Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU, X0A 0H0

Your file - Votre référence
2AM-MEL1631

November 8, 2020

Our file - Notre référence
CIDM# 1290785

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0

sent via email: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada Technical Review of Agnico Eagle Mines (AEM) Application to Amend Type "A" Water Licence No: 2AM-MEL1631 for the Meliadine Project in Nunavut.

Dear Mr. Dwyer,

Thank you for the October 7, 2020 invitation for the technical review of the application for amendment of Water Licence 2AM-MEL1631. The Water Resources Division of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*.

The results of this review are provided in the enclosed memorandum for consideration by the Nunavut Water Board.

If there are any questions or concerns, please contact me at (867) 975-4550 or godwin.okonkwo@canada.ca.

Sincerely,

Godwin Okonkwo
Manager Water Resources

Canada

IQALUIT#1290369 - v1
IQALUIT#1290785 - v1

Technical Review Memorandum

To: Richard Dwyer, Manager of Licensing, Nunavut Water Board

From: Godwin Okonkwo, Manager Water Resources, Crown-Indigenous Relations and Northern Affairs Canada

Date: November 8, 2020

Re: Crown-Indigenous Relations and Northern Affairs Canada's Technical Review of Agnico Eagle Mines (AEM) Application to Amend Type "A" Water Licence No: 2AM-MEL1631 Meliadine Project in Nunavut.

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

Agnico Eagle Mines (AEM) is operating the Meliadine Gold Mine, located approximately 25 kilometers north of Rankin Inlet, and 80 kilometers southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The mine plan includes open pit and underground mining methods for the development of the Tiriganiaq gold deposit, with two open pits (Tiriganiaq Pit 1 and Tiriganiaq Pit 2) and one underground mine.

Agnico Eagle Mines Limited (AEM) submitted its Application for Amendment to Type "A" Water Licence 2AM-MEL1631 (the Application). The Application included a cover letter and additional items as follows:

- NWB Application for Water Licence Amendment Form;
- Type A Water Licence 2AM-MEL1631 Amendment (Main Document), including:
  - Appendix A – Water Balance and Water Quality Model
  - Appendix B – Water Quality Management and Optimization Plan (WQMOP)
  - Appendix C – Water Management Plan
  - Appendix D – Mine Waste Management Plan
  - Appendix E – Prefeasibility Level Design WRSF3 & Water Management Infrastructure
  - Appendix F – Road Drawings
  - Appendix G – Security
  - Appendix H – Impact Assessment of the Diversion of Site Runoff to Melvin Bay on the Flow and Water Level Regimes of Meliadine Lake
  - Appendix I – Supplement Information Guideline (SIG)
  - Appendix J – Nunavut Planning Commission (NPC) Conformity Determinations.

AEM is proposing changes to the approved project activities under Type "A" Water Licence 2AM-MEL1631. Specifically, AEM is seeking approval for the following proposed changes under the amendment:

- Update (increase) of the TDS thresholds to Meliadine Lake (as per the approved emergency release thresholds)
- Increases of annual freshwater consumption
- Creation of additional laydown area
- Update to the waste management strategy
- Construction of additional site access roads including new access road to the Discovery Deposit, and
- Update of the Interim Closure and Reclamation Plan (ICRP).

The application provides a high-level summary of the approved activities in comparison to the changes requested in the Water Licence Amendment Application. These changes include:

- TDS threshold - Request that criteria for Meliadine Lake discharge be raised from 1,400 mg/L to 3,500 and 5,000 mg/L respectively for maximum average and maximum grab sample concentrations and that the edge of the mixing zone (at 100 m radius) be 1,000 mg/L
- Freshwater consumption for operations - be increased by 423,706 m^3/year from 318,000 m^3/year to 741,706 m^3
- Laydown area – request that area formerly designated for WRSF2 be used for expanded laydown area
- Waste rock management - request that expansion of WRSF3 be approved to handle waste from additional deposits already permitted by NIRB
- Site access roads - request approval to construct site access roads to future deposits, the Discovery, Pump, Fzone, and WES-NORMEG deposits
- Security – increase existing security of $59,514,717 by $7.4 million to $66,914,717

B. DOCUMENTS REVIEWED

Table **Error! No text of specified style in document.**.0 Water Licence 2AM-MEL1631 Amendment Application Documents Reviewed

Document Filename	Author / Date
200827 2AM-MEL1631 **Amendment Application Cover Letter**-8272020-IMLE	AEM, 27 August 2020
200827 2AM-MEL1631 **Water Licence Amendment Application**-August 2020-Final-IMLE	AEM, 27 August 2020
200827 2AM-MEL1631 Amendment-**MainApplicationDocument**-August2020-IMLE	AEM, 27 August 2020

Document Filename	Author / Date
200827 2AM-MEL1631 Amendment_**Appendix A**-WB-WQForecast-IMLE	Golder, 21 August 2020, Rev1
200827 2AM-MEL1631 Amendment_**Appendix B**-WQWMOP-Rev3-IMLE	Golder, 24 August 2020, Rev3
200827 2AM-MEL1631 Amendment_**Appendix C**-WaterMgmtPlan_v10-IMLE	AEM, August 2020, Version 10
200827 2AM-MEL1631 Amendment_**Appendix D**-MineWasteMgmtPlan_v7-IMLE	AEM, July 2020, Version 7
200827 2AM-MEL1631 Amendment_**Appendix E**-PFS Design WRSF3-WaterInfra-IMLE	AEM/Tetra Tech
200827 2AM-MEL1631 Amendment_**Appendix F**-RoadDrawings-IMLE	AEM/WSP
APPENDIX G – SECURITY	SNC Lavalin, 30 July 2020, Rev0
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part01-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part02-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part03-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part04-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part05-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part06-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part07-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part08-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part09-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part10-IMLE	
200827 2AM-MEL1631 Amendment_Appendix G-ICRP Update 2020-Part11-IMLE	
200827 2AM-MEL1631 Amendment_**Appendix H**-MeliadineLakeAssessm-IMLE	Golder, 6 July 2020
200827 2AM-MEL1631 Amendment_**Appendix I**-SIG-IMLE	NPC
200827 2AM-MEL1631 Amendment_**Appendix J**-NPC ConformityDeterm-IMLE	NPC, 20 August 2020

C. RESULTS OF THE REVIEW

1. Total Dissolved Solids (TDS) Thresholds

Comment 1

In addition to requesting approval of certain changes to mine infrastructure to support on-going operations, AEM's Amendment Application also proposes to revise the current total dissolved solids (TDS) discharge criteria to Meliadine Lake set out in Part F, Item 3 of the Type "A" Water Licence 2AM-MEL-1631. Specifically, AEM proposes the revision of the maximum average concentration (MAC) and maximum grab concentration (MGC) Effluent Quality Criteria (EQC) at end-of-pipe from the current 1,400 mg/L to 3,500 mg/L and 5,000 mg/L respectively, as well as to establish a threshold or Site-Specific Water Quality Objective (SSWQO) at the edge of the mixing zone of 1,000 mg/L. Supporting rationale for these proposed changes to the TDS thresholds is provided in Phase 3 of the Water Quality Management and Optimization Plan (WQMOP), which is appended to the main document of the Amendment Application as Appendix B.

It is not clear why the proposed changes to the TDS thresholds are necessary. In Section 2.3.1 of the main document of the Amendment Application, AEM states:

"As per the 2020 Emergency Amendment process, potential new water management strategies required to manage CP1 water efficiently were evaluated. The selected strategy consists of improving segregation of surface contact water with high TDS concentration from CP1 by capturing runoff reporting in CP1 upstream to the pond and use the access road as a temporary structure to hold this inflow. Even with the implementation of those mitigations, forecasted CP1 water TDS concentrations will be above the Licence Limit MAC TDS EQC of 1,400 mg/L (set out at Part F, Item 3 of the Water Licence) and the volume of water in CP1 will be above the Maximum Operating Level."

The above statement is true for year 2020 when the Emergency Amendment to the Water Licence was issued in May 2020, however, AEM's predictive modelling presented in Appendix A – Water Balance and Water Quality Model contradicts this statement for subsequent years. Figures 11 and 15 presenting predicted TDS concentrations at CP1 under average precipitation and wet conditions, TDS concentrations are predicted to drop to about 1,100 mg/L by May 2021, and afterwards will continue to decrease until the end of operations in 2028 to levels as low as about 400 mg/L. These predicted levels are already below the current EQC of 1,400 mg/L, which would allow for discharge to Meliadine Lake and drawdown of the CP1 water level to safe operating conditions. Based on the documentation presented in the Water Balance and Water Quality Model report, there is no clear rationale that supports AEM's request for revisions to the TDS criteria (as defined in Part F, Item 3 of the Type "A" Water Licence 2AM-MEL-1631) for discharging effluent to Meliadine Lake.

Recommendation 1
CIRNAC recommends that AEM provide an evidence-based rationale for the proposed revisions to the TDS threshold.

2. Works Related to Additional Deposits (Discovery, Pump, Fzone, and WES-NORMEG)

Comment 2
In the application Cover Letter to the Type "A" Water Licence Amendment, AEM states:

"The Application requests approval of certain changes to mine infrastructure to support on-going operations, including mining of the Discovery, Pump, Fzone, WES-NORMEG deposits that were included in the FEIS (Agnico Eagle 2014), but were not part of the previous water licence applications."

There is insufficient information included in the Type "A" Water Licence Amendment Application on the mining of these additional deposits.

References in the Main Document to the mining of these deposits include the following:

- Table 1-3 states that water consumption will be increased to a total of 741,706 m^3/year for Operations due to increased tonnage from previously approved deposits.
- Table 1-3 states that additional surface laydown and storage space in a centralized location to the portals and open pits is needed to proceed with mining from previously approved deposits.
- Table 1-3 states that an updated waste management strategy for the extension of WRSF3 to allow for *increased volumes of mining waste from mining the additional deposits already permitted by NIRB but not currently included in the Water Licence.*
- Table 1-3 and Section 2.3.5 state that site access roads will be constructed to future deposits, including Discovery, Pump, Fzone, and WES-NORMEG.

While there are indications that AEM intends to develop these additional deposits, it is not clear where these deposits are located relative to the Tiriganiaq site, and whether their mining would result in further surface disturbance to the Tiriganiaq site. Also, while the proposed changes in the Amendment Application seem to infer the development of these deposits during the current life of mine, the timeline for mining these deposits is not explicit. The Construction and Operation Schedule included in Table 1 of Appendix A of the Water Balance and Water Quality Model does not make any reference to mining any ore bodies other than the Tiriganiaq deposit.

In addition, Table 1-3 suggests that waste rock produced from the mining of these additional deposits will be placed within the extended footprint of WRSF3. However, information used in the Water Balance and Water Quality Model (Appendix A of the Amendment Application) to estimate waste rock runoff quality is based on lithological information from the Tiriganiaq pits and underground mine. It is not clear whether the lithologies of these other deposits are similar to the Tiriganiaq deposit or have been taken under consideration in the water quality modelling.

Recommendation 2
CIRNAC recommends that AEM Confirm their intention to develop other deposits referenced in the application, and if so, provide additional information on the deposits not currently included in the Type "A" Water Licence, and plans for their development and mining.

3. Water Balance Clarifications

Comment 3
Section 3.1 of the Water Management Plan included in Appendix C of the Type "A" Water Licence Amendment Application states that:

> *"Water collected in CP5 is either treated by an RO treatment plant prior to discharging to CP1 or discharged to CP1 directly, depending on the in situ CP5 water quality"* and Section 2.1 of the Water Balance and Water Quality Model

included in Appendix A states that *"Contact water from CP5 undergoes reverse osmosis (RO) treatment prior to discharge to CP1 if total dissolved solid (TDS) levels exceed 3,500 milligrams per litre (mg/L)."*

It is not clear from these sources whether the 3,500 mg/L TDS threshold mentioned above for RO treatment of CP5 water is assumed for the purposes of the water quality modelling based on the proposed TDS criteria in the Amendment Application, or if this is the current operational threshold applied for the management of CP5 water quality. If TDS 3,500 mg/L is the current operational threshold, it is unclear to CIRNAC if AEM plans to lower it to 1,400 mg/L as per the TDS discharge criteria stipulated in Part F, Item 3 of the Type "A" Water Licence to help manage TDS levels in CP1 to acceptable levels for discharge (i.e. ≤1,400 mg/L).

Figures 2 to 7 illustrating the water balance for each year of operation in Appendix A of the amendment application indicates a diversion of water from CP1 to Saline Pond 3 (SP3), which receives treated water from the Saline Effluent Treatment Plant (SETP) for final settling, and storage prior to transfer to Melvin Bay for discharge.

Recommendation 3

CIRNAC recommends that AEM provide clarification regarding the following:

1. The threshold applied in the management of CP5 water quality for RO treatment of TDS before discharge.
2. The rationale for diverting water from CP1 to SP3.

4. WRSF3 Expansion and Updated Waste Management Strategy

Comment 4

As part of the updated waste management strategy, AEM is proposing that waste rock/overburden originally planned for placement in WRSF2 be placed within an increased footprint of WRSF3. The updated waste management strategy focuses on updates to the WRSF3 and associated water management infrastructure.

In Section 1.1, Table 1.1 AEM states that the updated waste management strategy is:

> "an extension of WRSF3 to allow for increased volumes of mining waste from mining the additional deposits already permitted by NIRB but not currently included in the Water Licence".

In Table 1.3 AEM states that the detailed design report and issued for construction drawings for WRSF3 were approved by the NWB at the end of March 2020. The August 2020 proposed amendment by AEM includes states:

"updated waste management strategy (an extension of WRSF3 to allow for increased volumes of waste from mining the additional deposits already permitted by NIRB but not currently included in the Water Licence."

AEM further states that:

> "*Following the removal of WRSF2 as stated in Section 2.3.3, the footprint of WRSF3 has been increased. The updated detailed design for WRSF3 and associated water management infrastructure will be carried out once Agnico Eagle obtains the approval of the Water Licence Amendment Application.*"

In section 2.3.4 AEM states that the proposed footprint extension of WRSF3 is approximately 28.6 ha for a total approximate footprint of 51.3 ha, which will accommodate all waste rock generated from the mining of Tiriganiaq Pit 2 in Years 1 to 3, as well as a proportion of waste rock from the mining of Tiriganiaq Pit 1 in Years 3 to 6 until capacity is reached. The waste rock volumes in the 2020 Mine Waste Management Plan have been updated to reflect the design volumes of WRSF3 (Appendix D).

Based on the information provided by AEM the driver for the change in waste rock management strategy is unclear. CIRNAC is also unclear on which additional deposits AEM is referring to, and the nature and extent of waste rock from these additional deposits.

Recommendation 4
CIRNAC recommends that AEM:

1. Clarify the additional deposits referenced as the basis for extension of WRSF3
2. Provide additional information on the lithological and geochemical nature and extent of waste rock from these additional deposits.

5. Validation of Proposed Total Dissolved Solids (TDS) Discharge Criteria

Comment 5
Effluent discharge from CP1 to Meliadine Lake at TDS levels greater than the approved 1,400 mg/L limit was initiated on June 5, 2020 under the Emergency Amendment to the Type "A" Water Licence 2AM-MEL-1631 for the period May to October 2020. Required monitoring over this discharge period has included:

- Effluent monitoring (Station MEL-14)
    - Daily monitoring of discharging flow volumes
    - Weekly monitoring of TDS and other parameters as per the licence
    - Weekly acute toxicity testing
    - Monthly chronic toxicity testing

- Edge of mixing zone monitoring (100m; stations MEL-13-01, MEL-13-07, MEL-13-10)
    - Weekly monitoring of TDS and other parameters as per the licence
    - Weekly acute toxicity testing
    - Monthly chronic toxicity testing
- Receiving environment monitoring (mid-field station MEL-02-05, and reference stations MEL-03-02, MEL-04-05, MEL-05-04)
    - Monthly monitoring of TDS and other parameters as per the licence
    - Monthly chronic toxicity testing.

This Water Quality Management and Optimization Plan (WQ-MOP, Rev3) progress report tabulated all monitoring results available as of July 17, 2020 approximately 6 weeks of monitoring, and stated the following under Section 4:

> *"Based on the agreed upon site-specific benchmark derivation procedure outlined in the WQ-MOP Rev2 (Appendix A) and summarized in Section 2.0, the validation monitoring conducted to date support the proposed interim targets because:*
> 1. *Discharges were measured at TDS concentrations ranging between 1,510 and 3,100 mg/L measured TDS (2,502 and 2,588 mg/L calculated TDS), which did not result in acute toxicity at the point of release.*
> 2. *Discharges have not resulted in unacceptable chronic toxicity at the edge of the mixing zone following initial dilution (i.e., at a 100m radius surrounding the diffuser in Meliadine Lake)*
> 3. *Discharges do not appear to be exceeding the capacity of the receiving environment to accommodate long-term loadings of constituents (i.e., assimilative capacity), as indicated by the observation that effluent was rapidly dilute to well below (i.e. >10-fold less) the proposed edge of mixing zone target of 1,000 mg/L TDS during the June 7, 2020 sampling event.*
>
> *Based on these observations, it is likely that the MAC (3,500 mg/L can be adopted as a firm benchmark for managing discharge (as an ECQ), subject to confirmation by additional testing in Summer 2020. Monitoring efforts outlined in Table 1 in Section 3.0 will continue for the duration of the permitted discharge of CP1; these data will be used in the Phase 3 to ratify the mixing zone target as a firm benchmark (and SSWQO) in Meliadine Lake for long-term water management at the Site."*

While it is acknowledged in the WQ-MOP that final acceptance of the proposed TDS criteria will require further validation with additional monitoring results conducted to the end of the discharge period in October 2020, the observations noted above providing support for their acceptance are premature, based on a very limited data set, and are associated with a lot of uncertainty, as outlined in Appendix B of the WQ-MOP.
CIRNAC has taken the following monitoring results into consideration:

- Effluent: Toxicity testing results of effluents are limited, and there are no available results for chronic toxicity yet.
- Edge of Mixing Zone: Chemical characterization including TDS measurement, which is required weekly, was based on one sampling event due to unsafe

conditions from melting ice completed at 2 of 3 stations, limiting the ability to assess TDS levels and to spatially delineate conditions at the edge of the mixing zone. While remote data loggers have been installed to measure specific conductivity and temperature to estimate TDS levels at the edge of the mixing zone, there is no clear indication of validation of the relationship between specific conductivity filed measurements and laboratory TDS. Also, the assimilative capacity of the receiving environment has been assessed based on a single sampling event measuring TDS levels at 2 of 3 stations at the edge of the mixing zone.

Recommendation 5
CIRNAC recommends that the proposed TDS discharge criteria Effluent Quality Criteria (i.e., MAC of 3,500 mg/L and MGC of 5,000 mg/L) and Site-Specific Water Quality Objective (SSWQO) at the edge of the mixing zone (1,000 mg/L) be considered for review by the NWB when the results of all monitoring efforts and laboratory tests are made available and reviewed to confirm that the proposed criteria are properly validated.

6. Surface Contact Water Management and Waterline Discharge to Melvin Bay

In the Executive Summary of the Amendment Application, AEM states that:

> *"The NIRB is currently considering a Project Certificate Reconsideration Application for a proposed waterline between the mine and Melvin Bay, which is new mine infrastructure. This application for amendment to 2AM-MEL1631 includes a focused alternative to surface water management should the Project Certificate be amended to permit the waterline, which could provide a second receiver option of Melvin Bay for the transfer of CP1 water to Meliadine Lake."*

In Section 2.4 Alternatives Table 2-4 AEM presents a range of Options for management of CP1 water and notes:

> *"AEM is moving forward with the option to divert CP1 water into the waterline".*

In section 2.4.1 AEM briefly discusses the CP1 diversion using the waterline(s) as part of its adaptive strategy (2.4.1) along with potential impacts of water diversion from Meliadine Lake (2.5.1.1). This discussion is supported by the Appendix H technical memorandum on the impact of surface water diversion (via the waterlines to Melvin Bay) on the water flow to and water level of Meliadine Lake. In addition, AEM also provides a discussion of the fate and behaviour of waterline discharges in Melvin Bay (2.4.1.2). In Table 2-3 reclamation costs for the 41 km long water line as originally proposed to the Nunavut Impact Review Board (uncovered) are included as part of Surface and Ground water Management in the updated security estimate.

CIRNAC notes that AEM has not provided clear descriptions related to changes that they intend to undertake for their water management strategy, and the potential changes in physical infrastructure and operations at the site should the waterlines be approved by the Nunavut Impact Review Board.

Given the significant volumes proposed by AEM to Nunavut Impact Review Board for pipeline discharge to Melvin Bay (between 6,000 to 12,000 m^3/day with an alternative for an additional 8,000 m^3/day), it is important that AEM provide relevant information on the implications and revisions to existing and currently proposed water management strategies and facilities if the Nunavut Impact Review Board approval for this alternative is received.

Recommendation 6

CIRNAC recommends that AEM provide:

1. Information on how AEM's site water management strategy would change if the NIRB approves AEM's waterline application.
2. Relevant additional details related to expected changes in site facilities (ponds, treatment plants, etc.) and operations of these facilities that would result in association with the proposed waterlines should they be approved by the Nunavut Impact Review Board.

7. Reclamation Security Estimate Update

Comment 7

The RECLAIM estimates developed by AEM and CIRNAC are generally consistent given the level of information available at this time. CIRNAC's October 2020 overall assessment is for a total of $68,136,616 as compared to a total of $66,879,978 provided by AEM. Minor differences in the security amounts relate to different unit rates for work and some additional work items related to the removal of the saline pipeline not accounted for in AEM estimate. CIRNAC considered higher unit rates for some individual work items and increased anticipated duration of effort required.

A comparison of CIRNAC and AEM's security estimates is provided in Table 2.0 below:

Table 2.0 Reclamation security cost estimate

	AEM July 2020	CIRNAC Oct 2020	Difference
Capital Costs			
Open Pit	$1,704,963	$2,040,399	$335,436
Underground Mine	$1,096,384	$1,096,384	$0
Tailings Storage Facilities	$4,831,700	$5,081,950	$250,250
Rock Piles	$277,350	$307,350	$30,000
Buildings and Equipment	$19,974,815	$20,244,957	$270,142
Chemicals and Contaminated Soil			$0

Management	$2,359,406	$2,359,406	
Surface and Groundwater Management	$4,460,458	$4,460,458	$0
Interim Care and Maintenance	$5,294,620	$5,294,620	$0
Subtotal Direct Costs	$39,999,695	$40,885,523	$825,888
Indirect Costs			
Mobilization/Demobilization	$ 6,942,680	$ 6,961,400	$18,720
Post-Closure Monitoring	$ 3,704,694	$ 3,755,479	$50,785
Active Closure Monitoring	$ 3,032,829	$ 3,041,991	$9,162
Engineering (5%)	$ 1,999,985	$ 2,044,276	$44,291
Project Management (5%)	$ 1,999,985	$ 2,044,276	$44,291
Health & Safety Plans/Monitoring/QA/QC (2%)	$ 799,994	$ 817,710	$17,716
Bonding/Insurance (1%)	$ 399,997	$ 408,855	$8,858
Contingency (20%)	$ 7,999,939	$ 8,177,105	$177,166
Market Price Adjustment (0%)	$0	$0	$0
Subtotal Indirect Costs	$ 26,880,103	$ 27,251,093	$370,989
Grand Total	**$66,879,798**	**$68,136,616**	**$1,256,818**

Note: This security cost estimate has been prepared by Arcadis Canada Inc. on behalf of Crown-Indigenous Relations and Northern Affairs Canada using the RECLAIM and information provided for the application for the 2AM-MEL1631 water licence amendment.

Recommendation 7

CIRNAC recommends that the quantum of security estimate for the Meliadine Gold Mine project be set at $68,136,616 Million.

D. REFERENCES

Agnico Eagle Mines Limited, December 2019. Meliadine Mine Interim Closure and Reclamation Plan.

Arcadis Canada Inc. October 2015. RECLAIM Estimate for Meliadine Mine.

Indian and Northern Affairs Canada (CIRNAC), 2002. Mine Site Reclamation Policy for Nunavut. ISBN 0-662-32073-5. Copyright: Minister of Public Works and Government Services Canada.

Mackenzie Valley Land and Water Board, 2014. Guidelines for Closure and Reclamation Cost Estimates for Mines.