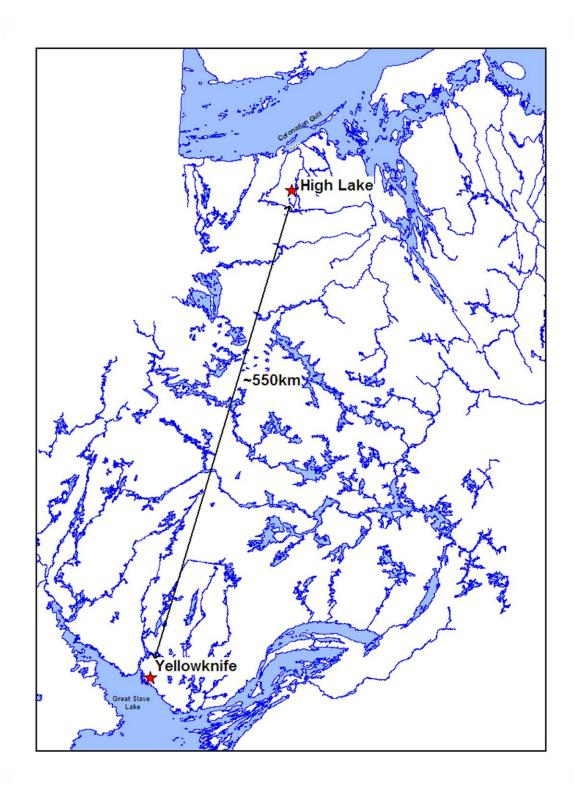
# HIGH LAKE AND HIGH LAKE EAST PROJECTS



# ABANDONMENT AND RESTORATION PLAN



1.0	PREAMBLE		4
2.0	INTRODUCTION		
3.0			
4.0	PROP	POSED SITE INFRASTRUCTURE	
5.0	SEASONAL SHUTDOWN AND RESTORATION PLAN		6
	5.1.	BUILDINGS AND CONTENT	6
	5.2.	Water System	6
	5.3.	ELECTRICAL SYSTEM	6
	5.4.	FUEL AND CHEMICAL STORAGE FACILITIES	6
	5.5.	Waste Facility And Incinerator	7
	5.6.	GREYWATER SUMP	7
	5.7.	Blackwater Sump	7
	5.8.	HELICOPTER PAD	7
	5.9.	CAMP SITE	7
	5.10.	FLOAT DOCK AND TUNDRA AIRSTRIP	7
	5.11.	Drilling Areas Restoration	8
	5.12.	DOCUMENTATION	8
6.0	FINAL ABANDONMENT AND RESTORATION PLAN		8
	6.1.	BUILDINGS AND CONTENT	8
	6.2.	Water System	9
	6.3.	ELECTRICAL SYSTEM	9
	6.4.	FUEL AND CHEMICAL STORAGE FACILITIES	9
	6.5.	WASTE FACILITY AND INCINERATOR	10
	6.6.	GREYWATER SUMP	10
	6.7.	BLACKWATER SUMP	10
	6.8.	HELICOPTER PAD	10
	6.9.	CAMP SITE	11
	6.10.	FLOAT DOCK AND TUNDRA AIRSTRIP	11
	6.11.	Drilling Areas restoration	11
	6.12.	DOCUMENTATION AND INSPECTION	11

### **PREAMBLE**

The Abandonment and Restoration Plan is effective from December 15<sup>th</sup>, 2009 to September 31<sup>st</sup>, 2012 and applies to the High Lake and High Lake East Projects operated by MMG Resources Inc. in the Kitikmeot District of Nunavut. (see location map). High Lake East is a satellite camp to the Southeast of the historic High Lake site along the James River with coordinates north latitude 67° 8′ 38″ and west longitude 109° 52′ 2″. Land Use permit applications have been reviewed and accepted by the Kitikmeot Inuit Association (KIA) and Nunavut Impact Review Board (NIRB), and the two camps are currently permitted under the single valid LUP# N2011C0033 (formerly N2007C0009).

# **INTRODUCTION**

This abandonment and restoration plan has been prepared as a new document for the High Lake and High Lake East Camps. Both continue to be used as a base of operations for drilling programs to be carried within the High Lake Project area. The camps are located some 550 km north of Yellowknife, and access is restricted to fixed wing aircraft of limited capacity year round, with larger aircraft capacity at High Lake seasonally operating off of the frozen lake surface. The Historic High Lake camp supports a population of up to 40 people, while High Lake East has accommodations for only 30. The camps open on a seasonal basis between March 1<sup>st</sup> and September 31<sup>st</sup>.

# **SCHEDULE**

The seasonal shutdown of the camp site should take 5 days to complete and will take place after the drilling activities have ceased. It will be conducted annually during the month of September. The plan will be applied by Project personnel under the supervision of the field supervisor and Project Manager.

# SITE INFRASTRUCTURE

#### **HIGH LAKE**

- 1 Kitchen / Dry facility that is wood framed and plywood clad
- 1 Accommodations / Recreation facility that is wood framed and plywood clad
- 1 Shop and Storage facility that is wood framed and plywood clad
- 1 Office building that is wood framed and plywood clad
- 2 storage facilities that are wood framed and plywood clad
- 2 accommodation tents that are wood framed and plywood clad
- 1 core shack that is wood framed and plywood clad
- 8 sleep tents that are wood framed and canvas covered
- 1 generator shack that is wood framed and plywood clad
- 1 bathroom facility that is wood framed and plywood clad

#### **HIGH LAKE EAST**

- 1 kitchen tent with wood floor, hot and cold running water, a stove, and a refrigerator.
- 1 dry tent with wood floor, hot and cold running water, hot water tank, washing machine
- 1 driller's dry tent, with wood floor, hot and cold running water
- 1 core-logging tent, wood floor
- 1 office tent, wood floor
- 8 sleep tents, wood floors
- 1 foreman shop, wood floor
- 2 wood frame outhouses
- 1 wood framed and plywood clad generator shack
- 1 float plane dock

# SEASONAL SHUTDOWN AND RESTORATION PLAN

#### 1.1. BUILDINGS AND CONTENT

All equipment will be stored inside the plywood clad wooden buildings to ensure they will withstand the winter season. Canvas tents will be secured and braced internally to ensure they will withstand snow and wind loads. Tarps over tents are inspected and replaced on a seasonal basis.

#### 1.2. WATER SYSTEM

Pump, tanks and hoses will be drained and dismantled. Rented equipment will be flown out to owner. Hoses will be rolled and stored in the tents over the winter.

#### 1.3. ELECTRICAL SYSTEM

The generator shed will be inspected for remaining hazardous waste (oil, grease) and will be drained of its fuel. Remaining waste fuel and oil will be collected in the containers labeled for that usage and used through the summer. These containers will be sealed and removed from site for proper handling and disposal in Yellowknife. The generator will be winterized and prepared for startup in spring. The soil surrounding the generator shed will be inspected for contamination. Any contaminated soil will be collected as outlined in site spill plan and removed from site for proper disposal. Electrical wires, plugs and sockets will be stored in the kitchen.

#### 1.4. FUEL AND CHEMICAL STORAGE FACILITIES

An inventory of remaining fuel will be made and full drums will be inspected and secured for the winter. Empty drums will be flown out to source. Empty propane cylinders will be flown out to source. Chemical stored on site will consists of drill additives, oil, grease and household cleaners. All drill additives will be stored in or by the drill foreman shed and secured for the winter. Empty cardboard containers will be disposed of with regular garbage if deemed safe for onsite incineration. Plastic containers will be removed from site and disposed of appropriately by KBL Environmental. The soil of the areas will be inspected for contamination.

#### 1.5. WASTE FACILITY AND INCINERATOR

Both sites have forced air, diesel fired incinerators that are used on a daily basis to dispose of burnable domestic and industrial waste products. Once the camp dismantled and remaining buildings secured, all remaining combustible waste stored at this site will either be burned or flown out to Yellowknife for disposal depending on the type of waste. Wastes will be categorized in accordance with Environment Canada standards and non-combustible wastes will be separated and sealed in empty fuel drums for removal from site. These wastes will be handled by KBL Environmental and disposed of appropriately. The incinerator will be cleaned and winterized. The soil surrounding will be inspected for contamination.

#### 1.6. GREYWATER SUMP

The greywater sump will be cleaned out and wood cover will be secured for winter.

#### 1.7. BLACKWATER SUMP

"pacto" style toilets will be used where waste is collected in a plastic bag lined container and content burned on a daily basis in the forced air incinerator located onsite. Pactos will be cleaned and the buildings sealed for winter.

#### 1.8. Helicopter Pad

The helicopter pad consists of a wooden platform built of a 2x4 base with plywood cover. Soil around the helicopter pad will be inspected for contamination.

#### 1.9. CAMP SITE

Areas showing evidence of impact from foot traffic will be covered with a layer of peat moss and lightly fertilized to promote natural growth. Soil contaminated by hydrocarbons and unnoticed before abandonment will be treated as per the spill contingency plan. Drill core to be left on site will be properly stored and secured in cross stacked piles or wooden cores racks.

#### 1.10. FLOAT DOCK AND TUNDRA AIRSTRIP

The float dock will be pulled from the river location and stored above the high water mark for use in subsequent field seasons. No support materials will be left in the river or lake, or below high water

mark in periods of inactivity. The tundra airstrip will be marked by anchored cones to designate safe taxiway for off-strip aircraft. This will be left in place for safe operation of mobilization flights in subsequent field seasons.

#### 1.11. DRILLING AREAS RESTORATION

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be left on solid ground until next season. All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned and/or flown out to an approved municipal discharge. Sumps will be filled and leveled. As much as possible, drill sites will be restored immediately after the drill has been moved to the next site and sumps have drained enough to be leveled.

## 1.12. DOCUMENTATION

Equipment and buildings left on site will be inventoried. Photos of camp and drill sites prior to building or drilling will be taken. Monitoring will be done during occupancy and photos taken. Once the site secured for the winter, it will again be documented with photos.

## FINAL ABANDONMENT AND RESTORATION PLAN

#### 1.13. BUILDINGS AND CONTENT

All the reusable equipment like tents, tent metal frames, stoves, kitchen stove, refrigerator, other kitchen appliances and equipment, showers, hot water tank, etc. will be packaged and flown out from project site to Yellowknife. Wood structures such as outhouses, pump shack, generator shed and tent wooden floors, beds and tables will be dismantled. Any treated or painted lumber will be flown out to Yellowknife for disposal. Nails, screws, anchors and other non-combustible parts will be recovered, packaged and flown out to an approved municipal disposal facility. Only paper products, paperboard packing and untreated wood wastes shall be designated for open burning in accordance with the

Department of Environment policy, "Municipal Solid Wastes Suitable for Open Burning". It has been communicated by ANAC authorities that in general "open burning" is discouraged.

#### 1.14. WATER SYSTEM

Pump, tanks and hoses will be drained, dismantled, packaged and flown out to Yellowknife. The wooden pump shack built to protect the pump will be burned or flown out to Yellowknife for disposal. Only paper products, paperboard packing and untreated wood wastes shall be designated for open burning during in accordance with the Department of Environment policy, Municipal Solid Wastes Suitable for Open Burning.

#### 1.15. ELECTRICAL SYSTEM

The generator shed will be inspected for remaining hazardous waste (oil, grease) and will be drained of its fuel. Remaining waste fuel and oil will be collected, sealed in containers and flown out to Yellowknife for disposal by the appropriate means. The shed will be dismantled and burned or flown out to Yellowknife for disposal. The soil will be inspected for contamination. Electrical wires, sockets, etc. will be taken down and either returned with camp material to Yellowknife, or flown out to an approved municipal disposal facility. Only paper products, paperboard packing and untreated wood wastes shall be designated for open burning during in accordance with the Department of Environment policy, Municipal Solid Wastes Suitable for Open Burning.

#### 1.16. FUEL AND CHEMICAL STORAGE FACILITIES

The fuel storage area consists of segregated groups of drums with empties apart from full drums. At the end of the field season, an inventory of remaining fuel will be made and full drums will be inspected. Full and empty drums will be flow out back to source or to an interested buyer. Propane cylinders will be flown out as well to source. Remaining waste fuel, stored in properly labeled drums will be flown out to a fuel outlet or discharge that accepts this type of fuel. Chemical stored on site will consists of drill additives, oil, grease and household cleaners. All drill additives will be stored in or by the drill foreman shed. Household cleaners will mainly be stored in the kitchen. Upon camp closure, any unused drilling additive, oil or grease will be returned to the drilling company warehouse. Half empty containers will be taken off site to be properly disposed in an approved discharge. Empty containers that are approved for burning under Department of Environment policy will be disposed of with regular garbage.

#### 1.17. WASTE FACILITY AND INCINERATOR

Once the camp is entirely dismantled, all remaining combustible waste stored at this site will be burned or flown out to Yellowknife for disposal. The incinerator (if present) will be dismantled, reusable parts will be returned to Yellowknife and the waste discarded in an approved municipal discharge. Only paper products, paperboard packing and untreated wood wastes shall be designated for open burning during in accordance with the Department of Environment policy, Municipal Solid Wastes Suitable for Open Burning. Open burning will only be conducted in the incinerator.

#### 1.18. GREYWATER SUMP

The kitchen-dry greywater sump will be back filled and leveled.

#### 1.19. BLACKWATER SUMP

Not Applicable. Human waste is collected and incinerated in a forced air diesel fired incinerator. If an outhouse was in use it would be limed and backfilled. Although not presently employed, a blackwater sump would be limed and backfilled.

#### 1.20. HELICOPTER PAD

The helicopter pad consists of a wooden platform built of a 2x4 base with plywood cover. Soil around the helicopter pad will be inspected for contamination. Any lumber will be flown out to Yellowknife for disposa. Only paper products, paperboard packing and untreated wood wastes shall be designated for burning in accordance with the Department of Environment policy, Municipal Solid Wastes Suitable for Open Burning.

#### **1.21. CAMP SITE**

The camp site will have a final inspection. Areas showing too much wearing evidences will be covered with a layer of peat moss and lightly fertilized to promote natural growth. Drill core to be left on site will be properly stored and secured.

#### 1.22. FLOAT DOCK AND TUNDRA AIRSTRIP

The float dock will be pulled from the river location and all anchors to shore will be removed. The floatation chambers will be recovered from the structure and flown south to Yellowknife. Any wooden frame materials will be dismantled. All markers designating the Tundra airstrip will be removed and all effects of aircraft landings will be removed, restoring the area to its natural state.

#### 1.23. DRILLING AREAS RESTORATION

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be flown out to another project or to a storage site designated by the drilling contractor. All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned if possible or to be flown out to an approved municipal discharge. Greywater and sludge sumps will be filled and leveled. As much as possible, drill sites will be restored immediately after the drill has been moved to the next site and sumps have drained enough to be leveled.

## 1.24. DOCUMENTATION AND INSPECTION

Photos of camp and drill sites prior to building or drilling will be taken. Monitoring will be done during occupancy and photos taken. Once the site restored, it will again be documented with photos. Soil contaminated by hydrocarbons and unnoticed before abandonment will be treated as per the spill contingency plan. A final site inspection visit with community representatives, Land Use Inspector and in collaboration with NWB staff will be organized by the permit holder.