

# MELIADINE GOLD PROJECT

## **AMENDMENT TO THE**

**APPLICATION TO CONDUCT**

**UNDERGROUND MINERAL EXPLORATION**

And

**ASSEMBLE A BULK SAMPLE**

SUBMITTED TO:  
THE KIVALLIQ INUIT ASSOCIATION

BY:  
COMAPLEX MINERALS CORP.  
CALGARY, AB

**May 2007 amended February 2010**

## **GENERAL**

### **Section 1.0: Name and location of proposed project.**

The Meliadine West Gold Project is located on Inuit Owned Land approximately 35 km north west of Rankin Inlet in the Kivalliq Region of Nunavut. The camp serving the exploration program is located at 63° 01' 30" N - 92° 10' 20" W and has operated at this location since May 1997. The exploration site is located approximately 2.5 km west of the camp. The general location of the Project and its site plan are shown on Figures 1, 2 and 3. The Project is owned by Comaplex Minerals Corp. of Calgary (78%) and Resource Capital Funds (22%), a private equity investment firm based in Denver, USA and Perth, Australia.

### **Amendment:**

In December 2009, Comaplex acquired 100% of the Meliadine Property. All references to the Meliadine West Gold Property have been changed to the Meliadine Gold Project.

### **Section 2.0: Contact information for proponent(s) and other project contacts.**

#### **Project Management**

The Meliadine Gold Project is managed by the following personnel:

Project Mailing address:

Meliadine Gold Project  
Comaplex Minerals Corp.  
901, 1015 - 4th Street SW  
Calgary, AB T2R 1J4

Project Manager: Mark Balog, Chief Operating Officer  
Comaplex Minerals Corp.  
Calgary, AB  
ph. 403 750 2560

Engineering: Tom Morrison, P.Eng., VP Project Development  
Comaplex Minerals Corp.  
Calgary, AB  
Ph. 604 736 3110

Environment: John Witteman  
Canmore, AB  
ph. 403 609 1222

\* Consultant to Comaplex Minerals Corp.

#### **Field Operations**

Surface Development and Services Contractor: Contractor TBA

Mining Operations: Contractor TBA

Camp Operations: Comaplex Minerals Corp.

**Section 3.0: List of Acts, Regulations, and Guidelines that apply to other project activities.**

Article 13 - Nunavut Land Claims Agreement

NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for Applicants

NWB - Interim Rules of Practice and Procedure for Public Hearings

NWTWB - Guidelines for the Discharge of Treated Municipal Wastewater in the NWT

NWTWB - Guidelines for Contingency Planning

DFO - Freshwater Intake End of Pipe Fish Screen Guideline Fisheries Act - s.35

ENV - Environmental Protection - Spill Contingency Regulations

Canadian Drinking Water Quality Guidelines

Public Health Act Camp Sanitation Regulations

Public Health Act Water Supply Regulations

Territorial Land Use Act and Regulations

Canada Mining Regulations

**Section 4: List of approvals, permits and licenses required including the authorizing agency, activity to which the authorization applies, and dates.**

The underground exploration program proposed for the Meliadine Gold Project is situated entirely on Inuit Owned Land. The exploration to date has been conducted under land use permits issued by the land owner, Kivalliq Inuit Association (KIA), for land use, and the Nunavut Water Board for water use. Transportation contractors serving the Project have operated under permits issued by KIA allowing transport across KIA land.

The exploration camp, fuel storage, and underground exploration site along with the road connecting these facilities are all situated on lands described in a Commercial Lease issued to Comaplex by KIA. Comaplex has posted a reclamation bond with the KIA in the form of a Letter of Credit for \$950,000 for the Meliadine Project. The road connecting the exploration camp and the exploration site was built in March/April 2006 with aggregate materials quarried on Federal Crown Land under a Quarry Permit issued by Indian and Northern Affairs Canada. This road was upgraded (smoothed by filling potholes) and extended to the proposed portal mouth in April 2007 under the existing land use permits and licences from INAC and KIA that are currently in place.

The land use activities proposed by Comaplex and described below (expiry date) will occur entirely on lands owned by the Kivalliq Inuit Association (KIA) and are authorized by:

- KIA Commercial Lease to Comaplex Minerals Corp. KVCL102J168; (July 1, 2009)
- KIA Exploration Land Use License KVL100B195; (Oct 31, 2007)
- KIA Drilling Land Use License KVL302C268; (July 8, 2008)
- KIA Right of Way Land Use Permit KVRW98F149; (Apr 30, 2008)
- Nunavut Water Board Water License # 2BE-MEL0709; (Feb 23, 2009)
- Federal Land Use Permit # N2005C0014; (July 5, 2008)
- Federal Land Use Permit # N2006X0012; (June 27, 2008)
- Federal Land Use Permit # N2005Q0001; (Mar 14, 2008) and

- Federal Land Use Permit # 2006QP0028 (Mar 15, 2008).

Amendment:

All permits upgraded as shown.

- KIA Commercial Lease to Comaplex Minerals Corp. KVCL102J168; (June 30, 2011)
- KIA Exploration Land Use License KVL100B195; (Oct 31, 2010)
- KIA Drilling Land Use License KVL302C268; (July 1, 2010)
- KIA Right of Way Land Use Permit KVRW98F149; (Apr 30, 2010)
- KIA Overland Right of Way Permit KVRW07F02; (Oct 26, 2010)
- KIA Meliadine East Exploration Permit KVL308C07 (Jun 13, 2010)
- Nunavut Water Board Water License # 2BB-MEL0914; (Jul 31, 2014)
- Nunavut Water Board Water License # 2BE-MEL0813; (Oct 31, 2013)
- Federal Land Use Permit # N2007C0041; (Apr 13, 2010)
- Hamlet Disposal Authorization; (renewed annually)
- WCB Program Authorization; (renewed as needed – annually)

Land and water use and related environmental screening and permitting requirements for the underground exploration described in this application are enumerated below.

Kivalliq Inuit Association (KIA) Rankin Inlet, Nunavut; Mr. Luis Manzo, Chief Lands Officer  
KIA authorizes surface land use and occupancy for the lands occupied by the Project;  
granular materials on Inuit Owned Land may be requested by way of a Quarry Permit;  
access over Inuit Owned Land is required for mobilizing Project materials, fuel, and  
equipment to the underground exploration site.

Nunavut Planning Commission (NPC) Taloyoak, Nunavut; Mr. Ron Roach, Chair  
NPC reviews land use proposals to assess compliance with approved regional land use  
plans pursuant to NLCA Article 11. The Keewatin Regional Land Use Plan prepared by  
NPC was approved in June 2000.

Nunavut Impact Review Board (NIRB) Cambridge Bay, Nunavut; **Lucassie Arragutainaq**, Chair  
NIRB will screen the proposed land use proposal pursuant to NLCA Article 12 “...to  
determine whether it has significant impact potential....”.

Nunavut Water Board (NWB) Gjoa Haven, Nunavut; Mr. Thomas Kabloona, Acting Chair  
The NWB regulates and authorizes the use of water and related depositions of waste in  
Nunavut pursuant to NLCA Article 13. Water use for drilling and camp needs will be  
subject to a water use licence from the NWB

Indian and Northern Affairs Canada (INAC) Rankin Inlet; Mr. Henry Kablalik  
INAC issues the Land Use Permit covering the quarry permit for granular materials from  
esker islands in Meliadine Lake that are required for road and pad construction for the  
Project.

Hamlet of Rankin Inlet Mr. John Hickes, Mayor  
Permission from the Hamlet is required to use the municipal disposal site for the Project’s

non-combustible waste; permission of the Hamlet may be required for non-traditional re-supply routes across municipal lands.

## **PROJECT INFORMATION**

### **Section 5: History of the site if it has been used in the past.**

North Rankin Nickel Mines identified gold mineralization in the area of Meliadine Lake during an exploration program for nickel and copper in the early 1960's. The first mineral claims in the Meliadine area were staked by Comaplex Minerals in 1988. Successive exploration programs by Asamera, Rio Algom, Comaplex, WMC International between 1989 and 2001 identified significant gold mineralization with potential for commercial production.

The Meliadine Gold Project exploration program was started by Comaplex in 1993 and continued by WMC International in 1995. Comaplex took over the operation again in 2004 and has been actively expanding and re-defining the Tiriganiaq gold deposit. Several significant gold bearing zones within the Tiriganiaq Zone have been identified that show very favourable grades and tonnage that may justify a future mine feasibility study. The camp currently being used for exploration was built in 1997.

#### **Addition:**

Comaplex safely and successfully operated an underground exploration and bulk sampling program from August, 2007 through the winter of 2007-8, with completion in August, 2008, with no lost-time accidents and no health and safety, environmental, regulatory or personnel-related problems.

### **Section 6.0: Map of the project site within a regional context indicating the distance to the closest communities.**

Figure 1 - Regional Map

### **Section 7.0: Map of any camp site including locations of camp facilities.**

Figure 2 - Campsite

### **Section 8.0: Map of the project site indicating existing and/or proposed infrastructure, proximity to water bodies and proximity to wildlife and wildlife habitat.**

Figure 3 - Site Plan - Claim Group - Wildlife / Wildlife Habitat

Figure 4 - Site Plan - Commercial Lease - Wildlife / Wildlife Habitat

### **Section 9.0: Describe the type of mineral resource under exploration.**

The target commodity of the Meliadine underground exploration program is gold. The Tiriganiaq gold deposit is typical of gold resources mined in southern Canada and elsewhere and consists principally of gold grains in quartz veins and sediments.

### **Section 10: Discuss the project need and purpose**

The Tiriganiaq gold deposit on the Meliadine project hosts several significant gold bearing zones that show very favourable gold grades and tonnages that may justify a mine feasibility study. A prerequisite to such a feasibility study is detailed underground exploration and bulk sampling.

This is the next logical and accepted step in the exploration process of a deposit to be mined from underground and serves two primary objectives:

- to expose, along strike, the dominant mineralization containing gold to assess its grade, continuity, consistency, and related mining properties by mapping and chip/channel sampling;
- collect a representative sample of mineralized rock (“ore”) suitable for metallurgical testing and bulk gold grade determinations.

Addition:

Diamond drilling in the last two years after the completion of the initial underground program (2008, 2009) has delineated an area of high grade gold mineralization in the deeper parts of the Tiriganiaq deposit (termed the Western Deeps) that is significantly below what was accessed in the 2007-8 underground program. This new gold resource is critical to the potential of an economic mine on the Meliadine property. The proposal is to extend the existing decline downward into the Tiriganiaq deposit to investigate the Western Deeps area through a combination of bulk sampling and underground drilling. A two year long exploration program is proposed with reactivation of the existing portal site in 2011.

**Section 11: Discuss alternatives to the project and alternatives to project components.**

The reliability of a mine feasibility study is based on the quality of the information describing the proposed ore body. While even detailed diamond drilling from surface can provide good general information about the deposit, it is imperative in the case of a potential underground mine to confirm the grade, continuity, and consistency of the gold mineralization in the rock prior to making major monetary and time commitments and applying for permits to construct and operate the mine. This can only be accomplished through an underground exploration program and the collection of a bulk sample of the mineralized rock. This is the next logical step in the exploration of the Tiriganiaq deposit.

The conceptual mine design work completed to date for the Tiriganiaq deposit suggests mining the mineralized structures by means of an underground mine accessed by a system of spiral declines, with ore and waste hauled to surface by trucks. Underground development in combination with small open pits may also be worth consideration in the future. Other possibilities exist for underground mining and these will be evaluated as a part of the feasibility process. The underground exploration program will be designed to optimize eventual development and mine operation, should that prove feasible. For this reason, the portal and decline will be located and designed to be suitable for future mining operations.

Stripping of the deposit to expose mineralized rock was considered, but because the Tiriganiaq gold deposit is buried under 5-20+ meters of frozen glacial till and is not exposed at surface anywhere along its length, this is not a practical alternative. Such an activity would cause very significant terrain disturbance and contributes little to the project should it advance to the next stage.

Variations of the scope and scale of an underground exploration program have been examined to obtain the best solution to achieve what needs to be done. This included examining all alternatives with respect to the ramp and portal sizes and the slope of the decline. The proposed

portal is designed such that it could be used for further development, should a feasibility study prove positive in the future. We have attempted to present a proposal that provides us with the optimum amount of information in a cost effective and timely manner, with minimal impact on the environment.

It is noteworthy to reiterate that the entire proposed underground exploration program will take place within the confines of a Commercial Lease that Comaplex has with the KIA. Comaplex has a posted Letter of Credit of \$950,000 on this Lease, on file with the KIA.

Amendment:

The proposed extension of the underground exploration program has been determined to be the lowest impact alternative. The program will use the existing portal, site buildings, and roads and is basically a continuation of the previous program to greater depths in the gold deposit. As proposed, the additional impacts to the area will be minimal. These include an addition to the waste rock and ore pads (behind existing containment), widening of the roads accessing the pads, a cover over the portal, and an increased requirement for fuel storage or year round access to fuel from Rankin Inlet. For now, fuel storage is to be increased and would be consolidated in the current area as much as possible.

Waste rock and ore pads will be situated behind existing primary containment in the same watersheds as the first program. The rock being extracted is largely identical to that already accessed and processed. Existing surface buildings and shops will be used (the current buildings will be repaired and upgraded, with minor additional buildings likely required to accommodate more underground equipment). The current bulk sample water license is sufficient for the proposed underground exploration extension. All work will continue to take place on the Commercial Lease Comaplex has under a Letter of Credit with the Kivalliq Inuit Association. The existing Letter of Credit required by the Lease will be maintained.

The existing exploration camp at Meliadine Lake will be used for housing the workers. An increase in capacity of the camp from its existing 50-60 man capacity to approximately 80 men is proposed. Many of the additional sleeping and kitchen tents will be obtained from the demobilization of the Meliadine East camp, which Complex recently consolidated into the project. Upgrades in the waste water treatment plant, wash cars, etc. at the Meliadine Lake camp in 2009 should be able to accommodate the increased capacity. This is considered the lowest impact alternative.

Timing of the Underground Exploration Project

The underground contractor will move 150-250 tonnes of equipment and materials to the site and will set up, as a minimum, a workshop, a warehouse, a diesel generator and its associated switchgear, a water supply system, an air compressor, receiver tank, valving and piping, a ventilating fan and duct, a site office and a crew shelter.

It is essential to the success of the project that the underground contractor set up its site facilities in warm weather with long hours of daylight i.e. during the months of July-September. It would be possible, but difficult, to do this in the months of May and October-November. It would be, for practical purposes, impossible during the months of December-April.

The winter road between Rankin Inlet and the site is open between November and May, at best; otherwise, there is no surface access for heavy equipment and supplies to the site. Barge access to Rankin Inlet is possible only during the months of July-September. Using surface access only, the underground contractor would have to mobilize to Rankin Inlet in the summer of 2007, but could not mobilize to the site and set up there until May 2008, a delay of eight months, during which time Comaplex would have to pay for equipment standby in Rankin Inlet. This is the reason for the helicopter lift planned for August 2007.

The helicopter lift is feasible because:

- (a) Comaplex has held discussions with VIH Helicopters (based in Vancouver), who have proposed a Kamov KA32 helicopter with a sling-load lifting capacity of 4,990 kilograms.
- (b) Comaplex has tendered the underground program by invitation to six underground mining contractors with experience in this type of work. None has expressed any doubt as to the feasibility of the planned helicopter lift.
- (c) The Comaplex Vice-President, Project Development, in the capacity of contractor's field superintendent, mobilized an underground exploration program of similar size and scope at Cape Ray, Newfoundland, in 1987, using an Aerospatiale Super Puma with a sling-load lifting capacity of 4,000 kilograms.

The helicopter lift is based on experience and thorough consultation (Nuna Logistics, mining contractors) and is feasible. It is planned for the first week in August, contingent on the receipt of permits by mid-July. If the designated helicopter is temporarily unavailable at the time, for whatever reason, the lift could be postponed for only a short period of time or another machine possibly found.

Mobilization and site set-up by this means will still be possible until late September, but will become increasingly difficult due to weather conditions (freezing rain/sleet) in October-November, and will become impractical in December.

Comaplex plans to mobilize the underground contractor to Rankin Inlet in July-August, 2007. Significant delays resulting from permitting will expose Comaplex to considerable standby charges from the contractor. If permits are not granted in time for the contractor to mobilize to site before November, the helicopter lift will be cancelled. Mobilization will then be by winter road and site setup will be delayed many months. This will expose Comaplex to standby charges for the contractor's complete plant, an amount that could be in excess of \$1 million.

Amendment:

On conclusion of the 2007-8 underground program, Comaplex purchased the contractor's site plant, buildings and equipment and stored them ready for further use. Comaplex anticipates engaging an experienced mining contractor for the underground work and an experienced construction contractor to provide the necessary support services on surface, primarily snow removal, movement of rock and operation of the bulk sampling plant.

Comaplex proposes to move approximately 850 tonnes of additional equipment and materials to the site, representing necessary site improvements, additional haulage equipment to move rock over greater lengths of decline, and a year's supply of materials. This material will be barged to



Rankin Inlet during the 2010 shipping season and moved to the site over the January 2011 winter road. No heavy lift helicopters are required.

Explosives will be airlifted direct to the existing site magazines in early 2011, either by aircraft landing on Meliadine Lake, or by aircraft landing at Rankin Inlet, followed by surface haulage over the winter road. This will maximize security and minimize transit time through Rankin Inlet.

Because the portal, site plant, and buildings are already in place, Comaplex will be able to begin reactivating the site as early as April, 2011. Comaplex will spend the summer of 2011 reconditioning the site equipment, and re-ventilating and re-opening the decline. Comaplex plans to install a multi-plate portal cover to prevent the portal descending to the decline from filling with snow in winter.

Comaplex will also mobilize additional mining equipment to Rankin Inlet in the summer of 2011, move it to the site in the winter of early 2012, and use it that year. A ventilation raise will be required between the decline and surface in 2012 and early 2013.

It is expected that the ramp will be extended at an estimated rate of 4 metres/day throughout the remainder of 2011, the whole of 2012 and the early part of 2013. A ventilation raise will be driven between the decline and surface in 2012. Diamond drilling from underground bays will begin in early 2012 and will continue into 2013. Drifting on mineralized structures to take bulk samples will take place in 2012 and 2013.

**Section 12:    Indicate the type of exploration activity.**

Underground exploration program and bulk sample extraction.

**Addition:**

As above and as per the previous program. Due to the depths of the mineralized structures in the deposit, underground diamond drilling will also be a part of the proposed underground exploration program. Exploration drilling from the decline extension is significantly more effective than attempting to hit the targets from surface

**Section 13:    Describe all activities included in this project.**

**\*\* The following are brief summaries of the proposed activities. Detailed descriptions of each category are provided later in the application.**

**Overburden Removal** - The bulk sampling program requires that an access portal and underground ramp (tunnel) be developed. Overburden will be removed from the bedrock surface over an area about 110 meters long by 20 meters wide. The attached Figures 5 and 6 show details of the portal development. Figure 4 shows the location of the portal development, including where the overburden material removed will be stored.

**Amendment:**

No additional overburden removal is anticipated in the area of the portal.

A ventilation raise will be driven from the ramp extension to surface approximately 100 metres southeast of the existing portal. This will require the removal of overburden where the raise is planned to break surface so that a concrete collar and fan house can be installed. The ventilation raise will be 3 metres in diameter. The amount of overburden to be extracted for the vent collar is expected to be less than 1000 cubic metres of material. The overburden will be stored on the existing pile immediately west of the portal.

**Road Use** - About 2.7 kilometres of road is in place to facilitate ongoing exploration at the site (Figure 4). The bulk sampling program anticipates establishing pads for storage of ore, soil, waste rock, and explosive magazines on the margins of the road, within the confines of the Commercial Lease with the KIA.

Amendment:

Widening of the existing road between the portal and the waste/ore pads will be required. An access road within the confines of the primary containment will need to be built to access the pad extension to the northwest (see Figure 5).

**Camp Use / Construction** - The existing exploration camp (Figure 2) is fully permitted and sufficient to complete the program. We anticipate some minor modifications to allow operations to continue through the winter. These upgrades are covered under existing permits and will be completed during the summer and fall of 2007.

Amendment:

The existing Meliadine exploration camp will be used in the start up of the underground exploration program, but it is anticipated that additions will be required to the camp in 2011 to meet increased demand in 2012-13 when underground excavation and both surface and underground diamond drilling will all be in progress at the same time. The plan is to clean up the Meliadine East camp site and move those tents to the Meliadine Lake camp in 2010. The upgrading of the main camp to hold approximately 80 men, from its current 50-60, will be consistent with the upgrading of the waste water treatment plant and wash car brought to the camp in 2009.

**Fuel Transportation and Storage** - Fuel is delivered to the site from Rankin by overland transport in the winter under existing permits (Figure 3) and transferred to bulk Enviro fuel tanks or bermed fuel bladders located midway between the camp and the proposed portal site. The fuel is hauled from Rankin Inlet over the winter road by Challenger tracked vehicles towing specially constructed fuel tanks ( as per previous years). Fuel handling is in accordance with the Meliadine West Gold Project Environmental Management Plan (Appendix 3).

Amendment:

The size of the proposed underground exploration program is such that existing fuel storage capacities at the site are insufficient to sustain the project during periods when winter road access is not possible. The alternatives are to build the all-season access road from Rankin Inlet to the site or increase fuel capacity. Comaplex has elected at this time to increase the tankage on the Meliadine project.

A fuel berm (with fuel bladders) is presently permitted and will be built in the winter of 2010 that

will add an additional 1.13 million liters of capacity. This will not however, suffice for fuel requirements in 2011, 2012, and 2013.

It is anticipated that the proposed underground program will use a total of 7.6 million liters of fuel over the life of the project. Current on-site fuel storage (after construction of the 2010 fuel berm) will be sufficient for 2011; however, total on-site storage capacity of 4 million liters is required in year 2012 to get through the period of time between the last winter road fill and refuelling of the tanks the following winter. The fuel berms for this level of tankage will need to be built in the latter half of 2011.

This will require a second fuel berm. Comaplex is investigating the idea of additional fuel bladders with a capacity of approximately 2 million liters. A fuel storage option that could be used in future mine development is preferred. Failing this, an all-weather road may be required to be built from Rankin Inlet to allow year-round fuel and supplies delivery from the hamlet of Rankin Inlet. A decision on which way to go will be based largely on the results of the Feasibility Study that will be completed in early 2011. An amendment to this application addressing this situation will be forwarded at that time.

**Explosives Transportation and Storage** - Comaplex anticipates the usage of 115,000 kg of explosives for the project. On-site storage facilities (magazines) will be available for about 36,000 kg of explosive (Figure 4). These will consist of 3 Type 9 magazines of 2,000 kilogram capacity for the initial portal development and early underground development. Two Type 4 magazines of 15,000 kg capacity will be mobilized to site from Rankin to hold additional explosives. Re-supply of explosives will be conducted as needed by charter aircraft.

Winter re-supply of explosives and caps will utilize an ice airstrip on Meliadine Lake (Figure 4) or will be delivered to the magazines via the winter road from Rankin. The explosives required for daily operations will be transported from the magazines to the development area in a dedicated vehicle equipped in accordance with regulations.

\*\* At present, the underground contract has not been awarded. It is possible that alternative modes for the storage and transport of the explosives will be provided by the mining contractor at that time. All such plans will be fully permitted and will be approved by the proper authorities.

#### Amendment:

Explosives transport to the Meliadine site in the previous program was found to be problematic, expensive, and inefficient during times outside of the winter road access period. Comaplex anticipates requiring approximately 212,000 kilograms of explosives for the decline extension, including 142,000 kilograms between winter resupply in early 2012 and winter resupply in early 2013. There are currently ten Type 4 magazines on the site with a total capacity of 90,000 kilograms of explosives, allowing two magazines for the storage of blasting caps. Comaplex proposes to mobilize an additional five Type 4 magazines to Rankin Inlet in the summer of 2011 for movement to site in early 2012. These magazines will be incorporated into the existing plan with Nunavut and NWT Mines Safety. See Figure 5 for location of the magazines.

**Chemical Transportation and Storage** – In permafrost conditions, such as prevail at Meliadine West, Calcium-chloride (CaCl) is routinely mixed with water to create a drilling brine for dust

suppression. Comaplex anticipates using about 68,000 kg of calcium chloride during the underground exploration and bulk sample program for the drilling of blast holes during the construction of the decline and in ore drifts. The CaCl is typically shipped in bags and palletized. The bags are weatherproof and will be stored at the camp or adjacent to the portal on the services pad (Figure 4).

Amendment:

Comaplex anticipates requiring approximately 250,000 kg of Calcium Chloride during the ramp extension and bulk sample program. The materials will be brought in as required and stored as per the previous program. No problems were encountered with the movement or storage of this material in the previous program.

**On Site Sample Processing** - A total of about 12,860 tonnes of mineralized rock will be brought to surface on a round by round basis. The mineralized rock will pass through a crusher to reduce it to one inch size. The ore will then be run through a sample tower. The sole purpose of the sample tower is to winnow a complete round (75-120 tonnes) down to a representative sample of approximately 60 kilograms. This sample will be sent out for processing at a certified lab in southern Canada to be assayed and to undergo metallurgical testing, the results of which will be compared to those received from the diamond drilling and to the underground channel sample results (Figure 4).

Amendment:

It is estimated that a total of 22,000 tonnes of mineralized rock will be brought to surface in the proposed underground exploration and bulk sampling program. The processing of the ore will take place as previously permitted, with the same sample tower and procedures.

**Off Site Sample Processing** - A 10 tonne sample, separated into numerous small samples (for each round) will be taken for assaying and metallurgical testing in southern Canada.

Amendment:

Sample processing will take place as per the previous program and a small representative sample from each round will be sent south as was previously done.

**Waste Rock Storage** - Comaplex intends to use some of the barren mine rock excavated during the portal and ramp development phase of the project as construction material for pads and road beds. Excess waste rock will be stored on a waste rock pad at the location shown on Figure 4. Existing studies, summarized in Appendix 1, indicate that the waste rock is non-acid generating. ARD testing of waste rock will be done if rock types are encountered that are inconsistent with those expected.

Amendment:

The ramp development will generate approximately 114,000 loose cubic metres of waste rock. Comaplex plans to use 45,000 loose cubic metres of this waste rock material to extend the existing bulk sampling waste rock pad 120 metres to the north over an east-west length of 250 metres, and an average of 1.5 metres thick.

The remaining 69,000 loose cubic metres will be stored in two piles on this pad. One pile, to

contain an estimated 36,000 loose cubic metres, will be stockpiled for future use in construction should the project advance to development. The second pile, to contain an estimated 33,000 loose cubic metres, will consist of material from the western end of the workings which is not believed to be suitable for future construction purposes.

The remaining area of the waste rock pad will be used to hold the bulk ore piles expected to be produced in the program. All of the waste rock (and ore) will be located behind the primary containment area currently in place on site. See Figure 5 for details.

**Ore Storage** - Ore not transported south for testing will remain on the ore pad adjacent to the ramp portal. This material will be kept separate and available for further sampling during the feasibility study period, and potentially, subsequent processing in a future mill. Monitoring of the ore piles will be ongoing. In the event the project does not go ahead, all ore with acid generating potential will be returned underground and placed in the permafrost zone where any ARD cannot be mobilized by ground water.

Amendment:

As per the previous program, mineralized rock (ore) will be stored on site on the waste rock pads behind secondary containment. See Figure 5.

**Portal and Underground Ramp Construction**

The surface program (construction of the ramp through the overburden to the portal opening) will be completed by Nuna Logistics (Edmonton), a very experienced Arctic contractor in this type of work. The underground exploration program will be completed by a mining contractor having satisfactory northern experience and capability. At the time of submission of this application, the mining contractor has not yet been selected. The project has been put out to competitive tender; this selection will occur in mid May. The contractor would be supervised by Comaplex staff.

The Meliadine West Gold Project underground exploration program will include:

- constructing an open ramp to a portal wall. The ramp will be 100 meters long, 7.3 meters wide with a sill going from surface to a depth of 15 metres from surface. Slope angles and setbacks in rock and overburden have been determined by reference to experienced advice.
- with a 5 meter wide berm on each side of the ramp;
- construction of 950 metres of decline at 5.3 meters wide by 5.0 meters high from surface down to 117 metres below surface;
- construction of 285 metres of ore drift on two potential ore zones of 3.5 meters by 3.5 meters at 67 and 117 metres depth;
- mine approximately 11,250 tonnes of mineralized material from 285 metres of horizontal drift in two zones (including slashing as required);
- mine 600 tonnes of mineralized material from two 30-metre raises (one in each mineralized structure to be tested); and
- bring approximately 12,850 tonnes of mineralized material to surface to confirm mineral content and for metallurgical analysis.
- mapping and sampling of all mineralization in the ore drifts and raises.

The general plans for this underground work are shown on Figures 4-13. These plans are subject

to minor changes in detail on review by WCB and the mining contractor. Final plans will be filed with all appropriate agencies before any underground work is initiated.

**Additions and Amendments:**

The proposed underground exploration program and ramp extension will include:

- installing a multiplate portal cover over the existing portal;
- installing a small number of additional buildings and generators on the existing plant site;
- construction of 1,920 metres of decline (ramp) at 5.2 metres wide by 5.2 metres high from the end of the existing decline down to 400 metres below surface;
- construction of 490 metres of 4.5-metre x 4.5-metre decline, branching off the main ramp to explore and access mineralized structures;
- construction of a 245 metre long, vertical, 3.0-metre diameter ventilation raise between the decline and surface, with construction of a fan house and exhaust fan at surface;
- 45,000 metres of diamond drilling from underground bays into mineralized structures at depth;
- 400 metres of drifting on mineralized structures;
- extraction and sampling of a 22,000 tonne bulk sample.

**Section 14: Indicate whether any of the following Department of Fisheries and Oceans (DFO) Operational Statement (OS) activities apply to the project proposal.**

There are no direct effects on fish habitat. The proposed surface runoff water management plan will address potential water quality effects on Pump Lake.

**Section 15: If any of the DFO OS apply to the project proposal, does the Proponent agree to meet the conditions and incorporate the measures to protect fish and fish habitat as outlined in the applicable OS? If yes, please provide a signed statement of confirmation.**

Not Applicable.

**Section 16: Provide a schedule for the above activities**

The proposed schedule for this project is shaped by the scheduling constraints of seasonal marine transportation services to Rankin Inlet, the seasonal development of a winter road between Rankin Inlet and the site, and related logistics. The transportation schedule used in setting the schedule assumes the latest shipping into Rankin Inlet must be completed before October 31. The schedule below shows the milestones that determine the exploration schedule for this program. All activities past the July 10, 2007 date are contingent on project approvals from all pertinent regulatory bodies.

**2007**

Call for tenders to mining contractors with satisfactory Northern experience and capability	15 March
Submit Project Application to KIA	26 March
Submit Water Use Application to NWB	3 May
Mobilize fuel and surface contractor's equipment to site	15 May completion
Project Certificate from NIRB	10 July

Mobilize explosives to site	16 July onwards
Finalize underground mining contract	16 July
Submit Mining Plan and Design to GN WCB	16 July
Surface contractor breaks ground for ramp excavation	17 July
Mobilise initial mining equipment, fuel, and construction materials to Rankin Inlet	July
Mobilise mining equipment and explosives to site*	August
Underground Contractor starts portal excavation	September
Underground decline construction	October-December

## 2008

Underground decline construction	January - April
Drifting, crosscuts to ore	January - June
Ore zone drifting / raising in ore	January-June
Crush ore / Assemble bulk sample	January-July
Seal ramp and portal	August
Ship out bulk sample	August
Demobilise and remove equipment**	August

## 2009

Site rehab and monitoring	July with ongoing monitoring
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\*Comaplex intends to mobilize equipment for initial portal excavation from Rankin Inlet to the exploration site by heavy-lift helicopter to allow the underground contractor to set up site facilities in favourable weather. Larger equipment will be mobilized to the site overland after freeze-up.

\*\*On completion of the work, equipment may be airlifted to the road in August 2008 for shipping out on the barge in 2008 to avoid holding charges until the 2009 summer shipping season.

## Amendments:

## 2010

Submit Project Application to KIA, NIRB, NWB	late February
Award contract to mining contractor	May
Procure materials and equipment	May - June
Ship materials and equipment to Rankin Inlet	July-October
Store materials and equipment in Rankin Inlet	October-December
Upgrade the Meliadine camp	July-December

## 2011

Haul materials and equipment to site	January-February
Haul fuel to site	February-March
Airlift explosives to site	February
Excavate ventilation raise collar	March-April



Reactivate portal site	April-May
Recondition equipment, build multiplate	May-June
Re-ventilate & re-access underground workings	June-July
Construct additional fuel berm	June- August
Advance decline	July-December
Construct ventilation raise collar	August
Ship equipment and materials resupply to Rankin Inlet	July-October
Store equipment and supplies in Rankin Inlet	October-December

## 2012

Airlift explosives resupply to site	January
Haul materials resupply to site	January-February
Haul fuel resupply to site	February-March
Advance decline	January-December
Diamond drilling from underground	March-December
Construct ventilation raise	March-April
Ship equipment and materials resupply to Rankin Inlet	July-October
Store equipment and materials in Rankin Inlet	October-December
Drifting on mineralized structures, bulk sampling	June-December

## 2013

Airlift explosives resupply to site	January
Haul materials resupply to site	January-February
Haul fuel resupply to site	February-March
Advance decline	January-June
Diamond drilling from underground	January-June
Drifting on mineralized structures, bulk sampling	January-June

Other activities in 2013 will depend on progress of environmental assessment and permitting.

### **Section 17: Indicate on map the boundary subject to air and/or ground geophysical work.**

No geophysics is planned as part of this program.

### **Section 18: Provide flight altitudes and locations where flight altitudes are below 300m.**

No geophysics is planned as part of this program.

## **DRILLING**

**\*\* We have made the assumption that this section refers to drilling for blasting for the underground exploration program. There is no diamond drilling anticipated in the underground program presented here. All surface diamond drilling in the near term is already approved under existing permits.**



Amendment:

Underground diamond drilling is planned as a part of the ramp extension and underground exploration and bulk sampling program.

**Section 19: The number of drill holes and number of meters (provide estimates and maximums where possible).**

As required for the drill, blast component of the underground exploration program.

Amendment:

It is anticipated that a total of 45,000 metres of underground diamond drilling in approximately 238 holes will be completed.

**Section 20: Drill additives used.**

Calcium chloride. No other additives.

**Section 21: Describe method for dealing with drill cuttings.**

Drill water will be pumped from the face to an underground sump where the drill cuttings will settle out. Periodically the drill cuttings will be removed to surface by a diesel-powered, rubber-tired LHD and dumped on the waste pile.

Amendment:

Underground diamond drill cuttings will remain underground where they will freeze in place.

**Section 22: Describe method for dealing with drill water.**

A re-circulating brine system will be used, with gradual loss of water in damp broken rock. The brine system will be re-charged with fresh water every 2-4 days. Make-up water will average 4,000 liters per day. Any accumulation of water underground in the mine will be pumped back to the brine system.

Amendment:

Each underground drill rig will have its own system for mixing and re-circulating brine. Re-circulation systems will re-use water to the maximum extent possible. No drill water will be removed to surface.

**Section 23: Describe how drill equipment will be mobilized.**

Drilling equipment will be mobilized by means of a rubber-tired, diesel-powered 2-boom, electric-hydraulic drill jumbo.

Amendment:

Underground diamond drills will be skid mounted electric-hydraulic drills that will be moved from site to site by the rubber-tired diesel equipment used to advance the decline.

**Section 24: Describe how drill holes will be abandoned.**

Drill holes for blasting will be blasted. Miss-holes will be re-blasted. Bootlegs will be circled with green paint. Drill holes for rock bolting will have rock bolts installed in them.

Amendment:

Underground diamond drill holes will be left open and likely fill with ice. No holes from underground will break surface.

**Section 25:** If project proposal involves uranium exploration drilling, consider the potential for radiation exposure and radiation protection measures. Please refer to the *Canadian Guidelines for Naturally Occurring Radioactive Materials* for more information. Uranium exploration is not a part of this program.

**STRIPPING / TRENCHING / PIT EXCAVATION / BULK SAMPLE**

**Section 26:** Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other).

All unfrozen topsoil and the uppermost part of the glacial till (spoil) from the ramp area will be removed by excavator and bulldozer and moved to a separate pile for storage for eventual rehabilitation. Permafrost till underlying the surface layer will be handled by standard drill, blast, load and haul excavation methods and will be pushed back to the sides of the ramp leading to the portal, beyond the 5 meter setback as shown in Figure 4 and 5. The exposed till will be sloped at 2 Horizontal:1 Vertical. The toe of the overburden slope will be set back 5 metres from the edge of the rock cut. The available information provided by drilling indicates that overburden is 4-5 metres deep over the area of the portal cut.

Ramp construction in permafrost bedrock will continue to require drilling and blasting. A portal face with at least 5 meters of bedrock brow over a 5 meter high portal will be exposed (depth of till along the ramp is estimated to be 4-5 meters in depth). At the portal face there will be approximately 5 metres of rock with 5 metres of overlying glacial till.

The rock wall of the portal will be sloped at 1 Horizontal: 8 Vertical and will be supported with rock bolts, wire mesh and shotcrete, as required for safety. See Figures 5 and 6 for scaled drawings of the ramp and portal. Figure 12 shows a schematic drawing of the ramp in long section. The sill of the ramp leading down to the portal will start at UTM coordinates 6988798N, 539938E and descend through 15 m vertically at -15% along a 100 metre ramp length to establish the rock portal at 6988705N, 539901E. See Figure 13.

The majority of the till will be removed to the sides of the portal or to a small pile to the edge of the decline. Bedrock (waste) will be removed and laid down as required to build the underground contractor's laydown area pads and the ore pads. Waste rock not needed for pad construction will be put on a waste rock pile as shown in Figure 4.

Amendment:

The existing portal will be used for all of the proposed ramp extension and underground sampling and drilling work.

A ventilation raise from underground will break surface and will require the removal of an 8 metre by 8 metre area of overburden to expose bedrock and to install a cement/corrugated steel cylinder to seal the raise from external weather and water. See Figure 5 for location of ventilation raise.

## **Underground Exploration Mapping and Sampling**

A critical aspect of the underground exploration program is the mapping and channel/chip sampling of the ore drifts as the underground work progresses. The information gathered from this process will be compared against both the assumptions and interpretations from the previously completed diamond drilling, and against the ore grades obtained from the bulk samples. Continuity of the gold grades and the controlling structures responsible for the presence of the gold must be determined prior to moving the project towards feasibility.

### Amendment:

Mapping and sampling will take place as per the previous underground program.

## **Bulk Sample**

Ore (mineralized rock hosting the gold) will be mined on a round by round basis and each individual round will be brought to surface and placed in a separate pile. The entire round will then be passed through a crusher and sample tower where it will be crushed to -25 mm. The sole purpose of the sample tower is to reduce the 70-120 tonne round to a small representative sample weighing approximately 60 kilograms. Each representative sample will then be shipped to a certified lab in southern Canada to determine gold grade and for metallurgical work.

The remaining sample will remain on the ore pad near the ramp portal as shown on Figure 4. This material will be kept separate and will be available for sampling during the feasibility study period and subsequent processing in a future mill. Should the project develop into a mine, this material will be processed in the mill. In the event that this does not happen, permanent disposal of ore with acid generating potential will be returned underground and placed in the permafrost zone where any ARD will not be mobilized by ground water.

### Amendment:

Bulk sampling and the excavation of samples will take place in the same way, using the same methodology, as were employed in the previous bulk sample program on the deposit. High grade stockpiles of mineralized rock will be deposited on a new waste rock pad build behind containment to the west of the existing pad. See Figure 5 for location and details.

## **Section 27: Describe expected dimensions of excavation(s) including depth(s).**

Ramp:	100 meters long and 7.3 meters wide.
Exposed bedrock at the portal (incl. the portal):	20 meters wide.
Decline dimensions:	5.3 meters wide by 5.0 meters high; 950 meters in length to 117 meters vertically below the surface.
Drift dimensions in ore:	**3.5 meters wide x 3.5 meters high; 285 meters in length; comprising 125 meters on the -67 meter level below surface and 160 meters on the -117 m level.
Ore Raises:	1.5m x 2.2m raise on the -67m level below surface and also on the -117m level below surface.

\*\* these are proposed dimensions obviously, as the drifts will follow ore widths

Additions:

Decline dimensions:

- (a) 5.2 metres wide by 5.2 metres high; 1,920 metres in length to 400 metres vertically below surface.
- (b) 4.5 metres wide by 4.5 metres high; 490 metres in length as a branch off the main ramp to explore mineralized structures.

Drift dimensions in ore:

8 drifts - 3.5 metres high by mineral width (expected to be 4-7 metres wide); total 400 metres in length; comprising 200 metres on the 335 metre level below surface and 200 metres on the 385 m level below surface.

Ore Raise:

four 2.0-m x 2.0-m raises, 20 metres long each, on the 335-m level below surface and four 2.0-m x 2.0-m raises, 20 metres long each, on the 385-metre level below surface.

**Section 28: Show location on a map.**

See Figures 4-6 and 13 for locations and dimensions of the portal and all topsoil, till, explosive magazine, waste and ore pad locations.

Amendment:

See the upgraded Figures 4 to 8

**Section 29: Expected volume material to be removed.**

**Expected volumes of material removed for the Portal:**

	<u>Solid volumes (m<sup>3</sup>)</u>	<u>Loose Volumes (m<sup>3</sup>)</u>
Overburden / till	11,150	14,500
Waste rock in portal/ramp	2450	3675
Waste rock in decline and drifts	25,700	38,550

Additions:

Overburden/till in ventilation raise collar	600	900
Waste rock in decline and drifts	76,000	114,000
Mineralized material	7,640	11,500

**Section 30: Discuss methods to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.**

The mineralized rock (ore) in this gold deposit is generally rich in sulphide. Sulphides oxidize when newly exposed rock is subject to air and moisture and can generate acidic runoff (acid rock drainage - ARD). Neutralization Potential (NP) tests of 5 ore samples showed acid base accounting (ABA) ratios of 1.0 to 3.4, indicating acid generating potential (see Appendix 1 for lab test results and related analyses).

All dominant rock types (including overburden) that are expected to be handled in this project have been tested for acid generating potential and for metal leachate potential. Glacial till overburden showed a strong neutralization potential (not acid generating) with tests results from seven samples ranging from 12.4 - 34.8 (see Appendix 1). The waste rock is not acid generating. A thin argillite unit occasionally present in one of the ore zones in the deposit showed potential for generating acid. This argillite makes up an extremely small portion of the rock mass to be brought to surface. The neutralization potential tests from four argillite samples ranged from 0.55 - 12.6 indicating that some (but not all argillite) has a potential for generating acid.

All waste rock excavated will be reassessed as to its potential for generating acid during the course of the project. If rock type(s) are encountered that are significantly different from the rock expected, on the basis of the diamond drill core, fresh analyses will be conducted for neutralization potential and metal leachate. Any rock considered to be potentially acid generating will be encapsulated by rock that will neutralize any drainage. Rock with unacceptable long term leachate properties will be placed so that runoff from this waste rock can be monitored and controlled. See Section 57 for details.

**Amendment:**

Significant geochemical testing of both waste and ore rock has been completed by consultants for Comaplex (Golder Associates) since the initial underground exploration program at Meliadine. The results are consistent with the information provided above. Details are provided in the attached report provided on CD, **Interim Static Test Report for Waste Rock from the Tiriganiaq Deposit, Meliadine West Gold Project, April 2009.**

Control and monitoring of the waste and ore rock piles developed in association with the regulatory groups has continued since the previous program and will continue through and after the proposed program.

## **UNDERGROUND ACTIVITIES**

### **Section 31: Describe underground access**

The open cut excavation for the decline portal will be excavated through 4-5 meters of overburden and a maximum depth of 10 meters into rock. Comaplex designed the rock and till slopes in accordance with advice received from engineers (SRK, Golder) and contractors (Nuna Logistics) experienced in this type of excavation. Recognizing that the surface layer of the till is likely to thaw and slump during the summer months, Comaplex selected a till slope of 2H:1V and set the toe of the till slope 5 meters back from the edge of the rock cut. It is common practice in Arctic terrain to allow a mobile excavator to clean slumped material from the toe of the till slope. Experienced opinion (SRK, Golder, Nuna) is that these design features will prevent till, thawing during the summer, from falling into the rock cut.

Additionally, a safety fence will be installed along the edge of the rock cut. While this is mainly for personnel safety, it would additionally contain material that had rolled or slumped down the 2H:1V till slope and across the whole 5-metre width of the setback. Comaplex believes that these measures for preventing material from falling into the rock cut are sufficient.

Movement (creep) of thawed till is only believed to have the potential to be a problem in the summer months of 2008. Should it be required, the layback slope will be covered with a geotextile. This will greatly hinder solar and ambient heating of the till layer. Should this not suffice, a backup to this plan would be to cover the lay back slope with waste rock.

Placing a 1-meter thick mat of rock on top of the layback slope was considered but is not the preferred option as it would either reduce the clearance between the toe of the till slope and the edge of the rock cut, or would require additional till excavation to make room for the 5-metre setback for the toe of the till slope. Both of these are undesirable and, according to experienced opinion, unnecessary.

Comaplex has considered placing a rock berm along the toe of the till slope but, like the rock mat, this would either encroach on the 5-meter setback or would require extra till excavation. Comaplex therefore believes that the existing design is sound and that the suggested modification is undesirable and unnecessary.

Amendments:

No additions to the underground portal are planned, other than a cover that is to be installed over the portal to facilitate more efficient use of the ramp during winter storms.

**Section 32: Describe underground workings and provide a conceptual plan.**

Access to the underground workings beyond the portal will be by means of a decline 5.3 metres wide and 5.0 metres high driven at a -15% grade. Extensive diamond drilling from surface has indicated that the decline will pass through 877 meters of unmineralized rock to access the gold bearing structures (see Figure 11). An additional 75-100 metres will be developed for cut-outs off the decline for muck storage and transfer to trucks that will haul the rock or ore to the surface. Cut-outs will also serve as electrical substations and safety bays, and may subsequently be used for future diamond drilling from underground and for continued decline development.

Decline development will produce approximately 25,700 m<sup>3</sup> (solid volume) of unmineralized rock. Ground support will be installed as required including rock bolts, wire mesh, straps, timber or shotcrete as necessary.

This decline is designed to also serve as the main production decline for a future mine. Therefore it is relatively large with a moderate grade to accommodate full-size underground ore trucks during future mine operations.

Additions:

The proposed ramp will be driven down into the Western Deeps portion of the Tiriganiaq gold deposit at the same size and slope (-15%) as the upper, previously completed, ramp. The total length of the ramp is expected to be 1920 metres. Development of this decline will produce approximately 64,500 m<sup>3</sup> (solid volume) of un-mineralized rock, including drill bays and stubs for exploration drilling purposes. The ventilation raise will produce a further 1,720 m<sup>3</sup> (solid volume) of un-mineralized rock.

### **Cross-cuts, Ore Drifting, and Diamond Drill Drift**

The first lateral drift off the decline will access the 1100 lode at about 350 metres down decline from the portal. The decline will terminate after advancing about 950 meters with access to the 1000 lode. At this point, the decline will be about 117 metres vertically below the surface. Drifts in the mineralized zones will be 3.5 meters high x 3.5 meters wide but may be widened or narrowed to take in the width of the mineralized structure being followed. Drifts following the mineralized structures will proceed from the point where a crosscut from the decline intersects the respective mineralized structure. Decline and drift configurations are shown in Figures 7-13.

Decline and drift development (not including the ramp) will produce 25,700 m<sup>3</sup> and 4,100 m<sup>3</sup> solid volume of unmineralized and mineralized rock, respectively.

Drifting in ore will allow the assessment of mineralization continuity and consistency, and evaluation of the mining conditions in the mineralized structures. The faces, walls, and backs of all development will be thoroughly mapped. Drifts on mineralized structures will additionally be sampled for mineral content. Ground support will be installed as required including rock bolts, screen, straps, timber or shotcrete as necessary.

#### Additions:

One or more crosscuts will be driven from the decline to the mineralized structures. Development of this branch decline will produce 10,000 m<sup>3</sup> (solid volume) of un-mineralized rock. Decline and drift configurations are shown in Figures 6 to 8.

A total of 400 metres of drift development will be driven on the gold-bearing structures, producing approximately 7,640 m<sup>3</sup> (solid volume) of mineralized rock.

### **Raises in Mineralized Rock**

Further assessment of the mineralized structures is planned with two short raises up the dip of the respective structures from the drifts. The locations of these raises will be set following inspection of the structures during drift development. These raises will be 1.5 metres x 2.2 metres wide, following the angle of mineralization (~60 deg.). The faces and walls of the raises will be thoroughly mapped and sampled to assess the vertical continuity, consistency, and mining conditions of the mineralized structures. A total of 60 meters of raises in mineralized rock are planned, producing roughly 200 m<sup>3</sup> solid volume of rock.

#### Additions:

It is expected that a total of roughly 160 metres in raises in mineralized rock will be completed in the proposed program, producing roughly 640 m<sup>3</sup> solid volume of mineralized rock.

### **Section 33: Show location of underground workings on a map.**

See Figures 4-13.

#### Amendment:

See Figures 4 to 8

### **Section 34: Describe ventilation system.**



The ventilation requirement for the full underground development is estimated at 100,000 CFM (47 m<sup>3</sup>/sec). Ventilation for the decline development will be provided by ducting from surface, with a 150 Hp fan on surface providing sufficient ventilating air to meet regulatory requirements.

As the decline advances and the length of ventilation ducting increases, booster fans will be installed as required to maintain the required volumetric flow rate and quality. The above figures are order-of-magnitude only. The underground contractor will design the ventilation plant to reflect actual equipment used and ventilation duct size and material so as to maintain a proper working environment. Ventilation air will not be heated.

Amendment:

Due to the length of the ramp and the proposed drift development, it will be necessary to add additional ventilation to the underground by means of a ventilation raise to surface. The decline will be advanced for approximately 930 metres to a depth of 245 metres from surface and then a vertical raise will be driven between the decline and surface. An exhaust fan will be installed on the raise collar and the ducting and fans in the decline itself will be dismantled. Decline advance will then resume, using fans and ducting as before, except that the fans will draw air from the current flowing down the decline, induced by the exhaust fan on surface. See Figure 5 for the location of the vent raise. See Figure 9 for a schematic drawing of the vent raise and fan assembly at surface.

**Section 35: Describe the method for dealing with ground ice, groundwater and mine water when encountered.**

The underground exploration program proposed in this application is located entirely in permafrost. The decline and underground workings are not expected to generate any mine water. Water production from the melting of the glacial till layer adjacent to the portal is only expected to be possible in the summer of 2008 (frozen the rest of the year). The layback angles of the till layer (2H:1V) and the 5 meter setback planned for the portal access are considered sufficient to control any ground water issues. If required, the layback could be covered with a geo-textile type material to greatly hinder solar and ambient heating of the till layer as much as possible. Should it be required, a backup to this process would be to cover the geo-textile with waste rock to allow the permafrost to creep back up into the till layer.

Within the portal itself, a sump will be built at the base of the ramp where any ground water collecting in the sump will be pumped out of the ramp area, never allowing it to enter the underground decline.

The underground contractor will set up a plant on surface for mixing and pumping brine for dust suppression during the drilling of shot-holes and during mucking of broken rock. Water for this plant will be drawn from local lakes, as required, in the same manner as for the diamond drilling programs of previous years.

The brine solution will be re-circulated to the maximum extend possible. As soon as possible, the contractor will install a sump underground and the mixing plant will be moved there. The contractor will pump water from Pump Lake, using a similar set-up to the existing



installation used by Boart Longyear for diamond drilling. Minor amounts of brine sprayed onto the muck pile underground for dust suppression will soak into the muck and be removed with it to surface.

The brine will be re-circulated until it is too thick to use, due to suspended solids. The contractor will add fresh water as required, expected to be only every 2-4 days. Water will be heated as necessary. Drill cuttings deposited in the underground sumps will be periodically removed to surface and dumped on the waste pile.

Water absorbed by blasted rock will freeze during the winter. The amount will be such that, if it thaws in the summer, it will remain as dampness in the rock pile with minimal runoff, if any. Summer rain, if heavy, could wash some brine into the ground immediately beneath or adjacent to the ore pile, although if this happens, the rainwater would dilute the brine. Monitoring quality of the run-off from the ore and waste pads will be ongoing.

Amendment:

The existing till and rock slopes around the existing portal are stable. The sump at the base of the ramp has proven to be sufficient for collecting minor seepage and rainwater/snow-melt running down the ramp. The sump beside the area of primary containment was sufficient for all water that needed to be pumped from the ramp sump. The portal cover will greatly reduce the amount of snow and water collecting in the portal itself.

The existing underground workings encountered no groundwater. Thermistor readings and testing by Golder Associates indicates that permafrost extends to 470 metres below surface. Diamond drilling from surface has encountered local unfrozen pockets 400-450 metres from surface. The deepest workings in the present plan will reach 395 metres from surface. It is not anticipated that the planned workings will encounter groundwater and will remain in permafrost. If this should prove not to be the case, the water encountered would be used for underground work and drilling purposes. Any excess capacity would be pumped or trucked to surface and directed to secondary containment.

**Section 36: Provide a Mine Rescue Plan**

The underground contractor's Mine Rescue Plan will comply with the Mine Health & Safety Act, Regulations, Part VIII, Divisions 3, 4 and 5 and will be approved by the chief mine inspector. Comaplex is not currently in a position to provide a detailed Mine Rescue Plan as this will be developed by the underground contractor who has not yet been selected.

Amendment:

Comaplex will be reactivating the Mine Rescue Plan that was in place for the previous program.

**WASTE ROCK STORAGE AND TAILINGS DISPOSAL**

**Section 37: The location and conceptual design of waste rock storage piles(s) and tailings disposal facility. (show on map).**

The waste rock excavated during the portal construction by the surface contractor will be used to form the services pad for the underground contractor. This pad will be 60 meter x 60 meters x 1.5 meters thick. Waste rock excavated by the underground contractor during the driving of the decline will be used to form an ore storage pad and for minor road repair. This ore stockpile base

or pad will be approximately 100 meter x 120 meters in size x 1.5 meters thick. Excess waste rock not needed for the ore stockpile will be stored in a waste ore pile estimated to be 72 meter square by 5-6 meters in height. See Figure 4.

There are no tailings generated in this program.

Amendment:

The proposed work is expected to generate an equivalent amount of mineralized rock as the previous exploration program but a greater amount of waste rock. The plan is to extend and double the size of the existing pad on site, all the while remaining behind containment and within the one drainage basin. This pad will serve as a base on which the mineralized rock piles will be placed. See Figure 5 for location and proposed designs and layouts.

**Section 38: Anticipated volumes of waste rock and tailings.**

	<u>solid (cubic m)</u>	<u>loose (cubic m)</u>
Till:	11,150	14,500
Waste rock (total ramp + decline)	28,150	42,225

Amendment:

	<u>solid (cubic m)</u>	<u>loose (cubic m)</u>
Waste rock (total declines and vent raise)	76,000	114,000
Drifts & raises on mineralized structures	7,650	11,500

**Section 39: Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.**

All dominant rock types (including overburden) that are expected to be handled in this project have been tested for acid generating potential and for metal leachate potential. Glacial till overburden showed a strong neutralization potential with tests results from seven samples ranging from 12.4 - 34.8 indicating a strong neutralization potential (see Appendix 1). Waste rock is not acid generating. A thin argillite unit occasionally present in one of the mineralized zones in the deposit showed a potential for generating acid. Argillite makes up a very small portion of the rock mass to be brought to surface. The neutralization potential tests from four argillite samples ranged from 0.55 - 12.6 indicating that some (but not all argillite) has a potential for generating acid.

All waste rock excavated will be reassessed as to its potential for generating acid during the course of the project. If rock type(s) are encountered that are significantly different from the rock expected, on the basis of the diamond drill core in hand, fresh analyses will be conducted as to neutralization potential and metal leachate. Any rock considered to be potentially acid generating will be encapsulated by rock that will neutralize any drainage. Rock with unacceptable long term leachate properties will be placed so that runoff from this waste rock can be monitored and controlled.

Amendment:

The geochemical characterization program for mining wastes was initiated in 1998 on a limited number of samples from the Tiriganiaq deposit, including ore, waste rock and overburden. Additional sampling of wastes from this deposit was carried out in 2006, 2008 and 2009.

Geochemical characterization of future mining wastes from the F-zone and Discovery deposits was initiated in 2009. A total of 343 samples have been collected since 1998. The focus of the analytical program was to characterize the geo-environmental characteristics of the future wastes, focusing on chemical composition, acid generation (ARD) potential and metal leaching (ML) properties.

Samples of waste rock were obtained from the core of previously drilled exploration and geotechnical boreholes. Samples of the anticipated milling residues were obtained from metallurgical test work conducted under the direction of Comaplex. Overburden samples were collected for the purpose of geo-environmental testing, from hand-dug test pits within the proposed open pit outlines.

The analytical programs completed in 2006, 2008 and 2009 incorporated a comprehensive set of standard geochemical tests to characterize the ARD/ML potential of the different material types expected to be produced during mine life. The testing methods used and comparative criteria are consistent with INAC (1992), MEND (2009) and Price (1997) recommended methods. They include the following analyses on waste rock, soil and tailings:

- Whole rock and trace element chemistry (ICP);
- ABA by the Modified Sobek method;
- Net Acid Generation (NAG) tests on select waste rock samples, and,
- Readily leachable metals through short-term metal leach testing by a modified version of the shake flask extraction (SFE; Modified ASTM D3987).

Preliminary results indicate the rock found in the foot wall and hanging wall are non acid generating. For the same rocks, static testing show localized leaching of arsenic and aluminum with the results exceeding the CCME Guidelines for Freshwater Aquatic Life but meeting the Metal Mining Effluent Regulations. In some samples, other trace metals also exceed the CCME freshwater guidelines.

A report on all the testing (including kinetic testing presently underway) is expected in the near future and will be subsequently distributed to all authorizing agencies.

## **STOCKPILES**

### **Section 40: The location and conceptual design of stockpile(s). (show on map).**

There will be four separate types of stockpiles associated with this proposal. See Figure 4.

Topsoil will be stripped off first and pushed to a small stockpile to the side of the portal.

Unfrozen and frozen till will be pushed to the edges of the portal as previously discussed. This material will be segregated for future rehabilitation purposes.

The waste rock excavated during the portal construction by the surface contractor will be used to form the services pad for the underground contractor. This pad will be 60 meter x 60 meters x 1.5 meters thick. Waste rock excavated by the underground contractor during the driving of the decline will be used to form an ore stockpile pad and for minor road repair. This ore stockpile base or pad will be approximately 100 meter x 120 meters in size x 1.5 meters thick. Excess waste rock not needed for the ore stockpile will be stored in a waste ore pile estimated to be 30 meter square by 7-8 meters in height.

Ore will be excavated from underground on a round by round basis with each round passing

through the crusher and sample tower. About 95% of each round will remain on the property in separate, segregated piles. The individual ore piles and the crusher/sample tower machines are the reason for the size of the ore stockpile pad.

Amendment:

See “Waste Rock Storage” section page 12 and Figure 5.

**Section 41: Describe the types of material to be stockpiled. (i.e. ore, overburden)**

Topsoil:	topsoil and tundra (minimal material, if any)
Till:	glacial till material
Waste:	predominantly greywacke and siltstones, minor gabbro dikes
Ore Material:	gold bearing quartz veins hosted in iron formations and sericitized siltstones.

Amendment:

Topsoil, till, waste, and ore material will be the same as the previous program (see above).

**Section 42: Anticipated volumes of types of material to be stockpiled.**

	<u>solid (cubic m)</u>	<u>loose (cubic m)</u>
Top Soil Pad:	600	600
Till:	11,170	14,250
Waste from the portal cut (contractors pad)	2450	3575
Waste (ore pad)	12,000	18,000
Waste Pad (excess)	13,700	20,500
Ore on pads	4300	6450

Amendment:

	<u>solid (cubic m)</u>	<u>loose (cubic m)</u>
Till/overburden	600	900
Waste (to construct pad)	30,000	45,000
Waste for construction (stockpiled)	24,000	36,000
Waste not for construction (stockpiled)	22,000	33,000
Ore on pads	7,650	11,500

**Section 43: Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.**

The mineralized rock (ore) in this gold deposit is generally rich in sulphide. Sulphides oxidize when newly exposed rock is subject to air and moisture and can generate acidic runoff (acid rock drainage - ARD). Neutralization Potential (NP) tests of 5 ore samples showed acid base accounting (ABA) ratios of 1.0 to 3.4, indicating acid generating potential (see Appendix 1 for lab test results and related analyses).

All dominant rock types (including overburden) that are expected to be handled in this project have been tested for acid generating potential and for metal leachate potential. Glacial till overburden showed a strong neutralization potential (not acid generating) with tests results from seven samples ranging from 12.4 - 34.8 (see Appendix 1). Waste rock is not acid generating. A

thin argillite unit occasionally present in one of the ore zones in the deposit showed potential for generating acid. This argillite makes up a very, very small portion of the rock mass to be brought to surface. The neutralization potential tests from four argillite samples ranged from 0.55 - 12.6 indicating that some (but not all argillite) has a potential for generating acid.

All waste rock excavated will be reassessed as to its potential for generating acid during the course of the project. If rock type(s) are encountered that are significantly different from the rock expected, on the basis of the diamond drill core, fresh analyses will be conducted as to neutralization potential and metal leachate. Any rock considered to be potentially acid generating will be encapsulated by rock that will neutralize any drainage. Rock with unacceptable long term leachate properties will be placed so that runoff from this waste rock can be monitored and controlled. See Section 57 for details.

Amendment:

The geochemical characterization program for mining wastes was initiated in 1998 on a limited number of samples from the Tiriganiaq deposit, including ore, waste rock and overburden. Additional sampling of wastes from this deposit was carried out in 2006, 2008 and 2009. Geochemical characterization of future mining wastes from the F-zone and Discovery deposits was initiated in 2009. A total of 343 samples have been collected since 1998. The focus of the analytical program was to characterize the geo-environmental characteristics of the future wastes, focusing on chemical composition, acid generation (ARD) potential and metal leaching (ML) properties.

Samples of waste rock were obtained from the core of previously drilled exploration and geotechnical boreholes. Samples of the anticipated milling residues were obtained from metallurgical test work conducted under the direction of Comaplex. Overburden samples were collected for the purpose of geo-environmental testing, from hand-dug test pits within the proposed open pit outlines.

The analytical programs completed in 2006, 2008 and 2009 incorporated a comprehensive set of standard geochemical tests to characterize the ARD/ML potential of the different material types expected to be produced during mine life. The testing methods used and comparative criteria are consistent with INAC (1992), MEND (2009) and Price (1997) recommended methods. They include the following analyses on waste rock, soil and tailings:

- Whole rock and trace element chemistry (ICP);
- ABA by the Modified Sobek method;
- Net Acid Generation (NAG) tests on select waste rock samples; and,
- Readily leachable metals through short-term metal leach testing by a modified version of the shake flask extraction (SFE; Modified ASTM D3987).

Preliminary results indicate the rock found in the foot wall and hanging wall are non acid generating. For the same rocks, static testing show localized leaching of arsenic and aluminum with the results exceeding the CCME Guidelines for Freshwater Aquatic Life but meeting the Metal Mining Effluent Regulations. In some samples, other trace metals also exceed the CCME freshwater guidelines.

A report on all the testing (including kinetic testing currently underway) is expected in the near

future and will be subsequently distributed to all authorizing agencies.

## TRANSPORTATION

### **Section 44: Describe how the site will be accessed and how supplies will be brought to site. (show route on map)**

Annual access to the exploration area for the re-supply of bulk supplies has been by way of a winter overland route from Rankin Inlet. The equipment and materials required to excavate the overburden in the ramp and the blast, load and haul bedrock to expose the portal face that cannot be airlifted will be mobilized overland to the site prior to 2007 spring break-up. This will include local equipment available in Rankin Inlet and equipment currently on other local exploration projects.

Underground mining equipment and bulk supplies will be shipped to Rankin Inlet by barge or ship following break-up in early summer 2007. Comaplex is considering initial equipment mobilization to the work site by heavy-lift helicopter so that the underground contractor can set up and winterize its plant while weather conditions are still mild. Following freeze-up in November, further equipment and materials may be transported overland from Rankin Inlet to the site by using low PSI type mobile equipment as surface conditions permit.

Throughout the winter, transportation of materials, personnel and supplies will be carried out overland by locally owned and operated Cat and Bombardier equipment or fixed wing charter aircraft. After the spring thaw, personnel, materials, and camp supplies will be transported by helicopter.

Overland transport vehicle specifications:

Bombardier:	3,000 kg loaded GVW; 1.2 psi loaded ground pressure
Cat Challenger:	8 – 10 psi ground pressure
Foremost Delta:	16.6 psi loaded ground pressure

Please see Figure 3 for the winter re-supply transportation routes used to date.

### **Amendment:**

Access to the site for personnel and supplies will be as per previous years. This includes helicopter access in the spring, summer, and fall and potentially helicopter and/or plane access in the winter. This worked well in the 2007-8 program.

Supplies will be brought in on the permitted winter road as per previous years. There is no plan to use a heavy lift helicopter for the proposed program as the size of equipment required for the extension makes this an unrealistic option. All supplies and fuel will be brought in by barge and transported by winter road using the equipment listed above as per previous years.

Due to the depths in the Tiriganiaq deposit that need to be accessed in the proposed underground program, it will be very difficult to supply the program with sufficient fuel in years 2011 and 2012 to sustain it from the period of time from one winter re-supply to the next winter re-supply. For this to be possible, Complex would have to more than triple its fuel capacity on the property.

This could be done but this storage capacity will not be suitable for, nor compatible with, the development plans for a gold mine presently under consideration.

Based on the results of the Feasibility Study, Complex is considering two options in a future amendment to this application: One is to build tankage sufficient for the balance of the underground exploration program and future mine development. The second option is consideration to construction of the all-season access road from Rankin Inlet to the mine site. Construction of this road in the fall of 2011 would allow fuel, explosives, and supplies to be transported to site as required from storage in Rankin Inlet and greatly benefit future exploration on the property and in the area.

**Section 45: If an airstrip is being used or constructed provide a description and its location. (show location on map)**

There is no summer air strip on site. In the winter, fixed wing aircraft can land on the ice of Meliadine Lake. See Figure 4.

Note: No summer air strip is required. An ice strip could be possible, as per the previous program, and as illustrated in the original application.

**Section 46: Describe expected flight altitudes.**

Wherever and whenever possible, travel between Rankin Inlet and camp by both helicopter and fixed wing aircraft will be at an elevation of all least 200 meters, avoiding known cabins, communities, and wildlife areas. Local helicopter flights over the Meliadine West property are commonly below this level.

**CAMP SITE**

**Section 47: A list of existing and proposed camp structures and infrastructure.**

- 1 core tent (several tents together)
- 1 kitchen-mess tent
- 12 four man sleeping tents
- 1 dry (laundry, shower, toilet, and washing facility)
- 1 trailer housing the power plants (electricity)
- 1 equipment tent
- 2 twelve man sleepers
- 1 three man sleeping trailer
- 1 entertainment tent
- 1 storage tent
- 1 office tent
- 2 incinerators (housed in sea-cans)
- 1 drill foreman's tent
- 3 storage-supply sea-cans for drilling equipment

**Amendment:**

Since the original underground program in 2007-8, a waste water treatment plant, a wash car, a new sump-wetlands area, and several sleeping tents have been added to the Meliadine Lake camp.



The existing Meliadine exploration camp will be used at the start up of the underground exploration program, but it is anticipated that additions will be required to the camp in 2012-2013 once the underground exploration program gears up in late 2011, early 2012. The plan is to reclaim the Meliadine East camp site and move those tents to the Meliadine Lake camp in 2010 to upgrade the main camp to hold approximately 80 men, from its current 50-60.

It is possible however, that due to the number of men required for the underground exploration work and the overlap of underground and surface diamond drilling, that additional upgrades and potentially an additional camp may need to be built. This option would only be considered through an amendment to the existing permits expected for the program as proposed.

**Section 48: Describe the type of camp.**

The Meliadine West camp is a temporary seasonal exploration camp previously in operation from early March to late September, and closed for the fall and winter months. For the duration of the underground program, the camp will remain open through the winter of 2007-2008. It has been at this location since the spring of 1997. If the project proceeds to commercial production, this camp would be replaced and the site would be rehabilitated.

**Amendment:**

As per the 2007-8 program, the camp will run 12 months a year as required. It is expected that changes made to the camp and to the facilities near the portal will make for a more efficient operation.

**Section 49: Maximum number of people expected on site.**

It is expected that number of personnel on site will vary between 35 and 50 people over the term of the work. Numbers could fluctuate up to a maximum of 60 people for short times during summer overlap periods with surface programs or with short term visitors. Personnel estimates for the Meliadine West camp for the term of this program are summarized monthly in Table 1 below.

It is expected that there will only be a slight overlap of the surface contractors (portal construction) with the underground contractor (decline and drift development). The surface contractor will have several people on site during the underground program for snow removal and site services.

**Table One: Estimated Personnel at Meliadine West camp**

	2007										2008								
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Supervision	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Geology	5	5	5	5	5	5	5	2	2	2	2	2	5	5	5	5	5	5	5
Support	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Kitchen	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Drilling	16	16	16	14	14	14	14						12	12	12	14	14	14	14
Surface		5				10	2	2	2	2	2	2	2	2	2	2	2	2	2
Mining							18	18	18	18	18	18	18	18	18	18	18	15	5
Other						3													
<b>Total</b>	<b>31</b>	<b>36</b>	<b>31</b>	<b>29</b>	<b>29</b>	<b>42</b>	<b>49</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>32</b>	<b>47</b>	<b>47</b>	<b>47</b>	<b>49</b>	<b>49</b>	<b>46</b>	<b>36</b>



Amendment:

	2007											2008								
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Supervision	2	2	2	2	2	2	2	2	2	2		2	2	2	2	2	2	2	2	2
Geology	5	5	5	5	5	5	5	2	2	2		2	2	5	5	5	5	5	5	5
Support	5	5	5	5	5	5	5	5	5	5		5	5	5	5	5	5	5	5	5
Kitchen	3	3	3	3	3	3	3	3	3	3		3	3	3	3	3	3	3	3	3
Drilling	16	16	16	14	14	14	14							12	12	12	14	14	14	14
Surface		6	6	6	6	4	4	4	4	4		4	4	4	4	4	4	4	4	4
Mining	4	7	7	14	14	14	25	25	25	25		25	30	30	30	25	25	25	25	25
Other						3														
Total	31	44	44	49	49	50	58	44	44	44		44	49	61	61	56	58	58	58	58

**Section 50: Describe the source of power for the camp.**

The camp electric power is provided by 2 Perkins 53kW diesel generators running in parallel. Generators are exchanged once a week for servicing. These generators run at 40-50% of nameplate load. A new 53kW generator was installed in camp in 2007 to run the core logging and cutting facilities.

**EQUIPMENT**

**Section 51: A list of equipment indicating uses and approximate dimensions.**

The equipment required for ramp excavation to be moved to the site is enumerated in the table below.

Description	Function	Number of Units	Source
Air Track Drill	Drilling ramp permafrost and bedrock	1	Surface development contractor
Trucks	Haul and dump ramp spoil	2	Surface development contractor
Fuel truck	Re-fueling equipment	1	Surface development contractor
Excavator	Ramp spoil excavation and loading	1	Surface development contractor
Dozer	Spoil and waste rock levelling on pad	1	Surface development contractor
Loader	Loading till and blast rock	1	Surface development contractor
Van	Personnel transfer between site and camp	1	Local contractor

Amendment:

No additional surface excavation is required for the proposed program, except for the ventilation raise collar. A steel multiplate cover will be built over the portal cut in the summer of 2011. The material excavated from the portal cut and stockpiled beside it in the 2007-8 program will be backfilled over the portal cover, thereby reclaiming a part of the portal site and reducing the footprint. This work would involve the equipment listed here.

The mining equipment required for portal, decline and drift development is summarized below.

The surface contractor or underground contractor will have a loader or Cat on site at all times that will be suitable for road maintenance and snow removal as required.

<b>Description</b>	<b>Function</b>	<b>Number of Units</b>
Drill Jumbo	face drilling	1
LHD (u/g scoop)	moving broken rock underground	2
U/G Rock Truck	hauling muck to surface	2
Scissor Lift Truck	service vehicle	1
Tractor	service vehicle	1
4 wd Truck	fuel truck	1
4 wd Truck	powder truck	1
4 wd Truck	water delivery to drills	1
Fans – Variety 30-100 Hp	ventilation	6

**Amendment:**

Due to the increase in the length of the ramp, additional trucks and scoops will be required. The following is a list of equipment expected to be on site for the proposed underground program.

<b>Description</b>	<b>Function</b>	<b>Number of Units</b>
Drill Jumbo	face drilling	1
LHD (u/g scoop)	moving broken rock underground	3
U/G Rock Truck	hauling muck to surface	3
Scissor Lift Truck	service vehicle	1
Tractor	service vehicle	1
4 wheel drive Truck	fuel truck	1
4 wheel drive Truck	powder truck	1
4 wheel drive Truck	water delivery to drills	1
Fans – Variety 30-100 Hp	ventilation	6

**Section 52: If possible, provide digital photos of equipment.**

The equipment described is generic. The equipment currently on site is illustrated below.



**Section 53: Method of moving equipment within the project site.**

Movement of men and materials within the project site will occur on a ~2 km long all season road constructed between the camp and the portal location (Figure 4). All fuel depots (fuel truck), explosive magazines (powder or mixer truck) and the sample tower machinery are located along this road. Movement of these vehicles, plus all additional trucks and personnel vans, will be restricted to the road with no movement of vehicles over the tundra. In the winter, overland movement of supplies, personnel, etc. will take place as in previous years, as required. This generally involves Challenger and Bombardier vehicles pulling komatiks.

**WATER**

**Section 54: Location of water source(s) (show on map).**

Water for the camp is supplied from Meliadine Lake. Water for the underground exploration program will be sourced from Pump Lake in the winter, with smaller local ponds used in the summer months as available. See Figure 4.

**Section 55: The estimated rate of water consumption (L/d).**

Water estimates for all activities on the project are included below.

	<u>cubic meters/day</u>	<u>liters/day</u>
camp	10	10,000
blast hole drilling	10	10,000
diamond drilling	<u>40-75</u>	<u>40-75,000</u>
	60-95	60-95,000

**Amendment:**

Based on metered drilling water volumes (flow through systems as opposed to actual use numbers), an amendment to the NWB has been submitted requesting the allowable water consumption for the Meliadine project be increased to 290 cubic metres per day. This volume of water was determined to be sufficient for all planned activities on the Meliadine project, including the underground exploration program, surface drilling, and camp operations.

Based on the experience of the 2007-2008 program, the proposed underground exploration and bulk sample work, including the underground diamond drilling, is expected to use an average of 4000 liters of make-up water per day.

	<u>cubic metres/day</u>
camp	4.3- 7
blast hole drilling	4
diamond drilling (3-4 drills)	159-212
underground drilling (2 drills)	20

**Section 56: Describe water intakes. Describe methods for the prevention of fish entrapment.**

The intakes on the water pumps will be equipped with a screen with a mesh size sufficiently small to prevent any danger to fish. Pumping rates will be sufficiently low so as to prevent the impingement of fish onto the pump intake screen.

**Section 57: If applicable, discuss how surface water and underground water will be managed.**

Surface Water:

Surface runoff entering by way of the ramp will be intercepted in a sump and returned to surface by pumps. Surface water for the camp will be drawn from Meliadine Lake as it has since 1997 with the intake as shown by Figure 4.

Surface runoff from the area of the pads and waste rock may carry sediments, dissolved blasting residue and other substances that may be deleterious to aquatic organisms in down stream environments. The first year-round water body downstream from the portal site is Pump Lake.

Pre-development water quality monitoring: Water quality will be monitored in the small ponds below the portal site beginning in July 2007 to establish a baseline for pre-portal conditions. Samples will be analyzed for water quality parameters important to aquatic life as set out in the *Canadian Water Quality Guidelines for the Protection of Aquatic Life* for metals and ammonium nitrate.

Exploration phase water quality monitoring: Samples will again be collected from these ponds in September 2007 (or within 4 weeks of construction start-up if during the open water season) for analyses of the same water quality parameters. This will be repeated in June 2008.

If analyses show that the water quality conditions have deteriorated so that they do not meet the Canadian Water Quality Guidelines for the Protection of Aquatic Life, the contaminated runoff will be intercepted by the placement of Aquadams (portable heavy plastic 1 meter x 30 meter tubes that are filled with water and so become dykes) that will hold the water so that it can be disposed of on the surrounding upland by spray irrigation (Figure 4). The Aquadams and the pumps necessary to deploy them are on site. Spray apparatus will be procured.

Underground Waters

The contractor will pump water from local ponds in the summer and Pump Lake in the winter (see Figure 4), using a recirculation system similar to that used by Boart Longyear for diamond drilling in previous years. The underground contractor will set up a plant on surface near the portal for mixing and pumping brine for dust suppression. Drilling operations will recycle brine to the maximum extent possible keeping the need for fresh make-up water to a minimum.

As soon as possible, the contractor will install a sump underground and the mixing plant will be moved there. Some brine will be sprayed onto the muck pile for dust suppression. This brine will soak into the muck and be removed with it to surface. The brine will be re-circulated until it is too thick to use due to suspended solids. The contractor will add fresh water as required - this will take place only every 2-4 days. Water will be heated as necessary.

Drill cuttings deposited in the underground sumps will be periodically removed to surface and dumped on the waste pile. Due to the small amount of water used and the re-circulation system, there will be no need for a settling pond on surface. Water absorbed by blasted rock will freeze during the winter. The amount will be such that, if it thaws in the summer, it will remain as dampness in the rock pile with minimal runoff, if any. Summer rain, if heavy, could wash some brine into the ground immediately beneath or adjacent to the rock pile, although if this happens, the rainwater would dilute the brine. This will be monitored. A contingency plan is in place (see Surface Waters above). The underground exploration program will take place entirely within the level of permafrost (permafrost to >400m depth). As such, the underground program will not produce any mine water.

Amendment:

The proposed underground program will be conducted as per the 2007-8 program in the manner outlined above.

The underground diamond drill cuttings (sludge) will remain underground and quickly freeze to the floors of the drill subs. Each underground drill rig will have its own plant for mixing and re-circulating brine. Re-circulation systems used in the previous program will be re-deployed keeping water use numbers low.

**WASTE (GREY WATER, SEWAGE, OTHER)**

**Section 58: Describe the characteristics, quantities, treatment, storage, transportation, and disposal methods for the following:**

Sewage: Pacto toilets; waste incinerated on site.

Amendment:

Comaplex installed a waste water treatment plant and wash car in the Meliadine Lake camp in 2009. The system is set up and has yet to be commissioned. While notoriously finicky, the system is expected to be up and running for the 2010 field season and any bugs (pun intended) worked out at that time. The existing Pacto system is still on site as a backup.

Comaplex also proposed and will soon commission a new sump area to the south of the old one. This area has a larger catchment basin and was approved by all regulatory authorities in 2009. This new site will be used in 2010 and for the proposed program.

Camp Grey Water: Low domestic water consumption in camp will be achieved with low-flow shower heads and flush toilets. The result is the low output of grey water at the camp that has performed since 1997. The sump is located approximately 30 meters east of the camp, about 50 meters from Meliadine Lake.

Amendment:

Comaplex has installed de-greasing system in the kitchen to assist in the processing of grey water in camp.

The addition of the wash car (with flush toilets) in the Meliadine camp will result in a modest



increase in the water consumption for camp. It is estimated that this will increase the consumption from 4.3 cubic metres per day to approximately 7.0 cubic metres per day.

Combustible Solid Material: Incinerated in an incinerator on site.

Non Combustible Solid Material: removed from site overland or by helicopter to the Rankin Inlet land fill site (have an agreement with the Municipality – fee based).

Bulk Items: removed from site overland or by helicopter to the Rankin Inlet land fill site (have an agreement with the Municipality – fee based).

Waste Oil/Hazardous Waste: All potential hazardous waste such as batteries, aerosol cans, paint cans, etc. are routinely collected and shipped for proper disposal in southern Canada.

Amendment:

Waste oil will be incinerated in town as per the previous program.

Contaminated Soils: Substances in use during the program that are a potential source of contaminated soil would be hydrocarbon compounds such as lubricants and fuel. Contaminated soils from altered terrain (shop, pads, road) will be identified and the appropriate response reviewed with KIA in the context of final site closure and abandonment. Solutions could include burial underground with material with ARD potential, treatment with topsoil, peat and fertilizer, or removal.

Contaminated soils in undisturbed tundra will be assessed and in consultation with KIA either treated in situ with topsoil, peat and fertilizer to avoid terrain disturbance, or removed to be handled like contaminated materials from altered terrain.

Amendment:

The area used by Comaplex for soils contaminated by fuel was sampled three times and found to meet Canada Wide Standard for Hydrocarbons in Soils for Residential/Parkland and also Nunavut's hydrocarbon guidelines for soil.

Empty Barrels: Sent back to Rankin for transport south for deposit refund.

**Section 59:** If project proposal includes a landfill and/or land farm, describe the location (show on map), conceptual design, and management.

Not required at site for this level of activity.

## **FUEL**

**Section 60:** The types, quantities (number of containers, type of containers and capacity of containers), method of storage, method of containment, location of storage (show on map) and uses.

Fuel oil storage capacity on site:

14 - 50,000 liter double walled steel Enviro fuel tanks (diesel)

3 – 50,000 liter double walled steel Enviro fuel tanks (Jet A)

## 2 - 113,000 liter self berming “bladders”

All fuel storage tanks and bladders are located within the Commercial Lease that Comaplex has with the KIA. See Figures 2 and 4.

It is estimated that approximately 1,900,000 liters of diesel will be consumed in the August 2007 to July 2008 period. As of spring break-up in May 2007, there will be 900,000 liters of diesel in onsite storage. Additional tankage may be required and mobilized to camp in 2008. Additional fuel for the 2008 season will be brought in by barge late in the fall of 2007 to re-supply the tanks in camp will take place by overland transport in the winter months of 2008.

Incidental requirements for gasoline to run small pumps and portable generators will be stored in 45 gallon (205 litre) drums. The drums will be stored laying down in rows, away from water bodies, with the bungs horizontal, as per the Regulations. Damaged drums will be checked for leaks and transferred to better drums if required.

Helicopter fuel (Jet A) will continue to be stored in the Enviro tanks (3 - 50,000 liter) on the hill above the exploration camp. Approximately 150,000 liters of Jet A will be on site by early May 2007, with re-supply as required in the winter months of 2008, as per previous years.

### Amendment:

The proposed underground exploration program will, however, require significantly more fuel than the 2007-8 program; specifically, in the years 2012-2013. The inability to economically move fuel from Rankin Inlet to site from May to December necessitates that additional fuel storage be built at the Meliadine Project site.

The presently permitted fuel berm will be built on site in the winter of 2010. This, together with the existing tankage, will provide sufficient storage capacity on site for the program in 2011. As outlined above, the tanks presently on the property will continue to be used. The new lined fuel berm will be filled with up to ten 113,000 liter fuel bladders. The two smaller tanks on the services pad will be utilized. On-site and existing (permitted) tankage at Meliadine is:

- 14 - 50,000 liter double walled steel Enviro fuel tanks (diesel)
- 3 - 50,000 liter double walled steel Enviro fuel tanks (Jet A)
- 2 - 11,400 liter double walled steel Enviro fuel tanks (diesel)
- 10 - 113,000 liter fuel bladders (diesel)

Additional tank capacity will be required for the underground program in 2012 and 2013. An amendment to this application will be filed to address this issue well in advance of need to allow time for both regulatory review and logistical planning purposes. Two options are being considered:

- a) The easier option would be to build additional tankage on site (with the downside that the tank farm will not be useable in a future mine scenario).
- b) The second option is to construct a 27.4 km long all-weather road between Rankin Inlet and camp to allow year round movement of fuel and supplies to the project site for the 2012-2013 season.



A decision on which option to go with will be based on the conclusions of the Feasibility Study that Comaplex intends to have completed by late 2010, early 2011. In either case, an amendment will be filed to this permit as required.

**Section 61: Describe secondary containment measures including the type of material or system used. If no secondary containment is required, please provide justification.**

All of the 50,000 liter tanks are double walled fuel storage vaults and therefore provide their own secondary containment with no requirement for external berms. The two fuel bladders are totally contained in self supported berms of a type common to, and approved for Arctic operations.

**Amendment:**

Comaplex will construct a fuel berm for up to 10 – 113,000 liter fuel bladders in the winter-spring of 2010. This berm has been permitted and consists of a lined berm built to an approved set of specifications for these types of storage vessels.

It is fully expected that any additional bulk fuel storage facility on the Meliadine property would also have lined containment acceptable to the various agencies in Nunavut. Consideration is being given to constructing and consolidating the fuel storage facilities in one area of the Meliadine site; however, it must be noted that should the project advance to a development situation (a mine), the fuel tanks would almost certainly be located very near the mill and camp site, which is not near the present tank farm.

**Section 62: Describe the method of fuel transfer and the method of refueling.**

The surface and underground contractors are responsible for the transport of fuel from the bulk storage containers on site to the portal and decline. They will be responsible for supplying and maintaining a fuel truck for this purpose. The bulk fuel tanks are connected to a metered gas powered pump with hose to fill the fuel truck as required. The trucks and tanks will be electrically grounded during fuel transfer. The pumping mechanism for both the Jet A and diesel bulk fuel tanks has been in place and used for over 5 years without incident.

Gasoline in 205 liter drums will be transferred to the equipment using manual or battery/electric powered pumps. Absorbent matting will be available at camp or near the re-fueling stations as a precautionary measure. Fuel handling and storage will be in accordance with the Meliadine West Gold Project Environmental Management Plan (see Appendices 3 and 4).

**Amendment:**

Comaplex has built two separate lined fuel transfer stations on the property. These facilities were built to allow equipment to drive onto the lined and slightly depressed pad and be filled directly from metered equipment. At present, only one of the two pads is being used, while the other near the portal site is being used to store drum fuel. Any future surface or underground program would use the same re-fueling stations.

## **CHEMICALS AND HAZARDOUS MATERIALS**

**Section 63: The types, quantities (number of containers, the type of container and capacity of containers), method of storage, method of containment, location of storage (show on map), and uses.**

It is anticipated that the only chemicals required and stored on site will be calcium chloride (CaCl). This material is the same as that used on the property for diamond drilling for the last 15 years. It is generally transported and stored in bags on pallets. The pallets are tarped over to protect them from the weather. The CaCl will be stored near the portal site as determined by the contractor. It is estimated that 68,000 kilograms of CaCl will be required. The CaCl for the decline and ramp will be stored on the services pad near the portal. See Figure 4.

**Section 64: Describe any secondary containment measures including the type of material or system.**

Monitoring of the stockpile of CaCl will be done on a regular basis and leaking bags, if any, will be re-bagged and the spillage cleaned up.

**Section 65: Describe the method of chemical transfer.**

The CaCl generally comes in by barge in the fall. An amount needed for the surface work will likely be brought in by heavy lift helicopter in the fall of 2007. The bulk of the material will be stored in Rankin Inlet in one of the surface contractors trailers or lots and then brought in overland in the early winter. Minimal movement of the CaCl is anticipated as the brine re-circulation system will likely be located close to the portal. The CaCl will be moved underground by one of the contractor's vehicles once the brine system is moved underground.

**Amendment:**

It is likely that all supplies required for each year will be brought in all at once during the winter re-supply runs. There are no plans to use a heavy lift helicopter in the proposed program.

**EXPLOSIVES**

**Section 66: Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), method of storage.**

Explosives will be brought to the site and used for the excavation of frozen overburden and rock. Explosive types will comprise ANFO and cartridged emulsions. Initiation will be by detonating cord and nonel blasting caps. The detonating cord will be initiated electrically. Hazard classes are 1.1 and 1.5.

In the course of the project, total explosives consumption is anticipated to be of the order of 115,000 kg (approximately 25,000 kg ANFO for the surface work and 90,000 kg of ANFO for the underground work). Comaplex has applied to the WCB for the storage of a total of 36,000 kg on site in approved and permitted magazines.

Two empty type 9 explosive magazines (2000 kg capacity each) will be brought to the site in early May 2007. A third Type 9 magazine will be barged in to Rankin in the summer along with two additional Type 4 magazines (capacity 15,000 kg each). All three magazines will be mobilized to site in the late fall/early winter of 2007, when conditions permit. See Figure 4 for the proposed locations of the explosive magazines.

Explosives for surface excavation will be flown from Yellowknife to Rankin Inlet and flown by helicopter to the site without intermediate storage in Rankin Inlet. In detail, fixed wing flights of explosives will be mobilized to Rankin every 10 days (3600 kilograms of ANFO). The ANFO

will be offloaded and immediately moved to a location on the road west of town where a helicopter will transport the explosive to the magazines at camp. In the winter months, the explosives may be taken to the magazines by overland transport or the plane will land on the ice at camp for transfer of the materials to the magazines.

While it is possible to conduct the portal cut and early underground work with explosive resupply flights to the two Type 9 magazines, the method of supplying explosives to the underground excavation is not yet confirmed because the underground contractor has not yet been selected. Comaplex does not have control over the off-site storage and movement of explosives by the contractor.

Details on the final plan for the movement of explosives to the site and their storage will be forwarded once the contract is awarded in mid May 2007.

Amendment:

Explosives transport to the Meliadine site in the previous program was found to be problematic, expensive, and inefficient during times outside of the winter road access period. Comaplex anticipates requiring approximately 212,000 kilograms of explosives for the decline extension, including 142,000 kilograms between winter resupply in early 2012 and winter resupply in early 2013. There are currently ten Type 4 magazines on the site with a total capacity of 90,000 kilograms of explosives, allowing two magazines for the storage of blasting caps. Comaplex proposes to mobilize an additional five Type 4 magazines to Rankin Inlet in the summer of 2011 for movement to site in early 2012. These magazines will be incorporated into the existing plan with Nunavut and NWT Mines Safety. See Figure 5 for location of the magazines.

## **PUBLIC INVOLVEMENT / TRADITIONAL KNOWLEGDE**

**Section 67: Describe the level of public involvement, a summary of public involvement measures, a summary of concerns expressed, and methods of addressing the concerns.**

The Meliadine West Gold Project has conducted an active consultation program throughout the current exploration program which began in 1995. The consultation program included the communities of Rankin Inlet and Chesterfield Inlet as the lands affected fall within the area of influence (as determined by the Keewatin Regional Land Use Plan) for those communities. A chronology of consultation activities is enumerated below.

### **Chronology of community consultation events hosted by the Meliadine West Gold Project**

<b>DATE</b>	<b>PLACE</b>	<b>PARTIES PRESENT AND SUBJECTS OF MEETING</b>
<b>1995</b>		
1 May	Rankin Inlet	KIA, WMC, Cumberland, Comaplex; history of exploration and prospect of WMC entering the Project on western lands.
<b>1996</b>		
10 January	Rankin Inlet	KIA, WMC, Cumberland, Comaplex; Project status report and notice of manpower needs

29-31 Mar.	Rankin Inlet	Nunavut Mining Forum; Project status report; Project booth at trade fair
1 April	Chesterfield Inlet	public, KIA, Hamlet, HTO, CLARC; Project status report and notice of manpower needs
2 April	Rankin Inlet	public, KIA, CLARC, HTO's, Fed. & Ter. govt, WMC; day long review of environmental studies
2 December	Chesterfield Inlet	public, KIA, CLARC, Hamlet, HTO; Project status report and notice of manpower needs
3 December	Rankin Inlet	public, KIA, CLARC, HTO; Project status report and notice of manpower needs
<b>1997</b>		
21-23 Mar.	Rankin Inlet	Kivalliq Mining Round Table; Project status and emphasis on mine readiness training
25 March	Rankin Inlet	public, CLARC, KIA Board
19-20 April	Iqaluit	Nunavut Mining Conference; Project status report
13 May	Rankin Inlet	public, KIA, CLARC, HTO; current year exploration program and manpower needs
14 May	Chesterfield Inlet	public, KIA, Hamlet, HTO, CLARC; current year exploration program and manpower needs
11 June	Coral Harbour	briefing KIA Board of Directors on regional demography research and how it relates to mine work force needs
28 June	Rankin Inlet	public reception for Sir Arvi Parbo, Chair to WMC Limited Board.
28 August	Rankin Inlet	public reception with WMC senior management visiting from Australia.
23 October	Rankin Inlet	inaugural dinner meeting with Elder's Steering Committee for Traditional Knowledge.
6 November	Rankin Inlet	Project briefing to Keewatin Wildlife Fed. executive committee.
9 December	Rankin Inlet	meeting #2 of the Elder's Steering Committee for Traditional Knowledge.

## **1998**

7 January	Rankin Inlet	public, Hamlet, KIA, HTO, CLARC; Project status report
8 January	Chesterfield Inlet	public, KIA, Hamlet, CLARC; Project status report
28 March	Cambridge Bay	Nunavut Mining Symposium; Project status report
2 April	Rankin Inlet	HTO's for Rankin and Chesterfield, KIA, CLARC, DFO, DRWED; review environmental baseline studies.
23 June	Rankin Inlet	joint meeting of the Rankin Inlet and Chesterfield Inlet CLARCs to review underground exploration application (since withdrawn); public meeting in afternoon and evening to brief Rankin Inlet businesses and residents of underground exploration application
25 June	Chesterfield Inlet	project briefing to Chesterfield Inlet Hamlet Council; evening meeting to brief Chesterfield resident on underground exploration application (since withdrawn).
6 July	Rankin Inlet	brief Rankin Inlet Hamlet Council on underground exploration program and need to store fuel in barge overwintering in Melvin Bay (plans since cancelled).
8 July	Meliadine Camp	overall project briefing to DIAND Minister, the Hon. Stewart and Nunavut leadership- Josie Karetak-Lindell MP for Nunavut; NWT Finance Minister and MLA for Rankin Inlet, the Hon. John Todd.
5 August	Rankin Inlet	dinner meeting #3 of the Elder's Steering Committee for Traditional Knowledge; review Project and proposed archaeological survey of proposed test pit area.
2 October	Rankin Inlet	dinner meeting #4 of the Elder's Steering Committee for Traditional Knowledge; review Project and results of archaeological survey of proposed test pit area.
21 October	Rankin Inlet	meeting with Hamlet Coordinating Committee (reps. of all the service agencies in Rankin Inlet) to review Project and its current effects on the social fabric of the community.
<b>1999</b>		
13 January	Rankin Inlet	KIA,CLARC, public; review Project results for 1998 and plans for 1999.
14 January	Chesterfield Inlet	KIA,CLARC, public; review Project results for 1998 and plans for 1999.
14 April	Rankin Inlet	workshop with stakeholders from Rankin Inlet, Chesterfield

		1997. Inlet and Kivalliq region plus relevant government agencies to review environmental study results of 1998 studies and plans for 1999.
11 April	Arviat	review regional gold exploration program for 1999 with Hamlet Council and HTO.
14 Sept.	Rankin Inlet	meeting #5 of the Elder's Steering Committee for Traditional Knowledge; review Project and receive final report on completed Traditional Knowledge Study of Project area.
<b>2000</b>		
7 January	Rankin Inlet	KIA, CLARC, public; review Project results for 1999 and plans for 2000.
22 May	Arviat	review regional gold exploration program for 1999 with Hamlet Council and HTO.
23 May	Rankin Inlet	workshop with stakeholders from Rankin Inlet, Chesterfield Inlet and Kivalliq region plus relevant government agencies to review environmental study results of 1998 studies and plans for 1999
23 May	Chesterfield Inlet	KIA, CLARC, public; review Project results for 1999 and plans for 2000.
13 November	Rankin Inlet	Nunavut Mining Symposium public talk on the need for mine related training; Project update to symposium delegates.
<b>2001</b>		
10 April	Rankin Inlet	workshop with stakeholders from Rankin Inlet, Chesterfield Inlet and Kivalliq region plus relevant government agencies to review environmental study results of 2000 studies and plans for 2001; public meeting to review Project results for 2000 and plans for 2001.
<b>2002</b>		
7 January	Rankin Inlet	KIA, CLARC, public meeting to review 2001 work and project status;
8 January	Chesterfield Inlet	KIA, CLARC, public meeting to review 2001 work and project status
27 June	Rankin Inlet	KIA commercial lease signing
26 Nov.	Chesterfield Inlet	KIA, CLARC, public meeting to review 2002 work and project status

28 Nov.	Rankin Inlet	KIA, CLARC, public meeting to review 2001 work and project status including camp closure.
<b>2003</b>		
12 May	Rankin Inlet	KIA, CLARC, public meeting to review project status focusing on impending sale of project.
13 May	Chesterfield Inlet	KIA, CLARC, public meeting to review project status focusing on impending sale of project.
16 July	Rankin Inlet	teleconference from KIA between Rankin Inlet, Chesterfield Inlet, Denver (WMC), and Calgary (Comaplex) to announce and discuss Comaplex/WMC agreement on sale of WMC Canadian interests to Comaplex.
3 Nov.	Rankin Inlet	KIA, CLARC, public review of new directions of project under Comaplex control.
<b>2004</b>		
July 27	Rankin Inlet	brief KIA on status of the project.
October 21	Rankin Inlet	presentation on project status to KIA Board of Directors with a request for a proposal of motion to support a future road from Rankin to the Tiriganiaq deposit site.
October 21	Rankin Inlet	town hall public meeting presenting the results of the 2004 exploration program and the proposed plans for 2005.
<b>2005</b>		
June 3	Rankin Inlet	presenting the plans for the 2005 exploration program.
July 29	Rankin Inlet	present project update to the KIA.
<b>2006</b>		
July 30	Rankin Inlet	presentation to the Rankin Inlet town council on the project.
March 27	Rankin Inlet	town hall public meeting on the plans for the 2006 exploration program.
<b>2007</b>		
March 26	Chesterfield Inlet	presentation to the KIA Board of Directors on the proposed underground program and 2007 Meliadine West exploration plans. Verbal Motion of Support from the Board.
March 27	Rankin Inlet	presentation of the proposed 2007 Meliadine West exploration program to the Rankin Inlet CLARC.
March 28	Rankin Inlet	presentation of the proposed 2007 Meliadine West



exploration program to the Kivalliq Chamber of Commerce.

March 28	Rankin Inlet	town hall meeting - presentation of the proposed 2007 Meliadine West exploration program.
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Addition:

**2008**

March 26	Rankin Inlet	presentation to the KIA personnel and the Rankin Inlet CLARC on progress at Meliadine West.
March 27	Rankin Inlet	presentation of the Meliadine West project progress to the Kivalliq Chamber of Commerce at their AGM.
April 8	Iqaluit	Nunavut Mining Symposium; presentation to industry and all regulatory boards with project update.
April 10	camp	Kivalliq Outreach Program (Kevin Sanquine); 8 kids, 3 elders into camp by snowmobile for a visit.
July 8	Rankin Inlet	Presentation to the KIA on the project and discussion of KIA thinking on environmental and regulatory issues.
July 16	camp	Elders tour to the Meliadine West project site. People who attended were Moses Aliyak, Robert Tatty, Remi Nakokti, Paul Kanuyak, John Hickes. All were taken underground for a full tour.
August 25	Rankin	Meeting with KIA
August 26	camp	Underground tour for L. Manzo (KIA director), L. Kusugak (Rankin Inlet mayor), T. Manernaluk, H. Tatty.
August 28	Rankin	Town hall update meeting.
Sept 11	Rankin	meeting with the KIA

**2009**

Mar 30-Apr 30	Iqaluit	Nunavut Mining Symposium; presentation to industry and all regulatory boards with project update.
May 6-8	Rankin Inlet	MDAG: all regulatory groups in attendance.

		Present project and meet regulators.
May 21	Rankin Inlet	Town hall update meeting. 13 people.
June 17	Rankin Inlet	Presentation to the CLARC on the project. Attendees: Hamish Tatti, Celestino Mukpah, Jack Karitok, Jerome Tattuinee, Paul Kanayok.
June 17	Rankin Inlet	Meeting with EDC (Robert Connelly) and Nunavut Transport (Alan Johnson) regarding proposal to access federal infrastructure money for the Meliadine River bridge and Comaplex fund the road. Visit to the bridge site.
June 18	Rankin Inlet	Discussion with Rankin mayor John Hicks, the SAO, and several council member. Project update and proposed application for road and bridge funding.
Oct 3	Rankin Inlet	Presentation of the current project to the Social Economic Monitoring Committee.

### **Public Issues and Concerns**

The public meetings hosted by the Project have focused on the exploration program and a hypothetical mine that may be developed in due course. The issues below are a capsule of those that emerged in discussions during the community consultations from 1995 – 2009 regarding the overall Meliadine West Gold Project.

#### **HELICOPTER OVERFLIGHTS**

The effects of over flights on both people and wildlife were raised at the first meeting. Project managers responded with an operating guideline to be followed (weather conditions permitting) that advises pilots to avoid passing over cabins and tents and also to maintain specified altitude over areas occupied by wildlife. This has not been a perfect solution and ongoing reminders to pilots have been necessary. The subject continues to be raised informally indicating it to be an issue of ongoing public concern.

#### **WATER QUALITY**

The peculiar drainage configuration for Meliadine Lake was reviewed with the HTO and Elders' Committee who recognised that both major drainages in the Rankin could be at risk of contamination in the event of disaster or bad practice. The Project's environmental baseline studies established a data base line for a comprehensive water quality monitoring program; standard industry diamond drilling practice has been modified to remove all solids from drilling fluids before discharging these when drilling from lake ice platforms. In summer, sumps are developed to prevent drill cuttings from entering water bodies or water courses. These practises are a standard routine as prescribed in the Project Environmental Management System filed with KIA.

#### BUSINESS AND EMPLOYMENT OPPORTUNITIES

A recurring theme in discussion with leaders and elders was the need for employment for “our young people”. The Project has hired all unskilled help from the region and has provided on the job training as required. Long term labour force development will require a major upgrading and training effort in partnership with government.

#### FUEL SPILLS

Fuel management and threat of contamination to the environment is an ongoing public concern. The Project EMS implements a rigorous inspection routine of all fuel storage vessels including ULC approved double walled fuel vaults for bulk diesel and turbo fuel storage.

#### UNDERGROUND BLASTING EFFECTS ON LAKES AND FISH

This issue was raised in Chesterfield Inlet as a concern if mining were to go ahead. The physical effects of blasting on the surrounding rock and water at surface is controlled by the placement, sequence, and volume of explosive. This is planned to ensure that the maximum energy from the blast is released into the immediate area of the explosive and not into non-target areas as provided in usage guidelines for explosives. The effects of underground blasting on water bodies has not been a problem reported in the area of other operating mines; e.g. Giant and Con at Yellowknife and Lupin near Contwoyto Lake.

#### ARE THERE OPPORTUNITIES FOR WOMEN?

Both communities have a tremendous interest in the opportunities for employment in all aspects of Project work. The Project is an equal opportunity employer.

#### IS THERE EXPLORATION IN THE AREA OF PEOPLES' CAMPS?

To date there has been very little drilling in the immediate vicinity of existing cabins or camps. Efforts are made to review the work with the persons at the campsite to learn if the exploration schedule can be adjusted so that disturbance and inconvenience can be avoided.

#### WORK ROTATION

Time spent away from families is a concern for persons living at the camp for extended periods. While no rigid work rotation has been in place to date, rotations for local workers are flexible to meet both the work load and the individual needs of the employee. The preferred rotation for local employees is 20 days in and 10 days out. The hours accumulated in the 20 days includes considerable overtime and so provides more income than regular hours per month in many seasonal community based jobs in the region.

#### EFFECTS ON CARIBOU

Public concerns for wildlife are focused on caribou. Caribou are not regularly abundant in the area of the exploration program in any season. The Project initiated a program of satellite telemetry in which five collars were put on female caribou to learn the calving ground affinity of the caribou in the area during winter. Are they of the Qamanirjuaq herd or a herd north of Chesterfield Inlet? Telemetry data showed that the caribou overwintering in the area of the exploration program in 1997 / 98 were from at least two different calving areas - the Qamanirjuaq Lake calving ground to the southwest of Meliadine Lake, and a calving area north of Chesterfield Inlet. This cooperative program was officially suspended as of December 31, 2001.

In general, the Project has received support and encouragement for its work at Meliadine West from both Rankin Inlet and Chesterfield Inlet and has enjoyed a cooperative working relationship with the landlord, KIA.

In addition to the consultation meetings, annual Project Status Reports (in Inuktitut and English) have been prepared and provided at public meetings.

Comment:

The 2007-8 underground exploration and bulk sample program was very successful in advancing the project and was completed largely without incident or accident. In large part, the proposed underground program is a measure of the success achieved by Comaplex in its surface drilling programs. Underground sampling and exploration drilling of the Western Deeps portion of the Tiriganiaq gold deposit (as proposed) in conjunction with a Feasibility Study on the project (and ongoing permitting) is expected to advance the project to a production decision without delay. That is the goal of the proposed program.

The dominant question that seems to be raised at almost every community meeting is when the access road from Rankin Inlet to the site will be built. There is very strong support for such a road by locals, the HTA, and the community in general. It is well recognized that having the road built prior to a production decision would greatly benefit ongoing exploration of the property; however, due to the cost, Comaplex would not undertake to build the road for exploration purposes unless a positive result was obtained from the Feasibility Study.

Comaplex intends to continue with its community town hall style meetings and will be significantly expanding its work in this capacity in advance of its ongoing regulatory work and Environmental Impact Statement requirements. Golder Associates and Nanuk Enterprises have been contracted to begin community tours in each community in the Kivalliq area to collect socioeconomic and IQ information, with longer study periods in the hamlets of Rankin Inlet, Chesterfield Inlet, and Whale Cove.

### **Inuit Qaujimajatuqangit and Traditional Knowledge**

An Inuit Qaujimajatuqangit (IQ) study carried out in 1998 provided significant insight into the use of the Meliadine area by the Inuit. A Traditional Knowledge map was published at the time and has been distributed to the relevant authorities. Comaplex has continued to bring elders to the site (a group of Inuit elder miners were taken underground in 2008). Inuit Qaujimajatuqangit (IQ) provided by these elders is ongoing and has increased Comaplex's knowledge of the area. This knowledge includes heritage areas of importance (where development is to be avoided) and also areas where they have indicated that the site(s) is recent and of no significance. Elders have accompanied archaeologists on some of their surveys and provided interpretative input on the various heritage sites visited on the property. Inuit Qaujimajatuqangit has allowed the activities at the Meliadine site to be planned in such a way so as to avoid areas of importance to the Inuit.

## **4.0 DESCRIPTION OF THE EXISTING ENVIRONMENT**

### **Physical Environment**

## **Geology**

The Meliadine area is underlain by an Archean age package of rocks termed ‘greenstones’ in what is referred to as the Rankin Inlet Group. A major regional fault, the Pyke Fault, is present in the Meliadine area from Hudson Bay in the east to Peter Lake some 90 kms inland to the west. Iron rich rock (iron formation) and sediments are associated and deformed by the Pyke Fault and are associated with the presence of gold. Several gold bearing zones have been identified on the Meliadine property. The “ore” zone in this underground exploration program, the Tiriganiak Zone, is in a shear splay off of the Pyke Fault. This gold deposit includes a complicated series of mineralized sheets of varying thickness dipping north and plunging east and west. The minerals in these zones include both carbonate rock (basic) and sulphide (acidic) rock.

Archean ‘greenstone’ geological settings host many gold mining camps throughout Canada including Timmins, Rouyn-Noranda, and Yellowknife.

## **Climate**

The climate of the area is characterized by short cool summers and long cold winters. Brisk wind is a common feature in all seasons of the year. Precipitation is roughly divided evenly between rain during a short summer and fall (predominantly in late summer), and snow which can fall in any month but is most common between October and April. Surface waters are usually frozen by early October and remain frozen until early June. The land is usually snow free by late June. Historic climate data sets are available for Chesterfield Inlet, 80 km northeast of the camp and Rankin Inlet, 30 km south. The periods of record are 48 years and 16 respectively (AGRA, 1998).

An automatic weather station operated at the Meliadine West Gold Project camp from May 1997 through June 2002. It recorded data on the following climate parameters:

- air temperature;
- ground temperature at -5 cm;
- relative humidity;
- precipitation (summer only);
- wind speed and direction; and
- net radiation.

The climatic conditions recorded at the camp as well as those from the historic data sets for nearby communities are not significantly different from the conditions of gold mines operating now, or in the past, in arctic and sub arctic Canada (Cullaton Lake, Lupin, Giant, Con, Colomac).

## **Comment:**

Comaplex’s environmental consultant, Golder Associates, carried out confirmatory work in 2008-9. This work will be presented in the EIS document.

## **Terrain**

The terrain in the area of the Meliadine West Gold Project is of glacial and marine origins. Post glacial uplift is ongoing. The landscape is shaped by drumlinoid relief on a till plain (Aylsworth, et al, 1984). Low lying areas are poorly drained due to a low slope in the landscape generally with numerous shallow ponds and lakes connected by intermittent streams. Soils are generally sandy and silty clay with unsorted aggregate materials. All uplands are underlain by permafrost

of an undetermined thickness. The surface active layer of annual freeze / thaw is 1 - 2 meters thick depending on cover type. It is expected that a talik (permafrost absent) of considerable depth underlies Meliadine Lake. Similarly, taliks should be expected under all water bodies that do not freeze solid.

A sealed sensor cable for determining the annual soil temperature profile from the surface through the zone of permafrost was placed into ddh Mel98-195 in June 1998. Permafrost depth in the Meliadine West project area extends to -450 m with minimum temperatures of -8 to -9 deg. C at ~ -10 meters. Temperatures of the permafrost at depths below -10 m did not show seasonal amplitude.

Aerial photography necessary to prepare a digital terrain model (DTM) was flown in July 1997. Maps of the project area at a 1:5,000 scale with a 1 meter contour interval have been prepared.

#### Addition:

Twelve additional thermistors were installed by Golder Associates in 2009 in areas of proposed waste and ore pads, mill sites, and pit locations associated with proposed locations concerning a potential future mine site. These sites are currently being monitored.

Comaplex's environmental and geotechnical consultant, Golder Associates, carried out extensive work on ground thermal conditions and geomorphology during 2009. The results of this work are being compiled and reviewed and will be presented in the EIS.

#### **Hydrology**

The Meliadine Lake watershed covers 586 square kms (AGRA, 1998). The northeast basin of Meliadine Lake from which water for this underground exploration program and camp will be drawn is assumed (for planning purposes) to be isolated from the main lake in late winter due to ice thickness. The residual water volume of the basin below the ice (at 2 m thickness) has been calculated to be 63.66 million cubic meters (RL&L Ltd., 1998).

The hydrometric study at Meliadine West set up water level and flow monitoring stations to document the annual hydrologic regime in the project area. Results of the four year study (1997 - 2000) include both "dry" and "wet" years and show the expected precipitation and run off patterns that is typical for tundra watersheds. One unusual feature of the overall Meliadine watershed is that Meliadine Lake has two outlets, the Meliadine River carries about 80% of the flow, and an outlet to Peter Lake on the Diana River takes the balance (AGRA, 1998). The domestic water supply of Rankin Inlet is not situated on either of these two major watersheds. The water balance study on the Meliadine system showed the long-term average annual precipitation at Rankin Inlet was 297 mm. In a hydrologic year of historic low precipitation (172 mm in 1996-97) the yield was 78 mm or 45%; whereas in a hydrologic year with historic high precipitation (385 mm in 1998-99), the yield was 239 mm for 62%. The water balance study included monitoring an evaporation pan set up for the summer period. In general, it showed that summer evaporation was roughly equivalent to summer precipitation with little if any net input from summer rain. The net input to the annual water balance of the Meliadine River watershed comes from spring run off which recharges the lakes and ponds in the sub-basins above Meliadine Lake. The streams draining these water bodies usually run dry after the spring run off, but before the late summer rains.

Comment:

Comaplex's environmental and geotechnical consultant, Golder Associates, carried out extensive work on site hydrology during 2009. Additional study is proposed for 2010. The results of this work are being compiled and reviewed and will be presented in the EIS.

## **Aquatic Environments**

### **Water Quality**

The Meliadine River watershed has to date not hosted ongoing commercial or industrial activity. The water quality should therefore be close to its pristine condition. Aquatic environment studies for the Meliadine West Gold Project have established a comprehensive baseline on water quality conditions in the Project area. Parameters for analyses included metals, simple hydrocarbons, and levels of exotic airborne pollutants deposited by long range atmospheric transport. Analytical data includes water samples from winter, spring, and summer collections. The sampling network established includes a "control" area outside the basins under active exploration.

Sediment quality samples were collected from naturally occurring sediment traps: the deepest locations in Meliadine Lake downstream of the outfall of the streams draining the sub-basin hosting the Tiriganiaq Zone as shown by bathymetric mapping. Marine sediments were also collected in Prairie Bay beyond the mouth of Meliadine River.

The analytical results of all water and sediment sample testing are reported in appendices to the yearly data reports received. Water quality results were assessed against values published by Health Canada (1993) for drinking water, and the Canadian Council of Ministers for the Environment (CCME, 1999) for the protection of aquatic life. Values that did not meet the standard of the published guidelines are indicated in the data sets submitted by R.L. & L. in 1998, 1999, 2000, and 2001. Elevated values for cadmium, copper, iron, lead, manganese, and zinc in pre- development baseline conditions at some water quality sampling sites were observed.

Amendment:

Comaplex has been closely monitoring and reporting the results of water analyses from samples taken within and around the area of the portal over the last two years. These reports have been submitted to the Kivalliq Inuit Association on a regular basis, and to the NWB on a monthly basis. The results are to be included in the annual report to be submitted to the NWB before the end of March.

### **Fish**

Fish populations were studied in Meliadine Lake, Meliadine River and many ponds and lakes above Meliadine Lake. Nine fish species were identified: lake trout, Arctic char, round whitefish, Arctic grayling, cisco, three- and ninespine stickleback, burbot and sculpin. Seasonal distribution of fish was studied by deploying fyke nets which allowed live capture and release of tagged fish. Radio telemetry was also used to monitor the distribution of lake trout and char. Arctic char and lake trout are important resources for the local domestic fishery. A significant stratification of species was noted between Meliadine Lake and the water bodies above it. The distribution of lake trout (all cohorts) was generally restricted to Meliadine Lake with occasional individuals captured in the first water body above Meliadine Lake. Round whitefish, like trout, were generally restricted to Meliadine Lake. The remaining species, with the exception of Arctic



char, were generally found throughout the basins above Meliadine Lake.

Arctic char are anadromous and their distribution and movements were documented by live capture and tagging with both floy tags and telemetry radios. Like lake trout, they were rarely found beyond the first lake above Meliadine. One of the lakes above Meliadine (D1) may be extra-ordinary summer habitat in that non migratory char seemed to congregate there (and not in other similarly situated lakes) in the summer prior to their spawning. The overall significance of this to the Meliadine char population remains to be determined.

A fish fence was set up near the mouth of the Meliadine River in 1997, 1998 and 1999 to capture, measure and tag char returning from the ocean. A reward program offering \$5 per floy tag and \$25 per telemetry radio was established to provide local incentive to return tags collected from fish harvested. This program was initiated in the fall of 1997 and was terminated at the end of December 2001. A total of 2543 char were tagged; more than 850 tags were recovered from local fishers and 656 tagged char were recaptured either at the Meliadine fish fence or by net during the normal course of the study. The distribution of char as shown by telemetry data suggest that char may spawn at numerous locations in Meliadine Lake. Also, telemetry data show that the migration of char from Meliadine Lake to Hudson Bay is via both Meliadine River and Peter Lake / Diana River.

Fish population studies also included developing a baseline on fish tissue quality. Samples of char and lake trout were collected to assay metal and organic contaminant levels. Due to lake trout longevity, a data set for lake trout tissue quality was also taken from Parallel Lake that is intended to serve as a “control”. All fish population data were reported in yearly data reports by R.L. & L. Ltd in 1998, 1999, 2000 and 2001. No “species at risk” was found in the fish studies in the Project area.

Comment:

Comaplex’s environmental consultant, Golder Associates, carried out work on fish populations during 2009. The results of this work are being compiled and reviewed and will be reported in the EIS.

**Fish Habitat**

Fish habitat studies focused on physical and biological parameters of the lakes and streams in the Project area. Physical parameter studies documented the shorelines and stream habitats that may be at risk of alteration during the construction and operations of a gold mine. These investigations included preliminary examination of water crossings that would be required by an all-weather road from Rankin Inlet to a conceptual mine site near Bud Lake. The bathymetric profiles mapped numerous lakes and ponds including parts of Meliadine Lake. Biological parameter studies documented winter oxygen levels in several ponds and lakes as well as the relative abundance of primary and secondary producers in the aquatic ecosystem of the Project area. Although winter oxygen levels in the lakes above Meliadine were very low, several species of fish were found to overwinter there, including Arctic Grayling. The diversity of primary and secondary producers found was typical for sub-arctic aquatic systems. As a cost saving measure, not all the samples of benthic invertebrates collected were analyzed and reported; 136 preserved benthos samples remain in secure storage with R.L. & L. Ltd. in Edmonton (now a division of Golder Associates Ltd.).

Comment:

Comaplex's environmental consultant, Golder Associates, carried out work on fish habitat during 2009. Discussions with DFO and other regulatory groups as part of the preparations for the EIS are ongoing. The results of this work are being compiled and reviewed and will be reported on in the EIS.

## **Terrestrial Environments**

### **Vegetation and wildlife habitat**

Vegetation studies were conducted in 1998 by Page Burt of Rankin Inlet. A comprehensive list of plant species and a description of their habitats was prepared including a map of habitats over the exploration area (Burt, 1999). The dominant factor shaping the distribution of habitat types seems to be the amount of moisture available, with wetter areas having much more vegetation and the ridge tops the least. The greatest species diversity was documented in the transition zone between the wet meadows and well drained communities on drumlin slopes.

No plant species at risk of extinction were found in the Project area. No critical habitat for any local wildlife species has been identified in the course of completed baseline studies in the project area. No critical wildlife habitat was identified by the Nunavut Planning Commission in its preparation of the Keewatin Regional Land Use Plan (NPC 2000). Also, there are no known caribou calving grounds in the general area that will be affected by the proposed underground exploration project. With the exception of the immediate area of the portal and camp there will be no risk of wildlife habitat disturbance.

All of these areas except the waste rock dumps can be re-vegetated with local plants by the careful application of peat and fertilizer to disturbed sites with a suitable soil base. It will be many years for the areas built up with rock and natural aggregate to become vegetated.

Comment:

Comaplex's environmental consultant, Golder Associates, carried out extensive work on vegetation and wildlife habitat during 2009. The results of this work are being compiled and reviewed and reported on in the EIS.

### **Wildlife**

The area of the project is within the ranges of 40 bird species (Godfrey, 1966) and 17 mammal species (Banfield, 1977). The wildlife species inventory of the region was developed from published compendia of birds and mammals and from the field observations of the staff of the project as recorded in the camp wildlife log.

Wildlife studies on the caribou herds using the Project area were initiated in the fall of 1997 when the Project collaborated with the Wildlife Service of the then Government of the Northwest Territories in the deployment of satellite telemetry collars on female caribou. Systematic studies of wildlife generally in the Project area started in the spring of 1998 when Arc Wildlife Services Ltd. of Calgary began systematic studies of bird and mammal studies in the area. These studies continued through the summer of 2000. Annual data reports were submitted for 1998, 1999 and 2000 (Jalkotzy 1999, 2000a, 2000b).

The normal assemblage of bird and mammal species expected for sub-arctic tundra ecosystems was found. The most common of the large birds like sand hill cranes, loons, and tundra swans were studied in more detail than other water fowl and passerines. Swans exhibit traditional nest site selection habits. Raptors (rough-legged hawks and peregrine falcons) were noted but no nests were located within the active exploration area of the Project. Mammals present include lemming, ground squirrel, red fox, and caribou. Aerial surveys combined with telemetry data showed the Project area is marginal to the overall range of two caribou herds. Portions of the Qaminirjuaq herd may pass through the Project area very quickly in summer, but linger in some years from late October through March. It is at this time of year that most caribou harvesting by Rankin Inlet hunters is done. Telemetry data also showed that the caribou present in the fall of 1997 included females that traveled north of Chesterfield Inlet for calving in the spring of 1998 and so may belong to the herd(s) calving in the Lorillard River / Wager Bay area.

Comment:

Comaplex's environmental consultant, Golder Associates, carried out work on wildlife during 2009. The results of this work are being compiled and reviewed.

#### **4.0: IDENTIFICATION OF IMPACTS**

**Table 1: Identification of Environmental Impacts**

#### **IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION MEASURES**

Tables 1 and 2 follow.

**THE NUNAVUT IMPACT REVIEW BOARD**  
**PROJECT SPECIFIC INFORMATION REQUIREMENT - PART 2 FORM**  
**TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS**

[illegible][illegible]

**P** Positive

**N**     *Negative*

**M** *Negative and mitigatable*

**U** Unknown

*If no impact is ex*

Nunavut Impact Review Board					
Screening Part 2 Forms					
Table 2 - Mitigation and Monitoring					
Impacts (Identified in Table 1)	Proposed Mitigation Measure	Implementation Schedule	Residual Impacts	Proposed Monitoring Schedule	Reporting Schedule
Ground Stability	Accepted u/g mining techniques used	Begins with u/g activity and continues throughout activity	none	Constantly monitored while mining	Report to WSCC as required.
Permafrost	Accepted u/g mining & pad construction techniques used	Begins with u/g activity and continues throughout activity	none	Constantly monitored while mining	
Water Quality	Containment	Ongoing	none	Monitor before discharge & monthly	Monthly NWB, KIA & NIRB.
Air Quality	Keep equipment in good working order, proper ventilation & use brine to control dust.	Begins with u/g activity and continues throughout activity. Install ventilation raise	none	Regular testing of air u/g	Report to WSCC as required.
Noise Levels	Eventual shutting of camp. Keep generators shielded for noise reduction.	Camp will close upon building of mine	none	none	none
Vegetation	Vegetation will re-establish on removal of camp, & on pads following completion of mining.	Reclaim camp area when mine infrastructure is built	none	Monitor success once camp is removed	Decided with authorizing agencies. To be set out in approved Reclamation & Closure Plan
Wildlife	Management of food wastes through incineration. Wildlife has right-of- way on roads.	Ongoing	none	Wildlife Monitoring Program to be designed as part of draft EIS	Summer time

Employment	Encourage the enhancement of job skills in exploration & possibly underground mining	Initiate on-the-job training upon hiring	Job skills are transferable to other sectors	Expenditures on services and wages are tracked by Comaplex	Annual reporting to Kivalliq socio-economic committee
Community wellness	Preferential hiring of community members	On going	More skilled workers in the community	Not applicable	Not applicable

### **Discuss the impacts identified in the above table.**

#### **Camp Operations**

This camp has operated every year since 1997.

The potential impacts on water quality, vegetation and terrain have been successfully mitigated by the following measures;

- sewage is avoided by the use of Pacto toilets and the incineration of waste;
- grey water passes through a sump before it seeps into a meadow;
- camp kitchen wastes are incinerated to avoid attracting scavenging wildlife.

#### **Amendment:**

In 2009, Comaplex brought in and installed a waste water treatment plant and wash car for the Meliadine Lake camp. It is scheduled to be commissioned in 2010. A larger and improved wetlands area is to be used in conjunction with the new waste water system. A new incinerator has been brought into the camp since the 2007-8 underground program and has been in use for over a year.

#### **Re-supply**

Re-supply of bulk supplies like fuel occurs in the late fall and winter when the ground is frozen and snow covered with no significant effects on terrain and vegetation.

Transport of personnel and provisions occurs by air (helicopter) in summer or bombardier in winter. Helicopter pilots are instructed to avoid cabins and wildlife to mitigate potential effects and disturbance.

#### **Portal and Underground Mining**

Excavating the ramp and portal and mining underground will use standard drill, blast, load and haul methods resulting in construction of pads and storage piles. Approximately 3.6 ha of tundra will be covered by excavation and mined materials. There is a risk of blast residue (ammonium nitrate) and dissolved metals from rock entering runoff from these piles. Runoff water quality will be monitored. Elevated levels of ammonium nitrate (a form of fertilizer) and/or metals in runoff will be mitigated by controlling runoff by placing Aquadams in the downstream watercourse below the pads and waste piles and pumping the accumulated water onto adjacent uplands by way of spray irrigation.

The effects of blasting will be mitigated by abiding by all rules and regulations that apply as well as ensuring that no wildlife are at risk of disturbance or injury from fly rock at the time of a blast.

#### **Assembling Bulk Sample**

Assembling the bulk sample will involve crushing the mineralized rock and taking numerous samples of crushed rock. Dust will be suppressed by moisture in the rock from mining; additional moisture can be added to control excessive dust. Noise suppression protective devices will be used by workers as necessary.

#### **Decommissioning**



The site will closed and abandoned only in the event that the Project does not meet economic feasibility standards. No incremental environmental effects will be incurred from closure activities.

#### **4.3 Discuss potential socioeconomic impacts, including human health.**

### **WORKFORCE AND HUMAN RESOURCES / SOCIOECONOMIC IMPACTS**

#### **Interactions with the local/regional social and economic environment**

Comaplex is aware of the challenging social setting in which many local employees live. The wages paid to local workers by the project have contributed both positively and negatively to the quality of life of the employees, their dependants, and extended families. A very important overall objective for the project is to make a significant positive contribution to the quality of life for as many persons in Kivalliq communities as is possible by conducting cost effective and sustainable mineral exploration programs.

Employees that undermine that objective with substance abuse will be encouraged to modify their behaviour or risk disciplinary action, including termination of employment. The exploration camp itself operates on a zero tolerance policy for alcoholic beverages and non-prescription drugs on site. The same will apply to the underground exploration project and to all the personnel of contractors working at Meliadine.

#### **Project Labour Needs**

The underground exploration program extension will be contracted to a company specialized in underground exploration and mining practices, much like the original 2007-8 program. This contract was awarded by way of a competitive bidding process. The proposed underground exploration project will apply the same criteria to the new mining contractor that it has previously and with other contractors involved on the project with respect to employment for local residents and the supply of goods and services by local businesses. Comaplex has a long and successful history of employing local residents and this will continue, having regard to the skill levels required for the safe and efficient completion of the work.

The list presented in Section 49 of this application outlines the expected labour force requirements for the proposed project. Labour needs may vary over the course of the project.

Of the underground workforce, approximately 30 would be working on-site at any one time, with the remainder out on their time off. Combined with surface, camp services, and the surface exploration, the project will have anywhere from 50 to 80 workers on site on an ongoing basis.

The initial site remobilization and reconstruction period will be carried out on a single shift 12 hour per day schedule, 7 days per week. When the project reaches full underground operation, the project will work 2 shifts per day, 7 days per week. The actual shift plan and rotation will be determined by Comaplex having regard to health and safety legislation, points of hire, crew availability and similar considerations. Crews may rotate as complete crews or as individuals. A typical rotation would be a three-crew, two-shift rotation of 4 weeks on, 2 weeks off.

The tender document for the underground mining contract requires that the successful tenderer will use best efforts to reach a mutual benefit agreement with the local workforce and businesses and will give priority to local job applicants to the extent possible. In the interests of safety, the majority of the workforce will have to be made up of experienced underground miners; even with training, the experience needed to work safely underground is acquired over a period of years, substantially longer than the planned duration of the underground exploration program.

### **Goods and services**

The goods and services to be supplied by local suppliers for the underground exploration camp and project is expected to be similar to that of the project's exploration program to date. The successful tender will give priority to local suppliers of goods and services to the extent possible. Local goods and services that will be required include:

- Earthmoving materials and services
- Transportation of equipment into and out of the site
- Camp structures and building materials, installation services.
- 7,600,000 litres of diesel fuel,
- 150,000 litres of aviation fuel.
- Personnel transport on rotation.
- Groceries and supplies for a 50 - 80 person camp

The table below shows the participation by local persons in the Meliadine West Gold Project work force and the Project's dollar value contribution to the regional economy since 1995.

With respect to community wellness generally, this exploration project represents a significant step toward assessing the feasibility of a long term employer for the community of Rankin Inlet. The Project could, therefore, be a positive development that could contribute to community wellness over the intermediate to longer term. For the proposed underground exploration and bulk sample program extension, there are no human health issues related to this Project that go beyond workplace health and safety issues.

### **Camp Operations**

Camp operations have provided employment for local residents as shown in the table showing historic economic benefits to the Kivalliq region by the Meliadine West Gold Project. This level of participation by residents of Rankin Inlet is expected to continue and could increase.

### **Re-supply**

Winter re-supply and overland transport is contracted to local firms for significant dollar inputs to the local economy.

### **Portal and Underground Mining**

Local manpower will be recruited to the maximum extent possible.

### **Assembling Bulk Sample**

Local manpower will be recruited to the maximum extent possible.

### **Decommissioning**

The site will closed and abandoned only in the event that the Project does not meet economic

feasibility standards. If decommissioning is undertaken, it will be done by a local contractor.

**Expenditures in the Kivalliq Region by the Meliadine West Gold Project: 1995 to 2006**

<b><u>Activity</u></b>	<b><u>2006</u></b>	<b><u>2005</u></b>	<b><u>2004</u></b>	<b><u>2003</u></b>	<b><u>2002</u></b>	<b><u>2001</u></b>	<b><u>2000</u></b>	<b><u>1999</u></b>	<b><u>1998</u></b>	<b><u>1997</u></b>	<b><u>1996</u></b>	<b><u>1995</u></b>
local people employed	9	11	11	14	8	12	27	26	45	30	21	6
wages	\$108,360	\$122,980	\$181,263	\$130,615	\$76,941	\$236,406	\$268,256	\$233,303	\$386,265	\$205,000	\$80,000	\$40,000
freight / expediting	\$232,323	\$130,065	\$164,815	\$150,088	\$66,839	\$176,349	\$270,215	\$152,533	\$476,744	\$385,200	\$183,000	\$42,000
fuel	\$343,930	\$235,760	\$253,000	\$62,643	\$9,391	\$184,094	\$31,847	\$81,080	\$647,107	\$27,000	\$120,000	\$80,000
equipment / supplies	\$23,700	\$12,831	\$11,000	\$1,203	\$2,328	\$15,153	\$55,740	\$5,609	\$77,484	\$150,000	\$10,000	\$10,000
food / lodging	\$142,000	\$119,500	\$23,312	\$18,781	\$8,850	\$77,582	\$104,302	\$128,388	\$280,366	\$263,000	\$100,000	\$43,000
construction	\$141,900	\$22,410	\$8,503	\$57,494	\$0	\$45,041	\$51,088	\$29,778	\$82,045	\$0	\$57,000	\$10,000
drilling	\$1,500	\$51,129	\$74,182	\$45,589	\$0	\$0	\$17,913	\$86,456	\$150,836	\$160,000	\$0	\$0
community/gov	\$93,298	\$97,226	\$63,680	\$97,719	\$208,254	\$90,259	\$384,597	\$69,303	\$229,948	\$42,000	\$0	\$0
environment	\$8,800	\$0	\$8,500	\$2,150	\$0	\$0	\$0	\$16,806	\$16,650	\$0	\$0	\$0
other (air, etc)	\$47,945	\$95,315	\$24,400	\$10,116	\$2,944	\$13,180	\$18,573	\$25,732	\$30,680	\$0	\$0	\$0
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<b>Total (Kivalliq)</b>	\$1,143,756	\$887,216	\$812,655	\$576,398	\$375,547	\$838,064	\$1,202,531	\$828,988	\$2,378,125	\$1,232,200	\$550,000	\$225,000
% local of total	17	17	25	18	8	13	15	12	17	11	11	12
<b>Total (Program)</b>	\$6,739,004	\$5,167,550	\$3,300,027	\$3,150,493	\$4,778,824	\$6,302,757	\$7,854,865	\$7,207,958	\$14,402,262	\$10,887,000	\$5,063,000	\$1,907,000
<b>Cumulative (Kivalliq)</b>	\$11,050,480	\$9,906,724	\$9,019,508	\$8,206,853	\$7,630,455	\$7,254,908	\$6,416,844	\$5,214,313	\$4,385,325	\$2,007,200	\$775,000	\$225,000
<b>Cumulative (Program)</b>	\$76,760,740	\$70,021,736	\$64,854,186	\$61,554,159	\$58,403,666	\$53,624,842	\$47,322,085	\$39,467,220	\$32,259,262	\$17,857,000	\$6,970,000	\$1,907,000

### Amendment:

The following table outlines recent work completed on the Meliadine West gold project to the end of September 2009.

### Expenditures on the Meliadine West Gold Project from 1995-2009:

Activity	2009*	2008	2007	2006	2005	2004	2003	1995-2002 (WMC)
locals employed	13	18	16	9	11	11	14	
wages	\$245,479	\$421,011	\$292,784	\$108,360	\$122,980	\$181,263	\$130,615	\$1,526,171
freight/expediting	\$589,714	\$1,815,173	\$472,979	\$232,323	\$130,065	\$164,815	\$150,088	\$1,752,880
fuel	\$272,351	\$731,472	\$1,240,057	\$343,930	\$235,760	\$253,000	\$62,643	\$1,180,519
equipment/supplies	\$47,131	\$89,574	\$86,109	\$23,700	\$12,831	\$11,000	\$1,203	\$326,314
food / lodging	\$168,078	\$467,913	\$337,815	\$142,000	\$119,500	\$23,312	\$18,781	\$1,005,488
construction	\$250,677	\$2,271,372	\$1,055,853	\$141,900	\$22,410	\$8,503	\$57,494	\$274,952
drilling	\$50,000	\$0	\$79,634	\$1,500	\$51,129	\$74,182	\$45,589	\$415,205
community/gov	\$19,447	\$19,664	\$30,623	\$93,298	\$97,226	\$63,680	\$97,719	\$1,024,361
environment	\$32,834	\$83,904	\$0	\$8,800	\$0	\$8,500	\$2,150	\$33,456
other (air, etc)	\$155,020	\$262,061	\$391,084	\$47,945	\$95,315	\$24,400	\$10,116	\$91,109
<b>Total (Kivalliq)</b>	<b>\$1,830,729</b>	<b>\$6,162,145</b>	<b>\$3,986,938</b>	<b>\$1,143,756</b>	<b>\$887,216</b>	<b>\$812,655</b>	<b>\$576,398</b>	<b>\$7,630,455</b>
% local of total	19%	20%	22%	17%	17%	25%	18%	13%
<b>Total (Project)</b>	<b>\$9,826,850</b>	<b>\$30,090,272</b>	<b>\$18,218,864</b>	<b>\$6,739,004</b>	<b>\$5,167,550</b>	<b>\$3,300,027</b>	<b>\$3,150,493</b>	<b>\$58,403,666</b>
<b>Cumulative (Kivalliq)</b>	<b>\$23,030,293</b>	<b>\$21,199,564</b>	<b>\$15,037,418</b>	<b>\$11,050,480</b>	<b>\$9,906,724</b>	<b>\$9,019,508</b>	<b>\$8,206,853</b>	<b>\$7,630,455</b>
<b>Cumulative (Project)</b>	<b>\$134,896,726</b>	<b>\$125,069,876</b>	<b>\$94,979,604</b>	<b>\$76,760,740</b>	<b>\$70,021,736</b>	<b>\$64,854,186</b>	<b>\$61,554,159</b>	<b>\$58,403,666</b>

\* - Expenditures to end of September 2009

#### **4.4 Discuss potential for trans-boundary effects related to the project.**

There are no potential trans-boundary effects associated with this proposed underground exploration and bulk sample project.

#### **4.5 Identify any potentially adverse effects of the project proposal on species listed under the Species at Risk Act (SARA) and their critical habitats or residences, what measures will be taken to avoid or lessen those effects and how the effects will be monitored.**

The Project is located in a region of Nunavut for which no Schedule 1 and 2 species have been identified (as shown by the SARA website on April 30, 2007). Two bird species on Schedule 3, the Tundra Peregrine and Short-eared Owl occur in the region but neither have been observed to nest in the Project area (within 2 km).

### **5.0 POTENTIAL INTERACTIONS WITH THE ENVIRONMENT – MITIGATION OF IMPACTS**

This project is an advanced exploration program and as such will keep the longer term physical effects to as small an area as possible. Potential interactions between the underground exploration project proposed and the environment in the project area will be reviewed in the sequence and issues developed in the section on the Description of the Existing Environment.

#### **Physical Environment**

The sequence and schedule of the project is season dependant in that the project site does not have all season overland access. Mobilizing heavy equipment and bulk materials can be done only under winter conditions when terrain conditions allow overland transport.

### **Air**

The mining contractor will be encouraged to operate and maintain engines, especially power generators, in accordance with manufacturer's specifications.

### **Water / Hydrology**

The waste rock excavated from the decline has a low potential for acid generation. As well, the glacial till in the area has a high neutralization potential. Tests show that ore and some of the thin argillite bands occasionally associated with the ore in storage at surface have potential for acid generation. Waters from the ore pad will be monitored for contaminants and if required, will be treated (Aquadam restriction, collection, and aeration) before release. No residual impacts on the natural water bodies and water courses in the project area are expected.

#### Amendment:

The extended underground exploration decline program is designed to take advantage of the existing primary containment area and the Lake A54 catchment basin (Peanut Lake drainage) that was used in the original 2007-8 program. This system worked very well. A rigorous water sampling program is ongoing and will be continued through the term of the proposed program. Reporting has been made on a regular basis to all authorizing agencies.

The proposed 2011 underground exploration project will be sited in the upper reaches of the same local drainage basin used in the previous program. All ponds adjacent to the proposed portal area are shallow and freeze to bottom in winter. The potable water source for the camp will continue to be Meliadine Lake. The proposed underground program will use the pump shack and water line installed on Lake A8 (Pump Lake) in 2007.

### **Fish**

No direct interaction with fish and fish habitat is required by the project and no residual impacts are expected.

#### **Fish Habitat**

No direct interactions by the underground exploration program and related support activities with fish habitat are required or expected. The water intake on Meliadine Lake is screened. There will be no waste water discharged directly into fish habitat.

### **Terrain**

The primary interaction between the proposed program and the terrain in the area will be the disturbance required to establish a portal (the opening of the ground surface to enter the underground workings) and to store the rock that comes up from underground exploration. A total of 3.6 ha of terrain will be covered with natural aggregate and development rock.

Preliminary estimates of the area of incremental disturbance are as follows:

Ramp and layback area	0.3 ha
Top soil pad	0.06 ha

Waste rock pad	0.54 ha
Till / Overburden pad	0.53 ha
Explosives storage	0.5 ha
Maintenance shop pad	0.37 ha
“Ore” pad	<u>1.2 ha</u>
<b>Total area of new disturbance</b>	<b>3.6 ha</b>

All altered surfaces will be contoured and sloped to reduce the opportunity for natural erosion to the maximum extent possible.

#### Amendment:

The extension of the underground program at Meliadine is planned to have minimal disturbance to the terrain beyond the effects of the 2007-8 underground programme. The proposed program will use the existing site facilities and portal. Runoff and surface drainage through the active layer will be intercepted to prevent runoff flowing down the ramp and decline. Any water entering the portal will be pumped out from a sump at the bottom of the portal ramp to containment at surface.

Waste rock will be layered into a low-profile disposal area measuring roughly 120 metres x 250 metres extending from the existing waste rock pad (within the existing area of primary containment). Additional waste rock will be stockpiled on this pad. Mineralized rock will undergo the same processing procedures used in the initial program and will be stored on the waste rock pad behind containment.

Potential sources of contaminants include:

- leachate from waste rock;
- ARD and metal leaching from ore rock in storage on the waste rock pad;
- ammonium and nitrate residues from underground explosive use.

#### **New Disturbance**

Waste storage area	3.2 ha
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Minor upgrading of the roads and pad areas presently used for the operation will be done as required. It is estimated that a total of 3.2 ha. of additional terrain will be covered by waste rock from the proposed program.

#### **Soil**

All earth works will be designed to avoid contributing to surface erosion. No residual impacts on soil, other than the disturbance in the immediate area of the portal and quarry (s) are expected.

All combustible waste will be incinerated with the residue deposited in the municipal dump at Rankin Inlet. Non-combustible waste will be placed in the municipal dump at Rankin Inlet.

Contaminated soils will be handled in consultation with the KIA at the time of closure and abandonment by disposal underground, treatment, or removal.



Amendment:

The proposed underground exploration extension will use the existing portal for underground access. As such, there will be next to no digging of till/soil other than a very small area approximately 10m x 10m in size in the area of the vent raise. This soil will be moved to the area of till immediately east of the portal and monitored as required.

**Vegetation**

No residual impacts on vegetation other than the disturbance in the immediate area of the portal and associated surface developments are expected. Habitats affected are well drained transition communities midway between dry ridge and wet meadow. No declared plant “species at risk” are known for the project area.

**Wildlife**

No ongoing interaction with wildlife and wildlife habitat is required by the project and so no residual impacts are expected. Hunting by staff while at the site will not be allowed.

Amendment:

To date, there have been no significant or residual impacts on wildlife resulting from the Meliadine project. The primary risk of interaction between the proposed underground exploration project and wildlife species will be at the site or along the re-supply routes. The re-supply routes will be active only in the late fall and winter. In summer, activity will be confined to the project site plus helicopter traffic between the site and Rankin Inlet. Wildlife will always have the “right of way” as the principal mitigation measure to avoid and prevent project related mortality due to surface traffic. Helicopter over flights will continue to be configured to reduce disturbance to people and wildlife to the maximum extent possible.

**Summary - Environmental Effects**

1. The environmental effects of the proposed underground exploration and bulk sample program will not significantly alter the carrying capacity of fish and wildlife habitat. It will however, create terrain disturbance that will be observable for a long time. Habitat disturbance will be mitigated to the extent practicable. The project's specific Abandonment and Reclamation measures developed in consultation with KIA will be in effect.
2. There will be no waste water discharges into fish habitat.
2. There will be no direct effects on fish populations.
3. Known mitigation practices in discouraging scavengers that have been successfully applied to date will continue.
4. The most effective mitigation measure for managing environmental effects of mobile equipment on caribou and wildlife generally is to ensure that the "wildlife has the right of way" policy is rigorously practised to avoid vehicle collision injuries and road kills.

**6.0 CUMULATIVE EFFECTS**

No sustained industrial or commercial activity has been conducted on the Meliadine River drainage in the past; therefore, no environmental effects of past activities are evident. Some of the effects of diamond drilling conducted during the course of the historic exploration program can be observed on the aerial photographs. Many of these drill sites have already re-vegetated,

while the others will be re-vegetated over time and so fade as observable effects of surface mineral exploration over the next 5 - 10 years.

A comprehensive environmental assessment and environmental monitoring plan will accompany a project application in the event that commercial feasibility is demonstrated. It will have the benefit of completed environmental baseline studies and so be able to address the subject of cumulative effects in a comprehensive and systematic manner.

A successful underground exploration program that confirms continuous and consistent gold mineralization in the Tiriganiaq zone at Meliadine West will be a significant milestone in determining the overall technical and commercial feasibility of a gold mine here. An active gold mine would require related infrastructure and services that will be incremental to existing current facilities including:

- a multi-million litre fuel oil tank farm at Rankin Inlet;
- an all season road from Rankin Inlet to Meliadine West;
- an active mine and mill operation at Meliadine West;
- secure and permanent mine waste storage.

If a comprehensive feasibility study shows that a gold mine at Meliadine West can be technically and commercially feasible the potential environmental effects of these facilities and related activities will be reviewed as required by the NLCA.

Amendment:

The purpose of the proposed extension of the underground exploration program is to confirm the results of the surface drilling into what is a structurally complex part of the Tiriganiaq deposit. The part of the deposit being accessed in the new program is significantly below the level of work completed in the first program and confirmation of the gold mineralization in the Western Deeps is critical to the feasibility of the deposit to carry an economic gold mine.

## **7.0 SUPPORTING DOCUMENTS**

### **Abandonment and Decommissioning Plan**

If on completion on a feasibility study it is found that the Meliadine West Gold Project is not commercially feasible, the camp and site will be decommissioned, reclaimed and abandoned.

Final abandonment plans will be developed with KIA that are based on the following conceptual closure plan:

- everything with salvage value will be removed from the site;
- all combustible materials with no salvage value will be burned and the residue removed to the Rankin Inlet dump;
- all non-combustible waste and scrap will be removed to the Rankin Inlet dump;
- all waste rock piles will be contoured to complement the natural features of the landscape;
- all rock with long term risk of acid generation and / or hazardous metal leachate release will be returned underground;

- all disturbed areas with a suitable substrate for revegetation will be reclaimed with the aid of peat and fertilizer;
- contaminated soils will be removed or treated;
- the portal will be permanently closed and sealed to prevent ongoing slumping of ramp fill down the decline. This would probably be done by backfilling the portal with waste rock. This will be followed by returning the spoil from the layback area around the ramp to the exposed till slope of the ramp above bedrock.

It is unlikely that the entire ramp will be backfilled and so over time the remaining depression will fill with water from surface runoff.

Details on the reclamation of the camp are covered in the existing documentation concerning the surface exploration of the camp.

### **Existing Site Photos with Descriptions**



Existing camp



Portal site powerhouse



Portal site brine mixing plant



Portal site at completion of the 2007-8 program. Contractor's site and portal in background left. Bulk sampling plant in foreground right.

### **Emergency Response and Spill Contingency Plan**

All work done to date have been completed in accordance with the Meliadine West Gold Project Environmental Management Plan on file with the Kivalliq Inuit Association (Appendix 3 on the CD version of this application). Likewise, the Meliadine West Gold Project Fuel Transport Contingency Plan is on file with the Kivalliq Inuit Association (Appendix 4 on the CD version of this application). No other hazardous goods are expected to be used other than explosives which will be handled in compliance with relevant laws, permits and licences issued to the respective contractor. All contingency plans will be filed with KIA on receipt from the contractor.

### **Amendment:**

An updated Emergency Response and Spill Contingency Plan will be prepared and form part of the plan prior to the commencement of work on the decline. All existing plans relevant to the amendment are attached on the accompanying CD.

The plans included are:

- (1) Abandonment and Restoration, Meliadine West Gold Project Camp and Underground Exploration Area, September 2009
- (2) Fuel Management And Spill Contingency Plan, Meliadine West Project, revised Sept 2009
- (3) Quality Assurance / Quality Control Plan for the Meliadine Gold Project, October 2009
- (4) Waste Management Plan, Meliadine West Gold Project, Revised September 2009

(5) Waste Rock and Ore Storage Management Plan For Materials Generated During The Excavation Of The Exploration Decline at the Tiriganiaq Deposit, Meliadine West Project, Addendum 1, April 2009

(6) Water Management Plan, Meliadine West Gold Project, June 2008

## **Monitoring Plan**

### **Runoff water management**

Surface runoff from the area of the pads and waste rock may carry sediments, dissolved blasting residue and other substances that may be deleterious to aquatic organisms in down stream environments. The first year-round water body downstream from the portal site is Pump Lake.

### **Pre-development water quality monitoring**

Water quality will be monitored in the small ponds below the portal site beginning in July 2007 to establish a baseline for pre portal conditions. Samples will be analyzed for water quality parameters important to aquatic life as set out in the *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life*.

### **Construction phase water quality monitoring**

Samples will again be collected from these ponds in September 2007 (or within 4 weeks of construction start-up if during the open water season) for analyses of the same water quality parameters. This will be repeated in June 2008 and as required.

If analyses show that the water quality conditions have deteriorated so that they do not meet the Canadian Water Quality Guidelines for the Protection of Aquatic Life, the contaminated runoff will be intercepted by the placement of Aquadams (portable heavy plastic 1 meter x 30 meter tubes that are filled with water and so become dykes) that will hold the water so that it can be disposed of on the surrounding upland by spray irrigation. The Aquadams and pumps necessary to deploy them are on site; spray apparatus will be procured. See Figure 4 for proposed locations for water quality monitoring points and Aquadams, should they be required.

### **Amendment:**

The water sampling program developed and approved by the various regulators will be continued by Comaplex prior to, during, and after the conclusion of the proposed underground exploration program extension. Analysis results from the samples will continue to be reported as is presently the case.





Plate 1: Camp, Sept. 2006, Looking South



Plate 2: Camp and Road, Sept. 2006, Looking South



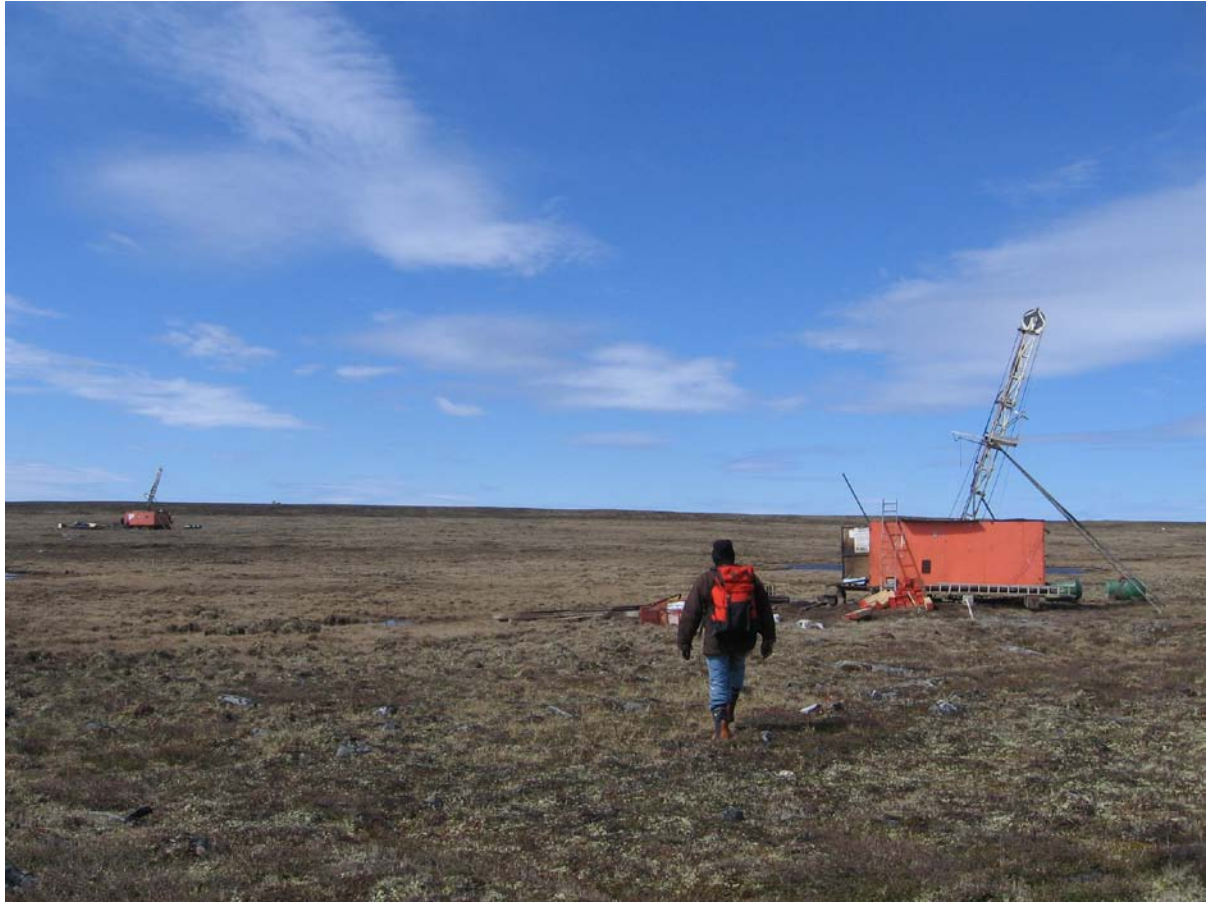


Plate 3: Portal Area, Summer 2006, Looking South