APPENDIX K

NIRB Screening Part 2 Form

SCREENING PART 2 FORM
PROJECT SPECIFIC INFORMATION REQUIREMENTS (PSIR)

1. SUBMISSIONS

The Proponent must submit all information pertaining to the Project as a whole. The information requirements below are designed for the purpose of environmental assessment and are not limited to the scope of a single permit or license application.

IMPORTANT: Please be advised of the following:

1. NIRB does not accept references to an ftp or web sites as a submission.

2. The Proponent must provide NIRB with 1 (one) electronic copy and 1 (one) hardcopy of the required information in English.

3. All maps should be shapefiles, be legible, and should include grids, be of appropriate scale, indicate the scale, include latitude and longitude references, NTS Maps numbers, title, legend and a north arrow. To the extent possible, avoid hand-drawn demarcations and faxed maps; and,

4. Please complete all required information in each section below. If the required information is not applicable to the project proposal, please indicate this in the response with "n/a". If the request has been provided in a different section or report, please note the section or report where the response can be found.

2. GENERAL PROJECT INFORMATION REQUIREMENTS

Project Coordinates and Maps

1. The preferred method for submitting project coordinates information is through the use of a Geographic Information System (GIS) compatible digital file. Although an ESRI ArcView 3.x shape file (in decimal degrees) is the preferred interchange format, the NIRB has the capacity to receive over 100 GIS and CAD related formats, including MapInfo and AutoCAD, provided proper format and projection metadata is also submitted. The NIRB requires coordinates for the project proposal which reflect the entire project area as defined by:

    - Area/sites of investigation;
    - Boundaries of the foreseen land use permit/right-of-way area(s) to be applied for;

The All-Weather Access Road (AWAR) will be located on municipal land (commissioner's land), crown land, and Inuit Owned Land administered by the Kivalliq Inuit Association. This is shown on figure 3.1-1 in the Project Description.

- Location of any proposed infrastructure or activity(s); and,
  The Char, Meliadine and M5.0 bridges will be located where the road crosses the rivers/stream and is shown on figure 3.1-1 in the Project Description.

- Boundaries of the mineral claim block(s) where proposed activities will be undertaken.

  The road falls partly outside of the mineral claims block. Easement leases will be obtained from the Community and Government Services, AAND and KIA.

2. Map of the project site within a regional context indicating the distance to the closest communities.

   Refer to figure 3.1-1 in the Project Description. The AWAR starts at a municipal road approximately five km north of the main Rankin Inlet town site. It will be approximately 23.8 km long, ending at the Meliadine site.

3. Map of any camp site including locations of camp facilities.

   The Meliadine camp has been in operation for over 20 years. It is presently being enlarged to accommodate the workers for the advanced exploration program and will hold up to 172 workers.

4. Map of the project site indicating existing and/or proposed infrastructure, proximity to water bodies and proximity to wildlife and wildlife habitat.

   Figure 3.1-1 in the Project Description shows the Char and Meliadine Rivers and the 8 ephemeral streams crossings, which will be crossed using culverts.

Project General Information

5. Discuss the need and purpose of the proposed project.

   Refer to section 2.1 of the Project Description

6. Discuss alternatives to the project and alternative methods of carrying out the project, including the no-go alternative. Provide justification for the chosen option(s).

   Refer to section 2.0 in the Project Description for the various alternatives considered and Table 2.2-1

7. Provide a schedule for all project activities.

   Refer to section 8.0 in the Project Description

8. List the acts, regulations and guidelines that apply to project activities.

   Refer to appendix G in the Project Description

9. List the approvals, permits and licenses required to conduct the project.

   Refer to section 9.3 in the Project Description

DFO Operational Statement (OS) Conformity

10. Indicate whether any of the following Department of Fisheries and Oceans (DFO) Operational Statement (OS) activities apply to the project proposal:
    - Bridge Maintenance

      Although not applicable to building the road and bridges, their subsequent maintenance will follow the operational statement.

    - Clear Span Bridge

      Single span bridges will also be built to cross the Char, Meliadine and M5.0 water crossings with the abutments and any ancillary facilities all located above the ordinary high water mark. The height of the bridge above the water will meet the requirements for navigable waters in the case of the Meliadine Bridge.

    - Culvert Maintenance

      The road will cross 8 ephemeral streams using culverts. As is the practice in arctic environments, the culverts will be stacked as shown in figure 3.1-7.

    - Ice Bridge

      An ice bridge may be built to install the bridge girders when there is no flow in the Meliadine River. This would occur in winter.

    - Routine Maintenance Dredging

      n/a

    - Installation of Moorings

      n/a

    Please see DFO's OS for specific definitions of these activities available from DFO's web-site at http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/index-eng.htm
11. If any of the DFO's OS apply to the project proposal, does the Proponent agree to meet the conditions and incorporate the measures to protect fish and fish habitat as outlined in the applicable OS? If yes, provide a signed statement of confirmation.

The signed statement of confirmation can be found at the end of the Part 2 NIRB form.**

Transportation

12. Describe how the project site will be accessed and how supplies will be brought to site. Provide a map showing access route(s).

    Presently, two approved winter roads are used to deliver supplies to the Meliadine camp. These two routes were approved by the KIA under permits KVRW98F149 and KVRW07F02.

    The proposed all weather road is shown on figure 3.1-1 in the Project Description.

13. If a previous airstrip is being used, provide a description of the type of airstrip (ice-strip/all-weather), including its location. Describe dust management procedures (if applicable) and provide a map showing location of airstrip.

    An ice runway was used in the distant past but for all ongoing purposes, the airport in Rankin Inlet will be used. Having the road will allow road delivery of supplies coming in by air and barge, and will allow the ferrying of workers to and from the Rankin Inlet airport.

    a. If an airstrip is being constructed, provide the following information
    b. Discuss design considerations for permafrost
    c. Discuss construction techniques
    d. Describe the construction materials, type and sources, and the acid rock drainage (ARD) and metal leaching (ML) characteristics (if rock material is required for airstrip bed).
    e. Describe dust management procedures.
    f. Provide a map showing location of proposed airstrip.

14. Describe expected flight altitudes, frequency of flights and anticipated flight routes.

    Not Applicable

Camp Site

15. Describe all existing and proposed camp structures and infrastructure

    The existing camp was established in 1997 and has operated continuously since with brief periods of winter shut down. Additional Atco units were added to the camp in early 2011 to accommodate the increase in workers.

    In large part, it is a Weatherhaven design along with some stick-built structures and Atco type trailers. Presently it will accommodate about 140 people. The sewage treatment plant is sized for 150 people. The volume of water allowed for the camp under the Water Licence is 25 m^3/day and this is sufficient, even with the increased number of workers.

16. Describe the type of camp:
    a. Mobile **Some new ATCO units being installed in 2011 are trailers placed on gravel pads.**

    b. Temporary

       The continued advanced exploration program will operate out of the camp. It is temporary in nature and can easily be dissembled and removed to Rankin Inlet.

    c. Seasonal **n/a**
    d. Permanent **n/a**
    e. Other

       Some hotel accommodation in Rankin Inlet may be block booked by the contractors during the construction of the road.

17. Describe the maximum number of personnel expected on site, including the timing for those personnel involved with the project.

    The Meliadine camp will have a maximum of 140 persons at any one time. AEM supervisory staff (maximum 4) devoted to road building may stay in camp.

Equipment

18. Provide a list of equipment required for the project and discuss the uses for the equipment.

    The project will involve standard road building equipment supplied by local contractors. This will include dump trucks, loaders, dozers, drills, explosives trucks, fuel - service trucks, pickups and vans.

19. If possible, provide digital photos of equipment.

    Not available

Water

20. Describe the location of water source(s), the water intake methods, and all methods employed to prevent fish entrapment. Provide a map showing the water intake locations.

    The road and bridges will be built beginning in early March 2012. No water will be used.

21. Describe the estimated rate of water consumption (m^3/day).

    n/a

22. Describe how waste water will be managed. If relevant, provide detail regarding location of sumps, including capacity of sumps and monitoring.

    n/a

23. If applicable, discuss how surface water and underground water will be managed and monitored.

    The road will be built in winter starting in early March 2012 and is expected to be completed some six months later. Single span bridges are to be installed over the Meliadine and Char Rivers, and stream M5.0. Stacked culverts will be used to cross eight ephemeral streams found along the road right-of-way.

Waste Water (Grey water, Sewage, Other)

24. Describe the quantities, treatment, storage, transportation, and disposal methods for the following (where relevant):

    Workers will either be staying in commercial lodging in Rankin Inlet.

    - Sewage

      N/A

    - Camp grey water

      N/A

    - Combustible solid waste

      All combustible solid waste will be taken to the Rankin Inlet landfill for the work crew building the road.

    - Non-combustible solid waste, including bulky items/scrap metal

      All non-combustible, non-hazardous solid waste will be removed to the Rankin Inlet landfill.

    - Hazardous waste or oil

      Although not anticipated any hazardous waste will be kept secure and packed according to the TDGA for transport to a southern waste management facility for treatment and/or disposal. This waste would be sent south during the shipping season.

      Waste Oil is delivered to a contractor in Rankin Inlet who uses it for heating.

    - Contaminated soils/snow

All contaminated snow will be placed in empty 205 litre drums and stored on a lined, bermed area at the Meliadine site until the melted snow can be treated in an oil-water separator. The recovered oil will be stored in 205 litre barrels while the water will be used within the operations.

- Empty barrels/ fuel drums

  Empty barrels / fuel drums will be returned to the supplier for reuse.

- Any other waste produced

  A waste management has been prepared for the Water Board for licence 2BB-MEL0914 and it describes how all wastes are to be handled.

25. If the project proposal includes a landfill or landfarm, indicate the locations on a map, provide the conceptual design parameters, and discuss waste management and contact-water management procedures.

    n/a

Fuel

26. Describe the types of fuel, quantities (number of containers, type of containers and capacity of containers), method of storage and containment. Indicate the location on a map where fuel is to be stored, and method of transportation of fuel to project site.

    Fuel for machinery building the road will come from the Rankin Inlet tank farm.

27. Describe any secondary containment measures to be employed, including the type of material or system used. If no secondary containment is to be employed, please provide justification.

    N/A

28. Describe the method of fuel transfer and the method of refuelling.

    Fuel will be delivered to road building machinery by a fuel truck. Some of the smaller vehicles may go into town for refuelling.

29. Describe spill control measures in place.

    The contractor will have a spill contingency plan. The AEM Fuel Management and Spill Contingency Plan will serve as backup.

Please refer to Environment Canada's fuel storage tank system regulations (*Storage Tank System for Petroleum and Allied Petroleum Products*) website at http://www.ec.gc.ca/st-rs/ for details on fuel storage requirements.

Chemicals and Hazardous Materials*

**included but not limited to oils, greases, drill mud, antifreeze, calcium or sodium chloride salt, lead acid batteries and cleaners*

All reagents and materials used in building the AWAR will be stored and handled in compliance with manufacturers' and WHMIS specifications.

30. Describe the types, quantities (number of containers, the type of container and capacity of containers), method of storage and containment. Indicate the location on a map where material is to be stored, and method of transportation of materials to project site.

    A small quantity of engine oil will be held at a location along the road for immediate use.

31. Describe any secondary containment measures to be employed, including the type of material or system used.

    All reagents and materials used on site will be stored and handled in compliance with manufacturers' and WHMIS specifications. Transfers will take place from suppliers' containers as close to the end-use point as possible (in a secondary containment environment if appropriate).

32. Describe the method of chemical transfer.

    All reagents and materials used on site will be stored and handled in compliance with manufacturers' and WHMIS specifications. Transfers will take place from suppliers' containers as close to the end-use point as possible (in a secondary containment environment if appropriate).

33. Describe spill control measures in place.

    A detailed spill plan was developed for the Meliadine site and filed with the NWB in August 2010.

    All fuels and other products requiring secondary containment will be stored in lined, bermed area.

    Spill kits will be located where inadvertent spills may occur such as at refuelling locations.

Workforce and Human Resources/Socio-Economic Impacts

34. Discuss opportunities for training and employment of local Inuit beneficiaries.

Inuit firms bid and were successful in securing the contract to build the road. A northern company will install the bridges. Both will employ Inuit beneficiaries.

35. Discuss workforce mobilization and schedule, including the duration of work and rotation length, and the transportation of workers to site.

    Local contractors will be hired to build the road and assist in building the bridges. Approximately 50 workers will build the road and 20 will build the bridges.

    Construction will begin in March 2012 and continue up to 6 months. Shift rotation will be in compliance with Labour Standards Act and the Mine Health and Safety Act.

    The workers working on building the road from the Rankin Inlet to Meliadine will use a van and/or pickups to report to work and will stay at home in Rankin Inlet or in commercial lodging in Rankin Inlet. The same hold true for the workers working on the bridges.

36. Discuss, where relevant, any specific hiring policies for Inuit beneficiaries.

    An Inuit firm was successful in bidding on the contract to build the road. A northern company will install the bridges. Both will employ Inuit beneficiaries

Public Involvement/ Traditional Knowledge

37. Indicate which communities, groups, or organizations would be affected by this project proposal.

    The Hamlet of Rankin Inlet will be directly affected by the development as it will mean greater economic activity with more business and employment opportunities for the residents. It will also provide easy access to traditional use area, and to camps and cottages found around Meliadine Lake.

    The main groups and organizations affected by the development of the road will be the Kivalliq Inuit Association and the Rankin Inlet HTO.

38. Describe any consultation with interested Parties which has occurred regarding the development of the project proposal.

    Refer to Table 6.2.5-1 in the Project Description.

39. Provide a summary of public involvement measures, a summary of concerns expressed, and strategies employed to address any concerns.

    Refer to Table 6.2.5-1 in the Project Description.

40. Describe how traditional knowledge was obtained, and how it has been integrated into the project.

Refer to section 6.2.3 of the Project Description.

41. Discuss future consultation plans.

AEM will continue its engagement with local stakeholders both within Rankin Inlet, Chesterfield Inlet and Whale Cove on the proposed all weather access road and also on the possible future development of a mine. This engagement process will include ongoing periodic meeting with the key stakeholder groups such as the Hamlets, the local HTO's, the Kivalliq Inuit Association, the GN, and local business community. It will also include public meetings and forums. The Project Description for the Phase 1 all-weather access road provides a first comprehensive vision of the proposed project and will become a key tool for public engagement.

AEM opened an office in Rankin Inlet allowing the public to request information during normal working hours.

3. PROJECT SPECIFIC INFORMATION

The following table identifies the project types identified in Section 3 of the NIRB, Part 1 Form. Please complete all relevant sections.

It is the proponent's responsibility to review all sections in addition to the required sections to ensure a complete application form.

Table 1: Project Type and Information Required

Project Type	Type of Project Proposal	Information Request
1	All-Weather Road/Access Trail	Section A-1 and Section A-2
2	Winter Road/Winter Trail	Section A-1 and Section A-3
3	Mineral Exploration	Section B-1 through Section B-4
4	Advanced Mineral Exploration	Section B-1 through Section B-8
5	Mine Development/Bulk Sampling	Section B-1 through Section B-12
6	Pits and Quarries	Section C
7	Offshore Infrastructure(port, break water, dock)	Section D
8	Seismic Survey	Section E
9	Site Cleanup/Remediation	Section F
10	Oil and Natural Gas Exploration/Activities	Section B-3 and Section G
11	Marine Based Activities	Section H
12	Municipal and Industrial Development	Section I

SECTION A: Roads/Trails

A-1. Project Information

1. Describe any field investigations and the results of field investigations used in selecting the proposed route (e.g. geotechnical, snow pack)

   Refer to section 3.1.1 in the Project Description.

2. Provide a conceptual plan of the road, including example road cross-sections and water crossings.

   Refer to section 3.1.2 and 3.1.3 and associated figures in the Project Description

3. Discuss the type and volume of traffic using the road/trail (i.e. type of vehicles and cargo and number of trips annually).

   Refer to sections 3.3 and 3.3.6 in the Project Description.

4. Discuss public access to the road.

   The AWAR will have restricted access. Refer to secions 3.3, 3.3.1 and 3.3.2 in the Project Description.

5. Describe maintenance procedures.

   Refer to sections 3.2, 3.2.1 and 3.2.2 in the Project Description.

A-2. All-Weather Road/Access Trail

6. Discuss road design considerations for permafrost.

   Refer to Section 3.1 in the Project Description and in "*All Weather Access Road, Meliadine Gold Project, Feasibility Level Design,* January 2011 (Golder 2011(a))

7. Describe the construction materials (type and sources for materials), and the acid rock drainage (ARD) and metal leaching characteristics of the construction materials.

   Refer to section 3.1-4 in the Project Description. Also refer to the report, *"Geochemical Assessment of Potential Road Construction Material"* on the attached CD for detailed information.

8. Discuss construction techniques, including timing for construction activities.

   Refer to section 3.0 in the Project Description.

   The road will be built by contractors using their own trucks, dozers, loaders, drills, fuel truck, explosive truck and various pickups and vans. Simplistically, the method of construction will be blast or dig, load, haul, and dump. A dozer will move the road building materials into place.

A separate crew will build the three bridges. Firstly, they will build the abutments and place armouring around the abutments to protect them from erosion. A crane will lift or slide the steel girders and other steel works into place for the Char and Meliadine bridges from an ice bridge on the river. The bridge at M5.0 will be prefabricated and lifted into place.

9. Indicate on a map the locations of designated refuelling areas, water crossings, culverts, and quarries/borrow sources.

   Refer to figure 3.1-1 for the location of the water crossings and quarries. Fuel trucks will deliver fuel to all the equipment working on the road. The fuel will be obtained from the Rankin Inlet tank farm.

10. Identify the proposed traffic speed and measures employed to ensure public safety.

    The road is being built for a maximum speed of 50 km/hr and this will be posted in English and Inuktitut.

    The road will have restricted access. Refer to section 7.0 for a Traffic Management Plan

11. Describe dust management procedures.

    Refer to section 3.2.1 in the Project Description.

A-3. Winter Road/Trail

12. Describe the surface preparation, including the use of snow berms or compaction, and any flooding. If flooding is to be used, provide the location of the water source on a map. **n/a**
13. Describe the operating time period.**n/a**
14. Identify the proposed traffic speed and measures employed to ensure public safety. **n/a**
15. Discuss whether the selected route traverses any fish-bearing water bodies. **n/a**

SECTION B: Mineral Exploration /Advanced Exploration /Development

There will not be any mineral exploration / advanced exploration associated with the AWAR construction project.

There will be drilling and blasting at quarries along the AWAR route.

B-1. Project Information

1. Describe the type of mineral resource under exploration. **n/a**

B-2. Exploration Activity n/a

2. Indicate the type of exploration activity: **n/a**
   - Bulk Sampling (underground or other)

- Stripping (mining shallow bedded mineral deposits in which the overlying material is stripped off, the mineral removed and the overburden replaced)
- Trenching
- Pitting
- Delineation drilling
- Preliminary Delineation drilling
- Exploration drilling
- Geophysical work (indicate ground and/or air)
- Other

3. Describe the exploration activities associated with this project: **n/a**
   - Satellite remote sensing
   - Aircraft remote sensing
   - Soil sampling
   - Sediment sampling
   - On land drilling (indicate drill type)
   - On ice drilling (indicate drill type)
   - Water based drilling (indicate drill type)
   - Overburden removal
   - Explosives transportation and storage
   - Work within navigable waters
   - On site sample processing
   - Off site sample processing
   - Waste rock storage
   - Ore storage
   - Tailings disposal
   - Portal and underground ramp construction
   - Landfilling
   - Landfarming
   - Other

B-3. Geosciences

4. Indicate the geophysical operation type: **n/a**
   a. Seismic (please complete Section E)
   b. Magnetic
   c. Gravimetric
   d. Electromagnetic
   e. Other (specify)
5. Indicate the geological operation type: **n/a**
   a. Geological Mapping
   b. Aerial Photography
   c. Geotechnical Survey
   d. Ground Penetrating Survey
   e. Other (specify)
6. Indicate on a map the boundary subject to air and/or ground geophysical work. **n/a**
7. Provide flight altitudes and locations where flight altitudes will be below 610m. **n/a**

B-4. Drilling **(This refers to drilling at the quarries for the road construction only.)**

8. Provide the number of drill holes and depths (provide estimates and maximums where possible).

   A blast pattern will be laid out in the quarry for good fragmentation of the rock. The depth of drilling will be approximately 3 metres. The number of drill holes and depths is dependent on the quantity of rock needed for the road. This will be decided in the field. Esker material that does not require blasting will be used wherever possible for the road.

9. Discuss any drill additives to be used.

   The holes will be drilled without water and no drill additives.

10. Describe method for dealing with drill cuttings.

    Drill cuttings will collect on the surface around the drill holes. The holes will be filled with explosives, discharged and the rock, along with drill cuttings, loaded for immediate use in building the road.

    The abutments of the bridges are likely to be built on piles and these will be drilled into the bed rock located 8 – 12 metres below surface. The drill cuttings at this location will be collected and moved a minimum of 30 metres from water and placed on the right-of-way of the road.

11. Describe method for dealing with drill water. **n/a**

12. Describe how drill equipment will be mobilized.

    The drill equipment will be mobilized to the quarries either by sled, flatbed truck or helicopter.

13. Describe how drill holes will be abandoned. **n/a**

14. If project proposal involves uranium exploration drilling, discuss the potential for radiation exposure and radiation protection measures. Please refer to the *Canadian Guidelines for Naturally Occurring Radioactive Materials* for more information. **n/a**

B-5. Stripping/ Trenching/ Pit Excavation

15. Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other)

    Esker will likely be sourced by ripping it with a dozer. In some instances esker quarries may be blasted. A loader will load the trucks.

    Rock will be blasted from potential quarries located along the road.

16. Describe expected dimensions of excavation(s) including depth(s).

    Refer to Figure 3.1-4 in the Project Description for the location and size of the potential quarries. The dimensions of the quarries will be dependent on the volume of material to be extracted, the topography of the potential quarry - which

will influence the depth and areal extent. Most potential quarries are topographical highs and can readily be accessed for material. For the largest quarry where 65,000 m^3 of material will be extracted and assuming an estimated depth of 6 metres, the surface area of the quarry would be 11,000 m^2. Smaller quarries would have a smaller footprint. **

17. Indicate the locations on a map.

    Refer to Figure 3.1-4 in the Project Description for the location of all potential quarries.

18. Discuss the expected volume material to be removed.

    The total volume of rock and granular material to be extracted for road building should not exceed 325,000 m^3. The volume extracted from each quarry is presented in Table 3.1.4-1.

19. Discuss methods used to determine acid rock drainage (ARD) and metal leaching potential and results.

    Refer to section 5.2 in the Project Description and also the report "Geochemical Assessment of Potential Road Construction Material". **

B-6. Underground Activities

20. Describe underground access. **n/a**
21. Describe underground workings and provide a conceptual plan. **n/a**
22. Show location of underground workings on a map. **n/a**
23. Describe ventilation system. **n/a**
24. Describe the method for dealing with ground ice, groundwater and mine water when encountered. **n/a**
25. Provide a Mine Rescue Plan. **n/a**

B-7. Waste Rock Storage and Tailings Disposal n/a

26. Indicate on a map the location and conceptual design of waste rock storage piles and tailings disposal facility. **n/a**
27. Discuss the anticipated volumes of waste rock and tailings. **n/a**
28. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results. **n/a**

B-8. Stockpiles n/a

29. Indicate on a map the location and conceptual design of all stockpiles. **Crushed rock and/or granular material for road maintenance will be stored in select quarries along the road right-of-way. 8000 m^3 will be stored between km 0 and 4, 9000 m^3 between km 8 and 9, and another 9000 m^3 between km 14 and 17.**

30. Describe the types of material to be stockpiled. (i.e. ore, overburden) **see above**

31. Describe the anticipated volumes of each type of material to be stockpiled. **A total of 25,000 m^3 of material for road maintenance will be stored in all the quarries combined.**

32. Describe any containment measures for stockpiled materials as well as treatment measures for runoff from the stockpile. **Stockpiled material will have a low potential to leach trace metals, and will be far removed from water bodies. A depression at the exit to the quarry will allow the settling of suspended soilds.**

33. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results. **All potential quarries are non ARD. Also, refer to section 5.2 in the Project Description and the report, "Geochemical Assessment of Potential Road Construction Material" found on the attached CD**

B-9. Mine Development Activities

34. Indicate the type(s) of mine development activity(s): **n/a**
    - Underground
    - Open Pit
    - Strip Mining
    - Other
35. Describe mine activities. **n/a**
    - Mining development plan and methods
    - Site access
    - Site infrastructure (e.g. airstrip, accommodations, offshore infrastructures, mill facilities, fuel storage facilities, site service roads)
    - Milling process
    - Water source(s) for domestic and industrial uses, required volumes, distribution and management.
    - Solid waste, wastewater and sewage management
    - Water treatment systems
    - Hazardous waste management
    - Ore stockpile management
    - Tailings containment and management
    - Waste rock management
    - Site surface water management
    - Mine water management
    - Pitting and quarrying activities (please complete Section C)
    - Explosive use, supply and storage (including on site manufacturing if required)
    - Power generation, fuel requirements and storage
    - Continuing exploration
    - Other
36. Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage. **n/a**

B-10. Geology and Mineralogy n/a

37. Describe the physical nature of the ore body, including known dimensions and approximate shape.
38. Describe the geology/ mineralogy of the ore deposit
39. Describe the host rock in the general vicinity of the ore body.
40. Discuss the predicted rate of production.
41. Describe mine rock geochemical test programs which have been or will be performed on the ore, host rock, waste rock and tailings to determine acid generation and contaminant leaching potential. Outline methods and provide results if possible.

B-11. Mine n/a

42. Discuss the expected life of the mine.
43. Describe mine equipment to be used.
44. Does the project proposal involve lake and/or pit dewatering? If so, describe the activity as well as the construction of water retention facilities if necessary.
45. Discuss the possibility of operational changes occurring during the mine life with consideration for timing. (e.g. open pit to underground)
46. If project proposal involves uranium mining, consider the potential for radiation exposure and radiation protection measures. Particular attention should be paid to *The Nuclear Safety and Control Act*.

B-12. Mill n/a

47. If a mill will be operating on the property in conjunction with mining, indicate whether mine-water may be directed to the mill for reuse.
48. Describe the proposed capacity of the mill.
49. Describe the physical and chemical characteristics of mill waste as best as possible.
50. Will or does the mill handle custom lots of ore from other properties or mine sites?

SECTION C: Pits and Quarries

1. Describe all activities included in this project.
   - Pitting **n/a**
   - Quarrying

     Granular and rock quarries will be developed close to the road right-of-way. These are shown on figure 3.1-4. Most potential quarries are topographical highs and can readily be accessed for material. While the granular material will be ripped using a dozer in most cases, the rock quarries will require blasting.

   - Overburden removal

     The granular and rock quarries do not have appreciable overburden.

   - Road use and/or construction (please complete Section A)

     See section A above.

   - Explosives transportation and storage

Explosives transportation and storage will be carried out in accordance with applicable regulations under the Mine Health and Safety Act. Explosives will be stored in magazines at approved locations as set out by the Workers' Safety & Compensation Commission.

- Work within navigable waters

  The Meliadine River is the only navigable water. All the work in navigable waters will be done over the winter. Some work may be carried out on the ice of the Meliadine Rivers to install the steel girders for the bridges. The ice will be cleaned once the girders are in place.

- Blasting

  Blasting will be carried out in accordance with applicable regulations under the Mine Health and Safety Act.

- Stockpiling

  Rock and granular material will be used directly after blasting for road building over the 6 month building period.

  However, stockpiles of crush and esker will be stored in select quarries for future road maintenance.

  Crushed rock and/or granular material set aside for maintenance purposes will approximate 25,000 m^3.

- Crushing

  Approximately 20,000 m^3 of granular and rock will be screened and/or crushed for the top layers of the road.

- Washing

  The rock and esker will not be washed.

- Other **n/a**

2. Describe any field investigations and the results of field investigations used in determining new extraction sites.

   Geomorphology was carried out along the right-of-way for the road. Occurrences of geomorphic and periglacial processes and surficial materials were mapped to identify potential site conditions, soil displacement hazards and possible granular sources to be considered during engineering design and construction. Occurrences of less than desirable soil conditions caused the road route to be altered to avoid these. The complete report "Geomorphology and Soils – Meliadine Access Road" can be found on the attached CD.

Potential quarries for both granular and rock construction material were sampled over the summer of 2010. The samples collected underwent static testing for ARD and leaching of trace metals. The methods used and the results are presented in the report by Golder Associates, "Geochemical Assessment of Potential Road Construction Material". Only quarries having no ARD and low metal leaching are to be used for road building. This report can be found on the attached CD.

3. Identify any carving stone deposits.

   No stone suitable for carving has been identified during the course of exploration at Meliadine so far.

4. Provide a conceptual design including footprint.

   Figure 3.1-4 shows the location of the quarries and the road alignment. Each quarry will have different footprint based on its surface expression and the quantity of rock and/or esker needed to construct sections of road.

5. Describe the type and volume of material to be extracted.

   The total quantity of material extracted to build the road will be approximately 325,000 m^3. 103,000 m^3 wil be quarried rock and 222,000 m^3 will be glacial-fluvial material.

   More detail is provided in the Golder report, "All Weather Access Road Meliadine Gold Project Feasibility Level Design", November 2010 on the attached CD.

6. Describe the depth of overburden.

   Exposed outcrops having no overburden will be used for rock needed for road construction. Glacial-fluvial quarries will provide material for road building and these do not have significant overburden.

7. Describe any existing and potential for thermokarst development and any thermokarst prevention measures.

   Fine grained, poorly drained, ice rich, frost susceptible soil conditions as noted by geomorphological mapping were avoided where possible due to the susceptibility to thaw settlement. Where these soils could not be avoided, the depth of the road base was increased to 1.3 m to ensure no melting of the soils occurs over the summer period. Further details can be found in the Golder report, "Geomorphology and Soils, Meliadine Access Road, Meliadine Gold Project, Nunavut, 2010" on the attached CD.

8. Describe any existing or potential for flooding and any flood control measures.

   All quarries are positive topographic features and should not be prone to flooding.

9. Describe any existing or potential for erosion and any erosion control measures.

The road traverses gently to moderately sloping hillsides and ridges of low relief. Steeply sloping areas are present locally, but the road corridor avoids these areas. In a similar manner, the potential quarries are topographical high points and are gently sloping. The potential for erosion is low as the quarrying will further reduce the relief.

The road will be inspected every two weeks during the summer period. As necessary a small depression at the mouth of the quarries will allow the settling of suspended solids. As a preventive measure and where necessary, silt fences will be installed to capture any sediments arising from erosion at water crossings.

10. Describe any existing or potential for sedimentation and any sedimentation control measures.

    Sedimentation control will be employed at stream crossings. The road fill armouring culverts and the bridges will be large cobbles or boulders to minimize the possibly of erosion and sedimentation. As a preventive measure and where necessary, silt fences will be installed to capture any sediments arising from erosion at water crossings.

11. Describe any existing or potential for slumping and any slump control measures.

    Relief along the road is low; there is no natural slumping and road construction should not cause slumping. Glacial-fluvial quarries will have gently sloping sides so as to minimize any slumping.

    Refer to section 3.1.4 in the Project Description for mitigation measures.

12. Describe the moisture content of the ground.

    Most soils are generally saturated and frozen.

13. Describe any evidence of ice lenses.

    The road alignment is located wherever possible along well-drained ridge and upper slope areas, which are underlain by gravelly beach deposits, gravelly washed till surfaces, or angular fragments. These normally have few ice lenses in these areas.

    For imperfectly to poorly drained, the probability of ice lenses increases and road construction will ensure no melting of the underlying natural soil. This will minimize problems that might occur should any ice lenses be encountered.

14. If blasting, describe methods employed.

    All explosive handling, transport, storage and use will be subject to federal approval under the Explosives Act, and subject to Nunavut Mine Health and Safety Act requirements.

15. Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.

    The explosives and blasting accessories will be staged through a secure magazine at approved sites.

    The explosives will be cartridged slurries (Hazard Classes 1.1D and 1.5D), detonating cord, and detonators. All explosive handling, transport, storage, manufacture and use will be subject to federal approval under the Explosives Act, and subject to Nunavut Mine Health and Safety Act requirements.

16. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.

    AEM contracted Golder Associates to carry out static testing and metal leaching on all potential quarries. Refer to 5.2 in the Project Description. The complete report, "Geochemical Assessment of Potential Road Construction Material" can be found on the attached CD.

17. Discuss safety measures for the workforce and the public.

    Refer to section 3.3 in the Project Description. The workforce will be required to follow the applicable labour standards, meet the requirements of the Mine Health and Safety Act, and abide by AEM's safety policy.

SECTION D: Offshore Infrastructure

There will not be any offshore infrastructure associated with constructing and operating the road.

D-1. Facility

1. Describe any field investigations and the results of field investigations used in selecting the site (i.e. aerial surveys, bathymetric surveys, tidal processes, shoreline erosion processes, geotechnical foundation conditions)
2. Provide a conceptual plan, profile description and drawing(s) indicating shoreline, facility footprint, tidal variations, required vessel draft, keel offset, deck height freeboard
3. Discuss how anticipated loads on the seabed foundation and on the offloading platform will be incorporated into the design.
4. Describe how vessels will manoeuvre around the facility. (e.g. pull alongside or in front)
5. Discuss the anticipated life of the facility.

D-2. Facility Construction

6. Describe the types of material used for construction (i.e. granular or rock, steel piling or sheet piling, concrete). If material is granular, consider acid rock drainage potential, metal leaching potential, percentage of fines, size.
7. Describe dredging activities.
8. Indicate source of granular or rock material used in construction.
9. List quantities of the various types of material used in construction.

10. Describe construction method(s).
11. Indicate whether a site engineer will be on-site to inspect construction.
12. If proposed construction method involves dumping of fill into water, discuss measures for mitigating the release of suspended solids.

D-3. Facility Operation

13. Describe maintenance activities associated with the facility (e.g. dredging, maintenance to account for potential settlement of facility,)
14. Discuss whether the public will have access to the facility(s) and describe public safety measures.
15. Describe cargo and container handling, transfer and storage facilities.
16. Indicate whether fuel will be transferred from barges at this site and describe the method of that fuel transfer.
17. Discuss frequency of use.

D-4. Vessel Use in Offshore Infrastructure

18. Please complete Section H

SECTION E: Seismic Survey

There will not be any seismic survey carried out in constructing and operating the road.

E-1. Offshore Seismic Survey

1. Indicate whether the survey is 2D or 3D at each site
2. Describe the type of equipment used, including:
   - Type and number of vessels including length, beam, draft, motors, accommodation capacity, operational speeds when towing and when not towing
   - Sound source (type and number of airguns)
   - Type and number of hydrophones
   - Number, length, and spacing of cables/ streamers
3. On a map, indicate the grid, number of lines and total distance covered at each site.
4. Indicate the discharge volume of the airguns, the depth of airgun discharge, and the frequency and duration of airgun operation at each site.
5. Discuss the potential for dielectric oil to be released from the streamer array, and describe proposed mitigation measures.
6. Indicate whether additional seismic operations are required for start-up of operations, equipment testing, repeat coverage of areas.
7. Indicate whether air gun procedures will include a “ramping up” period and, if so, the proposed rate of ramping up.
8. Indicate whether the measures described in the *Statement of Canadian Practice for Mitigation of Noise in the Marine Environment* will be adhered to for this project.

E-2. Nearshore/Onshore Seismic Survey

9. For each site, indicate whether nearshore and onshore surveys will be conducted during the ice season or once the ice has melted
10. Describe how nearshore and onshore areas will be accessed.

11. Describe the survey methods to be used (e.g. explosive charge, vibration, air or water gun, other)
12. Describe equipment to be used
13. If applicable, indicate number, depth and spacing of shot holes
14. Describe explosive wastes including characteristics, quantities, treatment, storage, handling, transportation and disposal methods.

E-3. Vessel Use in Seismic Survey

15. Please complete Section H

SECTION F: Site Cleanup/Remediation

1. Describe the location, content, and condition of any existing landfills and dumps (indicate locations on a map).

   Under an agreement with the Hamlet of Rankin Inlet, all non-hazardous, non-combustible waste generated at the Meliadine camp and during road construction can be transferred to the municipal landfill in Rankin Inlet.

2. Identify salvageable equipment, infrastructure and/or supplies.

   There will not be any salvageable equipment, infrastructure and/or supplies arising from the building of the road over the 6 month period.

3. Provide a list of all contaminants to be cleaned up, anticipated volumes and a map delineating contaminated areas. This includes buildings, equipment, scrap metal and debris, and barrels as well as soil, water (surface and groundwater) and sediment.

   There should not be any contaminants arising from the construction of the road. Inadvertent spills of hydrocarbon compounds are possible and these will be cleaned up with the contaminated snow and/or soil removed to the Meliadine camp for treatment or storage.

4. Describe the degree of pollution/contamination, and list the contaminants and toxicity.

   There will be no accumulation of pollution/contamination associated with the road building.

5. Describe technologies used for clean-up and/or disposal of contaminated materials. Include a list of all the physical, chemical and biological cleanup/ remediation methods, operational procedures, and the dosage/frequency of reagents and bacterial medium.

   The clean-up and/or disposal of contaminated materials, most likely hydrocarbons, will be carried out using road building equipment or hand tools. The material will be removed to the Meliadine site for storage and treatment.

6. Identify and describe all materials to be disposed of off site, including the proposed off site facilities, method of transport and containment measures. **n/a**
7. Discuss the viability of landfarming, given site specific climate and geographic conditions. **n/a**

8. Describe the explosive types, hazard classes, volumes, uses, location of storage (indicate on a map), and method of storage (if applicable).

   The explosives and blasting accessories will be staged through a secure magazine located at approved sites.

   The explosives will be cartridged slurries (Hazard Classes 1.1D and 1.5D), detonating cord, and detonators. All explosive handling, transport, storage, manufacture and use will be subject to federal approval under the Explosives Act, and subject to Nunavut Mine Health and Safety Act requirements.

9. If blasting, describe the methods employed.

   All explosive handling, transport, storage, manufacture and use will be subject to federal approval under the Explosives Act, and subject to Nunavut Mine Health and Safety Act requirements.

   The blast holes will be vertical and shallow with a pattern to fragment the rock as required for road building.

10. Describe all methods of erosion control, dust suppression, and contouring and re-vegetation of lands.

    Sediment and erosion control measures will be implemented be implemented prior to the start of work and maintained during the work phase.

    Dust will be mitigated by maintaining posted speed limits, regular grading of the road surface, and applying dust suppressants where necessary.

    The walls of glacial-fluvial quarries will be gently sloped to minimize any erosion and suitable for plants to re-colonize the disturbed area.

    Refer to section 3.1.4 and 3.2.1in the Project Description.

11. Describe **all** activities included in this project.
    - Excavation (please complete Section B-5) **Please refer to Section B-5**
    - Road use and/or construction (please complete Section A) **Please refer to Section A**
    - Airstrip use and/or construction **n/a**
    - Camp use and/or construction **n/a**
    - Stockpiling of contaminated material **n/a**
    - Pit and/or quarry (please complete Section C) **Please refer to Section C**
    - Work within navigable waters (please complete Section H) **The Meliadine River is the only navigable water. All the work in navigable waters will be done over the winter.**
    - Barrel crushing **n/a**
    - Building Demolition **n/a**
    - Other

SECTION G: Oil and Natural Gas Exploration/Activities n/a

G-1. Well Authorization

1. Identify the location(s) of the well centre(s) by latitude and longitude. Attach a map drawn to scale showing locations of existing and proposed wells.
2. Indicate if the site contains any known former well sites.
3. Include the following information for each well:
    a. Well name
    b. Surface location
    c. Proposed bottomhole location
    d. Ground elevation (in metres)
    e. Spacing area (in units)
    f. Identify the well type:
        i. Production
        ii. Injection
        iii. Disposal
        iv. Observation
        v. Storage
        vi. Experimental
        vii. Other (specify)
    g. Identify the well classification:
        i. Exploratory wildcat
        ii. Exploratory outpost
        iii. Development
    h. Drilling operation (deviation):
        i. Vertical
        ii. Directional
        iii. Horizontal
        iv. Slant
    i. Objective Zones (copy chart style below)

Objective Formation	Fluid (oil/gas/water)	Depth (mTVD)	Core (Y/N)

    j. Proposed Total Depth in mTDV and mMD.
    k. Formation of Total Depth
    l. Sour well? (yes or no)
        i. If Yes: Maximum H_2S concentration in mol/kmol
            Emergency planning zone radius in km
    m. Blowout Prevention (Well Class I – VI)
    n. Deviation Surveys
        i. Will be run at intervals less than 150m? (yes or no)
    o. Wireline logs
        i. Will run logs in hole for surface casing? (yes or no)
        ii. Will run a minimum of 2 porosity measuring logs? (yes or no)

G-2. On-Land Exploration

4. Indicate if the site contains any known:
    a. Waste Dumps

b. Fuel and Chemical Storage Areas
c. Sump Areas
d. Waste Water Discharge Locations

5. Attach maps drawn to scale showing locations of existing and proposed items identified in (2) above, as well as all proposed:
    a. Sumps
    b. Water sources
    c. Fuel and chemical storage facilities
    d. Drilling mud storage areas
    e. Transportation routes
6. If utilizing *fresh water*, estimate maximum drawdown and recharge capability of the river or lake from which water will be drawn.
7. Indicate if permafrost is expected to be encountered under:
    a. Camp Facilities
    b. Well Site
    c. Access Routes
    d. Sumps
    e. Other: _____
8. Indicate any potential for encountering artesian aquifers or lost circulation within the surface hole (to casing depth).
9. Will drilling wastes contain detrimental substances (including, but not limited to, oil-based or invert mud and high salinity fluids)? If yes, indicate the substances and estimated volumes.
10. Indicate methods for disposal of drilling wastes:
    a. Sump
    b. Down Hole (requires NEB approval)
    c. On-Site Treatment (provide plan)
    d. Off-Site (give location and method of disposal)
11. If a sump is being used, attach the following information:
    a. scale drawings and design of sumps
    b. capacity in cubic metres
    c. berm erosion protection
    d. soil permeability and type
    e. recycling/reclaiming waters
    f. surface drainage controls
    g. abandonment procedures
12. Attach the proposed or existing contingency plan which describes the course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials.
13. Attach an outline of planned abandonment and restoration procedures.

G-3. Off-Shore Exploration

14. Will drilling wastes contain detrimental substances (including, but not limited to, oil-based or invert mud and high salinity fluids)? If yes, indicate the substances and estimated volumes.
15. Attach the proposed or existing contingency plan which describes the course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials.
16. Attach an outline of planned abandonment and restoration procedures.
17. Please complete Section H

G-4. Rig

18. Type of Rig. Draw works, make and model
19. Derrick/Mast make and model
20. H.P. available to draw-works

SECTION H: Marine Based Activities n/a

H-1. Vessel Use

1. Describe the purpose of vessel operations.
2. List classes and sizes of vessels to be used.
3. Indicate crew size.
4. Indicate operating schedule.
5. Provide a description of route to be traveled (include map).
6. Indicate whether the vessel will call at any ports. If so, where and why?
7. Describe wastes produced or carried onboard including the quantities, storage, treatment, handling and disposal methods for the following:
    a. Ballast water
    b. Bilge water
    c. Deck drainage
    d. Grey and black water
    e. Solid waste
    f. Waste oil
    g. Hazardous or toxic waste
8. List all applicable regulations concerning management of wastes and discharges of materials into the marine environment
9. Provide detailed Waste Management, Emergency Response and Spill Contingency Plans
10. Does the vessel(s) possess an Arctic Pollution Prevention Certificate? If yes, indicate the date of issue and the name of the classification society.
11. Describe the source of fresh water and potable water
12. Indicate whether ice-breaking will be required, and if so, approximately where and when? Discuss any possible impacts to caribou migration, Inuit harvesting or travel routes, and outline proposed mitigation measures.
13. Indicate whether the operation will be conducted within the Outer Land Fast Ice Zone of the East Baffin Coast. For more information on the Outer Land Fast Ice Zone, please see the Nunavut Land Claims Agreement (NLCA), Articles 1 and 16.
14. Indicate whether Fisheries or Environmental Observers will be onboard during the proposed project activities. If yes, describe their function and responsibilities.
15. Describe all proposed measures for reducing impacts to marine habitat and marine wildlife (including mammals, birds, reptiles, fish, and invertebrates).

H-2. Disposal at Sea

1. Provide confirmation you have applied for a *Disposal at Sea* permit with Environment Canada
2. Provide a justification for the disposal at sea
3. Describe the substance to be disposed of, including chemical and physical properties
4. Indicate the location where the disposal is to take place

5. Describe the frequency of disposals (disposals per day/week or month)
6. Describe the route to be followed during disposal and indicate on a map.
7. Indicate any previous disposal methods and locations
8. Provide an assessment of the potential effects of the disposal substance on living marine resources
9. Provide an assessment of the potential of the disposal substance, once disposed of at sea, to cause long-term physical effects.
10. Describe all mitigation measures to be employed to minimize the environmental, health, navigational and aesthetic impacts during loading, transport and disposal.

SECTION I: Municipal and Industrial Development

1. Describe the business type, including public, private, limited, unlimited or other.
2. Describe the activity (e.g. development of quarry, development of hydroelectric facility, bulk fuel storage, power generation with nuclear fuels or hydro, tannery operations, meat processing and packing, etc.).

   A new quarry will be developed within the municipal boundaries of Rankin Inlet. The location is shown on figure 3.1-4 in the Project Description. Section A above describes the process in selecting the potential quarries.

3. Describe the production process or service provision procedures.
4. Describe the raw materials used in this activity, the storage and transportation methods. If hazardous materials are included in raw materials, products or by-products; include safety regulations methodology. **n/a**
5. Provide detailed information about the structure and/or building in which the activity will be conducted. **n/a**
6. List the PPE (personal protective equipment) and tools to be used to protect personal health and safety.

   Personal Protective Equipment includes but is not limited to safety glasses, safety vest or reflective clothing, hard hat, safety boots and heavy duty work gloves. Specific tasks may require additional, special-purpose equipment, such as face masks or safety lanyards and harnesses.

7. Describe the firefighting equipment that are or will be installed. **n/a**
8. Describe the noise sources, noise level in work area, technical measurements that will be adopted to abate the noise levels and regulatory requirements for noise abatement and noise levels.

   Noise will result from vehicles and equipment building the road, and also explosions. When the road is in operation, noise will come from vehicles using the road. Refer to section 5.1.2.3 and Table 5.1.3.1 in the Project Description.

9. Describe the type of gaseous emission that will be produced during this activity. Include the allowable thresholds and mitigation measures. **n/a**
10. Describe odours that the activity might release and include corresponding allowable threshold. Describe mitigation measures if thresholds are exceeded. **n/a**
11. Describe radiation sources that might be emitted during the activity. Include type and source and include mitigation measures. Also describe preventative measures for human exposure (i.e. PPE). **n/a**

12. Discuss the employee safety and environment protection training program.

    The road will be built by contractors who will have the responsibility for their employees' safety training. At a minimum, the contractors will have to abide by AEM's safety policy and Nunavut's Labour Standards Act and regulations.

    All activities will occur within the road right-of-way or the quarries. Contractors will abide by AEM's Spill Plan and have spill kits at the work site. Spills will be cleaned up should they occur.
13. If the activity involves a bulk fuel storage facility, include drawings showing the bulk fuel storage facility location in proximity to natural water courses, high water marks, etc. **n/a**
14. If the activity involves the development of a new quarry or expansion of an existing quarry, complete Section C.

4. DESCRIPTION OF THE EXISTING ENVIRONMENT

Refer to the Phase 1 – Meliadine All-weather Access Road Environmental Assessment.

Describe the existing environment, including physical, biological and socioeconomic aspects. Where appropriate, identify local study areas (LSA) and regional study areas (RSA).

Please note that the detail provided in the description of the existing environment should be appropriate for the type of project proposal and its scope.

The following is intended as a guide only.

Physical Environment

Please note that a description of the physical environment is intended to cover all components of a project, including roads/trails, marine routes, etc. that are in existence at present time.

- Proximity to protected areas, including:
    i. designated environmental areas, including parks;
    ii. heritage sites;
    iii. sensitive areas, including all sensitive marine habitat areas;
    iv. recreational areas;
    v. sport and commercial fishing areas;
    vi. breeding, spawning and nursery areas;
    vii. known migration routes of terrestrial and marine species;
    viii. marine resources;
    ix. areas of natural beauty, cultural or historical history;
    x. protected wildlife areas; and
    xi. other protected areas.
- Eskers and other unique landscapes (e.g. sand hills, marshes, wetlands, floodplains).
- Evidence of ground, slope or rock instability, seismicity.
- Evidence of thermokarsts.
- Evidence of ice lenses.
- Surface and bedrock geology.

- Topography.
- Permafrost (e.g. stability, depth, thickness, continuity, taliks).
- Sediment and soil quality.
- Hydrology/ limnology (e.g. watershed boundaries, lakes, streams, sediment geochemistry, surface water flow, groundwater flow, flood zones).
- Tidal processes and bathymetry in the project area (if applicable).
- Water quality and quantity.
- Air quality.
- Climate conditions and predicted future climate trends.
- Noise levels.
- Other physical Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

Biological Environment

- Vegetation (terrestrial as well as freshwater and marine where applicable).
- Wildlife, including habitat and migration patterns.
- Birds, including habitat and migration patterns.
- Species of concern as identified by federal or territorial agencies, including any wildlife species listed under the *Species at Risk Act (SARA)*, its critical habitat or the residences of individuals of the species.
- Aquatic (freshwater and marine) species, including habitat and migration/spawning patterns.
- Other biological Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

Socioeconomic Environment

- Proximity to communities.
- Archaeological and culturally significant sites (e.g. pingos, soap stone quarries) in the project (Local Study Area) and adjacent area (Regional Study Area).
- Palaeontological component of surface and bedrock geology.
- Land and resource use in the area, including subsistence harvesting, tourism, trapping and guiding operations.
- Local and regional traffic patterns.
- Human Health, broadly defined as a complete state of wellbeing (including physical, social, psychological, and spiritual aspects).
- Other Valued Socioeconomic Components (VSEC) as determined through community consultation and/or literature review.

5. IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION MEASURES

1. Please complete the attached Table 1 – Identification of Environmental Impacts, taking into consideration the components/activities and project phase(s) identified in Section 4 of this

document. Identify impacts in Table 1 as either positive (P), negative and mitigable (M), negative and non- mitigable (N), or unknown (U).
2. Discuss the impacts identified in the above table.
3. Discuss potential socioeconomic impacts, including human health.
4. Discuss potential for transboundary effects related to the project.
5. Identify any potentially adverse effects of the project proposal on species listed under the *Species at Risk Act (SARA)* and their critical habitats or residences, what measures will be taken to avoid or lessen those effects and how the effects will be monitored.
6. Discuss proposed measures to mitigate all identified negative impacts.

6. CUMULATIVE EFFECTS

Discuss how the effects of this project interact with the effects of relevant past, present and reasonably foreseeable projects in a regional context.

Refer to Section 5.2.5 in the Project Description.

7. SUPPORTING DOCUMENTS

Where relevant, provide the following supporting documents:

- Abandonment and Decommissioning Plan

  The "MGP Reclamation and Closure Plan – August 2010" is attached on the enclosed CD.

- Existing site photos with descriptions

  Photos of each crossing is provided in the attached document, "NWPA navigability request" found on the CD. A picture of water crossing D1.2 is not included.

- Emergency Response Plan

  No Emergency Response Plan has been developed for the road.

- Comprehensive Spill Prevention/Plan (must consider hazardous waste and fuel handling, storage, disposal, spill prevention measures, staff training and emergency contacts)

  The "MGP Spill Plan – August 2010" is attached on the enclosed CD.

- Waste Management Plan/Program

  The "MGP Waste Management Plan – August 2010" is attached on the enclosed CD.
- Monitoring and Management Plans (e.g. water quality, air pollution, noise control and wildlife protection etc.)

The "MGP Water Management Plan – August 2010" is attached on the enclosed CD.

- If project activities are located within Caribou Protection Areas or Schedule 1 Species at Risk known locations, please provide a Wildlife Mitigation and Monitoring Plan **n/a**

In addition, for Project Type 9 (Site Cleanup/Remediation), please provide the following additional supporting documents:

- Remediation Plan including cleanup criteria and how the criteria were derived. **n/a**
- Human Health Risk Assessment of the contaminants at the site. **n/a**

TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

		ENVIRONMENTAL COMPONENTS	PHYSICAL	designated environmental areas (ie. Parks, Wildlife Protected areas)	ground stability	permafrost	hydrology/ limnology	water quality	climate conditions	eskers and other unique or fragile landscapes	surface and bedrock geology	sediment and soil quality	tidal processes and bathymetry	air quality	noise levels	Other VEC	Other VEC	other VEC:	BIOLOGICAL	vegetation	wildlife, including habitat and migration patterns, caribou	birds, including habitat and migration patterns, raptors	aquatic species, incl. habitat and migration/spawning	wildlife protected areas	other VEC:	other VEC:	other VEC:	SOCIO-ECONOMIC	archaeological and cultural historic sites	employment	community wellness	community infrastructure	human health	other VSEC
PROJECT ACTIVITIES																																		
CONSTRUCTION	Quarry Use				M	M		M		N		M		M	M					M		M							M	P				
	Quarry ARD & Metal Leaching							M															M											
	Single Span bridges						P																P							P				
	Culverts crossing 9 streams					M	M																M							P				
	Mitigation of Archaeological sites																												M	P				
	Crushing of rock & dust							M						N						N														
																														P				
	Winter construction				P	P			P						M					N	U									P				
OPERATION	Dust													M						M											U		U	
	Use of road by Rankin Inlet residents																																	
	Traditional use																														P	P	P	
	Cottage on Meliadine Lake																														P	P	P	
	Work at site																														P	P	P	
	Fuel delivery to underground																													P	P	P	P	
	Delivery of supplies																													P	P	P	P	
	All weather road				M	P	M	M		N					M						M	M	N								P	P	P	
DECOMMISSIONING	Closure of quarries				P	P								P																				
	Removal of culverts						P	P															P											
	Scarifying the road																			P	P	P								P	N	N	N	
	Removal of bridges																													P	N	N	N	
																														P	N	N	N	

Note: Please indicate in the matrix cell whether the interaction causes an impact and whether the impact is
P = Positive N = Negative and non-mitigatable M = Negative and mitigatable U = Unknown If no impact is expected please leave the cell blank

All Weather Access Road
ENVIRONMENTAL IMPACTS & MITIGATIONS MATRIX
Phase 1 Meliadine All-weather Access Road Environmental Assessment.

Phase	Activity	Potential Effects	Type	Proposed Mitigation	Residual Effects
CONSTRUCTION	**Road from Rankin Inlet to site**	Disturbance of permafrost.	M	Build road base high enough to allow active layer to move into the road base.	None.
		Disruption of drainage patterns.	M	Drainage patterns retained using culverts & bridges. Maintain culverts/bridges during operation of the road.	None.
		Water contamination.	M	Construct road while ground frozen and on height of land. Use low metal leaching quarries	Low levels of metal leaching may be measured in the immediate vicinity of the road.
		Generation of greenhouse gases.	N	Ensure vehicle engines properly maintained. No idling when not in use.	Adds to Canada's emissions of greenhouse gases.
		Routing along eskers.	M	Follow existing ATV trails.	Road along esker crests.
		Surface and bedrock geology	M	Quarries built at intervals along the route	Positive drainage from quarry & low wall angles
		Disruption of tundra soils.	M	Road edges will revegetate naturally, build road during winter.	Only running surface bare of vegetation.
		Generation of dust	M	Control vehicle speeds. Maintain the road	Dust deposited on vegetation close to road
		Construction noise.	M	Temporary. Remote from community. Maintain equipment properly.	None.
		Burial of vegetation.	N	Follow existing ATV trails, crests of eskers and rock outcrops where vegetation is sparse.	Road edges will revegetate naturally. Only running surface bare of vegetation.
		Intrusion into wildlife habitat.	M	Wildlife to have right-of-way. Control vehicle speeds	medium-term effect. Road will be decommissioned after mine closure.
		Intrusion into bird habitat.	M	Low vehicle speeds to reduce bird collisions	medium-term effect. Road will be decommissioned after mine closure.
		Intrusion into fish habitat.	M	Road is routed along high ground. Culverts/bridges to allow continued fish passage.	None.
		Employment.	P	Preferential hiring, on the job training	Increased skills base.
		Community wellness.	P	Ease of access to traditional fishing and hunting areas	Continuation of traditional pursuits
		Human/social health.	M	Training & enforcement of safe working practices will mitigate workplace hazards.	Increased skills base & earning power.
		Traditional land use.	P		Improved access to land.

P - positive effect; N – negative effect, non-mitigable; M- negative effect, mitigable; U – Unknown

Phase	Activity	Potential Effects	Type	Proposed Mitigation	Residual Effects
CONSTRUCTION	**Quarry Development**	Wildlife habitat.	M	Granular quarries will have low angle slopes.	Temporary loss of quarry area as terrestrial habitat.
		Bird habitat.	M	Granular quarries will have low angle slopes.	Temporary loss of quarry area as terrestrial habitat. May serve as raptor nesting sites
		Fish habitat.	M	Elimination of stream damage currently occurring due to ATV travel through streams by installing culverts	Habitat improvement at water crossings, repair existing ATV trail damage to ground surface.
		Archaeological & cultural historic sites	M	Sites will be mitigated before construction of the road.	None.
		Employment.	P	Preferential hiring, training, apprenticeships,	Increased skills base.
		Traditional land use.	N	Allow public access on the Phase 1 AWAR under controlled conditions to enable traditional land use to continue with minimal disruption	None.
OPERATIONs (Effects in addition to effects of development.)	**Road operation**	Dust impinging on water bodies & vegetation close to the road	M	Dust suppression, road maintenance and controlled road speeds.	Will continue as long as road is used.
		Generation of greenhouse gases.	N	Ensuring vehicle engines properly maintained	Adds to Canada's emissions of greenhouse gases.
		Vehicle noise.	M	Will be heard near the road	None.
		Wildlife disturbance/mortality.	M	Wildlife to have right of way. Controlled vehicle speeds. Continuous use will discourage denning in road itself.	None.
		Bird disturbance/mortality.	M	Birds to have right of way. Controlled vehicle speeds. Continuous use will discourage nesting in road itself.	None.
		Employment.	P	Preferential hiring, training, apprenticeships,	Increased skills base.
		Community wellness.	P		Increased skills base. Long-term effects of life-of-mine tax revenue.
		Human/social health.	M	Training & enforcement of safe working practices will mitigate workplace hazards.	Increased skills base & earning power.
		Traditional land use.	P		Improved access to land.
		Vegetation	M	Dust suppression	
		Generation of greenhouse gases.	N	Ensure incinerator properly maintained.	Adds to Canada's emissions of greenhouse gases.

P - positive effect; N – negative effect, non-mitigable; M- negative effect, mitigable; U – Unknown

Phase	Activity	Potential Effects	Type	Proposed Mitigation	Residual Effects
Reclamation (Effects are of the work itself. Results of the work are residual effects.)		Wildlife habitat restored.	P		Re-establishment of wildlife along the road following reclamation
		Bird habitat restored.	P		Re-establishment of bird along the road following reclamation
		Employment.	P	Employment during reclamation work. Training and enforcement of safe work practices will mitigate workplace hazards.	Increase skills base transferable to other industries and communities.
		Community wellness.	N	Employment during reclamation work. Training and enforcement of safe work practices will mitigate workplace hazards.	Loss of local employment & tax revenues.
		Human/social health.	M	Employment during reclamation work. Training and enforcement of safe work practices will mitigate workplace hazards.	Loss of local employment but enhanced skills base and earning power.
		Traditional land use.	N		Traditional land use fully restored along the road but ease of access lost to traditional areas.
		Dust generation.	N	Temporary during reclamation work.	None.

P - positive effect; N – negative effect, non-mitigable; M- negative effect, mitigable; U – Unknown

25 September 2011

Derrick Moggy
Habitat Team Leader
Fisheries and Oceans Canada
1500 Paris Street, Unit 11
Sudbury, ON P0E 3B8

Bobbie Bedingfield
Fish Habitat Bilogist
Fisheries and Oceans Canada
7646 – 8th Street N.E.
Calgary, AB T2E8X4

RE: **Phase 1 Meliadine All-weather Access Road Environmental Assessment: Meliadine Gold Project: Fisheries and Oceans: Conformity with DFO - Operational Statements for Nunavut and Application for an Authorization for Works or Undertakings Affecting Fish Habitat: NIRB Part 2 Screening Form, Query 10**

Dear Mr. Moggy and Mr Bedingfield,

Agnico-Eagle Mines Limited (AEM) is proposing to construct and operate a Phase 1 all-weather access road of 23.8 km in length from Rankin Inlet to the Meliadine camp located near Meliadine Lake. Work on the all weather road will occasionally take place in and around fish habitat, which will cause us to follow the appropriate DFO Operational Statements for Nunavut.

The Operational Statements applicable to the all weather road include:

- Timing Windows,
- Clear Span Bridges,
- Ice Bridges and Snow Fills, and
- Temporary Stream Crossing.

AEM agrees to meet the conditions and incorporate the appropriate measures to protect fish and fish habitat as outlined in the above applicable Operational Statements.

Should you require further information or clarification on this letter, please do not hesitate in contacting John Witteman at 819 277 5444 or jwitteman@agnico-eagle.com.

Yours sincerely,

Eric M Lamontagne
Project Manager, Meliadine

Cc. Nunavut Impact Review Board
John Witteman, Environmental Consultant
Jennifer Gibson, Golder Associates
Veronica Tattuinee, Kivalliq Inuit Association