

Appendix A

Glossary of Terms and Definitions

The following terms are utilized in this document following the definitions provided in the Mine Site Reclamation Guidelines for the Northwest Territories (INAC 2007), the Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (AANDC/MVLWB, 2013) and the Meliadine Gold Project Type “A” Water Licence 2AM-MEL1631.

This Appendix includes discipline-specific technical terms and key closure and reclamation planning terms (Adapted from SLI, 2018).

Abandonment: The permanent dismantlement of a facility so it is permanently incapable of its intended use. This includes the removal of associated equipment and structures.

Acid Base Accounting (ABA): Acid base accounting; a static test that defines the amounts, and relative balance, of potentially acid-generating and acid-neutralizing (or base) minerals in a sample.

Acid Rock Drainage (ARD): Acid rock drainage/metal leaching. The production of acidic leachate, seepage or drainage from underground workings, open pits, ore piles, waste rock or construction rock that can lead to the release of metals to groundwater or surface water during the life of the Project and beyond closure.

Active layer: The layer of ground above the permafrost which thaws and freezes annually.

Adaptive management: A management plan that describes a way of managing risks associated with uncertainty and provides a flexible framework for mitigation measures to be implemented and actions to be taken when specified thresholds are exceeded.

Advanced mineral exploration: Any appurtenant undertaking in which the proponent requires a Type A or Type B water licence in order to carry out the proposed activities.

All-Weather Access Road (AWAR): The all-weather access road and associated water crossings between the Hamlet of Rankin Inlet and the Meliadine Gold Project mine site.

Aquatic Effects Monitoring Plan (AEMP): A monitoring program designed during the Environmental Impact Statement stage of the Project to determine the short and long-term effects in the aquatic environment resulting from the Project, to evaluate the accuracy of impact predictions, to assess the effectiveness of planned impact mitigation measures and to identify additional impact mitigation measures to avert or reduce environmental effects. An overarching “umbrella” program that conceptually provides an opportunity to integrate results of individual, but related, monitoring programs in accordance with the Water Licence.

Backfill: Material excavated from a site and reused for filling the surface or underground void created by mining.

Background: An area near the site under evaluation not influenced by chemicals released from the site, or other impacts created by onsite activity.

Baseline: A surveyed condition and reference used for future surveys.

Berm: A mound or wall, usually of earth, used to retain substances or to prevent substances from entering an area.

Best management practices: Any program, technology, process, operating method, measure, or device that controls, prevents, removes, or reduces pollution and impact on the environment.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

Biodiversity: The variety of plants and animals that live in a specific area.

Bioremediation: The use of microorganisms or vegetation to reduce contaminant levels in soil or water.

Borrow pit: A source of fill or embanking material.

Canadian Council of the Minister of Environment (CCME): The organizations of Canadian Ministers of Environment that set guidelines for environmental protection across Canada such as the Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life.

Care and maintenance: A term to describe the status of a mine when it undergoes a temporary closure. In respect of a mine, means the status of the facility when the License ceases production or commercial operation temporarily for an undefined period of time.

Closure: When a mine ceases operation without the intent to resume mining activities in the future.

Closure criteria: Details to set precise measures of when the objective has been satisfied.

Closure goal: The guiding statement that provides the vision and purpose of reclamation. Attainment of the closure goal happens when the proponent has satisfied all closure objectives. By its nature, the closure goal is a broad, high-level statement and not directly measurable.

Closure objectives: Statements that describe what the selected closure activities are aiming to achieve; they are guided by the closure principles. Closure objectives are typically specific to project components, are measurable and achievable, and allow for the development of closure criteria.

Closure options: A set of proposed alternatives for closing and reclaiming each mine components. The closure options are evaluated to determine the selected closure activity, which must be approved by the NWB.

Closure principles: The four core closure principles are 1) physical stability, 2) chemical stability, 3) no long-term active care requirements, and 4) future use (including aesthetics and values). The principles guide the selection of closure objectives.

Commercial operation: In respect of a mine, an average rate of production that is equal to or greater than 25% of the design capacity of the mine over a period of ninety consecutive days.

Construction: Activities undertaken to construct or build any components of, or associated with, the development of the Meliadine Gold Project.

Contact water: Any water that may be physically or chemically affected by mining activities.

Contaminant: Any physical, chemical, biological or radiological substance in the air, soil or water that has an adverse effect. Any chemical substance with a concentration that exceeds background levels or which is not naturally occurring in the environment.

Contouring: The process of shaping the land surface to fit the form of the surrounding land.

Core Receiving Environmental Monitoring Program (CREMP): A monitoring program designed to determine the short and long-term effects in the aquatic environment resulting from the Project, to evaluate the accuracy of impact predictions, to assess the effectiveness of planned impact mitigation measures and to identify additional impact mitigation measures to avert or reduce environmental effects.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

Cumulative Effects: The combined environmental impacts that accumulate over time and space as a result of a series of similar or related actions or activities.

Decommissioning: The process of permanently closing a site and removing equipment, buildings and structures. Rehabilitation and plans for future maintenance of affected land and water are also included.

Deleterious substances: A substance as defined in section 34(1) of the Fisheries Act.

Dike: Retaining structure designed for water control to enable safe open pit mining and for containing tailings impoundments.

Discharge: The release of any water or waste to the receiving environment.

Disposal: The relocation, containment, treatment or processing of unwanted materials. This may involve the removal of contaminants or their conversion to less harmful forms.

Domestic waste: All solid waste generated from the accommodations, kitchen facilities and all other site facilities, excluding those hazardous wastes associated with the mining and processing of ore.

Drainage: The removal of excess surface water or groundwater from land by natural runoff and permeation, or by surface or subsurface drains.

Effluent: Treated or untreated liquid waste material that is discharged into the environment from all site water management facilities or from a structure such as a settling pond or a treatment plant.

End land use: The allowable use of disturbed land following reclamation. Municipal zoning and/or approval may be required for specific land uses.

Engagement: The communication and outreach activities a proponent is required to undertake with affected communities and Aboriginal organizations/governments prior to and during the operation of a project, including closure and reclamation phases.

Engineered structure: Any facility, which was designed and approved by a Professional Engineer registered with the Association of Professional Engineers, Geologists and Geophysicists of Nunavut.

Environment: The components of the Earth, and includes: land, water and air, including all layers of the atmosphere; all organic and inorganic matter and living organisms; and the interacting natural systems that include the aforementioned components.

Environmental assessment: An assessment of the environmental effects of a project that is conducted in accordance with the Canadian Environmental Assessment Act and its regulations.

Environmental management system: A management system that incorporates environmentally and socially responsible practices into the project operations.

Erosion: The wearing away of rock, soil or other surface material by water, rain, waves, wind or ice; the process may be accelerated by human activities.

Explosives: Gunpowder, blasting powder, nitroglycerine, gun-cotton, dynamite, blasting gelatine, gelignite, fulminates of mercury or of other metals and every other substance made, manufactured or used with a view to producing a violent effect by explosion.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

Final discharge point: In respect of an effluent, an identifiable discharge point of a mine beyond which the operator of the mine no longer exercises control over the quality of the effluent (Metal Mining Effluent Regulations).

Fish habitat: Areas used by fish for spawning, nursery, rearing, foraging and overwintering.

Geotechnical Engineer: A professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments.

Geothermal analysis: The analysis of temperature below the ground surface.

Glacial till: Unsorted and unlayered rock debris deposited by glacier.

Greywater: The component of effluent produced from domestic use (i.e. washing, bathing, food preparation and laundering), excluding sewage.

Ground thermal regime: Temperature conditions below the ground surface; a condition of heat losses and gains from geothermal sources and the atmosphere.

Groundwater: All subsurface water that occurs beneath the water table in rocks and geologic formations that are fully saturated. Water that occupies pores and fractures in rock and soil below the ground surface in a liquid or frozen state.

Habitat: The place where animal or plant naturally lives and grows.

Hazardous materials/waste: A contaminant which is a dangerous good that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage. Materials or contaminant which are categorized as dangerous goods under the Transportation of Dangerous Goods Act (1992) and/or that is no longer used for their original purpose and is intended for recycling, treatment, disposal or storage.

Humidity cell test (HCT): A type of kinetic test in which a small sample (about 1 kg) is placed in an enclosed chamber in a laboratory, alternating cycles of moist and dry air is constantly pumped through the chamber, and once a week the sample is rinsed with water; chemical analysis of rinse water yields concentrations of elements and other parameters used to calculate reaction rates.

Hydrology: The science that deals with water, its properties, distribution and circulation over the Earth's surface.

In situ treatment: A method of managing or treating contaminated soils, sludges and waters "in place" in a manner that does not require the contaminated material to be physically removed or excavated from where it originated.

Incinerator: The dual chamber, high temperature facility designed with the capacity to service the camp.

Interim Closure and Reclamation Plan (ICRP): A conceptual detailed plan on the reclamation of mine components which will not be closed until the end of the mining operations, and operational detail for components which are to be progressively reclaimed throughout the mine life.

Kinetic test: A geochemical procedure for characterizing the chemical status of a sample through time during continued exposure to a known set of environmental conditions, such as a humidity cell.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

Land owner: The responsible authority with administrative control and ownership of a type of land classified as crown land, commissioners land or Inuit Owned Land.

- a. Crown land is a land belonging to Her Majesty or in respect of which Government has the power of disposition. In Nunavut, this power rests with Aboriginal Affairs and Northern Development Canada (AANDC).
- b. Commissions land is a land belonging to the Commissioner for the Government of Nunavut; which typically is a land within an established municipality administered by a Municipal Corporation and/or the Department of Community Government and Services (CGS).
- c. Inuit Owned Land (IOL) are those lands vested in the Designated Inuit Organization (DIO) pursuant the Nunavut Land Claims Agreement. For this Project the DIO is the Kivalliq Inuit Association.

Land use permit:

- a. For Crown land a Class A Permit or Class B Permit as required by the Territorial Land Use Regulations SOR/82-217, s.1; SOR/88-169, s.2 administered by AANDC Lands Department.
- b. For IOL's- Land Use Licence I, II or III or Commercial Lease I, II, III as defined by the DIO.
- c. For Commissioners land - a permit or lease as required by the Municipal Land Administration Policy.

Landfarm: The lined, engineered facility designed to treat petroleum hydrocarbon contaminated snow and soil that may be generated during mining activities using bioremediation.

Landfill: An engineered waste management facility at which waste is disposed by placing it on or in land in a manner that minimizes adverse human health and environmental effects.

Leachate: Water or other liquid that has washed (leached) from a solid material, such as a layer of soil or water; leachate may contain contaminants.

Long-term active care: A post-closure mine site is in long-term active care when sustained monitoring and maintenance of active facilities is required (e.g., for more than 25 years). This should be avoided whenever possible.

Metal leaching: The mobilization of metals into solution under neutral, acidic or alkaline conditions.

Migration: The movement of chemicals, bacteria, and gases in flowing water or vapour.

Mine design: The detailed engineered designs for all mine components stamped by a design engineer.

Mine plan: The plan for the development of the mine, including the sequencing of the development.

Mine water: Any water, including groundwater, which is pumped or flows out of any underground workings or open pit.

Mitigation: The process of rectifying an impact by repairing, rehabilitating or restoring the affected environment, or the process of compensating for the impact by replacing or providing substitute resources or environments.

Monitoring: Observing the change in geophysical, hydrogeological or geochemical measurements over time.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

No net loss: A term found in Canada's Fisheries Act. It is based on the fundamental principle of balancing unavoidable losses of fish habitats with habitat replacement on a project-by-project basis in order to prevent depletion of Canada's fisheries resources.

Non-contact water: The runoff originating from areas unaffected by mining activity that does not come into contact with developed areas.

Nunavut Land Claims Agreement: The "Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada," including its preamble and schedules, and any amendments to that agreement made pursuant to it.

Objectives: Objectives describe what the reclamation activities are aiming to achieve. The goal of mine closure is to achieve the long-term objectives that are selected for the site.

Operations: The set of activities associated with mining, ore processing and recovery of gold; excluding construction and decommissioning activities.

Operator: The person who operates, has control or custody of, or is in charge of a mine or recognized closed mine.

Ore: Rock that is considered economic according to the parameters used in the ore reserve estimate. Ore will be processed at the mineral processing plant after it is mined from the Project underground mine and open pits.

Overburden: A general term referring to soil and broken rock, lying above ore and mine rock, that can usually be removed without blasting; at mines in soft sedimentary rock like coal, overburden can be synonymous with mine rock.

Passive long-term care: Occasional monitoring, coupled with infrequent maintenance or repairs that takes place following reclamation in the post closure phase of the mine site. Many mine sites require ongoing passive care, which can be an acceptable practice.

Passive Treatment: Treatment technologies that can function with little or no maintenance over long periods of time.

Permafrost: Permafrost is defined as ground that remains at or below 0°C for at least two years. Permafrost does not necessarily contain ice; rather, the definition is based solely on temperature criteria of the mineral or organic parent material.

Permafrost Aggradation: A naturally or artificially caused increase in the thickness and/or area extent of permafrost.

Permanent Closure: Final closure of the mine site after mining has ceased, when no further exploration, mining, or processing activities are anticipated at the site.

Permeability: The ease with which gases, liquids, or plant roots penetrate or pass through soil or a layer of soil. The rate of permeability depends upon the composition of the soil.

pH: A measure of the alkalinity or acidity of a solution, related to hydrogen ion concentration; a pH of 7.0 being neutral.

Piezometer: An instrument used to monitor pore water pressure.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

Pore water pressure: The pressure of groundwater held within the spaces between sediment particles.

Pore water: The groundwater present within the spaces between sediment particles.

Post-closure: The period of time after active closure of the mine.

Potentially acid generating (PAG): Rock with an NP/AP ratio less than 2 as determined by static tests, as defined by MEND (2009). PAG rock can also be operationally defined based on the results of static testing such as ABA and NAG testing.

Progressive Reclamation: Actions that can be taken during mining operations before permanent closure, to take advantage of cost and operating efficiencies by using the resources available from mine operations to reduce the overall reclamation costs incurred. It enhances environmental protection and shortens the timeframe for achieving the reclamation objectives and goals.

Project: The Meliadine Gold Project as outlined in the Final Environmental Impact Statement. It comprises two (2) open pit mines, an underground mine, an All Weather Private Access Road from Rankin Inlet to the mine site, and site facilities in the Hamlet of Rankin Inlet (Itivia Harbor).

Proponent: Applicant for, or a holder of, a water licence and/or land use permit.

Quarry: The areas of surface excavation for extracting rock material for use as construction materials along the All Weather Private Access Road and facilities at the mine site.

Receiving environment: The aquatic and terrestrial environments that receive any discharge resulting from the Project.

Reclaim Pond: The pond located within the active zone of the Tailings Storage Facility, designed to contain process (tailings related) water, and where water in the pond will be used to satisfy mill process water make up requirements.

Reclamation: The process of returning a disturbed site to its natural state or one for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.

Reclamation Research: Literature reviews, laboratory or pilot-scale tests, engineering studies, and other methods of resolving uncertainties. Proponents conduct reclamation research to answer questions pertaining to environmental risks; the design of reclamation research plans aims to provide data and information which will reduce uncertainties for closure options, selected closure activities, and/or closure criteria.

Rehabilitation: Activities to ensure that the land will be returned to a form and productivity in conformity with a prior land use plan, including a stable ecological state that does not contribute substantially to environmental deterioration and is consistent with surrounding aesthetic values.

Remediation: The removal, reduction, or neutralization of substances, wastes or hazardous material from a site in order to prevent or minimize any adverse effects on the environment and public safety now or in the future.

Restoration: The renewing, repairing, cleaning-up, remediation or other management of soil, groundwater or sediment so that its functions and qualities are comparable to those of its original, unaltered state.

Re-vegetation: Replacing original ground cover following a disturbance to the land.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

Ripping: A method of loosening rock or soil using steel tynes attached to the rear of a bulldozer. The tynes are lowered into the ground and as the bulldozer moves forwards the soil or blocks of rock are displaced by the tynes.

Risk assessment: Analysis of potential threats and options for mitigation for a given site, component, or condition. Risk assessments consider factors such as risk acceptability, public perception of risk, socio-economic impacts, benefits, and technical feasibility. It forms the basis for risk management.

Runoff: Water that is not absorbed by soil and drains off the land into bodies of water.

Salvageable Materials: Decommissioned materials which can be sold or reused elsewhere.

Scarification: Seedbed preparation to make a site more amenable to plant growth. This is typically conducted with a grader.

Security deposit: Funds held by the Crown or land owner that can be used in the case of abandonment of an undertaking to reclaim the site, or carry out any ongoing measures that may remain to be taken after the abandonment of the undertaking.

Sediment: Solid material, both mineral and organic, that has been moved by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.

Seepage: Any water that drains through or escapes from any structure designed to contain, withhold, divert or retain water or waste. Seepage also includes any flows that have emerged through open pits, runoff from rock storage facilities, ore stockpile areas, quarries, and landfill or landfarm areas.

Seismic: Relating to an earthquake or to other tremors of the Earth, such as those caused by large explosions.

Selected closure activity: The closure and reclamation activity chosen from the closure options for each Project component.

Sewage: All toilet wastes and greywater.

Stakeholders: Industry, federal agencies, the territorial government, Aboriginal organizations/governments, land owners, affected communities, and other parties with an interest in a project.

Sump: An excavation in impermeable soil for the purpose of catching or storing water or waste.

Surface water: Natural water bodies such as river, streams, brooks, ponds and lakes, as well as artificial watercourses, such as irrigation, industrial and navigational canals, in direct contact with the atmosphere. Sustainable development: Industrial development that does not detract from the potential of the natural environment to ensure benefits for future generations.

Tailings: Material rejected from a mill after most of the recoverable valuable minerals have been extracted.

Tailings Storage Facility: The facility designed to permanently contain the solid fraction of the mill tailings.

Taliks: Unfrozen zones that can exist within, below, or above permafrost layers. They are usually located below deep water bodies.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report

Appendix A

Glossary of Terms and Definitions

Temporary closure: When a mine ceases operations with the intent to resume mining activities in the future. Temporary closures can last for a period of weeks, or for several years, based on economical, environmental, political, or social factors.

Total dissolved solids: A measure of the amount of dissolved substances in a waterbody.

Total suspended solids: A measure of the particulate matter suspended in the water column.

Traditional knowledge: A cumulative, collective body of knowledge, experience, and values built up by a group of people through generations of living in close contact with nature. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual and political change. The practical knowledge that has been gathered through the experience of living in close contact with nature and has been passed along or communicated orally and handed down from generation to generation.

Turbidity: The degree of clarity in the water column typically reflected as the amount of suspended particulate matter in a waterbody.

Type A water licence: A Type A water licence is required if the use is of a type set out in column 2 of Schedule 2 and satisfies a criterion set out in column 5 in respect of an undertaking set out in column 1 of the Nunavut Water Regulations SOR/2013-69

(Note: despite definition of Type B water licence item a), a Type A licence is the appropriate licence for a use of waters if a Type A licence is required for another use of waters, or a deposit of waste, in respect of the same undertaking.)

Type B water licence: A Type B water licence required if

- a) The use is of a type set out in column 2 of Schedule 2 and satisfies a criterion set out in column 4 in respect of an undertaking set out in column 1, or
- b) The use satisfies the criterion set out in paragraph 4(1)(a) but does not satisfy one or more criterion set out in paragraphs 4(1)(b) to (d) of the Nunavut Water Regulations SOR/2013-69.

Waste rock: All rock materials, except ore and tailings that are produced as a result of mining operations. All unprocessed rock materials that are or were produced as a result of mining operations and have no current economic value.

Wastewater: The water generated by site activities or originates on-site that requires treatment or any other water management activity.

Wastewater treatment system: A tertiary treatment plant designed to remove organic material and nutrients.

Watershed: A region or area bordered by ridges of higher ground that drains into a particular watercourse or body of water.

Water table: The level below where the ground is saturated with water.

Meliadine Interim Closure and Reclamation Plan – Update 2020		Original -V.03
2021/04/07	674942-4000-4EER-0002	Technical Report