

**Table 10.0-2: Summary of Mitigation Measures**

Mitigation Identifier	Mitigation Description
Mit_001	Reduce the overall height of the constructed features to the extent possible.
Mit_002	Construct WRSA and overburden stockpiles with an overall a 3:1 (horizontal to vertical) side slope to maintain a more natural appearance.
Mit_003	Initiate construction of the WRSA from the western edge
Mit_004	Vegetate the western facing side of the WRSA as soon as practicable.
Mit_005	Vegetate of the overburden stockpile as soon as practicable
Mit_006	Decommission the low-grade ore (LGO) stockpile at the end of operations
Mit_007	Overburden materials (clay, sand or organic material) stripped during the site preparation and construction phase will be placed in the overburden stockpiles located directly to the south of the proposed open pits.
Mit_008	Progressively construct a perimeter ditch and seepage collection system around the operations area to capture and direct all runoff from the site to the water management system.
Mit_009	Equipment will be maintained in good working order and inspected regularly
Mit_010	Re-fueling of equipment will be done in a manner to limit the potential for spills
Mit_011	Fuel will be stored in a lined, contained area.
Mit_012	Fueling vehicles will be parked in a concrete lined area when not in use.
Mit_013	Emulsion explosives will be stored and dispensed in a lined, contained area
Mit_014	Trucks used for the delivery of emulsion explosives will be parked in a concrete lined area when not in use.
Mit_015	Processing plant area will be lined and equipped with runoff and seepage collection
Mit_016	LGO stockpile will be equipped with runoff and seepage collection
Mit_017	Activities on the overburden stockpiles will be minimized and the stockpiles left undisturbed until closure activities are underway.
Mit_018	The WRSA will be capped with a low permeability cover, then a layer of overburden, then vegetated during closure.
Mit_019	Waste rock will be evaluated and segregated between PAG and NAG rock, if feasible
Mit_020	The PAG waste rock would be placed in the mined out areas of the open pit, to the extent practical.
Mit_021	During operations, tailings will be maintained in saturated conditions, and a water cover will be maintained over the majority of the TSF to prevent the onset of acidification.
Mit_022	The open pit will be allowed to flood at closure
Mit_023	Tailings within the TSF will be isolated using either a low permeability dry cover, or a wet cover of non-process water. The preferred option for limiting environmental effects is a wet cover.
Mit_024	The pit lake will be monitored as it is filling to determine whether batch treatment will be required to ensure the water meets PWQO, or background if background levels exceed the PWQO, prior to the discharge from the pit lake to a tributary of Blackwater Creek.
Mit_025	Heavy equipment activity will be conducted between the hours of 07:00 and 22:00, if feasible
Mit_026	Endeavor to schedule noise causing events, such as blasting, to reduce disruption to residents.
Mit_027	Advise nearby residents of significant noise-causing activities, such as blasting.
Mit_028	All internal combustion engines will be fitted with appropriate muffler systems
Mit_029	Implement a modern blasting program that minimizes the blast area, the overall amount of explosives required, and through detonating procedures, minimize the amount of explosives per delay.
Mit_030	Adjust blasting practices if effects of vibration to spawning shoals is identified
Mit_031	Material will be loaded into haul trucks in a manner that minimizes the drop height from the loader or excavator bucket to the bed of the truck
Mit_032	The WRSA and overburden stockpile will be situated to act as noise berms where possible
Mit_033	In the event that complaints lead to the identification of specific sources of concern, source-specific abatement such as noise walls, berms, or operational restrictions will be employed, as appropriate.
Mit_034	Activities during the site preparation and construction phase will generally occur during the daytime. If there are times when lighting is required to ensure the safety of the workers, portable lighting will be used in required areas only.

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Mit_035	Portable lighting will be directed downward
Mit_036	The higher Lux illumination levels (>80) will be placed within the process plant and mine infrastructure buildings, which contains the process and electrical equipment.
Mit_037	All externally mounted luminaires and their associated lamps will be designed to meet the requirements and recommendations of the Canadian Electrical Code (CEC), and the Building Code of Ontario.
Mit_038	External light fixtures will be installed at a tilt angle of 45°
Mit_039	Cut off angles for external lightings will be designed to minimize the off-site light trespass
Mit_040	Nighttime illumination will not be provided at the tailings storage facility (TSF).
Mit_041	Nighttime illumination will only be provided in the open pit when required. Portable lighting will be used in these situations.
Mit_042	Activities during the closure phase will generally occur during the daytime. If there are times when lighting is required to ensure the safety of the workers, portable lighting will be used in required areas only.
Mit_043	Blasting will likely be restricted to once per day, and only a few days per week.
Mit_044	All internal combustion engines will be properly maintained and all emission control systems (e.g., diesel particulate filters) will be kept in good working order.
Mit_045	Water and chemical suppressants will be used for dust control on the haul roads at the mine site when temperatures are above freezing
Mit_046	Best management practices plan for dust control will be implemented on the site during site preparation and construction, operations and closure.
Mit_047	The Project will utilize the 115 kV transmission line adjacent to the Project
Mit_048	The WRSA will be located immediately to the north of the open pit
Mit_049	Placing the overburden storage area immediately to the south of the open pit to reduce the haul distances.
Mit_050	Project design incorporates a compact footprint.
Mit_051	Perimeter runoff and seepage collection systems will be constructed around the TSF.
Mit_052	The drawdown zone of the dewatering process will capture all seepage that bypasses the seepage collection systems and will report to the open pit.
Mit_053	During operations, excess water not required in the process will be treated to concentrations that meet Provincial Water Quality Objectives (PWQO) or Canadian Water Quality Guidelines (CWQG) for the protection of aquatic life, or background if background levels exceed the PWQO, prior to discharging to Blackwater Creek. In the case of mercury, effluent will be treated to meet the background concentrations in Blackwater Creek.
Mit_054	Industry standard erosion and sediment controls, such as sediment traps within ditches, will be implemented during the site preparations and construction phase.
Mit_055	There will be no discharges to surface water during the closure phase.
Mit_056	During closure, the site will be graded such that runoff from the operations area will be directed to the open pit during closure and post-closure phases.
Mit_057	Effectively manage water collected on-site using constructed storage facilities, reducing the need for fresh water withdrawals and discharges of treated water.
Mit_058	An engineered structure, designed to dissipate flows and avoid erosion, will be constructed to discharge effluent during operations into Blackwater Creek.
Mit_059	Fresh water takings from tree nursery irrigation ponds on Thunder Lake Tributaries 2 and 3 will not exceed 5% of the flow entering the ponds
Mit_060	Once the open pit has been filled, excess water from the open pit will be passively released through an engineered spillway into the existing channel of Blackwater Creek Tributary 1.
Mit_061	The process will employ a thickener to help recover cyanide solution from the tailings for reuse in processing. The resulting tailings will then be treated using the SO <sub>2</sub> -air process to reduce cyanide in the tailings directed to the TSF so as to meet MMER requirements over a long-term basis.
Mit_062	The floor of the TSF will be a low-permeability layer capable of achieving seepage rates that ensure receiving surface water quality is equivalent to baseline, or meet PWQO. The liner would be comprised of natural material, or if necessary, an HDPE liner laid over a prepared basin of sand or comparable material.
Mit_063	Deepen those wells where the drawdown affects the wells ability to provide the required supply.
Mit_064	Financial assurance would be provided to the MNM as required and applicable as per regular permitting processes to ensure maintenance and provision of neighbouring residential wells

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Mit_065	Minimized the amount of habitat clearing required for the Project by siting Project infrastructure, to the extent practicable, in previously disturbed areas and optimizing the use of existing roadways.
Mit_066	Develop slope dependent vegetated buffers along rivers creeks and wetlands in conjunction with the MNRF. Buffers should be 120 m, wherever feasible.
Mit_067	Timber clearing will be conducted outside the breeding bird window (May 1 to August 15).
Mit_068	Closure activities should include revegetation with species suitable for the development of habitats capable of supporting a diversity of wildlife species.
Mit_069	Enforcement of speed limits within the Project area
Mit_070	Minimize disturbing areas with suitable bird breeding habitat, where practicable.
Mit_071	Wildlife awareness training for all staff will be provided including SAR identification/legislation and education regarding seasonal changes in animal behaviour and their presence.
Mit_072	Disposal of food waste generated on site will be done in an appropriate manner
Mit_073	Clearing of potential terrestrial reptile and amphibian breeding habitats will be restricted to periods outside the breeding season as directed by MNRF
Mit_074	Develop a wetland clearing strategy with the local MNRF to reduce the effects to overwintering frogs (i.e. draining wetlands to discourage hibernation).
Mit_075	If habitat destruction / damage cannot be avoided, alternate nesting habitat will be provided as a provision of compensatory habitat for species protected under the ESA
Mit_076	Acceptable buffers will be provided around all raptor nests identified throughout all Project phases
Mit_077	Prior to overburden removal, any beaver dams within the Project footprint will be removed and the impoundments will be allowed to draw down.
Mit_078	Activities and the construction of Project components that will impact or overprint watercourses will occur during the fisheries timing window when in-stream work is permitted.
Mit_079	To the extent practicable, fish in the sections of Blackwater Creek Tributary 1 that will be isolated by the construction of the perimeter ditch and overprinted by the removal of overburden from the open pit will be captured and relocated to the same tributary downstream from the operations area, or to the main branch of Blackwater Creek.
Mit_080	To the extent practicable, fish in the sections of Blackwater Creek Tributary 2 that will be isolated by the construction of the perimeter ditch and overprinted by the construction of the TSF and minewater pond will be captured and relocated to the same tributaries downstream from the operations area, or to the main branch of Blackwater Creek.
Mit_081	Pump intakes in the irrigation ponds at the former MNRF tree nursery will be fitted with fish screens to prevent entrainment.
Mit_082	As the Project advances, detailed engineering will be completed to ensure that all downstream culverts can support any predicted increases in flows and maintain current levels of fish passage.
Mit_083	Provide offsetting of fisheries habitat losses as part of the authorization required under the Fisheries Act.
Mit_084	Retention of forested areas wherever feasible.
Mit_085	Identify and protect the locations of any known SAR or provincially significant plant.
Mit_086	Broadcast spraying of herbicides will be avoided
Mit_087	Revegetation of final grade slopes around the open pit to encourage the development of riparian habitats.
Mit_088	Reclamation of mining footprints to be carried out in accordance with O.Reg. 240/00.
Mit_089	Seeding or hydro-seeding of the reclaimed areas with native seed mix.
Mit_090	Minimize crown land in the Project footprint
Mit_091	Minimize activities on the eastern portion of the Project property.
Mit_092	During the operating life of the Project, no access will be permitted to the operations area for security and safety reasons. Access to the former MNRF tree nursery will be controlled. Aboriginal peoples will be able to arrange for accompanied access to these areas with Treasury Metals. Appropriate signage will be placed around areas where access is limited.
Mit_093	Implement a Communications Management Plan to address ongoing engagement with potentially affected stakeholders and Aboriginal groups throughout the life of the Project. The plan should include a framework for a transparent grievance process.

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Mit_094	Treasury Metals will undertake additional land and resources use studies to ensure a pre-construction baseline of the land and resource users as supported by local communities.
Mit_095	Develop a Socio-Economic Management Plan to help ensure commitments are implemented, adverse socio-economic effects are minimized, results are monitored, and effects are adaptively managed.
Mit_096	Continue to collect additional traditional land use information for the Project area through meetings and traditional land use studies to identify areas of plant gathering, hunting, trapping, fishing, and cultural activities.
Mit_097	Contract security services to help promote a secure and safe worksite environment
Mit_098	Incorporate strategies and actions to aid residents following closure in the Socio-Economic Management Plan.
Mit_099	Treasury Metals will establish and enforce traffic safety protocols, regulatory and cautionary signage, road maintenance and emergency response plans on all Project roads to prevent collisions and accidents.
Mit_100	Ongoing engagement with potentially affected Aboriginal peoples throughout the life of the Project.
Mit_101	Ongoing engagement with potentially affected stakeholders throughout the life of the Project.
Mit_102	Treasury Metals will undertake an update of the socio-economic baseline to establish a pre-construction baseline of the affected communities prior to commencing the Project site preparation and construction
Mit_103	Employment preference will be given to local and regional labour where possible, including Aboriginal and non-Aboriginal communities. This will be dependent upon the skills and workforce being available locally.
Mit_104	Develop training and job transfer policies to support workforce development in the socio-economic study area
Mit_105	Develop training programs for unemployed and under employed residents and non-workers
Mit_106	Treasury Metals will communicate appropriate information (e.g., the timing and communities in which new residents may locate) to the school district(s) to assist with their resource planning process.
Mit_107	Treasury Metals will communicate education requirements needed for employment on the site.
Mit_108	Treasury Metals will work with specific affected homeowners to ensure that their concerns about potential Project-related effects are addressed.
Mit_109	Treasury Metals will work with local and regional governments to minimize the effects of in-migration and out-migration where possible.
Mit_110	Treasury will work with public safety services to develop safety and work policy guidelines for mine workers, including a policy of no alcohol or drugs onsite and policies and guidelines to support a respectful work environment.
Mit_111	Incorporate strategies and actions to help local agencies monitor community wellbeing and take corrective actions where appropriate.
Mit_112	Treasury Metals will engage the Local Services Board in Wabigoon to acquire Tree Nursery Road in its entirety from north of Normans Road.
Mit_113	Treasury Metals will approach MTO to discuss recommendations presented within the transportation study (Appendix E to the Revised EIS) regarding the snow plow turn-around for Anderson Rd. and Highway 17.
Mit_114	Treasury Metals will approach MTO to discuss recommendations presented within the transportation study (Appendix E to the Revised EIS) regarding the need for lighting at the Anderson Rd. and Highway 17 intersection.
Mit_115	Treasury Metals will approach MTO to discuss recommendations presented within the transportation study (Appendix E to the Revised EIS) regarding clearing of shrubbery, trees, soil mounds, etc. that could cause a visual obstruction for vehicles using the Anderson Rd. and Highway 17 intersection.
Mit_116	Treasury will maintain, where applicable, a local purchasing policy to purchase goods and services from local suppliers. This policy has the expectation that goods and services will be purchased locally assuming price, delivery and service is competitive with outside suppliers.
Mit_117	Revegetation of the WRSA and TSF will be done using species that are not traditionally used for medicinal purposes, or for consumption, and would deter these types of plants from growing.
Mit_118	Leave a 50 m buffer zone around remaining watercourses within the Project area.
Mit_119	If previously undocumented archaeological resources are discovered, the person discovering the resources will stop alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (l) of the Ontario Heritage Act.
Mit_120	If human remains are discovered, alteration of the site will stop and the person making the discovering will immediately notify the police, or coroner, and the Registrar of cemeteries, at the Ministry of Consumer Services,

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	as required under the Cemeteries Act, R.S.O. 1990 c.C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 (when proclaimed in force).
Mit_121	Restrict activities and development within 300 m of major water sources and within 300 m of historical travel routes, to only those areas where an archeological assessment has been completed.
Mit_122	Do not allow new ground altering activities to occur in areas where an archaeological assessment has not been completed. Once an archaeological assessments has been completed ground altering activities.
Mit_123	At closure, continue training opportunities to help residents to increase their competitiveness and chances to get employment elsewhere
Mit_124	Once the pit lake is fully flooded, it is expected that the monitoring of the water quality in the pit lake will continue for a period of time to determine whether additional batch treatment may be required to ensure the water released from the pit lake meets effluent release limits.
Mit_125	Spills will be contained and the soil remediated in accordance with the Emergency and Spills Response Management Plan.
Mit_126	Prior to construction activities, Treasury Metals will engage with the local trapping council, Indigenous communities and the MNR to prepare a plan for the removal of nuisance wildlife (i.e., beaver) within the Blackwater Creek watershed.
Mit_127	There will be no drinking water wells installed on the Project during the operations, closure, or during the portion of the post-closure phase when monitoring is required to confirm performance of the reclamation landscape..
Mit_128	MOECC Fish consumption advisories for Thunder Lake and Wabigoon Lake will be adhered to.
Mit_129	Project workers and site visitors will receive sufficient risk protection from direct contact with soil and water and/or dust inhalation via the implementation of PPE and requirement for suitable clothing.
Mit_130	Access to the waste rock storage area (WRSA) and the tailings storage facility (TSF) during operations and closure will be restricted to those workers with the required health and safety training and personal protective equipment (PPE).