WATER USE INSPECTION REPORT FORM

Date: July 31st, 2013	**Licensee Rep.** (Name/Title): Kim Kalen, National Defence, Barb Thompson, Nasittuq, Lindey Clements, Nasittuq and Simon Landry, Nasittuq
Licensee: National Defence	**Licence No: 3BC-CAM0919 – Cam Main**

Comments: The Inspector would like to thank Mr. Kalen, Ms. Thompson and Mr. Lindsey Clements for taking the time to facilitate and assist with the Inspection of these facilities. The last inspection of this site and facilities was completed in 2010. The CAM-M North Warning System Long Range Radar Station is located on Victoria Island within the Kitikmeot Region, Nunavut at latitude 69°06' 52" N; longitude l 05°07' 14" W. The site was constructed in the 1950's as part of the DEW Line, which provided radar surveillance of the northern approaches to North America. In March 1985, Canada and the United States agreed to close the DEW line sites by the early 1990's, and build the North Warning System (NWS).

Between 1992 and 1999 the site had remediation activities undertaken by Defence Construction Canada (DCC) under the authority of Water Licenses 050126NWB5CAM. The site and landfills associated with the clean up continues to be monitored by DCC under the authority of 1BR-CAM0520 issued by the Nunavut Water Board (NWB).

The current 10 year license has been issued by the NWB to allow for the disposal of waste during operation and maintenance of the Cam Main Long Range Radar Station and Logistics Support Site. This site is one of the few stations that is maintained and habituated throughout the year. Water is drawn from an adjacent water source lake (Water Lake) into tanks within the facility. The NWB has set the maximum Water usage (draw from the source) to the Facility at 10 Cubic meters or 10,000 liters of water per day. Both Sewage and Greywater are treated on-site using a Cycle-let® tertiary wastewater treatment system. Non-hazardous solid waste is disposed of at the Cambridge Bay landfill while Hazardous waste is backhauled outside of Nunavut. These records are kept and provided in the required annual report and to the Inspector during regular inspections of the facilities.

WATER SUPPLY

Source(s): Small Lake adjacent to site	**Quantity used:** 1,052,504 L total to date
Owner:/Operator: NWS	Pump house from Lake to Accommodation Train

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

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

Comments: Water from the lake is pumped from the lake directly to a holding tank in the accommodation train. Water is metered as it is sent to treatment which consist of a series of four filters and UV treatment before being sent on for use in the buildings. The meter was working during the period of Inspection. This system is a similar to the unit used in Hall Main.

Water testing within the facility remains unchanged. Tests are conducted monthly and results were available for review during the Inspection.

It was noted during the Inspection that water is taken from the pump house and installed into a truck for watering the roads and other uses. This water is to be metered and those totals added to the cumulative total for the facility.

WASTE DISPOSAL

Sewage: Cycle-let® tertiary wastewater treatment system **Treatment :(Prim./Sec/Ter.) Tertiary**

Natural Water Body: NA	**Continuous Discharge** (land or water)**: Land**	
Seasonal Discharge: NA	**Wetlands Treatment:** None	**Trench:** None

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

Discharge Quality: NI	**Decant Structure:** NA	**Erosion:** NA
Discharge Meas. Device: NA	**Dyke Inspection:** NA	**Seepages:** NA
Dams, Dykes: NA	**Freeboard:** NA	**Spills:**
Construction: NA	**O&M Plan: Provided A**	**A&R Plan:** As filed
Periods of Discharge: Con.	**Effluent Discharge Rate:** Unknown	

Comments: The Licensee has installed an Activated Sludge and filtration system to treat waste water within the facility. Treated waste water is also re-circulated back through the facility for use in toilets. Final treatment before discharge to the environment (pipeline) is a UV light system. The rate of discharge varies due to the "on-demand" system of usage within the facility.

Effluent treatment results were available for review during the Inspection.

Solid Waste: Wastes are hauled to the Municipality of Cambridge Bay for disposal.

Owner/Operator: Municipality of Cambridge Bay

Landfill: NA	**Burn & Landfill:** NA	**Other:** Haz-Mat marshalling area

Comments:

Domestic wastes generated by the licensee are picked up by the Municipality of Cambridge Bay and transferred to the Municipal Waste Management Area.

Hazardous wastes are shipped off site annually via sea-lift. . Logs and records from 2012 were available for review during the Inspection of the facility.

Storage of hazardous materials on site requires sufficient spill containment and clean up materials including some form of neutralizing agent for Battery Acid (H_2SO_4) – including SODIUM BICARBONATE, SODA ASH, LIME. Keeping batteries sequestered from any form of oxidizer is also highly recommended.

Waste Oil Storage: Waste Oil and other Haz Mat are to be shipped off site

FUEL STORAGE: On-site storage of fuels, all tanks inspected no issues noted.

Owner/Operator: North Warning System (Department of National Defence)

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

Berms & Liners: A	**Water within Berms:** A	**Evidence of Leaks:** A
Drainage Pipes: A	**Pump Station & Catchments Berm:** A	
Pipeline Condition: NI	**Condition of Tanks:** NI (Tanks in use were cleaned and tested in 2008) Tanks have been registered as per AGS Regs.	

Comments: Water was found within the Fuel Storage berms at the Camp Tank farm. The water was attributed to recent rain events and did not pose a significant reduction in secondary containment capacity. The tanks were also noted as not being locked out. This was investigated on site during the inspection. It was identified that the POL Technicians has been transferring fuel the day before and were scheduled to continue transferring fuel that day thus the tanks were not locked out at the time of the inspection.

It was noted during the inspection that power remained live at the beach tank pumping station however the tanks were all found to have been locked out.

The use of Drip-trays at the Hanger and other fuel distribution points was noted during the inspection. Secondary containment is highly encouraged wherever fuel is stored or transferred to prevent accidental releases. This is also a requirement of the water license Part G item 4 and is to be addressed before the period of the next inspection.

Inspections conducted at all of the of fuel containment areas did not find notable issues.

Spill Files/ Reports Inspected and can be closed:

2009143	2009-04-14	KIT		Cambridge Bay LSS	Jet A	20 L	Nasittuq Corporation
2009355	2009-07-16	KIT		Beach Loading Area	Varsol	1 L	Nasittuq Corporation
2010240	2010-06-16	KIT		Cambridge Bay, CAM-M	Hydraulic Fluid	1 L	Nasittuq Corporation
2010313	2010-07-27	KIT		Cambridge Bay, CAM-M	Jet A1	10 L	Nasittuq Corporation
2011252	2011-06-30	KIT		Cambridge Bay	Jet A1	10 L	Nasittuq Corporation
2012164	2012-05-03	KIT	-	Cambridge Bay, NWS site LSS-C	50% Ethylene Glycol Solution	135 L	Nasittuq Corporation

Spill files : On-going:

One continuing, legacy spill file remains the large spill at the Hanger at the airport. During the Inspection the site checked and it has been determined that at best the contamination is not rapidly moving off site. Test pits have dug and are monitored to determine if contamination is migrating off site.

A long term plan is required to address this spill.

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected	**Owner /Operator:**	
1	**INAC:** Raw water source lake was sampled.	
Signs Posted	**SNP:** (potable source)	**Warning: Noted on site**
Records & Reporting: Records were available as required.		
Geotechnical Inspection: N/A		

Non-Compliance of Act or Licence:

No obvious or serious issues of Non-compliance were noted during the period of Inspection. The Licensee is reminded that secondary containment, signage and segregation of hazardous materials are all constituent elements of the Water License. Diligence in the application of all aspects of the license is required to maintain compliance.

It is the recommendation that baring an incident that requires the attendance of the inspector at a date sooner, that a further inspection be done within 4 years at this facility.

Andrew Keim — Inspector's Name

Sent by E-mail (Original signed and on file) — Inspector's Signature

Cc:

Erik Allain - Manager Field Operations, AANDC

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