

# **MELIADINE GOLD PROJECT**

### ALL-WEATHER ACCESS ROAD RECLAMATION AND CLOSURE PLAN

for the Phase 1 All-weather Access Road between Rankin Inlet and the Meliadine site

### **DOCUMENT CONTROL**

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#### 1. Introduction and Background

Agnico-Eagle Mines Ltd. (AEM) and previous owners have been conducting mineral exploration in the Meliadine Gold Project area since 1990. The lands in the exploration area are Inuit Owned Lands (IOL) pursuant to the Nunavut Land Claims Agreement. Land use for the exploration activities has been authorized by the Kivalliq Inuit Association (KIA), the Designated Inuit Association that holds title to Inuit owned lands in the Kivalliq Region of Nunavut.

AEM is proposing to build an All-weather Access Road (AWAR) between Rankin Inlet and the Meliadine West Advanced Exploration site. Figure 1 shows the road alignment and location of the borrow/quarry sites required to build the road.

The Phase 1 AWAR will involve the construction of a 23.8 kilometres long road between the Char River bridge turn-off and the Meliadine West Advanced Exploration site, with access controlled by a manned gate located just after the Char River bridge turn-off. The Phase 1 AWAR will allow AEM to safely and efficiently support advanced exploration of the Meliadine West deposits through the feasibility and environmental assessment phase of the proposed Meliadine Gold Project.

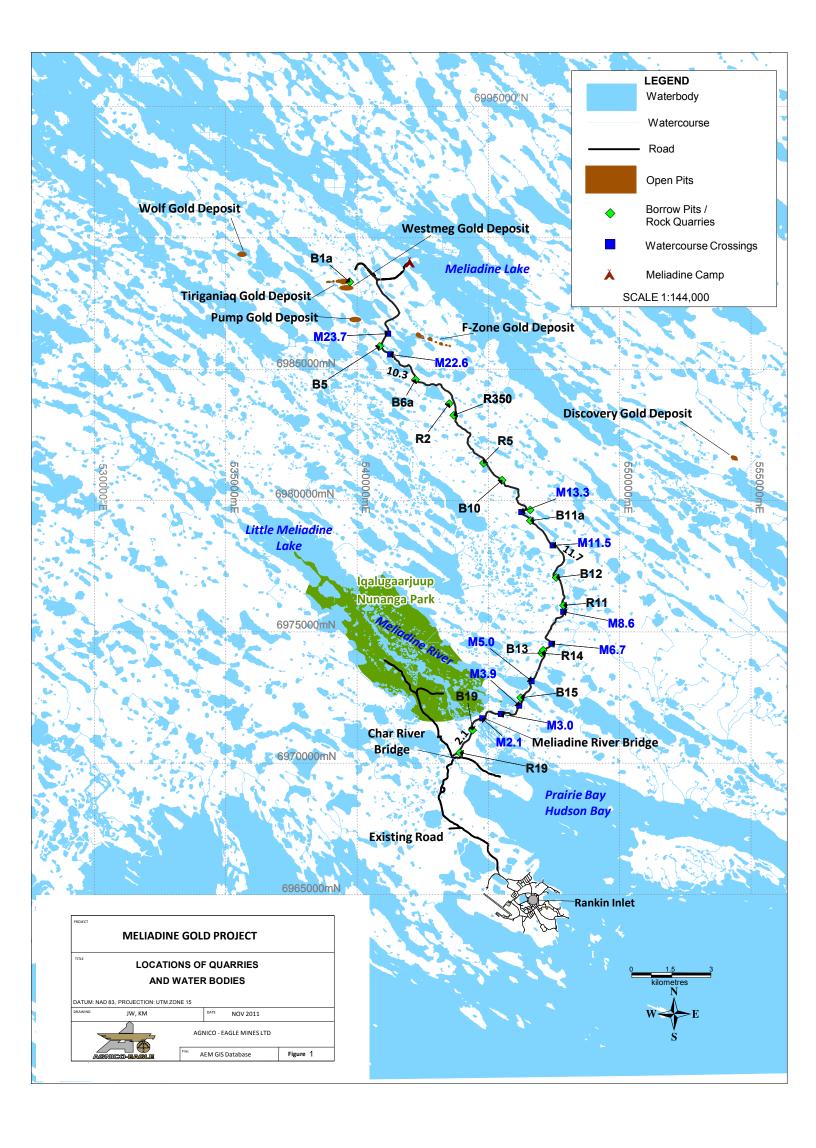
The Phase 1 AWAR will be a private road constructed primarily on Inuit Owned Lands leased by AEM from the KIA and to a lesser extent on leased municipal and crown land. The road will be constructed, inspected, and maintained by AEM with its primary purpose being to support advanced exploration and development activity at the Meliadine West Advanced Exploration site. Consequently AEM has sole responsibility for the construction, operation, and decommissioning of this road, including the road bed, the bridges, the culverts and the borrow/quarry sites used in the construction of the road.

The AWAR<sup>1</sup> will be decommissioned and reclaimed by AEM if the proposed Meliadine Gold Project fails to pass either the Feasibility stage or Environmental Assessment phase. This would take place within a year of the road no longer being required to complete the reclamation of the Meliadine West Advanced Exploration site.

This Plan only addresses the Phase 1 AWAR. A separate Reclamation and Closure Plan exists for the Meliadine West Advanced Exploration site and it is not discussed here.

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<sup>&</sup>lt;sup>1</sup> It is AEM's responsibility to decommission and reclaim the road once its activity in the area is complete. For a third party to take over the road, that third party would have to complete its own arrangements with the land owners (the KIA, municipality and crown) and then complete its own environmental assessment and permitting process covering future use. AEM does not own the land on which the road is constructed on and, thus, it cannot transfer future ownership or use privileges to any third party. AEM must complete its obligation to decommission and reclaim the Phase 1 AWAR unless directed otherwise by a combination of the land owners and other regulatory agencies who issued permits/authorizations for the road.



#### 2. Reclamation and Closure of the Phase 1 AWAR

The Meliadine Gold Project's reclamation objective is to minimize negative environmental effects wherever practicable, practice progressive reclamation, and upon closure, return negatively impacted areas to productive and lasting use by wildlife and humans. Reclaimed areas will be chemically and physically stable, and should ultimately support the same functions as the surrounding undisturbed land. Because of the proximity to Rankin Inlet, particular attention will be paid to ensuring that reclaimed areas are safe for future traditional use.

A practical, cost-effective approach will be central to reclamation and closure of the Phase 1 AWAR. The intent is to pursue reclamation and closure so there are no long-term care and maintenance requirements. Progressive reclamation will be used to reclaim areas no longer needed for road construction by stabilizing disturbed land surfaces and promoting re-vegetation. This approach will employ best management practices and will ultimately advance the return of areas to natural conditions while reducing the overall cost of reclamation.

Decommissioning of the AWAR will be accomplished by loosening compacted surfaces (ripping surface with a dozer mounted ripping unit), flattening side slopes, removing all culverts, and bridges (not including the Char River bridge as this would become the property of the Municipality), and other potential obstructions to drainages paths. The objective is to make the road surface impassable by vehicular traffic by ripping the entire road bed and removing all bridges and culverts along the route. The ripping of the road bed will be accomplished utilizing a CAT D8 dozer with a "ripper" attachment on the back. Successive passes with the dozer longitudinally along the road bed will eliminate the level road surface and make travel difficult (Figure 2). It is anticipated that, in this way, the abandoned former all-weather access road will not be useable by wheeled vehicles (i.e., cars, trucks, and pickups). The road bed would still be useable by ATV or snowmobile and, thus, even after final reclamation, the reclaimed roadbed would offer similar passage to the existing set of trails that currently exist and are used by the residents of Rankin Inlet for traditional use purposes.

The road deactivation works will be carried out as necessary to stabilize any slopes where potential for slope erosion may exist. Stabilization measures may require pulling back of side-cast fills on locally steep slopes or buttressing and/or re-contouring of steepened out slopes using non-acid generating material. These measures would also be applicable to borrow pits/quarries that remained open following construction and located adjacent to the roadway. As much as practical, deactivated surfaces will be graded to blend with the existing topography.

To the extent practical, the decommissioning would also restore the natural pre-road hydrology. Natural drainage courses would be restored primarily through the removal of all culverts and bridges (excluding the Char River bridge, which will belong to the Municipality of Rankin Inlet), and through rehabilitation of channels and banks at the crossing sites. Cross-drain structures (cross-ditches) will also be installed where necessary between culvert sites. Where armouring rock (riprap) is required, this rock will be non-acid generating for the protection of aquatic life. Where affected watercourses are fish bearing, the timing of work will have to be restricted to within the designated DFO fisheries work window (16 July through 30 April). For these sites, appropriate fish exclusion measures will be undertaken prior to the instream works. All in-stream works will be carried out using best management practices for erosion and sediment control.

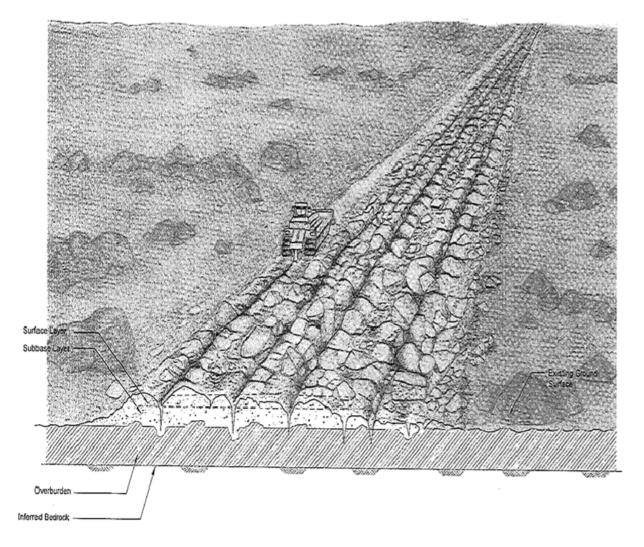


Figure 2. Schematic View of the Roadbed after Dozer Ripping (not to scale)

Decommissioning of the road will start from the proposed Meliadine Gold Project end of the road and progress south towards Rankin Inlet. Stream crossings will be rehabilitated as they are encountered during the progression of the work. The culverts and bridges will be removed from the crossings using a backhoe and crane, and the removed materials (i.e., culvert steel, bridge decks, abutment steel, etc.) will be transported to Rankin Inlet using a semi-tractor and a low-boy trailer, for disposal and salvage. To facilitate re-vegetation of the roadway, site preparation will be followed by seeding with native plant species (if they can be commercially located) as approved by the Government of Nunavut Department of Environment.

#### 2.1 Quarry Sites and Borrow Sources

All quarry sites and borrow sources developed during the construction of the road have been selected to generate only non-acid generating / low metal leaching materials. Water quality monitoring and testing

will be undertaken periodically during the construction and operational period of the road to measure the quality of water draining from the open quarry/borrow sites and from the road base materials.

The quarries will have gently sloping walls and will be designed for positive drainage wherever possible. With prudent initial design, the quarries should require little reclamation following completion of the road. Loose rock will be pulled to the floor of the quarry and the entrance blocked with large boulders.

During decommissioning of the road, should acid-generating bedrock be exposed along the roadway or in borrow pit/quarries, these areas will be covered with a minimum 2 m thick layer of non-acid generating soil or rock to direct water away from the surface, and the surface will be re-vegetated.

#### 3. Estimate of Reclamation Liability

In July of 2011, Aboriginal Affairs and Northern Development Canada (AANDC 2011) completed an estimate (based on information traded back and forth between AEM and Aboriginal Affairs and Northern Development Canada Water Resources staff) that included a calculation of the reclamation liability associated with the decommissioning and reclamation of 23.8 km of all-weather road between Rankin Inlet and the Meliadine West Advanced Exploration site. This estimate did not include the cost of removing the clear span bridges at KM 5.0 and across the Meliadine River. AEM has consequently adjusted the estimate to incorporate this additional work.

The revised total estimate for the decommissioning and reclamation of the Phase 1 AWAR is \$475,683 with the breakdown shown in Table 1.

Table 1. Estimate of Reclamation Liability for the Meliadine All-weather Access Road

Activity/Material	Units	Quantity	Unit Cost	Total Cost	% Land	Land Cost	Water Cost	
Scarify Road	km	23.8	\$ 3,250	\$ 77,350	50%	\$ 38,675	\$	38,675
Remove 8 water crossings	each	8	\$ 4,000	\$ 32,000	0%	\$ -	\$	32,000
Remove 2 clear span bridges	each	2	\$ 35,000	\$ 70,000	0%	\$ -	\$	70,000
Block road with 100m3 rock	m³	100	\$ 15	\$ 1,500	100%	\$ 1,500		
Reclaim road borrow sources (truck + dozer)	hrs	132	\$ 455	\$ 60,060	0%	\$ -	\$	60,060
Camp support & supplies	man days	300	\$ 250	\$ 75,000	50%	\$ 37,500	\$	37,500
Mobilization (dozer, crane, dump truck, loaders)	allow	1	\$ 25,000	\$ 25,000	50%	\$ 12,500	\$	12,500
Demobilization(dozer, crane, dump truck, loaders)	allow	1	\$ 25,000	\$ 25,000	50%	\$ 12,500	\$	12,500
·			Sub-total	\$ 365,910		\$ 102,675	\$ 2	263,235
Indirect Costs	Percentages							
Engineering	5%			\$ 18,296		\$ 5,134	\$	13,162
Project Management	5%			\$ 18,296		\$ 5,134	\$	13,162
Contingency	20%	-		\$ 73,182		\$ 20,535	\$	52,647
Total				\$ 475,683		\$ 133,478	\$ 3	342,206

#### 4. Post Closure Monitoring

The longer term environmental monitoring of the AWAR after the major restoration work has been completed will cover water and soil sampling following re-habilitation. This is the primary method of ensuring that the area has been brought back to productive habitat suitable for use by wildlife and humans. Details of the monitoring program are described in a separate AWAR Monitoring Plan covering collection of baseline data before construction, during construction and operation, and after decommissioning.

Environmental monitoring will continue during and after the post-closure phase of the reclamation until it can be established that licensed criteria have been met. The amount and frequency of post closure monitoring that is required will diminish with time as natural reclamation takes hold and all parties are satisfied that the reclamation has satisfactorily met its objectives.

#### 5. References

AANDC (Aboriginal Affairs and Northern Development Canada). 2011. Technical review memorandum to Nunavut Water Board from Indian and Northern Affairs Canada Water Resources. Dated 8 July 2011, Doc. CIDMS#47308, File #9545-2-2.2BB.MELA, entitled "2BB-MEL0914 – Meliadine West Gold Project – Agnico-Eagle Mines Limited – Reclamation Liability Estimate, Including All-weather Road.