that when IAAC develops a recommendation for the Minister in connection with a request for Ministerial designation, IAAC may "take into account a number of relevant factors including whether or not" "there are proposals for multiple activities within the same region that may be a source of cumulative effects". Notably, the environmental assessment regime that exists under Nova Scotia's *Environment Act* and *EAR* does not include cumulative effects assessment as a legislated requirement.

As we have argued throughout this letter, Atlantic Gold's proposed modifications to the Touquoy Mine pit are one part of a four-part cumulative plan, and we are deeply concerned that if all four parts of that plan are not assessed comprehensively and cumulatively with IAAC oversight, the full potential for adverse effects within federal jurisdiction and adverse direct or incidental effects will not be understood.

We have already provided examples illustrating that the apportioned assessment of Atlantic Gold's comprehensive plans for the Touquoy Mine pit is already creating confusion and inconsistencies. As another example, we note that in the IAAC IRs discussed above, IAAC wrote:

The EIS Guidelines state that the scope of the EIS includes changes to processes and infrastructure at the Touquoy Mine site related to the FMS [Fifteen Mile Stream Gold Project], including: storage of tailings in the Touquoy Mine pit and related water management.

Section 3.0 of Appendix I.6 of the EIS states that the Touquoy pit has a volume of 8.962 million cubic metres and that the expected volume of tailings from the FMS is 0.411 million cubic metres. However, the volume of tailings expected to be deposited in the Touquoy pit from the Touquoy mine, Beaver Dam mine, and Cochrane Hill mine is not provided. In addition, the amount of water the pit is expected to accommodate is not provided.

This information is required to determine the amount of tailings to be stored in the Touquoy pit from the Touquoy, Beaver Dam, and Cochrane Hill mines and to understand the current status of the water management at the Touquoy site.<sup>29</sup>

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<sup>29</sup> IAAC IRs at comment IR-47.

The apportioned assessment of Atlantic Gold’s comprehensive plans for the Touquoy Mine pit is problematic, in our view, and we are concerned that allowing the fourth part of Atlantic Gold’s four-part plan to be assessed in a provincial environmental assessment conducted without IAAC oversight will exacerbate the problem. Without the benefit of an impact assessment that examines Atlantic Gold’s comprehensive plans for the Touquoy Mine pit, IAAC cannot properly assess the cumulative effects those plans may cause.

### 3.1.2 *Proposed Effects on Wetlands Must Be Assessed Cumulatively*

The TGPM EARD makes it clear that the proposed modifications to the Touquoy Gold Project would impact wetlands if they were approved, including a Wetland of Special Significance (as defined within Nova Scotian law and policy) in which Blue Felt Lichen (which is designated as a “vulnerable” species under Nova Scotia’s *ESA*) is present.<sup>30</sup>

Importantly, Atlantic Gold’s proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream also involve significant proposed alterations to wetlands, including activities that would more appropriately be described as destruction. In our view, all of these proposed effects on wetlands should be assessed cumulatively. As we noted above, the environmental assessment regime that exists under Nova Scotia’s *Environment Act* and *EAR* does not include cumulative effects assessment as a legislated requirement.

## 3.2 **The Proposed Activities Are in an Environmentally Sensitive Area**

The Touquoy Gold Project and its proposed expansions are situated within an environmentally sensitive area that includes sensitive fish habitat, multiple watercourses, wetlands (including a Wetland of Special Significance), and other forested and vegetated areas that provide significant species habitats and ecosystem services.

For the purposes of the TGPM EARD, the Project Development Area (“PDA”) “represents the anticipated area of direct physical disturbance associated with construction, operation and decommissioning of the Project” and “comprises the existing Open Pit, the WRSA Expansion Area, the new Clay Borrow Area”, and the area of the proposed new access road.<sup>31</sup> Additionally, the Local Assessment Area (“LAA”) “encompasses the area within which Project-related environmental effects can be predicted or measured for assessment”.<sup>32</sup>

The TGPM EARD identifies a Wetland of Special Significance inhabited by the Blue Felt Lichen, which is designated as “vulnerable” under Nova Scotia’s *ESA*, within the LAA.<sup>33</sup> As we noted above, the TGPM EARD also identifies five avian species at risk that are “predicted to occupy lands within the LAA”.<sup>34</sup> Those species are: Barn Swallow (*ESA* “endangered”; *SARA* “threatened”), Canada Warbler (*ESA* “endangered”; *SARA* “threatened”), Common Nighthawk (*ESA* “threatened”; *SARA* “threatened”), Olive-sided Flycatcher (*ESA* “endangered”; *SARA* “threatened”), and Eastern Wood-pewee (*ESA* “vulnerable”; *SARA* “special concern”).<sup>35</sup> All five of these species are also protected under the *MBCA*.

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<sup>30</sup> TGPM EARD at page 9.51.

<sup>31</sup> *Ibid* at page 5.7.

<sup>32</sup> *Ibid*.

<sup>33</sup> *Ibid* at page 9.51.

<sup>34</sup> *Ibid* at page 9.52.

<sup>35</sup> *Ibid*.

Additionally, it is well known in Nova Scotia that wetlands provide important habitat areas for many wildlife species, including the endangered Mainland Moose. Suitable moose habitat in mainland Nova Scotia is concerningly scarce. The TGPM EARD indicates that Mainland Moose inhabit areas within the vicinity of the Touquoy Mine,<sup>36</sup> and we are concerned that expanding the site and using the Touquoy Mine pit as a tailings impoundment area (with its corresponding risks to the local watersheds) could adversely affect this imperilled and culturally significant species.

These examples are just a few among many that could speak to the environmental sensitivity of the area affected by the Touquoy Mine.

### **3.3 Threshold**

It is our understanding that the proposed modifications to the Touquoy Gold Project are not near a threshold set out in the *Physical Activities Regulations*.

### **3.4 Technological Considerations**

We are not aware of any plans to use new or emerging technologies or of any other technological considerations that might be relevant to our request.

### **4.0 Conclusion**

When the Touquoy Gold Project underwent a provincial environmental assessment in 2007, the proposed closure and reclamation plan for the exhausted Touquoy Mine pit envisioned that the empty pit would slowly fill with water and eventually become a “lake”.<sup>37</sup> Remarkably, the Focus Report that DDV Gold submitted in 2007 even went so far as to say that after the exhausted pit had flooded and formed a lake, it would “develop into a viable aquatic habitat”.<sup>38</sup>

In our view, DDV Gold’s early reclamation vision for the exhausted Touquoy Mine pit cannot be reconciled with Atlantic Gold’s comprehensive plans to use the pit as a massive tailings impoundment area. As recent IRs from NSECC, reproduced above, make clear, Atlantic Gold’s comprehensive plans for the Touquoy Mine pit envision depositing such large volumes of tailings that the current capacity of the pit may not even be able to hold them.

When the Touquoy Gold Project underwent its provincial environmental assessment in 2007, the project was not assessed with the understanding that the exhausted open pit would be used as the permanent impoundment area for millions of tonnes of tailings. As we understand Atlantic Gold’s comprehensive plans for the Touquoy Mine pit, the proposed modifications described in the TGPM EARD will not exclusively enable the pit to store tailings from the processing of ore that is currently stockpiled at the Touquoy Mine site but will also enable the use of the Touquoy Mine pit as the final repository for tailings generated by the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream. In our view, these proposed “modifications” go far beyond what the average person would consider to be modifications of an existing project. These modifications are integral to an entirely new vision for the Touquoy Mine pit, and we believe that vision requires an impact assessment in order to be properly understood.

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<sup>36</sup> TGPM EARD at page 9.57.

<sup>37</sup> 2007 EA Focus Report at page 285.

<sup>38</sup> *Ibid.*



Without the benefit of an impact assessment, IAAC cannot properly assess the adverse effects within federal jurisdiction, adverse direct or incidental effects, and cumulative effects that Atlantic Gold's comprehensive plans for the Touquoy Mine pit may cause. Additionally, other aspects of Atlantic Gold's proposed modifications to the existing Touquoy Gold Project may also warrant federal impact assessment, not least because of their contributions to the cumulative effects of proposed open-pit gold mining projects in the region.

For these reasons, Eastern Shore Forest Watch and the undersigned individuals, community groups, and organizations respectfully request that you exercise your powers under subsection 9(1) of the *IAA* and designate Atlantic Gold's proposed modifications to the Touquoy Gold Project for impact assessment.

Finally, as NSECC has advised the public that Nova Scotia's Minister of Environment and Climate Change will render his decision on the proposed modifications on or before September 5, 2021, we ask that you consider this request on an urgent basis.

Respectfully,

Eastern Shore Forest Watch Association

and

Atlantic Salmon Federation  
St. Andrews, New Brunswick



East Coast Environmental Law  
Halifax, Nova Scotia



Ecology Action Centre  
Halifax, Nova Scotia



Nature Nova Scotia  
Halifax, Nova Scotia



Nova Scotia Salmon Association  
Bedford, Nova Scotia



Sierra Club Canada Foundation, Atlantic Chapter  
Halifax, Nova Scotia



St. Mary's River Association  
Sherbrooke, Nova Scotia



Save Caribou  
Caribou Gold Mines, Nova Scotia

Save Our Seas and Shores Coalition  
Merigomish, Nova Scotia

Founder and Managing Partner of MacGillivray Injury and Insurance Law  
New Glasgow, Nova Scotia



New Glasgow, Nova Scotia

Edward Island

Merigomish, Nova Scotia

From: @gmail.com  
To: Environment Assessment Web Account  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: August 16, 2021 5:03:43 PM

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Project: touquoy-gold-project-site-modifications Comments: This Liberal government has expressed its concerns about our environment, with just cause, so I cannot understand its support of the Atlantic Gold proposed changes. These mining operations are notorious for the long term damage they leave behind. If Atlantic Gold goes so far as to admit the changes could affect water quality, groundwater and fish habitat, but it does not expect there to be significant residual environmental effects. You can probably bet it will be substantial. What kind of idiots are we to accommodate their proposed changes? I cannot believe the powers that be were not aware of the potential to run out of space when they submitted their initial proposal. What I can believe is that they probably saw a bunch of gullible Nova Scotia politicians desperate for a few good paying jobs which in turn would mean a few votes. I cannot believe this government would accommodate Atlantic Gold knowing the millions, if not billions, of dollars that it will cost our children and grandchildren to clean up. We see these mining companies going into third world countries and the damage they do to the environment. I ask you, how can we do this to our children? How can a few short term jobs be worth the long term damage to our environment? And, this is just the first of a number of planned mines! As far as I am concerned this government, which I am sad to say I helped to elect, has sold us out. Please, dont do any more damage to our environment, you have already done enough. How can you do this to your children? Name: Email:  
@gmail.com Address: Municipality: Fletchers Lake NS  
email\_message: Privacy-Statement: agree x: 52 y: 23

From: [@gmail.com](#)  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 8:02:08 PM

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Project: touquoy-gold-project-site-modifications Comments: I support the gold mine Name:  
Email: @gmail.com Address: Municipality:  
Weymouth email\_message: Privacy-Statement: agree x: 67 y: 24

From:  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 9:23:51 PM

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Project: touquoy-gold-project-site-modifications Comments: As a member of the community, and a recent engineering graduate I support the project due to the important implications of the modifications. I also have confidence in the team executing the modifications due to their commitment to safety and the community. Name:                      Email:                      @dal.ca  
Address:                      Municipality: Middle Sackville email\_message: Privacy-  
Statement: agree x: 61 y: 21

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: Proposed Project Comments  
Date: August 16, 2021 10:14:51 PM

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Project: touquoy-gold-project-site-modifications Comments: I have confidence that these modifications can be completed to the highest standard. Many of my husbands coworkers have worked very hard on the numerous documents and studies submitted to the government. I thank you for your time and consideration.

Name: oore Email: @gmail.com Address: Municipality:

Belmont\_email\_message: Privacy-Statement: agree x: 78 y: 23

From: [Eastern Shore Forest Watch Association](#)  
To: [Environment Assessment Web Account](#)  
Subject: Comments on the Touquoy Gold Project Site Modifications  
Date: August 16, 2021 10:41:31 PM  
Attachments: [touquoyEARD2021\\_ESFWcomments.pdf](#)

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**\*\* EXTERNAL EMAIL / COURRIEL EXTERNE \*\***

**Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien**

Dear Sir/Madam,

Please find attached the comments of the Eastern Shore Forest Watch Association regarding the Touquoy Gold Project Site Modifications EARD.

We would be grateful of a receipt acknowledgement.

Kind regards,

ESFW Treasurer



*Education, action, alternatives for the long-term health of the Acadian forest ecosystem*

[www.forestwatch.ca](http://www.forestwatch.ca) Email: [info@forestwatch.ca](mailto:info@forestwatch.ca) [www.facebook.com/ESFWA](https://www.facebook.com/ESFWA)

## **Touquoy Gold Project Modifications**

### **Environmental Assessment Registration Response – August 16, 2021**

The Eastern Shore Forest Watch Association is a community organization founded in 1998 to address forestry practices and environmental issues that affect the health of the forests, wildlife, and human inhabitants of Nova Scotia's Eastern Shore. We have been engaged with environmental assessments of Atlantic Gold projects since 2007.

We welcome the opportunity offered by the Nova Scotia Environment Department to comment on this EARD. Four volunteers of Eastern Shore Forest Watch have contributed to our response according to their expertise, knowledge and experience. As such, each contribution is presented separately in a different chapter, but they all represent the opinion and position of the Eastern Shore Forest Watch Association.

#### **Chapter 1 - Part A: The fragmented and inconsistent description of the Touquoy Gold Project and its modifications**

##### **- Part B: General comments**

#### **Chapter 2 - Part A: Transparency and the manipulation of the NS Environmental Assessment process**

##### **- Part B: Comments on sections 1 to 4**

#### **Chapter 3 - In-pit tailings disposal**

#### **Chapter 4 - Comments on operations chronology, decommissioning of the TMF and impacts on fish and fish habitat**



## Chapter 1

### **Part A – The fragmented and inconsistent description of the Touquoy Gold Project and its modifications**

The existing Touquoy Gold Project is an open-pit gold mining operation located in Moose River Gold Mines in Halifax County, Nova Scotia. Throughout this submission, we sometimes refer to the existing mine and its facilities as the Touquoy Mine. We refer to the proponent as Atlantic Gold (AG) because, despite being bought and hived off, that is the name generally understood to refer to the proponent.

The Touquoy Gold Project underwent a provincial environmental assessment in 2007 and was approved under Nova Scotia's *Environment Act* and corresponding *Environmental Assessment Regulations* ("EAR") in 2008.

In addition to owning and operating the Touquoy Mine, Atlantic Gold has proposed to develop three new open-pit gold mining projects in Nova Scotia. Those proposed new projects are the Beaver Dam Mine Project, the Fifteen Mile Stream Gold Project and the Cochrane Hill Gold Project. All three proposed projects are currently undergoing joint federal and provincial environmental assessments under the *Canadian Environmental Assessment Act, 2012* ("CEAA 2012") and Nova Scotia's *Environment Act* and *EAR*.

As is clear from the environmental assessment documents that Atlantic Gold has submitted to date, all three of the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream depend in large part upon plans to use the existing Touquoy Mine facilities to process ore that Atlantic Gold proposes to extract at the proposed new project sites and dispose of massive volumes of tailings created by that processing.

Based on the information that is currently available to the Impact Assessment Agency of Canada ("IAAC"), Nova Scotia Environment and Climate Change ("NSECC"), and the public, it appears that Atlantic Gold proposes to use the exhausted open pit at the Touquoy Mine ("the Touquoy Mine pit") as the permanent tailings impoundment area for at least 14 million tonnes of tailings generated from operations at the Touquoy Mine, the proposed Beaver Dam Mine Project, and the proposed Fifteen Mile Stream Gold Project.

Those 14 million tonnes of tailings do not yet factor in the tailings that Atlantic Gold proposes to generate through the Cochrane Hill Gold Project, as those numbers are not yet available.

On July 16, 2021, NSECC notified the public that Atlantic Gold had registered proposed Touquoy Gold Project Modifications for a Class I environmental assessment under Nova Scotia's *Environment Act* and *EAR*. *The Touquoy Gold Project Modifications – Environmental Assessment Registration Document* (Atlantic Mining NS Inc, July 2021) is available online, and the window for public commentary will close on August 16, 2021. We refer to this document as the 'TGPM EARD'.

NSECC has advised the public that Nova Scotia's Minister of Environment and Climate Change will render his decision on the proposed modifications on or before September 5, 2021. It is our understanding that the Minister is not obligated to give any reasons for his decision. We believe that this omission is outdated in 2021 and that Ministerial requirements should be brought up to 21<sup>st</sup> century standards as soon as possible.

The TGPM EARD summarizes the proposed modifications as follows:

*AMNS [Atlantic Gold] is proposing modifications to the Approved Project to support the ongoing operation. These modifications include: use of the exhausted Open Pit for tailings disposal instead of the existing approved Tailings Management Facility (TMF); expansion of the Waste Rock Storage Area (WRSA); expansion of the Clay Borrow Area; and realignment of the Plant Access Road used to access the Plant Site. These proposed modifications will increase the current approved development area, or, in the case of the in-pit tailings disposal, present a new activity not previously assessed in the original Environmental Assessment (EA) process for the Touquoy Gold Project conducted in 2007 (TGPM EARD, p. 1.1).*

The TGPM EARD provides the following overview of the proposed use of the Touquoy Mine pit as a tailings impoundment area:

*Currently, tailings from the processing of ore are deposited in the TMF [Tailings Management Facility]. However, the TMF is expected to reach its capacity for tailings in March 2022. The Open Pit is anticipated to be exhausted in 2022. AMNS [Atlantic Gold] is proposing to use the exhausted Open Pit for tailings disposal when the TMF reaches its design capacity. Once the Open Pit has been exhausted, it will be allowed to fill with groundwater, surface runoff and precipitation, creating the necessary conditions for tailings disposal. When the water level in the pit reach [sic] an elevation of 108 m, water will start to seep out to Moose River. The pit lake will be treated as a batch reactor with the objective of adjusting the pH to precipitate metals thus improving discharge quality. Water quality monitoring will determine if the surplus water can be directly discharged to Moose River via a constructed spillway or whether the surplus water must*

*be pumped first to a treatment facility before it is suitable for discharge to the environment. TGPM EARD at page xi.*

The TGPM EARD describes the proposed expansion of the existing Waste Rock Storage Area (“WRSA”) as being approximately 7.1 hectares page xi, and it describes the proposed expansion of the existing Clay Borrow Area as being approximately 5.9 hectares page xii.

Although our comments focus mainly on the proposed new use of the Touquoy Mine pit as a tailings impoundment area, we are concerned about adverse environmental effects and adverse direct and incidental effects that could be caused by all four of the proposed modifications that the TGPM EARD describes. Although Atlantic Gold currently operates only a single working mine, we are also very concerned about cumulative effects of the four mines planned for the Eastern Shore. In the EARD under discussion the word cumulative appears three times only, and there is no section which discusses cumulative effects on the watersheds of the Eastern Shore.

As regards the proposed new use of the Touquoy Mine pit as a tailings impoundment area, we are aware that in the TGPM EARD, Atlantic Gold describes the proposed modifications as being necessary solely for ongoing operations at the Touquoy Mine and as being unrelated to Atlantic Gold’s plans for its proposed “satellite” mines at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream. Notwithstanding Atlantic Gold’s characterization of its new plans for the Touquoy Mine pit, our view is that the proposed modifications to the pit will not **exclusively** enable the pit to store tailings from the processing of ore that is currently stockpiled at the Touquoy Mine site but will set the stage for Atlantic Gold’s proposed use of the pit as the final repository for tailings generated by the proposed operations at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream.

**The ongoing environmental assessments of Atlantic Gold’s proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream have split Atlantic Gold’s comprehensive plans for the Touquoy Mine pit into three parts of what will ultimately be a four-part cumulation.**

The Environmental Impact Statement (“EIS”) Guidelines that the Canadian Environmental Assessment Agency (“CEAA”) and Nova Scotia Environment (“NSE”) issued to Atlantic Gold for the proposed Beaver Dam Mine Project in January 2016 state that the scope of the proposed project includes “changes to processes and infrastructure at the Touquoy Mine site related to the Beaver Dam Project”, including, among other things, **“changes at the Touquoy Mine pit (if any) to accommodate the storage of tailings from the Beaver Dam Mine”, “storage of tailings in the Touquoy Mine pit and related water management”, and “any other changes in project components or activities from those previously assessed in the EA of the Touquoy Mine”** (emphasis added). The EIS Guidelines that CEAA and NSE issued to Atlantic Gold for the

proposed Cochrane Hill Gold Project and Fifteen Mile Stream Gold Project include substantially the same language but focus on changes associated specifically with each of those proposed projects, respectively.

In other words, each of the three environmental assessments that are currently being conducted for Atlantic Gold's proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream are attempting to address, separately and respectively, the changes to the existing Touquoy Mine facilities that each project will require. **So far it appears to be proving difficult for IAAC and NSECC to get a complete picture of Atlantic Gold's comprehensive plans for the site.**

This apportioned assessment of Atlantic Gold's comprehensive plans for the Touquoy Mine pit is already generating confusion and inconsistencies. If, as it is now, Atlantic Gold's proposed modifications to the Touquoy Mine pit are assessed through a provincial environmental assessment alone the assessment of Atlantic Gold's comprehensive plans for the pit will look like this:

- apportioned assessment of changes necessary for the proposed Beaver Dam Mine Project (joint federal and provincial environmental assessment with IAAC oversight);
- apportioned assessment of changes necessary for the proposed Cochrane Hill Gold Project (joint federal and provincial environmental assessment with IAAC oversight);
- apportioned assessment of changes necessary for the proposed Fifteen Mile Stream Gold Project (joint federal and provincial environmental assessment with IAAC oversight);
- apportioned assessment of changes necessary for the continued operation of the Touquoy Gold Project and proposed new use of the Touquoy Mine pit (provincial environmental assessment without IAAC oversight).

Given the fundamental interconnectedness of these proposed projects and proposed changes, we are concerned that allowing the apportioned assessment of the proposed modifications to the Touquoy Gold Project to proceed as a provincial environmental assessment will exacerbate the confusion and inconsistencies that are already apparent.

These comments highlight concerning inconsistencies and gaps in the information that Atlantic Gold has provided to date concerning its comprehensive plans for the Touquoy Mine pit.

Additionally, the information Requests (IRs) that IAAC recently delivered to Atlantic Gold identify other questions and issues that have not yet been addressed.

Atlantic Gold describes the total capacity of the Touquoy Mine pit “at the proposed spillway elevation of 108 m” as being 8.962 Mm<sup>3</sup>, and it describes the estimated total volume of tailings from the Touquoy Mine to be deposited in the pit as being 6.03 Mt: see TGPM EARD at page 2.3. These numbers add further inconsistencies.

These recent IRs issued by IAAC and NSECC illustrate the confusion and uncertainties that are arising through the apportioned assessment of Atlantic Gold’s comprehensive plans for the Touquoy Mine pit.

We understand Atlantic Gold’s proposed modifications to the Touquoy Gold Project as being inherently connected to the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream, and we are therefore concerned that assessing the proposed modifications through a provincial environmental assessment alone would exacerbate the problems that are already emerging in the environmental assessments that the proposed new projects are undergoing. We are also concerned that the mitigation measures currently being proposed and assessed in connection with Atlantic Gold’s plans for the Touquoy Mine pit may not be addressing Atlantic Gold’s plans comprehensively because they are being assessed in an apportioned manner as components of several “separate” projects.

## **Part B – General Comments**

### *Groundwater Resources*

Section 6.0 of the TGPM EARD addresses potential changes to groundwater resources and notes, among other things, that proposed activities are expected to reduce the baseflow to Moose River and may result in changes to groundwater quality as well as quantity. The document states:

“The deposition of tailings into the exhausted Open Pit has the potential to interact with groundwater quality around the Open Pit, as well as water quality in Moose River from groundwater seepage into the river. Groundwater in the filled Open Pit has the potential to seep to Moose River during the post-closure phase of the Project.”

The TGPM EARD goes on to state:

“During the post-closure period, the deposition of tailings in the Open Pit will affect the water quality in the pit, including the pore water quality in the tailings within the Open Pit. This lower quality water has the potential to migrate toward Moose River via groundwater.”

According to the TGPM EARD, groundwater modelling conducted by Stantec indicates that average concentrations of arsenic and “parameters of primary concern” would not stabilize in Moose River until after approximately **150 years**. Notably, after Atlantic Gold provided similar figures in its EIS for the proposed Fifteen Mile Stream Gold Project, IAAC IRs commented:

*Section 6.5.6.2 of the EIS indicates that the concentrations of all parameters at the property line after 500 years of travel are predicted to be less than the Canadian Drinking Water Guidelines. The average concentrations in the discharge to Moose River stabilize after about 150 years. Based on this definition **it would seem that the effects could be considered significant as 500 years to return to baseline is well beyond a reasonable amount to time [sic] to monitor the site.** (emphasis added)*

#### *Surface water resources*

Section 7.0 of the TGPM EARD addresses potential changes to surface water resources and notes, among other things, that proposed activities could result in changes to surface water quality and quantity. For example, the document states:

*In-pit tailings disposal will potentially interact with surface water resources through alterations of water quality and quantity associated with the deposition of tailings, related associated water management activities, and reclamation and decommissioning activities. [...] As the Open Pit starts to fill with tailings and water, the groundwater flow gradients to the Open Pit will lessen and eventually reverse, at which time water in the Open Pit will seep towards the Moose River. **When the Open Pit infilling is complete, surface flow will be directed to Moose River via a constructed spillway or discharge structure.** [emphasis added]*

These potential changes to groundwater and surface water quality and quantity in Moose River clearly have the potential to adversely affect fish, fish habitat, and aquatic species.

#### *The Project May Cause Adverse Direct or Incidental Effects*

Atlantic Gold’s proposed “modifications” to the pit are not simply physical changes to the structure of the pit itself. What the TGPM EARD is proposing as a “modification” to the Touquoy Mine pit is in large part—it may even be fair to say *is primarily*—the actual use of the pit to store massive volumes of tailings. The potential adverse effects of that aspect of the proposed project (that is, the actual use of the Touquoy Mine pit as a permanent tailings impoundment area—a use that was never contemplated in the original environmental assessment of the project) are discussed at length throughout the TGPM EARD.

As our comments have pointed out, the adverse effects about which we are especially concerned are the adverse effects to local groundwater and surface water that could be caused by using the Touquoy Mine pit as the permanent disposal site for massive volumes of tailings. Those adverse effects include adverse effects on fish, fish habitat, and aquatic species. What are the cumulative effects of the use of the Touquoy Mine pit as the permanent disposal site for massive volumes of tailings and where are they listed in the EARD?

### *Public Concerns Related to Adverse Effects*

As NSE is aware, the documents that have been generated to date for the ongoing environmental assessments of Atlantic Gold's proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream number in the thousands of pages, and many of the documents are highly technical. The TGPM EARD is more than 300 pages long, not counting its appendices. Concerned members of the public who participate in environmental or impact assessment processes rarely have the resources required to review such vast materials comprehensively and assess, on a technical basis, the accuracy and completeness of the information provided by the proponent.

Eastern Shore Forest Watch is deeply concerned about the adverse effects, direct or incidental, that could be caused by Atlantic Gold's proposed modifications to the Touquoy Gold Project. We are especially concerned about the relevant adverse effects that could result from Atlantic Gold's proposed use of the Touquoy Mine pit to store massive volumes of tailings generated by the processing of ore from the existing Touquoy Mine and the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream.

Additionally, in our view, the numerous comments that IAAC, NSECC, and Atlantic Gold have received from the settler public and from Mi'kmaq in Nova Scotia concerning the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream illustrate significant public concerns about the individual and cumulative impacts of Atlantic Gold's activities in this province. This inclusion of Beaver Dam tailings to be dumped into the exhausted Touquoy pit is acknowledged explicitly by the proponent in the EARD in SD 21 - Evaluation of Potential for Aquatic Effects as a Result of Effluent Releases Related to Beaver Dam Mine. We therefore ask that you also take these relevant public comments into account in your assessment of proposed modifications to the Touquoy Gold Project.

### *Cumulative Effects*

Atlantic Gold's comprehensive plans for the Touquoy mine pit should be assessed in their entirety. This requires IAAC involvement. Notably, the environmental assessment regime that exists under Nova Scotia's *Environment Act* and *EAR* does not include cumulative effects assessment as a legislated requirement. As stated previously, we believe that this lacuna in the legislation is both serious and dangerous, and must be corrected with alacrity.

As we have argued throughout this submission, Atlantic Gold's proposed modifications to the Touquoy Mine pit are one part of a four-part cumulative plan, and we are deeply concerned that if all four parts of that plan are not assessed comprehensively and cumulatively, the full potential for adverse direct or incidental effects will not be understood.

### *Proposed Effects on Wetlands Must Be Assessed Cumulatively*

The TGPM EARD makes it clear that the proposed modifications to the Touquoy Gold Project would impact wetlands if they were approved, including a Wetland of Special Significance (as defined within Nova Scotian law and policy) in which Blue Felt Lichen (which is designated as a "vulnerable" species under Nova Scotia's *ESA*) is present.

Importantly, Atlantic Gold's proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream also involve significant proposed alterations to wetlands, including activities that would more appropriately be described as destruction. In our view, all of these proposed effects on wetlands should be assessed cumulatively. As we noted above, the environmental assessment regime that exists under Nova Scotia's *Environment Act* and *EAR* does not include cumulative effects assessment as a legislated requirement. Nevertheless, we strongly urge a cumulative effects assessment if NSE is going to proceed to review this EARD.

### *The Proposed Activities Are in an Environmentally Sensitive Area*

The Touquoy Gold Project and its proposed expansions are situated within an environmentally sensitive area that includes sensitive fish habitat, multiple watercourses, wetlands (including a Wetland of Special Significance), and other forested and vegetated areas that provide significant species habitats and ecosystem services. The Touquoy Mine sits a mere 200 metres north of Scraggy Lake, the effective northern tip of the Ship Harbour Long Lake Protected Wilderness Area and the headwaters of the Fish River Watershed. It is close to the Tangier-Grand Lake Protected Wilderness Area. The other proposed three mines in the cumulation of Atlantic Gold mines weave in and out of other Protected Wilderness Areas. This giant mining project effectively imperils the entire Eastern Shore. A single accident could possibly render it toxic for other, non-polluting activities.



For the purposes of the TGPM EARD, the Project Development Area (“PDA”) “represents the anticipated area of direct physical disturbance associated with construction, operation and decommissioning of the Project” and “comprises the existing Open Pit, the WRSA Expansion Area, the new Clay Borrow Area”, and the area of the proposed new access road. Additionally, the Local Assessment Area (“LAA”) “encompasses the area within which Project-related environmental effects can be predicted or measured for assessment”.

The TGPM EARD identifies a Wetland of Special Significance inhabited by the Blue Felt Lichen, which is designated as “vulnerable” under Nova Scotia’s *ESA*, within the LAA. There is no evidence provided that moving the rare lichens by hand will 'save' them. We request that additional habitat with rare lichens be identified, purchased and donated to a land trust or to the province for protection.

Additionally, it is well known in Nova Scotia that wetlands provide important habitat areas for many wildlife species, including the endangered Mainland Moose. Suitable moose habitat in mainland Nova Scotia is concerningly scarce. The TGPM EARD indicates that Mainland Moose inhabit areas within the vicinity of the Touquoy Mine. We are concerned that expanding the site and using the Touquoy Mine pit as a tailings impoundment area (with its corresponding risks to the local watersheds) could adversely affect this imperilled and culturally significant species. It is (supposedly) illegal to damage habitat habitually used by a species at risk; potential core habitat for moose was supposed to be identified over a decade ago, and L&F have been ordered by the Court to identify potential moose core habitat (14 months ago, and still have not complied with the order). We request that NSE not allow the proposed destruction of moose habitat on the basis that potential core habitat for mainland moose has not yet been identified.

## **Conclusion**

When the Touquoy Gold Project underwent a provincial environmental assessment in 2007, the proposed closure and reclamation plan for the exhausted Touquoy Mine pit envisioned that the empty pit would slowly fill with water and eventually become a “lake”. Remarkably, the Focus Report that DDV Gold submitted in 2007 even went so far as to say that after the exhausted pit had flooded and formed a lake, it would “develop into a viable aquatic habitat”.

In our view, DDV Gold’s early reclamation vision for the exhausted Touquoy Mine pit cannot be reconciled with Atlantic Gold’s comprehensive plans to use the pit as a massive tailings impoundment area. As recent IRs from NSECC, reproduced above, make clear, Atlantic Gold’s

comprehensive plans for the Touquoy Mine pit envision depositing such large volumes of tailings that the current capacity of the pit may not even be able to hold them.

When the Touquoy Gold Project underwent its provincial environmental assessment in 2007, the project was not assessed with the understanding that the exhausted open pit would be used as the permanent impoundment area for millions of tonnes of tailings. As we understand Atlantic Gold's comprehensive plans for the Touquoy Mine pit, the proposed modifications described in the TGPM EARD will not exclusively enable the pit to store tailings from the processing of ore that is currently stockpiled at the Touquoy Mine site but will also enable the use of the Touquoy Mine pit as the final repository for tailings generated by the proposed new projects at Beaver Dam, Cochrane Hill, and Fifteen Mile Stream.

In our view, these proposed "modifications" go far beyond what the average person would consider to be modifications of an existing project. These modifications are integral to an entirely new vision for the Touquoy Mine pit, and we believe that vision requires, at the very least, a federal impact assessment in order to be properly understood.

Failing a federal impact assessment, we strongly urge NSE to refuse to allow Atlantic Gold to manipulate the system, to pick and choose the least onerous environmental assessment in order to obfuscate its plan for a giant four-piece mine along the Eastern Shore.

, August 13, 2021

## Chapter 2

On July 16<sup>th</sup>, 2021 Atlantic Mining NS Inc. (Atlantic Gold) registered the Touquoy Gold Project Site Modifications Environmental Assessment Registration. This proposal is concerning for a number of reasons.

### **Part A - Transparency and the manipulation of the NS Environmental Assessment Process:**

The intent to use the permitted Touquoy mine site to process additional satellite gold deposits (Cochrane Hill, Beaver Dam and Fifteen Mile Stream), which are within relatively close proximity to Touquoy, was developed to lower costs and impacts at each of the individual sites through the use of a single processing facility. This strategy has been part of the Atlantic Gold promotional story for many years.

For example, in a 2014 SEDAR News Release, Spur Ventures (predecessor of Atlantic Gold) stated “The development of Touquoy represents the first stage in a conceptual plan for resource exploration and expansion and combined development and operation of Atlantic’s properties, as well as potential consolidation of additional Meguma Terrane deposits.”<sup>1</sup>

And in a corporate presentation at the Precious Metals Summit in Zurich, November 2015 clearly outlines the consolidation strategy<sup>2</sup>:

- “Acquisitions of Atlantic Gold NL & Acadian in Q3 2014 consolidated ownership of 4 known open pittable deposits (Touquoy, Beaver Dam, Cochrane Hill, and Fifteen Mile Stream (FMS)) in truckable proximity of a central processing facility to be built at Touquoy
- Completed Feasibility Study on the Moose River Consolidated (“MRC”) Project, comprising the Touquoy and Beaver Dam deposits
- Touquoy has all major permits in place
- Centralized processing facility at Touquoy minimizes environmental impacts & requirements
- Proven and Probable Reserves at MRC: 760,000 oz @ 1.44 g/t Au
- Resources at Cochrane Hill and FMS deposits allow for significant reserve growth potential
  - M&I Resources (Cochrane Hill and FMS): 252,000 oz @ 1.8 g/t Au
  - Inferred Resources (Cochrane Hill and FMS): 882,000 oz @ 1.6 g/t Au
- Additional known deposits may be acquired to further supplement mine life”

There are additional corporate references.

Atlantic Gold ‘s strategy is based on their argument that ‘mining’ at the satellite deposits is essentially equivalent to aggregate quarrying and avoids impacts associated with milling,

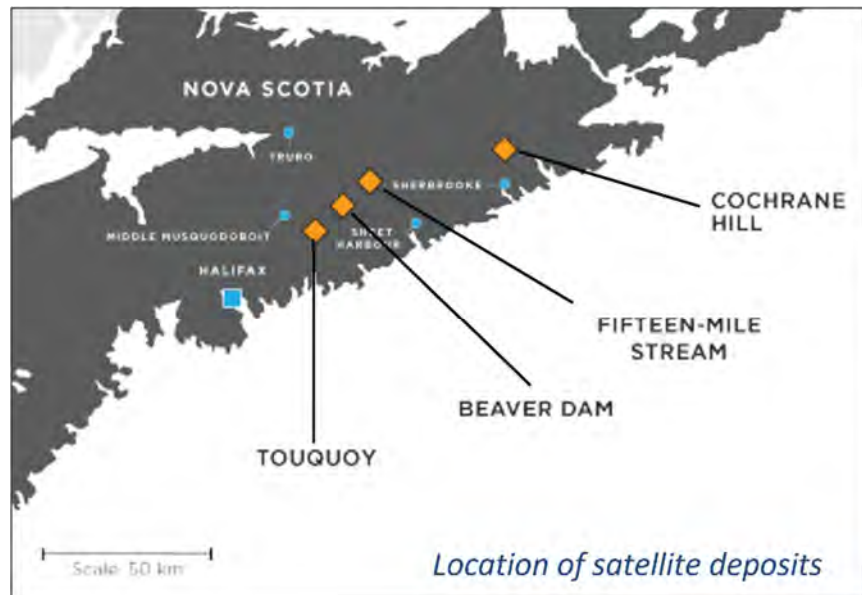
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<sup>1</sup> Atlantic Gold Corporation (previously Spur Ventures Inc.), Apr 8 2014 19:31:10 ET News release – English (SEDAR website accessed 2021.08.13)

<sup>2</sup> [https://staticcdn1.gowebcasting.com/documents/files/events/event\\_00002100\\_u4bF0ceL.pdf](https://staticcdn1.gowebcasting.com/documents/files/events/event_00002100_u4bF0ceL.pdf) accessed August 5th, 2021

tailings, chemical handling, etc. However, those potential impacts are simply transferred to the Touquoy site, where waste accumulates, and potential impacts increase from the substantial amount of material that needs to be trucked from each of those deposits to Touquoy.

This strategy is essentially a divide and conquer approach on several levels. The clear intent is to create shareholder value from the consolidation of at least four very low concentration gold deposits. The company significantly benefits from the consolidated approach as the mine life at Touquoy can be extended by processing ore from additional deposits. The divide and conquer aspect flows from the separate assessment of individual



projects when the intent is clearly a very large project, stretching across a quarter of Nova Scotia. This approach seems to be an attempt to skirt social and environmental discussions on such a large project. The perceived impacts appear to be less with the argument that no additional processing is needed, just a modification to an approved containment facility.

At this critical stage, not considering the Touquoy mine for what it is, a multi-component mine with accumulating impacts and extended imposition on local residents and communities sets, what we believe to be an unacceptable precedent. Modifying the Touquoy project without a full assessment that includes the additional deposits that have been publicly part of the strategic plan opens the door for additional piecemeal 'modifications' and with a precedent being set, we are concerned this could happen several more times. Consideration must be given to the fact that the company is actively exploring other former gold deposits to be incorporated into their portfolio.

Another issue at the corporate level is the seemingly contradictory information in the provincial Environmental Assessments Registration Documents (EARD) and the federal Environmental Impact Statements (EIS) for Atlantic Gold's projects. Specifically, Atlantic Gold's EIS for Beaver Dam stated that tailings would be deposited in the tailings facility. Now a modification is required to accommodate those tailings.

Regardless of the differences in the provincial and federal assessment documents, Atlantic Gold has contemplated the use of the Touquoy pit to store tailings from the other three satellite properties which are all undergoing joint federal – provincial reviews as a strategy to reduce

costs and increase the feasibility of developing each mine. The request for a modification at this stage lacks transparency at the corporate level illustrating that little trust can be afforded to anything presented from Atlantic Gold with respect to environmental and social issues. This is a glaring divide and conquer style management approach. Atlantic Gold has not been completely honest regarding the overall intent of their interest in Nova Scotia. Trying to convince government and the public that these are all separate projects – one main mine with three other *feeder* ‘quarries’ is not consistent with the message to investors of a consolidated project.

## **Part B – Comments on sections 1 to 4**

### *Purpose and Need for the Project*

In Section 1.4, the rationale is explained as, “These are common occurrences in open pit mining whereby the initial planning is based on geological modelling and the waste-ore cut off limits are further refined as additional data is collected during mining and influenced by fluctuating economic factors.” This is another example of piecemeal planning to minimize impacts and ask for expansion later when needed. Simple calculations and scenario planning should have provided sufficient evidence to plan for additional tailings management accommodations given the hope of better economic and geological conditions over time. Instead, the tailings management facility was designed at the minimum projected volume with no buffer or reserve for additional capacity. We feel this is a significant oversight in the original planning and creates great concern with respect to other minimum design criteria that were part of the original EARD.

The reality is that building additional tailings management facilities to handle the consolidated project’s tailings would be more costly and require additional environmental approvals. The company’s shareholders are the main beneficiaries.

### *In-Pit Tailings Disposal*

Section 2.2.1, states that “Once water quality meets regulatory reclamation criteria without treatment, the site is prepared for closure in accordance with the Touquoy Reclamation Closure Plan.”

Please provide more information on:

- the contingency plan if the pit water quality exceeds the criteria.
- how droughts and excessive precipitation events may impact pit water quality.
- on the proposed mitigative measures to be implemented if pit water exceeds quality criteria.

Additionally, more information is required regarding subaqueous tailings stability. Provide information on best practices and alternative approaches to increase waste stabilization.

### *Project Alternatives*

In Section 2.6 there is essentially no substantial information regarding the alternatives to in-pit tailings disposal. There are a couple of sentences regarding raising the existing tailings management facility height with some additional modifications. There is no discussion about new technologies or approaches that could be potentially employed. The lowest cost, easiest route is touted as THE only reasonable action. The proponent even states that “Proposed modifications to the Touquoy Gold Project are needed to support ongoing operation. Without implementation of these modifications as proposed, operation at the Touquoy Mine Site may be interrupted or terminated.” Without some discussion and rationale discussion (not a threat) on potential alternatives, how can residents even evaluate this section?

Please provide more information on possible tailings management alternatives and treatments.

### *Surface Water and Groundwater Monitoring*

Section 3.3.4 discusses predicted impacts to surface water flow as a result of interception of groundwater by the open pit. Observations also identified reduced flow rates in Moose River were greater than dewatering rates from the open pit and therefore cannot be solely attributed to base flow reductions in Moose River. The section concludes by stating that the open pit has less than a 5% influence on base flow in Moose River and that there are no adverse affects. What this points out in our opinion is that climate change has not been adequately incorporated into scenario planning.

More information around climate change modelling (increased as well as decreased groundwater flow) should be required to assess the potential range of effects.

In light of the most recent Intergovernmental Panel on Climate Change Report, and the uncertainty of climate modelling, please provide more information on design and contingency measures with respect to a range of possible flooding scenarios associated with heavy rainfall events.

### *Community Engagement and Social Benefits*

Section 4.0 and specifically Section 4.2 discuss Community Engagement. Managing Partner and CEO of St. Barbara Ltd. in a letter to shareholders states that their “deep-rooted sense of care extends to the wellbeing of our communities and our commitment to diversity.” However, over the last 14-15 years various operators have repeatedly marginalized groups that oppose the development of large open pit mines that may impact the local area, even to this day. Even though a Community Liaison Committee was established, the committee consists of supporters of the developments. Non-supporters were occasionally invited to discussions or presentations in isolation. This is a divide and conquer style engagement approach.

Furthermore, the lack of meaningful engagement presenting a truer version of the desired activities at Touquoy has resulted in a piecemeal approach to engagement, not to mention

environmental assessment as discussed above. If the company had been transparent all along and worked to discuss impacts in a way the community could understand and provide safe and reasonable opportunities for discussions with knowledgeable experts in a timely fashion, the rush to respond to the proposed modifications may have been palatable. As it stands, the provincial government environmental assessment process and associated regulations do not adequately allow for the full understanding of the development or timely review. Regulations, in this case do not create a reasonable and fair playing field for communities. It favours the developer and penalizes communities.

Consider that Atlantic Gold had many years to develop their plans, hire top experts to survey, compile, and digest highly technical information to support mining and manage environmental risks at a cost of hundreds of thousands of dollars... more likely millions. The lack of meaningful engagement is a clear indication of Atlantic Gold's intent to marginalize those who may not support the multi-phase development, into the foreseeable future. Also, consider sheer volume of information in reports and studies that is available for review. A review of even a portion of the 1700 plus pages by an expert is overwhelming.

Asking residents in communities with very limited knowledge or understanding of mining, how the environment actually works or how activities may ultimately impact their environment or lives in such a short period of time (according to regulation) is an impossible and completely unfair task.

The Impact Assessment Agency of Canada has moved from environmental assessment to impact assessment to better include social and health impacts, among others. This is a step towards sustainability and fairness. (<https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/impact-assessment-act-and-ceaa-2012-comparison.htm>)

Atlantic Gold and its predecessors have been exploring and developing Nova Scotia gold deposits since the early 2000's. There are supporters of these developments and there are non-supporters. Supporters are generally those who directly benefit from jobs, those who provide products or services and some organizations that benefit from charitable donations from Atlantic Gold. Associated benefits are easily identifiable as they are immediate and tangible.

Section 4.2.1 discusses a Public Perception Study that was conducted by Atlantic Gold to gauge the support for gold mining activity in the province. Appendix B 1 presents the results of this survey which states that eight out of ten people in the province support gold mining in the province. The most important factors were being environmentally responsible and contributing to the economy. More would further support gold mining if there were "no negative effects on the environment".

This study clearly indicates the lack of respect for local residents. Most of the respondents didn't live in the area of influence. They are not impacted in any way by mining activities. There is no good assessment of the public perception of gold mining by Atlantic Gold in the local area. This is a poor attempt to illustrate local support for Atlantic Gold's activities.

## CHAPTER 3

This chapter concentrates on in-pit tailings disposal. This is by no mean the only concern we have (the effects on watercourse #4 are another one, for example), but it is the modification that has the most environmental impacts, and that has a high potential to become a major pollution problem for decades after mine closure, and a big threat to the ecological integrity of the Ship Harbour Long Lake Wilderness Area and the communities downstream from the mine.

### **In-Pit Tailings Disposal Quantities**

The proposal calls for the disposal of 6.03Mt of tailings in the open pit. At the assumed density of 1.3, this quantity has a volume of 4.6 Mm<sup>3</sup> or roughly half the estimated volume of the pit to the 108 m elevation. Incidentally, this is very different from the Touquoy Integrated Water & Tailings Management Plan for the Fifteen Mile Stream Gold Project published in February 2021 by Stantec Consulting Ltd, which considers tailings deposition of 0.411 Mm<sup>3</sup>, or about a 10<sup>th</sup> of the total proposed here. Tailings from which operation is the present EARD (6.03Mt) considering? On the other hand, the statement on p. 2.5 “The top of the tailings will be maintained to 2 m below the spillway elevation” implies that the open pit will be filled almost completely with tailings with very little water depth, which is not what Appendix A.1 shows.

Tailings from which operation is the present EARD (6.03Mt) considering? The proponent should provide a time frame, water budget and tailings mass balance for the in-pit tailings disposal in relation with the geographical sources (satellite mines) of the ore processed.

This EARD is trying to sell the disposal of the mine tailings under water in the open pit as an “environmentally acceptable solution to tailings management at the Mine Site” (p. 2.14) with little or no justification. This proposal is in sharp contrast to the original EARD which asserted that the best tailing management was in a pond lined with impermeable clays to avoid seepage to ground water, that would be capped with clays and revegetated at closure to avoid surface water contamination and where metal-rich slurry precipitated in the polishing pond would be buried in “cells” lined with impermeable clay, again to avoid contact with meteoric water. None of these precautions will be achieved in the water-filled open pit. The metal-rich precipitates will be mixed with the tailings, interacting with the pore water, and through diffusion and advection, with the supernatant ‘lake’ water.

### **Tailings chemistry**

“The majority of the residual cyanide reagent introduced to the tailings during ore processing will be passively degraded and hydrolyzed to carbon dioxide and ammonium during storage in the tailings pond. Similarly, this will be expected to occur for the tailings being stored in the Open Pit” (p. 6.31). Degradation of the residual cyanide should not be simply “expected”, but proven to happen.



The original EARD states on page 55: "Upon deposition in the TMF, tailings pH trends downwards from 9 to 7 and the cyanate ion created by the INCO SO<sub>2</sub>/Air process breaks down rapidly under the effects of hydrolysis and sunlight into ammonium and carbon dioxide. Remaining low levels (<10ppm) of free and weak acid dissociable (WAD) cyanide under the same influence volatilize into barely detectable amounts of hydrogen cyanide gas, HCN, where its dilution and eventual degradation in the atmosphere render it harmless. This natural degradation is integral to the total cyanide destruction process and will reduce concentrations of cyanide in tailings water from 10 ppm to less than 1 ppm CN (WAD) in 30 to 45 days". In the open pit the deposition will be subaqueous thus limiting the amount of sunlight and oxygen available to breakdown cyanide and cyanate. Appendix A.1 states "the slow filling of the pit over time, the residence time and exposure to sunlight will increase, thus enhancing the natural UV degradation of cyanide and improving water quality in the pit lake" (p. 36). Yet this is bound to be less than in the case of subaerial tailings deposition and oxygen will be limited.

The proponent should explain how residual cyanide and the cyanate in the in-pit tailings will be reduced and to what concentration, given the limited oxygen and sunlight availability under a water cover.

"Tailings may be chemically and physically engineered and deposited as a thickened slurry that consolidates as a relatively impervious material (relative to the Open Pit surround)" (p. 2.3)

The proponent should explain what is meant by "impervious"; impervious to what? What are the chemicals used? What does physically engineered entail?

The treatment of the tailings is mentioned in the most cursory of terms and does not go beyond general goals of:

1. limiting oxidation: "A water cover also inhibits further oxidation of sulphide minerals and acts as a barrier to the diffusion of atmospheric oxygen to the submerged sulphides (MEND 2015)" (p. 2.14).
2. controlling the pH: "Throughout operation as the Open Pit fills and becomes a lake, it will be treated as a batch reactor with the objective of adjusting the pH to precipitate metals thus improving discharge quality" (p. 2.4).

Yet this is a gross over-simplification of the system. In reducing conditions (lack of oxygen) many metals are more soluble, regardless of pH. As mentioned before, a lack of oxygen will preserve more cyanide and cyanate in the tailings. Even if the tailings are treated when deposited, the pore water chemistry of the tailings will evolve toward a steady state which may be very different; for example, sulfide minerals are likely to dissolve over time, acidify the pore water and the acid will leach precipitated metals back into solution. The probable chemistry of the tailings water is mentioned only in the Appendix D which refers to Lorax (2018) a document

which has not been provided with the present EARD as a supporting document or Appendix. We found it in a submission to the Impact assessment Agency of Canada.

The Lorax (2018; p. 3.5) document summarizes the complex chemical reactions that will take place after the closure of the mine:

“Following cessation of the tailing discharge, post-depositional processes will become increasingly important over time in the saturated tailings. Depending on the mineralogy of the tailings materials and the aqueous regime, these post-depositional processes may attenuate or release contaminants within the TMF pore water. The basis for the potential release relates to the chemical instability of solid phases in the saturated portions of the TMF in the long-term in response to contrasting redox conditions in the mill (basic pH, oxidizing redox potentials) and TMF environments (circum-neutral pH, low redox potential). In this regard, both redox- and pH-dependent mechanisms can promote the dissolution of tailings phases. It can also be expected that various attenuation mechanisms will take place within the saturated pore spaces and as the water exits the TMF along groundwater pathways. For example, the gradual decay of residual cyanide species and ammonia is expected in inactive tailings ponds due to these species being unstable under atmospheric conditions (Devuyst et al., 1989)”.

The Lorax (2018) ‘Source Term concentrations’ are based on a duplicate test using one run-of-the-mill sample from the Touquoy tailings pond for barely six months in 2018. This is woefully inadequate and not statistically significant to predict geochemistry of tailings of ore from other mines over decades. Indeed Lorax (2018) concludes by stressing the “uncertainties with respect to the long-term behaviour of these materials” and recommends more studies to better characterize the geochemical behaviour of the tailings over time. To date, almost 3 years have passed since the first test and much more data and long-term tests should be available.

The proponent should provide detailed data on the initial and future geochemistry of the tailings to be dumped in the open pit, including sulfide minerals content and reagents nature and amounts used to treat the tailings (such as copper sulfate for example). Please provide pH and redox diagrams (Eh/pH diagrams) for each element showing what minerals and solute concentration levels can be expected for the likely range of pH and oxidation.

The proponent must explain “batch reactor”: Water treatment implies good mixing. In such a large batch as the open pit water, inhomogeneity can be expected. How will mixing be achieved in such a large pit? How and where will the water chemistry be monitored to adjust treatment?

## **Groundwater**

### *Spatial Boundaries*

The Mine is located at the head of the Fish River Watershed, which means that mine operations will affect all the water bodies downstream of its location, including the ground water which

flows downhill as well as surface water, albeit slower. Ground water feeds water courses through the rivers and lake beds and as such is an integral part of the watershed.

The proponent should explain why Local and Regional Assessment Area, as shown in Figure 6, are limited to the south and do not encompass the entirety of the Fish River-Lake Charlotte Watershed (IEL-5)?

#### *Definition of significance*

“The Project will not result in groundwater quality that exceeds the GCDWQ for a period of 30 days or more at existing or future groundwater users located outside of the PDA. Because of this, residual effects of the Project on groundwater resources are predicted to be not significant” (p. xiii).

On what authority is the significance of water quality defined as when it cannot meet the Guidelines for Canadian Drinking Water Quality for a consecutive period exceeding 30 days? It will be very significant for well users if they cannot drink their well water even if it is for shorter periods but possibly repeated. Dismissing this eventuality as not significant is unconscionable.

The ground water model is based on many assumptions, lacks some essential data and has some questionable results.

Table 7.24 indicates a net groundwater inflow into the pit even after it is full (post closure). Yet if the water level has reached the brim of the pit, it has presumably reversed the dewatering of the surrounding ground caused by the creation of the open pit and the surrounding water table should be back to approximately the elevations of pre-development conditions (Figure 6.3), meaning a flow out of the pit into downstream groundwater and surface water bodies. Furthermore, seepage of groundwater has been considered only for Moose River.

The proponent should explain why the model predicts a net inflow of groundwater into the pit after closure and why the seepage of groundwater from the pit into waterbodies to the south (Fish River, Otter Dam flowage, Rocky Lake, Scraggy Lake and beyond) has not been considered, even though they are at lower elevations than the full pit water level.

The data on hydraulic conductivity is scant to non-existent for the competent fractured bedrock at depths below 10 m (Figure 3.1, Appendix D.1) and its values were assumed. Moreover, faults have been mapped in the area of the open pit (Figure 2.4, Appendix D.1) but “Faults in the bedrock were not specifically tested to assess the hydraulic conductivity at the Touquoy Mine Site” (p. 3.2, Appendix D.1). Assumptions were also made about the fracturing of the bedrock due to blasting. This makes the model tentative and predictions very uncertain.

Given the limited data and the numerous assumptions the groundwater model cannot be used to ascertain the path and speed of tailings pore water seepage into ground water. The proponent should make additional comprehensive measurements and field tests to evaluate with more certainty the seepage of tailings pore water into the surrounding groundwater. Apparently, this is underway at present (summer 2021, p. 6.36), but of little help in evaluating this EARD.

### *Mitigation*

The only mitigation proposed is to “use standard bedrock grouting methods on high permeability fractures along the wall of the Open Pit to prevent migration of groundwater”(p. 6.26). This sounds like a makeshift solution unlikely to be sufficient given the size of the open pit, and a far cry from clay lining used in the TMF.

The proponent should explain what standard bedrock grouting methods involve, using what material, and provide case examples demonstrating the efficacy and longevity of these methods.

### *Monitoring*

“The objectives of the ongoing groundwater monitoring program are to: [...] allow for adaptive management and identify the need for any new mitigation measure” (p. 6.38)

The problem with this statement is that there will be no possibility to stop the contamination of ground water by the tailings pore water: once tailings are deposited in the open pit, it is too late to grout more or put another type of barrier, the seepage cannot be collected and treated, and settled tailings can hardly be resuspended to be chemically treated. No amount of monitoring is going to stop the contamination.

The proponent should discuss what kind of new mitigation measure could be taken if monitoring shows that groundwater contamination is taking place, especially after closure of the mine.

### **Surface water**

In the present operation, tailings water effluent is treated in a polishing pond using iron oxide coprecipitation to remove heavy metals and other contaminants from the water. This water is further treated in geotubes and an engineered wetland before being released into Scraggy

Lake. Despite all these precautions water quality monitoring undertaken by Eastern Shore Forest Watch has detected increasing Arsenic concentrations in Scraggy Lake.

None of these precautions are taken for the outflow of the pit into Moose River, simply a spill way and a reliance on dilution of the pit water by the Moose River waters (the 100 m mixing zone). It is only mentioned that “Should water treatment still be necessary, effluent from the Open Pit will be pumped for treatment to an effluent treatment plant and discharged to the Moose River receiving environment” (Appendix A.1 p. 36).

The proponent should provide details on the location and particulars of the treatment plant and what the treatment will consist of.

“Once water quality meets discharge criteria (i.e., representing closure conditions), surplus water in the Open Pit will spill to a channel and discharge to Moose River. Discharge water quality will continue to be monitored against discharge criteria to identify if the pit should continue to be pumped and treated at the effluent treatment plant prior to discharge to the Moose River” (Appendix A.1, p. 36).

The proponent should give an indication of the frequency of monitoring. Most data presented is monthly average concentration but within a month the concentration can fluctuate significantly and exceed the MDMER limits. Please explore the possibility of continuous monitoring of some indicator parameters such as water pH, conductivity or oxygen level to detect possible exceedances quickly.

A spill way is in no way capable of dampening these fluctuations while an artificial wetland might be. This would be a more ecological way to connect the pit to the Moose River, considering that, in effect, the pit becomes part of the Moose River watershed.

The pit water quality is only discussed in term of individual concentrations. However, it should be analyzed in an ecological way as the water quality will be controlled in large part by the diffusion of tailings pore water into a relatively shallow ‘lake’. Will this lake be acidic, or maybe anoxic because of oxidation of the tailings? Will a lot of eutrophication take place because of the high concentration of dissolved nitrogen species? Will it be warm, significantly more than the Moose River? These characteristics will strongly influence the viability of fish, invertebrate and other aquatic life in the receiving Moose River and beyond, potentially causing algal blooms, anoxic conditions, water too acidic for fish survival and reproduction, or a temperature barrier for fish migration in Moose River at the spillway location.

The proponent should characterize the pit lake ecology after closure and how it will influence the Moose River watershed. Please discuss how wildlife will be protected from potentially toxic conditions in the lake, such as preventing migratory ducks from landing on the lake or wildlife drinking there. Chronic low level contamination effects should be also considered.

## Conclusion

This EARD is sketchy, based on modelling with many assumptions and insufficient data. It ignores the possibility of high pollutants concentration by averaging measurements and reporting only monthly or yearly averages and using those averages in the models. The post-closure monitoring and mitigation is not described but merely mentioned, even if water treatment is projected to be necessary for 28 years from commencement of tailings deposition in the exhausted open pit (Appendix A.1, p. 37).

In its present form the proposal does not demonstrate due diligence and a precautionary approach from the company. Disposing of tailings in the open pit is very likely to result in contamination and environmental degradation that Nova Scotians will have to contend with for decades, that will prove expensive and will more than offset any perceived benefit to Nova Scotian through job creation.

The project is in direct contradiction with the province objectives laid out in the Sustainable Development Goals Act:

<https://nslegislature.ca/sites/default/files/legc/PDFs/annual%20statutes/2019%20Fall/c026.pdf>

and the Climate Change Plan for Clean Growth (<https://cleanfuture.ca/wp-content/uploads/2021/05/SDGA-and-Climate-Change-Plan-Clean-Growth-Discussion-Paper-English-1.pdf>) .

The Touquoy gold mine and the three proposed satellites cannot be considered a sustainable development as the mine life time is short. Its operation increases the CO2 emissions of Nova Scotia and degrades the surrounding land and water resources and habitats, to say nothing of a devastated footprint that will not regrow into a forest, a lake and a recreation area for many generations, despite what the company claims.

August 15, 2021

## Chapter 4

### **Need for clarification around the anticipated dates for operation of the mine and its final decommissioning incorporating these modifications (if approved)**

The planned chronology around this modification plan and the applicable regulatory steps and permitting requires clarification.

For example, **initially**, Atlantic Gold applied to NSE for an IA amendment to allow for changes to the mining operation including the **expansion** of the TMF.

On this basis, NSE took the decision for a Class I Environmental Assessment.

**Subsequently**, AG decided instead to seek approval for an amended modification plan which includes amongst other elements, the decommissioning of the existing TMF and the use of the open pit for TMF **and** future tailings disposal when the TMF is due to reach capacity for tailings treatment and storage in March 2022. Mining began in 2017. Commercial production began in 2018. Atlantic Gold states that the open pit will be exhausted in 2022 and that the TMF has been filled faster than originally planned due to the fact that 22% more tonnes of ore are currently required than originally estimated to meet the original production target for ounces of gold. Although not mentioned in the document (only in the supporting documentation), Atlantic Gold has plans to process ore at Touquoy from potentially three **additional satellite mines on the Eastern Shore**: Beaver Dam, Fifteen Mile Stream and Cochrane Hill. There are a few references (EARD page 17) to “accommodating future growth”. Confusing the issue, in Table 4.2, Summary of Stakeholder Concerns raised during an Atlantic Gold Webinar May 2021, Atlantic Gold stated in a response to whether the modifications would extend the duration of the Touquoy Mine:

“The modifications will allow AMNS to continue operating the mine but **will not extend the life of the mine**” The current IA dated November 4, 2020 for the Touquoy site currently extends to March 28, 2024 (EARD, July 2021).

Despite Atlantic Gold’s reluctance in this approval application to link its modification project with the planned satellite mines (Beaver Dam, Fifteen Mile Stream and Cochrane Hill), Supporting Document, SD-21, Evaluation of Potential Aquatic Effects as a Result of Effluent Releases related to Beaver Dam Mine (Intrinsk Consultants), January 25, 2019, describes Beaver Dam Mine as “a satellite surface mine operation to the Moose River Consolidated Mine”.

There is a need for more clarity around the proposed schedule of dates for the various components of the modification plan and for future ore processing from the satellite mines under review in parallel (and subject to federal and provincial assessment). This clarity is required to better assess the adequacy of plans to control and prevent environmental degradation as a result of these modifications and the additional ore processing from the satellite mines these modifications would allow, if approved. Due to the confusion around these issues, a request for federal designation was made on July 23, 2021 by Eastern Shore Forest Watch and a number of other conservation organizations. A decision by the federal Minister of Environment and Climate Change Canada is expected by the end of October 2021.

**There is relatively little in the documentation to describe specific steps planned for the decommissioning of the TMF which represents a significant change in the use of the 130 ha area from earlier approvals.**

The EARD states that the 2011 Preliminary Reclamation Plan was updated as required by regulation in November 2020 and will be updated again after regulatory approval of the modifications. However, there is relatively little information provided about decommissioning of the TMF which is a change from the original plans

Touquoy's Reclamation Plan (last version 2020) outlined in Supporting Document SD-16 prepared by Stantec, doesn't account for dewatering of the TMF and transfer of tailings from current mining operations as well as tailings stored in cells from historic operations to the mine pit. This represents a substantial change in use for the TMF. Presumably, the change in use and decommissioning will necessitate water drawdowns from Scraggy Lake. Fluid contents of the TMF will be redirected (pumped?) from the TMF to the open pit. How much extra water will this take beyond the original reclamation plans?

Supporting documents do not include specific, **incremental** water requirements for TMF decommissioning and reclamation. Additional water drawdowns from Scraggy Lake will have implications for fish and fish habitat. The Supporting Document SD-17 (Stantec study) focuses only on the potential impact of dam failure south of the TMF and the capacity of the lake to meet water requirements for the extension of mining operations. It should be noted that the water withdrawal permits extend to 2027. Further, there is little specific information about this change of use and reclamation implications in terms of impacts on ground and surface water around the TMF, and on the constructed wetland between the TMF and Scraggy Lake, nor about the incremental impact of drainage into Scraggy Lake itself. Further, there is scant information about the timing and sequencing of the decommissioning.

Although **DFO has expressed concerns** on the impacts of the revised operations on Moose River (flow reductions measured at SW-2 in particular), and effluent implications (cyanide and arsenic levels) as well as impacts on Watercourse #4 adjacent to the to-be-expanded Waste Rock Storage Facility, they have not focused on the specific implications of this change in function and reclamation of the TMF for Scraggy Lake.

### **Impacts on Fish and Fish Habitat**

The EARD and Focus Report that were prepared for the Touquoy Gold Project when it underwent a provincial environmental assessment in 2007 suggest using the Touquoy mine pit to store tailings may adversely affect fish, fish habitat and aquatic species. The EARD noted several watercourses in the vicinity of the Touquoy Gold Project, including Fish River and Moose River (Footnote 1). Appendix K of the EARD, which provided wetland evaluations, repeatedly described Fish River and Moose River as having "sensitive fish habitat" (Footnote 2).

Multiple sections of the TGPM EARD indicate that Atlantic Gold's proposed modifications to the Touquoy Gold Project could adversely affect **fish, fish habitat, and aquatic species**. As the document states:



“Fish and fish habitat have the potential to be affected by Project-related changes to groundwater resources (Section 6.0), surface water resources (Section 7.0) and terrestrial environment (e.g., wetlands) (Section 9.0) through effects such as the removal of riparian vegetation, alterations to stream flow, introduction of sediments and contaminants of potential concern (COPC), alteration of groundwater quantity and quality, and water management activities that result in changes in water levels in surrounding waterbodies” (Footnote 3).

Notably, the TGPM EARD acknowledges that Atlantic salmon are “known to occur in Moose River”, (Footnote 4) and it lists 13 species of fish that are “confirmed to be present in the upper Fish River Watershed”, all of which are also “assumed to be present in Moose River” (Footnote 5). Those species include the American eel. While all of the species identified are ecologically valuable, it is worth emphasizing that American eel and Atlantic salmon have special cultural significance for the Mi’kmaq of Nova Scotia and are also species of conservation concern.

Section 6.0 of the TGPM EARD addresses potential **changes to groundwater resources** and notes, among other things, that proposed activities are expected to reduce the baseflow to Moose River and may result in changes to groundwater quality as well as quantity (Footnote 6).

The document states:

“The deposition of tailings into the exhausted Open Pit has the potential to interact with groundwater quality around the Open Pit, as well as water quality in Moose River from groundwater seepage into the river. Groundwater in the filled Open Pit has the potential to seep to Moose River during the post-closure phase of the Project” (Footnote 7).

The TGPM EARD goes on to state:

“During the post-closure period, the deposition of tailings in the Open Pit will affect the water quality in the pit, including the pore water quality in the tailings within the Open Pit. This lower quality water has the potential to migrate toward Moose River via groundwater.”

According to the TGPM EARD, groundwater modelling conducted by Stantec indicates that average concentrations of arsenic and “parameters of primary concern” would not stabilize in Moose River until after approximately 150 years (Footnote 8). Notably, after Atlantic Gold provided similar figures in its EIS for the proposed Fifteen Mile Stream Gold Project, the Impact Assessment Agency of Canada IR commented:

“Section 6.5.6.2 of the EIS indicates that the concentrations of all parameters at the property line after 500 years of travel are predicted to be less than the Canadian Drinking Water Guidelines. The average concentrations in the discharge to Moose River stabilize after about 150 years. Based on this definition it would seem that the effects could be considered significant as 500 years to return to baseline is well beyond a reasonable amount of time [sic] to monitor the site.”

Section 7.0 of the TGPM EARD addresses **potential changes to surface water resources** and notes, among other things, that proposed activities could result in changes to surface water quality and quantity (Footnote 9). For example, the document states:

“In-pit tailings disposal will potentially interact with surface water resources through alterations of water quality and quantity associated with the deposition of tailings, related associated water management activities, and reclamation and decommissioning activities. [...] As the Open Pit starts to fill with tailings and water, the groundwater flow gradients to the Open Pit will lessen and eventually reverse, at which time water in the Open Pit will seep towards the Moose River. When the Open Pit infilling is complete, surface flow will be directed to Moose River via a constructed spillway or discharge structure.” (Footnote 10) [emphasis added]

**These potential changes to groundwater and surface water quality and quantity in Moose River clearly have the potential to adversely affect fish, fish habitat, and aquatic species.**

The potential threats to fish, fish habitat, and aquatic species are illustrative examples only: the TGPM EARD raises several other concerns about other adverse effects to these important species and habitat areas.

### **Advances in Fish Detection Technology**

Since the original environmental assessment work including the provincial Focus Report for this mining operation was completed in 2007-2008, research regarding the detection of fish species and assessments of their habitats has progressed. Such progress includes new methodologies for determining where fish species are present as well as their required habitats particularly in areas where they would likely be present but are otherwise difficult to detect with traditional methods. Current technologies include: electrofishing (a more established methodology); drone photography; remote sensing; acoustic telemetry; and, more recently, environmental DNA (eDNA). Supporting Document 16, Fish Habitat Assessment in Moose River in the Vicinity of the Existing Open Pit, December 2020, does outline up-dated survey work conducted by Stantec for Atlantic Gold. However, this work relies on established methodologies which are not as sensitive to the presence of salmonids (Atlantic salmon and brook trout in particular), and other species of conservation concern as more recent approaches. The research that was conducted by Stantec was during the month of November with snow-covered banks and turbid water that limited observation.

A recent study by the Nova Scotia Salmon Association (NSSA) employing eDNA methodologies, “Characterizing Water Chemistry and the Distribution of Atlantic Salmon in Nova Scotia’s Eastern Shore based on Environmental DNA (eDNA)”, has established that Atlantic salmon are present in various life stages all along the Eastern Shore and are using fresh and marine water habitats for various phases of their life cycle. The study includes smolt tracking from restoration projects as well the use Atlantic salmon make of coastal rivers and habitats more generally. This work is particularly relevant to fish and fish habitat in watersheds that are connected to coastal marine areas such as the **Eastern Shore**. The Intrinsk study cited above, and elsewhere in the EARD supporting documentation states that “the Fish River Watershed river system is significant for trout, gaspereau and Atlantic salmon populations”. The Moose River eventually drains into Lake Charlotte and salt water via Ship Harbour River. It should be noted that the NSSA eDNA study identified the presence of salmon in the Ship Harbour River which confirmed historical electrofishing surveys conducted by DFO in 2009 thus establishing

their continuing presence. All this suggests the **need for precaution** in the design of environmental protection regulations pertaining to the main Touquoy gold mining facility on the Eastern Shore, as well as its satellite surface mines, Beaver Dam, Fifteen Mile Stream and Cochrane Hill.

NSSA has also embarked on an additional project W.A.T.E.R. (Watershed Assessment Towards Ecosystem Recovery) involving eight watersheds across the province including 4 on the **Eastern Shore** (West River Sheet Harbour, Musquodoboit River, Moser River and St. Mary's River). The project targets five species of concern, two of ecological, cultural and Aboriginal significance to communities on the Eastern Shore: Atlantic salmon (Southern Uplands Population and the American eel). These species utilize coastal rivers and estuaries that would be impacted by a Touquoy mine failure.

This is particularly important given the compliance record of Atlantic Gold which has a record of provincial violations and is facing currently, a number of federal charges under the Fisheries Act.

## **Conclusion**

Our concerns about this mining operation are not unfounded nor far-fetched. On August 11, 2021, CBC reported on the outcome of disciplinary hearings against 2 professional engineers who were employees of the BC Mount Polley Mining Company owned by Imperial Metals. These engineers were on duty in 2014 when the Mount Polley Mine tailings dam broke spilling 8 million cubic metres of tailing effluent containing toxic gold mining waste contaminating drinking water sources and Sockeye salmon grounds in the Caribou Region of BC. The company that owns Mount Polley mine, site of the largest mining disaster in Canadian history, has faced no federal or provincial charges for their negligence. However, the CBC reported that the company that owns the mine, Imperial Metals, did receive a \$40 million tax credit for cleaning up the spill.

August 14, 2021

## **FOOTNOTES**

**Footnote 1:** DDV Gold Limited, "Environmental Assessment Registration Document for the Touquoy Gold Project, Moose River Gold Mines, Nova Scotia" (March 2007) at pages 96-102 ["Touquoy Gold Project EARD"].

**Footnote 2:** Touquoy Gold Project EARD, Appendix K – Wetland Evaluations: "Wetland 1 Report" at page 8, "Wetland 2 Report" at page 9, "Wetland 3 Report" at page 7, "Wetland 4 Report" at page 8, and "Wetland 5 Report" at page 8.

**Footnote 3:** TGPM ERD at page 8.1

**Footnote 4:** Ibid at page 8.13; see also page 8.15, which states that sea-run (as opposed to land-locked) Atlantic salmon are "known to occur in Moose River".

**Footnote 5:** Ibid at page 8.14. 20 Ibid at pages 6.16 and 6.24. 21 Ibid at page 6.25.

**Footnote 6:** Ibid at pages 6.16 and 6.24.

**Footnote 7:** Ibid at 6.25

**Footnote 8:** TGPM EARD at page 6.32

**Footnote 9:** Ibid at page 7.27

**Footnote 10:** Ibid at page 7.28

From: [@CameronConsulting.ca](mailto:@CameronConsulting.ca)  
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Project: touquoy-gold-project-site-modifications Comments: Comments on a concept, substantially written at a summer cottage, while family is visiting. Public comments are invited on a scale of 200 MB and 1000 pages of project description and supporting documents, available from the website of the Nova Scotia Department of Environment and Climate Change. An environmental assessment decision making process, with reasonable opportunity for the timely and thoughtful consideration from a variety of perspectives, is in the long term interest of our various communities. Atlantic Mining Nova Scotia Inc. registered this proposed activity with the Nova Scotia Department of Environment and Climate Change on Friday July 16, 2021. This was the day before an expected Nova Scotia provincial election officially began. A CBC media article on this was published on July 25, 2021. The closing date for public comments is Monday August 16, 2021, the day before the Nova Scotia provincial election voting concludes. During these best days of summer in 2021, we are also communities in a jurisdiction under emergency restrictions due to the COVID virus variants. One is challenged to imagine a 30 day period, with conditions that would result in even fewer timely and thoughtful public comments, than will be the case with this opportunity. The Nova Scotia Environment and Climate Change website notes that the Minister's decision will be made on or before September 5, 2021. After July 16, there has not been a Minister to be accountable and responsible for the making of a timely and thoughtful decision on this proposed activity. With an August 17, 2021 provincial election, perhaps there will not be a new Minister and government appointed until, say, August 27, 2021. It may take a little longer for their office to be fully staffed. September 5, 2021 is the Sunday of the Labour Day weekend. Perhaps a new Minister will be accountable and responsible for a decision made on Friday September 3, 2021. During this period of a provincial election and transition to a new Minister, some of the regular civil servant activities would be paused. Some civil servants may also have already scheduled some family vacation time, during these best days of summer. Some will be tasked with briefing and making recommendations on the proposed activity to the new Minister. Public comments received by the end of August 16, 2021 may or may not have a substantial influence on civil servant briefing notes and recommendations to a new Minister who will be accountable and responsible for the decision being made. So we have this decision making opportunity which coincidentally, or intended, or otherwise, where one is challenged to imagine there being a smaller quantity of timely and thoughtful public comment, or smaller opportunity for the timely and thoughtful consideration by a Minister who will be accountable and responsible for the decision. The brief Nova Scotia Environment and Climate Change website description of the proposed modifications to the mine and operations notes an 18 hectare ha. area increase to the already approved 271 hectare area, and other changes. It does not note the concept presented in the July 25, 2021 CBC article, of an anticipated increase in fluid leaving the site, that would have to be treated, for an un-described period of time. The July 2021 document Tourquoy Gold Project Modifications - Environmental Assessment Registration Document, is available on the Nova Scotia Environment and Climate Change website. It notes that some regulator and community engagement activities have already taken place, and some of the results and follow up activities. Atlantic Mining Nova

Scotia Inc. has available to it, sufficient human, technical, equipment, and financial resources to reasonably anticipate, respond to, and manage many potential environmental challenges. They similarly have the available resources, to have post commercial activity site conditions eventually be such that a future hiker, or bird, or animal on that soon to be former mining site, would not have cause to think that they were crossing that former mining site. . More available time was desired by this member of the public, with respect to better understanding the basis, and the expectations, in the anticipated treatment effort of impacted water leaving the proposed tailings pond site. Suspended solids and pH acid / base are anticipated. Conceptually, I would like to better understand the potential characteristics of leachate associated with the tailings pond materials, and the treatment of water that may be required in the future, to demonstrate the achievement of the desired environmental performance goals. Is water treatment by the proponent expected to be forever in order to achieve the desired environmental performance goals? More likely, are efforts expected to be, or for, a period of time with a trend in concentration reductions, coupled with further monitoring? Why? Under what conditions would the leaching potential from tailings pond materials be such that they would be treated to reduce their leaching potential before they are placed in the proposed area? Do such conditions exist? Is there provision to monitor or test in order to demonstrate if such conditions would or would not be reasonably expected to exist? A better understanding by this reader is desired, on if there may be leachate from the tailings pond materials, that may require long term treatment by the proponent. Is there potential for leachate, from the tailings pond materials placed in the proposed area by the proponent, or impacted water, to act in a similar way to how leachate from the former Sackville NS municipal waste disposal site, that was operationally active in the 1980s, to unacceptably impact - or fail to meet desired performance goals for - the groundwater adjacent to the Sackville River, or the water of the Sackville River itself? Name: Email:

@CameronConsulting.ca Address: Municipality: DARTMOUTH  
email\_message: Privacy-Statement: agree x: 52 y: 19

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Project: touquoy-gold-project-site-modifications Comments: My name \_\_\_\_\_, I grew up and make my home in Chaswood Nova Scotia, roughly 25 minutes From The Touquoy Gold Project. I work as a Machinist/Millwright, and have traveled vast distances to provide an good quality of life for my family. Working for The Touquoy Gold Project I finally have a job that pays well close to home where I can spend more quality time with my children and ensure they are on the right path in life. That to me is priceless in my books. I support the project to keep me home for years to come. Name: \_\_\_\_\_ Email: \_\_\_\_\_@gmail.com  
Address: \_\_\_\_\_ Municipality: Chaswood  
email\_message: Privacy-Statement: agree x: 47 y: 18

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Project: touquoy-gold-project-site-modifications Comments: This company should never have been allowed into the province. They are currently facing 32 charges under the Provincial Environment Act along with 3 Federal charges for non-compliance. 13 of the 32 the Provincial charges are for releasing a substance into the environment in excess of the approved levels in contravention of Section 682 of the Environment Act. Another 16 charges are for the failure to comply with Terms and Conditions of an Approval, in contravention of Section 158f of the Environment Act and Condition 15d and 7a of the Industrial Approval 2012-084244-05. When setting up the initial tailings pond they obviously pulled the wool over the governments eyes or thought they were dealing with fools. The company blames issues on heavy rains. Did they think they were mining in a desert? We haven't had record rainfalls for a long while and reviewing the Environment Canada data we have rarely met or exceeded what Environment Canada would consider heavy rainfall. What is their plan for hurricanes? My guess is they have none. They obviously think neither will happen here or just glossed over it hoping the government would overlook this. Atlantic Gold has been merrily out of compliance since two months after they started mining in Moose River. Do we want another Montague Gold Mines or Sydney tar sands? This is what the government seems to be aiming for so they can reap the almighty dollar at the expense of our environment. Everyone involved in this fiasco needs to take a good hard look in the mirror and should be thoroughly ashamed of what they see. British Columbia learned the hard lesson and expensive risks when tailings ponds fail. Is this what our government wants to repeat? The industrial approval for the Torquoy mine was very clear about what the company should have done to prepare for precipitation. The onus was on Atlantic Gold to have already developed the mine and infrastructure to prevent any environmental problems related to heavy or above average rains. Clearly they did not do this. Do you honestly think they are going to toe the line now? I'm sure they won't and I'm sure regardless of what the government allows they will do less than minimum required. Name: Email: @hotmail.com Address:

Municipality: Carrolls Corner email\_message: Privacy-Statement: agree x: 58 y: 7



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Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold is environmentally safe and provide good paying jobs to Nova Scotians. They keep Nova Scotian families in Nova Scotia where they belong. Atlantic Gold is following all the environmental procedures to keep the surrounding lakes safe and following MDMER requirements. Name:

Email: [@hotmail.com](#) Address: Municipality:  
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Project: touquoy-gold-project-site-modifications Comments: Atlantic Gold is providing good paying jobs to Nova Scotians. They are keeping Nova Scotian families in Nova Scotia where they belong. Atlantic Gold is environmentally safe and following all the environmental procedures to keep the surrounding lakes safe. Atlantic Gold also follows MDMER requirements which keeps marine life safe! Name: Email:  
@hotmail.com Address: Municipality: Elmsdale  
email\_message: Privacy-Statement: agree x: 41 y: 23



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Project: touquoy-gold-project-site-modifications Comments: I fully support this mine Name:  
Email: \_\_\_\_\_@gmail.com Address: \_\_\_\_\_ Municipality:  
Truro email\_message: Privacy-Statement: agree x: 74 y: 23