

## **Part F, Item 2 - Proposed Mitigation Measures**

The following is a summary of the mitigation measures planned to be in place prior to, during and following drilling, as required, to protect waters. This information is primarily required for drillholes which will be situated within 30 m of the ordinary high water mark however similar measures will be taken for all drillholes.

### **Prior to Drilling Operations**

The following mitigation measures will be taken at each drillhole location, prior to drilling operations:

- Any disturbance to the ground surface when setting up the drill area will be minimized as much as practical.
- Once the drill is in place, a temporary sump will be established adjacent to the drill to collect "dirty" drill water and cuttings. This sump may be, but not limited to, a natural depression, a pre-fabricated sump or may be constructed using other materials present on site.
- A sediment disposal location will be identified or established at least 30 m away from the ordinary high water mark and preferably such that any flow toward a surface water body or water course is minimized. "Dirty" drill water and cuttings will be relocated to here from the sump.
- Sediment and erosion control measures will be implemented to minimize spillage of sediment and prevent entry of sediment into water. Sediment and erosion control measures may consist of silt fences or diversion/collection channels or berms.
- As a minimum silt fences, diversion channels or berms will be installed downstream of drill rigs if required to contain sediment within the drill water runoff.

### **During Drilling Operations**

The following mitigation measures will be taken at each drillhole location, during drilling operations:

#### **Drill Operations and Movements**

- The drilling area will be kept clean and tidy at all times. No littering is permitted - all waste will be collected and packed for disposal at camp.
- No material will be stored on the banks immediately adjacent to streams or lakes, unless that material will be used immediately.
- Operations will be carried out so as to minimize surface disturbance.
- Overland transportation for transport of workers will be minimized due to the potential for ground disturbance.
- Surface vehicles will not be used to move drill rigs or other equipment, without prior authorization of the Environmental Superintendent. The use of any vehicles off approved routes is prohibited.
- Equipment or vehicles will not be moved unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.
- Fuel will be transported in fuel drums or double walled day tanks. Drip pans will be used under tanks to prevent fuel contamination.
- Emergency spill response equipment (i.e. a spill kit) will be kept with each drill. Spill kits contain the appropriate type, size and quantity of equipment for the volume and type of product present at the storage location as well as the environment likely to be affected by a spill (i.e. ground, lake river, ocean).
- Daily inspections will be carried out for fuel leaks, equipment condition, sediment and erosion control, water intakes and water management. Any leaks will be repaired immediately.

- Drill rigs will be equipped with oil absorbent materials in the event of leaks, releases and spills.
- No streams will be obstructed.
- Sediment and erosion control measures will be maintained during the drilling operation to prevent entry of sediment into water. No erosion is to be caused to the banks of any body of water. Additional erosion control structures may be installed as the land use operation progresses.

#### Water Use

- Streams will not be used as a water source unless authorized and approved by the Nunavut Water Board.
- Water sources will be visually monitored to confirm that drawdown is not occurring.
- DFO approved screens will be placed over the intake hoses. The pumping rate will be kept sufficiently low to ensure that fish do not become entrained (drawn against the screen) and that water is withdrawn at a rate that fish do not become impinged on the screen.
- No natural materials will be removed below the high water mark of any water source.

#### Drill Water and Runoff

- Drill water will be contained and recirculated to the fullest extent practicable to prevent it from running into watercourses. Drill water will be disposed of into a properly constructed sump, or a naturally occurring contained depression. Deleterious substances will not be disposed of into any water body.
- Portable containment sumps (e.g. bins) will be used for drill water and cuttings where containment in the ground is impractical.
- Dirty drill water and cuttings will be relocated to the sediment disposal location established >30 m away from the ordinary high water mark of adjacent water bodies.
- The footprint of any drill water and cuttings spillage will be minimized by means of berms and/or other means of containment.
- Drilling waste will not be allowed to spread to the surrounding lands or water bodies; the footprint of any spillage will be minimized to the greatest degree practicable.
- If artesian flow is encountered, drillholes shall be immediately plugged and permanently sealed to prevent induced contamination of groundwater or salinization of surface waters. The artesian occurrence will be reported within 48 hr to the Engineer. All artesian flows, including location (GPS NAD83), will be reported in the annual report to the Project Manager for subsequent reporting to the Nunavut Water Board.

#### **Following Drilling Operations**

The following mitigation measures will be taken at each drillhole location, after drilling operations have ceased:

- If there is a spillage of dirty drill water and cuttings at locations within 30 m of a water body, periodic monitoring of the drill site will be conducted and a clean-up crew may be mobilized to the drill site at the direction of the Baffinland Project Manager and Environmental Superintendent.
- No materials (i.e. debris, drill cuttings) will be left within 30 m of the high water mark when there is potential for that material to enter the water.
- All drillholes will be plugged upon completion, and where possible drill cuttings at surface returned to the drillhole at all land-based drilling locations.
- All constructed drill sumps will be restored to the natural surrounding contours of the land upon completion of drilling.
- All other disturbed areas will be contoured and stabilized upon completion of work and restored to a predisturbed state as much as practical.

- Upon completion of a hole in rock, the casing will be removed. If the casing cannot be removed it will be cut off to be flush with surface and backfilled.
- All non-combustible garbage and debris will be removed from the land use area to an approved disposal site.
- Return all combustible waste and petroleum products to camp for proper management.