



**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**



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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.

Site	Description	Quantity
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:

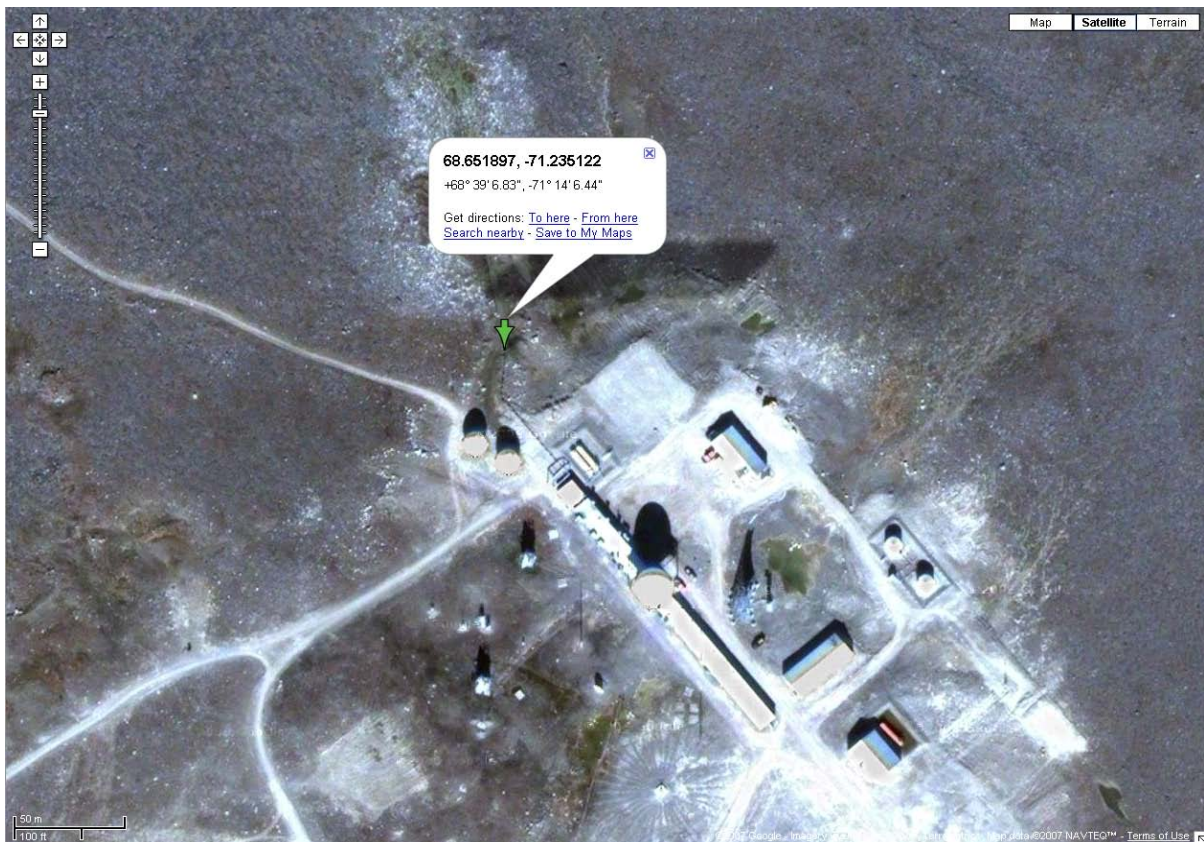
- spills are immediately reported to the NWSCC instead of the LSS Manager;
- Spill Response Flow Chart was updated to show the immediate report to NWSCC;
- all spills, indoors and outdoors, must be reported;
- all statements about burning (i.e. burning recovered fuel, fuel soaked sorbent, etc.) and burn 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)

February 2008 – page 1 of 1

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: 2008-03-08 Date Submitted: 2008-03-04 Project: P.O. Number: 2006112 Matrix: Wastewater			
Chain of Custody Number: 26141				LAB ID: 608720			
Sample Date: 2008-02-20				Sample ID: FOX-3			
PARAMETER	UNITS	MRL	OG	MAC	IMAC	TYPE	LIMIT
Conductivity	uS/cm	5	2520				
N-NH3 (Ammonia)	mg/L	2.0	197				
pH			7.18				
Phenols	mg/L	0.001	0.213				
Sulphate	mg/L	1	7				
Total Suspended Solids	mg/L	2	6280				
Calcium	mg/L	1	98				
Magnesium	mg/L	1	16				
Potassium	mg/L	1	58				
Sodium	mg/L	2	209				
Arsenic	mg/L	0.05	<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 = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration Comment: 608720: 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.							
APPROVAL: Loma Wilson Agriculture Lab Supervisor				4 of 4			

REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

Client: Nasittuq Corp. (Ottawa)
 100-170 Laurier Ave. West
 Ottawa, ON
 K1P 5V5
Attention: Ms. Barb Thomson
Report Number: 2819072
Date: 2008-08-25
Date Submitted: 2008-08-05
Project: 83502 - Dewar Lakes
P.O. Number: 83502
Matrix: Sewage
Chain of Custody Number: 26163

PARAMETER	UNITS	MRL	LAB ID:		TYPE	LIMIT	UNITS
			Sample Date:	Sample ID:			
Biochemical Oxygen Demand	mg/L	1	2008-07-26	647789			
Conductivity	uS/cm	5		FOX-3			
N-NH3 (Ammonia)	mg/L	2.0		Wastewater			
NO2 + NO3 as N	mg/L	5		Outfall			
pH							
Phenols	mg/L	0.001					
Sulphate	mg/L	1					
Total Suspended Solids	mg/L	2					
Calcium	mg/L	1					
Magnesium	mg/L	1					
Potassium	mg/L	1					
Sodium	mg/L	2					
Arsenic	mg/L	0.05					
Cadmium	mg/L	0.01					
Chromium	mg/L	0.05					
Copper	mg/L	0.01					
Iron	mg/L	0.1					
Lead	mg/L	0.03					
Mercury	mg/L	0.05					
Nickel	mg/L	0.01					
Zinc	mg/L	0.05					

MRL = Method Reporting Limit. INC = Incomplete. AO = Aesthetic Objective. OG = Operational Guideline. MAC = Maximum Allowable Concentration. IMAC = 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
 8-168 Patented Brand, Platinum PMS 9716 TV4 8718 Marine Coast Winches PMS 9715 100N

REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

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

Attention: Ms. Barb Thomson

Chain of Custody Number: 26163

Report Number: 2819072

Date: 2008-08-25

Date Submitted: 2008-08-05

Project: 83502 - Dewar Lakes

P.O. Number: 83502

Matrix:

LAB ID:			847789			DATE			2008-07-28			PROJECT			GUIDELINE		
Sample Date:			FOX-3			Wastewater			Outfall								
Sample ID:																	
PARAMETER			UNITS			MRL									TYPE		
Oil & Grease			mg/L			1			<1								
Oil & Grease - Mineral			mg/L			1			44								
Oil & Grease - Non-mineral			mg/L			1			44								
Oil & Grease - Total																	

MPL = Method Reporting Limit INC = Incomplete AO = Aesthetic Objective OG = Operational Guidelines MAC = Maximum Allowable Concentration IMAC = Interim Maximum Allowable Concentration
 Comment:

APPROVAL:

Mina Nasirai
Organic Lab Supervisor

REPORT OF ANALYSIS

ACCUTEST LABORATORIES - A New Bodycote Company

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

Attention: Ms. Barb Thomson

Chain of Custody Number: 26163

Report Number:	2819073
Date:	2008-08-0
Date Submitted:	2008-08-0
Project:	83502 - D
P.O. Number:	83502
Matrix:	Sewage

LAB ID:		64790		MRL		GUIDELINE	
Sample Date:		2008-07-28					
Sample ID:		Fox-3					
		Wastewater					
		Outfall					
PARAMETER		UNITS	MRL	TYPE		LIMIT	UNITS
Faecal Coliforms		cf/100mL					
			8000				

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

Comment:

APPROVAL:

Jennifer Mitchell
Microbiology Lab Supervisor

Annex C

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

