

Environmental Protection Operations
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EC file: 4703 001 062
NWB file: 2BB-MEL0914

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Via email: licensing@nunavutwaterboard.org

RE: 2BB-MEL0914– Meliadine All-Weather Road Water Licence Amendment 4

Environment Canada (EC) has reviewed the information regarding the above-mentioned project proposal, as submitted to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act 1999*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Agnico-Eagle Mines Ltd. is proposing to construct a public, all-weather access road between Rankin Inlet and the Meliadine Gold Project. The intent of the road is to support the underground exploration and bulk sample at the Tiriganiaq deposit. The construction of the road is proposed to occur from June 2011 to May 2012. Project activities include the replacement of an existing bridge across the Char River, construction of a bridge across the Meliadine River, construction of a bridge across an unnamed ephemeral stream, installation of stacked culverts at nine ephemeral streams, development of a spur road to Meliadine Lake, construction of an emergency airstrip, and the development of esker and rock quarries.

EC encourages NWB to consider the direct and cumulative regional impacts of the project taking into consideration the incremental increases in the activities currently being carried out as well as other activities that are reasonably foreseeable. In principle, and in keeping with EA best practice, EC is of the position that reviewing this project separately will make it more difficult to develop a comprehensive understanding of the project's overall effects. Accordingly, future review of any related development proposal would need to fully consider the use and operation of the road within the scope of any new assessment.

Based on the information provided, EC provides the following comments for the NWB's consideration:

General

- The proponent shall not deposit, nor permit the deposit of chemicals, sediment, wastes, or fuels associated with the project into any water body. According to the *Fisheries Act*, Section 36 (3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any deleterious substance

that results from the deposit of the deleterious substance, may enter any such water, is prohibited. All construction materials; gravel fill, bridge components, and miscellaneous tools as well as debris or sediment should be located a minimum of 30 m from the high water mark of, and such they do not enter, any water body.

- EC recommends that an undisturbed buffer zone of at least 100 m be maintained between any quarrying that may occur and the normal high water mark of any water body and should only take place one metre above the summer or high groundwater table.
- The proponent shall not deposit nor permit the deposit of sediment into any water body and appropriate erosion control measures will be implemented, as required, down gradient of any quarrying activities.
- Stream bank disturbances must be minimized and all disturbed areas stabilized upon completion of the project.
- Equipment which will be working in-stream or fording the stream shall be clean and inspected for leaks prior to entering the stream channel.
- Abutment construction materials shall be clean and contaminant free; rock/construction materials are not to be gathered from below the high water mark of any watercourse.
- EC recommends that an Abandonment and Restoration Plan be prepared for the road. This Plan should communicate the proponent's reclamation objectives and procedures for the area affected by the road and through excavation activities.

Acid Rock Drainage/Metal Leaching Potential of Borrow/Quarries for Road Construction (Reference: Geochemical Assessment of Potential Road Construction Material, Meliadine Gold Project)

- EC noted that a limited number of samples were taken per quarry/borrow site (i.e., on average, 3 samples/site) to determine its respective metal leaching and acid rock drainage potential. EC would like confirmation from the proponent that additional sampling and visual examinations of quarried material will be undertaken during excavation to confirm quarry/borrow materials remain suitable for road construction. To that end, EC recommends AEM indoctrinate this practice in their quality control procedures to ensure mineralized or altered materials will not be incorporated into the road.
- EC noted that metal leaching results were compared to metal mining effluent regulations (MMER) limits (see Section 3.3 of report). As a matter of course, EC does not recommend such comparisons be made as the MMER parameter limits are based primarily on achievable national water treatment values, and not on parameter concentrations that are protective of aquatic life. Further, it has been the practise to not consider the road as part of the operational area for purposes of the Regulations. To that end, EC supports comparisons to CCME guidelines.
- EC noted that all tested borrow sources were found to be relatively low in sulphur (less than 2 % sulphur). The problem with this material is that it has low to negligible carbonate neutralizing potential and relies on the "secondary" neutralizing minerals. Considering the foregoing, EC recommends the proponent ensure the surface topping meets the highest possible quality (i.e. most benign).
- On a minor note, the first paragraph under Metal Leach Potential on p.18 appears to misidentify the problematic quarry as T043 instead of the correct T046 (p.15).

Wildlife and Species at Risk

- Agnico-Eagle is proposing to construct an emergency airstrip between June-August 2011. In the southern Arctic region of the Northwest Territories and Nunavut, migratory birds may be found incubating eggs from May 14 until July 30, and young birds can be present in the nest until September 12. Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. The best mitigation measure to

ensure compliance is to conduct activities with a risk of disturbing or destroying nests or eggs outside of the migratory bird nesting season. If project activities are conducted during the nesting season, areas should be checked for nests before work begins and all crew members should be trained on how to recognize signs that a bird might be nesting in the area. If an active nest is found, the area should be avoided until nesting is completed (i.e. the young have left the vicinity of the nest).

- Section 3.2 of the proponents Project Proposal states that detailed information about the physical environment can be found in the “Terrestrial Vegetation and Wildlife Baseline Synthesis Report” and the “Aquatic Synthesis Report”, attached as a CD to the original document. Environment Canada requests that these reports be placed on the NIRB public registry.
- Environment Canada recommends that food, domestic wastes, and petroleum-based chemicals (e.g., greases, gasoline, glycol-based antifreeze) be made inaccessible to wildlife at all times. Such items can attract predators of migratory birds such as foxes, ravens, gulls, and bears. Although these animals may initially be attracted to the novel food sources, they often will also eat eggs and young birds in the area. These predators can have significant negative effects on the local bird populations.
- In order to reduce aircraft disturbance to migratory birds, Environment Canada recommends the following:
 - Fly at times when few birds are present (e.g., early spring, late fall, winter)
 - If flights cannot be scheduled when few birds are present, plan flight paths that minimize flights over habitat likely to have birds and maintain a minimum flight altitude of 650 m (2100 feet).
 - Minimize flights during periods when birds are particularly sensitive to disturbance such as migration, nesting, and moulting.
 - Plan flight paths to avoid known concentrations of birds (e.g., bird colonies, moulting areas) by a lateral distance of at least 1.5 km. If avoidance is not possible, maintain a minimum flight altitude of 1100 m (3500 feet) over areas where birds are known to concentrate.
 - Avoid the seaward side of seabird colonies and areas used by flocks of migrating waterfowl by 3 km.
 - Avoid excessive hovering or circling over areas likely to have birds.
 - Inform pilots of these recommendations and areas known to have birds.
- The following comments are pursuant to the *Species at Risk Act* (SARA), which came into full effect on June 1, 2004. Section 79 (2) of SARA, states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species and its critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This section applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, Environment Canada suggests that species on other Schedules of SARA and under consideration for listing on SARA, including those designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), be considered during an environmental assessment in a similar manner. The Table below lists species that may be encountered in the project area that have been assessed by COSEWIC as well as their current listing on Schedules 1-3 of SARA (and designation if different from that of COSEWIC). Project impacts could include species disturbance, attraction to operations, and destruction of habitat.

Terrestrial Species at Risk potentially within project area ¹	COSEWIC Designation	Schedule of	Government Organization with Primary Management Responsibility ²
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		SARA	
Peregrine Falcon	Special Concern (<i>anatum-tundrius</i> complex ³)	Schedule 3 – Special Concern (<i>tundrius</i>)	Government of Nunavut
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Grizzly Bear	Special Concern	Pending	Government of Nunavut
Polar Bear	Special Concern	Pending	Government of Nunavut
Wolverine (Western population)	Special Concern	Pending	Government of Nunavut

¹ The Department of Fisheries and Oceans has responsibility for aquatic species.

² Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

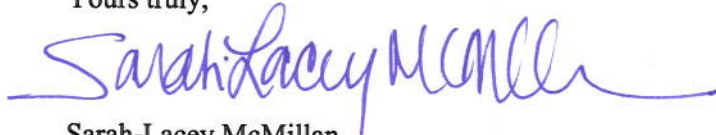
³ The *anatum* subspecies of Peregrine Falcon is listed on Schedule 1 of SARA as threatened. The *anatum* and *tundrius* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was listed by COSEWIC as Special Concern.

- For any Species at Risk that could be encountered or affected by the project, the proponent should note any potential adverse effects of the project to the species, its habitat, and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk registry at www.sararegistry.gc.ca for information on specific species.
- If Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
- Monitoring should be undertaken by the proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.
- For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.
- Mitigation and monitoring measures must be taken in a way that is consistent with applicable recovery strategies and action/management plans.
- All mitigation measures identified by the proponent, and the additional measures suggested herein, should be strictly adhered to in conducting project activities. This will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field. Environment Canada recommends that all field operations staff be made aware of the proponents' commitments to these mitigation measures and provided with appropriate advice / training on how to implement these measures.
- Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds and Species at Risk, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act, Migratory Birds*

Regulations, and the Species at Risk Act. The proponent must ensure they remain in compliance during all phases and in all undertakings related to the project.

If there are any additional changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact the undersigned with any questions or comments with regards to the foregoing at (867) 669-4724 or by email at Sarah-Lacey.McMillan@ec.gc.ca

Yours truly,



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