



**2013 Annual Report  
to the  
Nunavut Water Board**

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

**Licence: 3BC-DYE0919– Type “B”**

**Location: DYE-M North Warning System Site,  
Cape Dyer, Qikiqtani Region, Nunavut**

**Report prepared by: Nasittuq Corporation,  
24 March 2014**



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24 March 2014

### **Executive Summary**

This 2013 Annual Report to the Nunavut Water Board (NWB) is submitted as required by the licence issued 10 September 2009 3BC-DYE0919– Type “B”, Part B. General Conditions, paragraph 1.

DYE-M is an unattended (unmanned) North Warning System radar site at Cape Dyer, Nunavut. The site is visited quarterly for preventive maintenance inspections and as required for other work by Nasittuq staff based out of the Logistics Support Site - Iqaluit (LSS-Q), Iqaluit, Nunavut.

The annual water usage was 121.5 cubic meters taken from the melt-water water source DYE-1(b). This is below the annual maximum of 1,440 cubic meters allowed by the licence. No water was taken from the water lake DYE-1(a).

The water contained in the berms of fuel storage facilities was sent for laboratory analysis and confirmed to be within effluent quality limits before the water was pumped out of the berms.

Hazardous waste was removed from the site for disposal outside of Nunavut. The waste went to Safety Kleen 2730, boulevard Industriel, Chambly, QC, J3L 4V2. The waste was 23 drums of assorted waste (fuel, fuel filters, oil, oily rags, glycol, paint, etc.), 1 crate with 21 pails of waste oil, and 2 crates of waste batteries.

Nonhazardous domestic solid waste was flown out to the Logistics Support Site - Iqaluit and disposed of at Iqaluit’s landfill. Nasittuq had documented authorization from the community for receiving the waste.

The two sumps, one for each sewage outfall, were not pumped out therefore no samples were taken for laboratory analysis.



Two outdoor spills occurred. The spills were:

- a. NT-NU Spill Line Report # 13-288. A weeping heat recovery pump seal resulted in 31 liters of 50% ethylene glycol solution leaking onto the floor of building "A" on 13 August 2013. 1 liter of this leaked onto the ground below the building. Staff on-site cleaned up the spill with sorbent material. Contaminated soil was placed in a container. This waste will be sent to a hazardous waste disposal facility outside of Nunavut.
- b. NT-NU Spill Line Report # 13-305. Loader forks pierced a drum of waste fuel-water mixture on 30 August 2013. 100 liters spilled onto the apron near the hangar. Staff used sorbent material to clean up the spill. Contaminated soil was placed in a container. This waste will be sent to a hazardous waste disposal facility outside of Nunavut.

The Spill Contingency Plan was revised. The Spill Response Flow Chart and the Emergency Contacts List were updated.

## **Introduction**

This 2013 Annual Report to the Nunavut Water Board (NWB) is submitted as required by the licence issued 10 September 2009 3BC-DYE0919– Type “B”, Part B. General Conditions, paragraph 1.

DYE-M is an unattended (unmanned) North Warning System radar site at Cape Dyer, Nunavut. The site is visited quarterly for preventive maintenance inspections and as required for other work by Nasittuq staff based out of the Logistics Support Site - Iqaluit (LSS-Q), Iqaluit, Nunavut.

### **Water Drawn from DYE-1(b)**

A total of 121.5 cubic meters was drawn from the melt-water water source DYE-1(b). This is below the 1,440 cubic meters annually allowed by the licence. No water was taken from the water lake DYE-1(a). See Table 1 below for the volume of raw water drawn.

**Table 1. Monthly and annual raw water drawn at DYE-M.**

<b>Month</b>	<b>Raw water drawn in cubic meters (m<sup>3</sup>)</b>
January	0
February	0
March	0
April	0
May	0
June	8.1
July	10.3
August	30.4
September	72.7
October	0
November	0
December	0
<b>TOTAL</b>	<b>121.5</b>

## **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 went to Safety Kleen, 2730 boulevard Industriel, Chambly, QC, J3L 4V2. The waste receiver number for Safety Kleen is 1144094969.

See Table 2 below for the list of items sent for disposal.

See **Annex A** for the shipping documents: the completed movement documents for waste regulated under the Transportation of Dangerous Goods Regulations (TDGR) and Nasittuq manifests for nonregulated wastes.

**Table 2. Summary of waste sent for disposal from DYE-M.**

Site	Description, TDG shipping name	Quantity	Movement Document or Nasittuq Manifest #
DYE-M	Waste paint	1 drum	Mov. Doc. 2464784-4
DYE-M	Waste batteries, wet, non-spillable	2 crates	Mov. Doc. 2464784-4
DYE-M	Waste fuel, aviation, turbine engine	6 drums	Mov. Doc. 2464784-4 and 2464785-1
DYE-M	Waste oily rags  Waste solids containing flammable liquid, n.o.s. (fuel, aviation, turbine engine)	1 drum	Mov. Doc. 2464785-1
DYE-M	Waste fuel soaked absorbent  Waste solids containing flammable liquids n.o.s. (fuel, aviation, turbing engine)	1 drum	Mov. Doc. 2464785-1
DYE-M	Waste fuel filters  Waste solids containing flammable liquid, n.o.s. (fuel, aviation, turbine engine)	2 drums	Mov. Doc. 2464785-1
DYE-M	Waste glycol	4 drums	Nas. Man. 28855
DYE-M	Waste oil	8 drums and 21 pails	Nas. Man. 28856, 28858, 28903

## **Nonhazardous Solid Waste Disposal**

Nonhazardous domestic solid waste was flown out to the Logistics Support Site - Iqaluit and disposed of at Iqaluit's landfill. Nasittuq has documented authorization from the community for receiving the waste. See Table 3 below for the quantity of waste generated.

**Table 3. Monthly and annual nonhazardous domestic solid waste sent for disposal from DYE-M.**

<b>Month</b>	<b>Waste generated (kg)</b>
January	0
February	0
March	340
April	426
May	337
June	370
July	446
August	455
September	258
October	0
November	210
December	163
<b>TOTAL</b>	<b>3,005</b>

## **Monitoring Program**

See **Annex B** for the location of the sewage effluent outfall, DYE-2, with GPS co-ordinates. Two sumps, one for each sewage outfall, were built in 2010.

**Annex C** is blank. The two sumps, one for each sewage outfall, were not pumped out therefore no samples were taken for laboratory analysis.

See **Annex D** for the list of bermed fuel storage facilities, DYE-3, with GPS co-ordinates.

See **Annex E** for the analysis of berm water (water contained in the berms of fuel storage facilities). The results were confirmed to be within effluent quality limits before the water was pumped out of the berms.

## **Spills (Unauthorized Discharges)**

Two outdoor spills occurred. They are listed in Table 4 below.

**Table 4. Outdoor spills at DYE-M.**

<b>Date, Spill #</b>	<b>Product</b>	<b>Quantity</b>	<b>Cause and follow-up action</b>	<b>Location at DYE-M</b>
13 Aug 2013, Spill # 13-288	Glycol	1 liter outside	A weeping heat recovery pump seal resulted in 31 liters of 50% ethylene glycol solution leaking onto the floor. 1 liter of this leaked onto the ground below the building. Staff on-site cleaned up the indoor spill with sorbent material. Contaminated soil was placed in a container. This waste will be sent to a hazardous waste disposal facility outside of Nunavut.	A train
30 Aug 2013, Spill # 13-305	Fuel-water mixture	100 liters	Loader forks pierced a drum of waste fuel-water mixture. Staff used sorbent material to clean up the spill. Contaminated soil was placed in a container. This waste will be sent to a hazardous waste disposal facility outside of Nunavut.	Apron near the hangar



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

The Spill Contingency Plan was revised. The changes were:

- minor formatting changes;
- the Spill Response Flow Chart was updated; and
- the Emergency Contacts List was updated.

### **Progressive reclamation work undertaken**

None undertaken.



## Annex A

### **2013 Movement documents for regulated waste and Nasittuq manifests for non-regulated waste**

Note: On some completed movement documents (i.e. Parts A, B, and C completed), the shipping names in Part A are too faint to read. In such cases, another copy of the movement document with a legible Part A has been included.





**MOVEMENT DOCUMENT / MANIFEST  
DOCUMENT DE MOUVEMENT / MANIFESTE**

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.

Ce document de mouvement n'est pas conforme aux législations fédérale et provinciale sur l'environnement et le transport.

#### REFERENCES AND NOTES

Digitized by srujanika@gmail.com

2464784-4

**Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso**

**Copy / Copie 1 (white / blanche)**



## MOVEMENT DOCUMENT / MANIFEST DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation. Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport.

2464785-1

Mailed by Consignee to Consignor - Postée par le destinataire à l'expéditeur

Copy / Copie 6 (brown / brun)





## NASITTUQ MANIFEST

Suite 400, 160 Elgin Street, Ottawa, ON K2P 2P7

NON NEGOTIABLE

Filled By: <b>DDAVISON</b>	Date: <b>2012-07-16 2:03 PM</b>				TCN-28855
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA	From: DYE-M, CAPE DYER, DND Storeroom Nasittuq Corporation, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818				Priority <b>2</b>
Attention:	Attention:				
Carrier: NEAS	Routing: 48X48X42	Waybill #:	Total Pcs. 1	Total Weight: 830 KG	
QTY Order	Type Line Weight	Item Description	WO or PO	B/Code or S/N	Remarks
4.0	2002344	WASTE - GLYCOL (DRUM)	317475,317993,321522,302958		
NOTE: All claims related to this shipment have to be filled with Nasittuq within 45 hours of receipt.			Received By:	Date	
			Received By:	Date	



## NASITTUQ MANIFEST

Suite 400, 160 Elgin Street, Ottawa, ON K2P 2P7

NON NEGOTIABLE

Filled By: <b>DDAVISON</b>	Date: <b>2012-07-16 2:10 PM</b>				TCN-28856
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA	From: DYE-M, CAPE DYER, DND Storeroom Nasittuq Corporation, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818				Priority <b>2</b>
Attention:	Attention:				
Carrier: NEAS	Routing: 48X48X44	Waybill #:	Total Pcs. 1	Total Weight: 840 KG	
QTY Order	Type Line Weight	Item Description	WO or PO	B/Code or S/N	Remarks
4.0	2002406	WASTE - OIL (45 GALLON DRUM)	322406,321520,322790,321519		
NOTE: All claims related to this shipment have to be filled with Nasittuq within 45 hours of receipt.			Received By:	Date	
			Received By:	Date	



## NASITTUQ MANIFEST

Suite 400, 160 Elgin Street, Ottawa, ON K2P 2P7

NON NEGOTIABLE

Filled By: <b>DDAVISON</b>	Date: <b>2012-07-16 2:25 PM</b>				TCN-28858
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA	From: DYE-M, CAPE DYER, DND Storeroom Nasittuq Corporation, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818				Priority <b>2</b>
Attention:	Attention:				
Carrier: <b>NEAS</b>	Routing: <b>48X48X44</b>	Waybill #:	Total Pcs. <b>1</b>	Total Weight: <b>840 KG</b>	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N Remarks
4.0				WASTE - OIL (45 GALLON DRUM)	320999,320997,321518,320998
NOTE: All claims related to this shipment have to be filled with Nasittuq within 45 hours of receipt.					Received By: _____ Date: _____
					Received By: _____ Date: _____



## NASITTUQ MANIFEST

Suite 400, 160 Elgin Street, Ottawa, ON K2P 2P7

NON NEGOTIABLE

Filled By: <b>DDAVISON</b>	Date: <b>2012-07-18 11:39 AM</b>				TCN-28903
Ship To: CLEAN HARBORS CANADA INC. 2730 BOULEVARD INDUSTRIEL CHAMBLY, QC, J3L 4V2 CA	From: DYE-M, CAPE DYER, DND Storeroom Nasittuq Corporation, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818				Priority <b>2</b>
Attention:	Attention:				
Carrier: <b>NEAS</b>	Routing: <b>48X48X54</b>	Waybill #:	Total Pcs. <b>1</b>	Total Weight: <b>540 KG</b>	
QTY Order	Type	Line Weight	Item	Description	WO or PO B/Code or S/N Remarks
10.0				WASTE - OIL (5 GALLON PAIL)	320228/322407/ 322409 / 320232 / 322346/ 322348/320239/322344/, 322352/322349
11.0				WASTE - OIL (5 GALLON PAIL)	322814/ 322347/ 322353/, 322345/ 320230/ 320228/, 320238/ ,322351/ ,322343/, 322350/ 322813
NOTE: All claims related to this shipment have to be filled with Nasittuq within 45 hours of receipt.					Received By: _____ Date: _____
					Received By: _____ Date: _____

## Annex B

### DYE-M - Sewage Outfall Location (DYE-2) with GPS Co-ordinates





## Annex C

**This Annex has been left blank intentionally.  
(The two sumps, one for each sewage outfall, were not pumped out therefore no samples were taken for laboratory analysis.)**



## Annex D

### DYE-M - Bermed Fuel Storage Facilities with GPS Co-ordinates

<b>Licence</b>	<b>Location</b>	<b>Monitoring Station # (Final Discharge Point of Bermed Fuel Storage Facility)</b>	<b>Berm's Location On- site</b>	<b>Berm's GPS Co-ordinates</b>
3BC-DYE0919 Type "B"	DYE-M North Warning System Site, Cape Dyer, Qikiqtani Region, Nunavut	DYE-3	- Summit (behind PGS building) - Berm of tank W20A	66° 40' 00" N 61° 21' 27" W
			- Summit behind 'B' train - Berm of tanks W22K, W22J, W22I, and W20B	66° 39' 54" N 61° 21' 25" W



## Annex E

### **DYE-M - Analysis of Berm Water (Effluent from Bermed Fuel Storage Facilities)**



20 July 2013

Summit (behind PGS building), Berm of Tank W20A

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EXOVA OTTAWA

Certificate of Analysis

EXOVA

Client: Nasittuq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasittuq Corp. (Ottawa)

Report Number: 1315813  
Date Submitted: 2013-07-25  
Date Reported: 2013-07-30  
Project: Dye-Main Berm Sample  
COC #: 171605

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00			1045531 Water
Mercury	Hg	0.0001	mg/L		<0.0001
Metals	Aqua-Regia Digest		mg/L		y
	As	0.02	mg/L		<0.02
	Zn	0.04	mg/L		<0.04
Nutrients	Phenols	0.001	mg/L		<0.001
Oil & Grease	Oil & Grease - Total	1	mg/L		<1
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L		<0.1
	Benzene	0.5	ug/L		<0.5
	Ethylbenzene	0.5	ug/L		<0.5
	Toluene	0.5	ug/L		<0.5
	Toluene-d8	1	%		97

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline,  
MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range



20 July 2013

Summit (behind PGS building), Berm of Tank W20A

Page 2 of 2

**EXOVA OTTAWA**

**Certificate of Analysis**

**EXOVA**

Client: Nasittuq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasittuq Corp. (Ottawa)

Report Number: 1315815  
Date Submitted: 2013-07-25  
Date Reported: 2013-07-29  
Project: Dye-Main Berm Sample  
COC #: 171605

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Metals	Cd	0.0001	mg/L	<0.0001	1045533 Water
	Co	0.0002	mg/L	<0.0002	2013-07-20 DM-W20A
	Cr	0.001	mg/L	<0.001	
	Cu	0.001	mg/L	0.001	
	Ni	0.005	mg/L	<0.005	
	Pb	0.001	mg/L	<0.001	

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Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range



20 July 2013

Summit (behind 'B' train), Berm of Tanks W22K, W22J, W22I, and W20B

Page 1 of 2

**EXOVA OTTAWA**

**Certificate of Analysis**

**EXOVA**

Client: Nasittuq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasittuq Corp. (Ottawa)

Report Number: 1315812  
Date Submitted: 2013-07-25  
Date Reported: 2013-07-30  
Project: Dye Main Berm Sample  
COC #: 171595

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	
General Chemistry	pH	1.00			1045530 Water	2013-07-20 DM Berm W22JK + W20B
Mercury	Hg	0.0001	mg/L			<0.0001
Metals	Aqua-Regia Digest		mg/L			y
	As	0.02	mg/L			<0.02
	Zn	0.04	mg/L			0.09
Nutrients	Phenols	0.001	mg/L			<0.001
Oil & Grease	Oil & Grease - Total	1	mg/L			<1
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L			<0.1
	Benzene	0.5	ug/L			<0.5
VOCs	Ethylbenzene	0.5	ug/L			<0.5
	Toluene	0.5	ug/L			<0.5
	Toluene-d8	1	%			97

Guideline = \* = Guideline Exceedence

\*\* = Analysis completed at Mississauga, Ontario.

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional QA/QC information available on request.

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MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range



20 July 2013

Summit (behind 'B' train), Berm of Tanks W22K, W22J, W22I, and W20B

Page 2 of 2

**EXOVA OTTAWA**

**Certificate of Analysis**

**Exova**

Client: Nasittuq Corp. (Ottawa)  
160 Elgin Street, Suite 400  
Ottawa, ON  
K2P 2C4  
Attention: Ms. Barb Thomson  
PO#:  
Invoice to: Nasittuq Corp. (Ottawa)

Report Number: 1315814  
Date Submitted: 2013-07-25  
Date Reported: 2013-07-29  
Project: Dye Main Berm Sample  
COC #: 171595

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1045532 Water 2013-07-20 DM Berm W22 JK + W20B
Metals	Cd	0.0001	mg/L	<0.0001		
	Co	0.0002	mg/L	0.0004		
	Cr	0.001	mg/L	<0.001		
	Cu	0.001	mg/L	0.004		
	Ni	0.005	mg/L	<0.005		
	Pb	0.001	mg/L	0.002		

Guideline = \* = Guideline Exceedence

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Results relate only to the parameters tested on the samples submitted.  
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline,  
MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range