



**2008 Annual Report  
to the  
Nunavut Water Board**

**Licensee: Department of National Defence,  
Government of Canada**

**Licence: NWB6FOD0409 - Type "B"**

**Location: FOX-3 North Warning System Site,  
Dewar Lakes, Baffin Region, Nunavut**

**Report submitted by: Nasittuq Corporation,  
31 March 2009**



## **2008 Annual Report to the Nunavut Water Board**

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Dewar Lakes, Baffin Region, Nunavut

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### **Executive Summary**

This 2008 Annual Report to the Nunavut Water Board (NWB) is submitted as required by Licence Number NWB6FOD0409 – Type "B", Part B. General Conditions, para. 1.

FOX-3 is an unattended (unmanned) North Warning System radar site at Dewar Lakes, Nunavut. The site is visited quarterly for preventive maintenance inspections and as required for other work by Nasittuq staff from FOX-M, Hall Beach, Nunavut. The site was temporarily attended (manned) due to project activity in parts of January and February and also periodically from May to September.

The annual water usage was 107 cubic meters of water.

Hazardous waste was removed from the site for disposal outside of Nunavut. The waste went to Clean Harbors, Thurso, Quebec. The waste was 57 drums of assorted waste (oil, tank cleaning effluent, etc.) and 2 cylinders.

Nonhazardous domestic solid waste was flown out to FOX-M and disposed of through a contract with the Hall Beach community at the local landfill.

The sewage effluent was sent for laboratory analysis.

Two outdoor spills (fuel, glycol) occurred and were cleaned up.

The Spill Contingency Plan was revised. The main changes were: spills are now immediately reported to the NWSCC, and the Nasittuq Emergency Contact List (used only by Nasittuq Corp. staff) was updated to reflect changes in personnel.

## **Introduction**

This 2008 Annual Report to the Nunavut Water Board (NWB) is submitted as required by Licence Number NWB6FOD0409 – Type “B”, Part B. General Conditions, para. 1.

FOX-3 is an unattended (unmanned) North Warning System radar site at Dewar Lakes, Nunavut. The site is visited quarterly for preventive maintenance inspections and as required for other work by Nasittuq staff from FOX-M, Hall Beach, Nunavut. The site was temporarily attended (manned) due to project activity in parts of January and February and also periodically from May to September.

## **Water Pumped from FOD-1**

The annual water usage was 107 cubic meters. This is based on 150 liters per person per day multiplied by the actual daily site population.

The flow meter reading was recorded during the last site visit in 2008, and flow meter readings will now be taken each time water is pumped from FOD-1.

## **Hazardous Waste and Waste Oil Disposal**

Hazardous waste and waste oil were sent to an approved hazardous waste disposal site outside of Nunavut as required by the licence. The waste was sent to Clean Harbors, 200-7305 blvd Marie-Victorin, Brassard, QC, J4W 1A6. The receiving site address is Clean Harbors, 400 Galipeau, Rang 5, Thurso, QC, J0X 3B0.

Table 1 below lists the items sent for disposal.

**Table 1. Summary of waste sent for disposal in 2008 from FOX-3.**

<b>Site</b>	<b>Description</b>	<b>Quantity</b>
FOX-3	Waste oil	13 drums
FOX-3	Waste fuel contaminated soil	11 drums
FOX-3	Waste tank cleaning effluent	22 drums
FOX-3	Waste paint	10 drums
FOX-3	Waste fuel filters	1 drum
FOX-3	Acetylene	2 cylinders

## **Nonhazardous Solid Waste Disposal**

Nonhazardous domestic solid waste was flown out to FOX-M and disposed of through a contract with the Hall Beach community at the local landfill. Some solid waste was deposited at the on-site landfill (see Annex C).

## **Monitoring Program**

See Annex A for the location of the sewage effluent outfall, FOD-2.

See Annex B for analysis of sewage effluent.

See Annex C for the location of the landfill.

## **Spills (Unauthorized Discharges)**

Two outdoor spills occurred. They are in Table 2 below.

**Table 2. Outdoor spills in 2008 at FOX-3.**

Date	Product	Quantity	Cause and follow-up action	Location at FOX-3
02 Mar 2008	Jet A1 fuel	About 0.125 liters (1/2 cup)	Small discharge of fuel at pressure relief valve located within dyke.  Contaminated snow was placed in a drum.* Technicians examined valve and found no leaking or weeping. Mild weather may have raised the pressure in the fuel line and resulted in the small discharge.	Tank W22E near runway
16 Oct 2008	Norkool antifreeze (ethylene glycol – water mixture)	20 to 30 liters	Leaking radiator assembly in engine room.  Glycol on floor was soaked up with sorbent. Sorbent and contaminated snow beneath engine room were placed in drums.* Repaired radiator.	Engine room

\* Drums are retrograded to a licensed waste disposal company outside of Nunavut.



### **Revisions to the Spill Contingency Plan**

The Spill Contingency Plan was revised as follows:

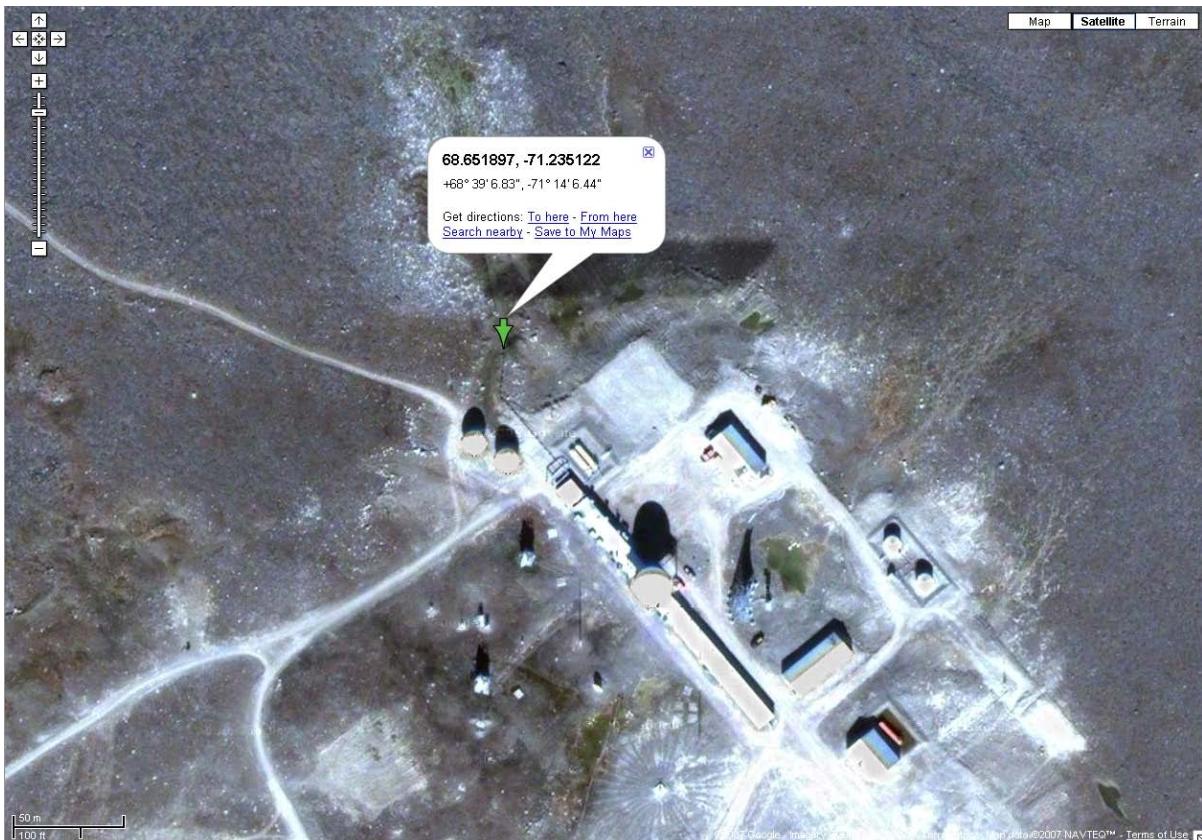
- spills are immediately reported to the NWSCC instead of the LSS Manager;
- Spill Response Flow Chart was updated to show the immediate report to NWSCC;
- all spills, indoors and outdoors, must be reported;
- all statements about burning (i.e. burning recovered fuel, fuel soaked sorbent, etc.) and burn bins were removed; and
- two names (I. Wawryk, S. Cheng) were removed from the Nasittuq Emergency Contact List. This List is used only by Nasittuq Corp. staff.

### **Progressive reclamation work undertaken**

None required.

## Annex A

### FOX-3 Sewage Outfall Location with GPS Co-ordinates





## Annex B

### **Analysis of Sewage Effluent in 2008 for FOX-3 (samples taken monthly when sewage actively discharged)**



**ACCUTEST LABORATORIES LTD**

**REPORT OF ANALYSIS**

Client: Nasittuq Corp. (Ottawa)  
100-170 Laurier Ave. West  
Ottawa, ON  
K1P 5V5  
Attention: Mr. Sam Chang

Report Number: 2804631

Date: 2008-03-06

Date Submitted: 2008-03-04

Project:

Chain of Custody Number: 26141

PARAMETER	UNITS	MRL									
Conductivity	µS/cm	5	2520								
N-NH3 (Ammonia)	mg/L	2.0	197								
pH	mg/L	0.001	0.213								
Phenols	mg/L	1	7								
Sulphate	mg/L	2	6280								
Total Suspended Solids	mg/L	1	98								
Calcium	mg/L	1	16								
Magnesium	mg/L	1	58								
Potassium	mg/L	2	209								
Sodium	mg/L	0.05	<0.05								
Arsenic	mg/L	0.01	0.05								
Cadmium	mg/L	0.01	0.05								
Chromium	mg/L	0.02	0.24								
Copper	mg/L	0.01	409								
Iron	mg/L	0.1	63.6								
Lead	mg/L	0.01	5.20								
Mercury	mg/L	0.001	<0.001								
Nickel	mg/L	0.01	0.34								
Zinc	mg/L	0.05	11.8								

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Interim Maximum Allowable Concentration IMAc = Interim Maximum Allowable Concentration

Comment:  
608120: N-NO2+N-NO3, BOD and Oil and Grease were submitted past their holding times and are not available. Pb MRL elevated due to matrix interference.

4-4-4  
R.4467 Nunavut Water Board Report No. 2008-03-06  
Annual Report to the Nunavut Water Board  
2008 Annual Report to the Nunavut Water Board

APPROVAL:  
Lorna Wilson  
Agriculture Lab Supervisor

Environmental Health and Safety



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**ACCUTEST LABORATORIES - A New Bodycote Company**

Client: Nasittuq Corp. (Ottawa)  
100-170 Laurier Ave. West!  
Ottawa, ON  
K1P 5V5

Attention: Ms. Barb Thomson

**REPORT OF ANALYSIS**

PARAMETER	UNITS	MRL										
Biochemical Oxygen Demand	mg/L	1	570									
Conductivity	µS/cm	5	2130									
N-NH3 (Ammonia)	mg/L	2.5	132									
NO2 + NO3 as N	mg/L	5	<5									
pH												
Phenols	mg/L	0.01	7.19									
Sulphate	mg/L	1	<0.001									
Total Suspended Solids	mg/L	1	1									
Calcium	mg/L	2	290									
Magnesium	mg/L	1	11									
Potassium	mg/L	1	4									
Sodium	mg/L	1	61									
Arsenic	mg/L	2	249									
Cadmium	mg/L	0.05	<0.05									
Chromium	mg/L	0.01	<0.01									
Copper	mg/L	0.05	<0.05									
Iron	mg/L	0.01	3.10									
Lead	mg/L	0.1	1.5									
Mercury	mg/L	0.01	0.03									
Nickel	mg/L	0.05	<0.05									
Zinc	mg/L	0.01	0.01									
	mg/L	0.05	0.28									

MRL = Method Reporting Limit. INC = Incomplete. AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration. IMAAC = Interim Maximum Allowable Concentration  
Comment: Metals analysis performed on aqua-regia digest of sample material.  
647789: Holding time for N-NO2+N-NO3 analysis was exceeded. N-NO2+N-NO3 MRL elevated due to matrix interference.

APPROVAL:

Ewan McRobbie  
Inorganic Lab Supervisor

Printed on computer, dated to this document when printed on this date, and for archival purposes.





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**ACCUTEST LABORATORIES - A New Bodycote Company**

**REPORT OF ANALYSIS**

Client: Nasittuq Corp. (Ottawa)  
100-170 Laurier Ave. West  
Ottawa, ON  
K1P 5V5

Attention: Ms. Barb Thomson

Chain of Custody Number: 28163

Report Number: 2819073  
Date: 2008-08-07  
Date Submitted: 2008-08-05

Project: 83502 - Dewar Lakes

PARAMETER	UNITS	MRL	TYPE	LIMIT	UNITS	GUIDELINE
						Sample ID:
Faecal Coliforms	cf/100mL	8000				647790
						Sample Date: 2008-07-26
						Sample ID: Fox-3
						Matrix: Sewage
						Project: 83502 - Dewar Lakes

MRL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guideline MAC = Maximum Allowable Concentration IAC = Interim Maximum Allowable Concentration

Comment:

APPROVAL: \_\_\_\_\_  
Jennifer Mitchell  
Microbiology Lab Supervisor

## Annex C

### Location of Landfill at FOX-3 with GPS Co-ordinates

