WATER USE INSPECTION REPORT

Dates: Aug 20th, 2009 Other: Aug 26th, 2009 (Sampling) Other: Sept 23, 24 & 29th, 2009	**Licensee Rep.** (Name/Title)**:** Phillip Katik, Hamlet Foreman (Aug 20th); George Egotak, WTP Operator (Sept 29th)
Licensee: Municipality of Kugluktuk (Hamlet)	**Licence No.: 3BM-KUG0914 (renewal processed May 2009)**

WATER SUPPLY

Source(s): Coppermine River	**Quantity used: NI**
Owner:/Operator: Hamlet	

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: A	**Storage Structure:** A	**Treatment Systems:** A	**Chemical Storage:** A-with conditions
Flow Meas. Device: A	**Conveyance Lines:** A	**Pumping Stations:** NA	**Screen:** NI

Comments: Water Intake Facility (WIF) pumphouse located beside River; water pumped to either Water Treatment Plant (WTP) or settling reservoir from there. WIF: Two pumps on site -both in working condition. Salinity meter hooked up, but readings are not yet recorded.

- Signage at WIF area needs replacement
- Chemical storage is improved from last year, but better inventory process is needed. Buckets of chlorine are stored inside WTP (under electrical panels); main storage is in Water Storage Building
- No spill kits for response to chemical or other spills (i.e.: chlorine, glycol, fuel)

Overall, WTP is well maintained and monitoring records are updated daily, including weekends.

Other: WTP chlorine injection occurs before filtration process; operators indicated that plans are in place to relocate this to after filtration point and reduce amount of chlorine used. Second chlorine injection point at point of use (i.e.: truck fill station).

Other comments as per WTP Operator (George Egotak): Salinity levels in potable water have been much lower than previous years. He believes this may be due to changes in sand bar areas (i.e.: building up due to sediment loading).

WASTE DISPOSAL

Sewage:

Sewage Treatment System: Newly constructed single cell lagoon, with exfiltration berm for decant. Old lagoon is located between new lagoon and municipal waste site.

Natural Water Body: No	**Continuous Discharge** (land or water)**:** no	
Seasonal Discharge: June-Oct (expected); decant activities were not confirmed for this year.	**Wetlands Treatment:** yes –wetland area is well established from previous discharge history.	**Trench:** yes –due to previous effluent and freshet flow paths

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: To be determined	**Decant Structure:** A	**Erosion:** A
Discharge Meas. Device: NA	**Dyke Inspection:** NA	**Seepages:** yes –from old lagoon site
Dams, Dykes: NA	**Freeboard:** A	**Spills:** A
Construction: Copy of final engineer/contractor commissioning report to be requested	**O&M Plan:** No (draft)	**A&R Plan:** No

Comments: Newly constructed, lined lagoon completed late last year by Nuna Burnside Engineering Environmental and NDL Construction; discharge event did occur before lagoon was commissioned for use (casual sewage delivery truck driver error). Area around lagoon has been trenched to divert surface water flows. Exfiltration area consists of liner material covered with riprap (no retention cell).

- Section in fence has been repaired, but gate is left unsecured
- Lagoon liner has large bubbles (bottom) and several large wrinkles (top/sides).
- Liner appears torn at top in two places (North side) and near sewage delivery point

Other: NDL employee (Riel) on site during inspection

- He was conducting an inspection of lagoon site and placing temperature sensors into monitoring pipes/wells; noting and correcting deficiencies where able:
  - Insufficient clearance was provided around well casings; improper caps were used
  - Bubbling occurring in liner
- 300m of black piping to be installed in trench to divert surface water flow away from base of lagoon; waiting for ground to freeze before equipment can be brought in.

Solid Waste:

Owner/Operator: Hamlet

Landfill: A –with conditions	**Burn & Landfill:** yes	**Other:** Bulk Wastes/Metals Dump –U

Comments: Landfill site is newly constructed; there is a small lined cell for hazardous and liquid wastes, and a lined cell intended for landfarming contaminated soil. Spill kit was present, secured near smaller bermed area.

- Lack of designated drop-off areas: several contractors and Hamlet employees were observed depositing various types of wastes (municipal, construction demolition debris, material excavated from culvert trenches) during inspection.
- Several burn piles were going; several small explosions occurred
- Wind blown debris between dump site and road

Bulky/Metal Waste Site: Site was covered over during Summer 2007 and "restarted"

- Site requires better management
- Fill material was saturated and soft around perimeter limiting use of site.
- Some segregation does occur –but no signage designating appropriate drop-off points

Surface water run-off drainage occurs through site; water drains into "pit" area where various bulky waste items are left and accumulates as a large pool, with some drainage occurring in path cut toward road

- Concern over state of abandoned materials left in this area affecting water quality and migrating off-site due.

Issue with indiscriminate dumping of waste fuel/unknown liquids and hazardous waste materials which should be placed in municipal dump site (i.e.: bermed areas) for proper storage (and preparation for ultimate disposal).

- Items of concern include waste fuel and unknown liquids in drums; various gas and refrigerant cylinders (including Nitrogen, Acetylene, Argon, and several unidentified), propane tanks, batteries.

Licensee is advised to take measures that will encourage responsible disposal practices by Hamlet operators, private operators and contractors, etc. This could include properly designating drop off points with appropriate signage, or more actively managing the solid waste sites.

FUEL STORAGE:

Waste Oil Storage: Small bermed area within municipal landfill site **Owner/Operator:** Hamlet

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: A	**Water within Berms:** A	**Evidence of Leaks:** A

Comments: Substrate in bermed areas is soft and saturated; liner exposed in some areas requiring regular maintenance. Bermed area intended for landfarming is being utilized for waste oil/fuel storage.

Haz-waste cell: Hamlet Foreman expressed concern –he feels this area is too small, making it difficult to manoeuvre equipment inside for placement of products and maintenance of area.

Tank Farm and other fuel storage areas: **Owner/Operator:** GN (Contractor: Arctic Coop)

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: A	**Water within Berms:** yes	**Evidence of Leaks:** U
Drainage Pipes: NA	**Pump Station & Catchments Berm:** A	
Pipeline Condition: NI	**Condition of Tanks:** see comments below	

Comments: Tank farm berm is in serious need of attention –vegetation growing around tanks and within bermed area is well established. Water accumulated inside containment berm is discharged directly to the environment without treatment.

- Many fuel drums of Av Gas (100LL) stacked (several hundred) stored within fenced area in front of tank farm (marked as PPD and CGS); some pallets looked ready to collapse.
- Liner is ripped up in this area
- Concerns by Hamlet (to GN) to remove these barrels due to overcrowding and safety concerns remain unaddressed.

Refuelling station: Better housekeeping is required in this area. A stream flows behind and around fuel station to a culvert that directs flow toward the ocean; high potential for fuel product to enter water.

- Various drums of product, jerry cans, waste products and fuel staining around refuelling station; lack of secondary containment.
- Lack of spill kit and identifiable spill-clean up materials; lack of secondary containment for waste fuel drums and jerry cans.
- "Garbage" drums of waste fuel and camping fuel cans are left beside fill station by members of the community.

It is highly recommended that the Owner ensures their contractor(s) tests for BTEX and Oil and Grease (HEM) in water collected within the tank farms next spring, prior to discharge to the environment. This is confirmatory sampling to ensure compliance. Owner is also encouraged to review responsible fuel handling practices and spill prevention and contingency practices with their contractor.

Licensee is advised to take measures that will encourage better fuel handling and storage practices by business operations and contractors on Commissioner's Lands.

Other areas:

Arctic Coast Enterprises: across from WTP (uphill from Coppermine River water intake)

- Messy area with multiple spills that require immediate intervention and clean up
- Lack of monitoring and spill reporting
- Site is being used by members of community for storage purposes
- Poor management of petroleum-based products: many barrels containing fuel appear abandoned in place; serious risk of environmental contamination
- Many vehicles and equipment abandoned in place; heavy equipment with stained soil underneath
- Vandalism of decrepit vehicles and equipment left on site

Overall this site is a disaster, with active risk of environmental contamination (close proximity to potable water source) without immediate intervention.

Mulco site: near airport (Company went bankrupt; property in receivership –Browning & Crocker)

- Large, messy area with major risk of environmental contamination; elevated risk due to property abandonment and erosion of site.
- Many barrels containing petroleum based product abandoned in place;
- Site is used by members of the community and/or business operations for various purposes (i.e.: storage, dumping, gleaning);
- All manner of waste and debris abandoned on site, including vehicles, heavy equipment, appliances, propane tanks, metal and wood scrap, etc.
- Barrels of fuel and other products affected by erosion of site: substrate washed out from under containers in some places; containers being buried in sediments in other areas.
- Used spill absorbent materials left out/abandoned recently*
- Vandalism of materials left on site (i.e.: paint cans have been thrown around)

*Drums (14) filled with dirty spill absorbent material and debris, and filling with rain water. Drums marked as "Mouse" (i.e.: Mouse Lake exploration camp). Mega tote filled with dirt and debris (unlabelled)

Overall this site is a disaster, with environmental contamination and impact to fresh water imminent without intervention: property is heavily influenced by natural drainage causing erosion. Issues are further compounded by unsolicited use of the site.

Barge area: site is used as lay-down and storage area; fuel resupply lines located here

- Fuel resupply lines left unsecured; water filling up containment structure.
- Fuel drums stored on pallets in this area
- Ditches created for drainage to ocean

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected	**Owner /Operator:** No	
2	**INAC:**. Potable water supply, Effluent flow path (end of wetland treatment area) *Note: anomaly with potable sample metal analysis; parameters were re-tested	
Signs Posted	**SNP:** No	**Warning:** one sign observed at entrance to dump and one at sewage lagoon
Records & Reporting: U –Reporting; A –Records (WTP)		
Geotechnical Inspection: NA		

Non-Compliance of Act or Licence:

Licence was renewed recently (May 2009); licensee is reminded they are legally obligated to meet those terms and conditions set out in the water licence–many of which are directly related to issues noted during the inspection.

- Lack of signage (except as noted above), monitoring and reporting requirements
- Indiscriminate dumping at bulky/metal dump area requires cleanup and better management by Licensee; lack of designated drop-off points
- Operations and maintenance manuals, spill contingency plans and related training not yet in place
- Issues identified with new solid waste facility that will require follow up with CGS (i.e.: use of landfarm area to store overflow of hazardous wastes and liquid waste products, batteries, etc
- Major risk of further environmental contamination from abandoned industrial sites (noted in "Other areas" section) requires immediate action.

M. Joy

Inspector's Name **Inspector's Signature**