Other Project Water Sample Locations

Project Water Sample Location (Mandated)

Operations Pad

Containment Pond

Lakes

Basin Boundary

Scale: 1:25,000

Grid: NAD83 Z15

6,990,000 m N

6,988,000 m N

6,986,000 m N

539,000 m E

541,000 m E

543,000 m E

537,000 m E

H Basin

D Basin

B Basin

A Basin

D7

B7

B6

B5

B4

B2

A8

A6

Meliadine Lake

Containment Pond

Operations Pad

Underground Development

Tiriganiaq (Open Pits)

F Zone (Open Pits)

B7-6

B2-1

P1

A15

A13

A54

A9

A38

A8-7

MEL1

MEL2

MEL3

MEL4

MEL5

MEL6

MEL7

6,992,500 m N

6,987,500 m N

6,982,500 m N

6,977,500 m N

6,972,500 m N

535,000 m E

540,000 m E

545,000 m E

Control Lake

Meliadine River (ML-R)
Near Rankin Inlet

Other Water
Sampling Sites

N

W

E

S

0 2 4
kilometres

0 0.5 1
kilometres

PROJECT: MELIADINE GOLD PROJECT

TITLE: 2010 WATER SAMPLING LOCATIONS

DRAWING: JW, NL

DATE: SEPT 2010

AGNICO - EAGLE MINES LTD

File: AEM GIS Database

Figure 1

Information Request # 8

Made By: Indian and Northern Affairs Canada

The proponent states that they will undertake post-project water monitoring. This statement should be elaborated upon with a description of the nature, duration, and plans for water monitoring, and an explanation of the appropriateness of the planned approach.

Made By: Kivalliq Inuit Association

...It states that the ephemeral streams have had limited sampling for water quality. This work needs to be completed before the road is constructed.

AEM's Response to Information Requests:

Potential impact of the all-weather road on water quality would be principally limited to where the road is immediately adjacent to a water body or at water crossings. This would largely be associated with the possible leaching of trace metals from the road building material and road dust settling on receiving waters.

AEM will conduct a water quality sampling program along the proposed road to monitor for these potential conditions. The proposed program is similar to that applied by AEM during and after construction of the Meadowbank all weather access road, and will include a water quality characterisation of all water crossings and select lakes before road construction begins (Nippisar Lake will be included in the survey, this being the water source for Rankin Inlet). Of the nine culvert water crossings, it is proposed that the three largest drainage basins be sampled on an ongoing basis, namely:

1. M3.0 having a drainage basin of 2.77 km^2;
2. M5.0 having a drainage basin of 11.02 km^2; and
3. M23.7 having a drainage basin of 3.62 km^2.

M3.0 and M5.0 are both near the Meliadine River and are located in the "low lands" before the road climbs to the higher ground. Water here would have a greater probability of being in contact with any road building material for an extended period. M23.7 is located downstream of the waste rock pad and upstream of the F Zone gold deposit, and has historical water quality data.

There is also a potential for drainage from the various quarries that are to be established along the access road route. A water sample will be collected from any noticeable flows reporting from a quarry. Standing water within the quarries will not be sampled as it poses little risk to the receiving environment.

The road water sampling program will be integrated into the existing monitoring program covering sites mandated by the Nunavut Water Board in our Type B Water Licence and those on or around the commercial lease issued by the Kivalliq Inuit Association. Water samples will be collected on a monthly basis over the open water period, June to September inclusive. The parameters to be collected will be the same as those presently collected downstream of the waste rock pad. The parameters include:

- Physical parameters – field pH and water temperature, lab pH, conductivity, turbidity, total suspended solids
- Major anions and cations,
- Nutrients – NH_4, NO_3, NO_2, Kjeldahl N and PO_4
- Trace metals – complete ICP/MS scan

The results will be reported monthly to the NWB, and compiled for the annual report that is sent to NWB, KIA and NIRB.

The sampling will continue for 1 year at which point the results will be reviewed in consultation with authorizing agencies to determine if the monitoring program is adequate. The sampling locations and/or frequencies may be adjusted based on the results of this consultation.

Finalization of the water quality monitoring component is expected during the regulatory phase, which follows NIRB's screening decision.

AEM Reference: Information Request #11

Made By: Indian and Northern Affairs Canada

Use of the Road
The proponent anticipates public use of the road. As the Government of Nunavut has legislative authority over public highways, the proponent should indicate what steps it has taken or plans to take in cooperation with the Government of Nunavut's transportation officials to ensure that it undertakes appropriate planning for the development, operation and maintenance of a public highway. For example, design, construction and maintenance standards, traffic management, emergency response, snow clearing and the management of hazards, policing, and by-law and other regulatory enforcement must all be taken into account.

AEM's Response to Information Request:

The proposed Meliadine all weather access road will be operated as a private road but with provision for use by the general public at the public's own risk. It will not be operated as a public highway. Signage will be installed at the southern end of the road that clearly indicates in both English and Inuktitut that this is a privately operated road and that public use is allowed but at the public's own risk.

The Government of Nunavut Department of Transportation will have no responsibility or authority for the construction or ongoing operation of this road. The road will be built in accordance with the design standards as presented in Table 2.2 on Page 13 of the document entitled "Project Description – Extension of the Underground Exploration and Bulk Sample Program" dated January 2011. As the road is not a public highway, it is not being built nor designed in accordance with operational or maintenance standards that the GN may apply to public highways.

Permission to build this road is being sought by AEM to support its expanded underground bulk sampling program at its Meliadine Gold Project. If the Project does not proceed beyond this advanced exploration phase then the road will be decommissioned and reclaimed by AEM at its expense.

It is speculative to consider this road as part of a future public highway system in Nunavut. Any future public highway construction in this area would be the subject of its own environmental assessment. The GN has made no commitment at this time to construct a public highway that would incorporate the proposed Meliadine Project private road. Consequently while AEM has met with the GN to discuss its planned road construction, no coordination of road planning has occurred. AEM has not coordinated specific issues with the GN (such as design, construction and maintenance standards, traffic management, emergency response, snow clearing and the management of hazards, policing, and by-law and other regulatory enforcement). This would not be appropriate until the GN decides on its plans for highway construction.

AEM Reference: Information Request # 12

Made By: Indian and Northern Affairs Canada

Use of the Road
The Proposal discusses many potential mitigation measures such as a southern gate and potential closing of the road for safety reasons. While it is useful to have an understanding of possible mitigation measures, it is essential that the proponent make clear which of the potential mitigation measures it intends to put into place.

AEM's Response to Information Request:

For the purpose of clarity for this environmental screening, AEM will implement the following measures to manage use of the proposed Meliadine Gold Project access road:

- An unmanned control gate will be installed at the southern end of the proposed road that will allow AEM to physically close off access to the road when road conditions warrant such closure to protect both company and public users. These would be short term closures lasting hours or days depending upon the condition but with the condition being reassessed every 24 hours. Such conditions could include:
  - i) road passage unsafe due to snow or other weather related condition;
  - ii) road passage unsafe due to ongoing road maintenance activity;
  - iii) road passage unsafe due to oversize loads being transported; and
  - iv) road passage unsafe due to presence of large numbers of wildlife on the road, etc.

- A system will be established to allow AEM to communicate current road closure conditions to the public. This will include announcements on community radio, public information sessions, email alerts to a subscription list of interested parties, email alerts to the Hamlet of Rankin Inlet and to the Kivalliq Inuit Association, and other methods of communication that are found to be effective through ongoing experience and consultation. AEM will have in place a written Meliadine all weather road operating procedure that will be periodically reviewed and updated that will set out the rules for all use of the road and the procedures that will be employed by AEM in operating and maintaining the road (similar to the road operating procedure that AEM has in place at Meadowbank for the road between Meadowbank and Baker Lake). Once the road is in operation copies of the procedures will be provided on a regular basis to the Hamlet office in Rankin Inlet, to the KIA office and to the HTO office in Rankin Inlet.

- Signage will be posted along the road in both English and Inuktitut advising all users as to speed limits and to other special road conditions as warranted for safe operation (for example, notice of approaching curves, notice of approaching bridges, etc.).

- A manned control gate will be installed and operated at the northern end of the road (the Meliadine Project end of the road) to prevent unauthorized access by the general public into the active areas of the Project to protect public safety. The public will not be allowed uncontrolled access into active areas of the Project to protect them from inadvertent contact with work areas where Mine Safety regulations are in force.

AEM Reference: Information Request # 13

Made By: Indian and Northern Affairs Canada

Use of the Road
The document does not describe or analyze the potential for accidents or malfunctions of — or in relation to use of — the road. While the safety of all users of the road is important, this issue is particularly important in view of the proponent's expectation that the general public will not be restricted from using the road. Unrestricted use–mixing mining/industrial users and the general public–may have implications for the likelihood and consequences of an accident or malfunction, and should be accounted for in both planning and assessment. Therefore, the proponent should provide a thorough analysis of the potential for accidents and malfunctions, including identifying potential consequences and conceptual plans for avoidance of accidents and malfunctions, and for response should they occur.

AEM's Response to Information Request:

There will be accidents and malfunctions that occur on this road. Such unfortunate events are inevitable. However, we can plan ahead to develop mitigation measures and response plans that can be applied to reduce the frequency and severity of such events. The types of events considered likely are as follows:

- Vehicle collisions that may result in personal injury and spillage of potential harmful materials such as fuel, lubricating fluids, antifreeze, etc.
- Contact between vehicles and wildlife that may result in harm to wildlife, personal injury and spillage of potentially harmful materials, etc.
- Single vehicle accidents that may result in personal injury and spillage of potentially harmful materials;
- Risk of people getting stuck on the road in bad weather such as in heavy snow or white out conditions, or due to mechanical breakdown; and
- Risk of accident due to an intoxicated or impaired driver on the road.

Potential Consequences include:

- Personal injuries including possible fatalities;
- Harm to wildlife; and
- Spills of harmful materials onto the land or into water.

Mitigation Measures to reduce risk and severity that will be applied by AEM include:

- Closure of the road to all traffic when road conditions are unsafe. This will reduce the risk of accidents but cannot be 100% effective;

- Closure of the road to public access when road maintenance or road use by oversize loads make use of the road less safe;
- Closure of the road when large numbers of wildlife on the road increase the risk of accidents between vehicles and wildlife;
- Public education programs run periodically in Rankin Inlet and at the Project site to inform all users of road safety requirements such as speed limits, etc. These will include public sessions and announcements using community radio;
- Use of road signs in both English and Inuktitut to advise all road users of safety concerns such as speed limits, approaching curves and bridges, etc.;
- Periodic patrols of the road by AEM security personnel and enforcement of road safety rules where appropriate;
- Installation and use of two way radios in all AEM vehicles using the road to inform other AEM vehicles, AEM maintenance vehicles and AEM security of conditions on the road and to aid in quick communication response to observed unsafe conditions on the road.
- Emergency response equipment carried in all AEM vehicles using the road to improve response in the event of an incident or accident. This equipment includes survival gear, emergency first aid equipment and initial spill response equipment;
- Emergency response personnel and equipment available at all times on the Project site to allow for response when an accident does occur. AEM will have a program to train and maintain personnel on site at all times that can respond and address all emergencies that may occur, ranging from personal injuries, fire, spills of harmful materials, etc. AEM will also have appropriate equipment and material available to equip its emergency response personnel; and
- The Project site will have an emergency and spill response plan in place at its project at all times. These Plans will be periodically reviewed and updated to learn from past experience. Emergency response personnel will be trained on the procedures and protocols contained in the Emergency and Spill Response Plans.

Response to Accidents and Malfunctions

As a private road the responsibility for response to any emergency or accident lies with AEM. It will be AEM that responds and deals with any emergencies that occur on the road. AEM would where appropriate ask for assistance from other parties but the response would be AEM's responsibility alone.

Examples of Response Scenarios

Vehicular Accidents – AEM emergency response personnel would be tasked to respond to any vehicle accident resulting in personal injury or spillage of harmful material. AEM would initiate

extraction and transport to medical assistance at Rankin Inlet's medical centre. AEM would initiate spill containment and clean up measures.

Spills – AEM emergency response personnel would be tasked to respond to any spills and would initiate spill containment and clean up

Reporting – AEM will report all reportable scale incidents to the appropriate Government authority (e.g., Mines Inspector, Water Board, NU Spill Line, Environment Canada, GN Department of Environment, Fisheries and Oceans Canada, KIA and Rankin Inlet Municipality).

Based on our experience with the road between Baker Lake and Meadowbank Gold Mine, we know that accidents will periodically occur but the proposed mitigation measures and emergency response planning, training and preparation will reduce significantly the risk, frequency and severity of such incidents.

AEM Reference: Information Request # 14

Made By: Indian and Northern Affairs Canada

Public Consultation
The proponent's descriptions of consultation sessions do not include any sessions that were open to the general public. The proponent should indicate whether it held any open sessions, describe any such sessions highlighting any concerns raised, and the results, conclusions or follow-up to these sessions.

AEM's Response to Information Request:

The following is a summary of the history of Past Consultation held in Rankin Inlet on the proposed road between the community and the Meliadine Project site:

- October 2004 – presentation on road study at KIA Annual General Meeting
- March 2007 – Comaplex presented alternate road routes to the Meliadine Projects at a community meeting and asked for advice (open to public)
- July 2007 – Complex presented alternate road routes on a large map to the Elders and asked for advice. At that time the Elders agreed that the route now proposed was the best route of those presented
- August 2008 – community update meeting (open to public)
- May 2009 – community update meeting (open to public)
- June 2010 – community update meeting (June 03rd) – large turnout at Sinniktarvik – general support for selected road route to Meliadine (open to public)
    - At this meeting Comaplex presented an update to the community on the Meliadine project along with a map of the proposed road alignment;
    - There was positive response with no suggestion on changing the road route

AEM has maintained this same routing based on this past consultation

- March 23, 2011 – A public meeting was held in Rankin Inlet at the Community Centre at which AEM presented the information on the proposed road contained in its application to the Nunavut Water Board and to the Nunavut Impact Review Board. There was a large turnout (~150 people) and the event was simultaneously broadcast on the community radio station. There was strong support for the road as proposed. Issues raised by the public included:
    - Concern over whether the Meliadine and other stream crossings would adversely impact fish passage. This centred on vibration from vehicles crossing the bridge and

the physical impediment of char passing up the Meliadine River. The public appeared to support the clear span bridge as proposed and recognized that as proposed this crossing should not prevent char passage up the river;

- Concern over whether increased road dust would harm community water supplies. AEM committed to working with the Rankin Inlet municipality to control dust in critical areas such as where the existing road runs alongside the lake from where the municipality draws its drinking water supply. AEM also pointed out that none of the new road impacts municipal water supplies. The issue centred on increased traffic alongside the existing road and what dust suppression activities could be applied during the driest non-winter months (e.g. watering of key areas or application of a non-toxic dust suppressant periodically);
- Concern over whether the road would impact the Territorial Park with relief expressed when it was seen that the road did not pass through the park; and
- There were many positive comments raised by community members regarding opportunities that this project will bring to Rankin Inlet including training, employment and new job opportunities. There were questions raised as to how the community could help AEM make this project go and how they could help speed up the process. They asked what AEM to identify what approvals/consent/information was missing to move the project forward and how they could help.

Information Request # 15

Made By: Indian and Northern Affairs Canada

Residual and Cumulative Effects

The proponent discusses cumulative effects of its project in combination with other mine development activity, but not in combination with any other types of activity. The proponent should broaden its analysis of cumulative effects to take into account other activities, including exploration activities and activities unrelated to the minerals sector.

AEM's Response to Information Request:

Cumulative effects are changes to the biophysical and socio-economic environments that are caused by one development in combination with other past, present and known future developments.

If one first looks at the mineral exploration activities besides those of AEM, only Shear Minerals to the north and Starfield Resources to the southwest come to mind. Neither property saw much activity in 2010. Although the Shear's claims were optioned by Rio Tinto in 2010, their program has been completed and it is unknown if there will be any follow-up activity. Shear Minerals itself is focusing on reactivating the Jericho Diamond Mine in the Kitikmeot Region.

Starfield Resources has a base metal – precious metals prospect on Ferguson Lake but the level of activity was minimal in 2010. It is unknown if future activity can be anticipated at this deposit. The cumulative effects of activities at these two properties are seen as minimal.

Areva's Kiggavik exploration project is far removed from the Meliadine Gold Project and its centre of operations is Baker Lake. Cumulative effects are not seen associated with this development excepting for the competition for employees from Rankin Inlet and other local communities.

The current proposal is to construct a road and use it to support of the underground program. The construction period will be of a shorter duration and will occur during the winter period, a time of low exploration activities. It is therefore expected that cumulative socio-economic effects from other exploration activities will be minimal.

Since all the non-AEM exploration activities would take place whether or not there is a road to Meliadine, and that none of the known activities would use the road, there should be no cumulative effects of the road operation coupled with other exploration activities.

Operation of the road, as with the advanced exploration occurring at the Meliadine Gold Project, would provide a socio-economic boost to the community, both economically and socially. With the exploration program, business development is thriving, more employment is being provided, and more people have a positive view of their future. Training courses being set up by government and supported by the mining industry are fully subscribed. The building of the All-Weather Road will further enhance these benefits. The cumulative effect of AEM's advanced exploration and the all-weather road results in a socio-economic benefit that the elders continually voice, this being "jobs for the young people".

Local hires have been a mainstay of the Project since inception. It is fully expected that with training of local workers, in combination with a willingness to work and learn, there would be substantial employment opportunities for Inuit and other Northerners in building and using the road, and having access to opportunities offered by the Meliadine exploration site.

It goes without saying that accompanying the positive cumulative effects there will also be negative ones. These would in part result from life style changes resulting from a wage economy. The example of the Meadowbank mine shows that these changes can be managed.

In terms of activities unrelated to the mining industry that need be considered in evaluating cumulative impacts, the only activities occurring in this area are recreational fishing and camping. The all-weather road will provide easier access to Meliadine Lake where a number of cottages and camps are located. The population currently accesses this location using ATV trails whose alignments are very close to the proposed road. The easier access provided by the road would benefit the population of Rankin Inlet as it would allow more people to participate in recreational and traditional activities.

Tourism will continue over the summers but AEM's activities will have few negative cumulative effects as tourism activities are normally far removed from Rankin Inlet.

Information request # 16

Made By: Indian and Northern Affairs Canada

INAC presumes the proponent's desired participation in the operation and maintenance in the road is limited to the period in which it requires use of the road for its commercial purposes, others, including the Government of Nunavut, the Hamlet of Rankin Inlet, and the Kivalliq Inuit Association may have interests that will survive the proponent's needs. The Proposal should identify likely scenarios for operation and maintenance of the road both during and after its period of usefulness to the Proponent, and assess those scenarios, including the possibility of a need to decommission and reclaim the road should there be no subsequent operator.

More specifically, this section describes that 'the road as designed will eventually be part of the Manitoba-Nunavut road to Chesterfield Inlet. As such, the larger part of the road – approximately 17 kilometres would not be reclaimed, and responsibility for it would be assumed by the Government of Nunavut upon closing of the Meliadine site.

Given that the 'Manitoba-Nunavut' road is not currently in the Nunavut Environmental Assessment processes, and given that the all-weather road is being constructed to support activities related to the bulk sample program which will end in 2013, the proponent should address reclamation of the 17 km of the proposed all-weather road by way of their reclamation plan, or provide evidence that the Government of Nunavut or the responsible Inuit Organization will assume responsibility for the 17 km of the all-weather road upon closing of the Meliadine site, whether or not the 'Manitoba-Nunavut' road is a reality.

AEM's Response to Information Request:

AEM is responsible for the design, construction, maintenance and ongoing safe operation of the all-weather road until the end of the lease period. It will be operated as a private road. In response to public feedback received during public consultation, provision for general public use at the public's own risk was included in the proposed road project. However, this road will not be operated as a public highway; it will remain a private road. The road is not designed in accordance with operational or maintenance standards that the GN may apply to its roads. It is designed for the safe transport of supplies and employees to the Meliadine project required for the advanced exploration program

AEM is therefore applying to build this road to service its advanced exploration at the Meliadine Project site only. AEM is not implying that this road will become a part of future community infrastructure. This is not for us to decide. A decision on future public highway development is a subject for the Government of Nunavut in consultation with regional government and the Kivalliq Inuit Association. We do not know how such development could unfold in the future. We do not know whether this access road could

become a part of such future development. Our application is to build and operate an access road for our stated exploration purpose. If the advanced exploration and feasibility study are successful, the road will become an integral component of our proposed mine development and its use for that purpose would be assessed accordingly as part of the mine.

For the current road permitting process, our obligation will be to decommission this road once our permitted activities are completed. Road decommissioning would be done after all exploration site remediation is completed. If any other party such as the GN decides that it is in their interest to utilize a part of this road in the future then they will have to deal with the land owner and the regulatory process in an appropriate manner to allow such to occur. Discussing this potential now is speculative and beyond our knowledge.

Decommissioning of the all-weather access road will be accomplished by loosening compacted surfaces, flattening side slopes, and removal of all culverts, bridges and other potential obstructions to drainage paths.

In the Project Description for the all-weather road, reclamation costs for the road are given in table 8.1. The cost of scarifying 30 km of road and removing all culvert crossings is $159,268 based on the RECLAIM model.

The removal of bridges does not have a unit cost in the RECLAIM model. Three bridges are to be removed and the anticipated cost is estimated to be in the order of $200,000 to $400,000 for all three.

AEM Reference: Information Request # 18

Made By: Kivalliq Inuit Association (KIA)

KIA has always been supportive of a good environmental review taking into account all social aspects of such projects.

In the case of AEM, particularly in regard to socio-economic aspects, the KIA has not yet received a response from the proponent...KIA has completed a technical report of the project to be sent to NIRB but the technical report is missing the socio-economic component due to the lack of information from AEM regarding contracts and Inuit employment...

AEM's Response to Information Request:

In a letter dated March 21, 2011 addressed to AEM, the KIA raised the point that the construction of the all weather road between Rankin Inlet and the Meliadine Project site represents a very important opportunity for Inuit businesses and for much needed employment for residents of the Kivalliq Region. On this point AEM and the KIA agree. In responding to the KIA, AEM indicated its intent to fully address these issues and opportunities with the KIA during the negotiation for a Road Lease Agreement between the KIA and AEM that will cover construction of the proposed road on Inuit Owned Land. In its response AEM committed to the KIA that our Request for Proposals for this road construction will make it clear that preference will be given to Inuit Firms and that all bidders must submit an Inuit Content Plan as part of their proposal stating what actions they will take to maximize Inuit employment and Inuit content in their work. It is our intent to ensure that the Inuit content is maximized through both local employment opportunities and through providing local business with full opportunity to bid but we cannot do this at any price. The selected contractor has to be cost competitive and competent to be able to construct this road according to technical specifications, on budget and on schedule.

To maximize the eventual best effort Inuit employment target that will be mutually agreed to with KIA, AEM is currently working with the Municipality of Rankin Inlet to implement a training program for 30 heavy equipment operators to be held in Rankin Inlet this summer. It is expected that this program will provide a pool of qualified workers for the eventual selected contractor to build the road.

We believe that the best way to ensure maximum Inuit participation is for AEM and the KIA to enter into full discussion of these issues as part of the negotiation of the Road Use Agreement.

Outside of the above, AEM has not received any request for additional socio-economic information related to the road construction from the KIA.

In community presentations AEM has provided the following socio-economic impact information related to this road construction:

- AEM believes that the construction of this road will take 6 months, will occur over the winter months and will employ up to 70 persons;
- The road construction will provide employment during a normally slack time for jobs in the community;
- With the Meliadine site being open year round in 2012 and 2013, it will provide year round employment to local staff normally laid off when the camp closes in October – November;
- The increased economic activity may provide impetus to some to register at the new Rankin Inlet trade school and learn a trade that the mining industry needs;
- No social impact is expected from the construction and operation of the road, other than positive effects in people being able to get to Meliadine Lake;
- The road will provide easier access to Meliadine Lake for recreational and traditional use (access currently done by ATVs on a path that is very close to the proposed road alignment); and
- The road will open many contract opportunities for Rankin businesses to provide daily services to ongoing surface and underground exploration activities at the Meliadine site.

AEM Reference: Information Request # 19

Made By: Kivalliq Inuit Association and Nunavut Tunngavik Inc

The proponent will ensure that the monitoring and management plans submitted include actual details on how ground ice encountered in the proposed granular material pits/quarries will be dealt with.

AEM's Response to Information Request:

A geomorphology study of the surficial soils along the road alignment corridor has been completed by Golder (2010)[7] . The study identifies potential thaw sensitive areas or areas with high ice content along the road alignment. The information presented in the geomorphology study can be used to provide a reasonable indication of which soil materials may include ground ice lenses or layers. Based on the results of the geomorphology study, observations that will be made during the final site selection of potential granular quarries, and general cold regions experience, areas containing landforms that are clear indicators of ice lens formation (such as palsas, pingos, polygonal patterned ground, and other obvious frost heave features) will be avoided, and the potential to encounter ice lenses and layers will be minimized.

The soil materials that will be used for construction purposes will be granular, and free draining. Typically, such materials contain limited free water with which to develop ice lenses or layers. Ice lenses and layers commonly form at the base of the permafrost active layer, where water can accumulate and may be available for ice formation. This is most common in fine grained soils because the ability for water to 'drain' is less than in coarse grained soils. Nevertheless, ice lenses can potentially form in coarser grained soils if the ability for free water to drain is inhibited by such causes as sub-surface topography, and/or the presence of fine grained soils enclosing coarse grained soils.

During excavation of granular materials from the quarries, a monitoring and management plan will be used to identify ice rich soils, ice lenses, and ice layers. If ground ice is encountered it will be identified, sub-excavated and removed, and stockpiled. This material will not be used for road construction, and will be backfilled into the quarries after the quarries have been completed.

[7] Golder 2010, Golder Associates Ltd., Report on Geomorphology and Soils – Meliadine Access Road, Meliadine Gold Project, Nunavut. Golder Document Number 046 Ver. 0., February 1, 2010

AEM Reference: Information Request #20

Made By: Kivalliq Inuit Association - Geovector

The proponent needs to provide monitoring and management plans for dealing with any issues related to metal leaching potential of the road construction materials, particularly for arsenic and copper which are twice accepted concentration levels in currently available test results.

AEM's Response to Information Request:

(1) Monitoring Plan

AEM will conduct a water quality sampling program along the proposed road to monitor for these potential conditions. The proposed program is similar to that applied by AEM during and after construction of the Meadowbank all weather access road, and will include a water quality characterisation of all water crossings and select lakes before road construction begins (Nippisar Lake will be included in the survey, this being the water source for Rankin Inlet). Of the nine culvert water crossings, it is proposed that the three largest drainage basins be sampled on an ongoing basis, namely:

4. M3.0 having a drainage basin of 2.77 km^2;
5. M5.0 having a drainage basin of 11.02 km^2; and
6. M23.7 having a drainage basin of 3.62 km^2.

As shown on figure 1, M3.0 and M5.0 are both near the Meliadine River and are located in the "low lands" before the road climbs to the higher ground. Water here would have a greater probability of being in contact with any road building material for an extended period. M23.7 is located downstream of the waste rock pad, and upstream of the F Zone gold deposit, and has historical water quality data.

There is also a potential for drainage from the various quarries that are to be established along the all-weather road route. A water sample will be collected from any noticeable flows reporting from a quarry. Standing water within the quarries will not be sampled as it poses little risk to the receiving environment.

The parameters to be collected will include:

- Physical parameters – field pH and water temperature, lab pH, conductivity, major anions and cations, turbidity, total suspended solids
- Nutrients – NH_4, NO_3, NO_2, Kjeldahl N and PO_4
- Trace metals – complete ICP/MS scan

The results will be reported monthly to the NWB, and compiled for the annual report that is sent to NWB, KIA and NIRB.

The sampling will continue for 1 year at which point the results will be reviewed in consultation with authorizing agencies to determine if the monitoring program is adequate. The sampling locations and/or frequencies may be adjusted based on the results of this consultation.

Finalization of the water quality monitoring component is expected during the regulatory phase, which follows NIRB's screening decision.

Management

Various precautionary measures are being instituted to prevent unacceptable leachates from occurring.

AEM confirms that it will conduct additional inspection, sampling and geochemical testing at each road borrow/quarry source during road construction to verify that the materials used are suitable for road construction. The following procedure is similar to those that were applied by AEM during construction of the Meadowbank Mine access road.

- During road construction visible inspections will be made at each quarry/borrow site by an AEM appointed qualified person on a daily basis whenever material is being taken from that site. The inspection will look for any sign of sulphide mineralization. When sulphide mineralization is identified, the qualified person will contact AEM's road construction project manager and arrange to have this section of the quarry/borrow area shut down until further geochemical assessment can be completed.

- Prior to the start of construction additional samples will be collected from the surface and drill cuttings at each selected borrow/quarry source and sent to an external lab for geochemical characterization (ABA & metal leaching potential). A time period of at least one month will be allowed for lab turnaround and data interpretation. The results will be used to confirm the suitability of the borrow source for road construction.

- During road construction additional samples of borrow/quarried material will be periodically collected from the active faces in each quarry/borrow sources and sent and sent to an external lab for geochemical characterization (Total Sulphur and metals have been identified as being potentially problematic by the sampling and characterization conducted to date, e.g., As, Al and Cu).

- If the results show similar sulphide and ML to previous testing, that is non acid-generating with an average sulphide content of less than 0.1%, and average SFE leachate concentrations below 10 times CCME, then the material will be used for construction. This limit is anticipated to be adequate to avoid potentially negative impacts to receiving water quality.

- Results of receiving water quality monitoring along the road will be used to verify the chemical suitability of the road material. If water quality exceedances associated with road material