Appendix D3

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 site 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 legible, and should include grids, be of appropriate scale, indicate the scale, include latitude and longitude references, title, legend and a north arrow. To the extent possible, avoid hand-drawn demarcations; and,

4. Please complete all required information in each section below. If the required information is not applicable to the Project Description, 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 Description which reflect the entire project area as defined by:
   - the area/sites of investigation;
   - the boundaries of the foreseen land use permit/right-of-way area(s) to be applied for;
   - the location of any proposed infrastructure or activity(s); and,
   - the boundaries of the mineral claim block(s) where proposed activities will be undertaken.
2. Map of the project site within a regional context indicating the distance to the closest communities.

   Refer to Section 1.1, Figure 1-1 in the Project Description.

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

Refer to Section 2.5.1, Figure 2.6 in the Project Description.

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

   Refer to Section 1.1, Figures 1.1, 2.3, 2.6 and 4.1 in the Project Description.

Project General Information

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

   The purpose of the Project is to build, operate and reclaim a gold mine.

   The mine will create employment and business opportunities in the Kivalliq Region of Nunavut. Sustained benefits will flow for the life of the mine to the owners of the company, employees, the Inuit, and the federal and Nunavut governments.

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

   Refer to Section 2.10 of the Project Description.

7. Provide a schedule for all project activities.

   Refer to Section 1.4, Table 1.1 of the Project Description.

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

   Refer to Appendix B in the Project Description.

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

   Refer to Section 1.9 and Table 1-3 of the Project Description.

9. **DFO Operational Statement (OS) Conformity**
   Indicate whether any of the following Department of Fisheries and Oceans (DFO) Operational Statement (OS) activities apply to the Project Description:
   - Bridge Maintenance – **it is the Project's intent to undertake all bridge maintenance in compliance with DFO-OS.**
   - Clear Span Bridge - **it is the Project's intent to undertake all bridge design and construction in compliance with DFO-OS.**
   - Culvert Maintenance - **it is the Project's intent to undertake all culvert installation and maintenance in compliance with DFO-OS.**
   - Ice Bridge – **it is the Project's intent to undertake all ice bridge construction and reclamation in compliance with DFO-OS**
   - Routine Maintenance Dredging – **it is the Project's intent that no routine dredging will be required for any aspect of the Project's construction or ongoing operations.**

- Installation of Moorings – **it is the Project's intent that no moorings will be required for any aspect of the Project's construction or ongoing operations.**

Please see DFO's OS for specific definitions of these activities available from either NIRB's ftp site at http://ftp.nunavut.ca/nirb/NIRB_ADMINISTRATION/ or DFO's web-site at http://www.dfo-mpo.gc.ca/canwaters-eauxcan/index_e.asp

10. If any of the DFO's OS apply to the Project Description, 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.

It is the Project's intent to construct and operate all facilities in compliance with relevant DFO-OS. Refer to the Project Description, Appendix E for the signed letter of confirmation sent to the Department of Fisheries and Oceans.

Transportation

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

Refer to Section 2.4 and Figures 2.2 and 2.3 of the Project Description.

12. 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 and provide a map showing location of airstrip.

Not applicable. There will not be an airstrip at the site, the Rankin Inlet airport will be used.

13. If an airstrip is being constructed, provide the following information: **Not applicable**
    a. Discuss design considerations for permafrost
    b. Discuss construction techniques
    c. 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).
    d. Describe dust management procedures.
    e. 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.

Refer to section 2.5 of the Project Description.

16. Describe the type of camp:
    a. Mobile **Not applicable.**
    b. Temporary **Refer to section 2.5.2 of the Project Description.**

c. Seasonal **Not applicable.**
d. Permanent **Refer to section 2.5 of the Project Description.**
e. Other

Some hotel accommodation in Rankin Inlet may be block-booked during construction.

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

Preliminary estimates of personnel are as follows:
Construction phase – 2012 to 2015: up to 700-800 personnel
Operations – 2015 to 2026: approximately 500 workers on site
Reclamation and closure – 2025 to 2029: approximately 100 workers on site

Equipment

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

Refer to Sections 2.6 and 2.7, Tables 2.3 and 2.4 in the Project Description.

19. If possible, provide digital photos of equipment.

6-yd Scooptram (typical)

Quarry-type excavating equipment (typical)

Drill jumbo (typical)

Scissor-lift in use (typical)

Underground mining equipment (typical)
Includes 16-t truck, 2 scoop trams, scissor-lift.

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.

    Refer to Section 2.10.4 and Figure 2.6 of the Project Description.

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

    Refer to Section 2.13.1 of the Project Description. The estimated rate of water consumption will be based on the use of 200 litres per person per day and make-up water required for the mill. The total quantity of fresh water to be used will be 5000 m^3/day

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

    Refer to Section 2.13.2 of the Project Description.

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

    Refer to Section 2.13.2 of the Project Description.

Waste Water (Grey water, Sewage, Other)

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

- Sewage – **Refer to Sections 2.5.8 and 2.13.2 of the Project Description. The existing exploration camp, with a modular sewage treatment plant, will continue to be used to house construction staff. The temporary construction camp will also use a modular sewage treatment unit.**
- Camp grey water – **Refer to Section 2.5.8 of the Project Description.**
- Combustible solid waste – **Refer to Section 2.14 of the Project Description.**
- Non-combustible solid waste – **Refer to 2.14 of the Project Description.**
- Bulky items/scrap metal – **Refer to 2.14 of the Project Description.**
- Waste oil/hazardous waste – **Refer to Section 2.14 of the Project Description.**
- Contaminated soils/snow – **Refer to Section 2.14 of the Project Description.**
- Empty barrels/ fuel drums – **Refer to Section 2.14 of the Project Description.**
- Any other waste produced – **A comprehensive waste management plan will be included as part of the draft Environmental Impact Statement.**

25. If the Project Description 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.

A comprehensive Water Management Plan, Spill Contingency Plan, and Waste Management Plan will be included as part of the draft Environmental Impact Statement.

The landfill will be located in one of the waste rock management areas with the location identified in the Waste Management Plan.

There will not be a landfarm on site. All contaminated materials that cannot be treated on site will be sent south for treatment and disposal.

Also refer to sections 2.13.2 and 2.14 in the Project Description.

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.

Refer to Sections 2.3.2 and 2.5.5, Figure 2.1 of the Project Description. Refer to Figure 2-6 for location of the tank farm on site. Helicopter fuel will be stored at the helipad at the present Meliadine camp. Three – 50,000 litre, double walled envirotanks will be used to store Jet-A fuel.

Fuel will be transported from the tank farm in Rankin Inlet to the Meliadine site on a daily basis in a tanker truck.

Propane may be used for camp cooking and, if used, will be stored in a bulk tank.

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.

Fuel storage tanks will be within engineered berms and will have an impermeable liner providing a minimum secondary containment of 110% of tank capacity.

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

Refer to Sections 2.3.2, 2.5.2 and 2.5.5 of the Project Description.

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 on site will be stored and handled in compliance with manufacturers' and WHMIS specifications. Further details will be provided with the draft Environmental Impact Statement.

29. 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.

Refer to section 2.11.2, 2.15 and table 2.7 in the Project Description.

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

All mill reagents will be stored in secure facilities that provide the secondary containment of a concrete floor surrounded by a cast-in-place stub wall in the case of sheltered storage or in an outdoor bermed facility with an impermeable liner throughout.

31. 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).

Workforce and Human Resources/Socio-Economic Impacts

Potential Social and Economic Effects in the Kivalliq Region

Refer to Sections 4 and 6 of the Project Description.

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

Refer to Section 6 of the Project Description.

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

Refer to Section 6 of the Project Description.

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

Refer to Section 6 of the Project Description.

Public Involvement/ Traditional Knowledge

35. Indicate which communities, groups, or organizations would be affected by this Project Description.

Refer to Section 5 and Appendix C of the Project Description.

36. Describe any consultation with interested Parties which has occurred regarding the development of the Project Description.

Refer to Appendix C in the Project Description.

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

Refer to Appendix C of the Project Description.

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

Refer to Section 4.2 of the Project Description.

39. Discuss future consultation plans.

Refer to Section 5.3 of the Project Description.

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.

Project Type	Type of Project Description	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

The Phase 1 all–weather access road is being submitted as a separate Project Description. It provides specific details on the road, bridges, culverts, quarries, geochemical testing of the same and environmental mitigation measures. The Phase 1 road will have controlled access and be a single lane. Refer to section 2.4.1 for information on the Phase 1 road and also the separate application.

The Phase 2 roads, which will follow issuance of the Project Certificate, will widen the Phase 1 road to two lanes, include a road to Discovery, and a boat launch on Meliadine Lake for public use. The Phase 2 roads will have open public access. Refer to section 2.4.2 for information on the Phase 2 roads.

Refer to Figures 2-2 and 2-3 of the Project Description for a maps of the Phase 1 and 2 all-weather access road routes.

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)

The Phase 1 all-weather access road is part of a separate application. Refer to attached CD.

The Phase 2 road will widen the Phase 1 road to 2 lanes. Refer to section 2.4.2 of the Project Description.

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

   The Phase 1 all-weather road is part of a separate application. Refer to attached CD.

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

   The construction phase of the mine will entail the movement of an estimated 50,000 to 100,000 tonnes of equipment and materials to the site over a 3-year period.

   Traffic volume on the road during mine operations will depend on the size of vehicles used to provide the services required; in particular, the size of the passenger bus used to ferry workers between the site and the airport/Rankin Inlet, and the size of trucks used to haul bulk fuel and supplies to the mine site. Annual operating requirements for the project that will be carried over the road include approximately:

   a. **Between 10,000-15,000 worker transfers in each direction.**
   b. **Between 100,000 and 200,000 tonnes per year of bulk material and supplies, including approximately 80 ML of fuel.**

   Refer to section 2.4.2 of the Project Description for more information.

4. Discuss public access to the road.

   The road alignment crosses municipal, federal and Inuit-Owned Lands and will cover existing ATV trails to Meliadine Lake. The Phase 1 all-weather access road will have controlled access. The proposed Phase 2 road will have unrestricted public access.

   Refer to section 2.4.2 of the Project Description.

5. Describe maintenance procedures.

   Refer to section 2.4.2 of the Project Description.

A-2 All-Weather Road/Access Trail

6. Discuss road design considerations for permafrost.

   The alignment of the proposed road along the crest of eskers and rock outcrops should reduce the prevalence of ground ice in the upper permafrost horizon of the road base. Also, the placement of dry rock and granular material to 1.5+ m depth will bring the zone of permanently frozen ground nearer to the surface and serve to stabilize the base of the road

and road bed. A crown in the road surface will shed water to the sides of the road and reduce the amount of natural precipitation entering the roadbed. This will reduce the effects of moisture-related road bed heaving.

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

   All construction material for the road building will be taken from quarries near or adjacent to the road alignment as shown in Figure 2-2 of the Project Description. Rock and till samples from all potential quarry and borrow sites were assayed and analysed for ARD and metal leaching. The test results from these samples show all samples being non PAG with low metal leaching for quarries selected.

   For complete details refer to the Phase 1 All-Weather Road Project Description, which can be found on the attached CD.

   Further testing of road building materials for the Phase 2 roads, the Discovery spur road and mine sites roads is continuing and will be presented in the draft Environmental Impact Statement.

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

   The road will be constructed to conventional Arctic standards using accepted practices. Road construction will precede construction at the mine site. Road building materials will be extracted from quarries by blasting in the case of rock, or loaded from a pit in the case of sand and gravel. Materials will be loaded into trucks at the quarry and hauled to the "end" of the road where it will be dumped and pushed into place by a dozer. Crushed rock will be used to "dress" the road surface. Stockpiles of crushed rock will be prepared at selected quarries for future road maintenance needs.

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

   Refer to Figure 2-2 for the location of bridges, culverts and quarries. Refuelling of stationary equipment will be carried out using a fuelling truck.

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

    The speed limits for mine vehicles on access and haul roads within the mine development will be a maximum of 30 km/h. The speed limit on the all-weather access road will be 50 km/hr. Road safety and speed limits will be reviewed with the community.

11. Describe dust management procedures.

    Regular road maintenance and observing the posted speed limits will reduce dust. However, spring and summer will likely require road dust suppression through the application of water or a dust suppressant. Additives to water approved for road dust suppression in Nunavut include calcium chloride (salt).

A-3 Winter Road/Trail

The Phase 1 all-weather access road will hopefully be completed as part of predevelopment, and as a result winter haul routes used in the past will not be required.

Should a winter road be required it would use the same routes and the same equipment as has been approved for use during the exploration phase of the Project.

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.
    Not applicable.

13. Describe the operating time period.
    Not applicable.

14. Identify the proposed traffic speed and measures employed to ensure public safety.
    Not applicable.

15. Discuss whether the selected route traverses any fish-bearing water bodies.
    Not applicable.

SECTION B: Mineral Exploration /Advanced Exploration /Development

B-1 Project Information

1. Describe the type of mineral resource under exploration.

Refer to Sections 2.1 and 3.2.1 of the Project Description.

B-2 Exploration Activity

2. Indicate the type of exploration activity:

Exploration by geophysics, geochemistry and diamond drilling has been semi-continuous on the property since the late 1980s and continues seasonally to the present. An exploration decline and drifts were driven underground in 2007 to 2008 and will be continued in 2011 to 2013.

- Bulk Sampling (underground or other)

An underground exploration and bulk sampling program was conducted on the Tiriganiaq gold deposit on the Meliadine property in 2007 to 2008 and again in 2011. (Please see NIRB Screening Decision Report File No. 07EN044.) The 2007 – 2008 and 2011 programs extracted bulk samples to evaluate:

- **Correlation between bulk grades and diamond drill grades,**
- **Continuity of mineralized structures between diamond drill holes,**
- **Geotechnical conditions for mining, and**

- **Metallurgical properties of the ore.**

- Stripping (mining shallow bedded mineral deposits in which the overlying material is stripped off, the mineral removed and the overburden replaced)

  Stripping of overburden at Meliadine was confined to the area of the exploration portal and was completed in August of 2007.

- Trenching

  Trenching was not used during the exploration phase at Meliadine due to depth of overburden.

- Pitting

  Pitting was not used during the exploration phase at Meliadine.

- Delineation drilling

  Diamond drilling was used extensively during the exploration phase, see exploration drilling below. Drilling from the surface continued during 2011 and is expected to continue in future years.

- Preliminary Delineation drilling

  Diamond drilling was used extensively during the exploration phase, see exploration drilling below.

- Exploration drilling

  Diamond drilling was used extensively during the exploration of the Meliadine property. Prior to, during and after construction of the mine, diamond drilling will continue.

- Geophysical work (indicate ground and/or air)

  Both ground-based and airborne geophysical surveys were used extensively during the early phases of the current ongoing exploration program at Meliadine. This method of exploration using mainly magnetics continues to be one of the most effective tools for targeting drill holes in the greater Meliadine exploration area.

- Other

  Boulder train mapping and gold grain counts from soil samples were used extensively during the early exploration phases at Meliadine. This form of exploration will continue in the greater Meliadine exploration area.

3. Describe the exploration activities associated with this project:
   - Satellite remote sensing

Remote sensing from satellites has not been used to date.

- Aircraft remote sensing

  Aircraft have been used for extensive airborne geophysical surveys during the early exploration.

- Soil sampling

  Soil sampling has been used extensively in the early stages of exploration and may resume in the greater Meliadine exploration area.

- Sediment sampling

  Sediment and stream sampling has been used extensively in the early stages of exploration and may resume in the greater Meliadine exploration area.

- On land drilling (indicate drill type)

  Diamond drilling has been used extensively during the exploration of the property and will continue to be a main form of exploration.

- On ice drilling (indicate drill type)

  Late winter diamond drilling from ice covered lakes has been used extensively during the exploration and is still required in the greater Meliadine exploration area. Mainly NQ is used in drilling.

- Water based drilling (indicate drill type)

  Water based drilling has not been used during the exploration at Meliadine and is not anticipated.

- Overburden removal

  Overburden has not been removed for exploration purposes except for portal development to facilitate conventional underground exploration as examined by NIRB in File No. 07EN044.

- Explosives transportation and storage

  Explosives have been used only during the underground exploration phase as examined by NIRB in File No. 07EN044.

- Work within navigable waters

  Work within navigable waters has not been undertaken during the exploration phase and is not anticipated.

- On site sample processing

  Core samples from diamond drilling have been logged, split and sampled on site. The samples were submitted for assay in southern assay laboratories. The remaining drill core is stored on site. This will continue.

  During the 2007 – 2008 and 2011 underground exploration phases, the mineralized material was crushed and passed through a sample tower to reduce each bulk samples (e.g. 120 tonnes from a blast) to much smaller representative samples (e.g. a 50-kilogram pail). These representative samples were sent to laboratories in southern Canada for bulk and metallurgical analysis. A one tonne 'tote' bag of crushed material from each individual sample was kept and left at site. All other crushed material not sent for assaying or testing was stockpiled on the site in one of four ore piles segregated by rock type. This ore would be processed in the proposed future mill.

- Off-site sample processing

  All diamond drill core samples during the exploration phase, as well as bulk sample metallurgical analyses were and continue to be completed in southern laboratories. Extensive geochemical analyses of overburden and host rock were also completed in southern laboratories.

- Waste rock storage

  Approximately 75,000 tonnes of waste rock mined during the 2007 – 2008 underground exploration phase were used to build pads and roads required during underground exploration. The waste rock from the second bulk sample will undergo geochemical testing and if found to be suitable for construction, will be used to build roads and pads elsewhere on the commercial lease. Otherwise it will go to a designated waste rock storage area.

- Ore storage

  Approximately 25,500 tonnes of mineralized material in 2007 – 2008, and 10,000 tonnes were excavated during the underground exploration program, most of which is in temporary storage on a rock pad near the portal, the balance having been shipped to laboratories in southern Canada. The second bulk sample of comparable size will also be stored on the same pad. If the mine goes into production, the mineralized material will be milled and the gold extracted. If the project is decommissioned, the mineralized material will be returned underground.

- Tailings disposal

  No tailings were produced during the underground exploration programs.

- Portal and underground ramp construction

  Standard underground mining methods were used for portal and ramp development during the underground exploration phase in 2007 to 2008. The portal and ramp were

sized and designed so they can be used for ore production should a commercial mine be developed. The same procedures are to be used in the 2011 – 2013 underground program.

- Landfilling

  A landfill is to be developed at the Meliadine site. All inert non-combustible waste is presently being stored on site awaiting approval of the landfill.

  When the mine is established, a landfill will be established in one of the waste rock management areas. The location will be provided in the draft Environmental Impact Statement.

- Landfarming

  No landfarm was developed at the exploration site and no landfarm will be established at the mine site. All spill material will be removed to a southern location or managed on site in another manner.

- Other

  Not applicable.

B-3 Geosciences

1. Indicate the geophysical operation type:
   a. Seismic (please complete Section E)

   No seismic surveys were conducted during the exploration phase.

   b. Magnetic

   Extensive geomagnetic geophysical surveys have been completed over most of the Meliadine property. Additional magnetic surveys in the greater Meliadine exploration area are likely.

   c. Gravimetric

   Only limited gravimetric geophysical surveys have been conducted in the area.

   Electromagnetic

   Extensive electromagnetic surveys have been included in geophysical surveys over the exploration area at Meliadine. The electromagnetic surveys conducted to date were done within the bounds of the mineral claim blocks shown on Figure 1.1 of the Project Description. Surveys were both airborne and ground-based.

   d. Other (specify)

   None.

2. Indicate the geological operation type:
   a. Geological Mapping

   Geological mapping has been completed over much of the claim block and in all areas where geophysical results warranted closer inspection. Most of the property is covered with glacial till that obscures all outcrop. All of the ramps, drifts, and raises in the 2007 – 2008 underground exploration and bulk sampling program were geologically mapped on a round-by-round basis. Similar procedures will be used during the 2011-2013 underground program. Geological mapping on the Meliadine property will continue.

b. Aerial Photography

Aerial photography for the exploration area was flown in 1997 with a detailed digital terrain model and maps were produced for the main Meliadine West exploration areas and the proposed road route. Additional satellite mapping will be carried out in 2011.

c. Geotechnical Survey

Geotechnical investigations have been made at prospective development sites with more contemplated as the overall project advances through the Feasibility Study. In particular, the exploration decline has been mapped for geotechnical characteristics as a means of developing appropriate mining methods. Numerous oriented-core diamond drill holes were drilled from 2007 to 2009 for the purposes of geotechnical analysis and more are to be drilled with the results to be used in the Feasibility Study.

d. Ground Penetrating Survey

A Ground-Penetrating Radar survey was conducted over the prospective portal area in 1998 to assess overburden characteristics.

e. Other (specify)

None.

3. Indicate on a map the boundary subject to air and/or ground geophysical work.

   Refer to Figure 1.1 for the area of the mineral claims that host the Meliadine Gold Project. The electromagnetic surveys conducted to date have been completed to cover the potential for gold mineralization within the bounds of these mineral claim blocks.

4. Provide flight altitudes and locations where flight altitudes will be below 610m.

   No further low level surveys are planned for the project at this time.

B-4 Drilling

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

   To the end of 2010, 1429 holes were drilled for the Project area ranging in depth from 53 m to 758 m. Drill holes on Tiriganiaq numbered 683. Drilling continued in 2011 with 390 holes drilled so far. The depths continue being from under 100 m to over 700 metres.

6. Discuss any drill additives to be used

   $CaCl_2$ (calcium chloride) is the standard additive for drilling in permafrost ground to lower the freezing point of the water to inhibit the risk of freezing the drill rods in the hole. The other functions of the water are lubricating the drill bit and to facilitate the movement of drill cuttings to surface.

7. Describe method for dealing with drill cuttings.

   Drill cuttings collect in natural sumps in the immediate area of the drill site. Where natural sumps are absent, a temporary sump is created with a temporary containment berm. In this way, drill cuttings are contained without causing the incremental terrain disturbance. No cuttings are allowed to enter any body of water.

8. Describe method for dealing with drill water

Water is collected in sumps where the drill solids settle, with excess water draining through the adjacent tundra.

9. Describe how drill equipment will be mobilized
   The necessary diamond drilling equipment has remained on site for many years with new drills being moved to site over the winter road in 2011. Geotechnical and diamond drilling on pads or laydown areas within the developed area of the mine and plant would involve drill moves by skid mounted drills pulled by a loader or similar tracked vehicle. Exploration drills working in areas of natural tundra outside of the mine and plant areas would be moved by helicopter in the summer and by a tracked vehicle pulling skid-mounted drills in winter.

10. Describe how drill holes will be abandoned –
    Drill sites have been abandoned by cutting off any casing at or below ground level.

11. If Project Description 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.
    Not applicable.

B-5 Stripping/ Trenching/ Pit Excavation

12. Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other)
    The area of the open pits would be stripped of overburden using conventional stripping procedures (drill, blast, muck and haul) followed by standard surface mining procedures to excavate waste rock and ore to the design depth of the pit. The mining sequence would involve drilling and blasting a predetermined volume of rock which would then be removed by loading and hauling either the ore or waste rock to designated locations. Please see proposed pit overburden and waste rock storage locations on Figures 2.5, 2.7 and 2.8 of the Project Description.

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

    Refer to Figures 2.5, 2.7 and 2.8 in the Project Description for the location and dimensions of the open pits. The depths of the open pits will vary with some of the smaller ones being less than 55 metres while some of the larger pits will mine to a depth of 190 metres. More detail will be presented in the draft Environmental Impact Statement.

14. Indicate the locations on a map.

    Refer to Figures 2.5, 2.7 and 2.8 of the Project Description.

15. Discuss the expected volume material to be removed.

    Refer to Table 2.5 in the Project Description.

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

Refer to Section 3.2.7 of the Project Description.

B-6 Underground Activities

17. Describe underground access.
    Refer to Sections 2.6 and 2.11.2 of the Project Description.

18. Describe underground workings and provide a conceptual plan.
    Refer to Sections 2.6 and 2.11.2 of the Project Description.

19. Show location of underground workings on a map.
    Refer to Sections 2.6 and 2.11.2 of the Project Description for a description. The underground will be located under the Tiriganiaq open pit and further to the northeast. Drilling at Wesmeg and F Zone has been encouraging, and an underground development at these locations cannot be discounted. Similarly, the extent of drilling at the other gold deposits is currently inadequate to rule out underground developments sometime in the future.

20. Describe ventilation system.
    Refer to Section 2.6.1 of the Project Description.

21. Describe the method for dealing with ground ice, groundwater and mine water when encountered.
    Refer to Section 2.6.1 of the Project Description.

22. Provide a Mine Rescue Plan.
    Refer to Section 2.16 of the Project Description.

B-7 Waste Rock Storage and Tailings Disposal

23. Indicate on a map the location and conceptual design of waste rock storage piles and tailings disposal facility.

    Refer to Sections 2.8 and 2.9, and Figures 2.5, 2.7 and 2.8 of the Project Description. The figures show the proposed locations of the overburden and waste rock management areas, and the tailings impoundment area.

    The proposed tailings impoundment area will include Lake B7 basin and possibly the land area immediately to the east. Dykes would progressively be raised to increase the holding capacity of the area in order to accommodate the accumulation of tailings over time.

24. Discuss the anticipated volumes of waste rock and tailings.

    Refer to Table 2.5 in the Project Description.

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

Refer to Section 3.2.7 of the Project Description and the *Static Test Results for Waste Rock and Tailings, Meliadine Gold Project, Nunavut, Canada* report on the attached CD.

B-8 Stockpiles

26. Indicate on a map the location and conceptual design of all stockpiles.

Refer to the Project Description, Figures 2.5, 2.7 and 2.8.

27. Describe the types of material to be stockpiled. (i.e. ore, overburden)

Low-grade ore will be stock piled for later processing.

Describe the anticipated volumes of each type of material to be stockpiled.

The volume of low grade ore will only be known once open pit mining proceeds and

28. Describe any containment measures for stockpiled materials as well as treatment measures for runoff from the stockpile.

All drainage and runoff from stockpiles will be directed to sumps at the toe of each stockpile and pumped to the tailings impoundment area or other holding pond. At the F Zone, Wolf, Pump and Discovery deposits, runoff will also be collected in sumps at the toes. The water will first be tested and, if it meets licence conditions, will be discharged. If not, it will be treated and discharged when licence conditions are met.

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

Refer to Section 3.2.7 of the Project Description and the *Static Test Results for Waste Rock and Tailings, Meliadine Gold Project, Nunavut, Canada* report on the attached CD.

B-9 Mine Development Activities

30. Indicate the type(s) of mine development activity(s):
    - Underground

      Refer to Sections 2.6 and 2.11.2 of the Project Description.

    - Open Pit

      Refer to Sections 2.7 and 2.11.3 of the Project Description.

    - Strip Mining

      No strip mining is envisaged at the Meliadine Gold Project.

- Other

  No other mining strategies are contemplated.

31. Describe mine activities.
    - Mining development plan and methods

      Refer to Sections 2.6, 2.7 and 2.11 of the Project Description.

    - Site access

      Refer to Section 2.4, Figure 2.2 of the Project Description

    - Site infrastructure (e.g. airstrip, accommodations, offshore infrastructures, mill facilities, fuel storage facilities, site service roads)

      Refer to Section 2.5 of the Project Description for description of site infrastructure. Figure 2.6 provides a close-up of the layout of main infrastructure.

    - Milling process

      Refer to Section 2.11.4 of the Project Description for a description of the mill process. The gold extraction process is illustrated in Figure 2.9 of the Project Description.

    - Water source(s) for domestic and industrial uses, required volumes, distribution and management.

      Refer to Sections 2.10.4 and 2.13 of the Project Description for a description of water management.

    - Solid waste, wastewater and sewage management

      Refer to Sections 2.14 of the Project Description for a description of solid waste management.

      Refer to Sections 2.5.8 and 2.13.2 of the Project Description for information on sewage treatment.

    - Water treatment systems

      Refer to Section 2.13 for information on water treatment systems.

    - Hazardous waste management

      Refer to Section 2.14 of the Project Description.

      A Hazardous Waste Management Plan will be included with the draft Environmental Impact Statement.

- Ore stockpile management

  Refer to Section 2.9 of the Project Description.

- Tailings containment and management

  Refer to Section 2.8 of the Project Description.

- Waste rock management

  Refer to Sections 2.9 of the Project Description. Open pit mining development rock in excess of site infrastructure construction and underground backfill needs will be placed in waste rock management areas.

- Site surface water management

  Refer to Section 2.13.2 of the Project Description. Site development design and engineering will ensure that all runoff from the built-up area of the mill site will be collected and treated as required.

- Mine water management
  Initial mining will be carried out in permafrost so no significant mine water volume is expected. Studies are in progress to determine probable quantity and quality of groundwater that may be encountered below the permafrost.

- Pitting and quarrying activities

  Refer to Section C Pits and Quarries of this questionnaire.

- Explosive use, supply and storage (including on site manufacturing if required)

  Refer to Sections 2.3.1 and 2.15.3 of the Project Description.

- Power generation, fuel requirements and storage

  Refer to Sections 2.3.2, 2.5.4 and 2.5.5 of the Project Description.

- Continuing exploration

  Exploration by AEM and others over the past 20 years has identified gold mineralization along the over 80 kilometre long geological trend of the Meliadine property from Hudson Bay to Peter Lake. AEM exploration lands along this trend are shown on Figure 1.1. Exploration on these lands will continue.

- Other

None

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

Refer to Sections 2.5.9 and 2.15.3, and figure 2.5 in the Project Description.

B-10 Geology and Mineralogy

34. Describe the physical nature of the ore body, including known dimensions and approximate shape.

Refer to Section 3.2.1 of the Project Description.

35. Describe the geology/ mineralogy of the ore deposit

Refer to Section 3.2.1 of the Project Description.

36. Describe the host rock in the general vicinity of the ore body.

Refer to Section 3.2.1 of the Project Description.

37. Discuss the predicted rate of production.

The predicted production rate will be 8,500 tonnes/day.

38. 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**.**

Refer to Section 3.2.7 in the Project Description.

B-11 Mine

39. Discuss the expected life of the mine.

Refer to Section 2.11 and table 2.6 of the Project Description. The expected mine life is expected to be 10 years based on present resources. Should more resources be found, the mine life would be extended.

40. Describe mine equipment to be used.

Refer to Tables 2-3 and 2.4 of the Project Description.

41. Does the Project Description involve lake and/or pit dewatering? If so, describe the activity as well as the construction of water retention facilities if necessary.

Refer to Sections 2.7.3 and 2.8 of the Project Description.

42. Discuss the possibility of operational changes occurring during the mine life with consideration for timing. (e.g. open pit to underground)

    Both open pit and underground mining will occur simultaneously. The quantity of ore from each may change over the mine life.

43. If Project Description 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*.

    The project does not involve uranium mining. There is no known uranium mineralization in the area.

B-12 Mill

44. 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.

    The open pit and underground parts of the mine will be in permafrost; the deeper parts of the underground mine may go below the permafrost. Mine water, if any, may be directly pumped to the mill or directed elsewhere in a water management infrastructure to be treated before reuse and/or being discharged. Water quality will be tested for compliance before any discharge.

45. Describe the proposed capacity of the mill.
    The proposed capacity of the mill will be 8,500 tpd.

46. Describe the physical and chemical characteristics of mill waste as best as possible.

    Mill tailings will be sand and slime caliber materials with a water content being 40 to 45 percent. The tailings will contain residual metals and mill reagents.

    Refer also to Sections 2.8 and 2.11.4 of the Project Description.

47. Will or does the mill handle custom lots of ore from other properties or mine sites?

    No mill feed from other sources are contemplated for this Project.

SECTION C: Pits and Quarries

Describe all activities included in this project.

- Pitting

  Not Applicable

- Quarrying

Quarries will be developed for spur road construction to Discovery. Quarries developed as part of the Phase 1 road will be used in the completion of the Phase 2 road from Rankin Inlet to the Meliadine site.

- Overburden removal

  Refer to Section 2.7 and Figures 2.5, 2.7, and 2.8 of the Project Description.

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

  Refer to Section A.

- Explosives transportation and storage.

  Please refer to Sections 2.3.1 and 2.15.3 of the Project Description.

- Work within navigable waters

  No work is contemplated within navigable waters excepting the installation of a jetty in Meliadine Lake.

- Blasting

  Excavating rock and granular materials from quarries, the open pits, and underground in permafrost requires blasting. Preparation for blasting involves drilling blast holes and loading these with explosive. All blasting will be done with materials approved for these purposes and under the supervision of persons trained and certified for the use of explosives. Blasting on surface will be fully guarded in accordance with NWT/NU Mine Safety Regulations to prevent inadvertent access by people from outside.

- Stockpiling

  Refer to the Figures 2.5 and 2.6 for low grade ore stockpiles.

- Crushing

  The construction phase will require crushed rock for site development and road construction and maintenance. Typically, level pads and road bases will be built with rock passing 150 mm. Finished surfaces of the development site and road will be dressed with crushed rock passing a 25 mm screen.

  Crushing of the ore will be part of milling. Refer to 2.11.4 of the Project Description.

- Washing

  Washing, as applied to coal beneficiation, is not required by any of the processes contemplated in this project.

- Other.

No other rock treatment processes are contemplated for this project.

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

At this time, no other mining sites are to be developed in the context of this Project. Exploration continues and may lead to further gold resources for future development. These will be described and submitted for screening and review as required by the Nunavut Land Claims Agreement.

2. Identify any carving stone deposits.

No carving stone has been identified during the course of exploration at Meliadine to date.

3. Provide a conceptual design including footprint.

Refer to Figures 2.1 to 2.5 of the Project Description for the conceptual layout of the major mine components. Refer to Table 2-2 in the Project Description for the area of major mine components.

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

Materials extracted during the course of mining will include overburden, waste rock and ore. This is outlined in the Table 2.5 of the Project Description.

Describe the depth of overburden.

The overburden on the area of the development site and pits varies in depth from bedrock on surface to 20 m in an area of the proposed pits.

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

Thermokarst can develop wherever the natural cover of saturated frozen tundra (that is not bedrock) or tundra with massive ice near surface is disturbed and the disturbed area is not re-covered with materials of an equivalent or greater insulative effect.

In exploring and developing the Meliadine Gold Project site, the risk of thermokarst development has been mitigated by avoiding disturbance to the natural tundra unless absolutely necessary. Generally, all working and developed surfaces in the Project area will be covered with approximately 1.5 metres of construction materials (aggregate or crushed rock) to insulate the permafrost in the underlying overburden. This will be supplemented with additional engineered solutions where design specifications call for added thermokarst mitigation measures.

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

   The hydrological basins draining from the project site to Meliadine Lake are small and natural runoff volumes are relatively low. Also, the Tiriganiaq and Discovery sites are near or at the height of land for their respective drainage basins, further mitigating the risk of large runoff. The pits at F Zone will require an engineered water diversion structure that likely will exist only while mining takes place, after which the pre-existing flow will be re-established.

   Local runoff will be managed by grading all developed working surfaces to drain into a sump. Accumulated water from natural precipitation in the various pits will also be pumped to a sump for holding, testing, and appropriate treatment before disposal, transfer to the tailings impoundment area or mill.

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

   The natural drainage basins affected by proposed site and pit development are generally low slope basins. The Tiriganiaq pit, mine site and development site are near the natural height of land. The Discovery pit is well situated with respect to drainage issues. All site development features will be designed to mitigate the risk of erosion caused by altered drainage patterns. Pits and quarries developed for road construction will be contoured to reduce the risk of progressive erosion beyond the pit margins and to also prevent ponding within the pit margin. Limited risk of erosion is envisaged.

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

   Sedimentation is usually associated with water movement over or through disturbed soils, or runoff from spoil piles. All natural runoff from the development site and the pit, and any mine water from the mine will be collected in sumps.

   For the F Zone and Discovery areas, all natural runoff will be directed to the associated sumps. Water will be held in the sumps, tested, treated if necessary and released to the environment upon meeting water licence effluent/MMER limits.

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

   Relief in the Project area is extremely low; there is no natural slumping and mining and construction work on the Project will not cause slumping. When overburden is excavated in the summer, it tends to have a low angle of repose (e.g. 5°). Overburden Management Areas for such material will be bermed at the toe.

10. Describe the moisture content of the ground.

    The overburden is generally saturated and frozen. Thermistors have shown that the active layer may extend to depths of 2.5 metres, but generally is in the range of 1-1.5 meters.

11. Describe any evidence of ice lenses.

Geotechnical investigations have shown the presence of ice in the overburden, but massive ice (e.g. 1+ metres of clear ice) has not been encountered. No ice lenses have been encountered in bedrock.

12. If blasting, describe methods employed.

    Section 2.11.3 of the Project Description applies to quarrying and open pit mining.

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

    Refer to Section 2.15.3 and Figure 2.5 of the Project Description.

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

    Refer to Section 3.2.7 of the Project Description and the geochemistry report found on the attached CD.

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

    Refer to Section 2.16 of the Project Description.

SECTION D: Offshore Infrastructure

No new offshore infrastructure is required for the development and operation of the Meliadine Gold Project. Commercial carriers will deliver materials to the dock and/or spud barge at Rankin Inlet for offloading and transfer to the mine site. Barges and ocean-going ships from eastern ports will serve the project's needs.

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).
   Not applicable.

2. Provide a conceptual plan, profile description and drawing(s) indicating shoreline, facility footprint, tidal variations, required vessel draft, keel offset, deck height freeboard.

Not applicable.

3. Discuss how anticipated loads on the seabed foundation and on the offloading platform will be incorporated into the design.
   Not applicable.

4. Describe how vessels will manoeuvre around the facility. (e.g. pull alongside or in front).

Not applicable.

5. Discuss the anticipated life of the facility.
   Not applicable.

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.
   Not applicable.

7. Describe dredging activities.
   Not applicable.

8. Indicate source of granular or rock material used in construction.
   Not applicable.

9. List quantities of the various types of material used in construction.
   Not applicable.

10. Describe construction method(s).
    Not applicable.

11. Indicate whether a site engineer will be on-site to inspect construction.
    Not applicable.

12. If proposed construction method involves dumping of fill into water, discuss measures for mitigating the release of suspended solids.
    Not applicable.

D-3 Facility Operation

13. Describe maintenance activities associated with the facility (e.g. dredging, maintenance to account for potential settlement of facility,)
    Not applicable.

14. Discuss whether the public will have access to the facility(s) and describe public safety measures.
    Not applicable.

15. Describe cargo and container handling, transfer and storage facilities.
    Not applicable.

16. Indicate whether fuel will be transferred from barges at this site and describe the method of that fuel transfer.
    Not applicable.

17. Discuss frequency of use.
    Not applicable.

D-4 Vessel Use in Offshore Infrastructure

18. Please complete Section H.
    Not applicable.

SECTION E: Seismic Survey

No seismic survey is required for the development and operation of the Meliadine Gold Project.

E-1 Offshore Seismic Survey

1. Indicate whether the survey is 2D or 3D at each site.
   Not applicable.

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

   Not applicable.

3. On a map, indicate the grid, number of lines and total distance covered at each site.
   Not applicable.

4. Indicate the discharge volume of the airguns, the depth of airgun discharge, and the frequency and duration of airgun operation at each site.
   Not applicable.

5. Discuss the potential for dielectric oil to be released from the streamer array, and describe proposed mitigation measures.
   Not applicable.

6. Indicate whether additional seismic operations are required for start-up of operations, equipment testing, repeat coverage of areas.
   Not applicable.

7. Indicate whether air gun procedures will include a “ramping up” period and, if so, the proposed rate of ramping up.
   Not applicable.

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.
   Not applicable.

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.
   Not applicable.

10. Describe how nearshore and onshore areas will be accessed.
    Not applicable.

11. Describe the survey methods to be used (e.g. explosive charge, vibration, air or water gun, other)
    Not applicable.

12. Describe equipment to be used
    Not applicable.

13. If applicable, indicate number, depth and spacing of shot holes
    Not applicable.

14. Describe explosive wastes including characteristics, quantities, treatment, storage, handling, transportation and disposal methods.
    Not applicable.

E-3 Vessel Use in Seismic Survey

15. Please complete Section H
    Not applicable.

SECTION F: Site Cleanup/Remediation

Refer to Section 2.17 of the Project Description for details on reclamation and closure of the mine site.

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

   A landfill will be established within a waste rock storage area when construction commences.

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

   Refer to Section 2.17 of the Project Description.

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.

   Refer to Section 2.17 of the Project Description. There will be no accumulation of contaminants over the mine life.

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

   Details will be provided with the draft Environmental Impact Statement.

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.

Refer to Section 2.17 of the Project Description. There will be no accumulation of contaminants over the mine life.

6. Identify and describe all materials to be disposed of off site, including the proposed off site facilities, method of transport and containment measures.

   Refer to Section 2.17 of the Project Description.

7. Discuss the viability of landfarming, given site specific climate and geographic conditions.

   No landfarm is contemplated for the mine.

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

   Site cleanup and remediation is not expected to involve blasting. Refer to Section 2.15.3 for a description of the explosives to be used at the mine.

9. If blasting, describe the methods employed.

   Site cleanup and remediation is not expected to involve blasting.

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

    The potential for erosion is extremely slight due to (a) low relief, (b) semi-arid climate, and (c) slow movement of surface waters. Slope erosion of reclaimed surfaces will be controlled by covering slopes with stable materials.

    Refer to question C 7 above.

    After closure, the tailings impoundment area will present a large surface area with the potential to become a source of dust. The tailings will be capped with waste rock.

11. Describe **all** activities included in this project.
    - Excavation (please complete Section B-5)
      Refer to Project Description and Section B-5 above.
    - Road use and/or construction (please complete Section A)
      Refer to Section 2.4 in the Project Description and Section A above.
    - Airstrip use and/or construction
      Not applicable
    - Camp use and/or construction
      Refer to Project Description, Section 2.5.2 and Section 2 items 16 to 18 above.
    - Stockpiling of contaminated material
      Contaminated material is not to be stockpiled, excepting while waiting for the shipping season to commence.
    - Pit and/or quarry (please complete Section C)
      See Section C above.
    - Work within navigable waters (please complete Section H)

See Section H below.

- Barrel crushing
  Refer to Section 2.14 of the Project Description.
- Building Demolition
  Refer to Section 2.17 of the Project Description.
  Other
  Not applicable.

SECTION G: Oil and Natural Gas Exploration/Activities

The Project does not comprise of any oil and natural gas exploration or related activities. There is no known hydrocarbon mineralization in the area.

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.
   Not applicable.

2. Indicate if the site contains any known former well sites.
   Not applicable.

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)

Not applicable.

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

    Not applicable.

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

    Not applicable.

6. If utilizing *fresh water*, estimate maximum drawdown and recharge capability of the river or lake from which water will be drawn.

    Not applicable.

7. Indicate if permafrost is expected to be encountered under:
    a. Camp Facilities
    b. Well Site
    c. Access Routes
    d. Sumps
    e. Other: _____

    Not applicable.

8. Indicate any potential for encountering artesian aquifers or lost circulation within the surface hole (to casing depth).

    Not applicable.

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.

Not applicable.

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)

    Not applicable.

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

    Not applicable.

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.

Not applicable.

13. Attach an outline of planned abandonment and restoration procedures.
    Not applicable.

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.
    Not applicable.

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.

Not applicable.

16. Attach an outline of planned abandonment and restoration procedures.
    Not applicable.

17. Please complete Section H
    Not applicable.

G-4 Rig

18. Type of Rig. Draw works, make and model
    Not applicable.

19. Derrick/Mast make and model
    Not applicable.

20. H.P. available to draw-works
    Not applicable.

SECTION H: Marine-Based Activities

The Project does not anticipate any marine-based activities other than receiving materials and supplies by commercial marine carriers using the Itivia barge landing at Rankin Inlet.

H-1 Vessel Use

1. Describe the purpose of vessel operations.
   Not applicable.

2. List classes and sizes of vessels to be used.
   Not applicable.

3. Indicate crew size.
   Not applicable.

4. Indicate operating schedule.
   Not applicable.

5. Provide a description of route to be traveled (include map).
   Not applicable.

6. Indicate whether the vessel will call at any ports. If so, where and why?
   Not applicable.

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

   Not applicable.

8. List all applicable regulations concerning management of wastes and discharges of materials into the marine environment
   Not applicable.

9. Provide detailed Waste Management, Emergency Response and Spill Contingency Plans
   Not applicable.

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.
    Not applicable.

11. Describe the source of fresh water and potable water
    Not applicable.

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.
    Not applicable.

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.
    Not applicable.

14. Indicate whether Fisheries or Environmental Observers will be onboard during the proposed project activities. If yes, describe their function and responsibilities.
    Not applicable.

15. Describe all proposed measures for reducing impacts to marine habitat and marine wildlife (including mammals, birds, reptiles, fish, and invertebrates).
    Not applicable.

H-2 Disposal at Sea

1. Provide confirmation you have applied for a *Disposal at Sea* permit with Environment Canada.
   Not applicable.

2. Provide a justification for the disposal at sea
   Not applicable.

3. Describe the substance to be disposed of, including chemical and physical properties
   Not applicable.

4. Indicate the location where the disposal is to take place
   Not applicable.

5. Describe the frequency of disposals (disposals per day/week or month)
   Not applicable.

6. Describe the route to be followed during disposal and indicate on a map.
   Not applicable.

7. Indicate any previous disposal methods and locations
   Not applicable.

8. Provide an assessment of the potential effects of the disposal substance on living marine resources

Not applicable.

9. Provide an assessment of the potential of the disposal substance, once disposed of at sea, to cause long-term physical effects.
   Not applicable.

10. Describe all mitigation measures to be employed to minimize the environmental, health, navigational and aesthetic impacts during loading, transport and disposal.
    Not applicable.

SECTION I: Municipal and Industrial Development

Refer to Section 2.3 in the Project Description.

Discussions have been initiated with the Hamlet of Rankin Inlet, Airport Authority and the Government of Nunavut regarding collaboration on the development of off-site facilities for the mutual benefit of all parties.

1. Describe the business type, including public, private, limited, unlimited or other.

   New business opportunities will emerge in the local construction, transportation, and supply and service sectors as a result of the Project. AEM intends to explore all potential avenues for contracting out possibilities with local interests who can provide competent, competitive, and qualified services or products.

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.).

   Laydown area, construction, operation, maintenance
   Expediting services, operation
   Trucking, operation
   Tank farm, construction, operation, maintenance
   Road maintenance and snow removal
   Catering and housekeeping

3. Describe the production process or service provision procedures.

   Siting and construction of the Project's Rankin Inlet infrastructure was discussed with the community and the hamlet's municipal council, and the Department of Community and Government Services. The location of the offsite infrastructure will be a 14 hectare site at Itivia that will be leased from Nunavut Airports.

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.

Raw materials will be construction materials, mostly quarried rock and granular material from local quarries. Refer to section 2.16 for safety provisions.

5. Provide detailed information about the structure and/or building in which the activity will be conducted.

   Refer to Section 2.3 of the Project Description.

6. List the PPE (personal protective equipment) and tools to be used to protect personal health and safety.

   Refer to Section 2.16 of the Project Description.

7. Describe the firefighting equipment that are or will be installed.

   Firefighting equipment will be installed at the tank farm and in all buildings in compliance with applicable regulations.

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 levels associated with receiving the materials at the dock or barge landing area and in shipping materials to the site on trucks. The noise level will be similar to those associated with the annual receiving of cargo at Rankin Inlet.

   AEM is exploring the development of a road around the community so as to minimize disturbances.

9. Describe the type of gaseous emission that will be produced during this activity. Include the allowable thresholds and mitigation measures.

   Gaseous emissions would be exhaust from vehicles used in offloading and moving supplies to storage.

10. Describe odours that the activity might release and include corresponding allowable threshold. Describe mitigation measures if thresholds are exceeded.

    Not applicable.

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).

    Not applicable.

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

Workers in the laydown area and those handling fuel will be trained in rigging, slinging, stevedoring, handling bulk fuel and WHMIS. A spill containment plan will be developed for the fuel storage facility. Spill response equipment and materials will be in place.

Refer also to Section 2.16 of the Project Description.

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.

Refer to Figure 2.1 for the location of the tank farm.

14. If the activity involves the development of a new quarry or expansion of an existing quarry, complete Section C.

Please refer to Section C.

4. DESCRIPTION OF THE EXISTING ENVIRONMENT

Describe the existing environment, including physical, biological and socioeconomic aspects. Where it is appropriate, identify local and regional study areas.

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

The following lists are 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

- Proximity to designated environmental areas, including parks; heritage sites; sensitive areas, including sensitive marine habitat areas (recreational areas; sport and commercial fishing areas; breeding, spawning and nursery areas; known migration routes of living ;marine resources; and areas of natural beauty, cultural or historical history and; other) and protected wildlife areas; and 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.

- 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.

PROJECT AREA ENVIRONMENT

Environmental baseline study reports were completed at and around the Project area during the period 1997-2011, and Aquatic and Terrestrial Baseline Reports are included on the attached CD. The results are summarized in Section 3 of the Project Description.

5. IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION MEASURES

1. Please complete the attached Table 1 – Identification of Environmental Impacts, taking into consideration the components in Appendix A. 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 Description 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.

Refer to Sections 3, 4 and Appendices D4 and D5 of the Project Description.

7. 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 7.7.2 of the Project Description.

8. SUPPORTING DOCUMENTS

Where relevant, provide the following supporting documents:

- Abandonment and Decommissioning Plan
- Existing site photos with descriptions
- Emergency Response Plan
- Comprehensive Spill Prevention/Plan (must consider hazardous waste and fuel handling, storage, disposal, spill prevention measures, staff training and emergency contacts)
- Waste Management Plan/Program

- Monitoring and Management Plans (e.g. water quality, air pollution, noise control and wildlife protection etc.)
- 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

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.
- Human Health Risk Assessment of the contaminants at the site.

Refer to references section of the Project Description. The management plans are currently in effect at the Meliadine Gold Project and will either be updated or replaced in order to meet the standard required for the draft Environmental Impact Statement that will be developed in conformity with the EIS Guidelines expected from the Nunavut Impact Review Board with the filing of this Project Description.

The following management plans can be found in an electronic format on the CD in the sleeve at the end of this document.

(1) Abandonment and Restoration, Meliadine West Gold Project Camp and Underground Exploration Area, November 2010

(2) Fuel Management And Spill Contingency Plan, Meliadine West Project, November 2010

(3) Quality Assurance / Quality Control Plan for the Meliadine Gold Project, October 2009

(4) Waste Management Plan, Meliadine West Gold Project, August 2010

(5) Waste Rock and Ore Storage Management Plan, August 2010

(6) Water Management Plan, August 2010