

**Nova Scotia  
Comment Index  
Touquoy Gold Project Site Modifications Second Addendum:  
Decision Date February 28, 2023**

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**Mi'kmaq of Nova Scotia**

	No comments	
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PO Box 1006, P500  
Dartmouth, NS  
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January 17, 2023

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

Bridget Tutty  
Environmental Assessment Officer  
Nova Scotia Environment and Climate Change  
1903 Barrington Street, Suite 2085  
Halifax, NS  
B3J 2P8

**Subject: DFO comments on 2<sup>nd</sup> Addendum to the Environmental Assessment Registration Document (EARD) – Touquoy Gold Project Site Modifications**

Dear Bridget Tutty:

The Fish and Fish Habitat Protection Program of Fisheries and Oceans Canada (DFO) received your request to review the 2<sup>nd</sup> Addendum to the Environmental Assessment Registration Document (EARD) for the proposed Touquoy Gold Project Site Modifications on January 9, 2023. DFO has provided previous advice and comments on the project EA in our correspondence to you dated August 16, 2021, April 22, 2022 and December 1, 2022.

DFO has reviewed the 2<sup>nd</sup> Addendum to the EARD, select appendices and acknowledges the extensive supporting documentation that was submitted by the proponent. 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 2<sup>nd</sup> Addendum to 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.

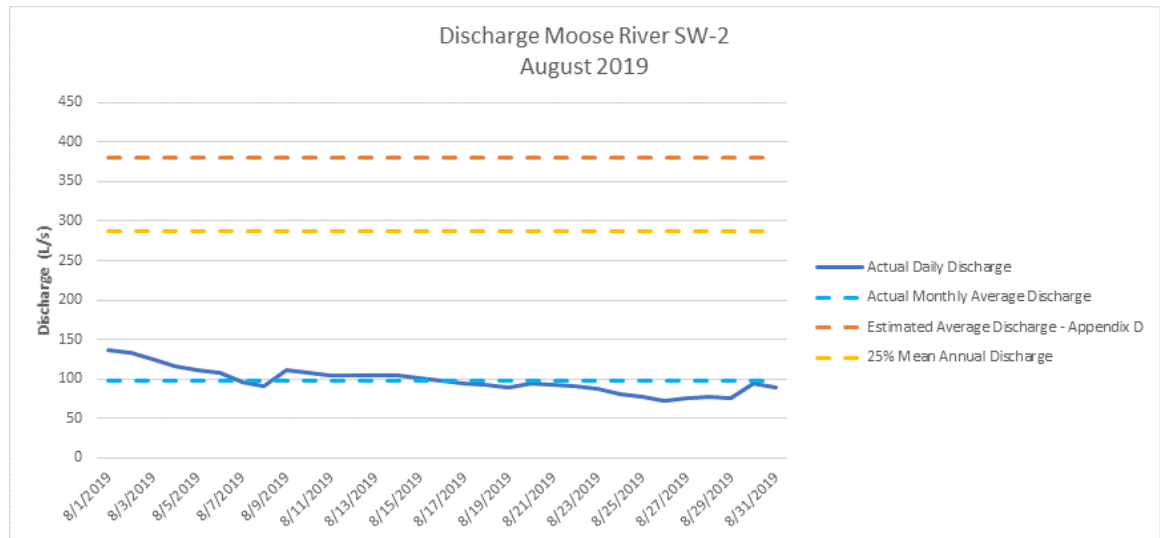
**Description of Proposed Project**

- Based on the July 2021 EARD, DFO understands that the proposed Touquoy Gold Project Site Modifications consisted of the following works, undertakings, and activities:
  - expand the existing waste rock stockpile area (WRSA) by 7.1 hectares (ha);

- expand the existing clay borrow area by 6.4 ha and construct a 1.4 ha clay overburden pile;
  - construct a sediment collection pond to the southwest of the WRSA and another collection pond to the northeast of the Mill Plant;
  - construct a spillway to connect the WRSA collection pond and Watercourse #4 (unnamed tributary to Moose River);
  - permanently dispose of mine tailings in the exhausted open pit; and
  - relocate the road used to access the Mill Plant to the west of its existing location.
- The 2<sup>nd</sup> Addendum suggests that the scope of the proposed Project has changed. DFO understands that the proposed WRSA expansion has been reduced to 3.1 ha and the revised proposal is shown in Attachment 12. DFO also understands that the proposed Project still involves permanent disposal of mine tailings in the exhausted open pit, and the construction of a spillway during end-of-mine from the pit lake to Moose River (Attachment 13). It is not clear whether there have been changes to the other WUAs proposed as part of the Project (i.e., expansion of clay borrow area, sediment collection ponds, spillway between WRSA and Watercourse 4, relocation of access road).

#### **Assimilative Capacity Study of Moose River (Attachment 7)**

- As explained in previous comments, assessments of effects to fish and fish habitat should not rely exclusively on average annual or monthly flows. Daily flows are highly variable so average flows are often not representative of the actual real-world fish habitat conditions at any given time.
- Since long-term, site specific flow data is not available for Moose River, it is helpful to use long-term datasets from nearby gauged rivers to understand the natural flow regime of Moose River at SW-2. However, AMNS has been monitoring daily flows at SW-2 since 2017, so the estimated flows should also be compared to the actual measured flows.
- The 25% Mean Annual Flow (MAF) statistic for Moose River was used in the updated Assimilative Capacity Study. In the EARD Addendum, AMNS estimated the MAF at SW-2 to be 1,150 L/s. Therefore, 25% MAF is equal to approximately 287.5 L/s.
- The 25% MAF value is 2-3 times greater than the average flows measured at SW-2 in August 2019 and August 2020. Therefore, 25% MAF does not represent a conservative low flow scenario for Moose River at SW-2. To further illustrate this point, Figure 1 below compares the flows used in the proponent's Assimilative Capacity Studies to the actual measured flows from the SW-2 monitoring data for August 2019.



**Figure 1. Discharge measurements and statistics for Moose River at SW-2 including: actual daily discharge (solid blue) and actual monthly average discharge (dashed blue) measured August 2019, average August discharge estimated by the proponent (orange dash), and 25% mean annual discharge estimated by the proponent.**

- On December 1, 2022 DFO recommended that the proponent use additional flow statistics in the Assimilative Capacity Study to better predict water quality during real-world low flow conditions, including:
  - 7-day low flow from the SW-2 hydrometric monitoring data, 2017-present (i.e., the lowest running 7-day average flow at SW-2 for the period). This represents real-world low flow conditions that have been observed in Moose River since the project commenced.
  - 7-day, 10-year low flow (7Q10) at SW-2 estimated from long-term datasets from nearby gauged rivers (i.e., the lowest running 7-day average flow predicted at SW-2 with an average recurrence interval of 10 years). This represents a reasonable conservative scenario for low flow conditions.
- The revised Assimilative Capacity Study did not address these comments and the 25% MAF was used. DFO acknowledges the proponent’s response to the Department’s comments and feedback provided in Addendum 1 of the revised study report.
- Appendix A of the revised Assimilative Capacity Study incorrectly states that the Initial Dilution Zone (IDZ) selected by the proponent does not impinge on critical fish habitats (e.g., spawning or rearing areas for fish)<sup>1</sup>. This represents a major gap in the proponent’s assessment of effects to fish and fish habitat from the proposed site modifications. Throughout this EA process for the proposed site modifications, DFO

<sup>1</sup> Here, the CCME guidance is not referring to “critical habitat” for aquatic species as defined under the *Species at Risk Act*, but rather important and sensitive fish habitats.

has provided detailed advice on the importance of the habitat in Moose River for the conservation and protection of the Southern Upland Atlantic Salmon population assessed as Endangered by COSEWIC and currently under consideration for listing under the *Species at Risk Act*. It should be noted that the proponent's 2007 EA also identifies the habitat in Moose River as good quality spawning and rearing habitat for Atlantic Salmon and Brook Trout.

- DFO reiterates once again that Moose River is considered important habitat for Atlantic Salmon, and also provides good quality habitat for other species such as Brook Trout and American Eel. The fish surveys confirm that a population of Southern Upland Atlantic Salmon persists in the river in and near the project area. Therefore, selection of the IDZ is not consistent with this CCME guideline for the selection of the IDZ.
- Metal mines have potential to impact Atlantic Salmon populations (Sergeant et al. 2022; Bowlby et al. 2016; Dubé et al. 2005). Chemical contaminants and hydrological alterations have been identified by DFO as threats to freshwater habitat of Atlantic Salmon that have potential to result in substantial impacts to habitat and population productivity (DFO 2013; Bowlby et al. 2014).

#### **2022 Moose River Fish Surveys (Attachment 14)**

- The 2005 baseline fish survey data from Moose River prior to development of the mine has not been provided to DFO. Therefore, baseline fish and fish habitat conditions in the river are limited to the qualitative description from the original 2007 EA for the mine.
- The 2007 EA stated that “numerous juvenile Atlantic Salmon” were captured in Moose River in 2005 adjacent to the project area, and that the area provided good habitat for Atlantic Salmon and Brook Trout.
- There appears to be a typo in Table 4.2 – the CPUE for site MR-03 in September would calculate to 30 fish per 1000 seconds instead of 3.
- During the September 2022 survey, the site located upstream of the project area near Moose River Rd. (site MR-2) had the highest fish abundance and species richness of all the survey sites. The data suggests a decrease in fish abundance and species richness in a downstream direction from the mine.
- No Atlantic Salmon or Brook Trout were captured during the September 2021 or June 2022 Moose River fish surveys. Atlantic Salmon ( $n=6$ ) and Brook Trout ( $n=2$ ) were captured during the September 2022 survey.
- Based on the 2021-2022 fish surveys, DFO does not consider Brook Trout or juvenile Atlantic Salmon to be “numerous” in Moose River near the project area at present.

This suggests there may have been a decline in the abundance of juvenile Atlantic Salmon and Brook Trout in Moose River since 2005, but a clear trend cannot be established because the 2005 baseline data has not been provided to DFO, and because there is a 16-year gap in data collection.

- American Eel were captured at all sites during both June and September 2022. In general, American Eel are less sensitive to stressors than salmonids, and are able to use and survive in a broader range of habitat types and conditions.
- The Report states that the pH readings in Moose River were generally low. The pH measurements of 5.20 to 6.67 are not considered low for Southern Upland rivers, and would fall into the slightly impacted to unimpacted acidification categories identified by DFO for Atlantic Salmon rivers (DFO 2013; Bowlby et al. 2014).
- The proponent has committed to providing the results of the environmental DNA sampling and analyses for Atlantic Salmon in an addendum at an unspecified later date.

### **Recommendations**

- The proponent should provide a detailed description of any changes to the scope of the proposed Project since the EA was registered. Prior to commencement of any project works, undertakings, or activities in or near fish habitat, the proponent should submit an updated Request for Review to DFO's Fish and Fish Habitat Protection Program at: [ReferralsMaritimes@dfo-mpo.gc.ca](mailto:ReferralsMaritimes@dfo-mpo.gc.ca). DFO will review the proposal under the *Fisheries Act* and *Species at Risk Act* and will determine if an authorization and/or permit is required.
- Should the proponent be approved to deposit tailings in the open pit and then connect the pit lake to Moose River, all feasible measures should be implemented to avoid and mitigate impacts to fish and fish habitat in the river from deleterious substances.
- Periodic fish and fish habitat surveys (e.g., every 3-5 years) should be conducted in Moose River and the tributary to Moose River (Watercourse #4) until mine closure to monitor for changes to fish and fish habitat and project effects. The surveys should use the same sampling methods and be conducted in the same locations during the same time of year.
- Fish and fish habitat data should be collected in summer 2023 using the same sampling methods at two additional sites to monitor for effects originating from the other locations in the mine site:
  - Watercourse 4 – a short distance upstream of Otter Dam Flowage; and
  - Moose River – a short distance downstream of Otter Dam Flowage.

- The proponent should continue monitoring flows in Moose River and Watercourse 4 (unnamed tributary to Moose River), including stations HM-3 and HM-4. Ongoing issues with data quality and station siting (e.g., SW-11) should be addressed.

### **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.
- Bowlby, H.D., Fleming, I.A. & Gibson, A.J.F. 2016. Applying landscape genetics to evaluate threats affecting endangered Atlantic salmon populations. *Conserv Genet* 17: 823–838. <https://doi.org/10.1007/s10592-016-0824-7>
- DFO. 2013. Recovery Potential Assessment for Southern Upland Atlantic Salmon. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2013/009.
- Dubé et al. 2005. Effects of metal mining effluent on Atlantic salmon (*Salmo salar*) and slimy sculpin (*Cottus cognatus*): using artificial streams to assess existing effects and predict future consequences. *Science of the Total Environment* 343(1–3):135-154
- Sergeant et al. 2022. Risks of mining to salmonid-bearing watersheds. *Science Advances* 8(26). DOI: 10.1126/sciadv.abn0929

If you have any questions with the content of this letter, please contact me at our Dartmouth office 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,

Chris Burbidge  
Senior Biologist  
Ecosystems Management-Regulatory Reviews  
Maritimes Region

Cc: Christine Hynes, NS Environment and Climate Change

Date: February 2, 2023

To: Bridget Tutty, Environmental Assessment Officer

From: ICE Division (Mining Engineer and sign off by District Manager)

Subject: **Touquoy Gold Project Site Modifications Project, Halifax County, Nova Scotia**

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## Scope of review

This review focuses on the following mandate: to review the additional information requested by the Minister of Environment and Climate Change (Minister) on May 12, 2022, for impacts to surface and groundwater quality, compliance with the existing Industrial Approval, and review of proposed mitigation measures.

## Technical Comments

***Minister's Request for Information: The third-party water modelling review I requested identified issues with water modelling and the recommendations from the review were not implemented by AMNS. Address the recommendations proposed by Wood Environmental & Infrastructure Solutions in the Water Modelling Third-party Review of the Touquoy Gold Project Site Modifications including but not limited to:***

The applicant retained Wood Environmental & Infrastructure Solution (Wood) to complete a third-party peer review of the water modelling presented and referenced in the Touquoy Gold Project Site Modifications Environmental Assessment Registration Document (EARD) registered on July 16, 2021. In the *Primary Recommendations on the Proposed Disposal of Tailings in the Open Pit* section of the report (Chapter 4.0), Wood questioned why the model is diluting the concentrations of contaminants that originate within the Open Pit by a factor of **one million** along the less than 100 m flow path from the Open Pit to Moose River as there would almost be no attenuation along such a short path. Wood stated that in reviewing the WRSA and the TMF, almost no or only limited attenuation is being seen and therefore recommends that the proponent re-examine the groundwater modelling work and provide additional detail to support their conclusions.

In "***Attachment 1 Disposition of Third Party Review Comments, Table 1***", the applicant did not address the **one million** dilution factor of the concentrations of contaminants entering Moose River.



**Minister's Request for Information: Present information to validate predicted tailings pore water quality and predicted open pit lake discharge water quality. Compare predicted values against water quality within the existing Tailings Management Facility.**

The "**Attachment 4 Pore Water Quality, Open Pit Discharge Water Quality**" prepared by Stantec titled "*Environmental Assessment Responses – Questions 1.e. Touquoy Gold Project Site Validate Predicted Tailings Pore Water Quality and Predicted Open Pit Lake Discharge Water Quality*" discusses two case studies completed for the water quality predictions:

- Base Case includes 2.5 million tonnes of waste rock that is currently stored at the bottom of the pit. This material is not permitted for permanent storage.
- Continued Operations case includes tailings from Beaver Dam/FMS plus the 2.5 million tonnes of waste rock in the pit bottom. The environmental effects of tailings from other projects were not assessed under the scope of this submission.

The predictions presented in Table 1 are not compared to the Industrial Approval – Appendix K criteria, instead the NSE Tier 1 EQS/CCME FAL is used. There is no way to check compliance with the Industrial Approval as the applicant has not provided the assumed hardness in order to calculate the concentrations for Cd, Cu, and Pb. The applicant also reported **Dissolved Aluminum** concentrations instead of **Total Aluminum** concentrations. All other parameters were reported as Total concentrations which is appropriate for surface water predictions.

Table 1 Note 2 states "*The waste rock stored in the bottom of the pit will be encapsulated from the water and tailings in the pit limiting oxidation potential, the deposited waste rock material is expected to insignificantly change the water quality in the Pit Lake.*" ICE has a report from Lorax that discusses results of waste rock column tests under saturated conditions that states:

*"Arsenic mobility was almost twice as high in the saturated column prior to the DOC amendment, possibly related to the increased pH and reduced oxygen content in the saturated column. The addition of DOC to the saturated column influent triggered a significant increase As concentration, reaching a maximum concentration of 0.37 mg/L. This is most likely associated with the increased mobility of sorbed As under reducing conditions. It is possible that high As concentrations forming under these conditions are temporary until the sorbed As and non-sulphide As-bearing phases are depleted."*

The Lorax report states that is possible that high arsenic concentrations forming under these conditions are temporary until sorbed arsenic and non-sulphide reducible arsenic - bearing phases are depleted. ICE requested a timeline for "temporary", but we have not yet received a response.

Table 1 Note for cobalt contradicts the source term assumptions "*Contrary to the source term assumptions, elevated concentrations of cobalt and lead overtime are not expected.*" The applicant has presented conflicting information between two different consultants (Lorax and Stantec). ECC cannot understand the potential environment effects when

conflicting information is presented. The July 2021 EARD Submission listed the Reclamation Plan as Supporting Documentation SD06. In section 3.2.2 Water Quality, the document states “Water quality pumped from the open pit has been monitored since 2017. The water in this pit is mildly alkaline with pH ranging 7.5 to 8.1, and slightly to moderately hard (hardness ranging from 140 to 420 mg/L).” This statement is supportive of Lorax’s findings and therefore, the maximum value of arsenic concentration of 0.37 mg/L (370 µg/L) is 74 times higher than the Industrial Approval limit of 5 µg/L and is almost 9 times higher than the proposed value of 42 µg/L (that is not yet approved).

***Minister’s Request for Information: Complete the assimilative capacity study of Moose River to be compliant with the Industrial Approval which uses SW-11 as the background station for quality and propose discharge criteria that will be protective of fish and fish habitat, in all areas of the Moose River. Incorporate Fisheries and Oceans Canada recommendations to determine summer flow conditions.***

The “***Attachment 7 Assimilative Capacity Study of Moose River***” prepared by Stantec titled “*Touquoy Gold Project Assimilative Capacity Study of Moose River – Touquoy Pit Discharge*” uses additional data from 2004-2007 to augment the SW-11 baseline data set. The use of this additional data was discussed with the applicant and direction was given to not use the additional data as there are no laboratory records. This data cannot be used in the assessment without proof of laboratory accreditation.

The submission also states that the clay liner along the western wall of the pit extending to 60 masl is “***below most of the underground workings***”. The word **most** is of concern.

The Base Case in this report states 2.5 million **cubic meters** of waste rock stored in the open pit was used in the modelling. **Cubic meters** is underpredicting the amount of material in the pit by more than half. This will affect the predicted numbers.

It is discussed that concentrations for Al, As, Co, Cu, WAD Cyanide, and N are predicted to exceed the IA Criteria. In addition, ammonia and arsenic are predicted to exceed the MDMER limits. The applicant only references that the MDMER exceedances are planned for treatment prior to release into Moose River. The report also relies on a site-specific standard for arsenic (42 µg/L) that has not been approved by ECC.

The applicant has not discussed mitigation measures required to:

- i) Maintain compliance with the Industrial Approval criteria and/or
- ii) Proposed discharge criteria that will be protective of fish and fish habitat and in contrary, continue to use MDMER limits which DFO have previously commented are not protective of fish and fish habitat.

***Minister’s Request for Information: Complete an assimilative capacity study of Watercourse #4 that will be protective of fish and fish habitat. Incorporate Fisheries and Oceans Canada recommendations to determine summer flow conditions.***

The “***Attachment 8 Assimilative Capacity Study of Watercourse No. 4***” prepared by Stantec titled “*Touquoy Gold Project Assimilative Capacity Study of Watercourse 4 – TMF*”

and WRSA Seepage” discusses the water releasing into WC 4 is expected “will meet the CCME FAL or criteria presented in Appendix K of the IA” and that a mixing zone is not required but a mixing zone is presented that is approximately 3 kilometers long (see figure below with yellow highlighted pathway). The report concludes that concentrations of Al, As, Cu, Se, nitrate, nitrite and sulphate will exceed the IA Appendix K criteria when discharged into WC 4 and will be below background levels buy the time it reaches Moose River (which is 3 kilometers away from the entry into WC 4) but will still exceed the IA Appendix K criteria.

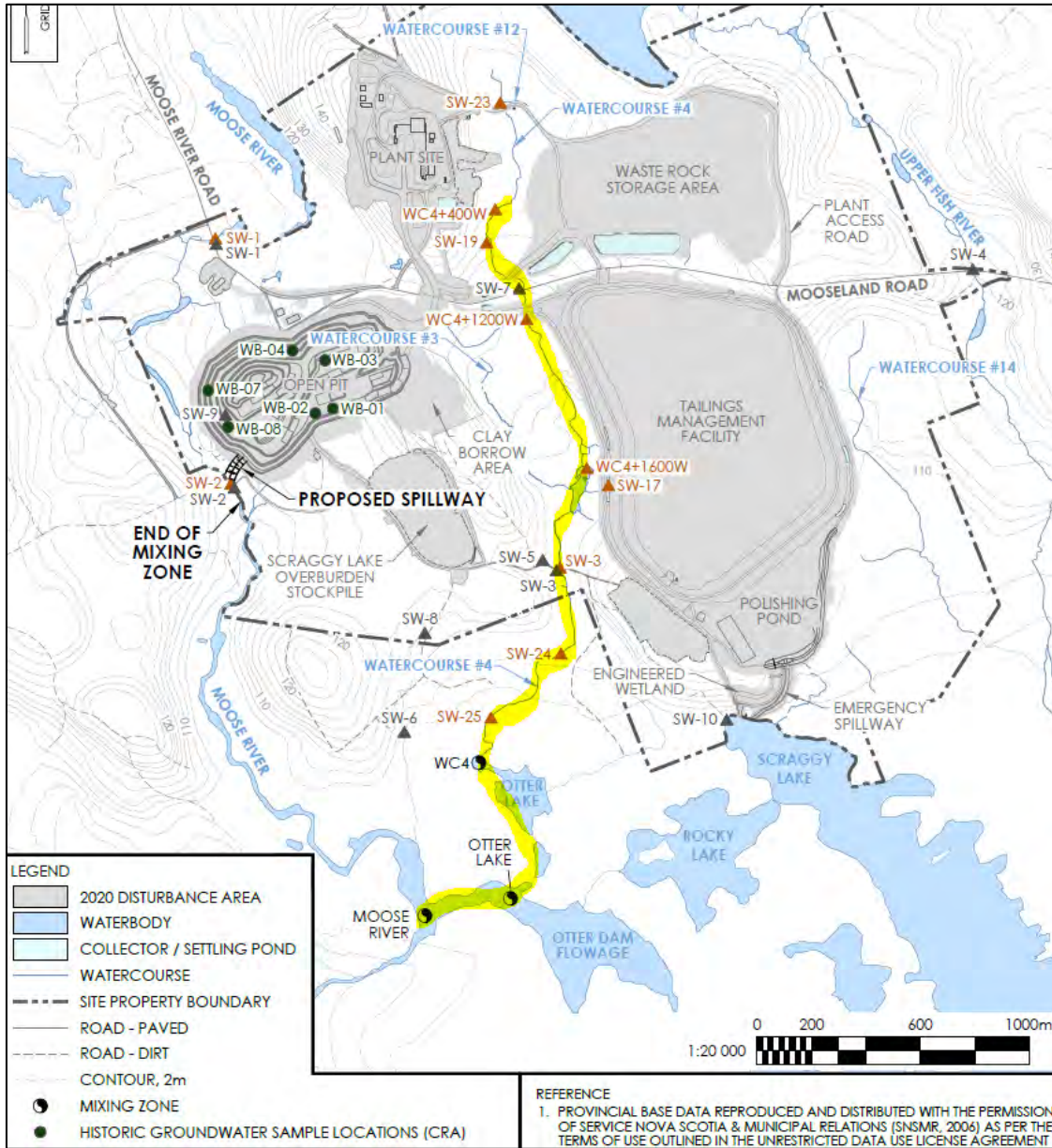


Figure 2.2 taken from “**Attachment 8 Assimilative Capacity Study of Watercourse No. 4**” prepared by Stantec titled “*Touquoy Gold Project Assimilative Capacity Study of Watercourse 4 – TMF and WRSA Seepage*”. Yellow highlighted pathway was highlighted by the reviewer and represents the 3 kilometer long mixing zone.

The applicant also uses SW-3 for baseline data and does not have consider SW-19 which is the station closest to the proposed WC4 discharge location.

The applicant has not discussed mitigation measures required to maintain compliance with the Industrial Approval criteria. The applicant is predicting to exceed the IA limits by up to 9 times concentrations for some parameters along a 3 kilometers within WC4.

Please note: The **“Attachment 8 Assimilative Capacity Study of Watercourse No. 4”** provides conflicting information. The **“Attachment 7 Assimilative Capacity Study of Moose River”** date November 18, 2022, states the Waste Rock Storage Area expansion and release directly into Watercourse 4 is no longer required. The **“Attachment 8 Assimilative Capacity Study of Watercourse No. 4”** dated December 20, 2022, continues discussing direct release into Watercourse 4. ECC is unclear if the applicant will be expanding the WRSA and/or releasing runoff from WRSA into Watercourse No. 4.

### **Miscellaneous**

In **“Attachment 10 Pit Slope Seepage Mitigation Technical Specifications and Drawings Attachment 2 Hydraulic Connectivity Testing Additional Interpretation”** prepared by Stantec titled **“Touquoy In-Pit Tailings Deposition: Pit Wall Seepage Mitigation Liner AMNS EA IR Request 1.b: Hydraulic Connectivity Testing”** states:

*“In-Pit tailings disposal is proposed to meet future tailings storage requirements for additional ore processing from both newly identified resources, as well as anticipated processing of medium to low grade ore at the site.” No mention of where the “newly identified resources” are located.”*

The applicant does not discuss where the *“newly identified resources”* are located.

### **Conclusions**

- The criteria set in the Industrial Approval by ECC are based on groundwater protection in areas where there is no serviced water, and on the protection of freshwater aquatic life in watercourses. The EA registration document concludes that water released into Moose River and Watercourse 4 will be non-compliant with the Industrial Approval – Appendix K criteria and the applicant has not provided mitigation measures to remain compliant.
- In this addendum AMNS proposes to operate the mine while out of compliance with their Industrial Approval.
- The proposed change to the Touquoy Mine Site cannot be address by standard mitigation measures. Site-specific mitigation measures are required which are feasible given the site geology and hydrogeology, and which can be put in place prior to commencement of work. If work proceeds without planned mitigation measures and contamination occurs to either Moose River, Watercourse 4 and/or groundwater, it cannot be undone.
- The follow table outlines the risk associated with the information gaps identified in the EARD.

Risk Assessment			
Identify Gap/Risk	Can it be addressed in another permit/approval or with a T&C?	Define/provide detail	Risk of this approach?
The applicant did not address the one million dilution factor of the concentrations of contaminants entering Moose River.	No	The applicant's conclusion that the effluent release into Moose River will be protective of fish and fish habitat is based on missing/inaccurate information.	Effluent concentrations may be toxic to aquatic life and/or pose risk to human health.
Pit discharge water quality predictions for cobalt and arsenic.	No	Mobilization of waste rock underwater within the pit was not discussed.	This information is crucial to determine the mitigation measures to prevent contamination of groundwater and to Moose River.
Additional data from 2004-2007 was used to augment the SW-11 baseline data set for Moose River.  Station used that is not representative of the baseline conditions in Watercourse #4.	No	The use the additional unaccredited data will change the conclusions of the water quality predictions.	The use of unvalidated/incorrect water quality predictions risk contamination of the groundwater and contamination to Moose River and Watercourse #4.
Incorrect information used to predict water quality.	No	The amount of waste rock stored in the pit was underrepresented by half.	
Discharge to Moose River.	No	Discharge to Moose River is predicted to exceed IA criteria and applicant has not proposed discharge criteria that will be protective of fish and fish habitat.	Unvalidated water quality predictions risk contamination of the groundwater and Moose River that may be toxic to aquatic life and pose a risk to human health.
Discharge to Watercourse #4.	No	Discharge to Watercourse #4 is predicted to exceed the IA criteria.	Potential to destruct a fish habitat along Watercourse #4.

## Summary of Recommendations

1. Justify the stated expectation of the "one million" dilution factor along the less than 100 m flow path from the Open Pit to Moose River.
2. Submit mobilization of waste rock underwater within the pit to understand the impacts to water quality.
3. Submit laboratory certificates for the historical data (2004-2007) used to augment the baseline data set or remove this data and update the predictions.
4. Submit mitigation measures to address predicted non-compliances with the Industrial Approval criteria.
5. If approved, all the above information is recommended to be submitted with the Industrial Approval Amendment Application.



**From:** [Hingston,Michael \(il\\_lui | he\\_him\) \(ECCC\)](#)  
**To:** [Tutty, Bridget R](#)  
**Cc:** [Drover, Brian \(ECCC\)](#)  
**Subject:** FW: Second Additional Information Addendum for the Touquoy Gold Project Site Modifications Project  
**Date:** February 14, 2023 11:12:06 AM

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

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ECCC offers the following comments on the Second Additional Information Addendum for the Touquoy Gold Project Site Modifications Project. Previous comments are not explicitly brought forward although it is not clear to what extent these have been addressed.

Please note that MDMER regulatory requirements are separate from Provincial regulatory requirements, requirements that may be set out in an industrial approval, or requirements associated with an environmental assessment process which aims to evaluate environmental effects. Note also that MDMER discharge limits establish national standards for mine effluent quality. More stringent requirements/guidelines may be stipulated in EA conditions or industrial approvals under certain conditions.

The report discusses operational and post-closure periods and discusses MDMER effluent limits at all stages. Presumably the mine will be designated as a Recognized Closed Mine (RCM) under the MDMER at some point in the post-closure period. In general, effluent from RCMs is subject to the General Prohibition against the deposit of deleterious substances under the Fisheries Act (Section 36(3)) rather than the less stringent MDMER effluent limits. This factor should be considered in the development of any post closure scenarios as additional treatment of effluent may be required at the RCM stage.

CCME guidance for assimilative capacity studies lists criteria required for the allocation of a mixing zone. It is not clear if all of these criteria have been met for the studies associated with WC4 and Moose River.

In section 8.0 (MIXING ZONE STUDY), the report states that “Seepage from the TMF and WRSA is a diffuse source which reaches WC4 over the distance of about 2 km” and that “Modeling shows that WC4 is well mixed, with seepage that potentially reaches the watercourse fully mixing within a very short distance.” It would be useful to show, in a figure, the size and extent of the mixing zone (where seepage and runoff is considered fully mixed) at all points along WC4 and the proportion of the cross-sectional area of the watercourse that this mixing zone represents.

It is not clear if the dilution ratios in Table 7.2 are generated from the flow and seepage rates listed in Table 7.1.

The report states that the source of non-point mine effluent is seepage from the existing WRSA and TMF and runoff from WRSA and goes on to model the nature of the seepage expected to enter surface waterbodies. Although the report goes on to acknowledge that seepage is considered effluent under the MDMER, there seems to be no discussion of the requirement that effluent from a mine, that is regulated under the MDMER, is to be controlled and directed through a final discharge point (FDP).

Michael

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Date: February 8, 2023  
To: Bridget Tutty, Environmental Assessment Officer  
From: Department of Natural Resources and Renewables  
Subject: **Touquoy Gold Project Site Modifications Project, Halifax County, Nova Scotia**

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**Scope of review:**

This review focuses on the following mandate: Biodiversity, species at risk status and recovery, wildlife species and habitat management and conservation including Old Growth Forest, Mineral Resources Act, authorities and approvals required from the Land Services Branch.

**Technical Comments:**

**Land Services Branch:**

No comments

**Renewable Resources Branch:**

Additional Information Request No.6, page 12. It is unclear how the proponent has addressed the question to provide alternatives to avoid the alteration of Wetland 15, a Wetland of Special Significance due to the presence of Blue Felt Lichen (*Degelia plumbea*), listed as Special Concern under SARA and Vulnerable under the ESA.

Attachment 12 (Figure 1 Touquoy Gold Mine WRD Extension with 2021 Wetland Impacts) does not clearly describe how the project has changed from the previous addendum submission to avoid further alteration to Wetland 15 (i.e., has it reverted back to the 2021 submission as indicated in the figure). The alteration of a portion of a wetland may compromise the ecological function of the entire wetland.

**Mineral Management and Geological Survey Divisions**

The Geoscience and Mines Branch within the Nova Scotia Department of Natural Resources and Renewables has reviewed selected sections of the Environmental Assessment Registration Document Addendum No. 2 submitted by Atlantic Mining NS Inc., dated December 2022, for the proposed Touquoy Gold Project Site Modifications. This review was conducted through the lens of requirements as laid out under the Nova Scotia *Mineral Resources Act* and its associated regulations.

The following comments are provided regarding the project and are limited to the review of documents submitted and reviewed as part of the Environmental Assessment



Registration Document Addendum:

1. Modifications as laid out in the addendum are expected to support efficient mining within the mineral lease as supported under Section 80 of the *Mineral Resources Act*.
2. In-pit tailings disposal is becoming a preferred method of tailings management within the mining industry (AuSIMM Tailings Management, 2022), especially in situations when an exhausted open pit is readily available. This change in preference is related to recent tailings dam failures and the general challenges involved with above-ground tailings facilities that require more robust engineering and management plans to be physically and environmentally safe in the long term.
3. Hydraulic conductivity testing of faulting within the pit has demonstrated limited connectivity to surrounding areas. The addition of a clay liner along sections of the pit in proximity to historical underground workings provides a further mitigation measure against potential seepage from the pit. The use of clay as an impermeable liner is preferable to artificial liners that may not have the same longevity (AuSIMM Tailings Management Course, 2022).

**Summary of Recommendations: (provide in non-technical language)**

**Land Services Branch:**

No comments

**Renewable Resources Branch:**

Based upon a review of the information in the addendum, the following recommendations for conditions of approval are provided:

- It is recommended the proponent clearly address the question about alternative approaches to alteration of Wetland 15, which should include maps and figures showing current waste rock storage location designs in comparison to previous requests for alterations.
- Provide information to support the assertion that the current approved alteration has not impacted the ecological integrity of Wetland 15 and presence of Blue Felt Lichen.

**Mineral Management and Geological Survey Divisions**

Upon approval of these site modifications, the Department requests that these changes be reflected in the next submission of the Reclamation plan for the Touquoy Gold Project as per Section 86 of the Mineral Resources Act.

Date: February 2, 2023

To: Bridget Tutty, Environmental Assessment Officer

From: Sr. Hydrogeologist, Groundwater Program, Sustainability and Applied Science

Reviewed by: Manager, Water Resources Management,  
Sustainability and Applied Science Division

Subject: **Touquoy Gold Project Site Modifications Project, Halifax County, Nova Scotia**  
**- IR2 Addendum 2 Response**

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**Scope of review:**

Atlantic Mining Nova Scotia AMNS proposed modifications to the approved Touquoy Gold Mine Project in 2021 to support ongoing operations. The modifications are listed below and represent the Project as described in the Touquoy Gold Project Site Modifications Project, Environmental Assessment Registration Document (EARD):

- use of the exhausted Open Pit for final additional Touquoy tailings disposal (following filling 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 Minister of Environment has requested additional information (IR2) regarding the modification application. This review focuses on the additional groundwater information provided in a second Addendum responses by AMNS titled:

*Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum No. 2, December 21, 2022 (the “Report”).*

**Technical Comments:**

The Report contains additional information about “worst case” or “continued operations” scenarios where modification activities other than those initially proposed are included. Any such activities are considered outside the scope of the Modification EARD and Addendum and are not included in this review.

- Groundwater Modeling Information (Report Attachment 3)

Calibration

- Calibration statistics were not fully presented for the model updates and thus it is not clear what the full effect of the model updates on the modelling results are.

- High positive calibration residuals of + 11.36 m and low of - 6.03 metres from drawing in OPM wells are higher compared to much lower previous values (relative maximum of 3 m residual previously in the OPM wells). These values exceed the calibration residuals provided in in the original calibrated model (July 2021 EARD) and while the overall nRMS statistic (the key measure for suitable calibration) is similar to previous estimates, the variability in range of heads is higher.
  - However, model residuals table and calibration statistics were not provided and correlation to previous work was not provided (Mar 2022 report).
  - Based on the figure provided, model head relative residual errors in the updated model are now higher and appear to be highest in the southern area of the site between the open pit and Moose River – the greatest area of concern including wells OPM 1A/B and OPM 2A/B
- Groundwater Model cells
    - It is not clear that the pit model Drain cells used in all the modelling are the best features to be used in relation to post-closure modelling.
    - The model used MODFLOW Drain cells, not specified head cells. Drain cells may not be as appropriate for evaluating post-closure conditions where groundwater levels recover and the pit lake is engineered to be maintained at certain levels (either 108.0 m or 106.5 m, unclear when transitions occur).
    - Better results may be obtained by modelling post-closure separately with pit lake cells as “specified” or Constant Head boundaries (at the two levels proposed), not Drain boundaries.
    - An example of issues, related to improper model treatment of specified head conditions:
      - Model does not appear to properly depict post-closure groundwater water table contours surrounding the pit lake
      - Groundwater flow post-closure does not properly indicate normal down-gradient groundwater flow vectors (magnitude and direction) into and out of the pit
      - Water table contours from post-closure conditions based on groundwater modelling in Figure 5.5 (Appendix D Technical Reports Water) appear to erroneously show a 5 m water table elevation difference occurring across the pit lake – which in fact should show as a constant elevation of 108.0 m across the Pit lake.
    - A clay liner was proposed to ensure no seepage into groundwater from the southern areas of the pit lake. This may be an important hydraulic feature affecting flow and should be considered to be included in the model and modelled post-closure scenarios. This clay liner essentially is proposed as a “dam”, restricting flow. Dams alter the hydraulic regime and flow paths and may create, for example, deep flow paths from impounded water flowing under the dam due to the pressure gradients. For this reason, more design information and evaluation of the clay liner may be useful.
- Groundwater Water Level Data
    - OPM 2B shows a linear decline in water levels that are likely due to dewatering effects of mining the pit (see Report). OPM 2A likely shows these effects does as well, with an apparent (smaller) average linear decline. Both these OPM 2 wells appear to

- indicate a groundwater flow connection with the pit. If pit levels recover to normal pit operational levels (108 m) it is likely that this flow connection will be halted and reversed as a groundwater flow gradient to the Moose River would likely be re-established, depending on the pit levels occurring post-closure.
- OPM wells 1A/B also appear to show an average linear decline in water levels since about 2018, although not to the degree of OPM 2B. This also indicates hydraulic connection and a likely groundwater flow path.
  - HT Wells 1-5 also show water level declines indicating likely hydraulic connections.
  - Under post-closure conditions, with the pit full at 108.0 m, a groundwater gradient is re-established towards the Moose River in some areas. (Attachment 2, text page 12 of 22; and Attachment 3, Table 1, p 3 of ). Flow through the area of OPM 1A/B may remobilize contaminant flux from Historic Tailings as well as pit lake water quality towards the Moose River.
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- Groundwater and Pit Lake Water Quality
    - As noted by AECOM (Report), historical tailings are located exactly where the spillway construction is proposed.
    - OPM 1A/B show high contaminant values in groundwater (in particular for Arsenic). These are not natural groundwater quality conditions and appear likely due to the historic tailings in the nearby vicinity.
    - There are a number of separate Report sub-sections, tables and attachments that provide information on predicted pit lake water quality, effluent water quality and groundwater quality from the pit. From these a clear picture of predicted pit water/groundwater water quality and time frames for post-closure management are difficult to grasp. For example:
      - The Report proposes pit water treatment to reduce predicted groundwater-pit Arsenic concentrations of 1660 ug/L from the pit water to acceptable levels prior to discharge. This is presented as in the conceptual stage (Attachment 9).
      - Predicted effluent water quality from the pit with a maximum concentration of 0.616 mg/L As - Base Case (over 51 yr) - Table 5.1 (Attachment 7)
      - Based on Attachment 7 values the Report indicates a plan to operate treatment for up to 50 yrs before federal MDMER limits (300 ug/L) are reached (Attachment 7, p. 17). However, this does not indicate consideration of length of time for treatment, or criteria for pit water discharge relative to Provincial NSECC requirements.
      - Groundwater seepage source term concentration from the pit of 3070 ug/L - Table 6.1 - Predicted Water Quality of Seepage are given from Touquoy Pit. (Attachment 7 Assimilative Capacity Study)
      - Discrepancies between Attachment 7 (51 yrs) and Attachment 9 (24 yrs) for predicted water quality treatment duration of pit lake effluent discharge, during the post-closure period.
  - Faulting/Hydraulic Conductivities
    - Note that the faults/mine workings identified in Figure 8 show a much different depiction than shown in previous reporting (July 21 Model report - Figure 5.12; Mar 2022 Model update - Figures 2.2 to 2.11). This demonstrates that with more and more

investigation - a better picture of faulting is established. While understandable, this indicates a certain degree of risk of unknown conditions - associated with fault/mine workings location and significance.

- Groundwater Model Results
  - The particle tracking results for the are of the pit lake provided do not depict what would be expected for the conditions described for this mine pit.
    - It is not clear that post-closure conditions with Pit Lake constant elevations, of 108.0 masl and alternately 106.5 masl, have been incorporated in the modelled scenarios.
    - The figures provided would be expected to match text description of hydraulic gradients, but do not (see Attachment 3, Groundwater Modelling Information, Section 1.D, p. 4 of 7)
    - The flowpath particle tracks for modelling cells in the vicinity of the pit lake are extremely short and indicate very little flow. These do not seem to match with expectations based on descriptions of water levels, gradients, drawdown and equipotential contours as described throughout the report and previous descriptions of flow.
  - Particle tracking for the combined features WRSA and TMF clearly shows the expected groundwater flow transport of particles to local surface water bodies within 10 years (in particular the on-site Fish River and Watercourse #4)

## **Summary and Recommendations:**

### Summary

The Report provides more information concerning the requested addendum activities and includes information relevant to the long-term closure conditions of the project site.

- Main groundwater concerns identified in this review are the proposed plans for post-closure activities associated with the open pit lake, once it fills with water in 5 or 10 years. Summary concerns can be expressed as follows:
  - The post-closure pit lake predicted water quality is not well defined (variable prediction levels reported) and thus there is risk associated with potentially higher concentrations than expected. Arsenic concentrations remain one of the greatest concerns, but there are also other contaminants present
  - Due to predicted contamination in the pit lake water, the management of the post-closure pit lake water levels and treatment prior to surface water discharge to meet acceptable criteria have high importance and need to be well understood and planned for.
  - As the distance between the pit lake and the Moose River is relatively short at about 100m, the groundwater seepage path for contaminated pit lake water to the Moose River has a high degree of risk.
  - The groundwater modelling information conducted, and engineering mitigation work proposed may not fully address the risks of groundwater seepage.

- Additional groundwater concerns are associated with the expansion of the waste rock storage area (WRSA) and the effects of this activity potentially increasing contaminant flux into groundwater and subsequent discharge into local surface water streams/watercourses.

See Table 1 below for a Summary Table of Gaps/Risks

See Table 2 below for a Disposition of Ministerial Questions – Groundwater as determined by this reviewer.

Recommendations:

- 1) As the pit lake water quality can affect groundwater quality - all efforts should be made to ensure that the post-closure pit lake water quality is of best condition as possible:
  - a. Develop containment options for any historical tailings or excess TMF or mine material placed in the bottom of the pit (e.g. encapsulated, covered material)
  - b. More thoroughly evaluate and consistently use predictions of water quality geochemical characteristics, interactions with pit lake pH and more precise predictions of flow volumes so that pit lake water quality treatment processes and predicted duration can be well designed for post-closure operations.
- 2) A better understanding and predictions for the groundwater flow conditions between the open pit (pit lake) and Moose River needs to be made. This could include:
  - a. A revised or new groundwater model should focus on better accounting for post-closure conditions with the pit lake having constant head conditions based on the operating levels proposed.
    - Assign constant head conditions to pit lake model cells
    - Assess groundwater flow conditions resulting from the two operating pit lake water level conditions proposed (currently 106.5 m and 108.0 m ASL)
    - Show the model effects of any engineered design features (such as the proposed clay wall) on groundwater flow by assigning and evaluating appropriate cell conditions. Contrast to modelled scenarios without the engineered design.
  - b. Areas of historical groundwater contamination such as at OPM 1 and the HT wells need to be assessed for their responses under the new groundwater flow field once the pit lake is at operating levels. Any flow gradient towards the Moose River has the risk of groundwater contaminant transport over time from either:
    - The pit lake, or
    - The contaminated groundwater associated with historic tailings.
- 3) The additional groundwater contaminant seepage into watercourses/water bodies in the vicinity of the WRSA and TMF, due to the expanded WRSA should be assessed to determine how to reduce this as much as possible and/or provide treatment options to meet Provincial criteria. Managing the long-term implications of this seepage also needs to be considered.

**Table 1 Summary of Gaps/Risks - Groundwater**

Identify Gap/Risk	Can it be addressed in another permit/approval or with a T&C?	Define/provide detail	Risk of gap and proposed approach
Groundwater model – Calibration uncertainties	Yes, Industrial Approval	Revise and update the model particularly with respect to better defining the post-closure pit lake conditions and meeting calibration targets in localized areas	Understanding calibration is necessary to fully understanding the model predictions related to risk. Full calibration details are necessary for this.
Groundwater model – Construction uncertainties related to modeling post-closure conditions	Yes – Industrial Approval	Revise and update the model particularly with respect to better defining the post-closure pit lake conditions such as constant head conditions at two proposed levels	Post-closure conditions are key to understanding risk. Model construction needs to be better aligned with expected closure features so flow predictions, including groundwater flow interactions with the Moose River are clear.
Groundwater model – Results for particle flow path tracking and solute transport	Yes – Industrial Approval	Revise and update the model particularly with respect to better defining the post-closure pit lake conditions and re-assessing flow paths.	If not updated, particle flowpath tracking may not be reliable and thus flow of contaminants to surrounding areas unknown. As a result any mitigation may not be adequate.
Groundwater Water Level Data – uncertainties in flow conditions at closure, flow direction and hydraulic gradients	Yes – Industrial Approval	More thorough assessment of expected of flow conditions at closure, flow direction and hydraulic gradients particular in between the post-closure pit lake, spillway, and Moose River	The interaction between the post-closure pit and groundwater flow of contamination to the Moose River is key. All aspects of groundwater flow need to be better understood to assess and prevent adverse impacts to the environment through mitigation design
Groundwater and Pit Lake Water Quality – concerns over lack of clarity regarding predicted pit lake water quality and flow, groundwater seepage quality and effects of historical mine tailings	Yes – Industrial Approval	Re-evaluate and present pit lake water quality and flow, groundwater seepage quality, treatment design and effects of historical mine tailings	Groundwater and pit lake water quality information is necessary for more fully understanding risks and providing treatment design adequate in preventing adverse impacts to the environment.



Identify Gap/Risk	Can it be addressed in another permit/approval or with a T&C?	Define/provide detail	Risk of gap and proposed approach
Faulting/Hydraulic Conductivities – remaining uncertainties in historical mine workings as well as fault zones and their hydraulic conductivities	Yes – Industrial Approval	Any additional significant faults or mine workings should be evaluated as discovered (including determining hydraulic conductivities and extent)	Any new, significant zones for groundwater flow could have adverse effects on flow of contaminants in the 100 m zone between the Pit and Moose River, as well as potential final discharge directly to the Moose River.

**Table 2 Disposition of Ministerial Questions - Groundwater**

Request No.	NSECC Minister's Request for Information	Does the AMNS response fully address the Request for Information? Yes / No	NSECC SAS Groundwater comments regarding response	Main risks
1.b	Complete hydraulic connectivity testing in all fracture/fault zones, identified underground mine workings, Ground Penetrating Radar anomalous areas and the overburden and upper weathered bedrock layers surrounding the pit.	<b>No</b>	<p>Although not completed as requested, the additional information provided is considered acceptable to this reviewer. There would be significant challenges in conducting k testing in all identified fractures/faults and UG mine workings. This is due to both the number of these (considerable and likely even that not all are identified) as well as the difficulty in accessing (not an exact science to intersect subsurface traces). AMNS did conduct testing on 12 BH locations around the pit, and with multi-zone packer test K determinations (5-6 per borehole). This data provides a reasonable range of k values for the area. In my view, targeting all identified features above is no longer necessary.</p> <p>However, as a result, based on the data and mapping it is evident that the level of risk for this situation is much higher than if complete data was available. This however is not unusual for assessing subsurface conditions. Risks include:</p> <ul style="list-style-type: none"> <li>- Not fully identifying potentially higher k groundwater flow zones</li> <li>- Not understanding the impacts of mine workings or higher k zones on groundwater flow – particularly in the short distance (&lt;100m) between the pit and Moose River</li> </ul> <p>Note that for any mitigation purposes and potential calculations used, use of the actual observed maximum k values would provide a more conservative risk approach than use of the modelled layer calibrated values for k as these were artificially adjusted lower to approximately 1 order of magnitude smaller k values (in order to achieve model calibration).</p>	<p><b>Main Risks</b></p> <ul style="list-style-type: none"> <li>- Unidentified or poorly identified k zones or UG/ workings may allow contaminated groundwater preferential transport to the Moose River</li> <li>- Post-closure pit water levels (at 108 masl) may be elevated into zones of higher k overburden till or weathered bedrock. This would allow flow of potential contaminants in groundwater</li> </ul>
1.c	Provide a clear conceptual outline with all significant processes for the groundwater flow of a conservative solute from the pit to the Moose River. Evaluate the hydraulic and attenuation factors being assumed and describe how these are incorporated into the groundwater model. Describe what mechanisms in the model would result in limitations to non-reactive solute transport. If the new evaluation indicates a change in conceptual approach, update and re-run the groundwater solute transport model.	<b>No</b>	<p>A completely clear conceptual outline of the post-closure groundwater flow from the pit to Moose River was not evident to this reviewer.</p> <p>The hydraulic gradient is key in determining the flow and particle flow paths/ solute transport. The modelled particle flow paths provided do not match with an expectation for groundwater flow at the site. Based on older documents submitted with elevation data I was able to calculate hydraulic gradients for flow from the Pit to Moose River in the vicinity of SW2. At Pit water elevation of the final 108 masl, the gradient to SW 2 in the Moose River is approximately <math>i = 0.014</math>, or 1.4% over the estimated &lt;100 metre distance.</p> <p>Overall, the conceptual model as presented is not clear for the following reasons:</p> <ol style="list-style-type: none"> <li>1) Contradictory statements are made concerning flow that are not clarified – e.g. groundwater will flow through the pit vs. groundwater flowpaths are extremely short over a 500 yr modelled period</li> <li>2) The main factors affecting flow in the model are not clearly outlined. As per the governing D'Arcy's Law for groundwater flow these include: <ul style="list-style-type: none"> <li>o Hydraulic conductivity values (k)</li> <li>o Hydraulic gradient (i)</li> <li>o Porosity (n)</li> </ul> </li> </ol>	<p><b>Main Risks</b></p> <ul style="list-style-type: none"> <li>- Risks regarding potential for long-term or post-closure impacts to develop over time</li> <li>- Model predictions may be too generalized and not adequately represent small scale zones of higher groundwater flow</li> <li>- Proposed operating water levels and post-closure water levels may not adequately be protective of the environment without clear mitigations</li> </ul>

Request No.	NSECC Minister's Request for Information	Does the AMNS response fully address the Request for Information? Yes / No	NSECC SAS Groundwater comments regarding response	Main risks
1.d	Provide particle flowpath tracking for the area of the groundwater model between the pit and Moose River.	Yes	<p>Although this request was completed, the results lead to additional questions concerning how they were derived and how meaningful the model results may be.</p> <p>A number of questions arise from what is provided.</p> <ol style="list-style-type: none"> <li>1) Why is there no groundwater flow to a local hydraulic discharge zone (boundary), the Moose River, for the 500 yr duration?</li> <li>2) The text indicates final elevation post-closure of Pit Water levels at 108.0 m - this should result in a flow gradient (compared with 106.7 m at Moose River – unless AMNS is assuming pit levels at 106.5 m (said to be "Normal Operating levels" which is likely not sustainable for 500 yrs)</li> <li>3) The report indicates that the post-closure Pit will be a flowthrough hydrogeologic feature, with groundwater generally entering the pit from the east-northeast and exiting the pit toward the Moose River on the west and southwestern portion of the pit.. The particle flowpath tracking does not indicate this.</li> <li>4) There are several unexplained anomalies that may be artefacts in the flow paths: <ol style="list-style-type: none"> <li>i. Mass of particle tracks in centre</li> <li>ii. Linear particle tracks feature in lower (South) section</li> <li>iii. Two particle tracks in proposed spillway area from Pit connecting to Moose River</li> </ol> </li> <li>5) Particle tracking is created using the model k values for bedrock which are an order of magnitude lower than field measured values (i.e. measured max of <math>1.4 \times 10^{-6}</math> m/s vs the model value of <math>1.6 \times 10^{-7}</math> m/s (which was done to achieve "calibration").</li> <li>6) k values of <math>1E-05</math> m/s (overburden) and <math>1E-06</math> m/s (weathered rock) should result in some groundwater flow if hydraulic gradients are present.</li> </ol>	<p><b>Main Risks</b></p> <ul style="list-style-type: none"> <li>- Flow paths may not be accurate if model representation, groundwater hydraulic gradients and k's are not accurate of actual conditions or if the capture of significant risk features is not complete (e.g. unknown UG workings or fault zones with higher k, or lower elevations of overburden till and weathered bedrock)</li> </ul>
1.f	Define the stratigraphy geologic layers (including overburden and upper weathered bedrock layers) and corresponding hydraulic conductivity measurements within and surrounding the open pit mine show how these are matched with the layers used in the groundwater model.	Yes	<p>The additional information and conceptual cross-sections and pit perimeter cross-sections assists in showing relevant stratigraphic conditions.</p> <p>These show the differences between model input values (calibrated) and measured values being somewhat significant (order of magnitude).</p> <p>Overburden and Till – model values are approximately one order magnitude higher than measured Weathered Bedrock – model values are approximately one order magnitude lower than measured.</p> <p>The significance of these differences is not known</p>	<p><b>Main Risks</b></p> <ul style="list-style-type: none"> <li>- The model k's may underestimate the degree of groundwater flow in weathered bedrock</li> </ul>
1.g	Provide in graphical cross-section format, data showing stratigraphic layering through the southern pit wall including geology, fault zones, underground working zones, elevations of the final pit water level, groundwater level and Moose River seasonal water elevations.	No	<p>Although there were a number of cross-sections provided, some key information was missing. The pit perimeter cross-sections lack sufficient detail related to the Moose River. The Moose River elevations and water elevations are not shown.</p> <p>While not fully meeting the required information, the information could be considered adequate due to the following.</p> <p>Water elevations were obtained by me for the Moose River for one location (SW2) by extensively reviewing several previously submitted documents (not seasonal however during likely dry period) that were not referenced in the response.</p>	<p><b>Main Risks</b></p> <ul style="list-style-type: none"> <li>- Uncertainty in operating pit levels and the interaction with both overburden till (high k) and weathered bedrock (moderate k) including hydraulic flow gradients are critical.</li> </ul>

# Guidance for Reviewers – Environmental Assessments

## Environmental Assessment Branch, Environment and Climate Change

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□  
Barrington Place  
1903 Barrington Street  
Suite 2085  
Halifax, Nova Scotia  
Canada B3J 2P8

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**Date:** February 3, 2023

**To:** Bridget Tutty, Environmental Assessment Officer

**From:** Senior Water Resources Engineer, Water Resources Management Unit, with comments from Wastewater Engineer Specialist, Water and Industrial Facilities Unit (reviewed by Water Resources Management Unit Manager)

**Subject:** Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum No. 2 Submission

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### **Scope of review:**

This review focuses on the following areas: Hydrology & surface water quantity, receiving water assimilative capacity

### **Documents reviewed:**

The documents outlined below formed the basis for this EA review, and is referred to as the 'the EARD' through the rest of this memorandum:

- Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum No. 2 Submission, accessed from <https://novascotia.ca/nse/ea/Touquoy-Gold-Project-Site-Modifications/>

### **Review Summary:**

- The results of the assimilative capacity study for Moose River and Watercourse #4 are used to demonstrate the adequacy of project design and proposed mitigations in protecting surface water quality. As presented, the models and assumptions behind the results do not represent conservative or worst-case conditions, nor do they sufficiently align with the guiding principles referenced. The presented assessment does not give confidence that the proposed project design and mitigations will have the necessary flexibility to manage scenarios where future conditions do not match what is predicted in the submission.
- Results from the assimilative capacity study for Watercourse #4 indicate it should be considered a 'mixing zone' upstream of the confluence of this watercourse and Moose River, and thus will not meet water quality criteria throughout its ~>3 km in length. The current and future impacts on fish and aquatic habitat within this reach were not clearly assessed in this submission and remain as outstanding questions associated with the impacts of the project.

### **Recommendations:**

# Guidance for Reviewers – Environmental Assessments

## Environmental Assessment Branch, Environment and Climate Change

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1. If the project is approved, it is recommended that the Moose River Assimilative Capacity study be updated to include the following and be submitted to the Department for review and acceptance:
  - a. Assessment of the CCME (2003) Guiding Principle that states “A zone of passage for migrating aquatic organisms must be maintained”, with consideration for the guidance outlined in CCME (2008);
  - b. Responses and consideration to the specific comments provided in this document;
  - c. Updates to the rest of the analysis (including dilution ratios) as a result of any changes that stem from completing a) and b), as appropriate.
  - d. Calculation of site-specific discharge limits for substances of concern in consideration of CCME guidance and revised dilution ratios.
2. If the project is approved, it is recommended that a condition be included that requires the Approval Holder(s) to discharge only under conditions where the dilution ratios outlined in the updated Moose River Assimilative Capacity study accepted by the Department (outlined in #1) can be confirmed. In support of this, the following actions are recommended as part of the application for the Industrial Approval:
  - o Submission of a plan that outlines how the proponent will operate the treatment facility and manage pit lake levels so that effluent will only be discharged when these conditions are met.
  - o Requirements for the applicant to engage with Environment and Climate Change Canada on the installation of a hydrometric station to be established as close as feasible to the planned discharge location, so that real-time surface water quantity data obtained from this location is of a quality and level of confidence to support this requirement.
  - o Requirements for a calibrated and validated real-time discharge measurement system from the spillway from the pit lake to Moose River be developed by a qualified professional engineer so that effluent discharge data is of a quality and level of confidence to support this requirement.
3. If the project is approved, it is recommended that the Watercourse #4 Assimilative Capacity study be updated to include the following and be submitted to the Department for review and acceptance:
  - o Details to support the conclusions surrounding the mixing zone extents from the discharge of Watercourse #4 to Moose River, including consideration for the recommended requirements outlined in recommendation 1 above.
4. If the project is approved, as part of the Industrial Approval application, it is recommended that adverse effects to fish and aquatic habitat resulting from impacts to Watercourse #4 be evaluated, and mitigations proposed for Department review and acceptance.

### **Detailed Reviewer Technical Comments:**

#### **Comments from wastewater engineer specialist:**

##### **Assimilative Capacity for both Moose River and WC4 studies:**

- The proponent has stated that "The proposed MDMER effluent criteria protect fish and fish habitat" (pg 117) and therefore are acceptable to use as effluent discharge criteria. MDMER is a federal regulation which lists maximum acceptable discharge criteria for a select few representative substances. MDMER does not provide consideration for the assimilative capacity of the receiving environment. As such, Nova Scotia has the authority to require site-specific

# Guidance for Reviewers – Environmental Assessments

## Environmental Assessment Branch, Environment and Climate Change

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discharge limits which are more stringent than MDMER in consideration of the assimilative capacity of the receiving environment.

- The proponent has stated that CCME (2003) has been used for assessing assimilative capacity in their studies. Within this guidance there are key guiding principles for the establishment of an initial dilution zone (IDZ). These have been specifically referenced by the proponent within Appendix A of the Moose River assimilative capacity study. The following guiding principles have not been applied, resulting in an IDZ greater than what is recommended by CCME.
  - The dimensions of an IDZ should be restricted to avoid adverse effects on the designated uses of the receiving water system (i.e., the IDZ should be as small as possible);
    - the proponent has defaulted to a dilution zone of 100 m while suggesting that this is the maximum allowable in Nova Scotia. No mention of what potential designated uses have been considered.
  - The IDZ should not impinge on critical fish or wildlife habitats (e.g., spawning or rearing areas for fish; overwintering habitats for migratory water fowl);
    - IDZ proposed occupies 100% of the receiving water for up to 100 m downstream. IDZ occupies fish and wildlife habitat for its entire extent.
  - A zone of passage for migrating aquatic organisms must be maintained;
    - As noted above, IDZ occupies 100% of stream width. The proponent suggests that contaminant levels within the IDZ do not pose a chemical barrier.
    - CCME considers IDZ to be a barrier to migrating aquatic organisms. This guiding principle is intended to restrict the IDZ allowing passage outside of its influence.
    - CCME 2003 lists these guiding principles on page 38. Within the paragraph immediately following, British Columbia is noted as an example where the “IDZ may not encompass an area greater than 25% of the stream width”. Nova Scotia does not have provincial guidance outlining this level of specific restriction. However, within the context provided, CCME 2003 clearly does not allow for an IDZ occupying 100% of stream width.
- The introductory paragraph for the capacity study of Moose River states: “The objective of the assimilative capacity study is to define parameters of potential concern for the effluent, characterize the mixing zone for the Touquoy pit effluent and propose the maximum effluent discharge limits for the parameters of potential concern.” In consideration of the above bullet points and this stated objective, it is expected that the study would determine the following:
  - categorization of parameters of potential concern based on substances expected to be present within the effluent. These are not restricted to those listed within MDMER.
  - Calculation of site-specific mixing zone limits in consideration of the CCME guiding principles inclusive of those noted above.
  - Calculations and/or modelling results demonstrating expected dilution (i.e. assimilative capacity) which could be accomplished within this mixing zone.
  - In consideration of limits for substances meeting water quality objectives (protective of aquatic life) at the edge of the mixing zone, limits at the discharge point for the substances should be calculated based on the expected dilution noted above.
  - CCME guidance does not permit dilution of substances which are persistent, bioaccumulative and inherently toxic.
  - CCME guidance describes consideration for background levels which exceed protection of aquatic life values.

### **Comments from Senior Water Resources Engineer:**

# Guidance for Reviewers – Environmental Assessments

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### Assimilative Capacity for both Moose River and WC4 studies:

- It is noted that DFO's comments on the last project submission (dated April 22, 2022) state the following: "While the EARD and Addendum predict that effluent will meet the concentration limits set out under the MDMER, monitoring data from ECCC's effects monitoring program shows that effluent from mines meeting the MDMER concentration limits has potential to result in a variety of adverse effects to fish and fish habitat downstream (<https://www.canada.ca/en/environment-climate-change/services/managing-pollution/publications/third-national-assessment-monitoring-data.html>)".

### Moose River Assimilative Capacity

- It is noted that the 2007 EARD for the project included the following statement: "Surveys conducted in 2005 found the section of Moose River adjacent to the study area provided habitat for a wide variety of fish species including Atlantic salmon and brook trout. Numerous juvenile Atlantic salmon were observed in the area, which provides good juvenile and rearing habitat and potential spawning habitat... Moose River was also determined to be good adult and juvenile brook trout feeding habitat, fair rearing habitat and potential spawning habitat. Other fish species observed included American eel (*Anguilla rostrata*), white sucker (*Catostomus commersonii*), and minnow species." (pg 100)
- It is noted that the 2008 Focus Report states the following in relation to the evaluation of discharge locations for the Tailings Management Facility: "Effluent could be piped to Moose River for discharge from Site (1). The average flow in Moose River is significant, 6000 M m<sup>3</sup>/yr. Moose River may host a small salmon population. Some years, however, Moose River dries up into a series of pools. Sufficient dilution could not be guaranteed in this event, possibly resulting in impact." (pg 31)
- The study states "The lowest observed flows during the flow monitoring period ranged between 50 L/s and 88 L/s with low flow occurring typically in late July, August or early September. These low flow conditions occur following a period of dry conditions in the watershed. Observed low flows in the summer are below the 25% Mean Annual Flow (MAF) metric of 290 L/s that was presented in the assimilative capacity study." (pg 172)
  - It is also stated that "The 7-day Q10 low flow condition is primarily driven by base flow into Moose River. Based on a review of climate data at the Halifax station, the net precipitation (i.e. precipitation less evaporative losses in the pit) is zero over the 7-day low flow period. Under these conditions the pit lake would be expected to evaporate at a rate exceeding inflow. Therefore, as effluent discharge from the pit lake is driven by meteorological conditions there is no effluent discharge from the pit expected during this period. In addition, groundwater seepage flows of 2.0E-5 L/s from the open pit have been accounted for but have been estimated to contribute a negligible amount of flow to the Moose River during the 7Q10 period." (pg 175)
  - It also states "The average annual baseflow to Moose River along the entire boundary of the Open pit is estimated at 7.0 L/s, based on climate average annual conditions and 1.75 L/S based on 25% MAF low flow condition. However, as calculated in the latest hydrogeology model only a fraction of this baseflow of 2E-05 L/s is considered seepage from the pit to Moose River." (131/298)
  - It should be noted that the 25% MAF metric used in the study is developed through regional regression analysis, and thus represents a modelled result that requires validation using measured data. This comment has been provided for all submissions received for this project thus far - in the response to No. 4 in the addendum, a very short



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summary of observed flows is provided with recognition that observed values are ~230% higher than the value used in the assimilative capacity study, but with no comparison of like for like against the regional regression analysis values (e.g., average and median flows of modelled vs. observed for July, August, Sept). No response is provided to the statement by DFO that says "...Therefore, the estimated average flows used in Appendix D do not represent a conservative low flow scenario". In No. 6 where DFO again highlights the differences between modelled flows vs. observed flows, the submission does not address that the modelled average flows for August represent ~280% increase over observed flows. Also, it remains unclear why a different approach was used for the regional regression analysis for Average July Flows, where only 4 stations are listed, with no stations less than 100 km<sup>2</sup> used. In summary, the information used to support the decision to use modelled 25% MAF flows in the assimilative capacity study is not at a level of detail or specificity to provide confidence that this value represents an appropriate value to be used in the assimilative capacity study.

- Information surrounding 'environmental water balance' average monthly effluent flows results is provided on page 127 - I have provided comments in the previous two submissions related to this water balance and the issues I identified through my review of that model, which I mention here to highlight the level of uncertainty in these results. I would also highlight that in the March 2022 EARD submission, the following was stated: "the environmental water balance has been superseded by the site wide water balance model." (EARD 2022, App A, pg. 20). In consideration of unaddressed previous concerns and uncertainty that the water balance being used has been superseded by another, it is difficult to have confidence in the effluent flow values being used in the assimilative capacity study and that they are best estimates of future conditions.
- It is likely that the monthly average effluent flows summarized in the figure on page 127 are being driven by a few large precipitation events. As described in my previous comments on the March 2022 submission, the differences between the contributing watersheds for the SW-2 (39.03 km<sup>2</sup>) and SW-11 (25.8 km<sup>2</sup>) and pit lake (0.41 km<sup>2</sup>) are important to note, and their respective responses and timing of peak flows occurring following a storm event (i.e., times of concentration) will differ. It is very likely that effluent will be discharged from the pit lake to conditions in Moose River that do not follow the simple 25% proration that is described on page 133.
- From the groundwater perspective, it is very difficult to follow what has been presented and what exactly is meant by 'average annual baseflow to Moose River along the entirety of the Open pit', how these values were determined, and why there is such a difference between this and the 'seepage' flows that are presented, and as such have confidence in the use of these values.
- With the current information provided and with recognition of previous statements highlighting the value of the habitat of the Moose River, it is not currently possible to have an adequate understanding of the overall level of conservatism or validity of the results that have been produced, and their adequacy in supporting an assessment that will be protective of fish and fish habitat downstream of the discharge of effluent from the proposed pit lake.
- "The mixing zone was established to follow the 14 guiding principles (CCME 2003b), which include: A zone of passage for migrating aquatic organisms must be maintained; The discharge infrastructure does not cause a physical barrier to the migration of aquatic organisms. Predicted effluent discharge concentrations do not propose a chemical barrier." (pg 144/298)



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- The statement that “Predicted effluent discharge concentrations do not propose a chemical barrier” has not been sufficiently justified in the work that is summarized - it is currently unclear if and how this has been considered in the assessment provided. There is existing guidance for how this should be considered in the development of mixing zones - for example, CCME (2008) outlines the following:
  - “However, one hundred per cent of the stream flow should not be allocated to a single discharge in order to allow for future development and to maintain a zone of passage for fish, among other considerations. Only a portion of the stream flow should be allocated for mixing. The dilution factor used to calculate the EDO should therefore be based on a limited portion of the stream flow (e.g., 25%, 33%, 50%), also called the fraction of flow (ff). This fraction could be reduced in situations where multiple discharges use a stream. The fraction of flow is applied to a low flow condition (e.g., a seven-day low flow with a ten year return period).” (pg 22/79)

### Watercourse #4 Assimilative Capacity

- It is noted that the 2007 EARD included the following statement on Watercourse #4 (then referred to as “Tributary to Moose River”): “Based on the current footprint and mapping, a tributary to Moose River is located within the footprint (Figure 7.4), but **will remain unaltered** and a 30 m buffer zone will be left intact.”
- It is noted that the July 2021 EARD stated the following: “Fish surveys and incidental observations in Watercourse #4 confirmed the presence of American eel, banded killifish, brook trout, brown bullhead, northern redbelly dace and white sucker (Stantec 2019c). Stickleback and northern redbelly dace were confirmed present in Watercourse #3.” (pg 197)
- “Study conservatism is derived from the corresponding use of both poor receiver quality (i.e., 75th percentile) and low flow conditions (i.e., 25% MAF) in the receiver. Therefore, the assimilative capacity study assumes that these two worst case events in the effluent occur at the same time.” (pg 191)
  - The 25% MAF is not a conservative estimate of low flow conditions, and is inappropriate to be considered as a ‘worst case event’ as daily flow measurements during summer low flows are typically well below this value. Further to this, the 25% MAF in this case is a modelled value that is extrapolated from regional regression analysis for stations with much larger drainage areas than WC4, making it even more critical that this and other modelled values for this location be compared and validated against measured data. For example, page 218 provides the following statement that outlines the differences between observed and calculated values: “The observed flows at SW-3 during the period of flow monitoring approaches 0 L/s, intermittently in the dryer months of the year of June, July, and August. Observed low flow in the summer is below the 25% Mean Annual Flow (MAF) metric of 7.8 L/s that was presented in the assimilative capacity study.”
- “The TMF and WRSA seepage rate to WC4 was simulated using a groundwater flow model (Stantec 2022). The average daily seepage rate from the TMF is 2.5 L/s and from the WRSA is 5.5 L/s. These seepage rates are representative of the mean annual flow conditions in WC4.” (pg 195)
  - “It is reasonable to expect that during dry conditions the seepage rates will be proportionally lower. Therefore, at the 25% MAF the average daily seepage rate from the TMF will be 0.63 L/s and from the WRSA will be 1.38 L/s.” (pg 195)
  - Rationale should be provided as to why the results of the groundwater model during the periods of interest of this study are not used instead of these estimated 25% MAF values,

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as it is important to have confidence in the values being representative of actual conditions, and 25% MAF calculated values could be underrepresenting contributions during this time.

- In low flow conditions, watercourse flows are driven by groundwater contributions (baseflow). Groundwater does not respond to dry conditions or meteorological inputs in the same way that surface water resources do (i.e., changes are dampened in magnitude and in time) – as a result, this assumption and the values that result are likely to be underestimating relative seepage contributions (and thus effluent contributions) during low flow conditions.
- “Modeling shows that WC4 is well mixed, with seepage that potentially reaches the watercourse fully mixing within a very short distance.” (pg 198)
  - No mixing zone models or specific modelling activities is described in this report, nor results or visualizations provided in Appendices or elsewhere – as a result, it is difficult to understand what modelling is being referred to in this study. If CORMIX or another model was used, an understanding of how was this completed in consideration of this ‘diffuse source’ input and the various assumptions and inputs used is necessary in order to have confidence in the results. Without information to understand and support the modelling that has taken place, it is difficult to have confidence in the results and conclusions.
- “At the end of the WC4 mixing zone, at the confluence of WC4 with Moose River, six out of seven parameters (arsenic, copper, selenium, nitrate, nitrite, and sulphate) are below the WQCC and inherently are not chronically toxic. Aluminum is above the WQCC due to elevated natural background concentrations. The results of the assimilative capacity study show that water quality in WC4 is protective of fish and fish habitat at the end of the mixing zone.” (pg 199)
  - On Figure 2.2, mixing zones are also identified at ‘WC4’ and ‘Otter Lake’ – results for these two mixing zones are not discussed in the submission, and as a result of this and the statement above that the end of the WC4 mixing zone occurs at the confluence of WC4 with Moose River, it is thus understood that Otter Lake and Otter Dam Flowage are both unable to meet water quality criteria. This conclusion appears to be further validated by the statement “The results of the assimilative capacity study show that water quality in WC4 is protective of fish and fish habitat at the end of the mixing zone.” (pg 201).
  - The report states “The observed flows at SW-3 during the period of flow monitoring approaches 0 L/s, intermittently in the dryer months of the year of June, July, and August.” (pg 218), and in the original July 2021 EARD, the following was reported: “During fish habitat survey in 2019, Watercourse #4 was ephemeral upstream of the Plant Access Road and intermittent for approximately 325 m downstream of the Plant Access Road during summer low flow conditions (Stantec 2021h) - where observed flows at SW-3 show an intermittent watercourse, the application of mixing zones only when WC4 enters Moose River would align with guidance in CCME (2008), which states “In intermittent streams, a mixing zone is not allocated and the EDOs are set as equivalent to the EQOs. However, in some cases, the jurisdiction may decide to apply the mixing zone where the stream empties into a larger, year-round receiving body of water (see section 6.1).”
- “However, as requested by DFO to provide an assessment of assimilative capacity under observed summer flows, the lowest average daily flow observed at SW-3 of 0.25L/s was used to represent this summer flow condition...Water quality meets IA WQ objectives or background just downstream of the confluence with Moose River.” (pg 219)

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- No further information, figures, or quantification is provided to support what is meant by ‘just downstream’ or otherwise describe the extents of the mixing zone where this discharge meets the Moose River.
- It is noted that the July 2021 EARD states the following re: previous site related impacts to WC4: “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). Monitoring conducted in 2020 within Watercourse #4 showed that the substrates in Watercourse #4 are generally returning to pre-siltation characteristics or are stable (Stantec 2021h). (pg 194/317 in July 2021 EARD)

#### **References**

Canadian Council of Ministers of the Environment (CCME), 2003. Canadian Water Quality Guidelines for the Protection of Aquatic Life – Guidance on the Site-Specific Application of Water Quality Guidelines in Canada: Procedures for Deriving Numerical Water Quality Objectives.

Canadian Council of Ministers of the Environment (CCME), 2008. Technical Supplement 2 – Canada-wide Strategy for the Management of Municipal Wastewater Effluent – Environmental Risk Management: Framework and Guidance.

Date: February 17, 2023

To: Environmental Assessment Branch

From: Maylia Parker, Director, Air Quality & Resource Management

Subject: Reviewer Comments on Touquoy Gold Project Site Modifications Addendum No. 2 for Environmental Assessment – December 2022

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Introduction

Technical staff within the Air Quality and Resource Management Branch of ECC reviewed the Touquoy Gold Project Site Modifications Addendum No. 2 for Environmental Assessment documentation; December 2022. This document summarizes that review.

Scope of review:

This review focused on the following mandate: Contaminated Sites

Technical Comments:

The proponent indicates that impact to groundwater quality from the project will be too low to be distinguishable from baseline conditions. The Contaminated Sites Regulations allow for consideration of natural background concentrations when they exceed Tier 1 Environmental Quality Standards (EQS). It is important to distinguish between natural background conditions, which reflect only natural sources of potential contaminants, and baseline conditions, which can be elevated due to historic or ongoing anthropogenic site activity. It is unclear whether the data presented by the proponent represents natural background concentrations or baseline concentrations.

If the project is approved, we recommend that additional information and analysis be provided by the proponent to clarify natural background concentrations and to support determination of compliance limits at the Industrial Approval stage.

END

Date: February 3, 2023

To: Bridget Tutty, Manager, Environmental Assessment

From: Surface Water Quality Specialist, Water Resource Management Unit;

Subject: Touquoy Gold Project Site Modifications, Additional Information Addendum 2,  
Halifax County, Nova Scotia

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### Scope of review:

Atlantic Mining Nova Scotia provided a submission to Nova Scotia Environment and Climate Change (NSECC) dated December 12, 2022, titled *Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum No. 2*.

The submission was issued in response to the additional information requested by the Minister of Environment and Climate Change, May 12, 2022.

This review is based on the Addendum No. 2 submission and the Minister's decision letter dated May 12, 2022. It focuses on the department's surface water quality mandate.

### Technical Comments:

***Minister's Request for Information: The third-party water modelling review I requested identified issues with water modelling and the recommendations from the review were not implemented by AMNS. Address the recommendations proposed by Wood Environmental & Infrastructure Solutions in the Water Modelling Third-party Review of the Touquoy Gold Project Site Modifications including but not limited to:***

***Present information to validate predicted tailings pore water quality and predicted open pit lake discharge water quality. Compare predicted values against water quality within the existing Tailings Management Facility.***

The information provided **does not** fully meet the Minister's request with respect to surface water quality because: 1) it does not address all water quality parameters of concern, 2) the predicted open pit lake discharge water quality data presented in Attachment 4 do not align with comparable data presented in Attachment 7, and 3) the comparison of water quality predicted for the open pit to the existing TMF do not adequately reflect the size differences between these facilities.

- This request was addressed in "Attachment 4 Pore Water Quality, Open Pit Discharge Water Quality"

- The addendum presented water quality predictions for the Pit Lake, accounting for both 2.5 Mt of waste rock at the bottom of the pit and consideration of the proposed pit slope low permeability liner.
- Table 1 Note 2 states *“The waste rock stored in the bottom of the pit will be encapsulated from the water and tailings in the pit limiting oxidation potential, the deposited waste rock material is expected to insignificantly change the water quality in the Pit Lake.”* The proponent has not identified whether the concentration or mobility of chemical contaminants in waste rock will change due to saturated conditions in the open pit.
- The model used to generate water quality predictions conservatively assumed that water quality in the open pit was equivalent to water quality in the pore water associated with subaqueous tailings.
- The water quality predictions presented in Table 1 were not compared to the water quality limits in the current Industrial Approval (IA) Appendix K criteria. The proponent did not predict or identify assumed hardness values for the open pit, which are necessary to calculate these criteria values for Cd, Cu, and Pb. The proponent also presented and predicted dissolved aluminum concentrations instead of total aluminum concentrations; the latter are specified for Appendix K criteria.
- The pit lake water quality predictions identify two water quality treatment processes: 1) process water treatment (PWT) through Touquoy mine mill operations, and 2) additional water treatment, required over and above PWT, to ensure that pit lake water quality will meet ECC compliance limits once discharged to Moose River.
  - *Process Water Treatment.* Mill operations require water for the processes that generate gold and waste materials, including tailings. These processes include the INCO process, which reduces the concentrations of cyanide, arsenic, and other contaminants in the tailings to be discharged to the pit lake. The addendum indicates that using water reclaimed from pit lake for mill process water will improve pit lake water quality over time, as pit lake contaminants will be removed each time they pass through the mill’s INCO process.
    - Two predictions were modelled: a base case, considering only Touquoy Pit Expansion tailings, and a ‘continued operations’ case, considering continuing tailings depositions from milling ore obtained from other mines.
    - The environmental effects arising from tailings generated from other projects, on other sites, with potentially different geochemical source material, were not assessed under the scope of this project.
    - The base case prediction indicated that pit lake water would be discharged to Moose River by year 6 (6 years after tailings initially deposited in the open pit). The ‘continued operations’ case prediction indicated that pit lake discharge would be required by year 4.

- Predicted pit lake water quality was compared against water quality within the existing Tailings Management Facility (TMF).
  - To predict the open pit water quality in consideration of the PWT, the proponent assumed that the process water treatment would be equally effective in the open pit lake as it was for the TMF. However, the pit volume significantly exceeds the TMF volume, so the pit water quality will improve (i.e., the concentration of cyanide will decrease) at a slower rate. The rate reduction is equivalent to the ratio of these two volumes.
  - *Additional Water Treatment.* This information was addressed under a separate Information Request.

***Minister's Request for Information: Use all of the above information (regarding the Wood Environmental & Infrastructure Solutions recommendations) to update ground and surface water modelling and provide analysis.***

The information provided **does** meet the Minister's request with respect to surface water quality because it accurately presents the situation, that no additional modelling was required, and all required analysis was presented in another part of the submission.

- The proponent indicated that the information presented in response to Wood Environmental recommendations includes all required analysis, captured in Attachments 1-5 of the addendum. It further indicated that none of this information represents new data or changes to conditions that requires new modelling.

***Minister's Request for Information: Complete the assimilative capacity study of Moose River to be compliant with the Industrial Approval which uses SW-11 as the background station for quality and propose discharge criteria that will be protective of fish and fish habitat, in all areas of the Moose River. Incorporate Fisheries and Oceans Canada recommendations to determine summer flow conditions.***

The information provided **does not** meet the Minister's request with respect to surface water quality if the proposed mixing zone occupies the entire width of Moose River and therefore may not provide the required zone of safe passage for fish.

- The proponent's response to this Information Request was enclosed within "***Attachment 7 Assimilative Capacity Study of Moose River***" prepared by Stantec titled "*Touquoy Gold Project Assimilative Capacity Study of Moose River – Touquoy Pit Discharge*".
- To supplement water quality data originating from Station SW-11 for the baseline dataset, the proponent included historical data from 2004-2007 at SW-1 and SW-2. Analytical results submitted in support of approvals are required to comply with the Department's Policy on Acceptable Certification of Laboratories.

- Water quality from the open pit is predicted to meet effluent limits established by the Metal and Diamond Mine Effluent Regulations (MDMER) at the point of discharge to Moose River, and that water quality treatment will be required to meet these limits for Arsenic and Aluminum for some time near the beginning of pit water release.
- The proponent conducted a mixing zone study using the CORMIX model to predict the concentrations of water quality at the edge of a mixing zone within Moose River, and to compare these predictions with baseline water quality and existing ECC compliance limits established in the Industrial Approval.
- The submission indicates that the mixing zone study for Moose River was designed in accordance with the Canadian Council of Ministers of the Environment (CCME) Guidance on the Site-Specific Application of water quality guidelines in Canada: Procedures for deriving numerical water quality objectives (CCME 2003).
- This CCME document identifies 14 guiding principles for consideration in the establishment of mixing zones. Of these, one is that “a zone of passage for migrating aquatic organisms must be maintained”. In Attachment 7, Appendix A, the proponent justified its consideration of this principle by stating “The discharge infrastructure does not cause a physical barrier to the migration of aquatic organisms. Predicted effluent discharge concentrations do not propose a chemical barrier.” It is not evident if the mixing zone will occupy the entire stream flow or only a portion of that flow to support this statement. Additional guidance to allow for a zone of passage for fish, among other considerations, is available from other resources, e.g., CCME’s Canada-wide Strategy for the Management of Municipal Wastewater Effluent, Technical Supplement 3: Environmental Risk Assessment.
- Two tailings deposition scenarios were considered: a ‘base case’ and a ‘continued operations case’. Base case assumptions include processing tailings from the Touquoy pit, excess water discharge beginning in year 6, and 2.5 Mt of waste rock remaining at the bottom of the open pit.
- Water quality predictions were generated for average monthly and maximum concentrations, for both scenarios (base case and ‘continued operations’, for the open pit and for Moose River under two conditions: September Flow and 25% Mean Annual Flow (MAF). The September flow conditions are more conservative and were adopted as the basis for conclusions in the submission.
- Total arsenic values predicted for the end of the mixing zone (September flow, Tables 9.1 & 9.2), for both the ‘base case’ and ‘continued operations case’, did not apply the predicted effluent quality for these cases presented in Table 5.1. The values used in these tables (0.3 mg/L) were far lower than the maximum concentrations reported for Arsenic for these in Table 5.1 (predicted effluent water quality parameters and limits) – approximately ½ and 1/10<sup>th</sup>, respectively. If these values were used to calculate predicted concentrations at the end of the mixing zone, then the predictions underestimate the arsenic concentrations.



- Although concentrations for Al, As, Co, Cu, WAD cyanide and N are predicted to exceed the IA criteria in the Open Pit, concentrations for four of these six substances are predicted to meet IA criteria where they apply – i.e., at the end of the mixing zone.
- Arsenic and aluminum concentrations are predicted to exceed IA criteria at the end of the mixing zone due to elevated natural background concentrations.
- The submission also reports and, in some cases, relies on site-specific water quality concentration for arsenic (42 µg/L) that has been submitted to but not yet accepted (approved) by the Department.

***Minister's Request for Information: Complete an assimilative capacity study of Watercourse #4 that will be protective of fish and fish habitat. Incorporate Fisheries and Oceans Canada recommendations to determine summer flow conditions.***

The information provided **does not** meet the Minister's request with respect to surface water quality because the assimilative capacity study does not reflect the proposed project design and applies the CCME guidance for developing water quality criteria incorrectly. Based on the information submitted, the study likely underestimates the potential surface water contamination. If the study and its predictions are accepted as presented, then watercourse #4 will have concentrations of arsenic, and sulphate that are elevated above background and compliance limits for up to 3 kilometers, and concentrations of aluminum that exceed compliance limits but do not exceed background for the same distance and may no longer be able to support aquatic life.

- This assimilative capacity study is based on two contaminant sources reaching Watercourse 4: 1) point-source runoff from a sedimentation pond associated with the WRSA, and 2) non-point source runoff (i.e., seepage through groundwater) associated with the WRSA and TMF.
- By contrast, the submission states elsewhere that “the design to the WRSA expansion has been decreased” (Disposition of Information Requests from the May 12 Minister's Letter, No. 4c, and “the waste rock storage expansion is no longer required and that water runoff from the expanded area is no longer required to return directly to watercourse no. 4” (Attachment 7, Assimilative Capacity Study of Moose River). These statements contradict the premise of the current Assimilative Capacity study – that the proponent plans to discharge (point-source) runoff from a sedimentation pond associated with the WRSA – and suggest that the study may not accurately represent planned future conditions.
- The submission indicates that the assimilative capacity study for watercourse 4 was designed in accordance with guidance in from Canadian Council of Ministers of the Environment (CCME) Guidance on the Site-Specific Application of water quality guidelines in Canada: Procedures for deriving numerical water quality objectives (CCME 2003). However, the steps provided in this guidance document regarding mixing zones are intended solely for point-source effluent discharges – not non-point source effluent discharges (e.g., seepage), as applied in this case. The study is

therefore not compliant with the guidance framework and cannot be considered to generate valid conclusions.

- The CCME guidance framework (CCME 2003) identifies 14 guiding principles for consideration in the establishment of mixing zones. Of these, one is that “a zone of passage for migrating aquatic organisms must be maintained”. In Attachment 8, Appendix A, the proponent justified its consideration of this principle by stating “The discharge infrastructure does not cause a physical barrier to the migration of aquatic organisms. Predicted effluent discharge concentrations do not propose a chemical barrier.” It is not evident if the mixing zone will occupy the entire stream flow or only a portion of that flow to support this statement. Additional guidance to allow for a zone of passage for fish, among other considerations, is available from other resources, e.g., CCME’s Canada-wide Strategy for the Management of Municipal Wastewater Effluent, Technical Supplement 3: Environmental Risk Assessment.
- Further, although the study did not identify the length of the proposed mixing zone, it appears to be 3 kilometres long, stretching from Mooseland Road to the confluence of Moose River, inclusive of Otter Lake and Otter Dam Flowage. CCME’s Municipal Wastewater effluent guidance (Technical Supplement 2; 2008) states that, for streams and rivers: “... mixing zones should be limited in length (e.g., 100 m., 300 m, or at the site of the water use).
- Historical water quality data from 2004-2007, collected at station SW3, was used as the basis for the baseline water quality for this study. Although this historical data was presented in an appendix to Attachment 8, analytical results submitted in support of approvals are required to comply with the Department’s Policy on Acceptable Certification of Laboratories.
- Water quality predictions indicate that the concentrations of aluminum, arsenic, and sulphate all exceed the current IA water quality limits at one or more locations, with arsenic and sulphate only meeting the limit at Moose River. The concentration of Aluminum is predicted to rise from Mooseland Road all the way to Moose River (the end of the mixing zone). Aluminum is predicted to significantly exceed the IA compliance level here while falling below the 75<sup>th</sup> percentile of background conditions.
- If the results of the study are to be accepted as stated above, then the proponent is seeking approval for watercourse #4 to have concentrations of arsenic, and sulphate that are elevated above background and compliance limits for up to 3 kilometres, and concentrations of aluminum that exceed compliance limits but do not exceed background for the same distance. No treatment is proposed to reduce these concentrations or to minimize the width or length of the mixing zone in accordance with CCME guiding principles.

***Minister’s Request for Information: Provide a detailed plan of how the open pit water will be treated to meet discharge requirements that will be protective of fish and fish habitat. Provide of schedule of when treatment will commence and end.***

The information provided **does** meet the Minister's request with respect to surface water quality because it provides adequately detailed concept-level plans for water treatment to

meet federal and provincial compliance limits excepting arsenic and aluminum, which are proposed to exceed background levels.

- The **“Attachment 9 Touquoy Open Pit Water Treatment – Conceptual Approach”** prepared by Stantec (under the same title) discusses the water treatment schedule, processes, and discharge requirements.
- The planned water treatment system is proposed to consist of three processes: 1) Mill cyanide destruction (previously identified as “Process Water Treatment” via the INCO process) 2) Sedimentation via in-pit deposition, and 3) metals removal, solids precipitation and pH adjustment.
- The water treatment system is proposed to operate from year 6 to 30. It is uncertain if each element of the system is intended to operate for this entire period, as the INCO process is related to mill operations, which are expected to conclude once the pit has filled with tailings, at approximately year 4.
- The conceptual approach addressed solely the “base case” that was previously identified in Attachment 4, excluding the “continued operations” case also identified in Attachment 4.

### Summary of Recommendations:

1. Justify stated expectation that 1) contaminants in waste rock will not be mobilized when saturated, and 2) pit lake water quality will not significantly change by leaving waste rock in pit bottom.
2. Re-run predictions of INCO (cyanide reduction) treatment effectiveness to confirm cyanide (WAD & total) concentrations meet CCME FAL at edge of mixing zone.
3. Comply with the Policy on Acceptable Certification of Laboratories and submit copies of laboratory certificates for historical (2004-2007) water quality datasets to ECC as part of IA Application. Alternatively, remove unverified data or replace with other acceptable verified data and re-run predictions to ensure effluent meets compliance limits.
4. Submit satisfactory evidence that enough stream flow is available in both Moose River and Watercourse 4 to allow aquatic organisms a zone of passage without transiting areas of elevated contaminant concentrations.
5. Correct the arsenic base case maximum concentrations used to predict their concentrations at the end of the mixing zone in the September flow conditions (i.e., tables 9.1 & 9.2 (Attachment 7) for Moose River, and re-run predictions. Adjust treatment system planning as required.
6. Apply to amend IA compliance criteria for aluminum based on elevated background concentrations.

7. Confirm if the sedimentation pond proposed to treat runoff from WRSA will be used or not.
8. Discard the current assimilative capacity study and design and conduct a new study in accordance with applicable guidance framework and guiding principles.
9. Stop contaminants (specifically aluminum, arsenic, & sulphate) from leaving WRSA & TMF or treat them before they are discharged to watercourse 4.
10. Confirm if INCO process is intended to run for the entirety of the planned treatment period.

Date: February 3, 2023

To: Bridget Tutty, Environmental Assessment Officer

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

CC: Director, Water Branch and Manager, Water Resources Management Unit

Subject: Touquoy Gold Project Modifications - Environmental Assessment Registration Document Addendum No. 2

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**Scope of review:**

The following review of the Touquoy Gold Project Modifications – Environmental Assessment Registration Document (EARD) Addendum No. 2 (December 21, 2022) is specific to the mandate of the ECC Wetlands Program. The review considers whether the environmental concerns associated with wetlands and the proposed mitigation measures to be applied have been adequately addressed within the Environmental Assessment Addendum.

**Reviewed Documents:**

Touquoy Gold Project Modifications - Environmental Assessment Registration Document Addendum No. 2, St Barbara Limited, December 2022.

**Limitations of Review:**

Due to the limited time provided for review, and the complexity of the submission and overall project file, the comments and recommendations below are based upon review of only the most relevant sections/appendices of the current addendum related to wetlands and wetland function. The contents of this review memo should not be considered a comprehensive review.

**General Comments:**

**Additional Information Request #6**

***No alternatives to altering Wetland #15, a Wetland of Special Significance were provided. Provide analysis for avoidance of Wetland #15, a WSS under the ECC Wetland Policy.***

The information provided **does not** meet the Minister's request due to the concern that additional impacts to wetland 15 such as water quality due to effluent discharge, sedimentation, the introduction of invasive species, among others have not been addressed.

The proponent has come up with an alternative design for the Expansion of the Waste Rock Storage Area (WRSA) which will now not require additional direct alteration of wetland habitat including Wetland 15, a Wetland of Special Significance (WSS).

Wetland alterations are defined by ECC as, "any activity, in or adjacent to a wetland that may affect wetland functions and habitat, including, but are not limited to infilling, draining, flooding or excavation". In the EARD, some indirect wetland impacts to wetland 15 were discussed and it is not expected that the WRSA expansion footprint will cause new hydrological (i.e., flow) impacts to wetland 15. However, wetland 15 is contiguous with watercourse 4, where effluent discharge has

been proposed. Other potential impacts such as water quality due to effluent discharge, sedimentation, the introduction of invasive species, among others have not been addressed.

Gap Assessment			
Identify Gap	Can it be addressed in another permit/approval or with a T&C?	Define/provide detail	Risk of gap and this approach?
Additional impacts to WL-15 a WSS.	T&C	Wetland 15 is contiguous with watercourse 4, where effluent discharge has been proposed. Other potential impacts such as water quality due to effluent discharge, sedimentation, the introduction of invasive species, among others have not been addressed.	Potential for loss/alteration of a Wetland of Special Significance contrary to the <i>Nova Scotia Wetland Conservation Policy</i> .

**Summary of Recommendations:**

The *NS Wetland Conservation Policy* (2011) objective is to “manage human activity in or near wetlands, with the goal of no loss in Wetlands of Special Significance (WSS) and the goal of preventing net loss in area and function for other wetlands”. There is uncertainty around additional impacts to wetland 15 a WSS, these impacts should be addressed, and mitigated as direct and indirect alterations to WSS are not consistent with the *NS Wetland Conservation Policy*.

Date: February 6, 2023

To: Bridget Tutty, Environmental Assessment Officer

From: Claire Rillie, Senior Consultation Advisor, OLA

Subject: **Touquoy Gold Project Site Modifications Project, Halifax County, Nova Scotia**

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**Scope of review:**

This review focuses on the following mandate: OLA leads the provincial approach to discharging the Government of Nova Scotia's Duty to Consult with the Mi'kmaq of Nova Scotia with respect to potential adverse impacts to credibly asserted and established Aboriginal and treaty rights.

**Summary of Recommendations:**

The Nova Scotia Office of L'nu Affairs (OLA) has reviewed the **Additional Information Addendum the Touquoy Gold Project Site Modifications for environmental assessment**, registered on January 9, 2023. The following review considers whether the information within the submission will assist the Province in assessing the potential of the proposed project to adversely impact established and/or asserted Mi'kmaw Aboriginal and Treaty Rights.

OLA has reviewed all sections of the addendum and, given the specific/technical nature of the additional information requested and the lack of any reference to the Mi'kmaq of Nova Scotia, we do not have any further recommendations. OLA provided comments on the original EARD which was registered on July 16, 2021 and the first addendum which was registered on March 23, 2022. OLA advises these recommendations should also be considered in ECC's decision-making on this second addendum. OLA also recommends that concerns related to potential adverse impacts on Aboriginal and treaty rights cited in correspondence from The Mi'kmaq of Nova Scotia received in response to the July 16, 2021 EARD and March 23, 2022 addendum be considered when deciding on the current application and in approving the project as a whole.

February 7, 2023

Re: Touquoy Gold Project Site Modifications – Addendum No. 2

The St. Mary's River Association (SMRA) of Sherbrooke, Nova Scotia joins the consensus of strong opposition to the proposed modification of the Touquoy Gold Project Site modifications proposed by Atlantic Mining Nova Scotia Inc.

The proponent has returned to the provincial assessment process once again without providing information that the repurposing of the exhausted open pit as a tailings lake will stand in perpetuity without failure. The addendum provided is rife with inconsistent reports, and major oversight.

The modifications documents from AMNS are perfunctory and in many instances, are false and disrespectful to the Environmental Assessment process and to the Nova Scotian public. In one instance from the addendum, the Moose River fish sampling that occurred June 28-30 happened 3 months before the study design was submitted to DFO for consultation, a condition requested by the Minister. A secondary sampling event happened mid-September, but there are inconsistencies within the report. With reference to the /Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum No. 2, Attachment 14 – Moose River Fish Surveys/, in the paragraph under /Table 4.4/, specific conductivity in the river did not, as claimed in the results, range from 23.6  $\mu\text{S}/\text{cm}$  to 1010  $\mu\text{S}/\text{cm}$ , it's documented in the appendix as ranging from 23.6  $\mu\text{S}/\text{cm}$  to 28.3  $\mu\text{S}/\text{cm}$ . Low conductivity will affect the efficiency of electrofishing, the method that was used for sampling. Low conductivity water (<100  $\mu\text{S}/\text{cm}$ ) is more resistant than fish, and the electrical field is limited to the immediate area of the electrode, not beyond. The water temperature at the time of the June survey claims to range between 13.2°C and 22.0°C, but in the raw data in /Table B.4 In Situ Water Quality Parameters in Moose River, NS, 2022/, in the same document, the temperature of the stream during the June sampling event ranged from 19.5°C to 22.0°C. These water temperatures are approaching and hitting dangerous levels of heat stress for salmonids. The inconsistency and false data that are reported in the document provided by AMNS, is frustrating, though not surprising. It is possible that this survey is underrepresenting the potential presence and abundance of species at risk and species of conservation concern.

Additionally, the minnow traps were ineffective in method. The recommended soak time for effective use of a minnow trap for sampling purposes is 24 hours. The first deployment was 16.5 hours, and the second, a mere 5.5 hours. Undereffective sampling provides underestimated results.

In attachment 3 – Groundwater Modelling Information – this model demonstrates that groundwater will be infiltrated by tailings contamination and that if the water levels rise about



107.02 masl, there would be a groundwater gradient towards the Moose River from the southwestern corner of the pit. A clay liner has been proposed for installation in this area to further minimize the potential for solutes from the pit to impact groundwater in the area between the pit and the Moose River. A clay liner? In this economy?

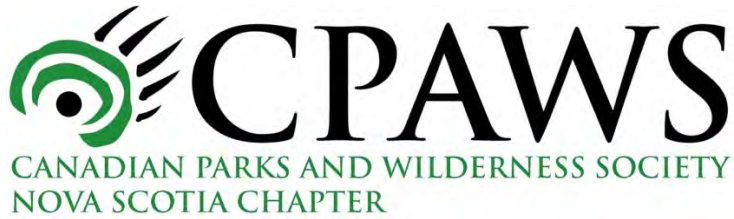
An environmental impact assessment must have a clear mitigation strategy; however, the proponent has not provided a transparent and appropriate perspective on the cumulative effects for using the Touquoy spent pit as a catch-all for their next projects across the region. The cumulative effects will persist beyond the life of the action that caused them.

As residents and stewards of the Eastern Shore, we do not want this land to become an industrial wasteland. The impact on the land and watershed following the tailings deposition in the spent pit will leave a lasting and deeply intergenerational impact. Our grandchildren will be dying from the ramifications of this type of industrial activity. Someone else will have to deal with this waste, this statement is made abundantly clear in the recent distancing of the parent company, St Barbara, through restructuring at AMNS, and the subsequent decision to enter Touquoy to a state of care and maintenance.

This letter stands behind the statements of opposition submitted by Millbrook First Nation, Save Caribou, the Nova Scotia Salmon Association, Eastern Shore Forests, East Coast Environmental Law, Ecology Action Centre, and others. This includes the Mi'kmaw Ecological Knowledge Study completed by the Mi'kma'ki All Points Services in which they conclude, "Atlantic Gold Corporation's Environmental Impact Statements do not meet the expectations of adequate cumulative impact assessment as they examine potential environmental impacts of its Moose River Consolidated Project in isolation and without proper consideration of cumulative effects of other concurrent or recent developments or changes on the regional bio-physical and social environment. ...adverse impacts will flow from it, and those impacts will indeed be significant."

The environmental risks associated with the proposed modifications to Touquoy Mine are high. We support our community groups and its leaders. For the health and wellbeing of our community, we will not support the modifications to the Touquoy Site.

Scott Beaver  
President, SMRA



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Canadian Parks and Wilderness Society  
Nova Scotia Chapter  
P.O. Box 51086 Rockingham Ridge  
Halifax, Nova Scotia  
B3M 4R8  
Email: @cpaws.org

**Re: Public consultation for “Touquoy Gold Project Site Modifications”**

February 9, 2023

Dear: Nova Scotia Environment and Climate Change

Atlantic Mining Nova Scotia Inc. is seeking environmental approval for the proposed Undertaking “Touquoy Gold Project Site Modifications”. The proposed modifications include dumping tailings into the open pit mine and expanding the waste rock storage area, among other things. The Proponent concludes that the proposed Undertaking is not likely to result in significant environmental effects, when the assessment, mitigation, and planned follow up are considered.

The Nova Scotia Chapter of the Canadian Parks and Wilderness Society (CPAWS-NS) disagrees with this assessment. For previous environmental approvals at the Touquoy Gold Project Site specifically, key conditions of those approvals have not yet been met. And since a company’s track record is a key indicator of future performance, this gives us considerable pause about the current proposed Undertaking.

Our expertise deals with the establishment and management of protected areas, so we would like to draw to your attention to previous environmental conditions for protected area establishment at Touquoy Gold Project Site that have not yet been met by the Proponent.

The 2008 environmental approval for the Touquoy Gold Project contained a condition for the “Protection of Lands”. That environmental approval can be viewed here [https://www.novascotia.ca/nse/ea/MooseRiver/MooseRiver\\_Conditions.pdf](https://www.novascotia.ca/nse/ea/MooseRiver/MooseRiver_Conditions.pdf). Section 2.1 (Page 2) states the following:

“Within four years of the date of this Approval, the Proponent shall develop and implement a plan for procuring conservation land with valued protected area attributes in the vicinity of the Undertaking for statutory protection by the province. The plan shall be developed in consultation with NSEL, NSDNR, the Community Liaison Committee, and any other parties identified by NSEL. The plan must be approved by the Minister prior to implementation.”

CPAWS-NS is not aware of any lands having been purchased for protection as a result of this environmental condition. We checked with Nova Scotia Environment and Climate Change to see if any lands had yet been purchased and were told that this condition has not yet been met, that it is still actively under consideration and is a requirement of the environmental assessment. In short, no lands have been purchased for protection, despite the timeline of “within four years of the date of this Approval”. Those lands should have been purchased no later than 2012. And, here we are, more than a decade later, in February 2023, still waiting for follow through from this Proponent from environmental approvals that were granted 15 years ago. That is more than enough time to have fulfilled that condition, yet it still has not been done. That condition was put in place by Nova Scotia Environment and Labour as a requirement of the environmental assessment; a mitigation measure to offset impacts from the approved Undertaking. But, since those lands have not yet been purchased or protected, the negative environmental impacts that required such a mitigation measure have not yet, in fact, been mitigated.

So, when this company says the current project is not likely to have significant environmental effects, when mitigation measures are considered, we have no confidence that there will be any follow through on the environmental approvals, the same way there has not yet been follow through on the 2008 environmental approval for the protection of lands from the same project site. We therefore conclude that there will likely be significant environmental effects associated with this project that will not be mitigated and we call on Nova Scotia Environment and Climate Change to REJECT the proposed Undertaking.

Thank you.

Executive Director



February 8, 2023

Ecology Action Centre Comments on Touquoy Gold Project Modifications –  
Environmental Assessment Registration Document Addendum No. 2

The following submission in response to Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum No. 2 is on behalf of the Ecology Action Centre.

The Ecology Action Centre is an environmental charity based in Mi'kma'ki/Nova Scotia. We take leadership on critical environmental issues from biodiversity protection to climate change to environmental justice. Grounded in over five decades of deep environmental change work and fuelled by love and grief, EAC takes a 50-year perspective on what is needed to build towards a time of thriving and flourishing. We work to equip human and ecological communities for resilience and build a world where ecosystems and communities are restored not just sustained.

The Ecology Action Centre does not support the proposed modifications. Open pit gold mining in Nova Scotia creates negative social, health, environmental and economic impacts in exchange for almost no benefits. The inevitable harms and destruction from the contaminated mine tailings, depletion of aquifers, loss of wildlife habitat, and other pollution simply put too much pressure on the life support systems of our province, and cost us all. Globally and locally, the gold mining industry contributes to the climate crisis and biodiversity collapse. In the face of these worsening crises, we desperately need intact ecosystems to be doing what they do best: sequestering carbon, providing clean water and air for us and other living creatures, and supporting local biodiversity. Intact ecosystems play a critical role in addressing these twin crisis - the most effective way to benefit from them is by protecting these ecosystems from the mass destruction and harm of economically-driven open pit gold mining projects.

We do not need open pit gold mining as it is an unnecessary industry. Gold can be recycled infinitely, and there is already more than enough mined gold to meet the needs of humans. In fact, Nova Scotia's (and Natural Resources Canada's) list of minerals critical for the green energy transition does not include gold. Therefore, the degradation of communities and the natural environment from open pit gold mining is indefensible. This proposed project infringes upon Treaty Rights and threatens traditional hunting grounds and gathering areas of the Mi'kmaq. Local Mi'kmaq community members rely on these important lands for food security and more; gold mining activities would severely damage these areas.

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

### 30 Day Comment Period

The Ecology Action Centre believes that the 30-day comment period is not enough time to provide a full response. Many of those who are interested in reviewing the documents and submitting comments do so on a volunteer basis and must dedicate a significant amount of time outside of their work and home life to write their comments. Please extend future public comment periods to at least 60 days so that organizations, groups and members of the public have a sufficient opportunity to review the relevant documents and form comments in response. This would also bring the EA public consultation period in line with another Nova Scotia Environment and Climate Changes comment period. NSECC seeks public input on proposed Wilderness Area designation through a public consultation process that is open for 60 days.

Comments on specific sections of the Environmental Assessment Registration Document Addendum No. 2

### Wetlands and Water

Additional Information Request no. 6 concerns the alteration of Wetland 15, a confirmed Wetland of Special Significance. The proponent responds to this request by describing that "in Section 5.1 of the March Addendum Report (AMNS, Stantec 2022), the total area of alteration of Wetland 15 was reduced through careful design and planning. Wetland 15 has been permitted for a total of 4.12 ha of alteration area under previous wetland alteration approvals, some of which overlaps with the areas proposed in the EARD. Only 0.62 ha of Wetland 15 was proposed for alteration, 15% of the previously approved alteration area. The proposed alteration area was confined to the northeast lobe and to a 0.1 ha area next to the existing WRSA area.". In the proponent's response, a map of the area was provided (attachment 12), but no details are provided as to why the modification activities couldn't be relocated to avoid all impacts to Wetland 15. Furthermore, **NSECC's Wetland Policy does not** support any alteration (direct or indirect) of a WSS. It is clear in the policy that alterations of a WSS will only be granted if "deemed to provide necessary public function." Therefore, Wetland 15 should not be altered at all. The proponent should provide detailed rationale as to why all impacts to Wetland 15 cannot be avoided.

With further regard to Wetland 15, the proponent should respond to Nova Scotia Department of Natural Resources and Renewables request for more information regarding the presence of Snapping Turtles at this wetland. In their comments, the Department wrote that the proponent should 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.

The proponent has also not included adequate detailing regarding the engineered wetland(s). This concern was also highlighted by the province's ICE Division and Sustainability and Applied Science Division. That is, the proponent has indicated that treatment will consist of settling and, if needed, engineered wetlands. Engineering wetlands in a complex undertaking and more details about these plans should be provided by the proponent. These details should include size and location of all possible engineered wetlands, and other supporting details about the processes regarding the engineered wetland(s).

We also support the comments by ICE Division who noted that the proponent should provide specifics as to how water quality and quantity have impacted fish and fish habitat within the Ship Harbour Long Lake Wilderness Area taking into consideration the current site activities and the proposed changes (cumulative effects assessment).

## Wildlife

The Addendum EARD states that (pg. 56): "Project activities will result in direct loss of habitat within Mine Site boundaries for avian species, including priority species such as common nighthawk, Canada warbler, barn swallow, olive-sided flycatcher, and eastern wood-pewee. However, due to the abundance of these habitats regionally and the likely decreased quality of the impacted habitats because of their proximity to the operating Touquoy Mine Site, it is not expected that this Project will further impact avian species."

This rationale is not supported. Each of these bird species at risk has as one its main threats (and causes for population decline) is loss of habitat. It is unsubstantiated to state that additional loss of habitat is not problematic. In fact, these bird SAR may be using the "decreased quality" habitats at the site precisely because there has been loss and degradation of habitat in other parts of the province. Additional loss of bird SAR habitat should be taken seriously. Key Mitigation measures for reducing impacts on wildlife should be a part of the EA Terms and Conditions if the project is approved.

The Wildlife Management Plan should be updated in cooperation with the Department of Natural Resources and Renewables.



## Protected Areas

We support the comment by NSECC that Ship Harbour Long Lake Wilderness Area should be treated and examined as a Valued Component. Given its very close proximity to the Project (including the proposed modifications) and the management objectives for Wilderness Areas, this omission is unacceptable. The analysis of potential impacts to the Wilderness Area (required as part of the Additional Information request) did *not*:

- Connect proposed Key Mitigation activities to Wilderness Area management objectives listed under the Wilderness Areas Protection Act (and listed in the Addendum No. 2 document).
- List Potential Project Interactions that could impact management objectives other than those related to wildlife habitat and “enjoyment” of the area, such as scientific study, environmental education, wilderness recreation, fishing, hunting, and trapping.
- Provide proposed mitigation measures that would reduce impacts to the above-mentioned management objectives for Wilderness Areas.

## Lobbying for the Project by a Provincial Department

The comments on the Additional Information Addendum Nov. 2 from George MacPherson with Mineral Management at DNRR are too supportive of the project to be considered acceptable comments from a government department.

## Timeframe of the Project

The timeframe of the project underlies many of the assumptions in the Addendum No. 2 and modeling for the project. The project in some ways assumes and describes a decommissioning of the site after the processing of Touquoy-pit ore is complete. However, it is well known to the Province that the intention of the company is to create open pits at Beaver Dam, Fifteen Mile Stream, and Cochrane Hill sites, and truck the ore from these sites to Touquoy for processing and deposition of tailings in the pit. But they claim it is acceptable that the impacts of these potential sites are being evaluated under separate assessment, even though the trucking, processing, and tailing deposition of ore from these sites would affect the Touquoy site environment. The entire Touquoy Gold Project Modifications EARD, and Addendum No. 2, are flawed because the company is trying to play it both ways. They have attempted, since their original EARD in 2007, to model potential impacts as if the site will only remain active

for approximately 5 years, then be decommissioned and reclaimed. However, all along they have intended to develop other sites that rely on Touquoy for tailings deposition in the pit. They have attempted to have each site permitted as independent sites when in fact they are not. The current information before the Minister and staff is incomplete because it is based on a false premise of the site being decommissioned in 2025. Models relating to everything from groundwater contamination “after decommission,” to assurances that wildlife will return to the area once the site is reclaimed (2028?), are not valid and decisions should be based upon them. As stated by Environment and Climate Change Canada in their comments:

“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...”

The proponent has tried to parse out the interrelated mining projects yet avoid evaluating them in a cumulative or connected way:

“Use of the Touquoy Mine Site infrastructure for processing ore from Beaver Dam and Fifteen Mile Stream Gold Projects and disposal of associated tailings is assessed in the environmental assessment documents for those projects.”

If the Minister approves the modifications project they should only approve deposition of tailings in the Touquoy pit for Touquoy project tailings, not tailings from the other proposed sites. After all, only the impacts of the Touquoy modifications assuming an end-of-mine life in 2025 have been estimated by the proponent and examined by Nova Scotia Environment and Climate Change and other departments (and the public).





February 8, 2023

**Comments RE Environmental Assessment site modifications for the Touquoy Gold Mining Project**

I am writing with comments on behalf of the Halifax and area chapter of KAIROS Canada. KAIROS is an ecumenical movement for ecological justice and human rights formed in 2001 by bringing together over 10 previous inter-church coalitions with justice commitments reaching back over 40 years. One of our greatest concerns is confronting the changing climate and caring for the earth in order to care for the needs of our children, grandchildren and all our relations now and in coming generations.

Gold mining is a non-essential, highly destructive, and polluting industry. It is not an appropriate industry for our province. A higher level of Environmental Assessment than is currently required should be necessary.

There must be due diligence in carefully considering all possible environmental, health, and economic implications before deciding on modifications and/or expansion of the Touquoy project. It is of great concern to Nova Scotians how the company plans to use the expired mining pit as a tailing storage area. The proposed modifications include use of the exhausted open pit for tailings deposition. That tailings pit should be used for Touquoy tailings only; not tailings from other pits. The danger of possible toxic contamination of water must be prevented at all costs.

Fresh, clean water is Nova Scotia's most essential resource for present and future generations and for all living beings. The Touquoy project should not be allowed to expand due to the massive threat it poses to freshwater. Turning the pit into a massive contaminated site with mine tailings at the bottom of the pit will leave a big liability on the landscape. History has shown us that the corporate owners of the mine will inevitably walk away. That filled-in pit, with its contaminated water, will pose a threat to human life and wildlife in perpetuity. Its care will be the responsibility of our province and citizens. It is our responsibility to prevent foreseeable disasters and to safeguard the remaining uncontaminated sources of water in our province. We are aware of the developing, negative impacts of climate change on freshwater and its relation to biodiversity loss. Water quality and quantity also impacts habitat of fish and other wildlife. It is up to today's decision makers to protect water and all natural habitats and resources for life.

Water is life – for all of us. At this critical moment, we are placing our trust in you to protect our life-giving water from the short-and long-term risks of contamination from gold mining.

We look forward to your responsible action on this critical matter.

Yours truly,

KAIROS Halifax

C: Tim Halman, Iain Rankin,

**Tutty, Bridget R**

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**From:** gmail.com>  
**Sent:** January 17, 2023 2:30 PM  
**To:** Environment Assessment Web Account  
**Subject:** comments re: Addendum to modifications to the Touquoy Mine from Save Caribou

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

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

Environmental Assessment Branch  
NS Environment and Climate Change  
PO Box 442  
Halifax, NS B3J2P8  
Email: [ea@novascotia.ca](mailto:ea@novascotia.ca)

January 17, 2023

Dear NSE and CC Environmental Assessment Staff:

**RE: Save Caribou's response to Atlantic Mining NS Inc.: Additional Information Addendum to the Touquoy Gold Project Site Modifications for Environmental Assessment**

Please accept the following as Save Caribou's submission regarding Atlantic Mining Nova Scotia's Class 1 Environmental Assessment, for the Touquoy Gold Mine project modifications Addendum. We are reiterating some of the key issues and concerns we addressed in our submissions to the proposed modifications to the Touquoy Mine dated August 16, 2021 and April 19, 2022 and the failure of Atlantic Mining in responding to them in this report.

### **Mainland Moose Habitat**

Our concern remains that the approval of the expansion of the Touquoy mine and the approval of the modifications will further destroy moose habitat. In our previous submissions, we stressed that "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."

The moose in the project area of the Touquoy Mine are within the core habitat of the mainland moose. (NS-NRR 2021) Local residents have documented their presence there. In 2021, a new Recovery Plan for the Moose in Mainland Nova Scotia was released. (NS-NRR 2021). The extensive and recent research on the threats to mainland moose, especially those pertaining to mining, quarrying and roads is very well documented in this plan. (NS-NRR 2021, pgs .25-27.)

The Touquoy Mine Modifications report includes the Wildlife Management Plan, with the Mainland moose management plan from 2017. This management plan, developed in 2008, is outdated and inadequate. It vastly underestimates the severe threats to the moose population from this project and the project modifications. Atlantic Mining has made no attempts to adopt a new Wildlife Management Plan based on the updated Recovery Plan.

Save Caribou is recommending that the assessments and monitoring plans related to moose, moose habitat, the threat of destruction of moose habitat and the reporting be revised to reflect the research and relevant information in this recently released and comprehensive plan. It is our opinion that

approval for the modifications for the Touquoy Mine not be given until this revision of the Mainland Moose Management Plan is rewritten and approved.

### **Rare Lichens:**

In Save Caribou's previous submissions, we expressed concerns about moving rare lichens by hand without providing evidence that this is a feasible strategy. We requested that 'the province require Atlantic Mining to purchase a significant tract of rare lichen habitat and donate it to a land trust or the Province to be protected'.

The addendum includes the lichen survey from 2021 however it does not address these concerns. It gives no new information on the proponent's plan for minimizing the impacts to these rare species, nor evidence that transporting lichen away from impacted areas would be an effective mitigation strategy. The addendum does not address this at all. Save Caribou is requesting, once again, as outlined above, that the province require Atlantic Mining to purchase a significant tract of rare lichen habitat and donate this land for protection.

### **Wetlands**

The presence of dead sphagnum moss due to silt and sediment in the wetlands is a concern. Sphagnum moss provides protection to the underlying watercourses. These bogs serve as huge storage depots for carbon and also remove toxic chemicals from water, thus helping to purify ground water. Drone imagery of these wetlands shows high rates of sphagnum moss mortality. Wetland 6...Year 1. The cover of sphagnum moss in good condition was reduced from an average of 87% in the reference quadrants to 13% in the affected quadrants.

This is imagery taken in 2019, before any modifications have been done. How will the processing of ore from 3 other mines and increased activity around these wetlands provide sustainability for these wetlands and the plant and animal life that depend on them? How can this be sustainable? Even though the proponent has a compensation plan for other areas this does not help with the destruction of the wetlands in the project area, especially the wetlands of significance. This is very concerning due to the fragile ecosystem of the whole project area.

How will these wetlands recover? Will the proponent be responsible for restoring these wetlands of significance? Why would this plan be acceptable to the province?

### **Touquoy Mine**

The original proposal and provincial approval for the Touquoy Mine was for the duration of 10 years. Now that the life span of that production is drawing to a close it is Save Caribou's opinion that a request for significant modification to the Touquoy Mine site is premature, considering that the three proposed areas for further development, Cochrane Hill, Beaverdam and Fifteen Mile Stream, have not received approval. To destroy and disrupt habitat, draw upon more resources and create an even bigger footprint on the landscape, is excessive and unnecessary. The fact that gold is not included in Canada's first Critical Minerals Strategy should be an even stronger disincentive for the proposed modifications.

Save Caribou appreciates the opportunity for engagement and consideration of our concerns.

Sincerely,  
Save Caribou



*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 Site Modifications**

### **Second Addendum Registration Comments – February 9, 2023**

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. These are our comments on Atlantic Mining Nova Scotia's (AMNS) second addendum to the Environmental Assessment Registration for modifications to the Touquoy Gold Project.

Easter Shore Forest Watch sent comments on the first Addendum on April 22, 2022. Although this second addendum addresses some of our previous comments, it does little to alleviate our concerns regarding the Touquoy mine modifications and the potential future use of the open pit as a tailings dump.

#### **IN-PIT TAILINGS DISPOSAL**

The company proposal to use a clay liner to avoid seepage of water and groundwater through the historic mine workings intersected by the pit walls is a considerable improvement.

AMNS contends that seepage of contaminants into ground water is considered negligible. However, this conclusion is based on complex models. Although models can be useful for planning purposes, they are an over-simplification of natural systems and their predictions are very dependent on input and assumptions, and thus indicative at best. AMNS commits to monitor groundwater quality in monitoring wells but does not have any mitigation plan. This is because it is almost impossible to mitigate groundwater contamination underneath and around tailings filling such a large pit. Groundwater collection trenches or recovery wells with pump-back capability, suggested as a mitigation of groundwater contamination for the WRSA and the TMF (Addendum Part 1, p. 10), would hardly be feasible at the scale of the open pit.

## **PIT WATER QUALITY**

Predictions of pit water quality are using the chemistry of water and pore water in the TMF as an analogue (Addendum Part 1, p. 4). However, it is not a representative analogue. In the case of the TMF, the effluent water is treated in the polishing pond to remove contaminants, particularly heavy metals, by iron hydroxide co-precipitation. The original proposal for the Touquoy mine stated that the resulting sludge would be dredged at intervals from the polishing pond and buried in impermeable (clay) cells within the tailings. If this is actually the case (we could not find mention that this has been taking place during the mine operation), the TMF water and pore water would not be in contact with this highly contaminated material.

In the case of the open pit, in-situ batch treatment of the water would be used, (Attachment 9), with the resulting contaminant-rich iron hydroxides settling and being uniformly mixed within the tailings. Thus, tailings pore water and supernatant will be in contact with the heavy-metal precipitate. Even small changes in redox condition and pH can cause the precipitate to dissolve and mobilise the contaminants back into the water, resulting in solute concentrations very different than those in the TMF. The model predictions for water quality in the pit are therefore very questionable. Concentration of Arsenic, Cyanide, Nitrite, Aluminium, Cobalt and Copper have been predicted by the model to exceed regulatory limits in the pit water (Attachment 4). It is likely that the exceedance is higher than predicted.

Rather than rely on modelling that is tentative at best, a chemical analysis protocol of pit water must be put in place that will monitor a wide range of parameters and solutes (which is not onerous with today's water analysis instruments). These analyses must be done frequently enough to treat water on a timely basis.

## **PIT WATER FLOW INTO THE MOOSE RIVER**

Although AMNS recognises now that water treatment of the pit water will be needed, the treatment will target principally arsenic and ammonia (Attachment 9) predicted to slightly exceed the 2021 MDMER discharge limit. However, no treatment is planned for other contaminants: dilution by Moose River water beyond the spillway is the only mechanism considered to bring their concentration below the NSECC Water Quality Objectives (WQO). Such an approach is not acceptable and water treatment should target these other parameters of concern.

The third-party review of the first Addendum states: "Wood further recommends that trigger thresholds be developed that would initiate treatment studies should future monitoring or re-assessment of the pit lake models indicate that pit lake concentrations or groundwater flows from the open pit be higher than predicted in the EARD." AMNS does not seem to have addressed this recommendation in their Touquoy open pit water treatment conceptual approach (Attachment 9).

## FISH AND FISH HABITAT

As a result of deficiencies in the initial submission regarding Touquoy modifications, AMNS commissioned additional fish and fish habitat surveys of the Moose River. These surveys were conducted by Stantec, a consultancy, in consultation with the federal Department of Fisheries and Oceans. The field work was completed in June and September 2022 and focussed on the diversity and abundance of existing fish communities and the potential presence of both designated Species at Risk and Species of Conservation Concern.

Three methodologies were undertaken including backpack electrofishing at six locations in the Moose River, the use of minnow traps for deeper water habitat not accessible by field staff on foot due to depth, and eDNA analysis.

This field research was more thorough than earlier work carried out for the original modification submission.

The June survey identified 25 fish (four species) including 72% American eels but no Atlantic salmon. The September survey identified 112 fish (10 species) including 44% American eel, 13% chub, 12% white sucker and 6 Atlantic salmon parr. Eels are species of special concern, deemed ‘threatened’ by COSEWIC. They are also of high cultural significance to the Mi’kmaq people and were the subject of the Supreme Court of Canada decision (the Marshall decision) regarding **Aboriginal moderate livelihood** fishing rights in the Maritime provinces.

The consultants note that on the basis of this and their earlier sampling, both landlocked and sea-run Atlantic salmon have the potential to be present in the Moose River and its watershed. Atlantic salmon and American eels are two Species at Risk/Species of Conservation Concern. The Atlantic salmon, landlocked and sea run, are part of the Southern Uplands Population.

In light of this additional field research, and verification of the presence of American eel and Atlantic salmon, the consultants state correctly that no prohibitions exist under the Species at Risk Act which is true to the letter of the law, if not its spirit, when it comes to Species at Risk or of Conservation Concern. It is hoped that governments will use this additional information to strengthen regulatory requirements, mitigation and avoidance measures and other conditions of Industrial Permits for this mine to ensure the protection of fish, including downstream and coastal habitat utilized by these species. It is also relevant to point out that in addition to the specific requirements of federal and provincial species at risk legislation, there are also federal and provincial framework agreements committing governments to coherent and consistent approaches to the conservation of species at risk.

The federal government has invested heavily in conservation efforts for Atlantic salmon as will be outlined below. At the very least these mining projects should not jeopardize these efforts which involve substantial federal, some provincial and private investments. Throughout the environmental assessment process for Touquoy and the proposed satellite mines: Beaver Dam, Fifteen Mile Stream and Cochrane Hill, there has been a failure to acknowledge the significance

of these conservation efforts and an easy assumption made that all can be mitigated, easily offset or compensated even in the face of a problematic compliance history by this mining company involving fundamental regulatory requirements. Further, AMNS has been slow to meet its compensation commitments for Touquoy required as a result of the destruction of wetlands and habitats for the original mine which was permitted in 2007 and began commercial production in 2018.

## **CONSERVATION EFFORTS AT RISK**

There are five significant conservation efforts and research projects focussing on fish and habitat involving Eastern Shore watersheds and coastal habitats. All focus on the sea-run Southern Uplands population of Atlantic Salmon and its habitat. These include a smolt tracking and coastal habitat use project involving the Ocean Tracking Network and acoustic tag tracking. This project involves DFO and the Atlantic Salmon Federation and focuses on the West River Sheet Harbour and its coastal estuary. A second project involving the NS Salmon Association, the Mi'kmaq Conservation Group and the Atlantic Salmon Federation is constructing artificial reef habitat to learn more about salmon habitat preference during the parr-smolt transformation period.

A third well-established project, the West River Acid Rain Mitigation Project has been operating for many years to provide lime to the acidic West River Sheet Harbour and, more recently, the Killag River. This project has utilized federal, provincial and private sector funding. It is focussed on reducing Atlantic salmon mortality caused by acid rain.

A fourth conservation project, Watershed Assessment Towards Eco-System Recovery (WATER), has been undertaken by the NS Salmon Association and the Atlantic Salmon Federation with funding from the Canada Nature Fund for Aquatic Species at Risk. The goal is to develop watershed-scale restoration plans supported by on-the-ground conservation work. Eight NS watersheds have been selected, four on the Eastern Shore: Musquodoboit River, West River Sheet Harbour, Moser River and St. Mary's River.

A fifth project involving the Eastern Shore coastal habit is the well-established St Mary's River Restoration and Protection Project which, since 2014, has restored seven kilometers of fish habitat in the West Branch of the St. Mary's River. Funding sources have included DFO's Ocean Protection Program, NS Salmon Associations Adopt-a-Stream Program and the Atlantic Salmon Conservation Foundation. This project also involves liming of the river.

All these projects are within the estuaries and coastal areas of the Eastern Shore. Rigidities of the approval processes for the Touquoy modifications aside, these additional projects are relevant to the provincial approval process for Touquoy modifications because those modifications will in part enable three additional satellite mines. Ore from these satellite mines,

if approved, will be processed at Touquoy. The environmental impacts will be felt nonetheless in the estuaries and watersheds of the Eastern Shore well beyond Touquoy.

### **SHIP HARBOUR LONG LAKE WILDERNESS AREA**

Forest Watch has continued to advocate for the protection of watersheds and wetlands near, adjacent to, or within the Ship Harbour Long Lake Wilderness Area for which Forest Watch advocated so strongly prior to its initial designation in 2009.

It has taken a number of years of environmental assessment processes for AMNS to finally recognise that the Touquoy mine poses a threat to the ecological integrity of the Ship Harbour Long Lake Wilderness Area downstream from the mine.

Forest Watch does not agree that the risks to fish and fish habitat **and downstream watersheds and wetlands** will be minimal. The modifications follow-up information provided lacks sufficient information on how downstream impacts will be managed, mitigated and offset. We fail to have confidence that precautionary management will be undertaken in light of past compliance violations.

### **CONCLUDING CONCERNS**

Santa Barbara second addendum Cover Letter and Clarification states that “As the EARD focussed solely on planned components and activities at the Touquoy site, and did not presume approval of other Projects currently under assessment subject to the Canadian Environmental Assessment Act 2012 (i.e., Beaver Dam and Fifteen Mile Stream), this information has no bearing on the assessment of potential environmental effects undertaken in support of the Touquoy Gold Project Site Modifications EARD.” It is difficult to believe that AMNS would go through so much effort and expense to get approval for using the open pit as tailings storage to process only the remaining **low-grade ore**. Some of that ore has already been processed thanks to a permit to raise the current tailings dam by 2.5 m granted by the NS department of Environment and Climate Change. The fact is that the Beaver Dam and Fifteen Mile Stream projects are dependent on the facilities at Touquoy, and that the potential environmental effects of the three mines, should they be approved, are linked and cumulative for the Eastern Shore of Nova Scotia.

The cover letter also says that “The recent December 12 announcements relating to the Company have no effect on the business entity of Atlantic Mining Nova Scotia Inc.” They refer to the announcement that St. Barbara has recently spun off AMNS to a new junior mining company, Phoenician Metals, and that Touquoy and the satellite mines are no longer core assets for St. Barbara. Maybe this does not affect the business entity of AMNS, but the change in ownership to a **new junior** mining company is worrisome in terms of capacity to fulfill long



term remediation requirements and commitments. It is hard to see how Phoenician Metals can be successful by acquiring an exhausted mine which has only some low-grade ore left and two others not permitted. There is a high probability that this new company (likely a sacrificial one) will go bankrupt and that the cost of the remediation and mitigation will fall on the Nova Scotia government for years to come (the duration of pit water treatment alone is projected to be 30 years). The government can ill afford it considering the reclamation bond of approximately \$40 millions is inadequate to cover the costs. This scenario of claiming bankruptcy to avoid honouring commitments of clean-up and remediation has occurred for many mines in Canada and abroad, the latest example being the Caribou mine in New Brunswick.

St Barbara's cover letter to this addendum states that "These announcements included confirmation that the Beaver Dam Project will be paused and it is likely that there will not be continuity at the Touquoy Mine beyond approximately December 2024. If this occurs, the site will enter a Care and Maintenance phase." We are concerned about day-to-day operations and down-the road obligations for cleanup and environmental restoration under these circumstances. For example, the proposed closure cover of the TMF "will consist of three layers: a Capillary Break Layer (CBL) placed over the tailings; a Moisture Retaining Layer (MRL) acting as an oxygen barrier; and a Drainage and Protection Layer (DPL) to control water flow and other natural site conditions at the surface" (Addendum Part 1, p. 9). Will this work go ahead as soon as the TMF is full, or will the Care and Maintenance status delay the cover? A delay will leave the tailings subject to erosion, water infiltration, and oxidation, all causes for worse water quality parameters than if the covering was done as soon as possible.

In conclusion, we do not support the proposed Touquoy mine modifications. There are a number of well-founded environmental concerns raised by the mine: the length of time the water will have to be treated (30 years); the very real risk of accidents such as tailings dam failure; and the impacts of extreme weather events. When we factor in the loss of ecosystem services caused by the mine footprint and operations, the mine is a net loss for Nova Scotia which outweighs the number of short-term jobs created (over-estimated by the company). Permitting the Touquoy mine and its modifications (and thus enabling potential satellite mines) is in blatant contradiction with Nova Scotia's goals of reducing green house gases emissions, preserving habitat and biodiversity, and preventing pollution.

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: February 9, 2023 2:03:47 PM

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

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Project: touquoy gold mine modification Comments: SUNNS-logo-for-email.png RE: Touquoy Gold Project Site Modifications Sustainable Northern Nova Scotia SuNNS, a group of concerned Nova Scotia citizens representing over 2,000 people in Northern Nova Scotia who successfully opposed a proposed gold mine in the French River Watershed stands with statements of opposition submitted by St Mary's River Assoc SMRA, Ecology Action Centre, Nova Scotia Salmon Association, Millbrook First Nation, Save Caribou, Eastern Shore Forests, East Coast Environmental Law, and any tax paying Nova Scotian who does not want to see further environmental degradation as well as having to pay the clean up bill as has been our previous experience with legacy gold mines in Nova Scotia. We expect our government to respect and use the the information provided by its own specialists such as DFO, the Sustainability and Applied Science Division, Wetlands and water Resources which do not support many of the amendments and also commented about the lack of access to all the documents held by the Minister related to the Touquoy project. The Nova Scotia government must exercise its required fiduciary responsibility as stated in The Precautionary Principle of the Environment Act section 2B2, given the evidence of tailings dam disasters world wide in exposing the citizens of Nova Scotia to a potentially vast unfunded liability, especially since NS does not have an enforceable polluter-pay model. And there are the pollution costs to waterways, land and communities downstream as we have learned from legacy mines in NS. For example, cleaning up the British Columbia Mount Polley dam break was estimated in 2016 to be \$67.4 million dollars and in 2020 had increased to \$2.8 billion, for which tax payers have already shouldered \$40 million. The current reclamation bond for AMNS/St Barbara is insufficient to cover increased potential liabilities. And it is impossible for the public to know exactly how much is in the NS gov's bank account for reclamation in cash because secrecy excludes the public from knowing the form amounts of the current in kind payments eg no payment, securities, letter of credit constitute that the reclamation securities. And the reclamation bond will not activate until the mine is declared closed, not when it is in care and maintenance mode which is a limbo or mothball mode during which maintenance is neglected in favour of reduced costs since mining is not actively happening and minimal rehab is undertaking with massive environmental liabilities and social issues with costs of repairing problems falls on tax payers. 1608.jpeg Paper: Pitfalls of gold mine sites in care and maintenance acg.uwa.edu.au We stress there are a number of redflags regarding the reliability of this company to act in a responsible manner regarding all aspects of mining activity: 1. Cited for 32 Federal and Provincial environmental infractions occurring Feb 2018-May 2020 endangering fish and fined in Feb 2022 and even the Federal Crown Prosecutor Marian Fortune-Stone called out AMNS's reckless disregard for federal regulation? Halifax Examiner, Feb.11, 2022, Joan Baxter 2. They have not provided a transparent and appropriate perspective on the cumulative effects for using the Touquoy spent pit as a catch-all for their next projects across the region - environmental impact assessment must have a clear mitigation strategy 3. There is a lawsuit still outstanding resulting from one of our SuNNS members asking questions at a public meeting held May 23, 2019 in Sherbrooke about tailings pit construction and the cumulative effects on the

environment of the pond

4. The recent corporate restructuring significantly reduces environmental risks to the parent company and its new partner, and offloads future environmental risks and problems to a junior company, or ultimately to the Nova Scotia taxpayer. The environmental risks associated with the proposed modifications to Touquoy Mine are high. We support Nova Scotia-wide community groups and for the health and wellbeing of our Nova Scotia, specifically for the areas impacted by current and future changes to Touquoy. Sustainable Northern Nova Scotia will not support the proposed modifications to the Touquoy Site.

Sustainable Northern

Nova Scotia

Name:

Email:

@gmail.com Address:

Municipality: Earltown email\_message: Privacy-Statement: agree x: 75 y: 20

**From:**  
**To:** [Minister, Env](#)  
**Cc:** [Environment Assessment Web Account](#); [Minister, Natural Resources and Renewables](#); [Premier](#)  
**Subject:** Support for the Touquoy Gold Project Modifications  
**Date:** February 2, 2023 1:12:44 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)

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Minister Halman:

I am writing on behalf of Nova Scotia's mining and quarrying industry to express our support for the Touquoy Gold Project Modifications.

The Touquoy gold mine has triggered an extraordinary golden opportunity for our industry to create jobs for Nova Scotians and to generate tax and royalty revenues to help pay for vital programs like health and education. The mine has generated global interest in the potential of Nova Scotia's geology for gold and other projects.

If these modifications are not permitted, it has the potential to put hundreds of Nova Scotian jobs in jeopardy, in addition to the indirect economic impacts on the people of the Eastern Shore.

Mining and quarrying employs over 3000 Nova Scotians and is the province's highest-paying resource industry with average total compensation (wages and benefits) of \$102,000 per year.

Modern mining is a sophisticated, science-based business that takes excellent care of the environment – completely different from what it was in the past. As you know, Nova Scotia mines are stringently regulated by the provincial and federal governments. Before getting operating permits, companies must get government approval of reclamation plans and post-reclamation bonds (money in escrow, basically) that ensure funds are available to properly take care of sites.

Companies like St. Barbara are supporting Nova Scotian families, creating opportunities for our young people to stay here instead of moving away, and generating essential government revenues. Approving the requested Touquoy Gold Project Modifications is important to both St. Barbara and the industry in general.

Thank you for your consideration.

Executive Director  
Mining Association of Nova Scotia  
902.820.2115  
[www.tmans.ca](http://www.tmans.ca)  
[www.NotYourGrandfathersMining.ca](http://www.NotYourGrandfathersMining.ca)

Follow our daily social media posts at:



## Tutty, Bridget R

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**From:** @eastlink.ca  
**Sent:** January 21, 2023 6:04 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

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Project: touquoy gold mine modification Comments: I see nothing but the destruction of a beautiful, pristine area in this proposal. It is a definite nope fro me. Name: Email: @eastlink.ca Address: Municipality: Musquodoboit Harbour email\_message: Privacy-Statement: agree x: 81 y: 28

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 1, 2023 10:33:46 AM

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

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Project: touquoy gold mine modification Comments: I fully support the Touquoy Gold Mine project. The safe, environmentally friendly and sustainable development of the mining sector in Nova Scotia is of great importance to me. The project contributes jobs for nova scotialans and financial benefits to the province. Name: Email:  
Address: Municipality: Halifax email\_message: Privacy-Statement:  
agree x: 67 y: 30

## Tutty, Bridget R

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**From:** @live.ca  
**Sent:** January 9, 2023 2:02 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

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Project: touquoy gold mine modification Comments: The Touquoy Gold Mine operations has given the opportunity to Nova Scotia Residents to grow in the industry as Mechanics, Heavy Equipment Operators, Administrative duties, Geological positions, Environmental and more. The individuals that work at this mining operation take tremendous pride in their positions, which in return provides above and beyond work for the company. The Employees that work at the mine all take significant care in the Environmental side of the operations even if it does not fall under their job descriptions. I can confidently say if you were to ask anyone that works at Atlantic Operations where Watercourse #4 is they would be able to tell you. That is because this mining operations takes great importance in the Environment and operating in a safe and conscious way. When looking at the environmental charges during the time of operations at this mine site it should be recognized that all sediment releases were self reported by the company to the Department both Provincially and Federally, this operation has always operated with full transparency to regulators and this is something that is not often found in large industry settings. I understand there is strong opposition to expanding this project, however please take the time to review all the thorough studies that has been completed for this project site. There is a lot of positive reasons to move forward with this mine, and I think the operations will continue to operate ethically, and with the highest environmental standards. Signed, An Environmental Specialist Name: Email:

@live.ca Address:

Municipality: Hilden email\_message: Privacy-Statement:

agree x: 78 y: 20



## Tutty, Bridget R

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**From:** @gmail.com>  
**Sent:** January 10, 2023 7:43 PM  
**To:** Environment Assessment Web Account  
**Subject:** Second Addendum Registration

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

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Environmental Assessment Branch  
Department of Environment and Climate Change  
PO Box 442  
Halifax, NS, B3J 2P8  
Fax: 902-424-6925

Dear EAB,

We noted misinformation in the second addendum registration for Atlantic Gold.

SD-21 Potential for aquatic effects is actually Evaluation of Potential for Aquatic Effects as a Result of Effluent Releases Related to **Beaver Dam Mine** and in no way related to the Touquoy application.

We have not read the whole proposal yet, but wonder how many other parts of the application are not related to Touquoy Mine.

We hope to hear from you on this matter.

## Tutty, Bridget R

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**From:** @hotmail.com  
**Sent:** January 23, 2023 2:24 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

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Project: - Choose - Comments: This project needs to be approved to retain the good paying rural jobs it creates . I am satisfied that any adverse effects or significant environmental effects of the undertaking can be adequately mitigated through compliance with the attached terms and conditions as well as through compliance to the other licenses, certificates, permits and approvals that will be required for operation. Name: Email:  
@hotmail.com Address: Municipality: Westville email\_message:  
Privacy-Statement: agree x: 60 y: 11

## Tutty, Bridget R

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**From:** @live.com  
**Sent:** January 19, 2023 5:00 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

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Project: touquoy gold mine modification Comments: With this day and age please favor this expansion as it is a huge growth for our province and the mining industry to continue learning and helping our economy in NS. The loss of this will devastate an already positive beginning of this industry in a great Province. Name: Email:  
@live.com Address: Municipality: Mackay Siding, NS email\_message: Privacy-  
Statement: agree x: 53 y: 45

## Tutty, Bridget R

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**From:** @eastlink.ca  
**Sent:** January 21, 2023 4:12 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

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Project: touquoy gold mine modification Comments: With respect to recently confirmed higher levels of arsenic in the surrounding waterways and the threat of higher levels of rainfall, this should be enough to put an end the Touquoy mine expansion and to future open pit mines. It is very irresponsible to consider more open pit mines in a province with limited land mass, which concentrates environmental contamination 10 fold and then some. All open pit mining should be deemed illegal. Name: Email: @eastlink.ca Address: Municipality: Head of Jeddore email\_message: Privacy-Statement: agree x: 81 y: 26



## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 23, 2023 11:07 AM  
**To:** Environment Assessment Web Account  
**Subject:** [PROBABLE-SPAM] Proposed Project Comments

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

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Project: touquoy gold mine modification Comments: I am writing to the Department of Environment and Climate Change in support of the Touquoy Gold Project Modifications and request that the department and Government of Nova Scotia allow these modifications to proceed in an environmentally responsible way. I am confident that the team at St Barbara Atlantic Operations, who are responsible for this project, have followed the requirements of the environmental assessment process to ensure there is a robust plan to assess and mitigate any environmental impacts that may result. St Barbara Atlantic Operations have acted in good faith since beginning operations in Nova Scotia. Through the EA process, they have completed thorough analysis, investigations, and design to provide comprehensive responses to information requests put forward. I am confident in the responses to the information requests and that the planned modifications to the Touquoy Gold Mine Project will not likely result in adverse environmental effects. If these modifications are not permitted, it has the potential to put hundreds of Nova Scotian jobs in jeopardy, in addition to the indirect economic impacts on the people of the Eastern Shore. St Barbara has embraced the opportunity to clarify applications because Respecting the Environment is ingrained in the fabric of their corporate values. I am confident that they will continue to operate responsible gold mining operations. Thank you for your consideration on this very important matter. I am looking forward to hearing about how this government is supporting environmentally responsible gold mining and rural economic development in Nova Scotia. Name: Email:  
@gmail.com Address: Municipality: Meaghers Grant email\_message: Privacy-  
Statement: agree x: 59 y: 32

## Tutty, Bridget R

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**From:**  
**Sent:** January 23, 2023 1:03 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

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Project: touquoy gold mine modification Comments: Dear Sir/Madam I think it makes a lot of sense for the owners of an exhausted pit in a mine to be able to use the pit that has been mined to be able to put in tailings to fill it in and operate as an ongoing tailings pond. therefore i support the owners application to amend use of their empty pit for future use as a tailings pond Name: Address:

Municipality: sackville email\_message: Privacy-Statement: agree x: 55 y: 24

## Tutty, Bridget R

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**From:**  
**Sent:** January 23, 2023 11:11 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

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Project: touquoy gold mine modification Comments: I agree with the project. Globally, Canada has some of the most stringent Environmental rules and regulations. Therefore if we are to get our mineral resources from here, we know companies have to abide by these rules which include EAs, habitat offsetting, consistent communication with government officials during operation, and high-quality closure plans. If we simply turn a blind eye and obtain gold from other countries without the same environmental standards, we are in fact doing more harm to the environment but feeling it does not affect us because it is not in our backyard. In Nova Scotia, we are held to the highest standards, can monitor every impact, and feel we have made the right decision about obtaining our gold. We require gold for more than just expensive jewelry gold is used in industries such as automotive, electronics, medicine, and an array of others. I believe the best thing we can do for the earth is source it in Canada, where we can be confident it is being done in the most environmentally sound way. If we work together we can keep the environment and people safe and have a thriving industry that pays taxes for our ancillary infrastructure, healthcare, and a variety of other services we take for granted in this province. Name: Email: Address: Halifax Municipality: Halifax email\_message: Privacy-Statement: agree x: 42 y: 19



## Tutty, Bridget R

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**From:**  
**Sent:** January 23, 2023 12:42 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

Exercice 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 mine modification Comments: Minister Timothy Halman Support for the Touquoy Gold Project Modifications I am writing to the Department of Environment and Climate Change in support of the Touquoy Gold Project Modifications and request that the department and Government of Nova Scotia allow these modifications to proceed in an environmentally responsible way. I am confident that the team at St Barbara Atlantic Operations, who are responsible for this project, have followed the requirements of the environmental assessment process to ensure there is a robust plan to assess and mitigate any environmental impacts that may result. St Barbara Atlantic Operations have acted in good faith since beginning operations in Nova Scotia. Through the EA process, they have completed thorough analysis, investigations, and design to provide comprehensive responses to information requests put forward. I am confident in the responses to the information requests and that the planned modifications to the Touquoy Gold Mine Project will not likely result in adverse environmental effects. If these modifications are not permitted, it has the potential to put hundreds of Nova Scotian jobs in jeopardy, in addition to the indirect economic impacts on the people of the Eastern Shore. St Barbara has embraced the opportunity to clarify applications because Respecting the Environment is ingrained in the fabric of their corporate values. I am confident that they will continue to operate responsible gold mining operations. Thank you for your consideration on this very important matter. I am looking forward to hearing about how this government is supporting environmentally responsible gold mining and rural economic development in Nova Scotia Name: Email: Address: Dartmouth, NS. Municipality: Dartmouth email\_message: Privacy-Statement: agree x: 49 y: 17

## Tutty, Bridget R

---

**From:**  
**Sent:** January 23, 2023 1:32 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I am writing to the Department of Environment and Climate Change in support of the Touquoy Gold Project Modifications and request that the department and Government of Nova Scotia allow these modifications to proceed in an environmentally responsible way. I am confident that the team at St Barbara Atlantic Operations, who are responsible for this project.

Name: Email:

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

agree x: 47 y: 17

## Tutty, Bridget R

---

**From:**  
**Sent:** January 24, 2023 4:05 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: The company should be allowed to carry out responsible mining practices in NS as they have outlined in this submission. NS cannot afford to lose good paying jobs in rural Nova Scotia. The economic spin off of keeping people employed and contractors working far outweighs the risk. Name:  
Email: Address: Municipality: East  
Gore email\_message: Privacy-Statement: agree x: 49 y: 20

## Tutty, Bridget R

---

**From:** @stbarbara.ca  
**Sent:** January 24, 2023 9:45 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: As a local resident and an employee of St Barbara ltd I would like to formally lend my support to the successful permitting and eventual implementation of the Touquoy TMF modification project. In my role I am directly involved with field operations in many sensitive environments. As a team we are committed to continual improvement and innovation associated with stewardship of our natural environment. I feel strongly that with the use of innovative thinking, technology, and transparency of relevant data reporting, industry in Nova Scotia can be supported and thrive into the future. Name:

Email: @stbarbara.ca Address: Municipality: Hopewell email\_message: Privacy-Statement: agree x: 44 y: 16

## Tutty, Bridget R

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**From:** @stbarbara.com.au  
**Sent:** January 24, 2023 4:50 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: The Touquoy Gold Mine mine currently provides employment and business opportunities that have a positive financial impact across Nova Scotia. Name: Email:  
@stbarbara.com.au Address: Municipality: Enfield email\_message: Privacy-Statement:  
agree x: 45 y: 16

**Tutty, Bridget R**

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**From:** @yahoo.com  
**Sent:** January 25, 2023 7:07 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine. Name: Email:  
@yahoo.com Address: Municipality: Meteghan Station email\_message: Privacy-  
Statement: agree x: 62 y: 22

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 25, 2023 12:08 PM  
**To:** Environment Assessment Web Account  
**Subject:** [PROBABLE-SPAM] Proposed Project Comments

**\*\* 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 mine modification Comments: I am writing to express my support for the Touquoy Gold Mine project as the mining sector provides employment for hundreds of individuals, generating spin off employment for several sectors and taxes that help pay for public services and public facilities in Nova Scotia. The province of Nova Scotia needs more employment opportunities like those generated by the Touquoy Gold Mine. Name:

Email: @gmail.com Address: Municipality: Salmon River email\_message: Privacy-Statement: agree x: 40 y: 30

## Tutty, Bridget R

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**From:** @hotmail.com  
**Sent:** January 25, 2023 3:44 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: The modifications being suggested would extend the life of the mine and intern allow other production sites to bd developed Name: Email:  
@hotmail.com Address: Municipality: Salmon River email\_message: Privacy-  
Statement: agree x: 68 y: 22



## Tutty, Bridget R

---

**From:** @gmail.com  
**Sent:** January 25, 2023 6:03 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: . Name: Email: @gmail.com Address:  
Municipality: Meteghan River email\_message: Privacy-Statement: agree x: 82 y: 30

## Tutty, Bridget R

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**From:** @outlook.com  
**Sent:** January 25, 2023 9:11 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the Touquoy Gold Mine project. I believe the project can be operated safely without endangering the environment and provide jobs and contributes to the economy of Nova Scotia  
Name: \_\_\_\_\_ Email: @outlook.com Address: \_\_\_\_\_ Municipality: \_\_\_\_\_  
Saulnierville email\_message: Privacy-Statement: agree x: 61 y: 31

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 25, 2023 6:00 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I wish to express my support for the project modifications required to extend the life of current operations and processing of future expansion sites. Name: Email:  
@gmail.com Address: Municipality: Concession email\_message: Privacy-Statement:  
agree x: 46 y: 23

## Tutty, Bridget R

---

**From:**  
**Sent:** January 26, 2023 1:32 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I fully support the gold mine and its operations. From what I see the mine has employed lost of Nova Scotians both directly and indirectly and has brought list of revenue to the province. Name: Email: Address: Municipality: Antigonish  
email\_message: Privacy-Statement: agree x: 48 y: 20

## Tutty, Bridget R

---

**From:** @gmail.com  
**Sent:** January 26, 2023 11:35 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine Name: Email:  
@gmail.com Address: Municipality: Westville email\_message: Privacy-Statement:  
agree x: 69 y: 19

## Tutty, Bridget R

---

**From:** @gmail.com  
**Sent:** January 26, 2023 12:27 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine. Name: Email:  
@gmail.com Address: Municipality: Antigonish email\_message: Privacy-Statement: agree x: 50 y: 11

## Tutty, Bridget R

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**From:** @hotmail.com  
**Sent:** January 26, 2023 12:30 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: This would benefit many people, providing jobs for many people and great for the local economy.

Email: @hotmail.com Address:  
Municipality: Antigonish email\_message: Privacy-Statement: agree x:

65 y: 31

## Tutty, Bridget R

---

**From:**  
**Sent:** January 26, 2023 2:29 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: As someone who has spent a 35 year career in the open pit mining industry in the Atlantic provinces, I feel this project is vital to the Province of Nova scotias economy .Allowing this project to proceed with environmental stipulations will show the mining industry that nova Scotia is open for business. I have seen through my years in the open pit mining industry that todays mining practices are not our grandfathers practices and the mining of today is highly regulated and todays mining companies have the people and technology to mine in a enviromental way where the sites are better after rehabilitation is completed than before the mining started.

In closing Nova Scotias economy bees mining. Name:

Email:

Address:

Municipality: Creignish email\_message: Privacy-Statement: agree x: 66 y: 31



## Tutty, Bridget R

---

**From:**  
**Sent:** January 26, 2023 11:49 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I frequent mine site and see how operations are run, environmental control is top priority. Name:                      Email:                      Address:  
Municipality: Alma/Westville email\_message: Privacy-Statement: agree x: 48 y: 27

## Tutty, Bridget R

---

**From:**  
**Sent:** January 26, 2023 10:39 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the mine. We need all the good paying jobs we can get in Nova Scotia. Name: Email: Address: mt thom Municipality: Salt springs email\_message:  
Privacy-Statement: agree x: 73 y: 23

## Tutty, Bridget R

---

**From:** @eastlink.ca  
**Sent:** January 26, 2023 12:49 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I would like to express my support for the Touquoy Gold Mine Modification. When industry proceeds carefully and responsibly, like this project, it means jobs and opportunities for Nova Scotians. Nova Scotia has to move forward and support industry that will support families and allow people to live here thrive. Name: Email: @eastlink.ca Address: Municipality: Antigonish  
email\_message: Privacy-Statement: agree x: 61 y: 20

## Tutty, Bridget R

---

**From:**  
**Sent:** January 23, 2023 1:02 PM  
**To:** Environment Assessment Web Account  
**Subject:** Project Comments - Support for Touquoy Gold Mine Modification [Jan 2023]  
**Attachments:** Letter Touquoy EA 23.pdf

**\*\* 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

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Halle Geological Services Ltd.  
Halifax, Nova Scotia

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

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 26, 2023 11:28 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the good mine they creat lots of jobs branched out to lots of in province companies and they prioritize safety on every job. Name: Email: @gmail.com  
Address: Municipality: Thorburn email\_message: Privacy-Statement: agree x: 67 y: 18

## Tutty, Bridget R

---

**From:** @hotmail.com  
**Sent:** January 26, 2023 11:59 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

Exercice 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 mine modification Comments: I support the gold mine as it creates work for myself and many others, their safety program is also outstanding. I am hoping to be able to continue working there in the future! Name:  
Email: J @hotmail.com Address: Municipality: Antigonish email\_message:  
Privacy-Statement: agree x: 83 y: 40

## Tutty, Bridget R

---

**From:** @gmail.com  
**Sent:** January 26, 2023 12:01 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the goldmine Name: Email:  
@gmail.com Address: Municipality: Antigonish email\_message: Privacy-Statement: agree  
x: 77 y: 23

## Tutty, Bridget R

---

**From:** @yahoo.ca  
**Sent:** January 26, 2023 11:44 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine.. Name: Email:  
@yahoo.ca Address: Municipality: Saltspings email\_message: Privacy-  
Statement: agree x: 75 y: 19



## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 26, 2023 9:33 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine. The Touquoy Gold Mine project contributes to the economy province while operating safely, sustainably, and in an environmentally responsible way. The mine provides employment for hundreds of individuals and generates dividends and taxes that help pay for public services and public facilities in Nova Scotia. Thorough analysis, investigations, and design have been completed to provide a comprehensive environmental assessment of the project modifications. Name: Email: gmail.com Address: Municipality: Halifax email\_message: Privacy-Statement: agree x: 62 y: 23

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 26, 2023 3:17 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine Name: Email:  
@gmail.com Address: Municipality: Pictou County  
email\_message: Privacy-Statement: agree x: 37 y: 15

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 26, 2023 11:10 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the Mine, it provides much needed jobs to the area!  
Name: Email: @gmail.com Address: Municipality: email\_message: Privacy-Statement: agree  
x: 45 y: 24

## Tutty, Bridget R

---

**From:** environment@novascotia.ca  
**Sent:** January 26, 2023 11:14 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

Project: touquoy gold mine modification Comments: Very important place to work, Nova Scotia needs more jobs like this one. Supports hundreds of jobs and wil soon be finished anyways. Best option to allow them to finish their production and keep peopleemployedas long as possible. Many young people working gaining experience for future endeavors aswell. Important place in our province to work. People from all over nova scotia, New Brunswick and PEI working here. Definitely a huge help to the already garbage economy. Name: . Email: Address: Municipality: email\_message: Privacy-Statement: agree x: 86 y: 42

## Tutty, Bridget R

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**From:** a  
**Sent:** January 26, 2023 2:06 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: This mine has provided huge spin off to the economy. created jobs and supports local business as well as outreach communities. I support the gold mine Name: Brow Email:  
Address: Municipality: Lower South River  
email\_message: Privacy-Statement: agree x: 77 y: 34

## Tutty, Bridget R

---

**From:**  
**Sent:** January 26, 2023 2:32 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the Gold Mine as it generates jobs and provides many economic benefits to the province. Name: Email: Address: Municipality: Pomquet  
email\_message: Privacy-Statement: agree x: 76 y: 29

## Tutty, Bridget R

---

**From:** @hotmail.com  
**Sent:** January 26, 2023 11:07 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

Exercice 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 mine modification Comments: I support this Name: Email:  
@hotmail.com Address: Municipality: Upper musquodoboit email\_message:  
Privacy-Statement: agree x: 67 y: 22

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 26, 2023 5:23 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

Exercice 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 mine modification Comments: I am writing to express my support for the Touquoy Gold Mine project as they contribute to the economy province while operating safely, sustainably, and in an environmentally responsible way. The mine provides employment for hundreds of individuals and generates dividends and taxes that help pay for public services and public facilities in Nova Scotia. Thorough analysis, investigations, and design have been completed to provide a comprehensive environmental assessment of the project modifications. Name:

Email: @gmail.com Address: Municipality: Mount Pearl,NL email\_message:

Privacy-Statement: agree x: 60 y: 20



## Tutty, Bridget R

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**From:** 5@gmail.com  
**Sent:** January 26, 2023 11:35 AM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

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

Exercice 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 mine modification Comments: I support the gold mine Name:

@gmail.com Address:

Municipality: Westville email\_message: Privacy-Statement:

agree x: 68 y: 20

## Tutty, Bridget R

---

**From:** @gmail.com  
**Sent:** January 27, 2023 3:46 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine Name: Email:  
@gmail.com Address: Municipality: Weymouth email\_message: Privacy-Statement: agree  
x: 64 y: 28

## Tutty, Bridget R

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**From:** @icloud.com  
**Sent:** January 27, 2023 5:33 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I support the gold mine and the jobs it provides. Name:      Email:  
icloud.com Address:      Municipality: Antigonish email\_message: Privacy-  
Statement: agree x: 70 y: 39

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 27, 2023 11:34 AM  
**To:** Environment Assessment Web Account  
**Subject:** [PROBABLE-SPAM] Proposed Project Comments

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

Exercice 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 mine modification Comments: I am writing to the Department of Environment and Climate Change in support of the Touquoy Gold Project Modifications and request that the department and Government of Nova Scotia allow these modifications to proceed in an environmentally responsible way. I am confident that the team at St Barbara Atlantic Operations, who are responsible for this project, have followed the requirements of the environmental assessment process to ensure there is a robust plan to assess and mitigate any environmental impacts that may result. St Barbara Atlantic Operations have acted in good faith since beginning operations in Nova Scotia. Through the EA process, they have completed thorough analysis, investigations, and design to provide comprehensive responses to information requests put forward. I am confident in the responses to the information requests and that the planned modifications to the Touquoy Gold Mine Project will not likely result in adverse environmental effects. If these modifications are not permitted, it has the potential to put hundreds of Nova Scotian jobs in jeopardy, in addition to the indirect economic impacts on the people of the Eastern Shore. St Barbara has embraced the opportunity to clarify applications because Respecting the Environment is ingrained in the fabric of their corporate values. I am confident that they will continue to operate responsible gold mining operations. Thank you for your consideration on this very important matter. I am looking forward to hearing about how this government is supporting environmentally responsible gold mining and rural economic development in Nova Scotia. Name: Email:

gmail.com Address: Municipality: Antigonish email\_message: Privacy-Statement: agree  
x: 64 y: 23

## Tutty, Bridget R

---

**From:** @gmail.com  
**Sent:** January 26, 2023 5:01 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: These projects are necessary for us as a province to earn taxable revenue and resources. Name: Email: @gmail.com Address: Municipality: Truro email\_message: Privacy-Statement: agree x: 65 y: 30

## Tutty, Bridget R

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**From:** @gmail.com  
**Sent:** January 28, 2023 7:09 PM  
**To:** Environment Assessment Web Account  
**Subject:** Proposed Project Comments

**\*\* 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 mine modification Comments: I am writing to express my support for the Touquoy Gold Mine project as they contribute to the economy province while operating safely, sustainably, and in an environmentally responsible way. The mine provides employment for hundreds of individuals and generates dividends and taxes that help pay for public services and public facilities in Nova Scotia. Thorough analysis, investigations, and design have been completed to provide a comprehensive environmental assessment of the project modifications. Name:

Email: gmail.com Address: Municipality: Waverley email\_message: Privacy-Statement: agree x: 52 y: 18

**From:** [environment@novascotia.ca](mailto:environment@novascotia.ca)  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 29, 2023 6:51:59 PM

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Project: touquoy gold mine modification Comments: I support the gold mine. Name:  
Email: Address: Municipality: Antigonish email\_message: Privacy-Statement: agree x: 22 y:  
31

**From:** @hotmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 29, 2023 3:37:57 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 mine modification Comments: I support this project, Need the jobs we can get in this province Name: Email: @hotmail.com Address:  
Municipality: Pine tree email\_message: Privacy-Statement: agree x: 2074 y: 169



**From:** [environment@novascotia.ca](mailto:environment@novascotia.ca)  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 30, 2023 1:22:39 PM

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Project: touquoy gold mine modification Comments: We are opposed to any modification plans for the Touquoy Gold Project and any plans for Cochrane Hill. Name:  
Email: Address: Municipality: Sherbrooke email\_message:  
Privacy-Statement: agree x: 47 y: 23

**From:** [environment@novascotia.ca](mailto:environment@novascotia.ca)  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 30, 2023 7:00:57 PM

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Project: touquoy gold mine modification Comments: Seems ludicrous to consider modifications to an already looming environmental disaster and allow it to become an even larger future cleanup problem for the people of Nova Scotia. We have already had to deal with this company in court with regards to their lack of environmental responsibility. What are we waiting for, something to happen that is beyond our ability to sweep it under the rug. Name:

Email: Address: Municipality: Dartmouth email\_message: Privacy-Statement:  
agree x: 71 y: 17

**From:** @outlook.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 30, 2023 1:45:08 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 mine modification Comments: Gold is not a critical mineral. Gold mining has some of the largest human and environmental impacts of all types of metal mining. There is no report on the cumulative effects of putting multiple mine site tailings into the proposed spent pit at Touquoy. The current mining operation have proven they cannot follow the Federal nor Provincial Environmental laws because they pled guilty to 32 environmental infractions. The existing tailing ponds were damaged with hurricane Fiona. Modifying the existing pond to accommodate even more waste runs a higher risk. The mining company has been restructured multiple times and is dealing with financial instability. That should serve as a huge red flag to our province.

Name: Email:  
@outlook.com Address: Municipality: New Glasgow  
email\_message: Privacy-Statement: agree x: 54 y: 19

**From:** [\\_ns.sympatico.ca](mailto:ns.sympatico.ca)  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 30, 2023 9:41:13 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 mine modification Comments: I oppose this proposal to expand the Touquoy mining operation based on several factors. 1 absence of any accounting of a financial benefit to the public of Nova Scotia from the drilling and/mining that has already taken place and might warrant expansion. 2 Further alteration of wetlands, albeit a relatively small area, is unacceptable given the attrition of wetland already incurred in NS. Name: Email:  
@ns.sympatico.ca Address: Municipality: Halifax  
email\_message: Privacy-Statement: agree x: 56 y: 22

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 30, 2023 4:27:15 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 mine modification Comments: Greetings: I strongly request that the Nova Scotia Government reject the major modifications St. Barbara is seeking to make to the Touquoy Gold Project. The proposed modifications including use of the exhausted open pit for tailings deposition, expansion of the waste rock storage area and clay extraction area and changing the plant access road used to access the mill facility and administrative buildings. Each of these are excessively risk to preserving a healthy living environment on the Nova Scotia Eastern Shore. NS wetlands, water, salmon, wildlife, birds, lichen, could all be effected by these modifications. Jeopardizing our NS precious living environment is not worth the risk for some small short term economic gains. Worldwide St. Barbara has a long litany of problematic circumstances that their projects has scarred the communities where they operate. I thank you for your wise consideration. Cordially,  
Email: gmail.com Address: Municipality: Halifax  
email\_message: Privacy-Statement: agree x: 58 y: 11

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 31, 2023 6:58:21 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 mine modification Comments: After years of destruction caused by Gold mining in Nova Scotia and around the world I believe it is long past time governments put a stop to this industry. I think there are many ways to create jobs that will save our small province and show leadership for others. Name: Email:

Address: Municipality: email\_message: Privacy-Statement:

agree x: 43 y: 25

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** January 31, 2023 5:10:27 PM

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

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Project: touquoy gold mine modification  
Comments: If the Minister chooses to approve this project, the terms and conditions of the approval should include the requirement that all terms and conditions issued for the mine back in 2008 should be completed BEFORE the modifications in 2022 and 2023 commence. It is a disgrace that Atlantic Gold has not met all the terms and conditions issued in 2008 and is allowed to continue to operate, and even propose an expansion! It also shows that Nova Scotia Environment and Climate Change, and its Minister, are not serious about enforcing requirements that they issue. For these and other reasons, such as the destruction of wetlands, the destruction of habitat for endangered species, such as the mainland moose and the generally destructive effects of goldmining on the environment during the climate emergency and species extinction we are in, I am completely opposed to allowing the Touquoy mine modification. Name: Email:

@gmail.com Address: Municipality: Hubley  
email\_message: Privacy-Statement: agree x: 50 y: 24

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Touquoy Gold Project  
**Date:** February 1, 2023 9:49:17 AM

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

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The risks to the environment are not worth the small economic gains: the NS wetlands, water, salmon, wildlife, birds, lichen, could all be affected by these modifications.

The proposed modifications include use of the exhausted open pit for tailings deposition, expansion of the waste rock storage area and clay extraction area; and changing the plant access road used to access the mill facility and administrative buildings.

**Please do not allow these proposed changes to go ahead.**

Thank you.

When the animals come to us, asking for our help, will we know what they are saying?  
When the plants speak to us in their delicate beautiful language, will we be able to answer them?  
When the planet herself sings to us in our dreams, will we be able to wake ourselves, and act?

-Gary Lawless

*I am grateful to live in Mi'kma'ki, the ancestral lands of the oak, maple, bayberry, mayflower, moose, coyote, beaver, squirrel, and Mi'kmaq.*



**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 1, 2023 11:54:23 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 mine modification Comments: WE AGREE THIS WORK NEEDS TO BE DONE! 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 realignment of the plant access road used to access the mill facility and administrative buildings. Name:  
Email: Address: Municipality:  
Dartmouth email\_message: Privacy-Statement: agree x: 62 y: 22

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 2, 2023 10:07:02 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 mine modification Comments: The proposed modifications include use of the exhausted open pit for tailings deposition, expansion of the waste rock storage area and clay extraction area and changing the plant access road used to access the mill facility and administrative buildings. I am opposed to these changes. The risks to the environment are not worth the risk for some small economic gains. The NS wetlands, water, salmon, wildlife, birds, lichen, will all eventually be effected by these modifications. Name:

gmail.com Address:

Municipality: Head Of St

Margarets Bay email\_message: Privacy-Statement: agree x: 60 y: 20

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Second Additional Information Addendum for the Touquoy Gold Project Site Modifications  
**Date:** February 2, 2023 12:53:21 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**

Dear sirs'

I write this email letter to you to express to the Nova Scotia Department of Environment and Climate Change my opposition to these proposed modifications.

Yours truly,

**From:** [\\_gmail.com](#)  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 2, 2023 11:01:37 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 mine modification Comments: This project would not only extend the jobs and income of many Nova Scotians but also further produce greater royalties for the province. It would allow for a smoother transition to continuing gold production in Nova Scotia and keep generating income for the province and its residents. I whole heartedly support this project and respect the due diligence process which will be put in place in order to ensure proper environmental compliance and safety for everyone involved. Name:

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

Municipality: Halifax email\_message: Privacy-Statement: agree x: 69 y: 15



**From:** @hotmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 3, 2023 5:07:50 PM

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

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Project: touquoy gold mine modification Comments: The modification request for this project should not be granted. Its days are numbered and it has already gotten away with enough environmental damage with no financial gain for Nova Scotia. The Caribou Mine in New Brunswick has recently gone into "ocare and maintenance mode," which is what the Touquoy Gold Mine site is expected to do later this year, as announced by the owners of the mine. Plus, St. Barbara, the owners of the NS mine, have restructured their company in a way to protect their wealth from legal recourse, likely leaving the province of Nova Scotia to maintain the mine site at a huge cost like New Brunswick is now doing at the Caribou Mine site. Nova Scotians deserve better than natural resource exploitation from an international company. Name: Email: @hotmail.com Address: Municipality: Halifax email\_message: Privacy-Statement: agree x: 76 y: 18

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** [PROBABLE-SPAM] Proposed Project Comments  
**Date:** February 3, 2023 10:01:45 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 mine modification Comments: I would like to state my support for the in-pit deposition modification at the Touquoy site. As a young mining professional working at this site, I would like to be able to continue working and living in Nova Scotia. If this permit is not approved, I any many others will need to relocate for employment. Name:  
Email: @gmail.com Address: Municipality:  
Bedford email\_message: Privacy-Statement: agree x: 75 y: 19

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 3, 2023 3:59:24 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 mine modification Comments: Strongly in support of these modifications as this mine provides good paying jobs to Nova Scotians Name:

Email:

Address:

Municipality:

email\_message: Privacy-Statement: agree x: 63

y: 32



**From:**  
**To:** [Minister, Env; Premier; Minister, Natural Resources and Renewables](#)  
**Cc:** [Environment Assessment Web Account](#); [kevin.garroway@novascotia.ca](mailto:kevin.garroway@novascotia.ca)  
**Subject:** Tourquay Mine St. Barbara  
**Date:** February 3, 2023 1:38:36 PM  
**Attachments:** [Tourquay St Barbara Comments SEND.odt](#)

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

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see attached

comments about St Barbara Mine / AMNS./ Phoenix tailings pond  
modification application

January 23, 2023

Premier Houston  
Minister Holman, Dept of Environment and Climate Change

Mr. Adrian Fuller, Exec. Director, Inspections, Compliance and Enforcement  
Min of the Environment & Climate Change

cc: Kevin Garroway, District Manager C&E

re: Tourquay Mine, application to increase the height of the Moose River tailings pond

Summary:

1) Do not renew St Barbara / AMNS / Phoenix Mine Ltd continued operation in Nova Scotia. Their record of following existing Department requirements does not encourage trust in future operations.

2) Reading the Lahey Report 2018 and his review of 2020, the Department of EnCCC and Department of Resources, Forestry the Provincial government must immediately take such steps to have the individual Departments and the departments collectively to adopt the Triad Process for Resource management (Environmental, Social, Economic)

3) Representatives of different interest groups ie Scientific, Environmental, Social and private Citizens must be given seats on committees, called on to advise the government departments, no longer having the representatives present one sided corporate interests!

Dear Sirs:

I have now spent well over 30 hours reading / reviewing / considering the St. Barbara Inc / AMNS 2<sup>nd</sup> submission application and related news reports / letters to the group Water Is Life, specific to concerns related to the increasing of the height of the Tourquay tailings pond by approximately 1.5 metres.

My university education focused on economic geography. My life experiences, many focused on resource extraction, shutter at the thought that the application could be green-lighted by the Department of Environment and Climate Change.

I find it important to mention, that I am a not a CFA. My ancestry goes back to the Acadians in Port Royal 1735 and Irish-Scots of Cape Breton, 1850's. I started my work career at the Bank of Nova Scotia, Kentville – Windsor, like many others, having to travel West for a lifetime of gainful employment.

### **To the Point: tailing pond expansion application**

- St Barbara/ AMNS came to Nova Scotia in 2018. Almost 4 years later, February 22, AMNS was convicted on 37 counts of non-compliance of their permit for operation of the Tourquay Mine. They were fined a meagre \$280,000\$. (CBC news, January 12, 2023)

- Director Mr. Adrian Fuller NS ECC, January 17, 2023.

In the letter to the group Water is Life, he writes that the applicant is required to ensure tailings facilities functions in accordance with its design and meets all performance objectives and regulatory obligations.

“ Industry Approval requires the company to develop, maintain and adhere to the OMS Manual”

Such statements become very cold comfort to the group and the public, when one takes into account the convictions of AMNS Tourquay Mine – Moose River mentioned above. Once burned – twice shy!!

Any person with a knowledge of similar corporate cost cuttings, easily asks Why would an off-shore company willing spend the \$\$\$ for upgrades, when they know how to operate out of compliance with provincial regulations. Reading other documents suggest that the Department of ECC, by having limited staffing and budget reductions is more expedient for continued short term economic growth than following provincial environmental regulations. (reference: Confessions of an Economic Hitman, 1996 and updated 2016)

St. Barbara in their shareholders newsletter clearly states that the Tourquay Mine will be non-operative in 2023- 24. With an appropriate permit, the closed open-pit mine, could be used as a waste rock dump, storing waste rock gathered from two nearby sites which would be re-opened.

However, in reading the submission #2, done by StanTec Consulting, they write Submission #2, (pages 11, 12, 13)

Section 5:1:3 ... the Sump Pump, is undersized for purposes and is to be upgraded to “collection sump pump”

“the construction footprint is in draft format... within 30 metres of a wetland ... Therefore the collection pond to be built is therefore considered to be **high risk** to an environmentally sensitive area”

Authorization will be required from NS ECC prior to implementation of any works outside the current footprint”

With recent provincial and international news on the importance of Wetlands, how can you risk endangering the bordering wetland, with a questionably designed expansion of a tailings pond, with dubious operational safeguards.

#### Section 6:0 Monitoring and Maintenance

“Essential communications between company staff and NS ECC must be maintained ... field records will be kept to demonstrate due diligence.”

Again, in their conviction, requirements for such communications and records were not maintained.

What assurance will NSECC have through 2023 and for years afterwards, that sufficient monies will be spent on the needed upgrade of the sump pump; that proper matting and clay based materials will be used in the re-build heightening of the tailings pond? ... that reports from mine staff will be truthful and accurate, not a second / false set of reports.

You really have no hook, by statute, financial nor moral, to ensure that St Barbara's / AMNS will upgrade the required waste water pumps, submit correct reports in time, as recommended by StanTec.

In closing, from my reading of the Lahey Report and Review, 2021, within the Department of Forest-NR and the Department of Environment Climate Change, there is a long history of totally ignoring input from the General Public. Statements from resources staff over the years have considered the general public insufficiently educated, such that they cannot understand issues nor are they able to contribute in any meaningful manner. (book Against the Grain: forestry and politics in Nova Scotia)

In consideration of the numbers of Nova Scotians, in the past 60 years, who for employment reasons were forced to go to Western Canada and have now returned home, that in those years away

- they worked in different resource industries;
- many have a high level of technical and professional education
- they have decades of field experiences

warrant that you fully accept their concerns on related mining issues, and as such consider their comments equal to those of corporate employees and or contracted consultants.

As discussed in the Lahey Report – Evaluation 2021, the Triad Management Philosophy: Environmental, Social and Economic must equally drive all future decisions within the Departments of Environment CC and Natural Resources.

The public, groups and associations will be monitoring the Departments and Division specifically their timely responses to resource use applications. Public inputs will be increasing though 2023, going well into decades ahead of us. The People of Nova Scotia, will no longer be cast aside, ignored as being uneducated workers.

We hope / expect that you will be far more receptive to community discussions, to expand decisions away from Economics First, as suggested in the Lahey Report Evaluation 2021.

Sincerely

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 4, 2023 7:40:39 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 mine modification Comments: January 23, 2023 Premier Houston Minister Holman, Dept of Environment and Climate Change Mr. Adrian Fuller, Exec. Director, Inspections, Compliance and Enforcement Min of the Environment Climate Change cc: Kevin Garroway, District Manager CE re: Tourquay Mine, application to increase the height of the Moose River tailings pond . Summary: 1 Do not renew St Barbara / AMNS / Phoenix Mine Ltd continued operation in Nova Scotia. Their record of following existing Department requirements does not encourage trust in future operations. 2 Reading the Lahey Report 2018 and his review of 2020, the Department of EnCCC and Department of Resources, Forestry the Provincial government must immediately take such steps to have the individual Departments and the departments collectively to adopt the Triad Process for Resource management Environmental, Social, Economic 3 Representatives of different interest groups ie Scientific, Environmental, Social and private Citizens must be given seats on committees, called on to advise the government departments, no longer having the representatives present one sided corporate interests! Rod Burns, CPHI Parkers Cove, 902 907 0122 bpc@connected.bc.ca Dear Sirs: I have now spent well over 30 hours reading / reviewing / considering the St. Barbara Inc / AMNS 2nd submission application and related news reports / letters to the group Water Is Life, specific to concerns related to the increasing of the height of the Tourquay tailings pond by approximately 1.5 metres. My university education focused on economic geography. My life experiences, many focused on resource extraction, shutter at the thought that the application could be green-lighted by the Department of Environment and Climate Change. I find it important to mention, that I am a not a CFA. My ancestry goes back to the Acadians in Port Royal 1735 and Irish-Scots of Cape Breton, 1850â?Ts. I started my work career at the Bank of Nova Scotia, Kentville â? Windsor, like many others, having to travel West for a lifetime of gainful employment. To the Point: tailing pond expansion application - St Barbara/ AMNS came to Nova Scotia in 2018. Almost 4 years later, February 22, AMNS was convicted on 37 counts of non-compliance of their permit for operation of the Tourquay Mine. They were fined a meagre \$280,000\$. CBC news, January 12, 2023 - Director Mr. Adrian Fuller NS ECC, January 17, 2023. In the letter to the group Water is Life, he writes that the applicant is required to ensure tailings facilities functions in accordance with its design and meets all performance objectives and regulatory obligations. â?o Industry Approval requires the company to develop, maintain and adhere to the OMS Manualâ? Such statements become very cold comfort to the group and the public, when one takes into account the convictions of AMNS Tourquay Mine â? Moose River mentioned above. Once burned â? twice shy!! Any person with a knowledge of similar corporate cost cuttings, easily asks Why would an off-shore company willing spend the \$\$\$ for upgrades, when they know how to operate out of compliance with provincial regulations. Reading other documents suggest that the Department of ECC, by having limited staffing and budget reductions is more expedient for continued short term economic growth than following provincial environmental regulations. reference: Confessions of an Economic Hitman, 1996 and updated 2016 St. Barbara in their shareholders newsletter clearly states that the Tourquay Mine will be non-operative in 2023- 24. With an appropriate permit, the closed open-pit mine, could be used as

a waste rock dump, storing waste rock gathered from two nearby sites which would be re-opened. However, in reading the submission #2, done by StanTec Consulting, they write Submission #2, pages 11, 12, 13 Section 5:1:3 ... the Sump Pump, is undersized for purposes and is to be upgraded to a collection sump pump? the construction footprint is in draft format... within 30 metres of a wetland ... Therefore the collection pond to be built is therefore considered to be high risk to an environmentally sensitive area? Authorization will be required from NS ECC prior to implementation of any works outside the current footprint? With recent provincial and international news on the importance of Wetlands, how can you risk endangering the bordering wetland, with a questionably designed expansion of a tailings pond, with dubious operational safeguards. Section 6:0 Monitoring and Maintenance a? Essential communications between company staff and NS ECC must be maintained ... field records will be kept to demonstrate due diligence.? Again, in their conviction, requirements for such communications and records were not maintained. What assurance will NSECC have through 2023 and for years afterwards, that sufficient monies will be spent on the needed upgrade of the sump pump that proper matting and clay based materials will be used in the rebuild heightening of the tailings pond? ... that reports from mine staff will be truthful and accurate, not a second / false set of reports. You really have no hook, by statute, financial nor moral, to ensure that St Barbara's / AMNS will upgrade the required waste water pumps, submit correct reports in time, as recommended by StanTec. In closing, from my reading of the Lahey Report and Review, 2021, within the Department of Forest-NR and the Department of Environment Climate Change, there is a long history of totally ignoring input from the General Public. Statements from resources staff over the years have considered the general public insufficiently educated, such that they cannot understand issues nor are they able to contribute in any meaningful manner. book Against the Grain: forestry and politics in Nova Scotia In consideration of the numbers of Nova Scotians, in the past 60 years, who for employment reasons were forced to go to Western Canada and have now returned home, that in those years away - they worked in different resource industries - many have a high level of technical and professional education - they have decades of field experiences warrant that you fully accept their concerns on related mining issues, and as such consider their comments equal to those of corporate employees and or contracted consultants. As discussed in the Lahey Report a?" Evaluation 2021, the Triad Management Philosophy: Environmental, Social and Economic must equally drive all future decisions within the Departments of Environment CC and Natural Resources. The public, groups and associations will be monitoring the Departments and Division specifically their timely responses to resource use applications. Public inputs will be increasing though 2023, going well into decades ahead of us. The People of Nova Scotia, will no longer be cast aside, ignored as being uneducated workers. We hope / expect that you will be far more receptive to community discussions, to expand decisions away from Economics First, as suggested in the Lahey Report Evaluation 2021. Sincerely

a

Address:

Municipality: Parkers Cove

email\_message: Privacy-Statement: agree x: 68 y: 25

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 4, 2023 6:02:57 AM

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

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Project: touquoy gold mine modification Comments: I support Name:

Email: @gmail.com Address: Municipality: Antigonish email\_message: Privacy-

Statement: agree x: 73 y: 29



**From:** @yahoo.ca  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 4, 2023 12:39:25 PM

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

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Project: touquoy gold mine modification Comments: I am in support of the Touquoy Gold Mine Modification because I know that this project has been continuing to operate safely, sustainably and in an environmentally responsible way. I also believe that this project has made it possible for the many community members and community businesses and organizations to be extremely supported directly from St. Barbara, Atlantic Operations. This project has supplied many families with employment within the community they live in. It has also flourished the province with many economical benefits as to aid our province to grow in this industry. Name:                      Email:                      @yahoo.ca Address:

Municipality: Middle Musquodoboit email\_message: Privacy-Statement: agree x: 39 y:

30

**From:** @live.ca  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 5, 2023 7:35:18 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 mine modification Comments: These mines are terrible for the ecosystem and waterways, fish and game Name: Email: @live.ca Address:  
Municipality: Dartmouth email\_message: Privacy-Statement: agree x: 44 y: 32

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: February 5, 2023 2:35:19 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 mine modification Comments: I wish to express my opposition to Santa Barbaras plan to use the Torquoy mine site as a dumping ground for waste from future mining sites that are proposed in this province. The current site has been a disaster with effluent leaching and multiple charges laid both Provincially and Federally due to environmental violations of existing laws. This province already has a long history of toxic tailings from multiple sites which have never been cleaned up. The companies involved are long gone and the current practice for mining companies to change names and ownership so many times that no one can identify who is responsible for the cleanup. The fact that they have already had to have an amendment to the original plan to permit the raising of the containment walls is an indication of the poor planning and lack of foresight by the mining industry. This company has extracted millions of dollars worth of gold without paying any taxes to the people of Nova Scotia. When their 5 or 6 year cycle is over what guarantees do we have that their toxic mess will be cleaned up? How much money out of their profits are being set aside to restore the landscape which looks more like a moon scape at this time? For these reasons and many others that I expressed in earlier hearings, I am adamantly opposed to this and any future mining proposals for this province. --- Name: Email: @gmail.com  
Address: Municipality: Halifax email\_message: Privacy-Statement:  
agree x: 49 y: 22

**From:** @hotmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 6, 2023 7:18:16 AM

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

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Project: touquoy gold mine modification  
Comments: I am writing to express my support for the Touquoy Gold Mine Modification. I am asking that the government allow the project modifications at the Touquoy mine to proceed in an environmentally responsible way. Atlantic Operations has embraced participating in a stringent Environment 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 jobs at risk. I am confident that the team responsible for this project, including third-party technical specialists, have completed thorough investigations, analysis, and design to provide fulsome responses to the information requests, and I am confident in the conclusions presented. 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.

Name: \_\_\_\_\_ Email: @hotmail.com  
Address: \_\_\_\_\_ Municipality: Mooseland email\_message: Privacy-Statement:  
agree x: 55 y: 23

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** [PROBABLE-SPAM] Nova Scotia Environment Feedback Form Submission  
**Date:** February 9, 2023 10:04:07 AM

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name: Peter Crowell email: @gmail.com comments: I am an avid sport fisherman and frequent the areas around the Gold River Mine. I have watched the development of the mine over the years and have been completely shocked as to how the mine has gradually been allowed to develop in a manner that has now positioned the tailings ponds to reside within feet of Scraggly Lake. No shock about the recent discovery of contamination reaching into the lake. That lake is very large and feeds many waterways in that area, including lakes in the Tangier wilderness area. I am not a geologist, but it does not take a world of expertise to have predicted this. The Liberal government that allowed this development to happen and now your government that stands by, I have heard no announcement of any review of the mines operations should both hang your head in shame on this matter. If your government wants my vote, as well as a rath of fellow fisherman I know that fish in that area, in the next election then you will turn some attention t o this potential environmental disaster. I would appreciate an acknowledgment of the receipt of this comment.  
Page Last Viewed: [novascotia.ca/nse/dept/regional-office-locations.asp](http://novascotia.ca/nse/dept/regional-office-locations.asp)

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Project: touquoy gold mine modification Comments: Below, find red flags and the many reasons to not allow modifications of Touquoy Mine to use in ongoing operations on the Eastern Shore. Mining needs to stop at Touquoy Mine immediately. There is an ongoing leak underneath the tailings pond that is being filtered through the wetland and out into the water systems, specifically Scraggy Lake and eventually into the ocean. This needs to be remediated immediately and all mining on this site stopped once and for all. Since 2017, the government of Nova Scotia has allowed Touquoy Mine to self-monitor. Collecting and distributing their own water and sediment samples. They have been in court for not following our rules and have proven beyond a doubt that they don't care for the land and the water systems. Once poisoned, there is no turning back. It makes no sense that the government of Nova Scotia would let them or anyone else do open-pit mining in the province. Leave the gold in the ground. It is useless and only worth money to the greedy. As mentioned above, there is ongoing contamination happening at Touquoy Mine. Citizens have gone beyond the testing required by government and have done their own testing. They have found contamination in the area. Testing and other information can be found at Water is Life Nova Scotia Facebook group. There is a stream under the settling pond that is constantly leaking contamination into the wetland. There is not stopping it now. It needs to be cleaned up as soon as possible. Touquoy Mine are trying to pump the contamination back in to the settling pond, but this is not working. The land and the water systems in the area have already been deliberately contaminated. This is our land. They had not right to come here and do this to Nova Scotia and our government should have been watching this more closely. They should have been doing everything in their power to not let this happen. Touquoy mine has recently stopped mining and is now only processing previously mined ore at the site. The company has announced it will go to into care and maintenance mode this year. St. Barbara has restructured to distant itself from non-core assets like Touquoy mine. If a mine remains in care and maintenance mode indefinitely, reclamation until closure is not required. The corporate restructuring demerging included Atlantic Gold and Simberi in Papua New Guinea. The new junior company is called Phoenician Metals. This merger has left Atlantic Gold with a smaller net worth 85 million between the two companies and less ability to deal with troubled assets that now remain at the Touquoy mine. This restructuring significantly reduces environmental risks to the parent company and its new partner, and offloads future environmental risks and problems to Phoenician Metals or ultimately to the Nova Scotia taxpayer. Once processing at the Touquoy mine is complete and the mine is no longer useful or profitable for Phoenician Metals, the mine will go into care and maintenance mode. St. Barbara could then abandon the mine. Nova Scotians needs to know that although modern mining companies pay into a reclamation bond held with the province, reclamation plans and expenses are not acted upon until the mine is declared closed not when mines are in care and maintenance mode. Care and maintenance mode puts a mine in infinite limbo, leaving an unaddressed environmental hazard which can ultimately end up as a contaminated site to be dealt with at taxpayer expense. And we already know it is contaminated. There are weaknesses in Nova Scotia's laws that will allow St. Barbara to get off scot-free. Our province has received no corporate tax from this

mine project, and have only received 1 royalties from the hundreds of millions of dollars this Australian company made on mining Nova Scotian gold. Could it be true that our province just doesn't know how to get out of this? Well, I hope not. Premier Houston changed the rules for housing. He created a Housing Task Force. So, I am hoping he will figure this one out. How do we get Touquoy Mine cleaned up and remediated? Mining for gold is not needed in this province. We need to be focusing on clean energy and tourism, not destroying our land and water systems for useless metals like gold. Gold is abundant and the world does not need more. Nova Scotians do not need to be worrying about whether we are going to have clean water to drink and lakes to fish and play. Once the mine is closed permanently and reclaimed, the mine owner at the time must monitor and report on it for at least three years. Tailings facilities don't just go away after three years. According to the Safety First Guidelines for Responsible Mine Tailings Management, May 2022, tailings facilities need to be monitored, inspected, maintained and reviewed in perpetuity, or until there are no credible physically possible failure modes. Without perpetual oversight, the failure of a tailings dam is inevitable. Given that operating companies will not exist long enough to accomplish perpetual monitoring, inspection, maintenance and review, the operating companies' ability to eventually eliminate all credible failure modes must be a key consideration during the permitting process. It is very disturbing that neither St Barbara nor Atlantic Gold are signatories to the International Cyanide Management Code, a voluntary certification for companies that manufacture, transport or use cyanide for gold or silver production, to help them improve safe management of the dangerous chemical and reduce risks to human health and the environment. Another piece of unfinished business for the new owner of St Barbara's Nova Scotia operations is the requirement, laid out in the 2008 environmental approval for the Touquoy mine and repeated in each amendment of its industrial approval, that the company "then DDV Gold and soon to be Phoenician Metals" produce a plan for acquiring conservation land in the vicinity of the Touquoy mine within a year of the amendment of the industrial approval, and if it fails to do so, post half a million dollars in security with the province. Name: \_\_\_\_\_ Email: \_\_\_\_\_@gmail.com Address: \_\_\_\_\_

Municipality: Gaetz Brook email\_message: Privacy-Statement: agree x: 67

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Project: touquoy gold mine modification Comments: This seems to be an environmental disaster already. No plan for appropriate clean up and disposal of the tailings. Certainly not satisfactory and seems to get worse with every change of ownership of the mine. Please dont approve any more mines of this type and I hope the mine owners can be forced to carry out the necessary mitigation to prevent environmental damage in the future. Name:

Email: @gmail.com Address: Municipality: Chaswood

email\_message: Privacy-Statement: agree x: 62 y: 22



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Project: touquoy gold mine modification Comments: SUNNS-logo-for-email.png RE: Touquoy Gold Project Site Modifications Sustainable Northern Nova Scotia SuNNS, a group of concerned Nova Scotia citizens representing over 2,000 people in Northern Nova Scotia who successfully opposed a proposed gold mine in the French River Watershed stands with statements of opposition submitted by St Mary's River Assoc SMRA, Ecology Action Centre, Nova Scotia Salmon Association, Millbrook First Nation, Save Caribou, Eastern Shore Forests, East Coast Environmental Law, and any tax paying Nova Scotian who does not want to see further environmental degradation as well as having to pay the clean up bill as has been our previous experience with legacy gold mines in Nova Scotia. We expect our government to respect and use the the information provided by its own specialists such as DFO, the Sustainability and Applied Science Division, Wetlands and water Resources which do not support many of the amendments and also commented about the lack of access to all the documents held by the Minister related to the Touquoy project. The Nova Scotia government must exercise its required fiduciary responsibility as stated in The Precautionary Principle of the Environment Act section 2B2, given the evidence of tailings dam disasters world wide in exposing the citizens of Nova Scotia to a potentially vast unfunded liability, especially since NS does not have an enforceable polluter-pay model. And there are the pollution costs to waterways, land and communities downstream as we have learned from legacy mines in NS. For example, cleaning up the British Columbia Mount Polley dam break was estimated in 2016 to be \$67.4 million dollars and in 2020 had increased to \$2.8 billion, for which tax payers have already shouldered \$40 million. The current reclamation bond for AMNS/St Barbara is insufficient to cover increased potential liabilities. And it is impossible for the public to know exactly how much is in the NS gov's bank account for reclamation in cash because secrecy excludes the public from knowing the form amounts of the current in kind payments eg no payment, securities, letter of credit constitute that the reclamation securities. And the reclamation bond will not activate until the mine is declared closed, not when it is in care and maintenance mode which is a limbo or mothball mode during which maintenance is neglected in favour of reduced costs since mining is not actively happening and minimal rehab is undertaking with massive environmental liabilities and social issues with costs of repairing problems falls on tax payers. 1608.jpeg Paper: Pitfalls of gold mine sites in care and maintenance acg.uwa.edu.au We stress there are a number of redflags regarding the reliability of this company to act in a responsible manner regarding all aspects of mining activity: 1. Cited for 32 Federal and Provincial environmental infractions occurring Feb 2018-May 2020 endangering fish and fined in Feb 2022 and even the Federal Crown Prosecutor Marian Fortune-Stone called out AMNS's reckless disregard for federal regulation? Halifax Examiner, Feb.11, 2022, Joan Baxter 2. They have not provided a transparent and appropriate perspective on the cumulative effects for using the Touquoy spent pit as a catch-all for their next projects across the region - environmental impact assessment must have a clear mitigation strategy 3. There is a lawsuit still outstanding resulting from one of our SuNNS members asking questions at a public meeting held May 23, 2019 in Sherbrooke about tailings pit construction and the cumulative effects on the

environment of the pond

4. The recent corporate restructuring significantly reduces environmental risks to the parent company and its new partner, and offloads future environmental risks and problems to a junior company, or ultimately to the Nova Scotia taxpayer. The environmental risks associated with the proposed modifications to Touquoy Mine are high. We support Nova Scotia-wide community groups and for the health and wellbeing of our Nova Scotia, specifically for the areas impacted by current and future changes to Touquoy. Sustainable Northern Nova Scotia will not support the proposed modifications to the Touquoy Site.

Sustainable Northern

Nova Scotia

Name:

Email:

@gmail.com Address:

Municipality: Earltown email\_message: Privacy-Statement: agree x: 75 y: 20

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Project: touquoy gold mine modification Comments: I urge the government to reject the proposed modifications to the Touquoy gold mine. These modifications would compound the toxic legacy of gold mining in Nova Scotia. The company has repeatedly underestimated or downplayed the cumulative effects this project will have on nearby watersheds, wetlands, and wildlife. For instance, Additional Information Request no. 6 concerns the alteration of Wetland 15, which is a Wetland of Special Significance. The Nova Scotia Wetland Conservation Policy does not allow the alteration or destruction of a Wetland of Special Significance unless deemed to provide necessary public function. It's clear that is not the case here. The provincial government must not allow the alteration of Wetland 15, a wetland of special significance. Furthermore, I urge the government to think very carefully about granting approval to a company that would try to contravene our established wetland policy, a company that's already been found guilty of breaking provincial and federal laws. The Addendum EARD states: "Project activities will result in direct loss of habitat within Mine Site boundaries for avian species, including priority species such as common nighthawk, Canada warbler, barn swallow, olive-sided flycatcher, and eastern wood-pewee. However, due to the abundance of these habitats regionally and the likely decreased quality of the impacted habitats because of their proximity to the operating Touquoy Mine Site, it is not expected that this Project will further impact avian species. There are several problems with this rationale. First, these are species at risk and we have a responsibility to protect them and their habitats. Secondly, saying that the habitat is already degraded because of its proximity to the Touquoy mine site and that it would therefore be to further degrade or destroy the habitat through more mining activities is nonsensical. Where would it end? Instead, we must consider the cumulative impacts of these projects on ecosystems and communities, rather than viewing them solely as independent sites, components, or modifications. The sixth mass extinction is an ongoing extinction event, the likes of which has never before been seen in human history. The Center for Biological Diversity reports, "The current rate of extinction of species is estimated at 100 to 1,000 times higher than natural background rates." The UN warns, "Around 1 million animal and plant species are now threatened with extinction, many within decades, more than ever before in human history." We have lost 60% of the planet's wildlife in less than 50 years, according to the World Wildlife Fund's 2020 Living Planet Report. Populations of Canadian species that are of global conservation concern have declined in Canada by an average of 42% between 1970 and 2016. Populations of Canadian species that are of national conservation concern have declined by an average of 59% between 1970 and 2016. To permit these modifications would further imperil endangered species, alter a Wetland of Special Significance, infringe upon the Ship Harbour Long Lake Protected Area, contaminate rural watersheds, and endanger local communities. We can no longer afford business as usual, in which any potential benefits are negligible and short-lived, but the adverse environmental and community impacts are significant and long-lasting. It's time to put our province and our planet first. Name:

Email: @gmail.com Address: Municipality: Hammonds Plains  
email\_message: Privacy-Statement: agree x: 59 y: 31

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Project: touquoy gold mine modification Comments: This site is already an ecological and environmental disaster. This was once a pristine, natural, and thriving wilderness area. Breaches at the mine site and a lack of proper enforcement policy are already threatening many species in the area, with local waterways presenting with much higher than acceptable levels of mercury, arsenic and other toxic heavy metals used in the extraction process of gold mining. If we, as a province allow St. Barbara to continue trucking their toxic tailings to the site from other locations, increasing the already hazardous levels exponentially, then we will be failing the current and future residents of Nova Scotia. Accountability and culpability must be taken by the company and subsequently enforced by the province. Neither one of these crucial elements are presently being adhered to. Why would any Nova Scotian believe that if this modification gets approved that practices at the site will improve or change in any meaningful or impactful way for the better. This is a slippery slope indeed, one that the residents of Nova Scotia do not deserve to be left holding the bag on. Please consider this VERY carefully. A few years of temporary jobs will have not much of a lasting impact on the economy once the gold is gone, the company goes back to Australia with their profits from our resources and were left footing the bill for toxic waste management and the environmental cleanup which will be ongoing for decades to come. Not a favorable, sustainable or viable outcome, but a very true actuality for Nova Scotia. Please consider rejecting this proposal for the ecological future of Canadas Ocean Playground and her inhabitants. Thanking you in advance for consideration of these valid concerns. Respectfully, doboit,

Name: Email: @gmail.com Address: . HRM  
N.S. Municipality: Middle Musquodoboit email\_message: Privacy-Statement: agree x: 80 y:  
36

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Project: touquoy gold mine modification Comments: February 8, 2023 Minister Timothy Halman Department of Environment and Climate Change 1894 Barrington Street, Suite 1800 Halifax, NS B3J 2P8 Dear Minister Halman, Re: Environmental Assessment "Atlantic Mining NS Incorporated Touquoy Gold Project Site Modifications Addendum #2 I am writing to urge you not to approve the most recent list of changes requested by Atlantic Mining Nova Scotia Inc. now or soon to be Phoenician Metals to the Touquoy gold mine site. My first comments are with respect to the Touquoy mine and its various corporate operators while my later comments will speak to the problems with gold mining in general. Atlantic Mining NS Inc. is an environmental offender I believe it is particularly incumbent on you as Minister to exercise the precautionary principle of the Nova Scotia Environment Act when dealing with an application from a company that is on record as an environmental offender. On February 3, 2022, Atlantic Mining NS Inc. previously Atlantic Mining NS Corp. pleaded guilty to contravening the Fisheries Act and Nova Scotia's Environment Act for offences characterized by the federal crown prosecutor as "reckless disregard for federal regulations". The judge concurred they were "not administrative types of offences" and fined the company \$250,000. As a result of this conviction, the company's name was added to the federal Environmental Offenders Registry. These convictions must be given due weight when exercising the precautionary principle. Failure to define the project to be assessed The Touquoy Project today is a very different thing than what was approved in 2008. Indeed, Atlantic Mining NS Inc. has not met all the terms and conditions issued in 2008 and yet now wants changes to its operational permissions. Back in 2008 when the Touquoy mine as proposed by the Australian company DDV Gold got its original approval, there was no mention of other mines at Beaver Dam and Fifteen Mile Stream depositing tailings at Touquoy. Later, in 2012 when the first industrial approval was issued for the mine, it was for a single mine, and there was no mention of tailings from other mines going into the tailings facility. What the company is asking for at Touquoy is substantial change the use of the pit from their original proposal hence the expansion of the waste rock storage area and clay borrow area move the access road and expand the site by about 7 per cent. This is likely not the end of the "modifications" that will appear if the record to date is any indication. Just like that, one open pit turns into three open pits, a road here is suddenly going there, seven trucks a day turn into ten, the tailings pond isn't large enough so, gosh, we need to put up higher walls. This pattern of piecemeal proposals followed by modifications prevents an understanding of the magnitude of the project and makes a fulsome environmental impact assessment of the project in its entirety impossible. The open pit mine which has now become a Tailings Management Facility TMF and a "temporary" rock waste storage area has the potential to create major environmental issues and requires a full and careful environmental assessment. The proponent has not yet met its obligations of 2008 let alone provided sufficient information for the significant changes proposed. Salmon restoration at risk The Nova Scotia Salmon Association NSSA and its many partners including First Nations, private industry, charitable ENGOS, academic institutes, and local conservation groups are engaged in a multi-year initiative of successful salmon conservation and restoration work in eight watersheds

along the Atlantic Coast of Nova Scotia. The West and St. Mary's Rivers are two of the most ecologically important watersheds for Atlantic Salmon recovery in Eastern Canada. The West River project is a world class restoration and research program. The NSSA has warned that gold mines in the area could have major impacts on fish conservation efforts in Eastern Canada. The Association has gone on record in opposition to the open pit mine proposed at Beaver Dam in the West River Sheet Harbour watershed. Again, while each of these various mine projects are proceeding through entirely separate approval processes, they are integrally linked. I would urge the Minister to consider that the modifications under review are to allow the Touquoy Mine to receive mine tailings that will be trucked over public roads from the Beaver Dam mine in the West River watershed which poses an environmental threat to salmon restoration. Gold mining itself as an extractive industry poses particular threats to local environments and communities. Risk of tailings pond failure Tailings facilities, which contain the processed waste materials generated from mining metals and minerals, are failing with increasing frequency and severity. In 2014, for example, the Mount Polley mine in British Columbia spilled over 24 billion litres of mine waste and debris into Quesnel Lake and the Fraser River watershed, home to one of the largest salmon runs in North America. Eight years later, contaminated slurry remains in the waterways, impacts are still being observed and clean-up efforts are still being completed. Two factors that go into tailings dam breaches are a heightened dam and an increased volume in the tailings. Both of these factors are happening at the Touquoy mine site. In the original 2008 environmental assessment for the Touquoy Mine, the tailings pond approved was not engineered to store the larger amounts of tailings that the proponent is asking for now. This is a significant modification that can have dramatic consequences. The risk of a breach, leading to toxic mining waste spilling out across nearby areas, resulting in the obliteration and contamination of watercourses, groundwater and wildlife, while jeopardizing the health and safety of people is too great a risk. The climate emergency Gold mining is also energy intensive and results in staggering Green House Gas emissions. According to a report from SP Global, gold mines emitted on average 0.8 tonnes of CO2 equivalent for every ounce of gold that was produced in 2019. Open pit gold mines emitted more carbon than underground gold mines. In fact, carbon emissions from Atlantic Gold's 2020 gold production at Touquoy was equivalent to taking 106,663 return flights between New York and Paris. This proposed mine development needs to be assessed on the basis of a robust carbon accounting for the life cycle of the project. This project relies heavily on trucking and processing a vast quantity of aggregate, which runs contrary to the direction our economy must take to meet the environmental goals and strategies for our citizenry, federal and provincial governments, and future generations. Gold mining is not an essential activity Gold is not a critical mineral in Canada, and it is not needed for clean energy or other climate solutions. Most of the gold mined today is used for jewelry production 50-60, for banking and investments 30-40 with only about 10 for industry and technology. Since gold can be infinitely recycled, demand going forward can be met by adopting circular economy policies and innovative investment strategies. For every ounce of gold that Atlantic Mining NS Inc. produces, it extracts 70 tonnes of ore and rock waste. In a single year, that adds up to roughly 8 million tonnes at the Touquoy Mine. In conclusion, I reiterate my request that you deny the modifications requested by the proponent. Sincerely yours,

Nova Scotia Name:

Email:

@gmail.com Address:

Municipality: Bayhead NS email\_message: Privacy-Statement: agree x: 45 y: 17

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Project: touquoy gold mine modification Comments: Re: Touquoy Gold Project Site Modifications EA Registration document Addendum No. 2 I do not support the proposed modifications And fully support the opposition comments made by the many concerned NS groups that have submitted comments : St Maryâ?Ts River Association, Millbrook First Nation , Save Caribou, the NS Salmon Asociation, Eastern Shore Forests, East Coast Environmental Law, Ecology Action Centre, Sustainable Northern Nova Scotia SuNNS to name a few. Minister Halman, the Environment and Climate Change ECC Minister must listen to the concerns raised by the specialists that have voiced their opposition to this project. The biodiversity and ecosystems of Nova Scotia must be protected for us and all future generations. The short term economic gains do not justify a project that has such extreme environmental risks. We do not want NS to become an industrial wasteland. We already have over \$60 million dollars of damage from gold mining from the past that we as tax payers are responsible for. Atlantic Gold has already had a very poor track record of monitoring for environmental issues and has had 30 environmental charges laid against it and received a \$250,000 fine. This record speaks for itself. Atlantic Gold can not be trusted to properly take care of the environment. Why would the ECC Department approve this project ? What possible justification can be used. On a final note, there is a severe lack of transparency in the whole EA process. I tried to contact various governmental specialists who had provided concerns about the project in 2021 and would not approve the project at that time. They all told me they were submitting comments this year but were unable to share there comments with me: that I would have to wait until they were shared publicly after the Feb 9th deadline for comments to be submitted. To not be able to see the concerns raised by specialists before the deadline is an extreme lack of transparency. The environmental risks associated with this project are too high. Please listen to the concerns of the many who have opposed this project. Do the right thing for the health and well being of our communities, our animals and our precious land and water environment.

Address: @gmail.com Name: Email: @gmail.com Municipality:  
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Project: touquoy gold mine modification Comments: February 7, 2023 Re: Touquoy Gold Project Site Modifications " Addendum No. 2 The St. Mary's River Association SMRA of Sherbrooke, Nova Scotia joins the consensus of strong opposition to the proposed modification of the Touquoy Gold Project Site modifications proposed by Atlantic Mining Nova Scotia Inc. The proponent has returned to the provincial assessment process once again without providing information that the repurposing of the exhausted open pit as a tailings lake will stand in perpetuity without failure. The addendum provided is rife with inconsistent reports, and major oversight. The modifications documents from AMNS are perfunctory and in many instances, are false and disrespectful to the Environmental Assessment process and to the Nova Scotian public. In one instance from the addendum, the Moose River fish sampling that occurred June 28-30 happened 3 months before the study design was submitted to DFO for consultation, a condition requested by the Minister. A secondary sampling event happened mid-September, but there are inconsistencies within the report. With reference to the /Touquoy Gold Project Modifications " Environmental Assessment Registration Document Addendum No. 2, Attachment 14 " Moose River Fish Surveys/, in the paragraph under /Table 4.4/, specific conductivity in the river did not, as claimed in the results, range from 23.6  $\mu\text{S}/\text{cm}$  to 1010  $\mu\text{S}/\text{cm}$ , it's documented in the appendix as ranging from 23.6  $\mu\text{S}/\text{cm}$  to 28.3  $\mu\text{S}/\text{cm}$ . Low conductivity will affect the efficiency of electrofishing, the method that was used for sampling. Low conductivity water 100  $\mu\text{S}/\text{cm}$  is more resistant than fish, and the electrical field is limited to the immediate area of the electrode, not beyond. The water temperature at the time of the June survey claims to range between 13.2 $^{\circ}\text{C}$  and 22.0 $^{\circ}\text{C}$ , but in the raw data in /Table B.4 In Situ Water Quality Parameters in Moose River, NS, 2022/, in the same document, the temperature of the stream during the June sampling event ranged from 19.5 $^{\circ}\text{C}$  to 22.0 $^{\circ}\text{C}$ . These water temperatures are approaching and hitting dangerous levels of heat stress for salmonids. The inconsistency and false data that are reported in the document provided by AMNS, is frustrating, though not surprising. It is possible that this survey is underrepresenting the potential presence and abundance of species at risk and species of conservation concern. Additionally, the minnow traps were ineffective in method. The recommended soak time for effective use of a minnow trap for sampling purposes is 24 hours. The first deployment was 16.5 hours, and the second, a mere 5.5 hours. Undereffective sampling provides underestimated results. In attachment 3 " Groundwater Modelling Information " this model demonstrates that groundwater will be infiltrated by tailings contamination and that if the water levels rise about 107.02 masl, there would be a groundwater gradient towards the Moose River from the southwestern corner of the pit. A clay liner has been proposed for installation in this area to further minimize the potential for solutes from the pit to impact groundwater in the area between the pit and the Moose River. A clay liner? In this economy? An environmental impact assessment must have a clear mitigation strategy however, the proponent has not provided a transparent and appropriate perspective on the cumulative effects for using the Touquoy spent pit as a catch-all for their next projects across the region. The cumulative effects will persist beyond the life of the action that caused them. As residents and stewards of the Eastern Shore, we do not want this land to become an



industrial wasteland. The impact on the land and watershed following the tailings deposition in the spent pit will leave a lasting and deeply intergenerational impact. Our grandchildren will be dying from the ramifications of this type of industrial activity. Someone else will have to deal with this waste, this statement is made abundantly clear in the recent distancing of the parent company, St Barbara, through restructuring at AMNS, and the subsequent decision to enter Touquoy to a state of care and maintenance. This letter stands behind the statements of opposition submitted by Millbrook First Nation, Save Caribou, the Nova Scotia Salmon Association, Eastern Shore Forests, East Coast Environmental Law, Ecology Action Centre, and others. This includes the Miâ?Tkmaâ?Tki All Points Services in which they conclude, â?oAtlantic Gold Corporationâ? Ts Environmental Impact Statements do not meet the expectations of adequate cumulative impact assessment as they examine potential environmental impacts of its Moose River Consolidated Project in isolation and without proper consideration of cumulative effects of other concurrent or recent developments or changes on the regional bio-physical and social environment. â?|adverse impacts will flow from it, and those impacts will indeed be significant.â? The environmental risks associated with the proposed modifications to Touquoy Mine are high. We support our community groups and its leaders. For the health and wellbeing of our community, we will not support the modifications to the Touquoy Site.

Name: \_\_\_\_\_ Email: smra.beaver@gmail.com Address \_\_\_\_\_ ,  
Canada Municipality: Sherbrooke email\_message: Privacy-  
Statement: agree x: 50 y: 25

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** [PROBABLE-SPAM] Proposed Project Comments  
**Date:** February 9, 2023 8:27:05 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 mine modification Comments: I was a member of Musquodoboit Valley Tourism Association MVTA at the time the development of the Moose River Gold mines development project was initially proposed. I wasn't willing to see the destruction of a historical landmark community site of the first live radio broadcast from a scene of disaster I.e. Moose River Gold Mines, April, 1936 Mine developers assured MVTA the existing provincial park established at the site would be re-created. As well, MVTA and our communities, were assured once mining operations ceased, the location would be restored. The pit would become a lake. Tree-planting and site remediation would occur. Never was putting this mine into a state of preverbal limbo ever mentioned. Name:

Email: e@gmail.com Address: Municipality: Middle  
Musquodoboit B0N1X0 email\_message: Privacy-Statement: agree x: 50 y: 20

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** [PROBABLE-SPAM] Proposed Project Comments  
**Date:** February 8, 2023 10:21:28 PM

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

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Project: touquoy gold mine modification Comments: Touquoy Gold Mine and its tailing ponds are an environmental disaster waiting to happen. The people of Nova Scotia were hood-winked by the government who quietly allowed the tailing pond to be heightened by 2.5 metres. The documented increase in poisonous materials in the streams and ponds close to the mine are proof of how the environment is being negatively affected. The removal of the 2.65 million tonnes of waste rock has yet to happen. Earthworks.org: Most consumers don't know where the gold in their products comes from, or how it is mined. 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. Producing gold for one wedding ring alone generates 20 tons of waste. There are environmentally friendly, but costly methods to mine gold and other minerals. Lets make corporations take responsibility for their actions. A little less profit and a lot more care for mother earth is what we need. Shalom

Name:

Email:

@gmail.com Address:

Municipality: Middle Musquodoboit email\_message: Privacy-

Statement: agree x: 72 y: 24

From: @gmail.com  
To: [Environment Assessment Web Account](#)  
Subject: [PROBABLE-SPAM] Proposed Project Comments  
Date: February 9, 2023 12:13:42 PM

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

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Project: touquoy gold mine modification Comments: Atlantic Gold and its mother company Saint Barbara have shown itself to be untrustworthy partners for the Province of Nova Scotia and its residents, especially when it comes to the stewardship of Nova Scotia lands and waters. They have failed time and again to meet regulatory requirements and have not provided additional information requested of them by the Minister of the Environment and Climate Change. On this basis alone, any additional amendments to their mining operation should not be granted approval. Atlantic Gold has requested use of the exhausted open pit for tailings deposition. Yet, citizen scientists have discovered tailing leakages into surrounding wetlands and Scraggy Lake that far surpass the expected levels of contaminants. The existing tailings pond should have been adequately lined and monitored " not by Atlantic Gold, but by an independent professional or government official. Additional tailings deposition, regardless of location, must not be considered until the existing leakage is stopped and further seepage into the surrounding watershed is mitigated and the watershed health is restored. No expansion of the waste rock storage and clay borrow area should be approved until Atlantic Gold and St Barbara repair and mitigate the leaking tailings pond, restore the watershed and provide any additional or outstanding information requested by The Minister of ECC. I could find no information regarding the proposed realignment of the road. Where is the realignment? To what degree will the road be changed? Who will pay for the changes? What are the environmental and traditional use implications? The burden that this industry places on local food supply, water supply, environmental health and global warming does not justify the continued support of open-pit gold mining in this province. Gold is not an essential element. In fact, the stockpile of gold world-wide is sufficient to meet the needs of technology and jewellery manufacturers without this burden. In addition, the recently announced corporate restructuring of St Barbara raises the very real risk that this company or its subsidiary will walk away from this project before remediation is complete. The result will be yet another massive historical gold mine that the government of Nova Scotia will be required to monitor, inspect and maintain in perpetuity at the expense of the taxpayers of Nova Scotia. Name:

Email: @gmail.com Address: Municipality: Dartmouth  
email\_message: Privacy-Statement: agree x: 47 y: 18

February 9, 2023

Environmental Assessment Branch  
Department of Environment and Climate Change  
PO Box 442, Halifax, NS B3J 2P8

**Re: Comments on Touquoy Gold Project Site Modifications**

While I am not against placing tailings in the open pit, extreme caution must be taken to ensure it is done properly such that there will be no future impacts to Moose River decades from now, particularly since the open pit is situated in close proximity to the river. I do recognize that the proponent's more recent reports / responses to comments raised are very thorough.

In the initial reports, it is stated that an estimated 6.5 million tonnes of tailings will be placed in the open pit, which would result in a finished tailings elevation of 75masl, as shown in a cross-section in one of the reports. The recent revisions to the plan indicate that now the finished tailings elevation will be higher because of the waste rock placed in the open pit. The recent reports do not illustrate nor indicate what the finished elevation will now be. So I calculated what I think the finished tailings elevation will be, ie 95masl. This should be confirmed by the proponent, considering there needs to be sufficient water above the tailings for a buffer, considering the spillway will be at an elevation of 108masl. If I am correct in my calculations, the Approval should be conditional that no more than the 6.5 million tonnes of tailings will be permitted.

Another reason why the finished elevation of the tailings cannot, in my opinion, be higher than 95masl because downgradient is Moose River decreasing in elevation from 108masl to <100masl downstream. The groundwater in the tailings will migrate around the perimeter of the proposed 1m thick clay wall liner, such that flow will be in a southerly direction. This impacted groundwater will ultimately discharge somewhere, so the plume should be kept as deep as feasibly possible. The contaminant solute transport model should consider the affects of the liner on groundwater /contaminant flow.

I didn't see much discussion of pH in the water and tailings. As pH drops, metals concentrations in groundwater and surface water increase exponentially, hence being a major contributor to their being naturally elevated metals in our lakes and streams in our Province, coupled with low natural buffering capacity of the overburden and bedrock. Aluminum needs to be focused on in addition to the other identified metals of concern, considering the toxic effects that aluminum can have on brook trout, as demonstrated in past studies conducted in the Province.

I have a few questions:

- (1) I don't see suspended solids addressed in the reports. Will there be suspended solids migrating via groundwater from the tailings placed in the open pit?
- (2) There will be open mineralized fractures in the bedrock surrounding the open pit, created from blasting carried out in the open pit, that will result in ARD generated over time (decades). Will the chemistry of the tailings help buffer this ARD or make it worse?
- (3) Has consideration been given to the ever increasing higher intensity / shorter duration precipitation storm events? As I am sure, the Province does not want to have this site a disaster waiting to happen. Hence, all necessary preventative measures must be considered.

Respectfully submitted,

<ORIGINAL SIGNED BY>

Hydrogeologist  
Dartmouth, NS

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Cc:**  
**Subject:** Comments on Touquoy Mine Modifications  
**Date:** February 9, 2023 9:58:22 PM  
**Attachments:** [Comments Re Touquoy Gold Mine Modification.docx](#)

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

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Attached is my letter of comments for consideration regarding the latest Touquoy Proposed Mine Modifications, focusing on the tailings being deposited into the Open Pit.

**From:** @outlook.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 11:13:41 AM

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

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Project: touquoy gold mine modification Comments: I am concerned about the possible approval for modifications to the Touquoy Gold Mine in Moose River as a citizen of the Musquodoboit Valley, an avid fisherman and repeat adventurer through the forest and waterways surrounding the mine site. As much as I can see the benefit of jobs in the community, I think that benefit is quite limited in scope. Although there are some locals employed through the mine, the vast majority of workers are coming from outside the Musquodoboit Valley. Other than employment, I see the mine as much more of a risk to our community, environment and fresh water. I have real concerns about the mines impact on our waterways specifically and am worried about future tailings disposal and the impact it will have. There have already been many instances of brackish water and fishing holes being affected. The long term consequences of unhealthy water will long out last the small economical gain to the community and I personally am not comfortable with the risk. Name:

Email: @outlook.com Address: Road

Municipality: Upper Musquodoboit email\_message: Privacy-Statement: agree x: 67 y: 32

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 5:55:17 AM

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

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Project: touquoy gold mine modification Comments: So it just makes this sort of purgatory where Nova Scotians have a contaminated site that never quite gets cleaned up. Worst-case scenario, like we saw in New Brunswick, the company splits town and Nova Scotians get left holding the bag for the liability and the cleanup. Please dont let this happen here. Name:  
Email: @gmail.com Address:  
Municipality: Hilden email\_message: Privacy-Statement: agree x: 45 y: 22



**From:** @live.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 5:35:20 PM

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

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Project: touquoy gold mine modification Comments: I personally was near the mine site on December 31st 2022. While next to the mine tailings area, I had a brief encounter with a branch that I was moving out of my path. A smaller branch snapped back in my face and hit my inner lip. I had a sudden burn and intense taste of salt which lingered for approximately four days. My lip was chemically burned, and as of today has not completely healed. The samples that were retrieved have not yet been fully tested, but I suspect that the testing in the environment is not what it should be considering the hazards that are apparent. The toxicity is increasing in the environment and should not be allowed to continue at any cost. Name:

Email: @live.com Address: Municipality: Tangier  
email\_message: Privacy-Statement: agree x: 70 y: 14

**From:** @yahoo.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 2:11:52 PM

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

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Project: touquoy gold mine modification Comments: The operation impacted and continues to impact one of my trout fishing areas. Iâ?Tm for renovation of the moonscape in moose River area and not add to it. Name: Email: @yahoo.com Address:

Municipality: Brookvale email\_message: Privacy-Statement: agree x: 52

y: 36

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 10, 2023 2:36:49 PM

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

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Project: touquoy gold mine modification Comments: Remember Keltec Petrochemicals? How much time and effort did they spend trying to do business in Nova Scotia? And here we go again, have a business set up, provide great jobs and work for local businesses, they are expanding/investing and here we go again! Cmon. Where are the budgets coming from for healthcare, etc? Name:                      Email:                      .com Address:

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

x: 22 y: 16

**From:** @icloud.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 10:08:51 PM

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

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Project: touquoy gold mine modification Comments: This is an environmental tragedy already, we must not allow it to get even more deadly or risky. Name: Email:

@icloud.com Address:

CANADA Municipality: Dartmouth email\_message: Privacy-Statement: agree x: 67 y: 16

**From:** @hotmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 6, 2023 11:30:32 AM

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

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Project: touquoy gold mine modification Comments: As a citizen concerned about our health care, rising taxes and closing schools I am infuriated that the NS govt allows anti resource development activists to write the policies the government in this province follows. Our tax base continues to shrink with every large development we lose and this retailing of the Touquoy mine will allow for the development of several more projects to come. If the government does not approve this, and allows our tax base to further shrink placing more stress on our provinces financial resources, then it does not deserve to be holding the reins of power Name: Email: @hotmail.com Address: Municipality: Halifax email\_message: Privacy-Statement: agree x: 59 y: 23

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 7, 2023 1:28:53 PM

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

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Project: touquoy gold mine modification Comments: I live in a small community just a few kms from the mine. My biggest concern is for the environment. The leak is public knowledge and everyone is concerned. I know the mine has done a lot for our valley but the risk of poisoning the water source is unexceptable. If they cannot 100 guarantee a fix, then they must close. Mother Nature is giving man a tongue lashing about how quickly man is taking away from the earth. Surely these highly educated folks can figure this out. Name:

Email: @gmail.com Address:

Municipality: Middle Musquodoboit, HRM email\_message: Privacy-Statement: agree x:  
56 y: 34

**From:** [accesswave.ca](mailto:accesswave.ca)  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 7, 2023 12:44:09 PM

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

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Project: touquoy gold mine modification Comments: I support the mine proponent in this application. Its clear to me that this was the original operators intent from Day 1, this being mine the Touquoy deposit then transport partially concentrated ore extracted from their satellite gold deposits Beaver Dam, 15 Mile Stream and Cochrane Hill to be milled at the Moose River Mill. Its logical and prudent to use the now existing Moose River pit to contain tailings from milling the satellite deposit ores as this will greatly minimize the aerial impact required for surface tailings storage. Of course the site will have to be properly engineered to receive these tailings and it is on the proponent to demonstrate how this will be done as per existing regulations. I have every confidence the proponent will do so via the established environmental review process. Its time to get on with this proposal and allow the province to continue to receive the very substantial economic benefits this gold mine is providing the province. Name: Email: @accesswave.ca Address:  
Court Municipality: Dartmouth email\_message: Privacy-Statement: agree x: 33 y: 29

**From:** @hotmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 11:12:18 AM

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

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Project: touquoy gold mine modification Comments: I am supportive of the Touquoy Gold Mine proposed modifications. This project operates responsibly and provides employment opportunities for the local community. Name: Email:

hotmail.com Address: Municipality: Carrolls Corner  
email\_message: Privacy-Statement: agree x: 48 y: 8



**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 10:11:18 AM

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

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Project: touquoy gold mine modification Comments: My submission to NS Environment and Climate Change with my reasons to not allow the Touquoy Mine Modifications. I refer to previous news articles and information provided by Joan Baxter, Karen McKendry of the Ecology Action Centre. Mining needs to stop at Touquoy Mine immediately. There is an ongoing leak underneath the tailings pond that is being filtered through the wetland and out into the water systems, specifically Scraggy Lake and eventually into the ocean. This needs to be remediated immediately and all mining on this site stopped once and for all. Since 2017, the government of Nova Scotia has allowed Touquoy Mine to self-monitor. Collecting and distributing their own water and sediment samples. They have been in court for not following our rules and have proven beyond a doubt that they don't care for the land and the water systems. Once poisoned, there is no turning back. It makes no sense that the government of Nova Scotia would let them or anyone else do open-pit mining in the province. Leave the gold in the ground. It is useless and only worth money to the greedy. As mentioned above, there is ongoing contamination happening at Touquoy Mine. Citizens have gone beyond the testing required by government and have done their own testing. They have found contamination in the area. Testing and other information can be found at Water is Life Nova Scotia Facebook group. There is a stream under the settling pond that is constantly leaking contamination into the wetland. There is no stopping it now. It needs to be cleaned up as soon as possible. Touquoy Mine are trying to pump the contamination back in to the settling pond, but this is not working. The land and the water systems in the area have already been deliberately contaminated. This is our land. They had not right to come here and do this to Nova Scotia and our government should have been watching this more closely. They should have been doing everything in their power to not let this happen. Touquoy mine has recently stopped mining and is now only processing previously mined ore at the site. The company has announced it will go to into care and maintenance mode this year. St. Barbara has restructured to distant itself from non-core assets like Touquoy mine. If a mine remains in care and maintenance mode indefinitely, reclamation until closure is not required. The corporate restructuring demerging included Atlantic Gold and Simberi in Papua New Guinea. The new junior company is called Phoenician Metals. This merger has left Atlantic Gold with a smaller net worth 85 million between the two companies and less ability to deal with troubled assets that now remain at the Touquoy mine. This restructuring significantly reduces environmental risks to the parent company and its new partner, and offloads future environmental risks and problems to Phoenician Metals or ultimately to the Nova Scotia taxpayer. Once processing at the Touquoy mine is complete and the mine is no longer useful or profitable for Phoenician Metals, the mine will go into care and maintenance mode. St. Barbara could then abandon the mine. Nova Scotians needs to know that although modern mining companies pay into a reclamation bond held with the province, reclamation plans and expenses are not acted upon until the mine is declared closed not when mines are in care and maintenance mode. Care and maintenance mode puts a mine in infinite limbo, leaving an unaddressed environmental hazard which can ultimately end up as a contaminated site to be dealt with at taxpayer expense. And we already know it is contaminated. There are weaknesses in Nova Scotia's laws that will

allow St. Barbara to get off scot-free. Our province has received no corporate tax from this mine project, and have only received 1 royalties from the hundreds of millions of dollars this Australian company made on mining Nova Scotian gold. Could it be true that our province just doesn't know how to get out of this? Well, I hope not. Premier Houston changed the rules for housing. He created a Housing Task Force. So, I am hoping he will figure this one out. How do we get Touquoy Mine cleaned up and remediated? Mining for gold is not needed in this province. We need to be focusing on clean energy and tourism, not destroying our land and water systems for useless metals like gold. Gold is abundant and the world does not need more. Nova Scotians do not need to be worrying about whether we are going to have clean water to drink and lakes to fish and play. Once the mine is closed permanently and reclaimed, the mine owner at the time must monitor and report on it for at least three years. Tailings facilities don't just go away after three years. According to the Safety First Guidelines for Responsible Mine Tailings Management, May 2022, tailings facilities need to be monitored, inspected, maintained and reviewed in perpetuity, or until there are no credible physically possible failure modes. Without perpetual oversight, the failure of a tailings dam is inevitable. Given that operating companies will not exist long enough to accomplish perpetual monitoring, inspection, maintenance and review, the operating companies' ability to eventually eliminate all credible failure modes must be a key consideration during the permitting process. It is very disturbing that neither St Barbara nor Atlantic Gold are signatories to the International Cyanide Management Code, a voluntary certification for companies that manufacture, transport or use cyanide for gold or silver production, to help them improve safe management of the dangerous chemical and reduce risks to human health and the environment. Another piece of unfinished business for the new owner of St Barbara's Nova Scotia operations is the requirement, laid out in the 2008 environmental approval for the Touquoy mine and repeated in each amendment of its industrial approval, that the company "then DDV Gold and soon to be Phoenician Metals" produce a plan for acquiring conservation land in the vicinity of the Touquoy mine within a year of the amendment of the industrial approval, and if it fails to do so, post half a million dollars in security with the province. <https://novascotia.ca/nse/ea/comments.asp> Name:

Email: @live.ca Address: Municipality: Halifax email\_message:  
Privacy-Statement: agree x: 42 y: 32

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 10:19:16 AM

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

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Project: touquoy gold mine modification Comments: I am in full support of this project. We need to keep people working and paying taxes. We need companies to be operating and paying taxes. I have full faith in NSECC to safeguard our sensitive environment and to hold companies and projects accountable. We need industrial development to pay for the services and necessities that ALL Nova Scotians require to survive that also afford some of us the luxury to protest and enjoy the benefits that are earned and funded by others. Name:

Email: @gmail.com Address: Municipality:  
Salmon River email\_message: Privacy-Statement: agree x: 77 y: 29

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 11:30:20 PM

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

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Project: touquoy gold mine modification Comments: St. Barbara has already shown me that they do not honor their commitments. The plan appears to be that they cut and run with the profits while leaving Nova Scotians with the bill for the environmental clean-up. If that is not enough reason to not support them in the next step toward entering care and maintenance then the larger, more urgent issue should be. We have one Earth. If we want it to be here for our children, then we must take better care of it now. Our planet deserves better and our children deserve better. Clean-up your waste St. Barbara. Do better! Name: Email:  
@gmail.com Address: Municipality: Middle Musquodoboit  
email\_message: Privacy-Statement: agree x: 73 y: 43

**From:** [environment@novascotia.ca](mailto:environment@novascotia.ca)  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 9:20:14 AM

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Project: touquoy gold mine modification Comments: The team at the Tuoquoy gold mine has worked hard to provide thorough analysis, investigations and design that provides a comprehensive response to additional information on our environmental assessment. The proposed purposed modifications will aid the mine in continuing to operate safely, sustainably and in an environmentally responsible way. I am in support of the Tuoquoy Gold Mine Modifications/In-pit tailings. Name: Email: Address: Municipality: Halifax  
email\_message: Privacy-Statement: agree x: 37 y: 15

**From:** @dal.ca  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 9:23:23 PM

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

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Project: touquoy gold mine modification Comments: Please, oh puh-lease, show the common sense and sense of history shared by many residents of this area, and DO NOT LET yourselves and your taxpayers be blinded and bamboozled by Saint Barbara. Weve seen this kind of thing SO MANY TIMES before. As they say, fool me once, shame on you or as the dog returns to its vomit, so the fool repeats his folly. Name: Email:  
@dal.ca Address: Municipality: Meaghers Grant  
email\_message: Privacy-Statement: agree x: 41 y: 25

**From:** \_\_\_\_\_@hotmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 9:23:15 PM

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

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Project: touquoy gold mine modification Comments: This project is an environmental disaster waiting to happen another example of a large mining company ruining the land, putting it into care and maintenance and then leaving the tax payers with the mess to pay for the clean up

Name: \_\_\_\_\_ Email: \_\_\_\_\_@hotmail.com Address: \_\_\_\_\_

Municipality: Meaghers grant email\_message: Privacy-Statement: agree x: 66 y: 28





**From:** \_\_\_\_\_@gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 9:23:04 PM

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

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Project: touquoy gold mine modification Comments: If St. Barbara stops mining there they should be responsible for environmental remediation, and enforcement is the responsibility of the Government. Lets not turn a pristine environment into a garbage dump. Name:

Email: \_\_\_\_\_@gmail.com Address: \_\_\_\_\_ Municipality: \_\_\_\_\_  
Halifax email\_message: Privacy-Statement: agree x: 67 y: 26

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 8, 2023 1:09:24 PM

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

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Project: touquoy gold mine modification Comments: I am in full support of the proposed modifications of the Touquoy Gold mine facility. St. Barbara has proven time and time again their commitment to responsible mining in our Province in a manner that is environmentally sustainable and economically responsible. In a post-pandemic world with a looming recession, maintaining stable jobs in the rural economy is more critical than ever. Here we have a wonderful opportunity to support economic growth in our province and taking a supportive role to investment attraction in the Province of Nova Scotia. Name:

Email:

Address:

Municipality: MacLellans Brook email\_message: Privacy-Statement: agree x: 63 y: 27



**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 7:39:39 AM

---

**\*\* 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 mine modification Comments: No more mining wanted in Nova Scotia!  
Do not try to sneak anything by the citizens. Im sick of the destruction Capitalist industries  
have gotten away with because our politicians care more about their ability to make profits  
than the state of our environmentour water ways, the soil, the air, the biodiversity of nature  
that all living things must have to survive. Stand up for Nature and your citizens and tell  
greedy capitalist industries to leave and never come back. Name: Email:  
Address: 306 Upper Musquodoboit, NS. Canada  
Municipality: Dean email\_message: Privacy-Statement: agree x: 35 y: 21

**From:** @gmail.com  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Proposed Project Comments  
**Date:** February 9, 2023 5:58:33 PM

---

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

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Project: touquoy gold mine modification Comments: I do not support the proposed modifications and fully support the opposition comments made by the many concerned NS groups that have submitted comments : St Mary's River Association, Millbrook First Nation , Save Caribou, the NS Salmon Association, Eastern Shore Forests, East Coast Environmental Law, Ecology Action Centre, Sustainable Northern Nova Scotia SuNNS The environmental risks associated with this project are too high. Please listen to the concerns of the many who have opposed this project. Atlantic Gold has already had a very poor track record of monitoring for environmental issues and has had 30 environmental charges laid against it and received a \$250,000 fine. This record speaks for itself. Atlantic Gold can not be trusted to properly take care of the environment. We should not reward them by giving them more opportunities. Name: Email: @gmail.com Address:

Municipality: Halifax email\_message: Privacy-Statement: agree x: 53 y:

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Cc:** [Minister, Energy and Mines](#); [Minister, Natural Resources and Renewables](#); [Premier](#)  
**Subject:** Support for St Barbara's Touquoy Gold Project  
**Date:** February 8, 2023 2:50:04 PM  
**Attachments:** [Letter to Minister Halman \(2023-02-08\).pdf](#)

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

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

Good afternoon,

I have attached a letter from \_\_\_\_\_ to Minister Halman in support of St Barbara's proposed modifications to the Touquoy Gold Project.

Kind regards,

*Heraldry Gold Corporation*

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Torquay Mine  
**Date:** February 8, 2023 9:24:44 PM

---

**\*\* 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

Please do not allow St. Barbara to use the open pit for tailings disposal. Not a good idea.

Sent from my Galaxy

**From:**  
**To:** [Environment Assessment Web Account](#)  
**Subject:** Touquoy mine modifications  
**Date:** February 9, 2023 10:15:42 AM  
**Attachments:** [EAC Comments on Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum.pdf](#)

---

**\*\* 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**

As a member of Eastern Shore Forest Watch Association, I have engaged with the Touquoy project on every single public consultation since the original public consultation was announced in 2007. **I MOST EMPHATICALLY DO NOT SUPPORT THE PROPOSED MODIFICATIONS.**

Since my eyesight and my general health are currently poor, I can do no better than to give my full endorsement to the enclosed submission from the Ecology Action Centre, “EAC Comments on Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum”, and I urge you to give this excellent analysis your full attention.

Respectfully submitted,





February 8, 2023

Ecology Action Centre Comments on Touquoy Gold Project Modifications –  
Environmental Assessment Registration Document Addendum No. 2

The following submission in response to Touquoy Gold Project Modifications – Environmental Assessment Registration Document Addendum No. 2 is on behalf of the Ecology Action Centre.

The Ecology Action Centre is an environmental charity based in Mi'kma'ki/Nova Scotia. We take leadership on critical environmental issues from biodiversity protection to climate change to environmental justice. Grounded in over five decades of deep environmental change work and fuelled by love and grief, EAC takes a 50-year perspective on what is needed to build towards a time of thriving and flourishing. We work to equip human and ecological communities for resilience and build a world where ecosystems and communities are restored not just sustained.

The Ecology Action Centre does not support the proposed modifications. Open pit gold mining in Nova Scotia creates negative social, health, environmental and economic impacts in exchange for almost no benefits. The inevitable harms and destruction from the contaminated mine tailings, depletion of aquifers, loss of wildlife habitat, and other pollution simply put too much pressure on the life support systems of our province, and cost us all. Globally and locally, the gold mining industry contributes to the climate crisis and biodiversity collapse. In the face of these worsening crises, we desperately need intact ecosystems to be doing what they do best: sequestering carbon, providing clean water and air for us and other living creatures, and supporting local biodiversity. Intact ecosystems play a critical role in addressing these twin crisis - the most effective way to benefit from them is by protecting these ecosystems from the mass destruction and harm of economically-driven open pit gold mining projects.

We do not need open pit gold mining as it is an unnecessary industry. Gold can be recycled infinitely, and there is already more than enough mined gold to meet the needs of humans. In fact, Nova Scotia's (and Natural Resources Canada's) list of minerals critical for the green energy transition does not include gold. Therefore, the degradation of communities and the natural environment from open pit gold mining is indefensible. This proposed project infringes upon Treaty Rights and threatens traditional hunting grounds and gathering areas of the Mi'kmaq. Local Mi'kmaq community members rely on these important lands for food security and more; gold mining activities would severely damage these areas.

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

Comments on specific sections of the Environmental Assessment Registration Document Addendum No. 2

### Wetlands and Water

Additional Information Request no. 6 concerns the alteration of Wetland 15, a confirmed Wetland of Special Significance. The proponent responds to this request by describing that “in Section 5.1 of the March Addendum Report (AMNS, Stantec 2022), the total area of alteration of Wetland 15 was reduced through careful design and planning. Wetland 15 has been permitted for a total of 4.12 ha of alteration area under previous wetland alteration approvals, some of which overlaps with the areas proposed in the EARD. Only 0.62 ha of Wetland 15 was proposed for alteration, 15% of the previously approved alteration area. The proposed alteration area was confined to the northeast lobe and to a 0.1 ha area next to the existing WRSA area.”. In the proponent’s response, a map of the area was provided (attachment 12), but no details are provided as to why the modification activities couldn’t be relocated to avoid all impacts to Wetland 15. Furthermore, **NSECC’s Wetland Policy does not** support any alteration (direct or indirect) of a WSS. It is clear in the policy that alterations of a WSS will only be granted if “deemed to provide necessary public function.” Therefore, Wetland 15 should not be altered at all. The proponent should provide detailed rationale as to why all impacts to Wetland 15 cannot be avoided.

With further regard to Wetland 15, the proponent should respond to Nova Scotia Department of Natural Resources and Renewables request for more information regarding the presence of Snapping Turtles at this wetland. In their comments, the Department wrote that the proponent should 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.

The proponent has also not included adequate detailing regarding the engineered wetland(s). This concern was also highlighted by the province’s ICE Division and Sustainability and Applied Science Division. That is, the proponent has indicated that treatment will consist of settling and, if needed, engineered wetlands. Engineering

wetlands in a complex undertaking and more details about these plans should be provided by the proponent. These details should include size and location of all possible engineered wetlands, and other supporting details about the processes regarding the engineered wetland(s).

We also support the comments by ICE Division who noted that the proponent should provide specifics as to how water quality and quantity have impacted fish and fish habitat within the Ship Harbour Long Lake Wilderness Area taking into consideration the current site activities and the proposed changes (cumulative effects assessment).

## Wildlife

The Addendum EARD states that (pg. 56): “Project activities will result in direct loss of habitat within Mine Site boundaries for avian species, including priority species such as common nighthawk, Canada warbler, barn swallow, olive-sided flycatcher, and eastern wood-pewee. However, due to the abundance of these habitats regionally and the likely decreased quality of the impacted habitats because of their proximity to the operating Touquoy Mine Site, it is not expected that this Project will further impact avian species.”

This rationale is not supported. Each of these bird species at risk has as one its main threats (and causes for population decline) is loss of habitat. It is unsubstantiated to state that additional loss of habitat is not problematic. In fact, these bird SAR may be using the “decreased quality” habitats at the site precisely because there has been loss and degradation of habitat in other parts of the province. Additional loss of bird SAR habitat should be taken seriously. Key Mitigation measures for reducing impacts on wildlife should be a part of the EA Terms and Conditions if the project is approved.

The Wildlife Management Plan should be updated in cooperation with the Department of Natural Resources and Renewables.

## Protected Areas

We support the comment by NSECC that Ship Harbour Long Lake Wilderness Area should be treated and examined as a Valued Component. Given its very close proximity to the Project (including the proposed modifications) and the management objectives for Wilderness Areas, this omission is unacceptable. The analysis of potential impacts to the Wilderness Area (required as part of the Additional Information request) did *not*:

- Connect proposed Key Mitigation activities to Wilderness Area management objectives listed under the Wilderness Areas Protection Act (and listed in the

Addendum No. 2 document).

- List Potential Project Interactions that could impact management objectives other than those related to wildlife habitat and “enjoyment” of the area, such as scientific study, environmental education, wilderness recreation, fishing, hunting, and trapping.
- Provide proposed mitigation measures that would reduce impacts to the above-mentioned management objectives for Wilderness Areas.

### Lobbying for the Project by a Provincial Department

The comments on the Additional Information Addendum Nov. 2 from George MacPherson with Mineral Management at DNRR are too supportive of the project to be considered acceptable comments from a government department.

### Timeframe of the Project

The timeframe of the project underlies many of the assumptions in the Addendum No. 2 and modeling for the project. The project in some ways assumes and describes a decommissioning of the site after the processing of Touquoy-pit ore is complete. However, it is well known to the Province that the intention of the company is to create open pits at Beaver Dam, Fifteen Mile Stream, and Cochrane Hill sites, and truck the ore from these sites to Touquoy for processing and deposition of tailings in the pit. But they claim it is acceptable that the impacts of these potential sites are being evaluated under separate assessment, even though the trucking, processing, and tailing deposition of ore from these sites would affect the Touquoy site environment. The entire Touquoy Gold Project Modifications EARD, and Addendum No. 2, are flawed because the company is trying to play it both ways. They have attempted, since their original EARD in 2007, to model potential impacts as if the site will only remain active for approximately 5 years, then be decommissioned and reclaimed. However, all along they have intended to develop other sites that rely on Touquoy for tailings deposition in the pit. They have attempted to have each site permitted as independent sites when in fact they are not. The current information before the Minister and staff is incomplete because it is based on a false premise of the site being decommissioned in 2025. Models relating to everything from groundwater contamination “after decommission,” to assurances that wildlife will return to the area once the site is reclaimed (2028?), are not valid and decisions should be based upon them. As stated by Environment and Climate Change Canada in their comments:

“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...”

The proponent has tried to parse out the interrelated mining projects yet avoid evaluating them in a cumulative or connected way:

“Use of the Touquoy Mine Site infrastructure for processing ore from Beaver Dam and Fifteen Mile Stream Gold Projects and disposal of associated tailings is assessed in the environmental assessment documents for those projects.”

If the Minister approves the modifications project they should only approve deposition of tailings in the Touquoy pit for Touquoy project tailings, not tailings from the other proposed sites. After all, only the impacts of the Touquoy modifications assuming an end-of-mine life in 2025 have been estimated by the proponent and examined by Nova Scotia Environment and Climate Change and other departments (and the public).



**To be sent to:**

Minister Timothy Halman  
Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

**CC:**  
energyminister@novascotia.ca  
premier@novascotia.ca

Dear Minister Halman,

**Support for the Touquoy Gold Project Modifications**

I am writing to the Department of Environment and Climate Change in support of the Touquoy Gold Project Modifications and request that the department and Government of Nova Scotia allow these modifications to proceed in an environmentally responsible way.

I am confident that the team at St Barbara Atlantic Operations, who are responsible for this project, have followed the requirements of the environmental assessment process to ensure there is a robust plan to assess and mitigate any environmental impacts that may result.

St Barbara Atlantic Operations have acted in good faith since beginning operations in Nova Scotia. Through the EA process, they have completed thorough analysis, investigations, and design to provide comprehensive responses to information requests put forward. I am confident in the responses to the information requests and that the planned modifications to the Touquoy Gold Mine Project will not likely result in adverse environmental effects.

If these modifications are not permitted, it has the potential to put hundreds of Nova Scotian jobs in jeopardy, in addition to the indirect economic impacts on the people of the Eastern Shore.

St Barbara has embraced the opportunity to clarify applications because Respecting the Environment is ingrained in the fabric of their corporate values. I am confident that they will continue to operate responsible gold mining operations.

Thank you for your consideration on this very important matter. I am looking forward to hearing about how this government is supporting environmentally responsible gold mining and rural economic development in Nova Scotia.

Please write any additional comments in this box:

Sincerely,

*[Signature]*

Name Printed

Name Signed

January 23, 2023

Date

Supporter of responsible mining in Nova Scotia

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Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

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Name Printed

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Date

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Name Signed

01/23/2023  
Date

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Name Printed

Supporter of responsible mining in Nova Scotia

Name Signed

*Feb 10, 2023*

Date

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Nova Scotia Environment  
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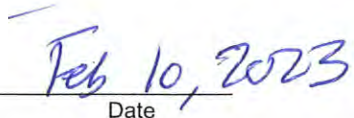
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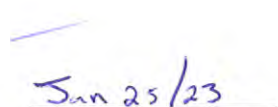
Please write any additional comments in this box:

Sincerely,

Name Printed

Supporter of responsible mining in Nova Scotia

 Name Signed

  
Date

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Sincerely,

Name Printed

Name Signed

Date

Supporter of responsible mining in Nova Scotia

*[Handwritten Signature]*  
Jan 23/23



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Please write any additional comments in this box:

I, support the Touquoy gold project modifications, This will keep Nova Scotian's working.

Sincerely,

\_\_\_\_\_  
Name Printed

  
\_\_\_\_\_  
Name Signed

2023-01-19  
\_\_\_\_\_  
Date

Supporter of responsible mining in Nova Scotia

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Sincerely,

Name Printed

Supporter of responsible mining in Nova Scotia

 Name Signed

Jan 24/22  
Date

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Sincerely,

\_\_\_\_\_  
Name Printed

*[Signature]*  
Name Signed

*Feb 5/23*  
\_\_\_\_\_  
Date

Supporter of responsible mining in Nova Scotia



**To be sent to:**

Minister Timothy Halman  
Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

**CC:**

energyminister@novascotia.ca  
premier@novascotia.ca

Dear Minister Halman,

**Support for the Touquoy Gold Project Modifications**

I am writing to the Department of Environment and Climate Change in support of the Touquoy Gold Project Modifications and request that the department and Government of Nova Scotia allow these modifications to proceed in an environmentally responsible way.

I am confident that the team at St Barbara Atlantic Operations, who are responsible for this project, have followed the requirements of the environmental assessment process to ensure there is a robust plan to assess and mitigate any environmental impacts that may result.

St Barbara Atlantic Operations have acted in good faith since beginning operations in Nova Scotia. Through the EA process, they have completed thorough analysis, investigations, and design to provide comprehensive responses to information requests put forward. I am confident in the responses to the information requests and that the planned modifications to the Touquoy Gold Mine Project will not likely result in adverse environmental effects.

If these modifications are not permitted, it has the potential to put hundreds of Nova Scotian jobs in jeopardy, in addition to the indirect economic impacts on the people of the Eastern Shore.

St Barbara has embraced the opportunity to clarify applications because Respecting the Environment is ingrained in the fabric of their corporate values. I am confident that they will continue to operate responsible gold mining operations.

Thank you for your consideration on this very important matter. I am looking forward to hearing about how this government is supporting environmentally responsible gold mining and rural economic development in Nova Scotia.

Please write any additional comments in this box:

The mine is a great fundamental asset to local citizens for employment. Closing the mine will have a devastating impact on economics for many people and many communities. Please allow the modifications to proceed and allow our local citizens to feed their families.

Sincerely

Name Printed

Supporter of responsible mining in Nova Scotia

Name Signed J

January 23, 2023

Date



**To be sent to:**

Minister Timothy Halman  
Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

**CC:**

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premier@novascotia.ca

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Sincerely,

\_\_\_\_\_  
Name Printed

\_\_\_\_\_  
Name Signed

2023-02-07

\_\_\_\_\_  
Date

Supporter of responsible mining in Nova Scotia

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Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

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Sincerely,

Name Printed \*

Name Signed

*Jan 19/2023*  
Date

Supporter of responsible mining in Nova Scotia

**To be sent to:**

Minister Timothy Halman  
Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

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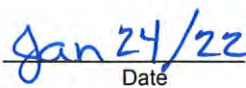
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Please write any additional comments in this box:

Gold mining brings jobs to Nova Scotia and is a crucial asset in developing electric vehicles and other environmentally friendly resources. Our environment department works around the clock to ensure we do not cause permanent damage to the land we disturb. They replant trees, plants to ensure disturbed lands return to its previous state after the mine closes. Please consider this when making your decision. Working for this gold mine is one of ~~the~~ the best jobs I've ever had in Nova Scotia.

Sincerely,

Name Printed

Name Signed

Date

Supporter of responsible mining in Nova Scotia

Jan 26, 2023

**To be sent to:**

Minister Timothy Halman  
Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

**CC:**

energyminister@novascotia.ca  
premier@novascotia.ca

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Please write any additional comments in this box:

*Important we need our young workers to stay here & work, we need the extra jobs to make sure this happens*

Sincerely,

Name Printed

Name Signed

Date

Supporter of responsible mining in Nova Scotia

*Feb 6/23*

**To be sent to:**

Minister Timothy Halman  
Nova Scotia Environment  
PO Box 442  
Halifax, NS B3J 2P8

**CC:**

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premier@novascotia.ca

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Please write any additional comments in this box.

02/7/2023  
Date

Supporter of responsible mining in Nova Scotia

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Halifax, NS B3J 2P8

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— 2/7/23 —  
Date

Supporter of responsible mining in Nova Scotia



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Please write any additional comments in this box:

*I fully support these modifications and this project.*

Name Signed

Date

Supporter of responsible mining in Nova Scotia

*Feb. 5/23*



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Please write any additional comments in this box:

Very important we need young workers  
to stay in Nova Scotia. Helps our  
economy MMD

Name Printed \_\_\_\_\_

Feb 6, 2023  
Date

Supporter of responsible mining in Nova Scotia