

APPENDIX E

Updated Impact Assessment Matrices

- E1 – Impact Assessment Matrix – Construction Phase**
- E2 – Impact Assessment Matrix – Operations Phase**
- E3 – Impact Assessment Matrix – Closure Phase**
- E4 – Impact Assessment Matrix – Post-Closure Phase**

Côté Gold Project
Environmental Effects Review Report
September 2018
EA: EA 05-09-02; EAIMS: 13022; CEAA: 80036

E1 – Impact Assessment Matrix – Construction Phase

Table E-1: Impact Assessment Matrix for the Construction Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Air Quality	Suspended Particulate Matter (Dust) as Total Particulate Matter (PM ₁₀)	Changes in air quality due to particulate emissions from construction activities. These activities include site preparation and construction, open pit overburden stripping and stockpiling and onsite road traffic.	-Dust Best Management Plan (DBMP) -IAMGOLD is committing to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<120 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<120 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Particulate Matter (PM ₁₀); 24 Hour Average	Changes in air quality due to particulate emissions from construction activities. These activities include site preparation and construction, open pit overburden stripping and stockpiling and onsite road traffic.	-DBMP -IAMGOLD is committing to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<50 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<50 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); 24 Hour Average	Changes in air quality due to particulate emissions from construction activities. These activities include site preparation and construction, open pit overburden stripping and stockpiling and onsite road traffic.	-DBMP -IAMGOLD is committing to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<25 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<25 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); Annual Average	Changes in air quality due to particulate emissions from construction activities. These activities include site preparation and construction, open pit overburden stripping and stockpiling and onsite road traffic.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (4.2 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (4.2 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Air Quality	Sulphur Oxides (SOx), Mainly as Sulphur Dioxide (SO2)	Changes in air quality due to gaseous emissions from construction activities, mainly vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements -Use of low sulphur fuel	EA	Level II	Level I	Level I	Level II	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level II	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
Air Quality	Nitrogen Dioxide (NO2): 24 Hour Average	Changes in air quality due to gaseous emissions from construction activities, mainly vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<200 µg/m3).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<200 µg/m3).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Nitrogen Dioxide (NO2): 1 Hour Average	Changes in air quality due to gaseous emissions from construction activities, mainly vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<400 µg/m3).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<400 µg/m3).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Arsenic: 24 Hour Average	Changes in air quality due to particulate emissions from construction activities, mainly handling of mine rock. Due to infrequent blasting during the construction phase, emissions of metals are infrequent.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Air Quality	Lead	Changes in air quality due to particulate emissions from construction activities, mainly handling of mine rock. Due to infrequent blasting during the construction phase, emissions of metals are infrequent.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Manganese; 24 Hour Average	Changes in air quality due to particulate emissions from construction activities, mainly handling of mine rock. Due to infrequent blasting during the construction phase, emissions of metals are infrequent.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (0.0055 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (0.0055 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	VOCs	Changes in air quality due to gaseous emissions from construction activities, mainly vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements	EA	Level I	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level II				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Air Quality	Other Key Metals	Changes in air quality due to particulate emissions from construction activities, mainly handling of mine rock. Due to infrequent blasting during the construction phase, emissions of metals are infrequent.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Hydrogen Cyanide (HCN); 24 Hour Average	No cyanide is used during the construction phase. Therefore, this effect is not assessed during the construction phase.	Not applicable	EA						-	-	-	Not Applicable
				EER	-	-	-	-	-				

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Noise & Vibration	Daytime Noise Level	Changes in noise levels due to construction activities, including equipment movement, haulage and stockpiling operations.	-1 km setback distances to be kept at the Project site between the construction location and the receptors -Construction equipment not to exceed noise levels specified in NPC-115 and NPC-118	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are reduced compared to the EA. Daytime noise below baseline levels due to reduced footprint.
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	Noise level above daytime baseline (44 dBA) and below or equal to 45 dBA.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Noise level below or equal to daytime baseline of 44 dBA.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Noise & Vibration	Nighttime Noise Level	Changes in noise levels due to construction activities, including equipment movement, haulage and stockpiling operations.	-1 km setback distances to be kept at the Project site between the construction location and the receptors -Construction equipment not to exceed noise levels specified in NPC-115 and NPC-118	EA	Level III	Level II	Level I	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are reduced compared to the EA. Noise levels are below NPC-115 and NPC-118 for nighttime operation.
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	Noise level above 40 dBA.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Noise level above nighttime baseline (34 dBA) and below or equal to 40 dBA.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Noise & Vibration	Blasting Noise Level	Changes in air vibration levels due to construction activities at the Project site and near watercourse realignments. Blasting is expected to occur infrequently during the construction phase.	-Charge size of construction blasting outside of the open pit boundary will be such that the objectives of NPC-119 will be achieved -Blasting charge size in the open pit is planned to be in compliance with NPC 119	EA	Level II	Level II	Level I	Level II	Level I	Not Significant	Not Significant	Likely	Impacts are comparable to the EA
				EER	Level II	Level II	Level I	Level II	Level I				
				EA	Blasting noise level above the adjusted baseline noise level (39 dBA) but below the regulatory limit of 120 dBL.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Blasting noise level above the adjusted baseline noise level (39 dBA) but below the regulatory limit of 120 dBL.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
Noise & Vibration	Blasting Vibration Level	Changes in ground vibration levels due to construction activities. Blasting expected to occur infrequently during the construction phase.	-Charge size of construction blasting outside of the open pit boundary will be such that the objectives of NPC-119 will be achieved -Blasting charge size in the open pit is planned to be in compliance with NPC 119	EA	Level II	Level II	Level I	Level II	Level I	Not Significant	Not Significant	Likely	Impacts are comparable to the EA
				EER	Level II	Level II	Level I	Level II	Level I				
				EA	Blasting vibration level at the receptor is above perceptible vibration level (0.14 mm/s) and below the regulatory limit (10 mm/s).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Blasting vibration level at the receptor is above perceptible vibration level (0.14 mm/s) and below the regulatory limit (10 mm/s).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				

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				EA	EER								
Hydrogeology	Groundwater Levels (Water Table)	Localized changes in groundwater levels due to construction activities, mainly watercourse realignments.	Not applicable	EA	Level III	Level I	Level I	Level III	Level III	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Waterlevels normalize with realignment channels following construction completion
				EER	Level III	Level I	Level I	Level III	Level II				
				EA	Change in the water table elevation is predicted to be greater than 5 m.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is not reversible				
				EER	Change in the water table elevation is predicted to be greater than 5 m.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Hydrology & Climate	Change in Flow	Streamflow changes due to construction of various Project components, such as watercourse realignments, TMF and MRA.	Not applicable	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Fewer watercourse alignments are required for the Project, which directs flows to Three Duck Lake (Upper) however increase in flow is not expected to change the hydrological characteristics of Three Duck Lake (Upper).
				EER	Level I	Level II	Level I	Level III	Level II				
				EA	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Water Quality	Change in Water Quality	Changes in water quality due to erosion and runoff which could potentially increase total suspended solids in water courses. Best Management Practices will be used during the construction phase, which will prevent changes in water quality.	-Best Management Practices (BMPs) and engineering design to limit soil erosion and mobilization/transport of sediments from disturbed areas	EA	Level II	Level II	Level I	Level II	Level I	Not Significant	Not Significant	Not likely	Impacts are reduced compared to the EA. The reduced footprint results in less potential of total suspended solids entering water courses.
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations greater than baseline concentrations, but less than water quality guidelines, where applicable.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Concentrations greater than baseline concentrations, but less than water quality guidelines, where applicable.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				

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				EA	EER								
Terrestrial Biology	Upland Plant Community Types	Vegetation loss due to site clearing. The Project is predicted to alter approximately 1,800 ha of the land cover.	-Limit the area of Project footprint and disturbance from employees and mining activities -Construct the 230 kV transmission line to minimize potential for ground disturbance and soil erosion, and use existing roads and rails as practicable -Rehabilitate habitat for plants as practicable -Limit / prevent the transfer of invasive plant species from equipment and imported soil	EA	Level I	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level II				
				EA	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Wetlands	Loss of wetland areas due to site clearing. The Project is predicted to alter approximately 185 ha of wetlands.	-Where practical, avoid placement structures in waterbodies along the transmission line ROW, and to the extent practicable, in low-lying areas	EA	Level I	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level II				
				EA	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Vegetation Species at Risk, Species of Special Concern and Provincially Rare Species	No predicted effect on Species at Risk, Species of Special Concern and Provincially Rare Species as none were identified during baseline data collection. Therefore, this effect is not assessed.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				

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				EA	EER								
Terrestrial Biology	Ungulates	Potential change in ungulates population abundance and distribution due to habitat removal during the construction phase. Site construction will remove an estimated 1,106 ha of suitable moose winter habitat and 1,074 ha of suitable moose summer habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Reduce risk of mortality to wildlife -Minimize construction of new roads -No hunting by Project personnel -Enforce speed limits on Project roads -Awareness trainings for employees 	EA	Level I	Level III	Level I	Level III	Level II	Not Significant	Not Significant	Not likely	Impacts are reduced compared to the EA. Less habitat being disturbed due to a reduced Project footprint.
				EER	Level I	Level II	Level I	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Furbearers	Potential change in furbearers population abundance and distribution due to habitat removal during the construction phase. Site construction will remove an estimated 355 ha of suitable beaver habitat. Between 1,074 and 1,266 ha of suitable black bear, eastern wolf, and American marten habitat will be removed from construction of the Project. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Reduce risk of mortality to wildlife -Minimize construction of new roads -No hunting by Project personnel -Enforce speed limits on Project roads -Awareness trainings for employees 	EA	Level I	Level III	Level I	Level III	Level II	Not Significant	Not Significant	Not likely	Impacts are reduced compared to the EA. Less habitat being disturbed due to a reduced Project footprint.
				EER	Level I	Level II	Level I	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Migratory Birds	Potential change in migratory birds population abundance and distribution due to habitat removal during the construction phase. Site construction will remove 99 and 216 ha of suitable nightjar, olive-sided flycatcher, rusty blackbird, and waterbird habitat. The Project is predicted to remove 1,203 and 1,233 ha of suitable Canada warbler and tree-nesting raptor habitat, respectively. The Project is not anticipated to remove any suitable short-eared owl habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Limit risk of nest destruction and mortality of migratory birds -Construct the transmission line ROW outside of the migratory bird breeding season -Install conductor wires at a sufficient distance apart to prevent accidental electrocution of birds -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife 	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	Not Significant	Not likely	Impacts are comparable to the EA, with the exception of a shorter transmission line alignment which requires fewer disturbances.
				EER	Level I	Level II	Level I	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

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				EA	EER								
Terrestrial Biology	Wildlife Species at Risk	Potential change in wildlife species at risk population abundance and distribution due to habitat removal during the construction phase. Site construction will remove an estimated 1,233 ha of suitable bat habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	-Reduce the risk of mortality to birds and bats -Reduce risk of mortality to wildlife	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology - TL	Vegetation Communities	Vegetation loss due to transmission line ROW clearing. The Project is predicted to result in the removal of 549.2 ha of forested communities including 146 ha of coniferous swamp.	-Construct the 230 kV transmission line to minimize potential for ground disturbance and soil erosion, and use existing roads and rails as practicable -Retain existing low-lying vegetation along the transmission line ROW	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Ungulates - Moose	Potential change in moose population abundance and distribution due to the construction of the transmission line alignment. This will result in the removal of 549.2 ha of habitat including areas with high potential Moose aquatic carrying capacities as well as 24 ha of identified over-wintering areas and portions of areas with the potential to support moderate to high densities of Moose in the dormant season. Additional effects are potentially associated with general disturbance and vehicular collisions.	-Reduce risk of mortality to wildlife -Minimize construction of new roads -No hunting by Project personnel -Enforce speed limits on Project roads -Awareness trainings for employees	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	Not Significant	Not likely	Impacts are reduced compared to EA. Reduced power requirement allows the Project to utilize a TLA from the Shining Tree Distribution Station.
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Furbearers - Wolves	Potential change in wolves population abundance and distribution due to the construction of the transmission line alignment. This will result in the removal of 549.2 ha of habitat. Noise from construction activities may temporarily displace local wolves and/or local Moose that wolves depend on for food. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Reduce risk of mortality to wildlife -Minimize construction of new roads -No hunting by Project personnel -Enforce speed limits on Project roads -Awareness trainings for employees 	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Furbearers - American Marten	Potential change in American marten population abundance and distribution due to the construction of the transmission line alignment. This will result in the removal of 549.2 ha of habitat including 127 ha of identified core marten habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Reduce risk of mortality to wildlife -Minimize construction of new roads -No hunting by Project personnel -Enforce speed limits on Project roads -Awareness trainings for employees 	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Furbearers - Black Bear	Potential change in black bear population abundance and distribution due to the construction of the transmission line alignment. This will result in the removal of 549.2 ha of habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Reduce risk of mortality to wildlife -Minimize construction of new roads -No hunting by Project personnel -Enforce speed limits on Project roads -Awareness trainings for employees 	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-1: Impact Assessment Matrix for the Construction Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Bats	Potential change in bats population abundance and distribution due to the construction of the transmission line. A total of 130 ha of suitable vegetation community types for bat roosting habitat will be cleared for Project development. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Enforce speed limits along Project roads -Reduce the risk of mortality to birds and bats 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Migratory Birds	Potential change in migratory birds population abundance and distribution due to the construction of the transmission line alignment. This will result in the removal of 549.2 ha of habitat. Additional effects are potentially associated with general disturbance and vehicular collisions..	<ul style="list-style-type: none"> -Limit risk of nest destruction and mortality of migratory birds -Construct the transmission line ROW outside of the migratory bird breeding season -Install conductor wires at a sufficient distance apart to prevent accidental electrocution of birds -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Raptors	Potential change in raptors population abundance and distribution due to the construction of the transmission line. Vegetation clearing for construction of the transmission line alignment is anticipated to remove 403.2 ha of forested land capable of providing woodland raptors nesting habitat. No raptor nests are located within the proposed transmission line alignment footprint and it is not expected that habitat removal will affect known raptor nests through habitat removal. Effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Limit risk of nest destruction and mortality of migratory birds -Construct the transmission line ROW outside of the migratory bird breeding season -Install conductor wires at a sufficient distance apart to prevent accidental electrocution of birds -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife -Minimize the level of potentially disturbing activities near any known or subsequently discovered active raptor nest sites during the raptor breeding season until nests are vacated -Remove carcasses of road-killed animals or any other carcasses found onsite in a timely manner to limit the attraction of wildlife 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Species at Risk, Species of Special Concern and Provincially Rare Species	Potential change in population abundance and distribution for species at risk, species of special concern and provincially rare species due to the construction of the transmission line. Overall, construction of the transmission line alignment will result in the clearing and temporary removal of 232.9 ha of deciduous mixed woodland habitat which may be used as nesting habitat by Canada Warbler; 403.2 ha of forest habitat which may be used as nesting habitat for Common Nighthawk; 22.9 ha of wetland habitat and 146 ha of coniferous forest habitat suitable for Olive-sided Flycatcher and Rusty Blackbird; 22.6 ha of wetland habitat and 3.8 ha of open water habitats which may provide potential habitat to Snapping Turtles. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Aquatic Biology	Aquatic Toxicity	Effects on aquatic species due to changes in water quality. Best Management Practices will be used during the construction phase, which will prevent changes in water quality.	<ul style="list-style-type: none"> -The use of erosion control measures and timing of construction to avoid spawning and egg incubation periods 	EA	Level I	Level II	Level I	Level II	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level II	Level I	Level II	Level I				
				EA	Median concentrations less than guidelines or less than chronic toxicity thresholds for substances without guidelines.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Median concentrations less than guidelines or less than chronic toxicity thresholds for substances without guidelines.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
Aquatic Biology	Commercial, Recreational, Aboriginal Fisheries	Effects on commercial, recreational and Aboriginal fisheries due to site construction, including relocation of fish due to dewatering of Côté Lake, construction of watercourse realignments and overpressure from blasting.	<ul style="list-style-type: none"> -Relocate fish (representative numbers of the community) to established habitats. Time relocation relative to life cycle requirements and environmental conditions -Removal of terrestrial vegetation prior to flooding will reduce the potential for methyl mercury production through decaying of terrestrial vegetation 	EA	Level I	Level II	Level I	Level II	Level I	Not Significant	Not Significant	Not likely	Impacts are reduced compared to EA. Fewer watercourse realignment channels, reducing organics disturbances.
				EER	Level I	Level II	Level I	Level II	Level I				
				EA	There is no measurable residual effect to communities or populations.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	There is no measurable residual effect to communities or populations.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				

Table E-1: Impact Assessment Matrix for the Construction Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Aquatic Biology	Loss of Aquatic Habitat	Loss of aquatic habitat due to construction of Project components. Lotic habitat affected includes Mollie River, Clam Creek and Bagsverd Creek. Lentic habitat affected includes Côté Lake, Beaver Pond, Clam Lake, Little Clam Lake, Unnamed Pond #3 and East Beaver Pond.	<p>-Spawning habitat within the water bodies affected will be included in the Fisheries Act Authorization for the site as a loss of habitat and will be addressed through the compensation plan (including modifications to ensure flow, fish passage and use of habitats)</p> <p>-Design of the realignment channels will incorporate the life cycle requirements of the resident fish species and promote, where possible, an increase in habitat</p>	EA	Level I	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level II				
				EA	Less than 10% of lotic habitat (stream length - m) and /or lentic habitat (lake area - m2) within the local study area.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Less than 10% of lotic habitat (stream length - m) and /or lentic habitat (lake area - m2) within the local study area.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Land Use Plans and Policies	Potential effects on land use planning areas during the construction phase of the Project may include overlapping of land use policy area where the use would not be allowed and creating land use conflicts.	-Incorporate the MOE D-series guidelines	EA	Level II	Level I	Level I	Level III	Level III	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level III				
				EA	The Project overlaps very small portions of land use areas that may be incompatible with mining activities but will not impede the designated land use.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is not reversible				
				EER	The Project overlaps very small portions of land use areas that may be incompatible with mining activities but will not impede the designated land use.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is not reversible				
Land and Resource Use	Mineral Exploration	Changes in access to other claim areas or effects on the ability to exercise exploration activities within these claim areas during the construction phase.	-Work with claim holders to identify access changes and negotiate access agreements if there is any requirement to use or cross IAMGOLD properties	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	—	Likely	Impact is no longer applicable. IAMGOLD has acquired the mineral claims within the Project area.
				EER									
				EA	The Project overlaps or changes access to other mining claims but does not limit the ability to exercise exploration activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	-	-	-	-	-				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Forestry	The potential effects on forestry due to the construction phase of the Project include overlapping, and therefore, loss of Forest Management Units (FMUs) area, long-term removal of forest resources (at the Project site footprint and along transmission line alignment) and changes to access along the Cross-Country TLA and at the Project site.	-Re-route the Chester Access Road south of the Project site	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA, except references to the cross-country TLA are no longer applicable
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Hunting	Potential effects on hunting during the construction phase of the Project include overlapping of, and therefore, limiting use of or access to WMUs, overlapping of, and therefore, limiting use of or access to BMAs, increased access to BMAs along the TLA alternatives and changes to the abundance and distribution of wildlife that could affect hunting success rates due to construction activities.	-To be determined through consultation between the MNR and any affected BMA holders -Enforce speed limits and warn IAMGOLD personnel of areas of high wildlife activity and crossings -Prohibit hunting on IAMGOLD property -Food wastes generated on-site will be appropriately disposed of to reduce the attraction of wildlife	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Trapping	A number of trapline areas overlap with the Project site and TLA alternatives. Potential effects on trapping during the construction phase of the Project include loss of trapline areas or trap cabins, changes to access to trapline areas or trap cabins and changes to the abundance and distribution of furbearers that could affect trapping success rates, and therefore, trapping income due to changes in biophysical or anthropogenic conditions.	-To be determined through consultation between the MNR and affected trappers	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps with small portions of trapline areas and affects a few individual trappers and/or will not limit the ability to carry out trapping activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with small portions of trapline areas and affects a few individual trappers and/or will not limit the ability to carry out trapping activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Recreational and Commercial Fishing	The Project site and TLAs overlap with Fisheries Management Zone (FMZ) 8 and several bait harvest areas. Potential effects on fishing during the construction phase of the Project include loss of bait harvest areas or recreational fishing areas, changes to access to fishing areas and changes to the abundance and distribution of fish that could affect fishing success rates, and therefore, any commercial fishing income (such as for bait fish harvesters) due to changes in biophysical or anthropogenic conditions.	Not applicable	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	The Project may affect a small number of waterbodies used for fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project may affect a small number of waterbodies used for fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Land and Resource Use	Cottages and Outfilters	Numerous cottages and outfilters are located near the Project site. Potential effects on the cottagers may include decreased enjoyment and leisure lifestyle associated with cottaging due to construction noise and dust; perceived effects to water quality, quantity and area aesthetics) and increased vehicle traffic. The potential effects of the Project on the outfilters may include decrease in areas recommended by outfilters to clientele (related to effects on BMAs), perception that the area is not pristine or natural which could detract clientele and increased local clientele due to increased workforce in area (staying or hunting, etc).	-Limit recreational boating for workers while they are staying at the work camp on-site	EA	Level II	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level I				
				EA	The Project is proximal to cottage areas or areas used by outfilters and may require the removal of a few cottages but will not limit the use of these areas by most cottagers/outfilters.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project is proximal to cottage areas or areas used by outfilters and may require the removal of a few cottages but will not limit the use of these areas by most cottagers/outfilters.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Land and Resource Use	Navigable Waters	Due to the construction of the watercourse realignments and retention dams, canoe routes will need to be modified during the construction phase.	-To be determined through consultation with any potential canoe route users to facilitate navigation during construction and operations	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	The Project is proximal to canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project is proximal to canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

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				EA	EER								
Land and Resource Use	Other Recreational Uses	The potential effects on other recreational uses include temporary disruption of the snowmobile Trunk Trail due to construction of the Project transmission alignment, changes to access to the Project area that may have previously been used for other recreation uses and changes in the natural aesthetic of the area which may detract some recreational users to avoid the Project area.	-Work with the Ontario Federation of Snowmobile Clubs to minimize potential conflicts	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps or changes access to portions of outdoor recreation areas but does not limit the ability to participate in outdoor recreation activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps or changes access to portions of outdoor recreation areas but does not limit the ability to participate in outdoor recreation activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Traditional Land Use	Plant Harvesting	There is a potential for blueberry harvesting to be affected during the construction phase of the transmission line due to clearing of vegetation.	Not applicable	EA	Level II	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level I				
				EA	The Project overlaps with areas used for traditional plant harvesting but does not limit the ability to harvest plants.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project overlaps with areas used for traditional plant harvesting but does not limit the ability to harvest plants.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Traditional Land Use	Traditional Hunting	Potential effects on traditional hunting during the construction phase include changes in access to and overlapping of the waterfowl hunting site and waterfowl hunting route and therefore limiting its use, enhanced access to hunting areas and travel corridor resulting from transmission line ROW clearing and changes to the abundance and distribution of wildlife due to construction activities that have the potential to affect hunting.	-Prohibit hunting on IAMGOLD property to provide safety for both hunters and workers	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps with portions of traditional hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with portions of traditional hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

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				EA	EER								
Traditional Land Use	Fishing	Potential effects on fishing during the construction phase of the Project include loss of traditional fishing areas, changes to access to fishing areas and changes to the abundance and distribution of fish due to construction activities.	-Design or time construction activities so there are limited or no in-water works required	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	The Project may affect a small number of waterbodies used for traditional fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project may affect a small number of waterbodies used for traditional fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Traditional Land Use	Canoeing	Due to the construction of the watercourse realignments and retention dams, canoe routes will need to be modified during the construction phase.	-To be determined through consultation with any potential canoe route users to facilitate navigation during construction and operations	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project is proximal to traditional canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project is proximal to traditional canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Traditional Land Use	Cultural, Spiritual and Ceremonial Sites	Changes in ability of Aboriginal people to access sites that may be of cultural, spiritual, ceremonial value or may increase or decrease intrinsic values such as privacy, in using sites.	-Inform workers of locally nesting raptors	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

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				EA	EER								
Visual Aesthetics	Change in Landscape from Receptor Locations	Changes in landscape due to construction of Project components that could potentially be seen from nearby receptors.	-Limit the design height of the MRA to 150 meters -Purchase and remove the trapper's cabin on Three Duck Lakes	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level II				
				EA	No perceptible change in landscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	No perceptible change in landscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Visual Aesthetics	Change in Landscape from Non-Receptor Locations	Changes in landscape due to construction of Project components that could potentially be seen from nearby bodies of water.	-Limit the design height of the MRA to 150 meters	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Visual Aesthetics	Change in Landscape due to the Transmission Line	Changes in landscape due to construction of the transmission line that could potentially be seen from nearby receptors.	Not applicable	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are reduced compared to EA. Reduced power requirement allows the Project to utilize a TLA from the Shining Tree Distribution Station.
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Socio-Economic	Labour Market	Direct, indirect and induced employment levels are expected to increase due to Project construction activities. The effect on employment is therefore positive and highly distinguishable in the regional study area and lasts for the life of the Project.	-Support employment of local community members where possible -Implement a procurement process that encourages Aboriginal and local suppliers -Cultural awareness training -Provide on-the-job Common Core training to workers -Provide training and education in local communities	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				

Table E-1: Impact Assessment Matrix for the Construction Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Socio-Economic	Business Opportunities	The construction of the Project is expected to result in increased business opportunities. There will be a positive highly distinguishable effect in the regional study area and will last for the life of the Project.	<ul style="list-style-type: none"> -Implement a procurement process that encourages Aboriginal and local suppliers -Implement a procurement policy that structures opportunities in terms of package size and bid evaluation to reflect Aboriginal and local capabilities -Establish a system to monitor and report on local and regional content with mechanisms to adapt procurement policies where required -Support capacity building for local businesses 	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					—
Socio-Economic	Government Finances	<p>The Project is expected to produce substantial revenues for Federal and Provincial governments through corporate taxes and royalties, indirect taxes on products, indirect taxes on production and direct taxes on income earned from economic activity.</p> <p>The residual effect is considered positive effect that lasts for the life of the Project and is expected to result in a measurable change in revenues outside of the normal range of variability for the Provincial and Federal governments.</p>	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					—
Socio-Economic	Population and Demographics	<p>The Project will create employment during the construction, operation and closure phases. This has the potential to positively affect, directly and indirectly, the population and demographics of regional study area communities. Regionally: Residual positive (growth) effects but not likely to be noticeable are expected in Timmins and Sudbury when construction begins. Locally: positive, highly distinguishable effect and may result in the need for investment by the community or government that lasts for the construction phase.</p>	<ul style="list-style-type: none"> -Support employment of local community members where possible -Implement a procurement process that encourages Aboriginal and local suppliers -Cultural awareness training -Provide on-the-job Common Core training to workers -Provide training and education in local communities 	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					—
Socio-Economic	Community Health Conditions	This Project has the potential to affect the existing health of the population in a variety of ways including the interaction of the workers with the local population, increased employment and income. This interaction could result in a more positive or adverse lifestyle depending on individual choices and the on-site work environment.	<ul style="list-style-type: none"> -Provide access to long distance phone service for employees -Provide for basic worker health care -Provide information on health-related issues such as nutrition, sexually transmitted infections, alcohol abuse etc. to workers -Provide worker transportation to and from Project site 	EA	Level I	Level III	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level II				
				EA	Effects are within the normal range of variability.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects are within the normal range of variability.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-1: Impact Assessment Matrix for the Construction Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Socio-Economic	Housing and Temporary Accommodation	<p>The Project will interact with permanent and temporary housing through the need to provide housing to the temporary workforce, migrants seeking work and others who are attracted to the region as it becomes a more robust economy.</p> <p>Locally: Residual housing effects in the local study area, while considered positive, are distinguishable and require investment by the community or government to address and be experienced in the construction phase.</p>	<p>-Develop on-site camp</p> <p>-Monitor indicators of Project housing effects and adapting management measures</p>	EA	Level I	Level III	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level II				
				EA	Effects are manageable within the stock of existing housing and temporary accommodations.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects are manageable within the stock of existing housing and temporary accommodations.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Public Utilities	<p>The Project has the potential to effect demands on public utilities such as water and wastewater, electricity, and solid waste systems because the Project will require them on-site and an increase in population may result in growth in housing and businesses with associated demands for public utilities.</p> <p>Regionally: Population changes in Timmins and Sudbury are low and therefore not expected to result in noticeable increased demands for any public utilities.</p>	-Work with Gogama Local Service Board	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	Effects may require investment to meet Project needs that are within the capabilities of communities or governments.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects may require investment to meet Project needs that are within the capabilities of communities or governments.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Education	<p>The Project could intersect with the education and training sector in a variety of ways including increases in population of school aged children and increased demands for post-secondary school training to access Project employment effects (direct, indirect and induced).</p> <p>The residual effect on primary and secondary education is considered positive since it results in a slight increase in enrolment in elementary schools in the local study area and in enrolment in high schools in the regional study area (Timmins and Sudbury).</p>	-Support post secondary education of workers	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				

Table E-1: Impact Assessment Matrix for the Construction Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Socio-Economic	Emergency Services	The Project will affect emergency services due to increases in population; increases in disposable income levels due to direct and indirect employment related to the Project; and through increases in Project-related accidents that require medical attention.	-Maintain open communication with local service providers to monitor existing social issues	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	Effects may require investment to meet Project needs that are within the capabilities of emergency service providers.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Effects may require investment to meet Project needs that are within the capabilities of emergency service providers.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Socio-Economic	Other Community Services	The Project could affect community services as a result of population changes and residency decisions, and the extent to which direct or indirect population growth in certain communities may place pressure on their services and infrastructure. Regionally: Residual effects on community services in Timmins and Sudbury are expected to be within the normal range of variability and last throughout the life of the Project. Locally: Positive effects for recreation services and negative due to lack of services in local study area communities (for shelters, victims' services, child care and health care).	-Implement the Zero Harm policy at the Project site	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	Effects may require investment to meet Project needs that are within the capabilities of community service providers.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects may require investment to meet Project needs that are within the capabilities of community service providers.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Transportation	The effects of the Project on traffic volumes will occur on Highway 144 as vehicular traffic will be the main mode of transportation used to transport goods, services and workers to and from the Project site. Rail may also be used during the construction phase to transport some Project materials to Gogama, to be offloaded there and transported by truck to the Project site.	-Road safety awareness training -Schedule major equipment delivery and removal -Schedule shuttle bus travel and shifts -Ensure heavy load sizing and seasonal load restrictions -Transport oversized loads in parts -Report wildlife sightings on highways	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	Traffic may increase but does not require investment in roadway infrastructure to accommodate Project demands.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Traffic may increase but does not require investment in roadway infrastructure to accommodate Project demands.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-1: Impact Assessment Matrix for the Construction Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Archaeology	Effect on Heritage Sites	Changes to physical or cultural heritage resources including structures, sites or things of historical, archaeological, paleontological or architectural importance that may be overprinted by Project components.	-Completed mitigation - archaeological assessments Stages 1, 2, 3 and 4, as required - Buffer zones are established, as required	EA	Level I	Level II	Level I	Level III	Level III	Not Significant	Not Significant	Not likely	Impacts are comparable with the EA. Changes in MTCS protocols regarding the curation and storage of artifacts. Discussions with MFN are in progress to identify suitable public institution(s). Inspecting newly-exposed shorelines.
				EER	Level I	Level I	Level I	Level III	Level III				
				EA	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is not reversible				
				EER	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is not reversible				
Cultural Heritage Landscapes and Built Heritage Resources	Effect on Heritage Resources	Changes to cultural heritage resources including built heritage and/or cultural heritage landscapes, as regulated by the Ontario Heritage Act. Heritage resources could potentially be affected by the Project.	Not applicable	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

E2 – Impact Assessment Matrix – Operations Phase

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Air Quality	Suspended Particulate Matter (Dust) as Total Particulate Matter (PM ₁₀)	Changes in air quality due to particulate emissions from operations activities. These activities include onsite road traffic, mine rock management, primary crushing, drilling, blasting, loading and hauling of ore and mine rock in the open pit.	-DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage -IAMGOLD is committed to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level II	Level I	Level I	Not Significant	Not Significant	Likely	Project related impacts are comparable with the EA. Reduced pit size requires a smaller fleet of vehicles and reduced production requirements which reduces emissions.
				EER	Level II	Level II	Level II	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<120 µg/m ³).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<120 µg/m ³).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Particulate Matter (PM ₁₀); 24 Hour Average	Changes in air quality due to particulate emissions from operations activities. These activities include onsite road traffic, mine rock management, primary crushing, drilling, blasting, loading and hauling of ore and mine rock in the open pit.	-DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage -IAMGOLD is committed to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level II	Level I	Level I	Not Significant	Not Significant	Likely	Project related impacts are comparable with the EA. Reduced pit size requires a smaller fleet of vehicles and reduced production requirements which reduces emissions.
				EER	Level II	Level II	Level II	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<50 µg/m ³).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<50 µg/m ³).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); 24 Hour Average	Changes in air quality due to particulate emissions from operations activities. These activities include onsite road traffic, mine rock management, primary crushing, drilling, blasting, loading and hauling of ore and mine rock in the open pit.	-DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage -IAMGOLD is committed to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level II	Level I	Level I	Not Significant	Not Significant	Likely	Project related impacts are comparable with the EA. Reduced pit size requires a smaller fleet of vehicles and reduced production requirements which reduces emissions.
				EER	Level II	Level II	Level II	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<25 µg/m ³).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<25 µg/m ³).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); Annual Average	Changes in air quality due to particulate emissions from operations activities. These activities include onsite road traffic, mine rock management, primary crushing, drilling, blasting, loading and hauling of ore and mine rock in the open pit.	-DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage -IAMGOLD is committed to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level I	Level II	Level III	Level I	Not Significant	Not Significant	Likely	Project related impacts are comparable to the EA. Reduced pit size requires a smaller fleet of vehicles and reduced production requirements which reduces emissions.
				EER	Level II	Level I	Level II	Level III	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<8.8 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<8.8 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Air Quality	Sulphur Oxides (SOx), Mainly as Sulphur Dioxide (SO2)	Changes in air quality due to gaseous emissions from Project site activities, mainly from the cyanide destruction process but also from vehicle exhausts.	<ul style="list-style-type: none"> -Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emission requirements -Use of low sulphur fuel -Closed loop delivery of SO₂ gas for cyanide destruction 	EA	Level II	Level I	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level II	Level III	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Nitrogen Dioxide (NO2): 24 Hour Average	Changes in air quality due to gaseous emissions from Project site activities, mainly blasting but also vehicle exhausts.	<ul style="list-style-type: none"> -Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emission requirements -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage 	EA	Level II	Level II	Level II	Level II	Level I	Not Significant	Not Significant	Likely	Project related impacts are comparable with the EA. Reduced pit size requires a smaller fleet of vehicles and reduced production requirements which reduces emissions
				EER	Level II	Level II	Level II	Level II	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<200 µg/m3).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<200 µg/m3).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
Air Quality	Nitrogen Dioxide (NO2): 1 Hour Average	Changes in air quality due to gaseous emissions from Project site activities, mainly blasting but also vehicle exhausts.	<ul style="list-style-type: none"> -Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emission requirements -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage 	EA	Level II	Level III	Level II	Level I	Level I	Not Significant	Not Significant	Likely	Project related impacts are comparable with the EA. Reduced pit size requires a smaller fleet of vehicles and reduced production requirements which reduces emissions
				EER	Level II	Level III	Level II	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<400 µg/m3).	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<400 µg/m3).	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Arsenic: 24 Hour Average	Changes in air quality due to particulate emissions from Project site activities, mainly handling of ore and mine rock.	<ul style="list-style-type: none"> -DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage 	EA	Level I	Level I	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level II	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Air Quality	Lead	Changes in air quality due to particulate emissions from Project site activities, mainly handling of ore and mine rock.	-DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage	EA	Level I	Level I	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level II	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Manganese: 24 Hour Average	Changes in air quality due to particulate emissions from Project site activities, mainly handling of ore and mine rock.	-DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage	EA	Level II	Level II	Level II	Level II	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level I					
				EA	Concentrations are below Federal and/or Provincial criteria (<0.2 µg/m3).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<0.2 µg/m3).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
Air Quality	VOCs	Changes in air quality due to gaseous emissions from Project site activities, mainly operation of the landfill and vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emission requirements	EA	Level II	Level I	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level II	Level III	Level II				
				EA	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Air Quality	Other Key Metals	Changes in air quality due to particulate emissions from Project site activities, mainly handling of ore and mine rock.	-DBMP -TMF DBMP -Dust collection systems -Control measures provided by equipment supplier for drilling -Blasting to occur mid-day based on favourable climatic conditions -Follow manufacturer's recommended guidelines regarding water infiltration and time of explosives usage	EA	Level II	Level II	Level II	Level II	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level II	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Air Quality	Hydrogen Cyanide (HCN): 24 Hour Average	Changes in air quality due to gaseous emissions from Project site activities, mainly operation of outdoors cyanide leach tanks.	-Cyanide destruction at the ore processing plant	EA	Level II	Level III	Level II	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level III	Level II	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<8 µg/m3).	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<8 µg/m3).	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
Noise & Vibration	Daytime Noise Level	Changes in noise levels due to activities at the Project site, including open pit operations, mine rock and ore haulage, additional vehicle movements at the site, operation of the ore processing plant.	-Site equipment will be operated to meet NPC-300 operational noise limits	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level I				
				EA	Noise level above daytime baseline (44 dBA) and below or equal to 45 dBA.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Noise level above daytime baseline (44 dBA) and below or equal to 45 dBA.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Noise & Vibration	Nighttime Noise Level	Changes in noise levels due to activities at the Project site, including open pit operations, mine rock and ore haulage, additional vehicle movements at the site, operation of the ore processing plant.	-Site equipment will be operated to meet NPC-300 operational noise limits -To meet NPC-300 nighttime criteria, sensitive receptors may be purchased	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Nighttime noise levels remain below NPC-300 limits with the optimized layout.
				EER	Level II	Level II	Level II	Level III	Level I				
				EA	Noise level above nighttime baseline (34 dBA) and below or equal to 40 dBA.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Noise level above nighttime baseline (34 dBA) and below or equal to 40 dBA.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Noise & Vibration	Blasting Noise Level	Changes in air vibration levels due to Project site activities, i.e., open pit blasting	-Blasting charge size in the open pit is planned to be in compliance with NPC-119	EA	Level II	Level II	Level II	Level II	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level II	Level I				
				EA	Blasting noise level above the adjusted baseline noise level (39 dBA) but below the regulatory limit of 120 dBL.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Blasting noise level above the adjusted baseline noise level (39 dBA) but below the regulatory limit of 120 dBL.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Noise & Vibration	Blasting Vibration Level	Changes in ground vibration levels due to Project site activities, i.e., open pit blasting.	-Blasting charge size in the open pit is planned to be in compliance with NPC-119	EA	Level II	Level II	Level II	Level II	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level II	Level I				
				EA	Blasting vibration level at the receptor is above perceptible vibration level (0.14 mm/s) and below the regulatory limit (10 mm/s).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
				EER	Blasting vibration level at the receptor is above perceptible vibration level (0.14 mm/s) and below the regulatory limit (10 mm/s).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is fully reversible				
Hydrogeology	Groundwater Levels (Water Table)	Changes in groundwater levels due to open pit development.	Not applicable	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Given that the footprint of the pit has reduced and is within the originally proposed extent for which the 3d model was constructed to predict water level draw downs, the effects predicted are anticipated to be similar
				EER	Level II	Level II	Level II	Level III	Level I				
				EA	Change in the water table elevation is predicted to be between 1 and 5 m.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Change in the water table elevation is predicted to be between 1 and 5 m.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Hydrology & Climate	Change in Flow	Streamflow changes due to water intake and discharge in addition to continued operation of various Project components, such as watercourse realignments, TMF and MRA.	-Realignment channels and dams	EA	Level I	Level II	Level II	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Fewer watercourse alignments are required for the Project, which directs flows to Three Duck Lake (Upper) however increase in flow is not expected to change the hydrological characteristics of Three Duck Lake (Upper).
				EER	Level I	Level II	Level II	Level III	Level II				
				EA	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Water Quality	Change in Water Quality	Changes in water quality due to Project discharges and runoff. Parameters potentially exceeding baseline include: ammonia, arsenic, barium, calcium, chloride, cobalt, copper, molybdenum, nickel, nitrate, phosphorus, potassium, sodium, strontium, sulphate, uranium.	<ul style="list-style-type: none"> -Best Management Practices (BMPs) and engineering design to limit soil erosion and mobilization/transport of sediments from disturbed areas -Treatment of process water; construction and operation of engineered water management systems to collect runoff and seepage from the TMF; reclaim water; returned (or recycled) to the process plant; use of liners on starter tailings dams to limit seepage losses during the early years of operations -Management of solid domestic and industrial waste in a permitted landfill, including the use of BMPs -Inclusion of PAG rock within the bulk of the MRA -BMPs for explosives use -Treatment of sewage -Monitoring and treatment of effluent, monitoring of groundwater quality and remedial action, as required 	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Average arsenic concentrations slightly exceed water quality guidelines on an infrequent basis.
				EER	Level III	Level II	Level II	Level I	Level II				
Terrestrial Biology	Upland Plant Community Types	Continued vegetation loss due to site clearing in the construction phase. The Project is predicted to alter approximately 1,800 ha of the land cover.	<ul style="list-style-type: none"> -Rehabilitate habitat for plants and wildlife as practicable -Limit / prevent the transfer of invasive plant species from equipment and imported soil 	EA	Level I	Level I	Level II	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level II	Level III	Level II				
Terrestrial Biology	Wetlands	Continued loss of wetland areas due to site clearing during the construction phase. The Project is predicted to alter approximately 185 ha of wetlands.	Not applicable	EA	Level I	Level I	Level II	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level II	Level III	Level II				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology	Vegetation Species at Risk, Species of Special Concern and Provincially Rare Species	No predicted effect on Species at Risk, Species of Special Concern and Provincially Rare Species as none were identified during baseline data collection. Therefore, this effect is not assessed.	Not applicable	EA EER	— —	— —	— —	— —	— —	— —	No Change from EA	—	No Change from EA
Terrestrial Biology	Ungulates	Continued potential for change in ungulates population abundance and distribution due to habitat removal during the construction phase. Site construction will remove an estimated 1,106 ha of suitable moose winter habitat and 1,074 ha of suitable moose summer habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA EER	Level I Level I	Level III Level III	Level II Level II	Level III Level III	Level II Level II	Not Significant	Not Significant	Not Likely	Project related impacts are reduced compared to EA. Less habitat being disturbed due to a reduced Project footprint
				EA EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EA EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Furbearers	Continued potential for change in furbearers population abundance and distribution due to habitat removal during the construction phase. Site construction will remove an estimated 355 ha of suitable beaver habitat. Between 1,074 and 1,266 ha of suitable black bear, eastern wolf, and American marten habitat will be removed from construction of the Project. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Limit risk of nest destruction and mortality of migratory birds -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife 	EA EER	Level I Level I	Level III Level III	Level II Level II	Level III Level III	Level II Level II	Not Significant	Not Significant	Not Likely	Project related impacts are reduced compared to EA. Less habitat being disturbed due to a reduced Project footprint
				EA EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EA EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Migratory Birds	Continued potential for change in migratory birds population abundance and distribution due to habitat removal during the construction phase. Site construction will remove between 99 and 216 ha of suitable nightjar, olive-sided flycatcher, rusty blackbird, and waterbird habitat. The Project is predicted to remove 1,203 and 1,233 ha of suitable Canada warbler and tree-nesting raptor habitat, respectively. The Project is not anticipated to remove any suitable short-eared owl habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Reduce the risk of mortality to birds and bats -Reduce risk of mortality to wildlife 	EA EER	Level I Level I	Level II Level II	Level II Level II	Level III Level III	Level II Level II	Not Significant	Not Significant	Not Likely	Project related impacts are comparable to the EA, with the exception of a shorter transmission line alignment which requires fewer disturbances.
				EA EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EA EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology	Wildlife Species at Risk	Continued potential for change in wildlife species at risk population abundance and distribution due to habitat removal during the construction phase. Site construction will remove an estimated 1,233 ha of suitable bat habitat. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Vehicles to drive slowly along the transmission line ROW -Ensure that ongoing clearing is constrained to the necessary area of clearance (the ROW) -Use mechanical brushing 	EA	Level I	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level II	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology - TL	Vegetation Communities	Continued vegetation loss due to transmission line ROW clearing during the construction phase. The Project is predicted to result in the removal of 549.2 ha of forested communities including 146 ha of coniferous swamp.	<ul style="list-style-type: none"> -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level I	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level II	Level III	Level I				
				EA	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Ungulates - Moose	Continued potential for change in moose population abundance and distribution due to habitat removal during the construction phase.	<ul style="list-style-type: none"> -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level III	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level II	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Furbearers - Wolves	Continued potential for change in wolves population abundance and distribution due to habitat removal during the construction phase. Increased levels of trapping or hunting can negatively affect local wolf population through increased mortality rates and increased noise from recreational use can displace wolves as well as their prey.	<ul style="list-style-type: none"> -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level III	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level II	Level III	Level I				
Terrestrial Biology - TL	Furbearers - American Marten	Continued potential for change in American marten population abundance and distribution due to habitat removal during the construction phase. Increased levels of trapping have the potential to negatively affect local marten populations.	<ul style="list-style-type: none"> -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level III	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level II	Level III	Level I				
Terrestrial Biology - TL	Furbearers - Black Bear	Continued potential for change in black bear population abundance and distribution due to habitat removal during the construction phase. Increased levels of trapping or hunting can negatively affect local populations.	<ul style="list-style-type: none"> -Enforce speed limits along Project roads -Reduce the risk of mortality to birds and bats 	EA	Level I	Level III	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level II	Level III	Level I				
Terrestrial Biology - TL	Bats	Continued potential for change in bats population abundance and distribution due to habitat removal during the construction phase.	<ul style="list-style-type: none"> -Limit risk of nest destruction and mortality of migratory birds -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife 	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level II	Level III	Level I				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Migratory Birds	Continued potential for change in migratory birds population abundance and distribution due to habitat removal during the construction phase. Additional potential effects include collisions with power lines and electrocutions.	<ul style="list-style-type: none"> -Limit risk of nest destruction and mortality of migratory birds -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife -Minimize the level of potentially disturbing activities near any known or subsequently discovered active raptor nest sites during the raptor breeding season until nests are vacated -Remove carcasses of road-killed animals or any other carcasses found onsite in a timely manner to limit the attraction of wildlife 	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level II	Level III	Level I				
Terrestrial Biology - TL	Raptors	Continued potential for change in raptors population abundance and distribution due to habitat removal during the construction phase. Additional potential effects include collisions with power lines and electrocutions.	<ul style="list-style-type: none"> -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife 	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level II	Level III	Level I				
Terrestrial Biology - TL	Species at Risk, Species of Special Concern and Provincially Rare Species	Continued potential for change in population abundance and distribution for species at risk, species of concern and provincially rare species due to habitat removal during the construction phase. Additional potential effects include collisions with power lines and electrocutions.	-Incorporate the MOE D-series guidelines	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level II	Level III	Level I				
Aquatic Biology	Aquatic Toxicity	Effects on aquatic species due to changes in water quality, primarily related to Project discharges.	-Site specific water quality objectives will need to be developed for these substances or effluent treatment will need to be employed such that protection of aquatic life is assured	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are reduced compared to EA. Water quality predictions indicated that fewer substances were elevated above benchmarks relative to the EA, and concentrations of most substances achieve water quality guidelines with the exception of arsenic, which is expected to periodically exceed the water quality guideline (CCME) during the dry year (1 in 25 year). However, the maximum predicted monthly average concentration is only marginally over the guidelines (0.0071 mg/L) and does not exceed toxicity thresholds.
				EER	Level I	Level II	Level II	Level III	Level I				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Aquatic Biology	Commercial, Recreational, Aboriginal Fisheries	Loss of aquatic habitat due to construction of Project components. Lentic habitat affected includes Mollie River, Clam Creek and Bagsverd Creek. Lentic habitat affected includes Côté Lake, Beaver Pond, Clam Lake, Little Clam Lake, Unnamed Pond #3 and East Beaver Pond.	<p>-Spawning habitat within the water bodies affected will be included in the Fisheries Act Authorization for the site as a loss of habitat and will be addressed through the compensation plan (including modifications to ensure flow, fish passage and use of habitats)</p> <p>-Design of the realignment channels will incorporate the life cycle requirements of the resident fish species and promote, where possible, an increase in habitat.</p>	EA	Level I	Level I	Level I	Level III	Level II	Not Significant	Not Significant	Not likely	Impacts are reduced compared to EA. The habitat area to be lost is approx. 33% less than the EA due to a reduced open pit footprint. The resulting habitat borders the open pit and will be affected by blasting until the mining level of the open pit is below the area of effect.
				EER	Level I	Level I	Level I	Level II	Level II				
				EA	There is no measurable residual effect to communities or populations.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to communities or populations.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is partially reversible				
Aquatic Biology	Commercial, Recreational, Aboriginal Fisheries	Effects on commercial, recreational and Aboriginal fisheries due to open pit blasting and because newly established watercourse realignments may not be fully established.	<p>-Relocate fish (representative numbers of the community) to established habitats. Time relocation relative to life cycle requirements and environmental conditions</p> <p>-Removal of terrestrial vegetation prior to flooding will reduce the potential for methyl mercury production through decaying of terrestrial vegetation</p> <p>-Design water intake structures to meet DFO requirements to prevent/limit fish impingement</p>	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	Not Significant	Not Likely	Impacts are reduced compared to EA, with a 33% reduction in areas flooded for the creation of habitat
				EER	Level I	Level II	Level II	Level III	Level I				
				EA	There is no measurable residual effect to communities or populations.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to communities or populations.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Aquatic Biology	Loss of Aquatic Habitat	Continued loss of aquatic habitat due to Project footprint. Lentic habitat affected includes Mollie River, Clam Creek and Bagsverd Creek. Lentic habitat affected includes Côté Lake, Beaver Pond, Clam Lake, Little Clam Lake, Unnamed Pond #3 and East Beaver Pond.	<p>-Time construction of watercourse realignments to allow for vegetation growth for one season prior to commissioning of watercourse realignments, if possible or conduct planting of aquatic vegetation immediately following commissioning of channel realignments to promote the establishment of vegetation within the newly constructed habitats</p> <p>-Use appropriate erosion control methods</p>	EA	Level I	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level II	Level III	Level II				
				EA	Less than 10% of lentic habitat (stream length - m) and /or lentic habitat (lake area - m2) within the local study area.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Less than 10% of lentic habitat (stream length - m) and /or lentic habitat (lake area - m2) within the local study area.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Land Use Plans and Policies	Potential effects on land use planning areas during the operations phase of the Project may include overlapping of land use policy area where the use would not be allowed and creating land use conflicts.	-Work with claim holders to identify access changes and negotiate access agreements if there is any requirement to use or cross IAMGOLD properties	EA	Level II	Level I	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level II	Level III	Level II				
				EA	The Project overlaps very small portions of land use areas that may be incompatible with mining activities but will not impede the designated land use.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps very small portions of land use areas that may be incompatible with mining activities but will not impede the designated land use.	Effect is restricted to the Project footprint	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Mineral Exploration	Changes in access to other claim areas or effects on the ability to exercise exploration activities within these claim areas during the operations phase.	-Re-route the Chester Access Road south of the Project site	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	-	Likely	Impact is no longer applicable. IAMGOLD has acquired the mineral claims within the Project area.
				EER									
				EA	Concentrations are below Federal and/or Provincial criteria (<120 ug/m3).	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs infrequently	Effect is fully reversible				
				EER	-	-	-	-					
Land and Resource Use	Forestry	The potential effects on forestry due to the operations phase of the Project include overlapping, and therefore, loss of Forest Management Units (FMUs) area, long-term removal of forest resources (at the Project site footprint and along transmission line alignment) and changes to access along the Cross-Country TLA and at the Project site.	-To be determined through consultation between the MNR and any affected BMA holders -Enforce speed limits and warn IAMGOLD personnel of areas of high wildlife activity and crossings -Prohibit hunting on IAMGOLD property -Food wastes generated on-site will be appropriately disposed of to reduce the attraction of wildlife	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level II				
				EA	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Hunting	Potential effects on hunting during the operations phase of the Project include overlapping of, and therefore, limiting use of or access to WMUs, overlapping of, and therefore, limiting use of or access to BMAs, increased access to BMAs along the TLA alternatives and changes to the abundance and distribution of wildlife that could affect hunting success rates due to operations activities.	-To be determined through consultation between the MNR and affected trappers	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level II				
				EA	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Trapping	A number of trapline areas overlap with the Project site and TLA alternatives. Potential effects on trapping during the operations phase of the Project include loss of trapline areas or trap cabins, changes to access to trapline areas or trap cabins and changes to the abundance and distribution of furbearers that could affect trapping success rates, and therefore, trapping income due to changes in biophysical or anthropogenic conditions.	Not applicable	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level II				
				EA	The Project overlaps with small portions of trapline areas and affects a few individual trappers and/or will not limit the ability to carry out trapping activities.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with small portions of trapline areas and affects a few individual trappers and/or will not limit the ability to carry out trapping activities.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Recreational and Commercial Fishing	The Project site and TLAs overlap with Fisheries Management Zone (FMZ) 8 and several bait harvest areas. Potential effects on fishing during the operations phase of the Project include loss of bait harvest areas or recreational fishing areas, changes to access to fishing areas and changes to the abundance and distribution of fish that could affect fishing success rates, and therefore, any commercial fishing income (such as for bait fish harvesters) due to changes in biophysical or anthropogenic conditions.	-Limit recreational boating for workers while they are staying at the work camp on-site	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level I				
Land and Resource Use	Cottages and Outfitters	Numerous cottages and outfitters are located near the Project site. Potential effects on the cottagers may include decreased enjoyment and leisure lifestyle associated with cottaging due to operation noise and dust; perceived effects to water quality, quantity and area aesthetics and increased vehicle traffic. The potential effects of the Project on the outfitters may include decrease in areas recommended by outfitters to clientele (related to effects on BMAs), perception that the area is not pristine or natural which could detract clientele and increase local clientele due to increased workforce in area (staying or hunting, etc).	-To be determined through consultation with any potential canoe route users to facilitate navigation during construction and operations	EA	Level II	Level I	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level II	Level III	Level I				
Land and Resource Use	Navigable Waters	Due to the continued presence of the watercourse realignments and retention dams during the operations phase, use of canoe routes may be disturbed during the operations phase.	Not applicable	EA	Level II	Level I	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level II	Level III	Level I				
Land and Resource Use	Other Recreational Uses	The potential effects on other recreational uses include changes to access to areas that may have previously been used for other recreational uses and changes in the natural aesthetic of the area which may detract some recreational users.	-Vegetation clearing will avoid the use of chemical agents	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level II				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Traditional Land Use	Plant Harvesting	There is a potential for blueberry harvesting to be affected during the operations phase of the transmission line due to periodic clearing of vegetation.	-Prohibit hunting on IAMGOLD property to provide safety for both hunters and workers	EA	Level II	Level I	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level II	Level III	Level I				
Traditional Land Use	Traditional Hunting	Potential effects on traditional hunting during the operations phase include changes in access to and overlapping of the waterfowl hunting site and waterfowl hunting route and therefore limiting its use, enhanced access to hunting areas and travel corridor resulting from transmission line right-of-way clearing and changes to the abundance and distribution of wildlife due to operations activities that have the potential to affect hunting. Additionally, the transmission line corridor may attract non-traditional hunters to hunt in the area that is currently principally used for hunting by the Mattagami First Nation.	Not applicable	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	Not Significant	Likely	Project related impacts are comparable to the EA. The shorter TLA will have fewer or equivalent effects on hunting compared to the EA.
				EER	Level II	Level II	Level II	Level III	Level II				
Traditional Land Use	Fishing	Potential effects on fishing during the operations phase of the Project include loss of traditional fishing areas, changes to access to fishing areas and changes to the abundance and distribution of fish due to operations activities.	-To be determined through consultation with any potential canoe route users to facilitate navigation during construction and operations	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. The optimized Project footprint and reduction in watercourse realignments will have fewer or equivalent effects on fishing compared to the EA.
				EER	Level II	Level II	Level II	Level III	Level I				
Traditional Land Use	Canoeing	Due to the continued presence of the watercourse realignments and retention dams during the operations phase, use of canoe routes may be disturbed during the operations phase.	-Inform workers of locally nesting raptors	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level II				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Traditional Land Use	Cultural, Spiritual and Ceremonial Sites	Changes in ability of Aboriginal people to access sites that may be of cultural, spiritual, ceremonial value or may increase or decrease intrinsic values such as privacy, in using sites.	-Limit the design height of the MRA to 150 meters -Purchase and remove the trapper's cabin on Three Duck Lakes	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level II	Level III	Level I				
				EA	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Visual Aesthetics	Change in Landscape from Receptor Locations	Changes in landscape due to the development of Project components (TMF, MRA and low-grade ore stockpile) that could potentially be seen from receptor locations.	-Limit the design height of the MRA to 150 meters -Purchase and remove the trapper's cabin on Three Duck Lakes	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. With the exception of the TMF visible from a receptor on Schist Lake, the number of receptors that will have the viewscape affected by the Project is consistent with the EA.
				EER	Level II	Level II	Level II	Level III	Level II				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Visual Aesthetics	Change in Landscape from Non-Receptor Locations	Changes in landscape due to the development of Project components (TMF, MRA and low-grade ore stockpile) that could potentially be seen from nearby waterbodies.	- Limit the design height of the MRA to 150 meters	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. The ore stockpiles, which are relatively small features compared to the TMF and MRA will be seen from portions of Bagsverd Lake and Three Duck Lakes, which is consistent with the EA. It is expected that the changes in the visual landscape during the Operations phase will be perceptible but will not affect enjoyment of the viewscape.
				EER	Level II	Level II	Level II	Level III	Level II				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Visual Aesthetics	Change in Landscape due to the Transmission Line	Changes in landscape due to the presence of the transmission line that could potentially be seen from receptor locations.	Not applicable	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are reduced compared to EA. The presence of the transmission line is expected to result in a perceptible change in landscape, which does not affect enjoyment of the viewscape. The reduced length of the TLA and utilization of the existing ROW will have fewer or equivalent effects compared to the EA.
				EER	Level II	Level II	Level II	Level III	Level I				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER
				EA	EER								
Socio-Economic	Labour Market	Direct, indirect and induced employment levels are expected to increase due to Project operations activities. The effect on employment is positive and highly distinguishable in the regional study area and lasts for the life of the Project.		EA	—	—	—	—	—	—	—	—	Not Applicable
				EER	—	—	—	—	—				
Socio-Economic	Business Opportunities	The operation of the Project is expected to result in increased business opportunities. There will be a positive highly distinguishable effect in the regional study area and will last for the life of the Project.	<ul style="list-style-type: none"> -Implement a procurement process that encourages Aboriginal and local suppliers -Implement a procurement policy that structures opportunities in terms of package size and bid evaluation to reflect Aboriginal and local capabilities -Establish a system to monitor and report on local and regional content with mechanisms to adapt procurement policies where required -Support capacity building for local businesses 	EA	—	—	—	—	—	—	—	—	Not Applicable
				EER	—	—	—	—	—				
Socio-Economic	Government Finances	The Project is expected to produce substantial revenues for Federal and Provincial governments through corporate taxes and royalties, indirect taxes on products, indirect taxes on production and direct taxes on income earned from economic activity. The residual effect is considered positive effect that lasts for the life of the Project and is expected to result in a measurable change in revenues outside of the normal range of variability for the Provincial and Federal governments.	Not applicable	EA	—	—	—	—	—	—	—	—	Not Applicable
				EER	—	—	—	—	—				
Socio-Economic	Population and Demographics	The Project has the potential to affect the population of the local and regional study area communities through the employment which would provide reason for people to remain in the region or by causing migrants to move to the area for jobs that cannot be filled locally. Regionally: Residual positive (growth) effects but not likely to be noticeable are expected in Timmins and Sudbury Locally: positive, highly distinguishable effect and may result in the need for investment by the community or government.	<ul style="list-style-type: none"> -Support employment of local community members where possible -Implement a procurement process that encourages Aboriginal and local suppliers -Cultural awareness training -Provide on-the-job Common Core training to workers -Provide training and education in local communities -Identify and implement basic skills and technical training for Aboriginal and local community members to upgrade marketable skills and increase capacity 	EA	—	—	—	—	—	—	—	—	Not Applicable
				EER	—	—	—	—	—				
Socio-Economic	Community Health Conditions	The Project is likely to interact with community health through the provision of long-term employment and a stable income which could positively or negatively affect an individual's health depending on life style choices.	<ul style="list-style-type: none"> -Provide access to long distance phone service for employees -Provide for basic worker health care -Provide information on health-related issues such as nutrition, sexually transmitted infections, alcohol abuse etc. to workers -Provide worker transportation to and from Project site 	EA	Level I	Level III	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level II	Level III	Level II				
				EA	Effects are within the normal range of variability.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
EER	Effects are within the normal range of variability.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible								

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Socio-Economic	Housing and Temporary Accommodation	The Project will interact with permanent and temporary housing through the need to provide housing to the temporary workforce, migrants seeking work and others who are attracted to the region as it becomes a more robust economy. Locally, Residual housing effects in the local study area, while considered positive, are distinguishable and require investment by the community or government to address.	-Maintain on-site camp during operations -Monitor indicators of Project housing effects and consider adapting management measures	EA	Level I	Level III	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level II	Level III	Level II				
				EA	Effects are manageable within the stock of existing housing and temporary accommodations.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects are manageable within the stock of existing housing and temporary accommodations.	Effect extends into the regional study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Public Utilities	The Project has the potential to create additional demands on water and wastewater treatment facilities, solid waste facilities and power supplies from population increases in local and regional study area communities. Regionally, Population changes in Timmins and Sudbury are low and therefore not expected to result in noticeable increased demands for any public utilities.	-Work with Gogama Local Service Board	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level II				
				EA	Effects may require investment to meet Project needs that are within the capabilities of communities or governments.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects may require investment to meet Project needs that are within the capabilities of communities or governments.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Education	The residual effect on primary and secondary education is considered positive since it results in a slight increase in enrolment in elementary schools in the local study area and in enrolment in high schools in the regional study area (Timmins and Sudbury).	-Support post-secondary education of workers	EA	—	—	—	—	—	—	No Change from EA	Likely	No Change from EA
				EER	—	—	—	—	—				
Socio-Economic	Emergency Services	The Project will affect emergency services due to increases in population; increases in disposable income levels due to direct and indirect employment related to the Project; and through increases in Project-related accidents that require medical attention.	-Maintain open communication with local service providers to monitor existing social issues	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level I				
				EA	Effects may require investment to meet Project needs that are within the capabilities of emergency service providers.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Effects may require investment to meet Project needs that are within the capabilities of emergency service providers.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-2: Impact Assessment Matrix for the Operations Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood of the Effect	Comparison between EA and EER	
Socio-Economic	Other Community Services	During operations, the Project is expected to result in population changes which, in turn, could affect the delivery of community services such as employment assistance, shelters and victims, child care, recreation, and health care services. Regionally: Residual effects on community services in Timmins and Sudbury are expected to be within the normal range of variability and last throughout the life of the Project. Locally: Positive effects for recreation services and negative due to lack of services in local study area communities (for shelters, victims' services, child care and health care).	-Implement the Zero Harm policy at the Project site	EA	Level II	Level II	Level II	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level II				
				EA	Effects may require investment to meet Project needs that are within the capabilities of community service providers.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects may require investment to meet Project needs that are within the capabilities of community service providers.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Transportation	During operations, the Project is likely to affect the transportation system within the local and regional study area through the transport of products, general goods and workers.	-Road safety awareness training -Schedule major equipment delivery and removal -Schedule shuttle bus travel and shifts -Ensure heavy load sizing and seasonal load restrictions -Transport oversized loads in parts -Report wildlife sightings on highways	EA	Level II	Level II	Level II	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level II	Level III	Level I				
				EA	Traffic may increase but does not require investment in roadway infrastructure to accommodate Project demands.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Traffic may increase but does not require investment in roadway infrastructure to accommodate Project demands.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Archaeology	Effect on Heritage Sites	Changes to physical or cultural heritage resources including structures, sites or things of historical, archaeological, paleontological or architectural importance that may be overprinted by Project components.	-Completed mitigation - archaeological assessments Stages 1, 2, 3 and 4, as required -Buffer zones are established, as required	EA	Level I	Level II	Level II	Level III	Level III	Not Significant	Not Significant	Not Likely	Impacts are comparable to the EA. Field work is on-going to support the EER and priorities have been updated to reflect the Project footprint.
				EER	Level I	Level I	Level I	Level II	Level III				
				EA	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is not reversible				
				EER	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is not reversible				
Cultural Heritage Landscapes and Built Heritage Resources	Effect on Heritage Resources	Changes to cultural heritage resources including built heritage and/or cultural heritage landscapes, as regulated by the Ontario Heritage Act. Heritage resources could potentially be affected by the Project.	-Support employment of local community members where possible -Implement a procurement process that encourages Aboriginal and local suppliers -Cultural awareness training -Provide on-the-job Common Core training to workers -Provide training and education in local communities -Identify and implement basic skills and technical training for Aboriginal and local community members to upgrade marketable skills and increase capacity	EA	Level I	Level II	Level II	Level III	Level I	Not Significant	Not Significant	Not Likely	Impacts are comparable to the EA.
				EER	Level I	Level II	Level II	Level III	Level I				
				EA	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

E3 – Impact Assessment Matrix – Closure Phase

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Air Quality	Suspended Particulate Matter (Dust) as Total Particulate Matter (PM _{tot}).	Changes in air quality due to particulate emissions from closure activities. These activities include site demolition and rehabilitation and onsite road traffic.	-DBMP -IAMGOLD is committing to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<120 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<120 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Particulate Matter (PM ₁₀); 24 Hour Average	Changes in air quality due to particulate emissions from closure activities. These activities include site demolition and rehabilitation and onsite road traffic.	-DBMP -IAMGOLD is committing to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<50 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<50 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); 24 Hour Average	Changes in air quality due to particulate emissions from closure activities. These activities include site demolition and rehabilitation and onsite road traffic.	-DBMP -IAMGOLD is committing to meeting Federal and/or Provincial criteria at the property boundary	EA	Level II	Level II	Level I	Level I	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level I	Level I				
				EA	Concentrations are below Federal and/or Provincial criteria (<25 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
				EER	Concentrations are below Federal and/or Provincial criteria (<25 µg/m ³).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); Annual Average	Changes in air quality due to particulate emissions from closure activities. These activities include site demolition and rehabilitation and onsite road traffic.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (4.2 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (4.2 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Air Quality	Sulphur Oxides (SOx), Mainly as Sulphur Dioxide (SO2)	Changes in air quality due to gaseous emissions from closure activities, mainly vehicle exhausts. Very limited emission of sulphur oxides due to the fact that the cyanide destruction will be decommissioned.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements -Use of low sulphur fuel	EA	Level II	Level I	Level I	Level II	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level II	Level I				
Air Quality	Nitrogen Dioxide (NO2); 24 Hour Average	Changes in air quality due to gaseous emissions from closure activities, mainly vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements	EA	Concentrations are below Federal and/or Provincial criteria	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Concentrations are below Federal and/or Provincial criteria (<200 µg/m3).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Nitrogen Dioxide (NO2); 1 Hour Average	Changes in air quality due to gaseous emissions from closure activities, mainly vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements	EA	Concentrations are below Federal and/or Provincial criteria (<400 µg/m3).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Concentrations are below Federal and/or Provincial criteria (<400 µg/m3).	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Air Quality	Arsenic; 24 Hour Average	Changes in air quality due to particulate emissions from closure activities. No blasting is planned during the closure phase, emissions of metals are limited.	-DBMP	EA	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER	
Air Quality	Lead	Changes in air quality due to particulate emissions from closure activities. No blasting is planned during the closure phase, emissions of metals are limited.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Manganese; 24 Hour Average	Changes in air quality due to particulate emissions from closure activities. No blasting is planned during the closure phase, emissions of metals are limited.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (0.0055 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (0.0055 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	VOCs	Changes in air quality due to gaseous emissions from closure activities, mainly operation of the landfill and vehicle exhausts.	-Engine Maintenance Program -Equipment compliant with Transport Canada vehicle emissions requirements	EA	Level II	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level II				
				EA	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Air Quality	Other Key Metals	Changes in air quality due to particulate emissions from closure activities. No blasting is planned during the closure phase, emissions of metals are limited.	-DBMP	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER	
Air Quality	Hydrogen Cyanide (HCN); 24 Hour Average	No cyanide is used during the closure phase. Therefore, this effect is not assessed during the closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					
Noise & Vibration	Daytime Noise Level	Changes in noise levels due to closure activities. These activities include site demolition and rehabilitation and onsite road traffic.	Not applicable	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	Noise level above daytime baseline (44 dBA) and below or equal to 45 dBA.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Noise level above daytime baseline (44 dBA) and below or equal to 45 dBA.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Noise & Vibration	Nighttime Noise Level	No nighttime activities are planned during the closure phase. Therefore, this effect is not assessed during the closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					
Noise & Vibration	Blasting Noise Level	No blasting is planned during the closure phase. Therefore, this effect is not assessed during the closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					
Noise & Vibration	Blasting Vibration Level	No blasting is planned during the closure phase. Therefore, this effect is not assessed during the closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					
Hydrogeology	Groundwater Levels (Water Table)	Changes in groundwater levels due to lowered groundwater levels in the open pit. Pumping activities will be terminated and the water level in the open pit will begin to rise in response to direct precipitation inputs and groundwater inflow	Not applicable	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Given that the footprint of the pit has reduced and is within the originally proposed extent for which for the 3D model was constructed to predict water level draw downs, the effects predicted are anticipated to be similar.
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	Change in the water table elevation is predicted to be between 1 and 5 m.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Change in the water table elevation is predicted to be between 1 and 5 m.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Hydrology & Climate	Change in Flow	Streamflow changes due to various Project components, such as watercourse realignments, TMF and MRA.	-Realignment channels and dams	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. Fewer watercourse alignments are required for the Project, which directs flows to Three Duck Lake (Upper) however increase in flow is not expected to change the hydrological characteristics of Three Duck Lake (Upper).
				EER	Level I	Level II	Level I	Level III	Level II				
				EA	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Water Quality	Change in Water Quality	Changes in water quality due to erosion and runoff which could potentially increase total suspended solids in water courses. For the purposes of a conservative effects prediction, the water quality model results for the Operations phase were applied to the Closure phase.	-Best Management Practices (BMPs) and engineering design to limit soil erosion and mobilization/transport of sediments from disturbed areas -Management of solid domestic and industrial waste in a permitted landfill, including the use of BMPs -Inclusion of PAG rock within the bulk of the MRA -Construction and operation of engineered water management systems to collect runoff and seepage; monitoring and treatment of effluent, as required.	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	Not Significant	Not likely	Impacts are comparable to the EA. Applying model results for the Operations phase to the effects assessment for the Closure phase is a conservative approach.
				EER	Level III	Level II	Level I	Level I	Level II				
				EA	Concentrations greater than baseline concentrations, but less than water quality guidelines, where applicable.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Concentrations greater than baseline concentrations and greater than water quality guidelines, where applicable.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is partially reversible				
Terrestrial Biology	Upland Plant Community Types	Continued vegetation loss due to site clearing in the construction phase. The Project is predicted to alter approximately 1,800 ha of the land cover. However, once closure activities are completed, vegetation will be allowed to reestablish itself.	-Rehabilitate habitat for plants and wildlife as practicable -Limit / prevent the transfer of invasive plant species from equipment and imported soil	EA	Level I	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level II				
				EA	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology	Wetlands	Continued loss of wetland areas due to site clearing during the construction phase. The Project is predicted to alter approximately 185 ha of wetlands. However, once closure activities are completed, vegetation will be allowed to reestablish itself.	Not applicable	EA	Level I	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level II				
Terrestrial Biology	Vegetation Species at Risk, Species of Special Concern and Provincially Rare Species	No predicted effect on Species at Risk, Species of Special Concern and Provincially Rare Species as none were identified during baseline data collection. Therefore, this effect is not assessed.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				
Terrestrial Biology	Ungulates	Continued potential for change in ungulates population abundance and distribution due to habitat removal during the Closure phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence. -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	The residual effect to population abundance and distribution is large enough that the changes are near or exceeding the predicted adaptive capability and resilience limits of the effects assessment indicator.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	The residual effect to population abundance and distribution is large enough that the changes are near or exceeding the predicted adaptive capability and resilience limits of the effects assessment indicator.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology	Furbearers	Continued potential for change in furbearers population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Limit risk of nest destruction and mortality of migratory birds -Maintain existing vegetation ground cover along the transmission line ROW to the extent practicable -No hunting by Project personnel will be permitted while working or residing on site, and advised not to interfere/harass wildlife -Project personnel will be educated to handle food and food wastes responsibly and enforce policies of no feeding of wildlife 	EA	Level I	Level III	Level I	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level II				
Terrestrial Biology	Migratory Birds	Continued potential for change in migratory birds population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Reduce the risk of mortality to birds and bats -Reduce risk of mortality to wildlife 	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level II				
Terrestrial Biology	Wildlife Species at Risk	Continued potential for change in wildlife species at risk population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Time removal of transmission line infrastructure to minimize the potential for ground disturbance and soil erosion by equipment and vehicles -Retain existing low-lying vegetation ground cover thereby minimizing vegetation clearing -Minimize the speed of service vehicles along Project roads and along the transmission line ROW -Encourage natural revegetation and recolonization of the ROW as part of the reclamation process 	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level II				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Vegetation Communities	Continued vegetation loss due to transmission line ROW clearing during the construction phase. The Project is predicted to result in the removal of 549.2 ha of forested communities including 146 ha of coniferous swamp. However, once closure activities are completed, vegetation will be allowed to reestablish itself.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where other alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along proposed access roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level I	Level III	Level I				
Terrestrial Biology - TL	Ungulates - Moose	Continued potential for change in moose population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where other alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along proposed access roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level I				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Furbearers - Wolves	Continued potential for change in wolves population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where other alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along proposed access roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level I				
Terrestrial Biology - TL	Furbearers - American Marten	Continued potential for change in american marten population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where other alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along proposed access roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level I				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Furbearers - Black Bear	Continued potential for change in black bear population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -Project personnel will be advised not to interfere or harass wildlife 	EA	Level I	Level III	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level I				
Terrestrial Biology - TL	Bats	Continued potential for change in bats population abundance and distribution due to habitat removal during the construction phase.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
Terrestrial Biology - TL	Bats	Continued potential for change in bats population abundance and distribution due to habitat removal during the construction phase.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Migratory Birds	Continued potential for change in migratory birds population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
Terrestrial Biology - TL	Raptors	Continued potential for change in raptors population abundance and distribution due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	<ul style="list-style-type: none"> -Utilize existing infrastructure for access and minimize construction of new roads and other corridors where alternatives exist -Include wildlife awareness information in regular safety and environmental inductions -Project personnel will be advised not to interfere or harass or feed wildlife -Project personnel will be made aware of seasonal changes in local large mammal behaviour or presence -Project personnel will be required to handle food and food wastes in a responsible manner -No hunting by Project personnel will be permitted while working or residing on-site -Enforce speed limits along Project roads to reduce the potential for collisions with wildlife -Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Species at Risk, Species of Special Concern and Provincially Rare Species	Continued potential for change in population abundance and distribution for species at risk, species of special concern and provincially rare species due to habitat removal during the construction phase. Additional effects are potentially associated with general disturbance and vehicular collisions.	-Incorporate the MOE D-series guidelines	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
Aquatic Biology	Aquatic Toxicity	Effects on aquatic species due to changes in water quality. Best Management Practices will be used during the closure phase, which will prevent changes in water quality. No planned discharge.	Not applicable	EA	Median concentrations less than guidelines or less than chronic toxicity thresholds for substances without guidelines.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible	Not Significant	Not Significant	Likely	Impacts are reduced compared to EA. Predictions appear to be improved compared to those in the EA resulting from a decreased footprint.
				EER	Median concentrations less than guidelines or less than chronic toxicity thresholds for substances without guidelines.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is fully reversible				
Aquatic Biology	Commercial, Recreational, Aboriginal Fisheries	Effects on commercial, recreational and Aboriginal fisheries due to site runoff during closure. Best Management Practices will be used during the closure phase, which will prevent changes in water quality. No planned discharge.	Not applicable	EA	There is no measurable residual effect to communities or populations.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible	Not Significant	Not Significant	Not Likely	Impacts are comparable to the EA. Habitat potentially lost in the EA (East Clam Lake) is no longer lost but is temporarily affected during Construction and Operations blasting. Effect is removed in Closure.
				EER	There is no measurable residual effect to communities or populations.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs intermittently or with a certain degree of regularity	Effect is partially reversible				
Aquatic Biology	Loss of Aquatic Habitat	Continued loss of aquatic habitat due to Project footprint. Lotic habitat affected includes Mollie River, Clam Creek and Bagsverd Creek. Lentic habitat affected includes Côté Lake, Beaver Pond, Clam Lake, Little Clam Lake, Unnamed Pond #3 and East Beaver Pond.	Not applicable	EA	Less than 10% of lotic habitat (stream length - m) and /or lentic habitat (lake area - m2) within the local study area.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Less than 10% of lotic habitat (stream length - m) and /or lentic habitat (lake area - m2) within the local study area.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Land Use Plans and Policies	Potential effects on land use planning areas during the closure phase of the Project may include overlapping of land use policy area where the use would not be allowed and creating land use conflicts.	-Work with claim holders to identify access changes and negotiate access agreements if there is any requirement to use or cross IAMGOLD properties	EA	Level II	Level I	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level II				
				EA	The Project overlaps very small portions of land use areas that may be incompatible with mining activities but will not impede the designated land use.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps very small portions of land use areas that may be incompatible with mining activities but will not impede the designated land use.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Mineral Exploration	Changes in access to other claim areas or effects on the ability to exercise exploration activities within these claim areas during the closure phase.	-Re-route the Chester Access Road south of the Project site	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	—	—	Impact is no longer applicable. IAMGOLD has acquired the mineral claims within the Project area.
				EER									
				EA	The Project overlaps or changes access to other mining claims but does not limit the ability to exercise exploration activities.	Effect extends into the local study area	The duration of the effect is between 2 and 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	-	-	-	-	-				
Land and Resource Use	Forestry	The potential effects on forestry due to the closure phase of the Project include overlapping, and therefore, loss of Forest Management Units (FMUs) area, long-term removal of forest resources (at the Project site footprint and along transmission line alignment) and changes to access along the Cross-Country TLA and at the Project site.	-To be determined through consultation between the MNR and any affected BMA holders -Enforce speed limits and warn IAMGOLD personnel of areas of high wildlife activity and crossings -Prohibit hunting on IAMGOLD property -Food wastes generated on-site will be appropriately disposed of to reduce the attraction of wildlife	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Hunting	Potential effects on hunting during the closure phase of the Project include overlapping of, and therefore, limiting use of or access to WMUs, overlapping of, and therefore, limiting use of or access to BMAs, increased access to BMAs along the TLA alternatives and changes to the abundance and distribution of wildlife that could affect hunting success rates due to closure activities.	-To be determined through consultation between the MNR and affected trappers	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Trapping	A number of trapline areas overlap with the Project site and TLA alternatives. Potential effects on trapping during the closure phase of the Project include loss of trapline areas or trap cabins, changes to access to trapline areas or trap cabins and changes to the abundance and distribution of furbearers that could affect trapping success rates, and therefore, trapping income due to changes in biophysical or anthropogenic conditions.	Not applicable	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps with small portions of trapline areas and affects a few individual trappers and/or will not limit the ability to carry out trapping activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with small portions of trapline areas and affects a few individual trappers and/or will not limit the ability to carry out trapping activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Land and Resource Use	Recreational and Commercial Fishing	The Project site and TLAs overlap with Fisheries Management Zone (FMZ) 8 and several bait harvest areas. Potential effects on fishing during the closure phase of the Project include loss of bait harvest areas or recreational fishing areas, changes to access to fishing areas and changes to the abundance and distribution of fish that could affect fishing success rates, and therefore, any commercial fishing income (such as for bait fish harvesters) due to changes in biophysical or anthropogenic conditions.	-Limit recreational boating for workers while they are staying at the work camp on-site	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	The Project may affect a small number of waterbodies used for fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project may affect a small number of waterbodies used for fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Cottages and Outfitters	<p>Numerous cottages and outfitters are located near the Project site. Potential effects on the cottagers may include decreased enjoyment and leisure lifestyle associated with cottaging due to closure activities noise and dust; perceived effects to water quality, quantity and area aesthetics) and vehicle traffic.</p> <p>The potential effects of the Project on the outfitters may include decrease in areas recommended by outfitters to clientele (related to effects on BMAs), perception that the area is not pristine or natural which could detract clientele and increased local clientele due to increased workforce in area (staying or hunting, etc).</p>	Not applicable	EA	Level II	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level I				
				EA	The Project is proximal to cottage areas or areas used by outfitters and may require the removal of a few cottages but will not limit the use of these areas by most cottagers/outfitters.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
EER	The Project is proximal to cottage areas or areas used by outfitters and may require the removal of a few cottages but will not limit the use of these areas by most cottagers/outfitters.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible								
Land and Resource Use	Navigable Waters	<p>Due to the continued presence of the watercourse realignments and retention dams during the closure phase, use of canoe routes may be disturbed during the closure phase.</p>	Not applicable	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	The Project is proximal to canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
EER	The Project is proximal to canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible								
Land and Resource Use	Other Recreational Uses	<p>The potential effects on other recreational uses include changes to access to areas that may have previously been used for other recreational uses and changes in the natural aesthetic of the area which may detract some recreational users.</p>	Not applicable	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps or changes access to portions of outdoor recreation areas but does not limit the ability to participate in outdoor recreation activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
EER	The Project overlaps or changes access to portions of outdoor recreation areas but does not limit the ability to participate in outdoor recreation activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible								

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Traditional Land Use	Plant Harvesting	There is a potential for blueberry harvesting to be affected during the closure phase of the transmission line due to closure activities.	Not applicable	EA	Level II	Level I	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level I				
				EA	The Project overlaps with areas used for traditional plant harvesting but does not limit the ability to harvest plants.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project overlaps with areas used for traditional plant harvesting but does not limit the ability to harvest plants.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Traditional Land Use	Traditional Hunting	Potential effects on traditional hunting during the closure phase include changes in access to and overlapping of the waterfowl hunting site and waterfowl hunting route and therefore limiting its use, enhanced access to hunting areas and travel corridor resulting from transmission line ROW clearing and changes to the abundance and distribution of wildlife due to operations activities that have the potential to affect hunting. Additionally, the transmission line corridor may attract non-traditional hunters to hunt in the area that is currently principally used for hunting by the Mattagami First Nation.	Not applicable	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project overlaps with portions of traditional hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with portions of traditional hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Traditional Land Use	Fishing	Potential effects on fishing during the closure phase of the Project include loss of traditional fishing areas, changes to access to fishing areas and changes to the abundance and distribution of fish due to closure activities.	Not applicable	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level I				
				EA	The Project may affect a small number of waterbodies used for traditional fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project may affect a small number of waterbodies used for traditional fishing but does not limit the ability to fish.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Traditional Land Use	Canoeing	Due to the continued presence of the watercourse realignments and retention dams during the closure phase, use of canoe routes may be disturbed during the closure phase.	Not applicable	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	The Project is proximal to traditional canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project is proximal to traditional canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Traditional Land Use	Cultural, Spiritual and Ceremonial Sites	Changes in ability of Aboriginal people to access sites that may be of cultural, spiritual, ceremonial value or may increase or decrease intrinsic values such as privacy, in using sites.	-Carry out the revegetation program on the MRA and TMF.	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Visual Aesthetics	Change in Landscape from Receptor Locations	Changes in landscape due to the continued presence of Project components (TMF and MRA) that could potentially be seen from receptor locations.	-Carry out the revegetation program on the MRA and TMF.	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. TMF has been relocated in the Project, however levels remain unchanged from the EA.
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Visual Aesthetics	Change in Landscape from Non-Receptor Locations	Changes in landscape due to the continued presence of Project components (TMF and MRA) that could potentially be seen from nearby waterbodies.	Not applicable	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. TMF has been relocated in the Project; however, levels remain unchanged from the EA.
				EER	Level II	Level II	Level I	Level III	Level II				
Visual Aesthetics	Change in Landscape due to the Transmission Line	Changes in landscape due to the activities surrounding the removal of the transmission line that could potentially be seen from receptor locations.	Not applicable	EA	Level II	Level II	Level I	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. The presence of the transmission line is expected to result in a perceptible change in landscape, which does not affect enjoyment of the viewscape. The reduced length of the TLA and utilization of the existing ROW will have fewer or equivalent effects compared to the EA.
				EER	Level II	Level II	Level I	Level III	Level I				
Socio-Economic	Labour Market	Direct, indirect and induced employment levels are expected to remain increased compared to baseline levels but reduced compared to operations phase levels.	<ul style="list-style-type: none"> -Implement a procurement process that encourages Aboriginal and local suppliers -Implement a procurement policy that structures opportunities in terms of package size and bid evaluation to reflect Aboriginal and local capabilities -support capacity building for local businesses -support local entrepreneurial development -Communicate with affected businesses to prepare for the effects of contract termination 	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
Socio-Economic	Labour Market	Direct, indirect and induced employment levels are expected to remain increased compared to baseline levels but reduced compared to operations phase levels.	<ul style="list-style-type: none"> -Implement a procurement process that encourages Aboriginal and local suppliers -Implement a procurement policy that structures opportunities in terms of package size and bid evaluation to reflect Aboriginal and local capabilities -support capacity building for local businesses -support local entrepreneurial development -Communicate with affected businesses to prepare for the effects of contract termination 	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Socio-Economic	Business Opportunities	During closure, the Project's contribution to the economy will gradually lessen, eventually returning the regional economy to pre-Project, baseline conditions.	Not applicable	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
				EA	Effects may require investment or expansions to meet Project needs that are within the capabilities of existing businesses.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects may require investment or expansions to meet Project needs that are within the capabilities of existing businesses.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Government Finances	During closure, the Project's contribution to the economy will gradually lessen, eventually returning the regional economy to pre-Project, baseline conditions.	<ul style="list-style-type: none"> -Implement a procurement process that encourages Aboriginal and local suppliers -Offer company services linking workers with local social services that provide job placement assistance -Develop an employment community relations program. -Identify and Implement basic skills and technical training for Aboriginal and local community members to upgrade marketable skills and increase capacity -Work with local communities to Develop a Project closure strategy that will minimize potential adverse effects of Project closure on regional communities -Engage and support local and regional communities and stakeholders in planning decisions relating to future use of the Project site -Support the establishment of local/regional job opportunities roster/forum accessible for workers -Post information on site for workers about other services agencies in the region that support small business ventures and planning 	EA	Level I	Level III	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level II				
				EA	Effects are expected to occur and are within the normal range of variability.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Effects are expected to occur and are within the normal range of variability.	Effect extends into the regional study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Socio-Economic	Population and Demographics	Workforce required for the closure phase is less than during the operations phase, forcing some of the population to look for jobs elsewhere. As a consequence, the population is forecasted to decrease.	-Provide access to long distance phone service for employees -Provide for basic worker health care -Provide information on health-related issues such as nutrition, sexually transmitted infections, alcohol abuse etc. to workers -Provide worker transportation to and from Project site	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
Socio-Economic	Community Health Conditions	During Project closure, the direct employment from the Project will decline. The associated decrease in employment may negatively affect how people perceive their health due to diminished financial security and challenges associated to finding employment. Terminated employees may have to move or commute outside of the regional study area to find work which may increase stress on family and friend relations.	-Develop on-site camp -Monitor indicators of Project housing effects and adapting management measures -Support local economic diversification programs that could facilitate resident retention after Project closure	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				
Socio-Economic	Housing and Temporary Accommodation	With closure, the Project's contribution to the economy will gradually lessen, eventually returning the regional economy to pre-Project, baseline conditions. This would cause a negative effect on housing demand as workers leaving the area sell their homes, although some workers may choose to commute to a different mine from the same home community, or may retire in the same home community, or may migrate to a new community in search of employment.	Not applicable	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Socio-Economic	Public Utilities	During the two year closure phase direct employment from the Project will diminish. Population trends indicate a decline in Timmins, Gogama and Mattagami First Nation reserve and relatively steady state for Sudbury. Reduced population size will decrease demands on public utilities as use decreases.	-Support post secondary education of workers	EA	Level I	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level II				
Socio-Economic	Education	It is expected that there will be a decline in primary school enrolment, and an increase in demands for post-secondary training to transition workers to other employment.	-Maintain open communication with local service providers to monitor existing social issues	EA	Level I	Level III	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level I	Level III	Level II				
Socio-Economic	Emergency Services	A decrease in employment and potential out-migration of workers to seek other job opportunities has the potential to create adverse social effects such as depression, substance abuse, and domestic violence that would require emergency and/or police response.	-Implement the Zero Harm policy at the Project site -Inform and/or provide employees with access to resources to support transition to other employment	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
Socio-Economic	Other Community Services	During closure, direct employment from the Project is expected to decline. As a result of this and other factors included in population projections for the regional study area, populations are expected to continue to decline resulting in corresponding declines or, in some cases increases, in demands for other community services and infrastructure to pre-Project levels.	-Road safety awareness training -Schedule major equipment delivery and removal -Schedule shuttle bus travel and shifts -Ensure heavy load sizing and seasonal load restrictions -Transport oversized loads in parts -Report wildlife sightings on highways	EA	Level II	Level II	Level I	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level I	Level III	Level II				

Table E-3: Impact Assessment Matrix for the Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Socio-Economic	Transportation	During the closure phase of the Project, Highway 144 will be used to transport material and equipment from the Project site decommissioning.		EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level I				
				EA	Effects are manageable within the existing capacities of highway service levels.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Effects are manageable within the existing capacities of highway service levels.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Archaeology	Effect on Heritage Sites	Changes to physical or cultural heritage resources including structures, sites or things of historical, archaeological, paleontological or architectural importance that may be overprinted by Project components.	Not applicable	EA	Level I	Level II	Level I	Level III	Level III	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level III				
				EA	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is not reversible				
				EER	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is not reversible				
Cultural Heritage Landscapes and Built Heritage Resources	Effect on Heritage Resources	Changes to cultural heritage resources including built heritage and/or cultural heritage landscapes, as regulated by the Ontario Heritage Act. Heritage resources could potentially be affected by the Project.	<ul style="list-style-type: none"> -Implement a procurement process that encourages Aboriginal and local suppliers -Offer company services linking workers with local social services that provide job placement assistance -Develop an employment community relations program. -Identify and implement basic skills and technical training for Aboriginal and local community members to upgrade marketable skills and increase capacity -Work with local communities to develop a Project closure strategy that will minimize potential adverse effects of Project closure on regional communities -Engage and support local and regional communities and stakeholders in planning decisions relating to future use of the Project site -Support the establishment of local/regional job opportunities roster/forum accessible for workers -Post information on site for workers about other services agencies in the region that support small business ventures and planning 	EA	Level I	Level II	Level I	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level I	Level III	Level III				
				EA	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is less than or equal to 2 years	Effect occurs infrequently	Effect is not reversible				

E4 – Impact Assessment Matrix – Post-Closure Phase

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER	
Air Quality	Suspended Particulate Matter (Dust) as Total Particulate Matter (PM ₁₀)	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (21.4 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (21.4 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Particulate Matter (PM ₁₀); 24 Hour Average	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (13.9 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (13.9 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); 24 Hour Average	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (9.8 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (9.8 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Suspended Particulate Matter (Dust) as Fine Particulate Matter (PM _{2.5}); Annual Average	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (4.2 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (4.2 µg/m ³).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Air Quality	Sulphur Oxides (SOx), Mainly as Sulphur Dioxide (SO2)	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Nitrogen Dioxide (NO2); 24 Hour Average	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (24.6 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (24.6 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Nitrogen Dioxide (NO2); 1 Hour Average	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (24.6 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (24.6 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Arsenic; 24 Hour Average	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (0.0018 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Air Quality	Lead	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	Manganese: 24 Hour Average	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels (0.0055 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels (0.0055 µg/m3).	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Air Quality	VOCs	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level II	Level I	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level III	Level III	Level II				
				EA	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Concentrations are below Federal and/or Provincial criteria.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Air Quality	Other Key Metals	Once closure activities are completed, there will be very limited onsite staff and activities. Therefore the potential for changes in air quality due to post-closure activities is greatly reduced.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Concentrations are comparable to baseline levels.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER	
Air Quality	Hydrogen Cyanide (HCN); 24 Hour Average	No cyanide is used during the post-closure phase. Therefore, this effect is not assessed during the post-closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					—
Noise & Vibration	Daytime Noise Level	Changes in noise levels due to post-closure activities, including water management around the MRA and the flooding open pit. Site activities during the post-closure phase will be very limited.	Not applicable	EA	Level II	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level I	Level III	Level I				
				EA	Noise level above daytime baseline (44 dBA) and below or equal to 45 dBA.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Noise level above daytime baseline (44 dBA) and below or equal to 45 dBA.	Effect is restricted to the Project footprint	The duration of the effect is less than or equal to 2 years	Effect occurs frequently or continuously	Effect is fully reversible				
Noise & Vibration	Nighttime Noise Level	No nighttime activities are planned during the post-closure phase. Therefore, this effect is not assessed during the post-closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					—
Noise & Vibration	Blasting Noise Level	No blasting is planned during the post-closure phase. Therefore, this effect is not assessed during the post-closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					—
Noise & Vibration	Blasting Vibration Level	No blasting is planned during the post-closure phase. Therefore, this effect is not assessed during the post-closure phase.	Not applicable	EA	—	—	—	—	—	—	—	Not applicable	
				EER	—	—	—	—					—

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Hydrogeology	Groundwater Levels (Water Table)	Groundwater levels will continue to rise and over time, will approximate pre-mining conditions except in the immediate vicinity of water realignment structures where these are to remain in place.	Not applicable	EA	Level II	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level I				
				EA	Change in the water table elevation is predicted to be between 1 and 5 m.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	Change in the water table elevation is predicted to be between 1 and 5 m.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Hydrology & Climate	Change in Flow	Streamflow changes due to various Project components, such as watercourse realignments, TMF and MRA. In post-closure stage II the reconfiguration of the realignments will result in watersheds that more closely resemble baseline conditions.	-Realignment channels and dams	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are comparable to the EA. For the simulated climate conditions, surface water flow changes in Post-closure were estimated to be 10% or less compared to Existing Conditions, suggesting a long term return to the natural flow regime at the Project site. Greater than 10% surface water flow changes are predicted at Clam Lake and Little Clam Lake, and are a result of watershed area change and seepage at the rehabilitated TMF and rehabilitation and resulting runoff from
				EER	Level I	Level II	Level III	Level III	Level II				
				EA	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	<10% or a change in flow which does not affect the hydrological characteristics.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Water Quality	Change in Water Quality	Changes in water quality due to site runoff and, eventually, overflow from the flooded open pit.	-Best Management Practices (BMPs) and engineering design to limit soil erosion and mobilization/transport of sediments from disturbed areas -Management of solid domestic and industrial waste in a permitted landfill, including the use of BMPs -Inclusion of PAG rock within the bulk of the MRA -Monitoring and water collection and treatment as required	EA	Level II	Level II	Level III	Level III	Level II	Not Significant	Not Significant	Likely	Impacts are reduced compared to EA. The reduced footprint reduces the potential of total suspended solids entering water courses.
				EER	Level II	Level II	Level III	Level II	Level II				
				EA	Concentrations greater than baseline concentrations, but less than water quality guidelines, where applicable.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Concentrations greater than baseline concentrations, but less than water quality guidelines, where applicable.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs intermittently or with a certain degree of regularity	Effect is partially reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology	Upland Plant Community Types	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site. No activities during the post-closure phase will further disrupt vegetation.	Not applicable	EA	Level I	Level I	Level III	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level II				
Terrestrial Biology	Wetlands	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site. No activities during the post-closure phase will further disrupt vegetation.	Not applicable	EA	Level I	Level I	Level III	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level II				
Terrestrial Biology	Vegetation Species at Risk, Species of Special Concern and Provincially Rare Species	No predicted effect on Species at Risk, Species of Special Concern and Provincially Rare Species as none were identified during baseline data collection. Therefore, this effect is not assessed.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				
Terrestrial Biology	Ungulates	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to ungulates population abundance and distribution.	Not applicable	EA	Level I	Level III	Level III	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level II				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology	Furbearers	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to furbearers population abundance and distribution.	Not applicable	EA	Level I	Level III	Level III	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Migratory Birds	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to migratory birds population abundance and distribution.	Not applicable	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology	Wildlife Species at Risk	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to wildlife species at risk population abundance and distribution.	Not applicable	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level II				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Terrestrial Biology - TL	Vegetation Communities	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. No activities during the post-closure phase will further disrupt vegetation.	Not applicable	EA	Level I	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level I	Level III	Level III	Level I				
				EA	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to the abundance and distribution of plant populations and communities.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Ungulates - Moose	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to moose population abundance and distribution.	Not applicable	EA	Level I	Level III	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Furbearers - Wolves	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to wolves population abundance and distribution.	Not applicable	EA	Level I	Level III	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Furbearers - American Marten	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to american marten population abundance and distribution.	Not applicable	EA	Level I	Level III	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Furbearers - Black Bear	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to black bear population abundance and distribution.	Not applicable	EA	Level I	Level III	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the regional study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Terrestrial Biology - TL	Bats	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to bats population abundance and distribution.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Migratory Birds	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to migratory birds population abundance and distribution.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Raptors	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to raptors population abundance and distribution.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
Terrestrial Biology - TL	Species at Risk, Species of Special Concern and Provincially Rare Species	During the post-closure phase, vegetation will be allowed to reestablish itself at the Project site, thereby allowing wildlife species to return to this area. Activities during the post-closure phase are not anticipated to further result in effects to species at risk, species of special concern and provincially rare species population abundance and distribution.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				
				EA	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	There is no measurable residual effect to population abundance and distribution.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER	
Aquatic Biology	Aquatic Toxicity	Effects on aquatic species due to site runoff and, eventually, overflow from the flooded open pit.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are reduced compared to EA. Expedited flooding will allow water courses to return back to naturalized channels faster than modelled in the EA.
				EER	Level I	Level II	Level III	Level I	Level I				
Aquatic Biology	Commercial, Recreational, Aboriginal Fisheries	Effects on commercial, recreational and Aboriginal fisheries due to site runoff and, eventually, overflow from the flooded open pit.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	Not Significant	Likely	Impacts are reduced compared to EA. Expedited flooding will allow water courses to return to naturalized channels faster than modelled in the EA.
				EER	Level I	Level II	Level III	Level I	Level I				
Aquatic Biology	Loss of Aquatic Habitat	In post-closure stage II the reconfiguration of the realignments will result in watersheds that more closely resemble baseline conditions, which will provide additional habitat. This phase will result in substantial increase in fish habitat.	-Time construction of water realignments to allow for vegetation growth for one or more growing seasons prior to commissioning of watercourse realignments or conduct planting of aquatic vegetation immediately following commissioning of channel realignments to promote the establishment of vegetation within the newly constructed habitats -Open pit edge will be sloped to support the development of productive habitat	EA	—	—	—	—	—	—	—	—	Fewer realignment channels will require decommissioning, allowing habitat to be established quicker once watercourses are reconnected
				EER	—	—	—	—	—				
Land Use	Land Use Plans and Policies	Once closure activities are completed, no more effects on land use plans and policies are expected.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude	Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER	
Land Use	Mineral Exploration	Changes in access to other claim areas or effects on the ability to exercise exploration activities within these claim areas during the post-closure phase.	Not applicable	EER	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
				EA	The Project overlaps or changes access to other mining claims but does not limit the ability to exercise exploration activities.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
EER	The Project overlaps or changes access to other mining claims but does not limit the ability to exercise exploration activities.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible								
Land and Resource Use	Forestry	During the post-closure phase, vegetation and therefore habitat will re-establish itself with time. As habitat re-establishes, effects on forestry are expected to cease.	Not applicable	EA	Level II	Level I	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level III	Level III	Level II				
				EA	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
EER	The Project overlaps very small areas of forest management units but does not substantially limit forestry resources or the ability to conduct forestry activities.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible								
Land and Resource Use	Hunting	During the post-closure phase, vegetation and therefore habitat will re-establish itself with time. As habitat re-establishes, effects on hunting are expected to cease.	Not applicable	EER	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
				EA	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
EER	The Project overlaps with portions of hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible								

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Trapping	During the post-closure phase, vegetation and therefore habitat will re-establish itself with time. As habitat re-establishes, effects on trapping are expected to cease.	Not applicable	EA	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
Land and Resource Use	Recreational and Commercial Fishing	Once closure activities are completed, no more effects on recreational and commercial fishing are expected.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				
Land and Resource Use	Cottages and Outfitters	Once closure activities are completed, no more effects on cottages and outfitters are expected.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				
Land and Resource Use	Navigable Waters	Due to the continued presence of the watercourse realignments and retention dams during post-closure phase I, use of canoe routes may be disturbed. Following the removal of retention dams and decommissioning of watercourse realignments, the effects on canoeing are expected to cease.	Not applicable	EA	Level II	Level I	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level I	Level III	Level III	Level I				
Land and Resource Use	Navigable Waters	Due to the continued presence of the watercourse realignments and retention dams during post-closure phase I, use of canoe routes may be disturbed. Following the removal of retention dams and decommissioning of watercourse realignments, the effects on canoeing are expected to cease.	Not applicable	EA	The Project is proximal to canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible	Not Significant	No Change from EA	Likely	No Change from EA
				EER	The Project is proximal to canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect is restricted to the Project footprint	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Land and Resource Use	Other Recreational Uses	Once closure activities are completed, no more effects on other recreational uses are expected.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				
Traditional Land Use	Plant Harvesting	Once closure activities are completed, no more effects on plant harvesting are expected.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				
Traditional Land Use	Traditional Hunting	During the post-closure phase, vegetation and therefore habitat will re-establish itself with time. As habitat re-establishes, effects on traditional hunting are expected to cease.	Not applicable	EA	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
				EA	The Project overlaps with portions of traditional hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project overlaps with portions of traditional hunting areas but does not limit the ability to carry out hunting activities.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Traditional Land Use	Fishing	Once closure activities are completed, no more effects on fishing are expected.	Not applicable	EA	—	—	—	—	—	—	—	—	Not applicable
				EER	—	—	—	—	—				
Traditional Land Use	Canoeing	Due to the continued presence of the watercourse realignments and retention dams during post-closure phase I, use of canoe routes may be disturbed. Following the removal of retention dams and decommissioning of watercourse realignments, the effects on canoeing are expected to cease.	Not applicable	EA	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
				EA	The Project is proximal to traditional canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project is proximal to traditional canoe routes/waterways used for canoeing/portaging and does not limit the ability to use these navigable waters.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Traditional Land Use	Cultural, Spiritual and Ceremonial Sites	Changes in ability of Aboriginal people to access sites that may be of cultural, spiritual, ceremonial value or may increase or decrease intrinsic values such as privacy, in using sites.	Not applicable	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level II				
				EA	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	The Project does not overlap important cultural, spiritual or ceremonial sites.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Visual Aesthetics	Change in Landscape from Receptor Locations	Changes in landscape due to the continued presence of Project components (TMF, MRA and low-grade ore stockpile) that could potentially be seen from receptor locations.	-Continue to maintain the MRA and TMF revegetation program, as required	EA	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Visual Aesthetics	Change in Landscape from Non-Receptor Locations	Changes in landscape due to the continued presence of Project components (TMF and MRA) that could potentially be seen from nearby waterbodies.	-Continue to maintain the MRA and TMF revegetation program, as required	EA	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
				EA	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
				EER	Perceptible change in landscape, which does not affect enjoyment of the viewscape.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Visual Aesthetics	Change in Landscape due to the Transmission Line	As the transmission line will be removed during the closure phase, no effects are anticipated during the post-closure phase.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				
				EA	No perceptible change in landscape.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	No perceptible change in landscape.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				

Table E-4: Impact Assessment Matrix for the Post-Closure Phase

Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Socio-Economic	Labour Market	Post-closure activities will be very limited, such that Project staffing and expenditures will be close to baseline conditions.	Not applicable	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level II				
Socio-Economic	Business Opportunities	Post-closure activities will be very limited, such that Project staffing and expenditures will be close to baseline conditions.	Not applicable	EA	Effects are expected to occur and are within the normal range of variability.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Effects are expected to occur and are within the normal range of variability.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				
Socio-Economic	Government Finances	Post-closure Project contributions are not expected to be noticeable since they would only result from direct taxes on post-closure monitoring workers, for example.	Not applicable	EA	Level I	Level III	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level II				
Socio-Economic	Population and Demographics	The population is forecasted to decrease to baseline conditions due to very limited work opportunities during the post-closure phase.	Not applicable	EA	Effects are outside of the normal range of variability, although the changes are not substantive enough to result in a community or government response.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Effects are outside of the normal range of variability, although the changes are not substantive enough to result in a community or government response.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is partially reversible				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Socio-Economic	Community Health Conditions	During post-closure, the direct employment from the Project will be negligible. The associated decrease in employment may negatively affect how people perceive their health due to diminished financial security and challenges associated to finding employment. Terminated employees may have to move or commute outside of the regional study area to find work which may increase stress on family and friend relations.	Not applicable	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level II				
Socio-Economic	Housing and Temporary Accommodation	With closure, the Project's contribution to the economy will gradually lessen, eventually returning the regional economy to pre-Project, baseline conditions. This would cause a negative effect on housing demand as workers leaving the area sell their homes, although some workers may choose to commute to a different mine from the same home community, or may retire in the same home community, or may migrate to a new community in search of employment.	Not applicable	EA	Level II	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level II	Level II	Level III	Level III	Level II				
Socio-Economic	Public Utilities	During the two year closure phase direct employment from the Project will diminish. Population trends indicate a decline in Timmins, Gogama and Mattagami First Nation reserve and relatively steady state for Sudbury. Reduced population size will decrease demands on public utilities as use decreases.	Not applicable	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level II				
Socio-Economic	Education	It is expected that there will be a decline in primary school enrolment, and an increase in demands for post-secondary training to transition workers to other employment.	Not applicable	EA	Level I	Level III	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level III	Level III	Level III	Level II				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Socio-Economic	Emergency Services	A decrease in employment and potential out-migration of workers to seek other job opportunities has the potential to create adverse social effects such as depression, substance abuse, and domestic violence that would require emergency and/or police response.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				
Socio-Economic	Other Community Services	During post-closure, direct employment from the Project will be negligible. As a result of this and other factors included in population projections for the regional study area, populations are expected to continue to decline resulting in corresponding declines or, in some cases increases, in demands for other community services and infrastructure to pre-Project levels.	Not applicable	EA	Level I	Level II	Level III	Level III	Level II	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level II				
Socio-Economic	Transportation	During the post-closure phase, highway traffic volumes are expected to return to pre-Project volumes.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				

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Discipline	Indicator	Effect	Mitigation/Effects Management Measures	Magnitude		Extent	Duration	Frequency	Reversibility	Residual Impact Significance (EA)	Residual Impact Significance (EER)	Likelihood	Comparison between EA and EER
				EA	EER								
Archaeology	Effect on Heritage Sites	Changes to physical or cultural heritage resources including structures, sites or things of historical, archaeological, paleontological or architectural importance that may be overprinted by Project components.	Not applicable	EA	Level I	Level II	Level III	Level III	Level III	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level III				
				EA	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is not reversible				
				EER	The Project is not proximal to archaeological sites or the site has been assessed and cleared in accordance with the Heritage Act.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is not reversible				
Cultural Heritage Landscapes and Built Heritage Resources	Effect on Heritage Resources	Changes to cultural heritage resources including built heritage and/or cultural heritage landscapes, as regulated by the Ontario Heritage Act. Heritage resources could potentially be affected by the Project.	Not applicable	EA	Level I	Level II	Level III	Level III	Level I	Not Significant	No Change from EA	Not Likely	No Change from EA
				EER	Level I	Level II	Level III	Level III	Level I				
				EA	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				
				EER	The Project is not proximal to cultural heritage resources or changes to viewscape and site context that does not affect the integrity of cultural heritage resources.	Effect extends into the local study area	The duration of the effect is beyond 15 years	Effect occurs frequently or continuously	Effect is fully reversible				