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2018 ANNUAL NUNAVUT WATER BOARD

REPORT FOR DYE-M

FOR THE

North Warning System

Contract # W8485-100224/001/NX

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ENGLISH EXECUTIVE SUMMARY FOLLOWS



EXECUTIVE SUMMARY

This 2018 Annual Report for the Nunavut Water Board (NWB) has been prepared by Raytheon Canada Limited (RCL) for the Department of National Defence in order to meet the requirements of the licence issued 10 September 2009 3BC-DYE0919 – Type “B”, Part B “General Conditions”, paragraph 1. This report covers the period of 01 January to 31 December 2018.

RCL is the Operation and Maintenance Contractor for the North Warning System (NWS), including DYE-M, the unattended (unmanned) North Warning System radar site located at Cape Dyer, Nunavut. The site is visited quarterly by RCL staff based in Iqaluit for preventive maintenance inspections and as required for other work.

A total of 87.7 cubic meters was drawn from the raw water sources. In 2018, all water was 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.

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 and waste oil were sent to an approved hazardous waste disposal facility outside of Nunavut as required by the licence. The hazardous waste was shipped to Qikiqtaaluk Environmental, through their subcontractor Veolia, 2630, boul. Industriel, Chambly, QC J3L 4V2. The hazardous waste consisted of 3 crates and 37 drums of assorted waste (oil, fuel, glycol, etc.).

Non-hazardous domestic solid waste was flown out to the Logistics Support Site in Iqaluit and disposed of at Iqaluit’s landfill. RCL has documented authorization from the community for receiving the waste.

One outdoor spill occurred at DYE-M in 2018. NT-NU Report Number 18-294. On 21-Jul-2018, staff were inspecting the truck prior to use on-site when the hydraulic cylinder failed on the dump truck, releasing approximately 1 L of hydraulic fluid. The spill was stopped and the impacted gravel was cleaned up. The dump truck has been placed in the site garage until repairs can be completed. The impacted gravel was collected and containerized for disposal.

The Spill Contingency Plan was updated on 29-Mar-2018.

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1.0 INTRODUCTION

This 2018 Annual Report for the Nunavut Water Board (NWB) has been prepared by Raytheon Canada Limited (RCL) for the Department of National Defence in order to meet the requirements of the licence issued 10 September 2009 3BC-DYE0919 – Type “B”, Part B. General Conditions, paragraph 1. This report covers the period from 01 January to 31 December 2018.

RCL is the Operation and Maintenance Contractor for the North Warning System (NWS), including DYE-M, the unattended (unmanned) North Warning System radar site located at Cape Dyer, Nunavut. The site is visited quarterly by RCL staff based in Iqaluit for preventive maintenance inspections and as required for other work.

1.1 Report Details

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: Raytheon Canada Limited, 05-Feb-2019
Time period covered: 01 January to 31 December 2018

2.0 WATER USE

A total of 87.7 cubic meters was drawn from the raw water sources. In 2018, all water was taken from the melt-water water source, listed in the licence as “DYE-1(b)”. This is below the annual maximum of 1,440 cubic meters allowed by the licence. See Table 2-1 for the volume of raw water drawn at DYE-M in 2018.

Table 2-1: Monthly Raw Water Usage at DYE-M in 2018

Month	Raw water usage (m ³)
January	0
February	0
March	0
April	0
May	19.2
June	0
July	27.1
August	24.2
September	14.3
October	2.9
November	0
December	0
TOTAL	87.7

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3.0 HAZARDOUS WASTE AND WASTE OIL DISPOSAL

Hazardous waste and waste oil were sent to an approved hazardous waste disposal facility outside of Nunavut as required by the licence. The hazardous waste was shipped to Qikiqtaaluk Environmental, through their subcontractor Veolia, 2630, boul. Industriel, Chambly, QC J3L 4V2. See Table 3-1 for the list of items sent for disposal.

See Annex A for the shipping document including the completed movement documents for waste regulated under the Transportation of Dangerous Goods Regulations (TDGR) and NWS Manifests for non-regulated waste. The hazardous waste consisted of 3 crates and 37 drums of assorted waste (oil, fuel, glycol, etc.).

Table 3-1: Hazardous Waste and Waste Oil Sent for Disposal from DYE-M in 2018

Description, TDG shipping name	Quantity	Movement Document or Manifest #
Waste batteries, wet, filled with acid	1 Crate	Movement Document 2539181-4
Waste batteries, wet, non-spillable	1 Crate	Movement Document 2539181-4
Waste tank bottom water/ tank cleaning effluent	12 Drums	Movement Document 2539181-4
Waste fuel, aviation, turbine engine mixture		
Waste POL soaked absorbent		
Waste solids containing flammable liquids, n.o.s (fuel, aviation, turbine engine)	4 Drums	Movement Document 2539181-4
Waste Jet A1 fuel filters		
Waste solids containing flammable liquids, n.o.s (fuel, aviation, turbine engine)	2 Drums	Movement Document 2539181-4
Waste Jet A1 fuel and water mixture		
Waste fuel, aviation, turbine engine mixture	2 Drums	Movement Document 2539181-4
Waste oil		
Not TDG regulated	1 Crate	NWS Manifest TCN38680
Waste oil		
Not TDG regulated	10 Drums	NWS Manifest TCN38681, TCN38682, TCN38698
Waste empty oil drum with residues		
Not TDG regulated	4 Drums	NWS Manifest TCN38683
Waste glycol filters (drum)		
Not TDG Regulated	2 Drums	NWS Manifest TCN38693

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Description, TDG shipping name	Quantity	Movement Document or Manifest #
Waste oil filters	1 Drum	NWS Manifest TCN38697
Not TDG regulated		

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4.0 NON-HAZARDOUS SOLID WASTE DISPOSAL

Non-hazardous domestic solid waste was flown out to the Logistics Support Site in Iqaluit and was disposed of at Iqaluit's landfill. RCL has documented authorization from the community for receiving the waste.

See **Table 4-1** for the quantity of waste generated.

Table 4-1: Non-hazardous Domestic Solid Waste Sent for Disposal from DYE-M in 2018

Month	Waste Generated (kg)
January	136
February	0
March	143
April	0
May	0
June	181
July	499
August	0
September	113
October	45
November	136
December	0
TOTAL	1,253

5.0 MONITORING PROGRAM

In 2018, a monitoring program was implemented at DYE-M as required by the water licence, Part I. The monitoring program included the following:

1. Volume of raw water drawn from the water Supply Lake (DYE-1a) and the melt water source (DYE-1b). The information from this monitoring program is shown in **Section 2.0 Water Use**. The water drawn was within the limit stated in the water licence.
2. Quality of sewage discharged from the final discharge point of the sewage disposal facility (DYE-2). The location of the sewage effluent outfall is shown in **Annex B**, including coordinates. A sump for the sewage outfall was constructed in 2010. The sewage outfall sump was sampled once in 2018. The results are shown in **Annex C: Analysis of Discharged Sewage Effluent**.
3. Quality of the water contained in the berms of fuel storage facilities prior to discharge (DYE-3) was analyzed and confirmed within the effluent quality limits listed in the water licence, Part D. The coordinates and the results of the analysis are shown in **Annex D: Location of Bermed Fuel Storage Facilities and Analysis of Berm Water**. All samples met the effluent requirements of the water licence, Part D.

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6.0 SPILLS (UNAUTHORIZED DISCHARGES)

Date, NT-NU Spill #	Product	Quantity	Cause and follow-up action	On-site location
21-Jul-2018, Spill # 18-294	Hydraulic fluid	1 L	On 21-Jul-2018, staff were inspecting the truck prior to use on-site when the hydraulic cylinder failed on the dump truck, releasing approximately 1 L of hydraulic fluid. The spill was stopped and the impacted gravel was cleaned up. The dump truck has been placed in the site garage until repairs can be completed. The impacted gravel was collected and containerized for disposal.	Near Hangar (66°35'49.25"N, 61°34'50.34"W)

7.0 REVISIONS TO THE SPILL CONTINGENCY PLAN

The Spill Contingency Plan was updated on 29-Mar-2018. An updated copy of the Spill Contingency Plan was submitted to the NWB with the application for water licence renewal.

8.0 PROGRESSIVE RECLAMATION WORK UNDERTAKEN

No progressive reclamation work was undertaken in 2018.

9.0 ACRONYMS

Table 9-1: Acronyms

Acronym	Definition
NWB	Nunavut Water Board
NWS	North Warning System
PCB	Polychlorinated Biphenyl
RCL	Raytheon Canada Limited
TDGR	Transportation of Dangerous Goods Regulations

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ANNEX A: HAZARDOUS WASTE AND WASTE OIL DISPOSAL IN 2018

The 2018 Movement Documents for TDG Regulated waste and NWS Manifests for non-TDG Regulated waste described in Table 3-1 are below.

MOVEMENT DOCUMENT / MANIFEST DOCUMENT DE MOUVEMENT / MANIFESTE

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

A Generator / consignor Producteur / expéditeur		Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial	B Carrier / Transporteur		Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial	23		Movement Document / Manifest Reference No. N° de référence du document de mouvement/manifeste											
Company name / Nom de l'entreprise DEPARTMENT OF NATIONAL DEFENCE clo BCL		City / Ville	Province	Postal code / Code postal	Company name / Nom de l'entreprise	City / Ville	Province	Postal code / Code postal	Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial										
Mailing address / Adresse postale 201 WING BLD 109 HORNELL HEIGHTS ON P0H 1P0				E-mail / Courier électronique		Tel. No. / N° de tél. ()		Reference No. of other movement documents/manifests used / N° de référence des autres documents de mouvement/manifestes utilisés											
E-mail / Courier électronique 105-494-2011-2861		Tel. No. / N° de tél. ()		Vehicle / Véhicule		Registration No. / N° d'immatriculation	Prov.	Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial											
Shipping site address / Adresse du lieu de l'expédition NWS LSS IQALUIT (CAPE DUE DUE MAN		City / Ville	Province	Postal code / Code postal	Trailer - Rail car No. 1 1 ^{er} remorque - wagon	Trailer - Rail car No. 2 2 nd remorque - wagon		Receiver / consignee / Récipient / destinataire											
Intended Receiver / consignee Récipient / destinataire prévu		2	Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial	Point of entry Point d'entrée	Intentional use only Usage intentionnel uniquement	Point of exit Point de sortie	Intentional use only Usage intentionnel uniquement	Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial											
Receiving site address / Adresse du lieu de réception QUINNATAKIN ENVIRONMENTAL		City / Ville	Province	Postal code / Code postal	Carrier Certification / I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is correct and correct. Attestation du transporteur : J'affirme avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au récepteur/ destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.		Receiver / consignee information same as in Part A Les renseignements du récepteur/ destinataire est la même qu'à la Partie A												
Email / Courier électronique clo.Nedalia		Tel. No. / N° de tél. ()		Name of authorized person (print): Nom de l'agent autorisé (caractères d'impression):		Tel. No. / N° de tél. ()	<input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous												
Receiving site address / Adresse du lieu de réception 2630 Roule Industriel		City / Ville	Province	Postal code / Code postal	Year / Année	Month / Mois	Day / Jour	Company name / Nom de l'entreprise											
CHAMBERY QC								Mailing address / Adresse postale											
J3L 4V2.								City / Ville											
								Province											
								Postal code / Code postal											
Prov. code Code prov.	3	Shipping name Appellation réglementaire	4	Class / Classe Sub classe(s) Classe(s) sub.	5	UN No. N°NU	6	Packing / risk gr. Gr. d'emballage/ de risque	7	Quantity shipped Quantité expédiée	8	Unit(s) Lor / ou Kg Unités	9	Packaging/Container Codes Int-ext	10	Phys. state Etat phys.	25	Date received / Date de réception Year / Année Month / Mois Day / Jour Time / Heure Year / Année Month / Mois Day / Jour Time / Heure	
(i)		Waste Battery, wet filled With Acid		8	2794	III	386	K	1	7	S								
(ii)		Waste Battery, wet Non Spillable waste fuel, Aviation		8	2800	III	500	K	1	7	S								
(iii)		Turbine Engine mixture		3	1863	III	2300	L	14	01	L								
(iv)		Waste Solid Containing Flammable Liquid NOS (Fuel Aviation Turbine)		4.1	3175	II	634	K	6	01	S								
11		12	13	14	15	16	17	National code in country of / Code du pays		18	19		20		21				
Notice No. N° de notification	Notice Line No. N° de ligne de la notification	Shipment Envoy	Off / De	D or R code Code E ou R	C code Code C	Basel Annex VIII or OECD Code Annexe VIII de l'Annexe VIII de l'OCDE ou Code CCDE	H code Code H	Y code Code Y	Export Expédition	Import Importation	Customs code(s) Codes(s) de douanes	If handling code "Other" (specify) Si code de manutention « autre » (spécifier)		22		23			
(i)		24-HOUR EMERGENCY NUMBER - Canutec - 613-996-6666										Receiver / consignee certification: I certify that the information contained in Part C is correct and complete. Attestation du récepteur/ destinataire : J'affirme que tous les renseignements à la partie C sont exacts et complets.		Name of authorized person (print) Nom de l'agent autorisé (caractères d'impression)					
(ii)		USE IN CASE OF DANGEROUS GOODS EMERGENCY. FLASH POINT 58°C										Signature		Signature		Signature			
(iii)												CIVAN		CIVAN		CIVAN			
(iv)												Signature		Signature		Signature			
Generator / consignor certification: I certify that the information contained in Part A is correct and complete. Attestation du producteur / expéditeur : J'affirme que tous les renseignements à la partie A sont exacts et complets.		Name of authorized person (print) Nom de l'agent autorisé (caractères d'impression)										Signature		Signature		Signature			
Rodney Jus		Rodney Jus										705-494-2011-2861		CIVAN		CIVAN		CIVAN	
MOE 04-1917 (07/07)																			
21		Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										22		23		24			
25		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										26		27		28			
29		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										21		22		23			
30		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										24		25		26			
31		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										27		28		29			
32		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										20		21		22			
33		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										23		24		25			
34		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										26		27		28			
35		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										29		30		31			
36		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										32		33		34			
37		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										35		36		37			
38		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										38		39		40			
39		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										41		42		43			
40		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										44		45		46			
41		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										47		48		49			
42		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										50		51		52			
43		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										53		54		55			
44		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										56		57		58			
45		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										59		60		61			
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48		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										68		69		70			
49		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										71		72		73			
50		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										74		75		76			
51		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										77		78		79			
52		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										80		81		82			
53		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										83		84		85			
54		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										86		87		88			
55		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										89		90		91			
56		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										92		93		94			
57		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										95		96		97			
58		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										98		99		100			
59		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										101		102		103			
60		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										104		105		106			
61		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										107		108		109			
62		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										110		111		112			
63		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										113		114		115			
64		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										116		117		118			
65		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										119		120		121			
66		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										122		123		124			
67		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										125		126		127			
68		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										128		129		130			
69		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										131		132		133			
70		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										134		135		136			
71		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										137		138		139			
72		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										140		141		142			
73		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										143		144		145			
74		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										146		147		148			
75		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										149		150		151			
76		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										152		153		154			
77		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										155		156		157			
78		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										158		159		160			
79		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										161		162		163			
80		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										164		165		166			
81		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										167		168		169			
82		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										170		171		172			
83		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										173		174		175			
84		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										176		177		178			
85		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										179		180		181			
86		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										182		183		184			
87		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										185		186		187			
88		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										188		189		190			
89		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										191		192		193			
90		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										194		195		196			
91		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										197		198		199			
92		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										200		201		202			
93		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										203		204		205			
94		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										206		207		208			
95		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										209		210		211			
96		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										212		213		214			
97		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										215		216		217			
98		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										218		219		220			
99		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										221		222		223			
100		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										224		225		226			
101		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										227		228		229			
102		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										230		231		232			
103		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										233		234		235			
104		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										236		237		238			
105		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										239		240		241			
106		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										242		243		244			
107		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										245		246		247			
108		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										248		249		250			
109		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										251		252		253			
110		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										254		255		256			
111		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										257		258		259			
112		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										260		261		262			
113		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										263		264		265			
114		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										266		267		268			
115		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										269		270		271			
116		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										272		273		274			
117		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01										275		276		277			
118		Year / Année Month / Mois Day / Jour Time / Heure 180 0 7 01</td																	



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SOW Ref: 16.F.5.d



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 30, 2018, 3:53 PM	TCN-38680			
Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0			
Attention:	Attention:				
Carrier: NEAS	Routing:	Waybill #: DR-C22044	Total Pcs. 1	Total Weight: 350LBS	
QTY Order	Type Line Weight	Item Item	Description	WO or PO B/Code or S/N	Remarks
1	CRATE	350LBS 2003658	WASTE - OIL (5 GALLON PAIL)	CRATE # 3	DIMS 48" x 70" x 54"
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.				Received By:	Date
				Received By:	Date

Figure 2: NWS Shipping Manifest TCN-38680



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 30, 2018, 3:55 PM	TCN-38681			
Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0			
Attention:	Attention:				
Carrier: NEAS	Routing:	Waybill #: DR-C22050	Total Pcs.	Total Weight: 1675LBS	
QTY Order	Type Line Weight	Item Item	Description	WO or PO B/Code or S/N	Remarks
4	PALLET	1675	2002406	WASTE - OIL, 45 GAL	PALLET #1 Assets 348073,348081,348072,348071
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.				Received By:	Date
				Received By:	Date

Figure 3: NWS Shipping Manifest TCN-38681

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SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 30, 2018, 3:57 PM	TCN-38682		
Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0		
Attention:	Attention:			
Carrier: NEAS	Routing:	Waybill #: DR-C22050	Total Pcs. 1	Total Weight: 1600LBS
QTY Order	Type Line Weight	Item Item Description	WO or PO PALLET #2	B/Code or S/N Assets 346362,346363,346364,349634
4	PALLET	1600LB:2002406 WASTE - OIL, 45 GAL		
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.			Received By:	Date
			Received By:	Date

Figure 4: NWS Shipping Manifest TCN-38682



SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: MSTRANO	Date: Aug 30, 2018, 4:00 PM	TCN-38683		
Ship To: QIKIQTAAULK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367	From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0		
Attention:	Attention:			
Carrier: NEAS	Routing:	Waybill #: DR-C22050	Total Pcs. 1	Total Weight: 200LBS
QTY Order	Type Line Weight	Item Item Description	WO or PO PALLET #3	B/Code or S/N Assets 349630,349631,349632,349633
4	PALLET	200LBS 3000929 WASTE - OIL, EMPTY DRUM WITH R		
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.			Received By:	Date
			Received By:	Date

Figure 5: NWS Shipping Manifest TCN-338683

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		SHIPPING MANIFEST			
Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8				NON NEGOTIABLE	
Filled By: MSTRANO		Date: Aug 31, 2018, 10:39 AM	TCN-38693		
Ship To: QIKIQTAALUK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367		From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0		
Attention:		Attention:			
Carrier: NEAS		Routing:	Waybill #: DR-C22044	Total Pcs. 1	Total Weight: 450LBS
QTY Order	Type Line Weight	Item Description	WO or PO B/Code or S/N	Remarks	
2	PALLET 450LBS 2003634	WASTE - GLYCOL FILTERS (DRUM)	PALLET #11	ASSETS 151220,349220	
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.			Received By:	Date	
			Received By:	Date	

Figure 6: NWS Shipping Manifest TCN-338693

		SHIPPING MANIFEST			
Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8				NON NEGOTIABLE	
Filled By: MSTRANO		Date: Sep 1, 2018, 8:15 AM	TCN-38697		
Ship To: QIKIQTAALUK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367		From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0		
Attention:		Attention:			
Carrier: NEAS		Routing:	Waybill #: DR-C22050	Total Pcs. 1	Total Weight: 275 LBS
QTY Order	Type Line Weight	Item Description	WO or PO B/Code or S/N	Remarks	
1	PALLET 275LBS 2002356	WASTE - OIL FILTERS	PALLET #13	ASSET 342432	
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.			Received By:	Date	
			Received By:	Date	

Figure 7: NWS Shipping Manifest TCN-338697

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SHIPPING MANIFEST

Suite 3000, 400 Cooper Street, Ottawa, ON K2P 2H8

NON NEGOTIABLE

Filled By: MSTRANO	Date: Sep 1, 2018, 8:17 AM	TCN-38698			
Ship To: QIKIQTAALUK ENVIRONMENTAL (QE) C/O VEOLIA 2630, BOUL. INDUSTRIEL CHAMBLY, QC, J3L 4V2 1-866-634-6367		From: DYE-M, CAPE DYER, DND Storeroom Raytheon Canada Limited, NWS LSS Iqaluit, P.O. Box 1089 Iqaluit, NU, X0A 0H0 867-979-4818	Priority 0		
Attention:	Attention:				
Carrier: NEAS	Routing:	Waybill #: DR-C22044	Total Pcs. 1	Total Weight: 450 LBS	
QTY Order	Type Line	Item Weight	Description	WO or PO B/Code or S/N	Remarks
2	PALLET	450LBS 2002406	WASTE - OIL, 45 GAL	PALLET # 14	ASSETS 345524, 341068
NOTE: All claims related to this shipment have to be filled with Raytheon within 45 hours of receipt.			Received By:	Date	
			Received By:	Date	

Figure 8: NWS Shipping Manifest TCN-38698

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ANNEX B: SEWAGE OUTFALL LOCATION (DYE-2) WITH CO-ORDINATES



Coordinates of Sewage Outfall Location (DYE-2): 66° 39' 51.26"N, 61° 21' 16.54"W

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ANNEX C: ANALYSIS OF DISCHARGED SEWAGE EFFLUENT

The sewage outfall sump sampled three times in 2018. The samples were analysed for the parameters listed in the water licence Part I, Item 3.

Table C-1: Summary of Analysis of Discharged Sewage Effluent at DYE-M in 2018

Sample Date	Parameter				
	pH	Oil and Grease (Present - P / Absent - A)	Biological Oxygen Demand (mg/L)	Total Suspended Solids (mg/L)	Faecal Coliforms
11-Aug-18	7.2	A	226	76	16800
25-Aug-18	6.45	A	510	271	132000
20-Oct-18	5.9	A	1350	247	16,100,000

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Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1814602
Date Submitted: 2018-08-16
Date Reported: 2018-08-23
Project: DYE M Sewage Sump
COC #: 183357

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	BOD5	1	mg/L		1381221 Sewage 2018-08-11 Sewage Lagoon DYE M
	pH	1.00			7.20
	Total Suspended Solids	2	mg/L		76
Oil and Grease	Oil & Grease - Mineral	1	mg/L		6
	Oil & Grease - Non-mineral	1	mg/L		237
	Oil & Grease - Total	1	mg/L		243
	Visible Sheen		P/A		A

Guideline = * = Guideline Exceedence

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

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Page 2 of 3

Figure 9: 11-Aug-18 sewage effluent results, Page 1 of 2



Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1814624
Date Submitted: 2018-08-16
Date Reported: 2018-08-17
Project: DYEM Sewage Swamp
COC #: 183357

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1381266 Sewage 2018-08-11 Sewage Lagoon Dye-M A	1381267 Sewage 2018-08-11 Sewage Lagoon Dye-M B	1381268 Sewage 2018-08-11 Sewage Lagoon Dye-M C
Others	Faecal Coliforms	0	ct/100mL		18100	17400	14900	

Figure 10: 11-Aug-18 sewage effluent results, Page 2 of 2

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Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1815574
Date Submitted: 2018-08-29
Date Reported: 2018-09-07
Project:
COC #: 183353

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1384075 Sewage 2018-08-25 1
General Chemistry	BOD5	1	mg/L		510	
	pH	1.00			6.45	
Oil and Grease	Total Suspended Solids	2	mg/L		271	
	Oil & Grease - Mineral	1	mg/L		26	
	Oil & Grease - Non-mineral	1	mg/L		80	
	Oil & Grease - Total	1	mg/L		106	
	Visible Sheen		P/A		A	

Guideline =

* = Guideline Exceedence

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

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Page 2 of 3

Figure 11: 25-Aug-2018 sewage effluent results, Page 1 of 2



Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1815526
Date Submitted: 2018-08-29
Date Reported: 2018-08-30
Project:
COC #: 183353

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1383891 Sewage 2018-08-25 Dye Main A	1383892 Sewage 2018-08-25 Dye Main B	1383893 Sewage 2018-08-25 Dye Main C
Others	Faecal Coliforms	0	cf/100mL		131000	76000	189000	

Figure 12: 25-Aug-2018 sewage effluent results, Page 2 of 2

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SOW Ref: 16.F.5.d



Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1819677
Date Submitted: 2018-10-29
Date Reported: 2018-11-05
Project:
COC #: 837327

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	BOD5	1	mg/L		1395853 Sewage 2018-10-20 DYE M #1+#2+#3
	pH	1.00			5.90
Oil and Grease	Total Suspended Solids	2	mg/L		247
	Oil & Grease - Mineral	1	mg/L		17
	Oil & Grease - Non-mineral	1	mg/L		58
	Oil & Grease - Total	1	mg/L		75
	Visible Sheen		P/A		A

Guideline = * = Guideline Exceedence

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

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Page 2 of 3

Figure 13: 20-Oct-2018 sewage effluent results, Page 1 of 2



Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1819678
Date Submitted: 2018-10-29
Date Reported: 2018-10-30
Project:
COC #: 837327

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Microbiology	Faecal Coliforms	0	ct/100mL		1395854 Sewage 2018-10-20 DYE M #4 16100000

Figure 14: 20-Oct-2018 sewage effluent results, Page 2 of 2

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ANNEX D: LOCATION OF BERMED FUEL STORAGE FACILITIES AND ANALYSIS OF BERM WATER¹

Table D-1: Analysis of Berm Water at DYE-M in 2018

Berm	Maximum concentration of any grab sample (ug/L)	DYE W20A	DYE W22K,J,I &W20B	DYE W22K,J,I &W20B
Location on-site		Summit	Summit	Summit
Discharge Latitude ²		66°40'0.13"N	66°39'53.59"N	66°39'53.59"N
Discharge Longitude		61°21'25.76"W	61°21'23.78"W	61°21'23.78"W
Date		20-Jul-18	9-Aug-18	28-Aug-18
pH (pH Units)	6 to 9	6.91	3.91	6.27
Oil and Grease (ug/L)	5000	<1000	<1000	<1000
Arsenic (total) (ug/L)	100	<20	<20	<20
Cadmium (dissolved) (ug/L)	10	<0.1	0.3	<0.1
Chromium (dissolved) (ug/L)	100	<1	<1	<1
Cobalt (dissolved) (ug/L)	50	<0.2	<0.2	<0.2
Copper (dissolved) (ug/L)	200	<1	5	<1
Lead (dissolved) (ug/L)	50	<1	<1	<1
Mercury (total) (ug/L)	0.6	<0.1	<0.1	<0.1
Nickel (dissolved) (ug/L)	200	<5	<5	<5
PCB (total) (ug/L)	1000	<0.1	<0.1	<0.1
Phenols (ug/L)	20	<1	<1	<1
Zinc (total) (ug/L)	500	<40	160	180
Benzene (ug/L)	370	<0.5	<0.5	<0.5
Toluene (ug/L)	2	<0.5	<0.5	<0.5
Ethyl benzene (ug/L)	90	<0.5	<0.5	<0.5

¹ Effluent from bermed fuel storage facilities.

² Final discharge point of bermed fuel storage facility

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SOW Ref: 16.F.5.d



Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1813288
Date Submitted: 2018-07-27
Date Reported: 2018-07-30
Project:
COC #: 834189

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1377189 Water 2018-07-20 DYE-M W20A Bern Water Total
General Chemistry	pH	1.00				6.91
Mercury	Hg	0.0001	mg/L			<0.0001
Metals	Aqua-Regia Digest					Y
	As	0.02	mg/L			<0.02
	Zn	0.04	mg/L			<0.04
Oil and Grease	Oil & Grease - Total	1	mg/L			<1
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L			<0.1
Subcontract-Inorg	Phenols	0.001	mg/L			<0.001
VOCs Surrogates	Toluene-d8	0	%			95
Volatiles	Benzene	0.5	ug/L			<0.5
	Ethylbenzene	0.5	ug/L			<0.5
	Toluene	0.5	ug/L			<0.5

Guideline =

* = Guideline Exceedence

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

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Page 2 of 5

Figure 15: DYE W20A berm water laboratory results, page 1 of 2

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SOW Ref: 16.F.5.d



Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1813289
Date Submitted: 2018-07-27
Date Reported: 2018-07-31
Project:
COC #: 834189

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1377190 Water 2018-07-20 DYE-M W20 A Berm Water Diss
Metals	Cd	0.0001	mg/L		<0.0001	
	Co	0.0002	mg/L		<0.0002	
	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	

Figure 16: DYE W20A berm water laboratory results, page 2 of 2

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SOW Ref: 16.F.5.d



Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1814389
Date Submitted: 2018-08-14
Date Reported: 2018-08-21
Project: Dye Main Tank Cleaning
COC #: 176747

Group	Analyte	MRL	Units	Guideline	
General Chemistry	pH	1.00			3.91
Mercury	Hg	0.0001	mg/L		<0.0001
Metals	Aqua-Regia Digest				Y
	As	0.02	mg/L		<0.02
	Zn	0.04	mg/L		0.16
Oil and Grease	Oil & Grease - Total	1	mg/L		<1
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L		<0.1
Subcontract-Inorg	Phenols	0.001	mg/L		<0.001
VOCs Surrogates	Toluene-d8	0	%		101
Volatile	Benzene	0.5	ug/L		<0.5
	Ethylbenzene	0.5	ug/L		<0.5
	Toluene	0.5	ug/L		<0.5

Guideline =

* = Guideline Exceedence

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

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Figure 17: DYE W22K, J, I &W20B berm water laboratory results (09-Aug-2018), page 1 of 2³

³ Sample failed on pH, tested in situ with hand-help meter (See Figure 20 and 21), Berm was sample was re-taken on 28-Aug-2018.

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Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1814390
Date Submitted: 2018-08-14
Date Reported: 2018-08-21
Project: Dye Main Tank Cleaning
COC #: 176747

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	
Metals	Cd	0.0001	mg/L		1380377 Water	0.0003
	Co	0.0002	mg/L		2018-08-09 PGS Tank	<0.0002
	Cr	0.001	mg/L			<0.001
	Cu	0.001	mg/L			0.005
	Ni	0.005	mg/L			<0.005
	Pb	0.001	mg/L			<0.001

Figure 18: DYE W22K, J, I &W20B berm water laboratory results (09-Aug-2018), page 2 of 2



Figure 19: In situ sampling of pH, location of sample

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Figure 20: In situ sampling of pH, results

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Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1815836
Date Submitted: 2018-09-04
Date Reported: 2018-09-10
Project: COC #: 176743

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
General Chemistry	pH	1.00		6.27	1385012 WW
Mercury	Hg	0.0001	mg/L	<0.0001	
Metals	Aqua-Regia Digest			Y	
	As	0.02	mg/L	<0.02	
	Zn	0.04	mg/L	0.18	
Oil and Grease	Oil & Grease - Total	1	mg/L	<1	
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L	<0.1	
Subcontract-Inorg	Phenols	0.001	mg/L	<0.001	
VOCs Surrogates	Toluene-d8	0	%	99	
Volatiles	Benzene	0.5	ug/L	<0.5	
	Ethylbenzene	0.5	ug/L	<0.5	
	Toluene	0.5	ug/L	<0.5	

Guideline =

* = Guideline Exceedence

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

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Page 2 of 5

Figure 21: DYE W22K, J, I &W20B berm water laboratory results (28-Aug-2018), page 1 of 2

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Environment Testing

Certificate of Analysis

Client: Raytheon Canada Limited Ottawa
400 Cooper St.
Ottawa, ON
K2P 2H8
Attention: Mr. Will Wyman
PO#: 002160-OT
Invoice to: Raytheon Canada Limited Ottawa

Report Number: 1815837
Date Submitted: 2018-09-04
Date Reported: 2018-09-07
Project:
COC #: 176743

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	1385013 WW 2018-08-28 Berm PGS Tank Dye Main
	Co	0.0002	mg/L	<0.0002	
	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	

Figure 22: DYE W22K, J, I & W20B berm water laboratory results (28-Aug-2018), page 2 of 2

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