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Environmental Protection Operations  
5204-50<sup>th</sup> Avenue, Suite 301  
Yellowknife, NT  
X1A 1E2

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Our File: 4703 001 069

Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0

Fax: (867) 360-6369

Attention: Richard Dweyer

via email at: [licensing@nunavutwaterboard.org](mailto:licensing@nunavutwaterboard.org)

**RE: NWB 2BE-MZE – Maze Lake Gold Exploration – Terrane Metals Corporation**

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

It is the understanding of Environment Canada that Terrane Metals Corp. (Terrane) is applying for a water license from the Nunavut Water Board to use water or the deposit of waste into water for the Maze Lake gold mineral exploration project. The proposed project is a multi-year project consisting of mapping, rock and soil sampling and ground geophysical surveys during July and August 2007, and possible core diamond drilling commencing on or about August 15<sup>th</sup>, and proceeding until decommissioning no later than October 31, 2007. The exploration camp will be opened after July 15<sup>th</sup>, in accordance with the Caribou Protection Measures, provided that there is no allowance for a Variance Request which has been submitted by Terrane to extend the occupation period to July 1<sup>st</sup>. The camp is located near the Kamanuriak Caribou Calving Ground. Ground activities will be serviced by helicopter with fly in-fly out serviced by Twin Otter aircraft.

The work will be based out of a maximum 15 person camp located at 62°15' 49" N, and 93° 37' 39" W, consisting of eleven (11) tents, and three (3) wood sheds. A burn barrel is to be used to dispose of combustibles such as food, paper and wood; non-combustibles will be collected and disposed of in Whale Cove, NT pending community approval.

Environment Canada requests that a copy of the drill locations and new fuel cache locations, including a map detailing their location in relation to water, be submitted once available.

Environment Canada recommends that the following conditions be applied throughout all stages of the project:

- The proponent shall not deposit, nor permit the deposit of any fuel, chemicals, wastes or sediment 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 other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- The proponent shall not store materials on the surface ice of lakes or streams, except that which is for immediate use.

The proponent has indicated that they intend to incinerate waste in burn barrels. Environment Canada recommends the use of an approved incinerator for the disposal of combustible camp wastes. The objective should be to ensure that only food waste and food-contaminated waste is burned.

- Used absorbent materials, oily or greasy rags, and equipment servicing wastes (such as used engine oil, antifreeze, hydraulic oil, lead acid batteries, brake fluid and other lubricants) should be safely stored and transported in sealed containers (odour free to prevent animal attraction) and safely transported to a facility that is authorized for the treatment and disposal of industrial hazardous wastes.
- Sumps created for the disposal of camp sewage or grey water shall be located at least 30m above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish.
- Sumps created for the disposal of drill cuttings, shall be located above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish. Further, *all* sumps shall be backfilled upon completion of the field season and contoured to match the surrounding landscape.
- Sumps should be inspected regularly to ensure there is no erosion or leaching. The proponent shall ensure that all sumps are backfilled and restored at the end of each season to prevent the contents from entering any waterbody.
- Environment Canada would like to inform the proponent that the *Canadian Environmental Protection Act* has listed Calcium Chloride (CaCl) as a toxic substance. The proponent shall therefore ensure that if CaCl is used as a drill additive, all sumps containing CaCl are properly constructed and located in such a manner as to ensure that the contents will not enter any water body.
- Land based drilling should not occur within 30 m of the high water mark of any water body. Drilling wastes from land based drilling shall be disposed of in a sump such that the contents do not enter any water body.
- If an artesian flow is encountered, the drill hole shall be immediately plugged and permanently sealed.

Terrane has indicated that there is a large capacity of fuel drums/barrels currently on site.

- All fuel caches shall be located above the high water mark of any water body. Further, EC recommends the use of secondary containment, such as self-supporting insta-berms, when storing barreled fuel on location rather than relying on natural depressions.
- **All spills** are to be documented and reported to the **24 hour Spill Line at (867) 920-8130**.
- Drip pans, or other similar preventative measures, shall be used when refueling equipment on site.

The following comments and recommendations have been provided by the Canadian Wildlife Service (CWS) pursuant to the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations* (the *Regulations*), and the *Species at Risk Act* (SARA).

1. Section 6 (a) of the Migratory Birds Regulations states that no one shall disturb or destroy the nests or eggs of migratory birds. Therefore, Environment Canada recommends that all activities in which there is a risk of disturbing or destroying nests or eggs be conducted outside the migratory bird breeding season, which extends from approximately May 15 to July 31. These dates are approximate, and if active nests (i.e. nests containing eggs or young) are encountered outside of these dates the proponent should avoid the area until nesting is complete (i.e. the young have left the vicinity of the nest).
2. For activities permitted to occur during the breeding season, Environment Canada recommends that the proponent confirm there are no active nests (i.e. nests containing eggs or young) in the vicinity of their operations before activities commence. If active nests of migratory birds are discovered, the proponent should halt all activities in the nesting area until nesting is completed (i.e. the young have left the vicinity of the nest).
3. In order to reduce disturbance to nesting, moulting, and migrating birds, Environment Canada recommends that aircraft used in conducting project activities maintain a flight altitude of at least 610 m during horizontal (point to point) flight unless safety or cloud ceiling do not permit. EC acknowledges that lower altitudes will

be required for the airborne geophysical survey. EC recommends that the best time to conduct the airborne geophysical survey to minimize impacts on migratory birds would be in mid-August, which would be after the nesting season is done but before the start of fall migration.

4. In order to reduce disturbance to resting, feeding, or moulting birds, Environment Canada recommends that aircraft used in conducting project activities maintain a vertical distance of 1000 m and minimum horizontal distance of 1500 m from any observed concentrations (flocks / groups) of birds.
5. Environment Canada recommends that camp waste be made inaccessible to wildlife at all times. Camp waste can attract predators of migratory birds (e.g., foxes and ravens) to an area if not disposed of properly.
6. Section 35 of the *Migratory Birds Regulations* states that no person shall deposit or permit to be deposited, oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.
7. 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.
8. Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations* (the *Regulations*). The proponent must ensure they remain in compliance with the *Act* and *Regulations* during all phases and in all undertakings related to the project.
9. 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.

Species at Risk that may be encountered	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility <sup>1</sup>
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Peregrine Falcon (subspecies tundrius)	Special Concern	Schedule 3	Government of Nunavut
Grizzly Bear <sup>2</sup>	Special Concern	Pending	Government of Nunavut
Wolverine (Western Population)	Special Concern	Pending	Government of Nunavut
Polar Bear <sup>2</sup>	Special Concern	Pending	Government of Nunavut

<sup>1</sup> Environment Canada 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. Thus, for species within their responsibility, the Territorial Government is best suited to provide detailed advice and information on potential adverse effects, mitigation measures, and monitoring.

<sup>2</sup> The proponent has indicated in their detailed project description that the project is in the distribution range of both polar and grizzly bears. An unidentified bear went through camp at night in 2004.

Impacts could be disturbance and attraction to operations.

Environment Canada recommends:

- Species at Risk that could be encountered or affected by the project should be identified and any potential adverse effects of the project to the species, its habitat, and/or its residence noted. Refer to

species status reports and other information on the Species at Risk registry at [www.sararegistry.gc.ca](http://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.
- The proponent should record the locations and frequency of any observations of Species at Risk and note any actions taken to avoid contact or disturbance to the species.
- For species under the responsibility of 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**

If there are any changes in the proposed project, such as the commencement of drilling activities, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (780) 951-8942 or by email at [jody.klassen@ec.gc.ca](mailto:jody.klassen@ec.gc.ca).

Yours truly,



Jody Klassen

cc: Carey Ogilvie (Head, Assessment and Monitoring, EPO)  
Mike Fournier (Northern Environmental Assessment Coordinator, A&M, EPO)