403 270 9200 tel 403 270 0399 fax

# RECEIVED By clerk at 9:44 am, Apr 18, 2011

March 17, 2010

Phyllis Beaulieu Licensing Manager Nunavut Water Board P.O. Box 119 Gjoa Haven, NU X0B 1J0

Dear Phyllis:

Project No: Water Use License 1BR-LON0813 2010 Annual Report

Regarding: FOX-2, Longstaff Bluff DEW Line Site

AECOM Canada Ltd. is providing the attached annual report form as per Section B.1 of the abovenoted water use license. The report is being submitted on behalf of Defence Construction Canada and the Department of National Defence.

In addition to the annual report form, we are providing a summary of the work completed to date at the site. The following is a summary of the work completed and of the samples collected as part of the wastewater monitoring and sewage effluent monitoring:

#### **Work Completed**

The following work was completed at the FOX-2 site during the 2010 summer construction season:

**Landfarm:** Excavation and remediation of hydrocarbon impacted soils to the project criteria in the landfarm was completed in 2010. The landfarm was closed, which included levelling off the berms and decommissioning the monitoring wells.

**Tier II Soil Disposal Facility:** Construction activities at the Upper Site Tier II Disposal Facility included construction of the perimeter berms, bottom liner installation, placement of liner bedding material, some placement of Tier II soils, and preparation for instrument installation. Approximately 3,695 m<sup>3</sup> of Tier II soils, along with intermediate fill, was placed in the Tier II Disposal Facility prior to being capped for the winter.

**Non-Hazardous Waste Landfill:** The Hangar Non-Hazardous Waste Landfill was constructed and landfilling of non-hazardous site debris was started. Approximately 5,638 m<sup>3</sup> of debris, along with intermediate fill, was placed in the landfill prior to being capped for the winter.

**Contaminated Soils:** All contaminated soils have been excavated and placed within an appropriate on-site disposal facility. No contaminated soils were removed from the site in 2010.



**Demolition:** Demolition and disposal of non-hazardous building materials into the Non-Hazardous Waste Landfill was completed for the module train, warehouse, garage, fuel storage tanks, and POL lines. All hazardous building materials were removed, packaged for transport off-site, and stored in the Hazardous Material Storage Area.

Debris Removal: On-going.

Landfill/Debris Area Excavations: The following landfills and debris areas were excavated – Airstrip West, Apron Debris Area, Airstrip Landfill, East Beach Debris Area, East Landing Debris Area, West Landfill, Airstrip South Landfill, West Landing Debris Area, Airstrip Camp Landfill, Hangar Pad Debris Area and Station Camp Dump.

**Community Consultations:** The results of the community meetings held by DCC were submitted with the Project Description. The contractor typically holds a project start up meeting prior to each season.

Spill Incidences: There was one spill incidence at FOX-2, see the attached spill report.

**Monitoring Results:** The monitoring reports are attached. The reports were prepared by the Environmental Sciences Group from Kingston, ON, who serve as the scientific advisors for the clean up work and are on-site for the duration of the work.

We trust the information provided is sufficient. Please feel free to contact the undersigned if you require any additional information.

Sincerely,

**AECOM Canada Ltd.** 

Eva Schulz, P.Ag.

Eva.Schulz@aecom.com

EMS.

cc: Tamara Van Dyck, DCC

Encl: Annual Report Form; Spill Report Form; Monitoring Reports; Selected Site Photographs

NWB Annual Report		Year being rep	ported:	2010	▼	
License No: 1BR-LON0813			Issued Date:	July 19, 2	2008	
			Expiry Date:	,	July 31,	2013
	Project Name:	FOX-2, Longstaff I	Bluff DEW Line	Site Clean	. Hn	
	rroject Name.	TOX-2, Longstan	Juli DEW Line	One Olean	ГОР	
	Licensee: Defend	ce Construction Ca	nada			
	Mailing Address:	Defence Constru DGME 101 Colonel By D Ottawa, Ontario,	Orive,	K2		
	Name of Company fill relationship between the AECOM Engineering Design C	e two entities, if app	=	Name of Li	icensee plea	se clarify
General Back	ground Information o	n the Project (*opti	onal):			
Licence Reg	uirements: the license	e must provide th	e following info	ormation i	n accodan	ce with
Licerice Requ	in ements. the license	e must provide m	e rollowing line	Ji illation il	ii accouaii	ce with
	Part B 🔻 I	tem 1				
_	eport of water use and ge and greywater man					
	Water Source(s):	water supply lake	<del></del>			
	Water Quantity:	12/day			Domestic (	
		19.9 cu.m/day for days	r 104 Actual Qu	iantity Use	ed Domesti	c (cu.m)
		40/day for indust	rial Quantity	Allowable I	Drilling (cu	.m)
		n/a			d Drilling (c	•
	Waste Management a Solid Waste Disp Sewage Drill Waste Greywater Hazardous		sewage 8	& greywate	er for 2010 :	season=1498 cu.ı
	Other:					
	Additional Details:  Details of the waste m	anagement and di	sposal were pro	ovided with	the applica	ation form.
A list of unau	thorized discharges a	nd a summary of	follow-up actio	ns taken.		
	Spill No.: 1		(as reported to	the Spill I	Hot-line)	
	Date of Spill: July 31  Date of Notification to		August 3	. 2010	1	
	Additional Details: (im	•			」 m monitoring	ı, etc)
	see attached	<u>.</u>			<del>-</del>	

	Joe attachica.	
Revisions to	the Spill Contingency Plan	
	SCP submitted and approved - no revision required or proposed	
	Additional Details:	
Revisions to	the Abandonment and Restoration Plan	
	AR plan submitted and approved - no revision required or proposed	
	Additional Details:	
	The entire project is an abandonment and restoration plan.	
	, , , , , , , , , , , , , , , , , , , ,	
Progressive	Reclamation Work Undertaken	
J	Additional Details (i.e., work completed and future works proposed)	
	n/a	
Results of th	ne Monitoring Program including:	
	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of where sources of water are utilized;	each
	Details attached	
	Additional Details:	
	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of where wastes associated with the licence are deposited:	each
	where wastes associated with the licence are deposited;	each
	where wastes associated with the licence are deposited;  Details attached	each
	where wastes associated with the licence are deposited;	each
	where wastes associated with the licence are deposited;  Details attached	each
	where wastes associated with the licence are deposited;  Details attached	each
	where wastes associated with the licence are deposited;  Details attached	each
	where wastes associated with the licence are deposited;  Details attached  Additional Details:	
	where wastes associated with the licence are deposited;  Details attached	
	where wastes associated with the licence are deposited;  Details attached  Additional Details:  Results of any additional sampling and/or analysis that was requested by an Inspector	
	where wastes associated with the licence are deposited;  Details attached  Additional Details:	
	where wastes associated with the licence are deposited;  Details attached  Additional Details:  Results of any additional sampling and/or analysis that was requested by an Inspector	
	where wastes associated with the licence are deposited;  Details attached  Additional Details:  Results of any additional sampling and/or analysis that was requested by an Inspector  No additional sampling requested by an Inspector or the Board	

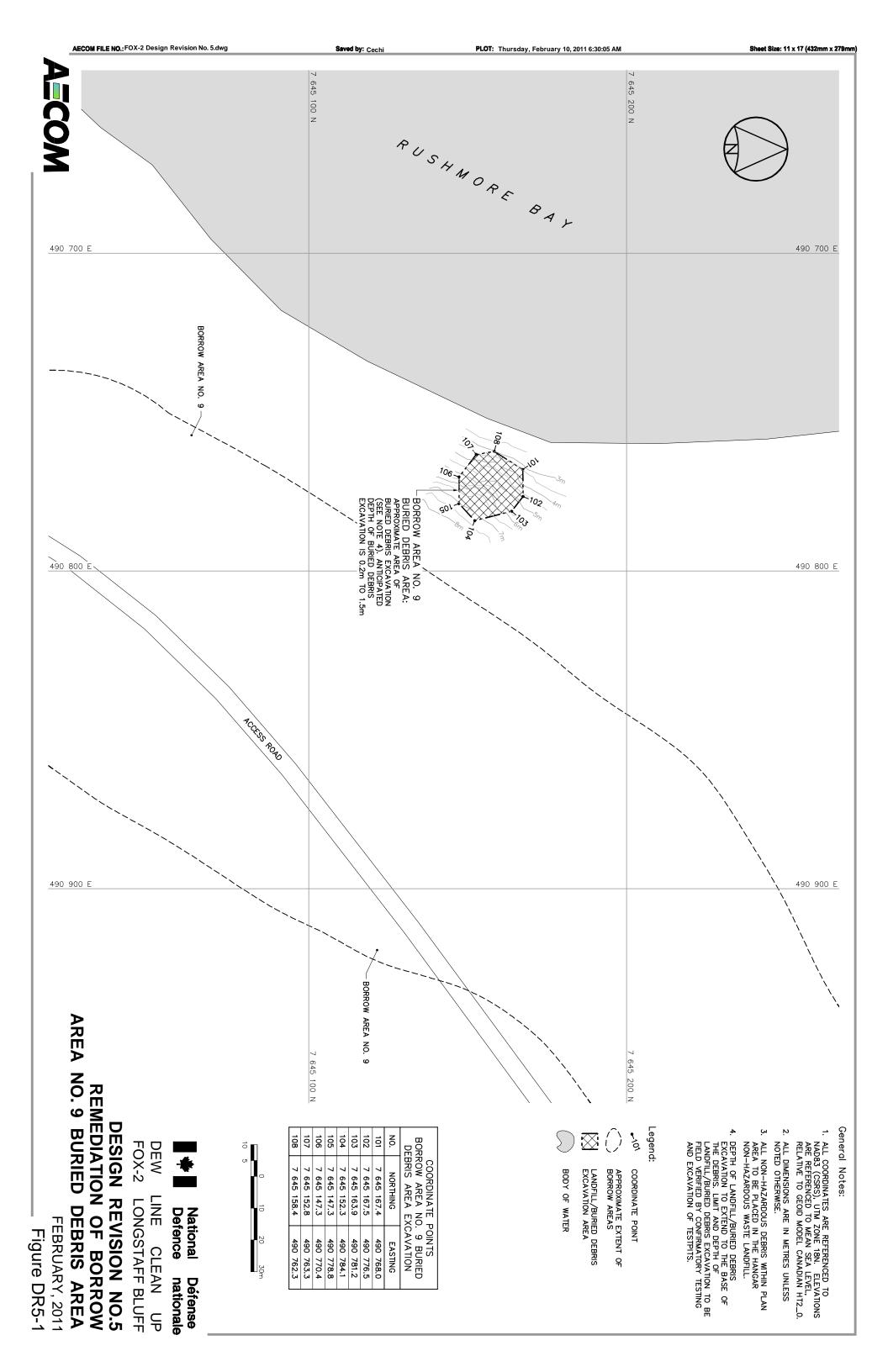
Any other details on water reported.	use or waste disposal requested by the Board by Novem	ber 1 of the year beir
No additional s	sampling requested by an Inspector or the Board	▼
Additional De	etails: (Attached or provided below)	
Any responses or follow-u	p actions on inspection/compliance reports	
No inspection	and/or compliance report issued by INAC	₩
Additional De	etails: (Dates of Report, Follow-up by the Licensee)	
Any additional comments	or information for the Board to consider	
	_	
Date Submitted: Submitted/Prepared by:	March 31, 2011 Eva Schulz	
Contact Information:	Tel: 403-270-9220	
	Fax: 403-270-0399	
	email: eva.schulz@aecom.com	

### **GPS Coordinates for water sources utilized**

	UTM Zone 18N, NAD83			
Source Description	Northing	Easting		
Water Supply Lake	7642850	493400		
		_		

### **GPS Locations of areas of waste disposal**

Location Description (type)	UTM Zone 18N, NAD83			
	Northing	Easting		
Landfarm (H01)	7646868.5	489093.5		
Landfarm (H02)	7646692.5	489225.5		
Landfarm (H05)	7646642.7	489130.3		
Landfarm (H06)	7646803.4	489008		
Hangar Non-Hazardous Waste				
Landfill (J10)	7646438.4	489315.9		
Hangar Non-Hazardous Waste				
Landfill (J11)	7646428.2	489353		
Hangar Non-Hazardous Waste				
Landfill (J12)	7646390.1	489341		
Hangar Non-Hazardous Waste				
Landfill (J13)	7646402.4	489304		
Station Non-Hazardous Waste				
Landfill (T10)	7643078.5	494111.5		
Station Non-Hazardous Waste				
Landfill (T11)	7643096.6	494161.4		
Station Non-Hazardous Waste				
Landfill (T12)	7643059	494175		
Station Non-Hazardous Waste				
Landfill (T13)	7643040.9	494125.2		
Tier II Landfill (U10)	7643260.4	494258.2		
Tier II Landfill (U11)	7643254.6	494312.9		
Tier II Landfill (U12)	7643197	494306.8		
Tier II Landfill (U13)	7643202.7	494252.1		
Sewage Lagoon	7646024	491084		







### NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130 FAX: (867) 873-6924 EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

								REPORT LINE USE ONLY
Α	REPORT DATE: MONTH – DAY 08-03-2010		I .	EPORT TIN	ΛΕ	ORIGINAL SPILL RE	EPORT,	REPORT NUMBER
В	07-31-2010	– DAY – YEAR		CCURREN	ICE TIME	UPDATE #TO THE ORIGINAL SP	ILL REPORT	<del>-</del>
С	LAND USE PERMIT NUMBER (I			1	BR-LON0813	,		
D	GEOGRAPHIC PLACE NAME O FOX-2, Longstaff		ON FROM NAMED LOC	CATION	REGION  NWT NUNA	AVUT □ ADJACENT JU	JRISDICTION	OR OCEAN
Ε	LATITUDE DEGREES 68	MINUTES 53	SECONDS 49		DNGITUDE EGREES <b>75</b>	MINUTES 0	9 se	ECONDS 37
F	F RESPONSIBLE PARTY OR VESSEL NAME Defence Construction Canada  RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 350 Albert, suite 1721, Ottawa, ON, k1A 0K3							
G	ANY CONTRACTOR INVOLVED  Quantum Murray		CONTRACTOR AD	DRESS OF	R OFFICE LOCATION			
	PRODUCT SPILLED  Hydraulic oil		QUANTITY IN LITR 55 litres	ES, KILOG	RAMS OR CUBIC ME	TRES U.N. NUMBER		
Η	SECOND PRODUCT SPILLED (	(IF APPLICABLE)	QUANTITY IN LITR	ES, KILOG	RAMS OR CUBIC ME	TRES U.N. NUMBER		
I	SPILL SOURCE Excavator		SPILL CAUSE  Ruptured I	hose		approxim		SQUARE METRES
J	FACTORS AFFECTING SPILL C	OR RECOVERY	DESCRIBE ANY AS	SSISTANCE	E REQUIRED	HAZARDS TO PE	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT  N/A	
K	The spill was spre Quick dry was pur area was excavate No further action	t under the excaved and soil place	vator and spi	II pads	s were emplo be disposed	yed to mitigated in the proper t	the spr	ead and the
L	REPORTED TO SPILL LINE BY Robert Bellizzi	POSITION ENV O	I .	MPLOYER DCC		LOCATION CALLING F		ELEPHONE 613-998-7288
M	ANY ALTERNATE CONTACT  Imad jaradat	Assoc. proj.		MPLOYER DCC		ALTERNATE CONTACT Ottawa LOCATION		13-998-4583
			REPORT LINE U	USE ONLY	<u> </u>	<u>'</u>		
N I	RECEIVED AT SPILL LINE BY	POSITION	EI	MPLOYER		LOCATION CALLED	F	
N		STATION OPERATOR				YELLOWKNIFE, NT	3)	EPORT LINE NUMBER
	DAGENCY DEC DCCG DG	NWT □ GN □ ILA □ INA	C □ NEB □ TC				1	EPORT LINE NUMBER
AGE	NCY			SIGNIFIC	CANCE   MINOR	MAJOR  UNKNOWN	FILE STATU	
LEA		CONTACT NAME		CONTAC		MAJOR UNKNOWN  REMARKS	FILE STATU	867) 920-8130
	O AGENCY	CONTACT NAME		+			FILE STATU	867) 920-8130
FIRS	D AGENCY ST SUPPORT AGENCY	CONTACT NAME		+			FILE STATU	867) 920-8130
		CONTACT NAME		+			FILE STATU	867) 920-8130

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4 TAL SCIENCES GROWNOWN CONTROL OF THE PROPERTY OF THE PROPERTY

Tamara Van Dyck Environmental Officer Defence Construction Canada DEW Line Cleanup PMO 101 Colonel By Drive Ottawa ON K1A 0K2

March 15, 2011

### RE: June 2010 Monthly Report for Water Use License Number: 1BR-LON0813

The following results of the Monitoring Program (MP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for FOX-2 (*Longstaff Bluff*).

### 1. CAMP SEWAGE LAGOON

A 2 cell sewage lagoon was constructed to service the FOX-2 construction camp in 2009. The sewage lagoon is located approximately 100 m from the contractor's camp, 100 m away from drainage channels, and away from water bodies supporting aquatic life. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 0491084E 7646024N.

### 2. SEWAGE EFFLUENT SAMPLES

The Water Use License and MP require that samples from treated sewage lagoon effluent at the point of discharge to the receiving water be collected prior to each discharge event. Six sewage effluent samples were collected in June 2010 from the FOX-2 sewage treatment plant and lagoons. A summary of the details of these results follows.

Laboratory results are provided in Appendix A.

GPS COORDINATES: 18W 0491768 7643478

SAMPLE: 10-12485 DATE: JUNE 8, 2010

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-12485
pН	6.0 to 9.0	pH units	7.97
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	<5
BOD	120	mg/L	54
Faecal Coliforms	10,000	CFU/dL	2500
Total Coliforms	-	CFU/ 100 mL	>20000

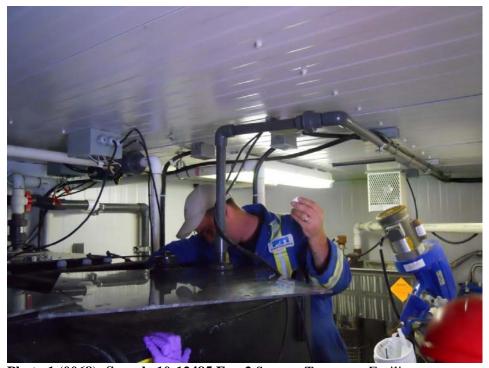


Photo 1 (0068): Sample 10-12485 Fox-2 Sewage Treatment Facility

GPS COORDINATES: 18W 0491768 7643478

SAMPLE: 10-12492 DATE: JUNE 11

Parameter	Allowable Maximum Average Concentration	Units	Sample# 10-12492
pН	6.0 to 9.0	pH units	8.53
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	<10
BOD	120	mg/L	17
Faecal Coliforms	10,000	CFU/dL	0
Total Coliforms	-	CFU/ 100 mL	80



Photo 2 (0095): Sample 10-12492 Fox-2 Sewage Treatment Facility

GPS COORDINATES: 18W 0491768 7643478

SAMPLE: 10-12702 DATE: JUNE 15, 2010

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-12702
pН	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	None Visible
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	62,000
Total Coliforms	-	CFU/ 100 mL	>200,000



Photo 5 (1448): Sample 10-12702 Fox-2 Sewage Treatment Facility

GPS COORDINATES: W0491657 7643666

SAMPLE: 10-13691 DATE: JUNE 30, 2010

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-13691
pН	6.0 to 9.0	pH units	8.3
Oil & Grease	None Visible	-	None Visible
Total Suspended Solids (TSS)	180	mg/L	5
BOD	120	mg/L	<3
Faecal Coliforms	10,000	CFU/dL	30
<b>Total Coliforms</b>	-	CFU/ 100 mL	230

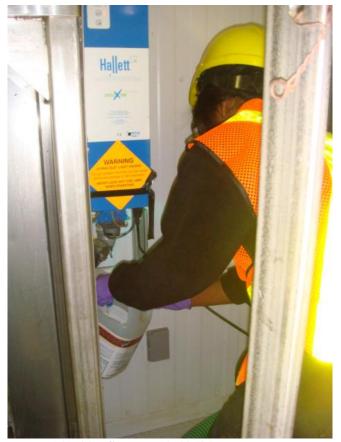


Photo 6 (1720): Sample 10-13691 Fox-2 Sampling the Fox-2 sewage treatment plant

The effluent from the Camp Sewage Treatment Facility (10-12485, 10-12492, 10-12702, and 10-13691) continued to be discharged directly to ground.( W0491657 7643666)

LOCATION: SEWAGE LAGOON CELL 1

GPS COORDINATES: 18W 0491084 7646022

SAMPLE: 10-12493 DATE: JUNE 11

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-12493
pН	6.0 to 9.0	pH units	7.57
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	<10
BOD	120	mg/L	14
Faecal Coliforms	10,000	CFU/dL	0
Total Coliforms	-	CFU/ 100 mL	600



Photo 3 (0097): Sample 10-12493 Fox-2 Sewage Lagoon Cell 1 - Facing East

The water from the Sewage Lagoon Cell 1 was discharged to the ground on June 25, 2010. (18W 0491084 7646022)

LOCATION: FOX 2 – SEWAGE LAGOON CELL 3 GPS COORDINATES: 18W 0491783 7643438

SAMPLE: 10-12494 DATE: JUNE 11

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-12494
pН	6.0 to 9.0	pH units	7.12
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	<10
BOD	120	mg/L	43
Faecal Coliforms	10,000	CFU/dL	0
<b>Total Coliforms</b>	-	CFU/ 100 mL	0



Photo 4 (0099): Sample 10-12494 Fox-2 Sewage Lagoon Cell 3

The water from the Sewage Lagoon Cell 3 was discharged to the ground on June 26, 2010. The water was discharged to an INAC approved location. (18W 0491783 7643438)

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Candice Casucci

Masuri.

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King, Ryan Adams (ESG)

## APPENDIX A LABORATORY RESULTS

		LA	BUKATUK	KE	<b>3</b> U.	L12				
G								ASG Logi		
Verite Ave										FOX-2
	em. / Chem. Eng.,	KMC					_			10-006
	7000, Stn. Forces							mples Rece		
	ntario K7K 7B4							Date of anal		
,	000 ext 6567							Date Repo		
ax: (613) 54	41-6596							S	heet:	1 of 1
	RESI	JLTS OF MIC	ROBIOLOGI	CAL	AN	ALY:	SIS			
			Method: ASG 036					thod: ASG	044	
Comm	la Idantification		Metriod. ASG 036	ivietrio	u. Ac	G 036	IVIE	Fecal	044	
Samp	ole Identification		E. coli	Pos	drawa.					
		(CFU/100 mL)	(CFU/100 mL)		<b>kgro</b> J/100		-	Coliforms CFU/100 ml		
	12485	> 20 000	900	_ `	20 0		<u> </u>	2500	<u>-)                                    </u>	
	12403	> 20 000	900		20 0	JU		2300		
		 	_ABORATOR	Y Q	Δ/Ω	C.				
			Method: ASG 036	Metho	d: AS	G 036	Me	thod: ASG	044	
Samp	ole Identification							Fecal		
		Coliforms	E. coli		kgro			Coliforms		
		(CFU/100 mL)	(CFU/100 mL)	(CFI	J/100	mL)	(	CFU/100 ml	L)	
	Blank	0	0		0			0		
	ontrol Sample	39	39		0			29		
Contr	ol Sample Target	37	37		0			37		
G							ASG	Login No:	206	00
Verite Ave	2						,,,,,	Site:		
	m. / Chem. Eng	DMC						Client No:		
						C				
	000, Stn. Force	S					•	Received:		
-	ntario K7K 7B4					D		of analysis:		
3) 541-60	00 ext 6567						N	lethod No:	ASC	G 037
c: (613) 5 <sup>4</sup>	41-6596						Date	Reported:	11-J	lun-10
								Page:	1 of	1
	- Dr	-0.0 -0.0		210						
	Ri	ESULTS OF	PH ANAL 13	010						
		Sample I.D.	рН							
		10-12485*	7.97							
	* ^	roand routh of the	licates							
	" Ave	raged result of dup	nicates							
		LABORAT	ORY QA/Q	C						
		Sample I.D.	pH							
		2485* ; Duplicate	7.97 ; 7.97							
	10-1.									
		Control	7.01							
		Control Target	7.00							

ESG						ASG Login No	o: 20600
12 Verite Ave						Site	e: Fox-2
Dept. of Cher	n. / Chem. Eng., RMC					Client Login No	o: 10-006
P.O. Box 170	000, Stn. Forces					Samples Received	d: 10-Jun-10
Kingston, On	tario K7K 7B4					Date of analysis	s: 11-Jun-10
(613) 541-600	00 ext 6567					Method No	: ASG 039
Fax: (613) 54	1-6596					Date Reported	
						Shee	t: 1 of 1
	RES	SULTS OF TOTA	AL SUS	PEND	ED SOLIDS AN	ALYSIS	
		Commis I D	01-	11-14	Total		
		Sample I.D.	Sample	Unit			
			Type^		Suspended Solids		
		10-12485*	SE	mg/L	< 5		
		LAE	BORAT	ORY C	QA/QC		
		Duplicate; 10-12485*	SE	mg/L	< 5 ; < 5		
		Control	Control	mg/L	190		
		Control Target	Control	mg/L	200		
		Blank	Control	mg/L	< 1		
		^SW =Surface Water, S	I = Sewag	e Influent	SE = Sewage Effluent		
		* Averaged result of dup					
		-					
		Control Target Blank  ^SW =Surface Water, S	Control Control I = Sewag	mg/L mg/L	200 < 1		

ESG				ASG Login No	20600
12 Verite Ave				Site	: Fox-2
Dept. of Chem. / C	hem. Eng., RMC			Client Login No	: 10-006
P.O. Box 17000, S	•			Samples Received	
Kingston, Ontario I				Date of analysis	
(613) 541-6000 ext					: ASG 042
Fax: (613) 541-6596				Date Reported	l: 15-Jun-10
				Page	e: 1 of 1
	RESULTS OF	BOD A	NALYSIS		
	Sample I.D.	Unit	BOD		
	10-12485*	mg/L	54		
	*Averaged result of duplic	cates			
	LABODAT		MOC		
	LABORA	UKI	(A) QC		
	Sample I.D.	Unit	BOD	1	
	Duplicate ; 10-12485*	mg/L	53 ; 54		
	Blank	mg/L	< 3		
	Control	mg/L	181		
	Control Target	mg/L	165		

c: (613) 541-6596				Date Reported: Sheet:	
RES	ULTS OF MIC	CROBIOLOG	ICAL ANALY	SIS	
	Mathadi ACC 020	Method: ASG 036	Mathadi ACC 020	Method: ASG 044	1
Sample Identification		Method: ASG 036	Method: ASG 036	Fecal	
Sample Identification	Coliforms	E. coli	Background	Coliforms	
	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	
12492*	80	0	470	0	
12493*	600	0	13 800	0	
12494*	0	0	80	0	
			(00		
	LABO	RATORY QA	VQC		
	Method: ASG 036	Method: ASG 036		Method: ASG 044	
Sample Identification	Method: ASG 036	Method: ASG 036	Method: ASG 036	Fecal	
Sample Identification	Method: ASG 036 Total Coliforms	Method: ASG 036	Method: ASG 036  Background	Fecal Coliforms	
	Method: ASG 036 Total Coliforms (CFU/100 mL)	Method: ASG 036  E. coli (CFU/100 mL)	Method: ASG 036  Background (CFU/100 mL)	Fecal Coliforms (CFU/100 mL)	
Blank	Method: ASG 036 Total Coliforms (CFU/100 mL) 0	Method: ASG 036  E. coli (CFU/100 mL)	Method: ASG 036  Background (CFU/100 mL) 0	Fecal Coliforms (CFU/100 mL)	
	Method: ASG 036 Total Coliforms (CFU/100 mL) 0 32	Method: ASG 036  E. coli (CFU/100 mL)	Method: ASG 036  Background (CFU/100 mL)	Fecal Coliforms (CFU/100 mL)	

ESG			ASG Login No	20606
12 Verite Ave			Site	: Fox-2
Dept. of Chem. / Chem.	n. Eng., RMC		Client No	: 10-007
P.O. Box 17000, Stn.	Forces		Samples Received	l: 12-Jun-10
Kingston, Ontario K7k	7B4		Date of analysis	: 14-Jun-10
(613) 541-6000 ext 65	67		Method No	: ASG 038
Fax: (613) 541-6596			Date Reported	
			Page	e: 1 of 1
	RESULTS OF	OH ANALYSIS		
	Sample I.D.	рН		
	10-12492*	8.53		
	10-12493	7.57		
	10-12494	7.12		
	* Averaged result of dupli	cates		
	LABORAT	ORY QA/QC		
	Sample I.D.	рН		
	10-12492 ; 10-12492	8.53 ; 8.52		
	Control	7.01		
	Control Target	7.00		

ESG	I						ASG Login No:	20606
12 Verite Ave								Fox-2
Dept. of Chem. / C	hem. Ena RMC	;					Client Login No:	
P.O. Box 17000, S		<u> </u>					nples Received:	
Kingston, Ontario							Date of analysis:	
(613) 541-6000 ext							Method No:	
ax: (613) 541-659							Date Reported:	
(0.0)							Sheet:	
	RI	ESULTS OF TOT	AL SUS	PEND	ED SOLIDS ANA	ALYSIS		
		Sample I.D.	Sample	Unit	Total			
			Type^		Suspended Solids			
		10-12492*	SE	mg/L	< 10			
		10-12493	SE	mg/L	< 10			
		10-12494	SE	mg/L	< 10			
		LA	BORAT	ORY (	QA/QC			
		Don't to to to		- "	40 10			
		Duplicate ; 10-12492		mg/L	< 10 ; < 10			
		Control	Control	mg/L	190			
		Control Target Blank	Control	mg/L mg/L	200			
					SE = Sewage Effluent			
		* Averaged result of d		e ii iii dei it	SE = Sewage Elliderit			
ESG						ASG	Login No:	
12 Verite Ave							Site:	FOX-2
•	Dept. of Chem. / Chem. Eng., RM					Clien	t Login No:	10-007
P.O. Box 17	7000, Stn. F	orces				Samples	Received:	12-Jun-10
Kingston, O	ntario K7K	7B4				Date of	of analysis:	12-Jun-10
(613) 541-6							Method No:	
Fax: (613) 54		<b>.</b>					Reported:	
rax. (013) 34	+1-0590					Date		
							Page:	1 Of 1
		RESULTS (	OF BC	D A	NALYSIS			
		Sample I.D.	_	nit	BOD	<u> </u>		
		12492	_	g/L	17			
		12493 12494*		g/L g/L	14 43	_		
		12434		9/ -	43	<u>.]</u>		
	*A\	veraged result of d	uplicates					
		LABOR	ATOF	RY Q	A/QC			
						1		
		Sample I.D.	U	nit	BOD			
		Sample I.D. 12494; duplicate	U	nit g/L	<b>BOD</b> 45; 40			
		Sample I.D.	U m m	nit	BOD			

ESG				ASG Login No:	20701
12 Verite Ave				Site:	FOX-2
Dept. of Chem. / Chem. Eng.,	RMC			Client No:	10-079
P.O. Box 17000, Stn. Forces				Samples Received:	2-Jul-10
Kingston, Ontario K7K 7B4				Date of analysis:	
(613) 541-6000 ext 6567				Date Reported:	3-Jul-10
Fax: (613) 541-6596				Sheet:	1 of 1
RES	ULTS OF MIC	CROBIOLOG	ICAL ANALY	SIS	
	Method: ASG 036	Method: ASG 036	Method: ASG 036	Method: ASG 044	
Sample Identification	Total	Welliou. 7100 000	Wictriod: 7100 000	Fecal	
Campie identification	Coliforms	E. coli	Background	Coliforms	
	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	
13691	230	10	1400	30	
	ΙΔRO	RATORY QA	VOC		
	LADO	TATORT QA	<b>140</b>		
	Method: ASG 036	Method: ASG 036	Method: ASG 036	Method: ASG 044	
Sample Identification	Total			Fecal	
	Coliforms	E. coli	Background	Coliforms	
	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	
Blank	0	0	0	0	
Control Sample	38	38	0	30	
Control Sample Target	31	31	0	31	

ESG					ASG Lo	ogin No: 2	20701
2 Verite Ave							FOX-2
Dept. of Chem. / Chem. Eng., RMC					Client Lo	gin No:	10-079
P.O. Box 17000, Stn. Forces					Samples Re		
Kingston, Ontario K7K 7B4					Date of a		
613) 541-6000 ext 6567					Met	hod No:	ASG 039
ax: (613) 541-6596					Date Re	eported:	3-Jul-10
						Sheet:	1 of 1
RF	SULTS OF TOT	AL SUS	PEND	FD SOLIDS AN	AI YSIS		
		/ 12 000			7.210.0		
	Sample I.D.	Sample	Unit	Total			
	Sample I.D.	Type^	Oilit	Suspended Solids			
	13691*	SE	mg/L	5			
	13091	SE .	IIIg/L	3			
	LA	BORAT	OBV (	N/OC			
	LA	BOILAI	OIXI C	x/vQC			
	Duplicate ; 13691*	SE; SE	mg/L	5.5 ; 5.0			
	Control	Control	mg/L	190			
	Control Target	Control	mg/L	200			
	Blank	Control	mg/L	< 1			
	^SW =Surface Water, S	SI = Sewage	e Influent	SE = Sewage Effluent			

ESG						180	Login No.	2070	24	
12 Verite	2 /2/0					ASG	Login No: Site:			
		/ Char	n. Eng., RMC			Cliant	Login No:			
P.O. Box							Received:			
Kingston							f analysis:			
(613) 54			57				lethod No:			
Fax: (613)	3) 541-65	96				Date	Reported:			
							Page:	1 01	1	
		RE	ESULTS O	F BOD	ANALYSIS					
		Sa	ample I.D.	Unit	BOD					
			13691*	mg/L	< 3					
		*Averaç	ged result of dup	licates						
			LABORA	TORY	QA/QC					
		Sa	ample I.D.	Unit	BOD					
		Dupl	icate; 13691*	mg/L	<3;<3					
			Blank	mg/L	< 3					
			Control	mg/L	187					
		Co	ntrol Target	mg/L	165					
ESG					<u> </u>			۱ ۲	Logio Ma	20704
	- 1						- 1	456	Login No:	
12 Verite		/ 01	E 5146							Fox-2
			n. Eng., RMC						Client No:	
P.O. Box									Received:	
Kingston							Da		f analysis:	
(613) 54 <sup>-</sup>			67							ASG 037
Fax: (61	3) 541-	6596					l	Date	Reported:	
									Page:	1 of 1
			RESUL	TS OF	pH ANALY	/SIS				
			Sample	I.D.	pH					
			1369		8.33					
		L		sult of du	plicates					
		,	* Averaged re	suit of au						
		7	* Averaged re	our or du						
		1	-		TORY QA/O	QC .				
		,	LAE	BORAT		DC .				
			LAE	BORATILD.	TORY QA/0	DC				

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4

Tamara Van Dyck Environmental Officer Defence Construction Canada DEW Line Cleanup PMO 101 Colonel By Drive Ottawa ON K1A 0K2

Monday, March 21, 2011



### RE: Analytical Results for Wastewater Samples Collected at FOX-2 in June, 2010

The following report summarizes results of the analysis of wastewater samples as per the FOX-2 (Longstaff Bluff) DEW Line Cleanup Project (DLCU) Specifications.

The FOX-2 specifications require that "wash water, melt water collection and rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream" meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pН	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Dissolved chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.0006	mg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	0.5	mg/L
Oil & grease	5	mg/L
PCBs	1	mg/L
Phenols	1	-

#### Phenols

The wastewater samples collected by ESG at FOX-2 in June, 2010 were not analyzed for phenols but they were analyzed for oil and grease. Research conducted by ESG<sup>1</sup> has determined that a) no federal, territorial or provincial criteria exist for the discharge of wastewater containing phenols to land at a minimum distance of 30-m from natural drainage courses b) the maximum concentration of phenols in DLCU wastewater to date (2.44 mg/L) is below the LC<sub>50</sub> for freshwater fish and crustaceans and below the oral and

<sup>&</sup>lt;sup>1</sup> Environmental Sciences Group. DEW Line Clean Up Project – Phenols in Wastewater. June, 2007.

dermal  $LD_{50}s$  for rats and rodents and c) phenols in excess of the maximum allowable concentration (MAC) have historically co-occurred with a visible oil & grease sheen and/or with an exceedance of the MAC for oil & grease. This information, and a subsequent decision to not test for phenols, has been presented to the NWB. To date, verbal agreement from the NWB has been received, but the project is awaiting written confirmation of the decision to suspend testing for phenols.

### **WASTEWATER SAMPLES**

Nine wastewater samples were collected at FOX-2 and analyzed in June 2010. A summary of the details of these results follows. Laboratory results are provided in Appendix A.

LOCATION: BARREL PROCESSING AREA MELTWATER

**G**PS COORDINATES: 18 W 0490764, 7644899

**SAMPLE:** 10-12486 **DATE:** JUNE 10, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-12486
pН	6-9	pH units	7.0
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	0.019
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

Water from the Barrel Processing Area was discharged on July 20<sup>th</sup>, 2010 to an INAC approved location (18W 0490764 7644899).

### LOCATION: LANDFARM COMPOSITE LOCATION – SOUTHEAST CORNER, SOUTHERN EDGE (EASTERLY / WESTERLY), SOUTHWEST CORNER

**GPS COORDINATES:** 1) 18W 0489136, 7646666 2) 18W 0489114, 7646700 3) 18W 0489069, 7646744

**4)** 18W 0489029, 7646801

**SAMPLE:** 10-12985 **DATE:** JUNE 19, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-12985
pН	6-9	pH units	7.73
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 2 (1484) Sample 10-12985 Fox-2 Landfarm Composite Sample Location 1 - Looking Southwest to Sampling at Location 2.

Water from the landfarm facility was discharged on July 22, 2010 to maintain berm stability, to an INAC approved location (488980, 7646809).

LOCATION: AIRSTRIP WEST LANDFILL LOBE B2 EXCAVATION BASE

**GPS** COORDINATES: 18W 0488497, 7646521

**SAMPLE:** 10-12986 **DATE:** JUNE 19, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-12986
pН	6-9	pH units	7.89
Total arsenic (As)	0.100	mg/L	0.005
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 3 (1491) Sample 10-12986 Fox-2 Airstrip West Landfill Lobe B2 Excavation Base - Facing South

LOCATION: AIRSTRIP WEST LANDFILL LOBE C EXCAVATION BASE

**GPS** COORDINATES: 18W 0488469 7646565

**SAMPLE:** 10-12987 **DATE:** JUNE 19, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-12987
pН	6-9	pH units	7.92
Total arsenic (As)	0.100	mg/L	0.006
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 3 (1492) Sample 10-12987 Fox-2 Airstrip West Landfill Lobe C Excavation Base - Facing South.

LOCATION: AIRSTRIP WEST LANDFILL LOBE D EXCAVATION BASE

**GPS** COORDINATES: 18W 0488458 7646580

**SAMPLE:** 10-12988 **DATE:** JUNE 19, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-12988
pН	6-9	pH units	7.90
Total arsenic (As)	0.100	mg/L	0.005
Dissolved cadmium (Cd)	0.010	mg/L	>0.001
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 4 (1494) Sample 10-12988 Fox-2 Airstrip West Landfill Lobe D Excavation Base - Facing Northwest.

Water levels decreased to the point where discharge was not necessary prior to backfilling in the Airstrip West Landfill lobes B2, C and D. (10-12986, 10-12987 and 10-12988)

### LOCATION: AIRSTRIP LANDFILL LOBE A – COMPOSITE LOCATION #1, #2 AND #3

**GPS COORDINATES: 1**)18W 0489389 7646668 2) 18W 0489391 7646657

**3**) 18W 0489380 7646668

**SAMPLE:** 10-13165 **DATE:** JUNE 21, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-13165
pН	6-9	pH units	8.24
Total arsenic (As)	0.100	mg/L	0.043
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	1.09
Oil & grease	5	mg/L	Broken Bottle
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



**Photo 5 (1541) Sample 10-13165) Fox-2** Airstrip Landfill Lobe A - From East Edge Facing Southwest.

Water from the Airstrip Landfill Lobe A was over criteria for Zinc; it was re-tested on June 29<sup>th</sup> (10-13689, 10-13690).

LOCATION: AIRSTRIP LANDFILL LOBE A

**GPS coordinates:** 1) L1: W0489385, N7646665

2) L2: W0489371, N7646668 3) L3: W0489408, N7646660

**SAMPLE:** 10-13689 **DATE:** JUNE 29, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-13689
pН	6-9	pH units	7.30
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

**SAMPLE:** 10-13690 **DATE:** JUNE 29, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-13690	
pН	6-9	pH units	7.22	
Total arsenic (As)	0.100	mg/L	< 0.003	
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001	
Dissolved chromium (Cr)	0.100	mg/L	N/A	
Dissolved cobalt (Co)	0.050	mg/L	< 0.003	
Dissolved copper (Cu)	0.200	mg/L	< 0.005	
Dissolved lead (Pb)	0.050	mg/L	< 0.010	
Total mercury (Hg)	0.0006	mg/L	< 0.0004	
Dissolved nickel (Ni)	0.200	mg/L	< 0.005	
Total zinc (Zn)	0.5	mg/L	< 0.010	
Oil & grease	5	mg/L	<2.0	
PCBs	1	mg/L	< 0.003	
Phenols	-	-	N/A	



Photo 7 (1707) Sample 10-13369/90 Fox 2 Wastewater sampling at the Airstrip Landfill Lobe A. Photo taken facing North

Water from Airstrip Landfill Lobe A was below criteria for all parameters. The excavation was not discharged prior to backfill.

**LOCATION: APRON DEBRIS AREA LOBE D - BASE GPS COORDINATES:** 18W 0488813 7646306

**SAMPLE:** 10-13368 **DATE:** JUNE 25, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-13368
pН	6-9	pH units	7.53
Total arsenic (As)	0.100	mg/L	0.009
Dissolved cadmium (Cd)	0.010	mg/L	< 0.01
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	0.007
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.4
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

Water levels decreased to the point where discharge was not necessary prior to backfilling at the Apron Debris Area Lobe D. (10-13368)

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Candice Casucci

Masuri.

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King (ESG)

### APPENDIX A LABORATORY RESULTS

lient: E	ESG					ASG Login No:	20608	
	12 Verite Ave							
			110				Fox-2	
	Dept. of Chem. / Chem		RIVIC			Client No:		
	P.O. Box 17000, Stn.					Samples Received:		
ŀ	Kingston, Ontario K7K	7B4				Date of analysis:		
(	(613) 541-6000 ext 656	67				Method No:	ASG 015	
	Fax: (613) 541-6596					Date Reported:		
T.	u (0.10) 0111 0000					Sheet No:		
			RESULTS OF PO	R IN W	ΔΤΕΡ ΔΝΔΙ Ν	/SIS		
			RESULTS OF FO		A I EN ANAL	Olo		
		Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260		
		W	12486	mg/L	< 0.003	< 0.003		
		* Average	e result of duplicate				1	
			Values in PPM**					
			LABOR	ATORY	( QA/QC			
r						< 0.003	1	
	(	<b></b>	Blank Control Sample	mg/L	< 0.003	< 0.003	-	
			Control Sample	mg/L	< 0.003	0.014		
			Control Sample Target	mg/L	< 0.003	0.015	]	
		** S = S	oil , C = Concrete , PC =	Paint Chip	, SW = Swab , P =	Plant , W = Water		
		All result	s corrected for the recove	ery of the su	ırrogate decachlorob	iphenyl		
lient :	F <b>4G</b> 12 Verite Ave					ASG L	ogin No:	
	12 Verite Ave						Site:	Fox-2
	Dept. of Chem. /	Chem F	Eng RMC			C	lient No:	10-008
	P.O. Box 17000,					Samples R	eceivea:	13-Jun-
	Kingston, Ontario	K7K 71	B4			Date of a	analysis:	14-Jun-
	(613) 541-6000 ex	xt 6567				Met	thod No:	ASG 01
	Fax: (613) 541-65							14-Jun-
	1 ax. (013) 341-03	330				Date K	Sheet:	
							Sneet.	1 01 1
			RESULTS O	F MER	CURY ANA	LYSIS		
						LYSIS		
			Sample		Mercury	LYSIS		
			Sample ID	9	Mercury ug/L	LYSIS		
			Sample	9	Mercury	LYSIS		
			Sample ID 10-1248	6*	Mercury ug/L < 0.4	LYSIS		
			Sample ID 10-1248i *Average result	6* of duplic	Mercury ug/L < 0.4			
			Sample ID 10-1248i *Average result	6* of duplic	Mercury ug/L < 0.4			
			*Average result	6* of duplic	Mercury ug/L < 0.4  ates.  DRY QA/QC  Mercury			
			*Average result  LABC  Sample  Sample	6* of duplic	Mercury ug/L < 0.4  ates.  DRY QA/QC  Mercury ug/L			
			*Average result  LABC  Sample  ID  Duplicate; 10	6* of duplic	Mercury ug/L < 0.4  ates.  DRY QA/QC  Mercury ug/L < 0.4; < 0.4			
			*Average result  LABC  Sample  ID  Duplicate; 10  Blank	6* of duplic  DRATC  P	Mercury ug/L < 0.4  ates.  DRY QA/QC  Mercury ug/L < 0.4; < 0.4 < 0.4			
			*Average result  LABC  Sample  ID  Duplicate; 10  Blank	6* of duplic  DRATC  P	Mercury ug/L < 0.4  ates.  DRY QA/QC  Mercury ug/L < 0.4; < 0.4 < 0.4			
			*Average result  LABC  Sample  ID  Duplicate; 10	e 6* of duplic  DRATC  e 1-12486*	Mercury ug/L < 0.4  ates.  DRY QA/QC  Mercury ug/L < 0.4; < 0.4			

Client:	ESG			ASC	3 Login No:	20608
	12 Verite Ave				Site:	Fox-2
	Dept. of Chem. / Che	em. Eng., RMC			Client No:	10-008
	P.O. Box 17000, Str	n. Forces		Samples Received: 1		13-Jun-10
	Kingston, Ontario K	7K 7B4		Date o	of analysis:	14-Jun-10
¢	(613) 541-6000 ext	6567			Method No:	ASG 037
~	Fax: (613) 541-659	6		Date	Reported:	14-Jun-10
					Page:	1 of 1
		RESULTS OF p	LI VIIVI ASI6			
		RESULTS OF P	H ANALT 313			
		Sample I.D.	pH			
		10-12486*	7.00			
		* Averaged result of duplic	ates			
		LABORATO	RY QA/QC			
		Sample I.D.	pH			
		10-12486 ; 10-12486	6.99 ; 7.01			
		Control	7.00			
		Control Target	7.00			

ASU#	12754	Report ID:	Fox-2 W4
Client:	ESG	Date Submitted:	14-Jun-10
		Date tested:	14-Jun-10
Site:	Fox-2	Date:	15-Jun-10
	10-008	Matrix:	water
Report of Analysis			
Sample	Oil & Grease		
	mg/L		
10-12486	<2.0		
Blank	<2.0		
Control	13.8		
Control Target	15.7		

Fox-2 10-008 ults in mg/L Cu	Ni -	Report ID: Date Submitted: Date tested: Date: Matrix:  Co	14-Jun-10 14-Jun-10 15-Jun-10 Water	Pb	Zn 0.019	Cr	As
10-008  ults in mg/L  Cu  -	-	Date: Matrix:  Co	15-Jun-10 Water				
10-008  ults in mg/L  Cu  -	-	Matrix:	Water Cd				
ults in mg/L  Cu  -	-	Со	Cd				
Cu	-						
Cu	-						
-	-						
-		-	-	-	0.019		
	-				0.012	-	< 0.003
		-	-	-	<0.010	-	<0.003
-	-	-	-	-	0.018	-	<0.003
-	-	-	-	-	0.019	-	<0.003
-	-	-	-	-	3.05	-	0.78
-	-	-	-	-	3.00	-	0.80
ılts in mg/L							
Cu	Ni	Co	Cd	Pb	Zn	Cr	As
<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-
<0.005	< 0.005	<0.003	<0.001	<0.010	-	<0.005	-
< 0.005	< 0.005	<0.003	<0.001	<0.010	-	< 0.005	-
<0.005	<0.005	<0.003	<0.001	< 0.010	-	<0.005	-
1.61	1.62	1.61	0.79	8.10	-	0.82	-
1.60	1.60	1.60	0.80	8.00	-	0.80	-
						3.05 3.05 3.00  dits in mg/L  Cu Ni Co Cd Pb Zn  <0.005 <0.005 <0.003 <0.001 <0.010 -  <0.005 <0.005 <0.003 <0.001 <0.010 -  <0.005 <0.005 <0.003 <0.001 <0.010 -  1.61 1.62 1.61 0.79 8.10 -	

ESG					ASG Login No:	20667
12 Verite Ave					Site:	Fox-2
Dept. of Chem. / Cher	m. Eng., R	MC			Client No:	10-035
P.O. Box 17000, Stn.					Samples Received:	25-Jun-10
Kingston, Ontario K7h	< 7B4				Date of analysis:	25-Jun-10
(613) 541-6000 ext 65	67				Method No:	ASG 015
Fax: (613) 541-6596					Date Reported:	28-Jun-10
					Sheet No:	1 of 1
	ŀ	RESULTS OF PC	BINV	VATER ANAL	YSIS	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	W	12985*	mg/L	< 0.003	< 0.003	
	W	12986	mg/L	< 0.003	< 0.003	
	W	12987	mg/L	< 0.003	< 0.003	
	W	12988	mg/L	< 0.003	< 0.003	
	W	13165	mg/L	< 0.003	< 0.003	
	* Average	e result of duplicate				
	**Report	Values in PPM**				
		LABORA	ATOR	Y QA/QC		
		Blank	mg/L	< 0.003	< 0.003	
		Duplicate ; 12985*	mg/L	< 0.003 < 0.003 ; < 0.003	< 0.003 < 0.003 ; < 0.003	
		Control Sample		< 0.003 ; < 0.003	0.003 ; < 0.003	
		Control Sample Control Sample Target	mg/L	< 0.003 < 0.003	0.011	
	ļ	Control Sample Target	mg/L	< 0.003	0.015	<u> </u>

ASU#	12810		Report ID:	Fox-2 W9				
Client:	ESG		Date Submitted:	25-Jun-10				
			Date tested:	28-Jun-10				
Site:	Fox-2		Date:	28-Jun-10				
	10-035		Matrix:	Water				
eport of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-12985	-	-	-	-	-	< 0.010	-	< 0.003
10-12986	-	-	-	-	-	< 0.010	-	0.005
10-12987	-	-	-	-	-	< 0.010	-	0.006
10-12988	-	-	-	-	-	< 0.010	-	0.005
10-13165	-	-	-	-	-	1.09	-	0.043
Blank	-	-	-	-	-	< 0.010	-	< 0.003
Control	-	-	-	-	-	3.08	-	0.79
Control Target	-	-	-	-	-	3.00	-	0.80
10-13165	-	_	-	-	_	1.06	-	0.041
10-13165	-	-	-	-	-	1.11	-	0.045
Dissolved Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-12985	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	_
10-12986	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-12987	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-12988	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-13165	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Blank	< 0.005	< 0.005	<0.003	< 0.001	< 0.010	-	< 0.005	-
Control	1.62	1.64	1.63	0.81	8.12	-	0.83	-
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
10-13165	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-13165	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
esults relate only to the	items tested							

ASU#	12810	Report ID:	Fox-2 W10
Client:	ESG	Date Submitted:	25-Jun-10
		Date tested:	26-Jun-10
Site:	Fox-2	Date:	28-Jun-10
	10-035	Matrix:	water
Report of Analysis	1		
Sample	Oil & Grease		
	mg/L		
10-12985	<2.0		
10-12986	<2.0		
10-12987	<2.0		
10-12988	<2.0		
10-13165	broken bottle		
Blank	<2.0		
Control	14.3		
Control Target	15.7		

ESG					ASG	Login No:	20667
12 Verite	Äve						Fox-2
Dept. of C	hem. / Ch	nem. Eng.,	RMC			Client No:	10-035
P.O. Box	17000, St	n. Forces			Samples	Received:	25-Jun-10
Kingston,	Ontario K	7K 7B4			Date of	of analysis:	28-Jun-10
(613) 541-					N	Nethod No:	ASG 014
Fax: (613)	541-6596	3			Date	Reported:	28-Jun-10
						Sheet:	1 of 1
		RE	SULTS OF MER	RCURY ANALY	YSIS		
			Sample	Mercury	1		
			ID	mg/L			
			12985	< 0.0004			
			12986	< 0.0004			
			12987	< 0.0004			
			12988	< 0.0004			
			13165	< 0.0004			
			LABORAT	ORY QA/QC			
			Sample	Mercury	1		
			ID	mg/L			
			Blank	< 0.0004			
			Blank Control Target	< 0.0004 0.0040			

ıt:	ESG		ate Submitted:	28-Jun-10			
#	12821		eport ID:	Fox-2 W12			
		Control Target	7.00				
		Control	7.72 , 7				
		12985 ; 12985	7.72 ; 7	73			
		Sample I.D.	pH				
		LABORAT	FORY QA	QC			
		* Averaged result of dup	olicates				
		13165	8.24				
		12988	7.90				
		12987	7.92				
		12986	7.73				
		Sample I.D. 12985*	рН 7.73	,			
		KESOETS OF	PITANAL	1010			
		RESULTS OF	nH ANAI	Vele			
						Page:	1 of 1
Fax: (613	) 541-6596						28-Jun-10
` '	-6000 ext 65	67					ASG 037
Kingston,	Ontario K7K	C 7B4			Date of ana		
P.O. Box	17000, Stn.	Forces			Samples Rec	eived:	25-Jun-10
Dept. of C	hem. / Cher	n. Eng., RMC			Clier	nt No:	10-035
2 Verite						Site:	Fox-2

		Control Target	7.00	,				
ASU#	12821		Report ID:	Fox-2 W12				
Client:	ESG		Date Submitted:	28-Jun-10				
			Date tested:	2-Jul-10				
Site:	Fox-2		Date:	2-Jul-10				
	10-061		Matrix:	Water				
Report of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-13368	-	-	-	-	-	< 0.010	-	0.009
Blank	-	-	-	-	-	< 0.010	-	< 0.003
Control	-	-	-	-	-	3.30	-	0.83
Control Target	-	-	-	-	-	3.00	-	0.80
10-13368	-	_	-	-	-	< 0.010	-	0.010
10-13368	-	-	-	-	-	< 0.010	-	0.009
Dissolved Metals	Results in mg/L							
Dissorred Medis	results in right							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-13368	0.007	< 0.005	<0.003	< 0.001	< 0.010	-	<0.005	-
Blank	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Control	1.75	1.75	1.75	0.87	8.81	-	0.90	-
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
10-13368	0.007	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-13368	0.007	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-

12 Verite Ave	ESG			ASC	Login No:	20678
P.O. Box 17000, Stn. Forces   Samples Received: 28-Jun-10	12 Verite Ave				Site:	Fox-2
Date of analysis: 28-Jun-10 (613) 541-6000 ext 6567   Method No: ASG 037	Dept. of Chem. / Che	m. Eng., RMC			Client No:	10-061
Color	P.O. Box 17000, Stn.	Forces		Samples	Received:	28-Jun-10
Date Reported: 28-Jun-10   Page: 1 of 1	Kingston, Ontario K7	K 7B4		Date of	of analysis:	28-Jun-10
RESULTS OF pH ANALYSIS  Sample I.D. pH 13368* 7.53  * Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH	(613) 541-6000 ext 65	567		N	Method No:	ASG 037
RESULTS OF pH ANALYSIS  Sample I.D. pH  13368* 7.53  * Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH	Fax: (613) 541-6596			Date	Reported:	28-Jun-10
Sample I.D. pH  13368* 7.53  * Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH					Page:	1 of 1
Sample I.D. pH  13368* 7.53  * Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH						
Sample I.D. pH  13368* 7.53  * Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH						
* Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH		RESULTS OF	pH ANALYSIS			
* Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH						
* Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH		Sample LD.	nН			
* Averaged result of duplicates  LABORATORY QA/QC  Sample I.D. pH						
LABORATORY QA/QC  Sample I.D. pH		10000	7.00			
Sample I.D. pH		* Averaged result of dup	licates			
Sample I.D. pH						
Sample I.D. pH		LABORAT	ODV OMOC			
		LABURAT	ORT QAVQC			
		Sample I D	nH			
1.02,7.00			•			
Control 7.01						
Control Target 7.00						
Control larger 1.00		John Target	7.00			

ESG			ASG Login No	20678
12 Verite Ave			Site	Fox-2
Dept. of Chem. / Chem. Eng	., RMC		Client No	10-061
P.O. Box 17000, Stn. Forces	3		Samples Received	28-Jun-10
Kingston, Ontario K7K 7B4			Date of analysis	
(613) 541-6000 ext 6567			Method No	ASG 021
Fax: (613) 541-6596			Date Reported	29-Jun-10
			Sheet	1 of 1
R	ESULTS OF ME	RCURY ANALY	SIS	
	Sample	Mercury^		
	ID	mg/L		
	13368*	< 0.0004		
	*Results of duplicate ar			
	# Reported at 0.0004 m			
	LABORAT	ORY QA/QC		
	Sample	Mercury <sup>^</sup>		
	ID	mg/L		
	Duplicate ; 13368*	< 0.0004 ; < 0.0004		
	Blank	< 0.0004		
	Control Target	0.0040		
	Control Sample	0.0042		

ESG					ASG Login No:	20678
12 Verite Ave						Fox-2
Dept. of Chem. / Chem	n. Eng., R	MC			Client No:	10-061
P.O. Box 17000, Stn.	Forces				Samples Received:	28-Jun-10
Kingston, Ontario K7K	7B4				Date of analysis:	29-Jun-10
(613) 541-6000 ext 656	67				Method No:	ASG 015
Fax: (613) 541-6596					Date Reported:	30-Jun-10
,					Sheet No:	
						-
					1/2/2	
	ŀ	RESULTS OF PO	BINW	ATER ANAL	YSIS	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	W	13368*	mg/L	< 0.003	< 0.003	
			J			
	* Average	e result of duplicate				
		Values in PPM**				
		LABOR	ATOR	Y QA/QC		
		Blank	mg/L	< 0.003	< 0.003	
		Duplicate; 13368*	mg/L	< 0.003 ; < 0.003	< 0.003 ; < 0.003	
		Control Sample	mg/L	< 0.003	0.017	
		Control Sample Target	mg/L	< 0.003	0.015	
	** 0 0	" 0 0	2.1.4.01.1	014/ 0 -1 D	District Marketine	
ASU#	S = 50	oil , C = Concrete , PC = F	Paint Chip	, Svv = Swab , P		Fox-2 W11
					Report ID:	
Client:		ESG			Date Submitted	
		-			Date tested:	29-Jun-10
Site:		Fox-2			Date:	30-Jun-10
		10-061			Matrix:	water
- 0. 1						
Report of Analy	ysis					
Comple		Oil & Grease				
Sample	<u> </u>					
		mg/L				
10-13368		<2.0				
10-13308		<2.0				
Blank		<2.0				
Zimi		~0				
Control		14.0				
Control Targe	t	15.7				
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2						

ESG					ASG	Login No:	20699
12 Verite A	Ave						Fox-2
Dept. of Ch	nem. / Ch	em. Eng.,	RMC			Client No:	10-078
P.O. Box	17000, Sti	n. Forces			Samples	Received:	2-Jul-10
Kingston, (	Ontario K	7K 7B4			Date of	of analysis:	2-Jul-10
(613) 541-6	6000 ext 6	5567			N	Nethod No:	ASG 02
Fax: (613)	541-6596				Date	Reported:	3-Jul-10
						Sheet:	1 of 1
	R	RESULT	S OF MERCUR	Y IN WATER A	ANALYSI	S	
			Sample	Mercury^	1		
			ID	μg/L			
			13689*	< 0.4	Ī		
			13690	< 0.4			
			LABORAT	ORY QA/QC			
			Sample	Mercury <sup>^</sup>	1		
			ID	μg/L			
			Duplicate ; 13689*	< 0.4 ; < 0.4			
			Blank	< 0.4			
			Control Target	4.00			
			Control Sample	4.00			
			* Averaged result of dup				
			^ Acid digestion perform	ned			
			# Reported at 0.4 µg/L				

ASU#	12845	Report ID:	Fox-2 W14
Client:	ESG	Date Submitted:	2-Jul-10
		Date tested:	5-Jul-10
Site:	Fox-2	Date:	6-Jul-10
	10-078	Matrix:	water
Report of Analysis			
Sample	Oil & Grease		
	mg/L		
10-13689	<2.0		
10-13690	<2.0		
Blank	<2.0		
Control	14.0		
Control Target	15.7		
Results relate only	to the items tested		

ESG					ASG Login No:	20699
12 Verite Ave					Site:	Fox-2
Dept. of Chem. / Cher	n. Eng., R	MC			Client No:	10-078
P.O. Box 17000, Stn.					Samples Received:	2-Jul-10
Kingston, Ontario K7k	< 7B4				Date of analysis:	5-Jul-10
(613) 541-6000 ext 65	67				Method No:	ASG 006
Fax: (613) 541-6596					Date Reported:	6-Jul-10
					Sheet No:	1 of 1
	l	RESULTS OF PC	B IN V	VATER ANALY	/SIS	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	W	13689	mg/L	< 0.003	< 0.003	
	W	13690*	mg/L	< 0.003	< 0.003	
	* Average	e result of duplicate				
	**Report	Values in PPM**				
		LABORA				
		Blank	mg/L	< 0.003	< 0.003	
		Duplicate ; 13690*	mg/L	< 0.003 ; < 0.003	< 0.003 ; < 0.003	
		Control Sample	mg/L	< 0.003	0.018	

		Control Target	7.00			
		Control	7.01			
		10-013690*; Duplicate	7.22 ; 7.22			
	ſ	Sample I.D.	рН			
		LABORAT	DRY QA/QC			
		LADODATA	DDV OA/OO			
		-				
	*	Averaged result of duplic	cates			
		10-13690	1.22			
		10-13689 10-13690*	7.30 7.22			
		Sample I.D.	pH			
		K20021001 p	717117121010			
		RESULTS OF p	H ANAI YSIS			
					Page:	1 of 1
Fax: (613) 5	41-6596			Date	Reported:	
(613) 541-60		7		-	Method No:	
Kingston, O	ntario K7K	7B4		Date of	of analysis:	6-Jul-10
P.O. Box 17	7000, Stn. F	orces		Samples	Received:	2-Jul-10
Dept. of Che	em. / Chem	. Eng., RMC			Client No:	10-078
12 Verite Av	<i>e</i>				Site:	Fox-2
ESG				ASC	Login No:	

ASU#	12845		Report ID:	Fox-2 W13				
Client:	ESG		Date Submitted:	2-Jul-10				
			Date tested:	5-Jul-10				
Site:	Fox-2		Date:	6-Jul-10				
	10-078		Matrix:	Water				
Report of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-13689	-	-	-	-	-	< 0.010	-	< 0.003
10-13690	-	-	-	-	-	< 0.010	-	< 0.003
Blank	-	-	-	-	-	<0.010	-	< 0.003
Control	-	-	-	-	-	3.2	-	0.81
Control Target	-	-	-	-	-	3.0	-	0.80
10-13690	-	-	-	-	-	< 0.010	-	< 0.003
10-13690	-	-	-	-	-	< 0.010	-	< 0.003
Dissolved Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-13689	< 0.005	< 0.005	<0.003	< 0.001	< 0.010	-	< 0.005	-
10-13690	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Blank	< 0.005	< 0.005	<0.003	< 0.001	< 0.010	-	<0.005	-
Control	1.60	1.64	1.63	0.79	8.10	-	0.83	-
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
10-13690	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-13690	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4 ON THE SCIENCES OF THE SECOND OF THE SECOND

Tamara Van Dyck
Environmental Officer
Defence Construction Canada
DEW Line Cleanup PMO
101 Colonel By Drive
Ottawa ON K1A 0K2

March 15, 2011

## RE: July 2010 Monthly Report for Water Use License Number: 1BR-LON0813

The following results of the Monitoring Program (MP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for FOX-2 (*Longstaff Bluff*).

### 1. CAMP SEWAGE LAGOON

A 2 cell sewage lagoon was constructed to service the FOX-2 construction camp in 2009. The sewage lagoon is located approximately 100 m from the contractor's camp, 100 m away from drainage channels, and away from water bodies supporting aquatic life. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 0491084E 7646024N.

### 2. SEWAGE EFFLUENT SAMPLES

The Water Use License and MP require that samples from treated sewage lagoon effluent at the point of discharge to the receiving water be collected prior to each discharge event. Two sewage effluent samples were collected in July 2010 from the FOX-2 sewage treatment plant, to confirm that discharge of the treated sewage to ground can continue. A summary of the details of these results follows. Laboratory results are provided in Appendix A.

LOCATION: CAMP SEWAGE TREATMENT FACILITY GPS COORDINATES: 18W 0491657 7643666

**SAMPLE:** 10-14033 **DATE:** July 13, 2010

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-14033
pН	6.0 to 9.0	pH units	7.71
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	<2
BOD	120	mg/L	<3
Faecal Coliforms	10,000	CFU/dL	0
Total Coliforms	-	CFU/ 100 mL	0



Photo 1 (1934) Sample 10-14033 Fox-2 Sampling the Fox-2 sewage treatment plant.

LOCATION: CA MP SEWAGE TREATMENT FACILITY

**GPS** COORDINATES: 18W 0491768 7643478

**SAMPLE:** 10-14597 **DATE:** JULY 28, 2010

Parameter	Allowable Maximum Average Concentration	Units	Sample# 10-14597
pН	6.0 to 9.0	pH units	7.48
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	<3
BOD	120	mg/L	<3
Faecal Coliforms	10,000	CFU/dL	120
Total Coliforms	-	CFU/ 100 mL	0

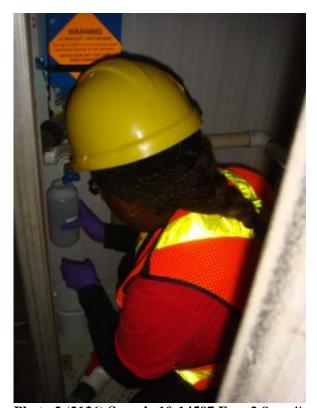


Photo 2 (2136) Sample 10-14597 Fox -2 Sampling the Fox-2 sewage treatment plant.

All July samples were below the relevant criteria, and the effluent from the treatment plant continued to be discharged to the ground. (W0491657,7643666).

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Candice Casucci

Masuri.

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King, Ryan Adams (ESG)

# APPENDIX A LABORATORY RESULTS

SG					ASG Login No:	2077	2
2 Verite Ave						Fox-	
ept. of Chem. / Cher	n. End	a., RMC			Client No:		
P.O. Box 17000, Stn.				Sam	ples Received:		
lingston, Ontario K7k					ate of analysis:		
613) 541-6000 ext 65					Method No:		
ax: (613) 541-6596	01				Date Reported:		
ax. (010) 041 0000				<u> </u>	Page:		
					raye.	1 01	1
	RI	ESULTS OF	pH ANALY	SIS			
		Sample I.D.	рН				
		10-14033*	7.71				
	* Ave	raged result of du	plicates				
		LABORA	TORY QA/Q	С			
		Sample I.D.	рН				
	10-1	4033*; Duplicate	7.71 ; 7.7	1			
		Control	7.00				
	(	Control Target	7.00				
SG				,	ASG Logi	n No:	20772
2 Verite Ave						Site:	FOX-2
ept. of Chem. / Chem.		RMC					10-112
O. Box 17000, Stn. F					Samples Rec		
ingston, Ontario K7K 7					Date of ana	•	
613) 541-6000 ext 6567	7				Date Rep		
ax: (613) 541-6596						neet:	1 of 1
F	RESI	ULTS OF MIC	CROBIOLOG	ICAL ANALY	SIS		
		Method: ASG 036	Method: ASG 036	Method: ASG 036	Method: ASG	044	Ì
Sample Identific	ation	Total			Fecal		
·		Coliforms	E. coli	Background	Coliforms		
		(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 m	L)	
14033^		0	0	0	0		
		LADO		V00			
		LABC	RATORY QA	vuc			
			Method: ASG 036	Method: ASG 036	Method: ASG	044	
Sample Identific	ation	Total	_		Fecal		
		Coliforms	E. coli	Background	Coliforms		
		(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 m	L)	
Blank		0	0	0	0		
Control Sample 1		49 38	49 38	0	44 38		
	ole	49	49	0	44		

ESG							ASG Login No:	20772
12 Verite Ave								Fox-2
Dept. of Chem. / C		RMC					Client Login No:	
P.O. Box 17000, S						S	amples Received	
(ingston, Ontario h							Date of analysis	
613) 541-6000 ext							Method No:	
ax: (613) 541-659	16						Date Reported	
							Sheet	1 of 1
		RESULTS OF TOT	TAL SUS	PENDE	D SOLIDS AN	IALYSIS		
		Sample I.D.	Sample	Unit	Total			
		Sample I.D.	Type^	Oilit	Suspended Sc	olids		
		~14033	SE	mg/L	< 2			
		LABO	RATORY	QA/Q				
		Blank	Control	mg/L	< 1			
		Control	Control	mg/L	200			
		Control Target	Control	mg/L	200			
		^SW =Surface Water, SI = \$	Sewage Influe	ent SE = Se	ewage Effluent			
ESC.		* Averaged result of duplica				A C (	C Logio Ne	20772
ESG						ASC	3 Login No:	
12 Verite Av								Fox-2
		hem. Eng., RMC				Clien	t Login No:	10-112
P.O. Box 1	7000, S	tn. Forces					s Received:	
Kingston, C							of analysis:	
(613) 541-6		6567					Method No:	
Fax: (613) 5 <sup>4</sup>	41-6596					Date	e Reported:	
							Page:	1 of 1
		RESULTS O	F BO	D AN	ALYSIS			
		Sample I.D.	Unit		BOD			
		10-14033*	mg/L		<3			
		10-14000	my/L					
	*A	veraged result of du	olicates					
					10.0			
		LABOR	ATOR	Y QA	/QC			
		Sample I.D.	Unit		BOD			
	D	Ouplicate ; 10-14033	mg/L		<3;<3			
		Blank	mg/L		< 3			
				_	170			
		Control	i ma/i		170			
		Control Control Target	mg/L mg/L		165			

ESG			ASG	Login No:	20847
12 Verite Ave				Site:	Fox-2
Dept. of Chem. / Chem.				Client No:	10-182
P.O. Box 17000, Sti	n. Forces			Received:	
Kingston, Ontario K			Date of	of analysis:	3-Aug-10
(613) 541-6000 ext 6	5567		N	/lethod No:	ASG 037
Fax: (613) 541-6596			Date	Reported:	
				Page:	1 of 1
	DECLII TO OF	MILANIAL VOIC			
	RESULTS OF	pH ANALYSIS			
	Sample I.D.	рН			
	14588*	9.92			
	14589	9.91			
	14597	7.48			
	* Averaged result of dup	licates			
	Averaged result of dup	licates			
	LADODAT	CODY O A IOO			
	LABORAT	ORY QA/QC			
	Sample I.D.	рН			
	14588*; Duplicate	9.91 ; 9.93			
	Control	7.01			
	Control Target	7.00			

		Blank	Control	mg/L	< 1			
		Control Target	Control	mg/L	200			
		Control	Control	mg/L	190			
		LA	BORAT	ORY C	QA/QC			
		14597	SE	mg/L	< 3			
			Type^		Suspended Solids			
		Sample I.D.	Sample	Unit	Total			
	RES	<b>ULTS OF TOT</b>	AL SUS	PEND	ED SOLIDS ANA	LYSIS		
							Sneet:	1 01 1
Fax: (613) 5	41-6596						Date Reported: Sheet:	
	000 ext 6567						Method No:	
Kingston, O	ntario K7K 7B4						Date of analysis:	
P.O. Box 17	000, Stn. Forces					5	Samples Received:	30-Jul-10
Dept. of Che	em. / Chem. Eng., RMC						Client Login No:	10-182
12 Verite Av	e						Site:	Fox-2
SG							ASG Login No:	20847

ESG					ASG Login No:	20847
12 Verite	e Ave				Site:	FOX-2
Dept. of	Chem. / Chem. Eng.,	RMC			Client No:	10-182
P.O. Bo	ox 17000, Stn. Forces				Samples Received:	30-Jul-10
Kingstor	n, Ontario K7K 7B4				Date of analysis:	30-Jul-10
(613) 54	11-6000 ext 6567				Date Reported:	31-Jul-10
Fax: (61	13) 541-6596				Sheet:	1 of 1
	RES	ULTS OF MIC	CROBIOLOG	<b>ICAL ANALY</b>	SIS	
			Method: ASG 036	Method: ASG 036	Method: ASG 044	
S	ample Identification	Total			Fecal	
		Coliforms	E. coli	Background	Coliforms	
		(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	
	14597	0	0	24 000	120	
		LADO	RATORY QA	VOC		
		LABO	KAIOKIQA	4/QC		
		Method: ASG 036	Method: ASG 036	Method: ASG 036	Method: ASG 044	
S	ample Identification	Total			Fecal	
		Coliforms	E. coli	Background	Coliforms	
		(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	(CFU/100 mL)	
	Blank	0	0	0	0	
	Control Sample	39	39	0	42	
C	Control Sample Target	37	37	0	37	

ESG				ASC	G Login No:	20847
12 Verite Ave					Site:	Fox-2
Dept. of Chem	. / Chem. Eng., RMC			Clien	t Login No:	10-182
P.O. Box 1700	00, Stn. Forces			Samples	Received:	30-Jul-10
Kingston, Onta	ario K7K 7B4			Date of	of analysis:	9-Aug-10
(613) 541-600	0 ext 6567			1	Method No:	ASG 042
Fax: (613) 541-6	596			Date	e Reported:	
					Page:	1 of 1
	RESULTS C	F BOD	ANALYSIS			
	Sample I.D.	Unit	BOD			
	14597*	mg/L	< 3			
	*Averaged result of du	plicates				
	LABOR	ATORY	QA/QC			
	Sample I.D.	Unit	BOD			
	Duplicate ; 21328*	mg/L	<3;<3			
	Blank	mg/L	< 3			
	Control	mg/L	160			
	Control Target	mg/L	165			

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4

Tamara Van Dyck Environmental Officer Defence Construction Canada DEW Line Cleanup PMO 101 Colonel By Drive Ottawa ON K1A 0K2

Friday, March 18, 2011



# RE: Analytical Results for Wastewater Samples Collected at FOX-2 in July, 2010

The following report summarizes results of the analysis of wastewater samples as per the FOX-2 (Longstaff Bluff) DEW Line Cleanup Project (DLCU) Specifications.

The FOX-2 specifications require that "wash water, melt water collection and rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream" meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pН	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Dissolved chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.0006	mg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	0.5	mg/L
Oil & grease	5	mg/L
PCBs	1	mg/L
Phenols	1	-

#### Phenols

The wastewater samples collected by ESG at FOX-2 in July, 2010 were not analyzed for phenols but they were analyzed for oil and grease. Research conducted by ESG<sup>1</sup> has determined that a) no federal, territorial or provincial criteria exist for the discharge of wastewater containing phenols to land at a minimum distance of 30-m from natural drainage courses b) the maximum concentration of phenols in DLCU wastewater to date

<sup>&</sup>lt;sup>1</sup> Environmental Sciences Group. DEW Line Clean Up Project – Phenols in Wastewater. June, 2007.

(2.44 mg/L) is below the  $LC_{50}$  for freshwater fish and crustaceans and below the oral and dermal  $LD_{50}$ s for rats and rodents and c) phenols in excess of the maximum allowable concentration (MAC) have historically co-occurred with a visible oil & grease sheen and/or with an exceedance of the MAC for oil & grease. This information, and a subsequent decision to not test for phenols, has been presented to the NWB. To date, verbal agreement from the NWB has been received, but the project is awaiting written confirmation of the decision to suspend testing for phenols.

### WASTEWATER SAMPLES

Six wastewater samples were collected at FOX-2 and analyzed in July 2010. A summary of the details of these results follows. Laboratory results are provided in Appendix A.

**LOCATION: AIRSTRIP CAMP DEBRIS AREA LOBE B (3 LOCATIONS) GPS COORDINATES:** 18W 0489062 7646527, 18W 0489058 7646544,

18W 0489046 7646528 **SAMPLE:** 10-14032 **DATE:** JULY 13, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-14032
pН	6-9	pH units	5.76
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	0.018
Dissolved copper (Cu)	0.200	mg/L	0.017
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.4
Dissolved nickel (Ni)	0.200	mg/L	0.103
Total zinc (Zn)	0.5	mg/L	0.045
Oil & grease	5	mg/L	None Visible
			3.0
PCBs	1	mg/L	
			< 0.003
Phenols	-	-	N/A



Photo 1 (IMG 1920) Sample 10-14032 Fox-2 Water in FOX-2 Airstrip Camp Debris Area Lobe B (Composite sample taken from 3 locations)

This sample was below the pH range, however water did not require discharge prior to backfill.

LOCATION: WASTE WATER IN ASDA LOBE A1 (3 LOCATIONS)

**GPS** COORDINATES: 18W 0489113 7646260, 18W 0489105 7646253, 18W

0489108 7646245 **SAMPLE:** 10-14074 **DATE:** July 15, 2010

Parameter	eter Maximum Allowable Concentration		Sample # 10-14074
pН	6-9	pH units	7.32
Total arsenic (As)	0.100	mg/L	0.018
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	0.006
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.4
Dissolved nickel (Ni)	0.200	mg/L	0.08
Total zinc (Zn)	0.5	mg/L	0.022
Oil & grease	5	mg/L	None Visible
			2.2
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 2 (IMG 1964) Sample 10-14074 Fox-2 Waste water in Fox-2 ASDL Lobe A1. (Comp from 2 locations)

Waste water in ASDA Lobe 1A (10-14074) was discharged to land on August 22<sup>h</sup>, 2010. The water was discharged to an INAC approved location (489108, 7646245).

LOCATION: WASTE WATER IN WLDA LOBE D

**GPS** coordinates: 491828 7643270

**SAMPLE:** 10-14210 **DATE:** JULY 22, 2010

Parameter	eter Maximum Allowable Concentration		Sample # 10-14210
pН	6-9	pH units	7.87
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.00
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	0.007
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	None Visible
			<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

**SAMPLE:** 10-14211 **DATE:** JULY 22, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-14211
pН	6-9	pH units	7.92
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.00
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	0.006
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 3 (IMG 2034) Sample 10-14210/11 Fox 2 West Landing Debris Area Base - wastewater sampling.

Water from the West Landing Debris Area Lobe D was discharged on Aug 20, 2010. The water was discharged to an INAC approved location (18w 0491828, 7643270).

LOCATION: AIRSTRIP LANDFILL LOBE A - CONTAINERIZED WATER

**GPS** coordinates: 489362 7646676

**SAMPLE:** 10-14588 **DATE:** JULY 28, 2010

Parameter	meter Maximum Allowable Concentration		Sample # 10-14588
pН	6-9	pH units	9.92
Total arsenic (As)	0.100	mg/L	0.006
Dissolved cadmium (Cd)	0.010	mg/L	0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	0.035
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.4
Dissolved nickel (Ni)	0.200	mg/L	0.009
Total zinc (Zn)	0.5	mg/L	0.155
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 4 (IMG 2115) Sample 10-14588 Fox-2 Sampling the tank of containerized contact water from ASL Lobe A.

Treated water within the tank was above the pH range, and water was discharged from the tank into the landfarm on site. Additional water samples from the landfarm will be collected prior to any water being discharged from the facility.

LOCATION: BARREL PROCESSING AREA - CONSOLIDATED WATER FROM

**BARRELS** 

**GPS** COORDINATES: 490774 7644917

**SAMPLE:** 10-14589 **DATE:** JULY 28, 2010

Parameter	er Maximum Allowable Concentration		Sample # 10-14589
pН	6-9	pH units	9.91
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	0.009
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.4
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	0.029
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



**Photo 5 (IMG 2121) Sample 10-14589 Fox-2** Sampling consolidated water from barrels in the barrel processing area.

Treated water within the tank was above the pH range, and water was discharged from the tank into the landfarm on site. Additional water samples from the landfarm will be collected prior to any water being discharged from the facility.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Candice Casucci

Masuri.

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King, Ryan Adams (ESG)

# APPENDIX A LABORATORY RESULTS

ESG				ASG	Login No:	20763
12 Verite A	\ve				Site:	Fox-2
Dept. of Ch	nem. / Cher	m. Eng., RMC			Client No:	10-121
P.O. Box 1	17000, Stn.	Forces		Samples	Received:	15-Jul-10
Kingston, (	Ontario K7	K 7B4		Date of	of analysis:	16-Jul-10
(613) 541-6	6000 ext 65	567			Method No:	
Fax: (613)	541-6596			Date	Reported:	16-Jul-10
					Page:	1 of 1
		RESULTS OF	pH ANALYSIS			
			<b>,</b>			
		Sample I.D.	pH			
		10-14032*	5.76			
		* Averaged result of dupl	icates			
		LABORAT	ORY QA/QC			
		Samula I D				
		Sample I.D.	<b>pH</b> 5.75 ; 5.77			
		10-14032 ; Duplicate Control	7.00			
		Control Target	7.00			

ASU#	12895	Report ID:	Fox-2 W15
Client:	ESG	Date Submitted:	15-Jul-10
		Date tested:	15-Jul-10
Site:	Fox-2	Date:	16-Jul-10
	10-121	Matrix:	water
Report of Analysis	S		
Sample	Oil & Grease		
	mg/L		
10-14032	3.0		
Blank	<2.0		
Control	14.9		
Control Target	15.9		

ESG					ASG Log		
12 Verite A	ve					Site:	Fox-2
Dept. of Ch	em. / Chem	. Eng., RMC			Clie	nt No:	10-121
	7000, Stn. I				Samples Rec	eived:	15-Jul-10
	Ontario K7K				Date of ana		
	000 ext 656						ASG 021
Fax: (613)					Date Rep		
rax: (613)	041-6096				·		
						Sheet:	1 Of 1
	RE	SULTS OF ME	RCUR	Y IN WATER	ANALYSIS		
		Samp	ole	Mercury^			
		ID		mg/L			
		10-140	32*	< 0.0004			
		* Averaged re	sult of dup	blicates			
		^ Acid digesti	on perform	ned			
			•	detection limit			
		ΙΔΡ	ORAT	ORY QA/QC			
		Samp	ole	Mercury^			
		ID		mg/L			
		Duplicate;	14032*	< 0.0004 ; < 0.000	04		
		Blan	k	< 0.0004			
		Control T	arget	0.0040			
		Control S	ample	0.0040			
		,			ASG Login No:	20763	
ite Ave						Fox-2	
of Chem. / Ch	nem. Eng., R	MC			Client No:	10-121	
ox 17000, St					Samples Received:	15-Jul-	10
on, Ontario K	7K 7B4				Date of analysis:	18-Jul-	10
41-6000 ext	6567				Method No:		
613) 541-6596	6				Date Reported:		10
					Sheet No:	1 of 1	
		RESULTS OF P	^R IN W	ATED ANALY	reie		
		(LOOL 10 OF 1		TATEN ANALI	010		
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260		
	W	14032*	mg/L	< 0.003	< 0.003		
		result of duplicate /alues in PPM**					
				4 0 1 10 2			
		LABOR	KA FOR'	Y QA/QC			
		Blank	mg/L	< 0.003	< 0.003		
		Duplicate; 14032*	mg/L	< 0.003 ; < 0.003	< 0.003 ; < 0.003		
		Control Sample	mg/L	< 0.003	0.013		
		Control Sample Target	t mg/L	< 0.003	0.015		
	** S = S0	il , C = Concrete , PC =	Paint Chin	SW = Swah P - F	Plant W = Water		

ASU#	12895		Report ID:	Fox-2 W16				
Client:	ESG		Date Submitted:	15-Jul-10				
			Date tested:	16-Jul-10				
Site:	Fox-2		Date:	16-Jul-10				
	10-121		Matrix:	Water				
Report of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-14032	-	-	-	-	-	0.045	-	< 0.003
Blank	-	-	-	-	-	< 0.010	-	< 0.003
Control						2.1		0.77
	-	-	-	-	-	3.1	-	0.77
Control Target	-	-	-	-	-	3.0	-	0.80
10-14032	-	-	-	-	-	0.045	-	< 0.003
10-14032	-	-	-	-	-	0.046	-	< 0.003
Diagolyod Motola	Doculto in mo/I							
Dissolved Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-14032	0.017	0.103	0.018	< 0.001	< 0.010	-	< 0.005	-
Blank	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Control	1.59	1.63	1.62	0.80	8.14	_	0.85	-
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
Common ranger	1100	1.00	1.00	0.00	0.00		0.00	
10-14032	0.017	0.102	0.019	< 0.001	< 0.010	-	< 0.005	-
10-14032	0.017	0.103	0.018	< 0.001	< 0.010	-	< 0.005	-
ASU#	12913		Report ID:	Fox-2 W17				
Client:	ESG		Date Submitted:	19-Jul-10				
			Date tested:	20-Jul-10				
Site:	Fox-2		Date:	20-Jul-10				
	10-130		Matrix:	Water				
Report of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-14074	-	-	-	-	-	0.022	-	0.018
Blank	-	-	-	-	_	< 0.010	-	< 0.003
Control	-	-	-	-	-	3.09	-	0.78
Control Target	-	-	-	-	-	3.00	-	0.80
Dissolved Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-14074	< 0.005	0.008	< 0.003	< 0.001	< 0.010	-	0.006	-
Blank	<0.005	< 0.005	< 0.003	<0.001	< 0.010	-	< 0.005	-
Control	1.55	1.65	1.64	0.83	8.24	-	0.83	-

ESG				ASG	Login No:		
12 Verite A	-					Fox-2	
	em. / Chem. E				Client No:		
P.O. Box 1	7000, Stn. Fo	rces			Received:		
Kingston, C	Ontario K7K 7E	34		Date o	of analysis:	20-Jul-	10
(613) 541-6	000 ext 6567				/lethod No:		
Fax: (613) :					Reported:		
1 ax. (010) (	541 0000			Date	Sheet:		10
					Sileet.	1 01 1	
	DEG	ULTS OF MERCUR	V IN WATED AN	IAI VÇI	2		
	NE3			IAL I SI	3		
		Sample	Mercury^				
		ID	mg/L				
		14074*	< 0.0004				
		* Averaged result of dur	olicates				
		^ Acid digestion perform	ned				
		# Reported at 0.4 µg/L					
		LABORAT	ORY QA/QC				
		Sample ID	Mercury^ mg/L				
		Duplicate ; 14074*	< 0.0004 ; < 0.0004				
		Blank	< 0.0004				
		Control Target	0.0040				
		Control Sample	0.0040				
ESG		Sonito Sample	3.00 10		ASG Log	nin No:	20780
	A. m				ASG EQ	•	
12 Verite							Fox-2
Dept. of C	hem. / Chem	n. Eng., RMC			Clie	nt No:	10-130
P.O. Box	17000, Stn.	Forces		Sai	mples Red	ceived:	19-Jul-10
	Ontario K7K				Date of an		
	6000 ext 656					-	ASG 037
` '		07					
Fax: (613)	541-6596				Date Rep		20-Jul-10
						Page:	1 of 1
		RESULTS OF p	H ANALYSIS				
		Sample I.D.	рН				
		14074*	7.32				
		14074	1.02				
	,	* Averaged result of duplic	ates				
		LABORATO	ORY QA/QC				
	-	Sample I.D.	рН				
		14074*; Duplicate	7.32 ; 7.32				
		14074*; Duplicate					
		14074* ; Duplicate  Control  Control Target	7.32 ; 7.32 7.01 7.00				

ASU#	12913	Report ID:	Fox-2 W18
Client:	ESG	Date Submitted:	19-Jul-10
		Date tested:	19-Jul-10
Site:	Fox-2	Date:	21-Jul-10
	10-130	Matrix:	water
Report of Analysis	S		
Sample	Oil & Grease		
	mg/L		
10-14074	2.2		
Blank	<2.0		
Control	14.4		
Control Target	15.9		

ESG					ASG Login No:	20780
12 Verite Ave						Fox-2
Dept. of Chem. / Cher	n. Eng., Rl	MC			Client No:	10-130
P.O. Box 17000, Stn.	Forces				Samples Received:	19-Jul-10
Kingston, Ontario K7h	( 7B4				Date of analysis:	19-Jul-10
(613) 541-6000 ext 65	67				Method No:	ASG 015
Fax: (613) 541-6596					Date Reported:	21-Jul-10
					Sheet No:	1 of 1
	F	RESULTS OF PC	B IN W	ATER ANALY	/SIS	
					0.0	
	L . I					
	Sample	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	T 44	•				
	Type **			0.000		
	Type **	14074	mg/L	< 0.003	< 0.003	
		14074	mg/L	< 0.003	< 0.003	
		14074	mg/L	< 0.003	< 0.003	
	W		mg/L	< 0.003	< 0.003	
	W	14074 Values in PPM**	mg/L	< 0.003	< 0.003	
	W		mg/L	< 0.003	< 0.003	
	W	Values in PPM**			< 0.003	
	W				< 0.003	
	W	Values in PPM**			< 0.003	
	W	Values in PPM**			< 0.003	
	W	Values in PPM** <b>LABORA</b>	ATORY	' QA/QC		

Clie t:	ESG				ASG	Login No:	20810
NZ.	12 Verite Ave						Fox-2
	Dept. of Chem	n. / Chem. Eng.,	RMC			Client No:	10-159
		00, Stn. Forces			Samples	Received:	26-Jul-10
	Kingston, Ont					f analysis:	
	(613) 541-600					/lethod No:	
	Fax: (613) 54				Date	Reported:	28-Jul-10
	, ,					Sheet:	
		RESUL	TS OF MERCUR	Y IN WATER A	NALYSI	3	
			Sample	Mercury^			
			ID	mg/L			
			10-14210*	< 0.0004			
			10-14211	< 0.0004			
			* Averaged result of dup	olicates			
			^ Acid digestion perforn	ned			
			# Reported at 0.4 µg/L				
			LABORAT	001/04/00			
			LABORA	ORY QA/QC			
			Sample	Mercury^			
			ID	mg/L			
			Duplicate ; 10-14210*	< 0.0004 ; < 0.0004			
			Blank	< 0.0004			
			Control Target	0.0040			
			Control Sample	0.0041			
			Outroi Campic				

ASU#	1293	37		Report I	D:	Fox-2 W1	9
Client:	ESC			Date Sul		26-Jul-10	
Chem.	Lou			Date tested:		26-Jul-10	
G!4	E	2			œu.		
Site:	Fox-			Date:		27-Jul-10	)
	10-1:	59		Matrix:		water	
Report of Analys	sis						
Sample	Oil & G	rease					
_	mg/	L					
10-14210	<2.0	0					
10-14211 <2.		0					
Blank	<2.0	0					
Control	13.						
Control Target	15.9						
12937		Report ID:	Fox-2 W20				
ESG		Date Submitted: Date tested:	26-Jul-10 27-Jul-10				
Fox-2		Date:	27-Jul-10				
10-159		Matrix:	Water				
Results in mg/L							
Testals in ng 2							
Cu	Ni	Co	Cd	Pb	Zn	Cr	As
					0.010		0.002
-		-	-	-	<0.010 <0.010	-	<0.003 <0.003
-	-	-	-	-	<0.010	-	<0.003
-	-	-	-	-	< 0.010	-	< 0.003
-	_	_	_	-	2.95	_	0.76
-	-	-	-	-	3.00	-	0.80
Results in mg/L							
Cu	Ni	Co	Cd	Pb	Zn	Cr	As
0.555	0.5		0	0 - : -		0	
<0.005	0.007	<0.003	<0.001	<0.010	-	<0.005	-
<0.005	0.006	< 0.003	< 0.001	< 0.010	-	< 0.005	-
< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
1.54	1.62	1.62	0.80	8.12	-	0.82	-
1.60	1.60	1.60	0.80	8.00	-	0.80	-

=00									<b>F</b> 00010
ESG						_	ASG	Login No:	
12 Verite A			DMO			_			Fox-2
Dept. of Ch						-		Client No:	
P.O. Box 1			S			,		Received:	
Kingston, (								of analysis:	
(613) 541-6								lethod No:	
Fax: (613)	541-659	6					Date	Reported:	
								Page:	1 of 1
		RI	ESULTS OF	ANA Ho	LYSIS				
			Sample I.D.	pl	Н				
			10-14210*	7.8	37				
			10-14211	7.9	92				
		* ^\_	roand rooult of dual:	aataa					
		- Ave	raged result of dupli	cates					
			LABORAT	ORY QA	VQC				
			Cample I D		,				
		10-1	Sample I.D. 4210* ; Duplicate	7.86 ;					
		10-1	Control	7.00,		-			
		-	Control Target	7.0		-			
ESG		<u>`</u>	Jonition ranget	7.0	~		Δς	G Login No	20810
12 Verite Av	e								Fox-2
Dept. of Che		n. Eng., R	MC					Client No	
P.O. Box 17							Sample	es Received	26-Jul-10
Kingston, Or							Date	of analysis	
(613) 541-60		67						Method No	
Fax: (613) 5	41-6596						Date Reported: Sheet No:		
								Sheet No.	1 01 1
		I	RESULTS OF F	PCB IN W	ATER AN	IALY	SIS		
		Sample Type **	Sample I.D.	Unit	Aroclor 12	54		or 1260	
		W	14210*	mg/L	< 0.003			0.003	
		W	14211	mg/L	< 0.003		< (	0.003	
			Result of Duplicate Values in PPM**						
			LABO	RATOR	QA/QC				
			Blank	mg/L	< 0.003		< (	0.003	i
			Duplicate ; 14210*		< 0.003 ; < 0.	.003		3; < 0.003	
			Control Sample	mg/L	< 0.003				
			Control Sample Targ	jet mg/L	< 0.003		0	.015	<u> </u>
		** 0 0-	oil , C = Concrete , PC	- Doint Ohi-	CIM - C	D r	Dlont \\/	_ \/\oto=	
		3 = 30	ni, c = conciete, PC	- ranıı Unip	, svv = swab	, r = h	iaiii, VV	– vvalei	

	U# ent:	12972 ESG		Report ID: Date Submitted: Date tested:	Fox-2 W21 30-Jul-10 31-Jul-10				
Si	te:	Fox-2 10-182		Date: Matrix:	1-Aug-10 Water				
Report of A	nalysis								
Total 1	Metals	Results in mg/L							
SAN	IPLE .	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
	4588	-	-	-	-	-	0.155	-	0.006
10-1	4589	-	-	-	-	-	0.029	-	< 0.003
Bla	ank	-	-	-	-	-	< 0.010	-	< 0.003
Cor	ntrol	-	-	-	-	-	2.82	-	0.73
Contro	l Target	-	-	-	-	-	3.00	-	0.80
10-1	4589	-	-	-	-	-	0.030	-	< 0.003
10-1	4589	-	-	-	-	-	0.029	-	< 0.003
Dissolve	d Metals	Results in mg/L							
SAN	1PLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-1	4588	0.035	0.009	< 0.003	0.001	< 0.010	-	< 0.005	-
10-1	4589	0.009	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Bla	ank	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Cor	ntrol	1.45	1.56	1.59	0.75	7.53	-	0.76	-
Contro	l Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
10-1	4589	0.009	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-1	4589	0.009	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Client:	ESG						ASG	Login No:	20847
	12 Veri								Fox-2
		of Chem. / Chem						Client No:	
		ox 17000, Stn. l on, Ontario K7K						Received: of analysis:	
		41-6000 ext 656						n analysis. Nethod No:	
		13) 541-6596	) (					Reported:	
	(0	,					2410		1 of 1
			RESULT	S OF pH A	NALYSI	S			
			Sample I		рН				
			14588*	.υ.	<b>рн</b> 9.92	_			
			14589	<del>-  </del>	9.91				
			14597		7.48				
		9	* Averaged resu	ult of duplicates					
			LAB	ORATORY	QA/QC				
			Sample I		рН				
			14588* ; Dup		9.91 ; 9.93				
			Control To		7.01				
			Control Tai	get	7.00				

	T(e)	LABOR	ATOR'	Y QA/QC			
	ite						
	**Por	port Values in PPM**					
	W		mg/L	< 0.003		0.003	
	Sam Type	• **	Unit mg/L	Aroclor 125		clor 1260	
		RESULTS OF PC	RINA	VAIEK AN	ALYSIS		
		DE0111 TO 0 T TO	D IN I		A1 VC:0		
						Sneet N	o: 1 of 1
Fax: (613) 5	41-6596						d: 4-Aug-10
(613) 541-60	000 ext 6567					Method N	o: ASG 015
	'000, Stn. Force ntario K7K 7B4	es					d: 30-Jul-10 s: 3-Aug-10
	em. / Chem. Eng						o: 10-182
12 Verite Av	е						e: Fox-2
ESG		Control Sample		U.UU <del>TT</del>	1	ASG Login N	o: 20847
		Control Target Control Sample		0.0040			
		Blank Control Target		0.0004			
		Duplicate ; 14588*		004; < 0.0004			
		Sample ID	Mercury^ mg/L				
		LABORAT	ORY	QA/QC			
		# Reported at 0.4 μg/L		n limit			
		^ Acid digestion perform	•				
		* Averaged result of du	ıplicates				
		14000		- 0.000 <del>-1</del>			
		14588* 14589		< 0.0004			
		10 14599*	1	mg/L			
		Sample	N	lercury^			
	KES	ULTS OF MERCUF	X I IIN	WAIEKA	NAL 1 SI	3	
	DEC	III TO OF MEDOLI	OV INI	MATED A	NAL VOI	0	
						Sheet:	1 Of 1
Fax: (613)	541-6596				Date	Reported:	_
	000 ext 6567					/lethod No:	
	Ontario K7K 7B	4				of analysis:	
	7000, Stn. For	•			Samples	Received:	
Dept. of Ch	em. / Chem. E	ng. RMC				Client No:	
12 Verite A	\ <b>n</b>				AGC	Login No:	Fox-2

ASU#	12972	Report ID:	Fox-2 W22
Client:	ESG	Date Submitted:	30-Jul-10
		Date tested:	30-Jul-10
Site:	Fox-2	Date:	30-Jul-10
	10-182	Matrix:	water
Report of Analysis			
Sample	Oil & Grease		
	mg/L		
10-14588	<2.0		
10-14589	<2.0		
Blank	<2.0		
Control	14.1		
Control Target	15.9		

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4 NOBILITIAL SCIENCES STATION OF THE PROPERTY OF

Tamara Van Dyck
Environmental Officer
Defence Construction Canada
DEW Line Cleanup PMO
101 Colonel By Drive
Ottawa ON K1A 0K2

March 15, 2011

### RE: August 2010 Monthly Report for Water Use License Number: 1BR-LON0813

The following results of the Monitoring Program (MP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for FOX-2 (*Longstaff Bluff*).

### 1. CAMP SEWAGE LAGOON

A 2 cell sewage lagoon was constructed to service the FOX-2 construction camp in 2009. The sewage lagoon is located approximately 100 m from the contractor's camp, 100 m away from drainage channels, and away from water bodies supporting aquatic life. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 0491084E 7646024N.

### 2. SEWAGE EFFLUENT SAMPLES

The Water Use License and MP require that samples from treated sewage lagoon effluent at the point of discharge to the receiving water be collected prior to each discharge event. Two sewage effluent samples were collected in August 2010 from the FOX-2 sewage treatment plant, to confirm that discharge of the treated sewage to ground can continue. A summary of the details of these results follows. Laboratory results are provided in Appendix A.

LOCATION: CAMP SEWAGE TREATMENT FACILITY GPS COORDINATES: 18W 0491657 7643666

**SAMPLE:** 10-16039 **DATE:** August 20, 2010

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-16039
pН	6.0 to 9.0	pH units	7.24
Oil & Grease	None Visible	-	None Visible
Total Suspended Solids (TSS)	180	mg/L	<1.8
BOD	120	mg/L	<3
Faecal Coliforms	10,000	CFU/dL	N/A
<b>Total Coliforms</b>	-	CFU/ 100 mL	N/A

LOCATION: CAMP SEWAGE TREATMENT FACILITY GPS COORDINATES: 18W 0491657 7643666

**SAMPLE:** 10-16305 **DATE:** August 26, 2010

Parameter	Allowable Maximum Average Concentration	Units	Sample # 10-16305
pН	6.0 to 9.0	pH units	N/A
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	N/A
BOD	120	mg/L	N/A
Faecal Coliforms	10,000	CFU/dL	N/A
Total Coliforms	-	CFU/ 100 mL	N/A

<sup>\*</sup>Sample 10-16305 expired in transit to the Lab and was not analyzed.

The sample collected in August was below the relevant criteria, and the effluent from the treatment plant continued to be discharged to the ground. (W0491657, 7643666).

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Candice Casucci

Masuri.

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King, Ryan Adams (ESG)

# APPENDIX A LABORATORY RESULTS

ESG			ASG	Login No:	20951
12 Verite Ave				Site:	Fox-2
Dept. of Chem. / Che	m. Eng., RMC			Client No:	10-317
P.O. Box 17000, Stn	. Forces		Samples	Received:	23-Aug-10
Kingston, Ontario K7	K 7B4		Date o	of analysis:	24-Aug-10
(613) 541-6000 ext 65	567				ASG 037
Fax: (613) 541-6596			Date Reported:		
				Page:	1 of 1
	RESULTS OF p	H ANALYSIS			
	Sample I.D.	рН			
	10-16039*	7.24			
	* Averaged result of duplic	cates			
	LABORATO	DRY QA/QC			
	Sample I.D.	рН			
	10-16039*; Duplicate	7.24 ; 7.24			
	Control	7.01			
	Control Target	7.00			

ESG							ASG Login No:	20051
12 Verite Ave								Fox-2
	Ohara Fran DMO							
	Chem. Eng., RMC						Client Login No:	
P.O. Box 17000,						S	amples Received:	
Kingston, Ontario							Date of analysis:	
613) 541-6000 e							Method No:	
Fax: (613) 541-6	596						Date Reported:	27-Aug-10
							Sheet:	1 of 1
	RES	ULTS OF TOT	AL SUS	PEND	<b>ED SOLIDS AN</b>	ALYSIS		
		Sample I.D.	Sample	Unit	Total			
			Type^		Suspended Solids			
		10-16039	SE	mg/L	< 1.8			
		LAI	BORAT	ORY C	QA/QC			
		Control	Control	mg/L	190			
		Control Target	Control	mg/L	200			
		Blank	Control	mg/L	< 1			

ESG				ASG	Login No:	20951
12 Verite Ave					Site:	Fox-2
Dept. of Chem.	/ Chem. Eng., RMC			Client	Login No:	10-317
P.O. Box 17000	, Stn. Forces			Samples	Received:	23-Aug-10
Kingston, Ontari	io K7K 7B4			Date o	of analysis:	30-Aug-10
(613) 541-6000	ext 6567			N	lethod No:	ASG 042
Fax: (613) 541-65	96			Date		30-Aug-10
					Page:	1 of 1
	RESULTS O	F BOD	ANALYSIS			
	Sample I.D.	Unit	BOD			
	10-16039*	mg/L	< 3			
	*Averaged result of dup	olicates				
	T G T T T T T T					
	LABOR	ATORY (	24/00			
	LABORA	AIORI	AMAC			
	Sample I.D.	Unit	BOD			
	Duplicate ; 10-16039*	mg/L	<3;<3			
	Blank	mg/L	< 3			
	Biank					
	Control	mg/L mg/L	146			

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4

Tamara Van Dyck Environmental Officer Defence Construction Canada DEW Line Cleanup PMO 101 Colonel By Drive Ottawa ON K1A 0K2 WANDER TO SEE OF THE SECOND OF

Monday, March 21, 2011

### RE: Analytical Results for Wastewater Samples Collected at FOX-2 in August, 2010

The following report summarizes results of the analysis of wastewater samples as per the FOX-2 (Longstaff Bluff) DEW Line Cleanup Project (DLCU) Specifications.

The FOX-2 specifications require that "wash water, melt water collection and rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream" meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pН	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Dissolved chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.0006	mg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	0.5	mg/L
Oil & grease	5	mg/L
PCBs	1	mg/L
Phenols	1	-

#### Phenols

The wastewater samples collected by ESG at FOX-2 in August, 2010 were not analyzed for phenols but they were analyzed for oil and grease. Research conducted by ESG<sup>1</sup> has determined that a) no federal, territorial or provincial criteria exist for the discharge of wastewater containing phenols to land at a minimum distance of 30-m from natural drainage courses b) the maximum concentration of phenols in DLCU wastewater to date (2.44 mg/L) is below the LC<sub>50</sub> for freshwater fish and crustaceans and below the oral and

<sup>&</sup>lt;sup>1</sup> Environmental Sciences Group. *DEW Line Clean Up Project – Phenols in Wastewater*. June, 2007.

dermal LD<sub>50</sub>s for rats and rodents and c) phenols in excess of the maximum allowable concentration (MAC) have historically co-occurred with a visible oil & grease sheen and/or with an exceedance of the MAC for oil & grease. This information, and a subsequent decision to not test for phenols, has been presented to the NWB. To date, verbal agreement from the NWB has been received, but the project is awaiting written confirmation of the decision to suspend testing for phenols.

### **WASTEWATER SAMPLES**

Ten wastewater samples were collected at FOX-2 and analyzed in August 2010. A summary of the details of these results follows. Laboratory results are provided in Appendix A.

LOCATION: AIRSTRIP SOUTH DEBRIS AREA LOBE A2

**GPS** COORDINATES: 18w 0489117 7646255

**SAMPLE:** 10-15340 **DATE:** AUGUST 5, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-15340
pН	6-9	pH units	7.64
Total arsenic (As)	0.100	mg/L	0.005
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	0.011
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	0.019
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

**SAMPLE:** 10-15341 **DATE:** AUGUST 5, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-15341
рН	6-9	pH units	7.51
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	0.020
Total zinc (Zn)	0.5	mg/L	< 0.001
Oil & grease	5	mg/L	<2.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



**Photo 1 (IMG 2225) Sample 10-15340/41 Fox- 2** Sampling Airstrip South Debris Area Lobe A2 water which had accumulated within the excavation

Waste water from the Airstrip South Debris Area Lobe A2 was discharged to the ground on August 22, 2010. The water was discharged to an INAC approved location. (18w 0489108, 7646245).

LOCATION: BARREL PROCESSING AREA TANK III

**GPS COORDINATES:** 18w 0490776 7644911

**SAMPLE:** 10-15400 **DATE:** August 9, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-15400
рН	6-9	pH units	8.23
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	0.068
Oil & grease	5	mg/L	2.6
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

**SAMPLE:** 10-15400 **DATE:** August 9, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-15401
pН	6-9	pH units	8.44
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	0.050
Oil & grease	5	mg/L	3.1
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 2 (IMG 2311) Sample10-15400/01 Fox 2- Sampling wastewater from barrels consolidated and treated in Tank III in the Barrel Processing Area

Waste water from the Barrel Processing Area Tank III (10-15400/01) was discharged to the ground on August 20, 2010. The water was discharged to an INAC approved location. (18w 0490776, 7644911)

LOCATION: BARREL PROCESSING AREA TANK III

**GPS COORDINATES:** 18w 0490776 7644911

**SAMPLE:** 10-16127 **DATE:** August 23, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-16127
pН	6-9	pH units	8.06
Total arsenic (As)	0.100	mg/L	0.005
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	0.113
Oil & grease	5	mg/L	5.2
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

.



Photo 3 (IMG 2445) Sample 10-16127 Fox-2 Sampling wastewater used to steam clean barrels in the Barrel Processing Area

Waste water from the Barrel Processing Area Tank III (10-16127) was above the discharge criteria for Oil and Grease, and was not discharged.

**LOCATION: CHLORINE TANK** 

**GPS COORDINATES:** 18w 0491632 7643603

**SAMPLE:** 10-16126 **DATE:** August 24, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-16126
pН	6-9	pH units	7.60
Total arsenic (As)	0.100	mg/L	0.005
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	0.012
Dissolved copper (Cu)	0.200	mg/L	0.027
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	0.0310
Dissolved nickel (Ni)	0.200	mg/L	0.109
Total zinc (Zn)	0.5	mg/L	0.061
Oil & grease	5	mg/L	60700
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

**SAMPLE:** 10-16224 **DATE:** August 24, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-16224
pН	6-9	pH units	9.48
Total arsenic (As)	0.100	mg/L	0.005
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	0.009
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	0.0038
Dissolved nickel (Ni)	0.200	mg/L	0.029
Total zinc (Zn)	0.5	mg/L	0.052
Oil & grease	5	mg/L	39.1
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 4 (IMG 2447) Sample 10-16126/16224 Fox-2 Sampling consolidated and treated chlorinated wastewater from fuel tanks in the Beach Refuel Area

Waste water from the Tank was above criteria for oil and grease and was not discharged.

**LOCATION: WL - 18297** 

**GPS COORDINATES:** 18 w 0492520 7642753

**SAMPLE:** 10-16129 **DATE:** August 24, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-16129
pН	6-9	pH units	7.35
Total arsenic (As)	0.100	mg/L	0.009
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	0.053
Oil & grease	5	mg/L	2.5
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



**Photo 5 (IMG 2450) Sample 10-16129 Fox-2 S**ampling wastewater from WL-18297 which had accumulated after excavation

Waste water from the WL - 18297 (10-16129) was below criteria for all parameters. No water was discharged prior to backfilling.

**LOCATION: FUEL TANK W19F** 

**GPS COORDINATES:** 18W 091620 7643590

**SAMPLE:** 10-16557 **DATE:** August 31, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-16557
pН	6-9	pH units	6.95
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	0.039
Total zinc (Zn)	0.5	mg/L	0.027
Oil & grease	5	mg/L	91.0
PCBs	1	mg/L	< 0.0003
Phenols	-	-	N/A



Photo 6 (IMG 2489) Sample 10-16557 Fox -2 Sampling consolidated and treated wastewater from fuel tank W19F in the Beach Refuel Area

Wastewater from Fuel Tank W19F was above criteria for oil and grease and was not discharged.

**LOCATION: FUEL TANK W19E** 

**GPS COORDINATES:** 18W 091620 7643590

**SAMPLE:** 10-16588 **DATE:** August 31, 2010

Parameter Parameter	Maximum Allowable Concentration	Units	Sample # 10-16588
pН	6-9	pH units	6.73
Total arsenic (As)	0.100	mg/L	N/A
Dissolved cadmium (Cd)	0.010	mg/L	N/A
Dissolved chromium (Cr)	0.100	mg/L	N/A
Dissolved cobalt (Co)	0.050	mg/L	N/A
Dissolved copper (Cu)	0.200	mg/L	N/A
Dissolved lead (Pb)	0.050	mg/L	N/A
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	N/A
Total zinc (Zn)	0.5	mg/L	N/A
Oil & grease	5	mg/L	N/A
PCBs	1	mg/L	< 0.0003
Phenols	-	-	N/A



Photo 7 (IMG 2490) Sample 10-16558 Fox-2 Sampling consolidated untreated wastewater from fuel tank W19E in the Beach Refuel Area

Wastewater from Fuel Tank W19E was above criteria for oil and grease (visible sheen) and was not discharged. The contents of Fuel Tank W19E were incinerated on site, and no discharge was required.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Candice Casucci

Masuri.

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King, Ryan Adams (ESG)

## APPENDIX A LABORATORY RESULTS

ESG			ASG Login No:	20899
12 Verite Ave			Site:	Fox-2
Dept. of Chem. / Chem. Eng.,	RMC		Client No:	10-240
P.O. Box 17000, Stn. Forces			Samples Received:	10-Aug-10
Kingston, Ontario K7K 7B4			Date of analysis:	11-Aug-10
(613) 541-6000 ext 6567			Method No:	ASG 021
Fax: (613) 541-6596			Date Reported:	11-Aug-10
			Sheet:	1 of 1
RESUL	TS OF MERCUR	Y IN WATER A	NALYSIS	
	Sample	Mercury <sup>^</sup>		
	ID	mg/L		
	15340	< 0.0004		
	15341	< 0.0004		
	^ Acid digestion perform			
	# Reported at 0.0004 m	g/L detection limit.		
	LABORAT	ORY QA/QC		
	Sample	Mercury <sup>^</sup>		
	ID	mg/L		
	Blank	< 0.0004		
	Control Target	0.0040		

	LABORAT  Sample I.D.  Control  Control Target	PH 7.02 7.00			
	LABORAT	ORY QA/QC			
	LARODAT	OPY OMOC			
	15341	7.51			
	Sample I.D.	pH			
		p/ 1010			
	RESULTS OF	nH ANALYSIS			
				Page:	1 of 1
541-6596			Date	Reported:	11-Aug-10
	<u> </u>		Samples		
	m Eng DMC				
			ASG		
1	17000, Stn. Ontario K7I 6000 ext 65	nem. / Chem. Eng., RMC 17000, Stn. Forces Ontario K7K 7B4 5000 ext 6567 541-6596	RESULTS OF pH ANALYSIS    Sample I.D.   pH   15340   7.64	RESULTS OF pH ANALYSIS    Sample I.D.   PH	Client No:   Samples Received:   Samples Received:   Samples Received:   Date of analysis:   Method No:   Samples Reported:   Date Reported:   Page:   Page:     Sample I.D.   PH

ASU#	13030		Report ID:	Fox-2 W24				
Client:	ESG		Date Submitted:	10-Aug-10				
			Date tested:	13-Aug-10				
Site:	Fox-2		Date:	13-Aug-10				
	10-240		Matrix:	Water				
Report of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-15340	-	-	-	-	-	< 0.010	-	0.005
10-15341	-	-	-	-	-	< 0.010	-	< 0.003
Blank	-	-	-	-	-	< 0.010	-	< 0.003
Control	-	-	-	-	-	3.04	-	0.78
Control Target	-	-	-	-	-	3.00	-	0.80
10-15341	-	-	-	-	-	< 0.010	-	< 0.003
10-15341	-	-	-	-	-	< 0.010	-	< 0.003
Dissolved Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-15340	0.011	0.019	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-15341	< 0.005	0.020	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Blank	<0.005	< 0.005	< 0.003	<0.001	< 0.010	-	<0.005	-
Control	1.59	1.62	1.63	0.80	8.17	-	0.82	-
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
10-15341	< 0.005	0.020	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-15341	< 0.005	0.020	< 0.003	< 0.001	< 0.010	-	< 0.005	-

ASU#	13030	Report ID:	Fox-2 W23
Client:	ESG	Date Submitted:	10-Aug-10
		Date tested:	11-Aug-10
Site:	Fox-2	Date:	13-Aug-10
	10-240	Matrix:	water
Report of Analysis	S		
Sample	Oil & Grease		
	mg/L		
10-15340	<2.0		
10-15341	<2.0		
Blank	<2.0		
Control	12.8		
Control Target	15.9		

ESG					ASG Login No:	20899
12 Verite Ave					Site:	Fox-2
Dept. of Chem. / Cher	n. Eng., R	MC			Client No:	10-240
P.O. Box 17000, Stn.	Forces				Samples Received:	10-Aug-10
Kingston, Ontario K7l					Date of analysis:	10-Aug-10
(613) 541-6000 ext 65	67				Method No:	ASG 015
Fax: (613) 541-6596					Date Reported:	
					Sheet No:	1 of 1
		RESULTS OF PC	R IN W	ATED ANAL	Veie	
		CL30L13 OI FO		IAI LIX ANAL	1 313	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	W	15340	mg/L	< 0.003	< 0.003	
	W	15341	mg/L	< 0.003	< 0.003	
		.00	9, =	1 0.000	7 0.000	
	* Average	result of duplicate				
	**Report	Values in PPM**				
		I ABOD	\TOD\	( QA/QC		
		LABORA	AT OK	WAVWC		
		Blank	mg/L	< 0.003	< 0.003	
		Control Sample	mg/L	< 0.003	0.016	
		Control Sample				

ESG					ASG	Login No:	20929
12 Verite	Ave						Fox-2
Dept. of C	Chem. / Che	m. Eng.,	RMC			Client No:	10-272
P.O. Box	17000, Stn	. Forces			Samples	Received:	16-Aug-10
Kingston,	Ontario K7	'K 7B4			Date o	f analysis:	17-Aug-10
(613) 541	-6000 ext 6	567			N	lethod No:	ASG 021
Fax: (613	) 541-6596				Date Reported:		17-Aug-10
						Sheet:	1 of 1
	R	ESUL'	TS OF MERCUR	Y IN WATER A	NALYSI	S	
			Sample	Mercury <sup>^</sup>			
			ID	mg/L			
			10-15400	< 0.0004			
			10-15401*	< 0.0004			
			* Averaged result of dup	diagtog			
			^ Acid digestion perform				
			# Reported at 0.0004 m				
			# Reported at 0.0004 II	ig/L detection innit.			
			LABORAT	ORY QA/QC			
			Sample	Mercury <sup>^</sup>			
			ID	mg/L			
			Duplicate ; 10-15401*	< 0.0004 ; < 0.0004			
			Blank	< 0.0004			
			Control Target	0.0040			
			Control Sample	0.0041			

ESG			ASG	Login No:	20929
12 Verite Ave				Site:	Fox-2
Dept. of Chem. / Che	m. Eng., RMC			Client No:	
P.O. Box 17000, Stn.	Forces		Samples	Received:	16-Aug-10
Kingston, Ontario K7I	< 7B4		Date of	of analysis:	17-Aug-10
(613) 541-6000 ext 65	567		N	Method No:	ASG 037
Fax: (613) 541-6596			Date	Reported:	17-Aug-10
				Page:	1 of 1
	RESULTS OF p	H ANALYSIS			
	Sample I.D.	рН			
	10-15400*	8.23			
	10-15401	8.44			
	* Averaged result of duplic	eates			
	LABORATO	ORY QA/QC			
	Sample I.D.	рН			
	10-15400*; Duplicate	8.22 ; 8.24			
	Control	7.01			
	Control Target	7.00			

ESG					ASG Login No:	20929
12 Verite Ave					Site:	Fox-2
Dept. of Chem. / Che	m. Eng., R	MC			Client No:	10-272
P.O. Box 17000, Stn	. Forces				Samples Received:	16-Aug-10
Kingston, Ontario K7	K 7B4				Date of analysis:	17-Aug-10
(613) 541-6000 ext 65	567				Method No:	ASG 015
ax: (613) 541-6596					Date Reported:	18-Aug-10
					Sheet No:	1 of 1
	F	RESULTS OF PC	B IN V	VATER ANALY	'SIS	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	W	15400*	mg/L	< 0.003	< 0.003	
	W	15401	mg/L	< 0.003	< 0.003	
	* Average	result of duplicate				
		e result of duplicate Values in PPM**				
		Values in PPM**	TOP	V 0 N/0 C		
		Values in PPM**	ATOR'	Y QA/QC		
		Values in PPM**	ATOR`	Y QA/QC	< 0.003	
		Values in PPM**  LABORA			< 0.003 < 0.003 ; < 0.003	
		Values in PPM**  LABORA  Blank	mg/L	< 0.003		

ASU#	13064		Report ID:	Fox-2 W25				
Client:	ESG		Date Submitted:	16-Aug-10				
			Date tested:	19-Aug-10				
Site:	Fox-2		Date:	19-Aug-10				
	10-272		Matrix:	Water				
Report of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-15400	-	-	-	-	-	0.068	-	< 0.003
10-15401	-	-	-	-	-	0.050	-	< 0.003
Blank	-	-	-	-	-	< 0.010	-	< 0.003
Control	-	-	-	-	-	2.92	-	0.76
Control Target	-	-	-	-	-	3.00	-	0.80
10-15401	-	-	-	-	-	0.051	-	< 0.003
10-15401	-	-	-	-	-	0.049	-	< 0.003
Dissolved Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-15400	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-15401	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Blank	<0.005	< 0.005	< 0.003	<0.001	< 0.010	-	< 0.005	-
Control	1.43	1.61	1.57	0.77	7.92	-	0.80	-
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
10-15401	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
10-15401	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-

ASU#	13064	Report ID:	Fox-2 W26
Client:	ESG	Date Submitted:	16-Aug-10
		Date tested:	18-Aug-10
Site:	Fox-2	Date:	19-Aug-10
	10-272	Matrix:	water
Report of Analysis	8		
Sample	Oil & Grease		
	mg/L		
10-15400	2.6		
10-15401	3.1		
Blank	<2.0		
Control	15.4		
Control Target	15.9		

ASU#	13142	Report ID:	Fox-2 W27
Client:	ESG	Date Submitted:	30-Aug-10
		Date tested:	31-Aug-10
Site:	Fox-2	Date:	31-Aug-10
	10-332	Matrix:	water
Report of Analysis	S		
Sample	Oil & Grease		
	mg/L		
10-16126**	60700		
10-16127	5.2		
10-16129	2.5		
10-16224	39.1		
Blank	<2.0		
Control	13.3		
Control Target	15.9		
Results relate only	to the items tested		
** samples had sig	gnificant layer of free	product on top, sample was treated as a	whole
and the water laye	r was not extracted f	for oil & grease.	

ESG			ASG Login No:	20985
12 Verite Ave			Site:	Fox-2
Dept. of Chem. / Chem. Eng.,	RMC		Client No:	10-332
P.O. Box 17000, Stn. Forces			Samples Received:	30-Aug-10
Kingston, Ontario K7K 7B4			Date of analysis:	1-Sep-10
(613) 541-6000 ext 6567			Method No:	ASG 021
Fax: (613) 541-6596			Date Reported:	
			Sheet:	1 of 1
RESUL	TS OF MERCUR	Y IN WATER A	NALYSIS	
	Sample	Mercury <sup>^</sup>		
	ID	mg/L		
	16126	0.0310		
	16127	< 0.0004		
	16129	< 0.0004		
	16224	0.0038		
	^Acid digestion perform			
	# Reported at 0.0004 mg	g/L detection limit.		
	LABORATO	ORY QA/QC		
	Sample	Mercury^		
		Mercury^ mg/L		
	Sample	,		
	Sample ID	mg/L		

ESG			ASG Login No	20985
12 Verite Ave			Site	Fox-2
Dept. of Chem. / Cher	m. Eng., RMC		Client No:	10-332
P.O. Box 17000, Stn.	Forces		Samples Received	30-Aug-10
Kingston, Ontario K7k	₹ 7B4		Date of analysis	1-Sep-10
(613) 541-6000 ext 65	67		Method No	ASG 037
Fax: (613) 541-6596			Date Reported	1-Sep-10
			Page	1 of 1
	DECLUITE OF	THE ANIAL VOICE		
	RESULTS OF	pH ANALYSIS		
	Sample I.D.	рН		
	16126	7.60		
	16127	8.06		
	16129	7.35		
	16224	9.48		
	* Averaged result of dup	licates		
	7 Wordgod Toodit of dap	illoctoo		
	LABORAT	ORY QA/QC		
	Sample I.D.	pH		
	Control	7.00		
	Control Target	7.00		

ASU#	13142	Report ID:	Fox-2 W27
Client:	ESG	Date Submitted:	30-Aug-10
		Date tested:	31-Aug-10
Site:	Fox-2	Date:	31-Aug-10
	10-332	Matrix:	water
Report of Analysis	S		
G 1	07.0.0		
Sample	Oil & Grease		
	mg/L		
10-16126**	60700		
10-16127	5.2		
10-16129	2.5		
10-16224	39.1		
Blank	<2.0		
Control	13.3		
Control Target	15.9		

<sup>\*\*</sup> samples had significant layer of free product on top, sample was treated as a whole and the water layer was not extracted for oil & grease.

ASU#	13142		Report ID:	Fox-2 W28					
Client:	ESG		Date Submitted:	30-Aug-10					т
			Date tested:	1-Sep-10					т
Site:	Fox-2		Date:	3-Sep-10					$^{+}$
	10-332		Matrix:	Water					I
Report of Analysis									
Total Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	+
									$^{+}$
10-16126**	-	-	-	-	-	0.061	-	0.005	т
10-16127	-	-	-	-	-	0.113	-	0.005	Т
10-16129	-	-	-	-	-	0.053	-	0.006	Т
10-16224	-	-	-	-	-	0.052	-	0.009	*
Blank	-	-	-	-	-	< 0.010	-	< 0.003	+
									Т
Control	-	-	-	-	-	2.91	-	0.73	
Control Target	-	-	-	-	-	3.00	-	0.80	F
10-16224	-	-	-	-	-	0.051	-	0.009	+
10-16224	-	-	-	-	-	0.053	-	0.009	
Dissolved Metals	Results in mg/L								
	_		_			_	_		
SAMPLE	Cu	Ni	Со	Cd	Pb	Zn	Cr	As	+
10-16126**	0.027	0.109	0.012	< 0.001	< 0.010	-	< 0.005	-	+
10-16127	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-	Т
10-16129	< 0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-	
10-16224	0.009	0.029	< 0.003	< 0.001	< 0.010	-	< 0.005	-	*
Blank	< 0.005	< 0.005	<0.003	< 0.001	< 0.010	-	< 0.005	-	
Control	1.44	1.55	1.54	0.77	7.66	-	0.78	-	+
Control Target	1.60	1.60	1.60	0.77	8.00	-	0.78	-	+
3-1									Τ
10-16224	0.009	0.028	< 0.003	< 0.001	< 0.010	-	< 0.005	-	
10-16224	0.009	0.029	< 0.003	< 0.001	< 0.010	-	< 0.005	-	F
** sample 10-16126 top	p layer of free product	removed before a	nalysis of water						+
Results relate only to the	items tested								t
									+
									I

ESG					ASG Login No:	20985
12 Verite Ave					Site:	Fox-2
Dept. of Chem. / Cher	m. Eng., R	MC			Client No:	10-332
P.O. Box 17000, Stn.	Forces				Samples Received:	30-Aug-10
Kingston, Ontario K7F	< 7B4				Date of analysis:	2-Sep-10
(613) 541-6000 ext 65	67				Method No:	ASG 015
Fax: (613) 541-6596					Date Reported:	3-Sep-10
					Sheet No:	1 of 1
	F	RESULTS OF PC	BINW	ATER ANAL	YSIS	
	01-					
	Sample	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	Type **	10100	,,	2.222		
	W	16126	mg/L	< 0.003	< 0.003	
	W	16127	mg/L	< 0.003	< 0.003	
	W	16129	mg/L	< 0.003	< 0.003	
	W	16224	mg/L	< 0.003	< 0.003	
	**Report \	Values in PPM**				
	* Average	Result of Duplicate				
		LABORA	TORY	QA/QC		
		Disale	ma/l	0.000	0.000	
	$\vdash$	Blank	mg/L	< 0.003	< 0.003	
	$\vdash$	Control Sample	mg/L	< 0.003	0.011	
		Control Sample Target	mg/L	< 0.003	0.015	
	** 0 0-	il , C = Concrete , PC = P	oint Chin	CM Curch D	Diant W Water	
	5 = 50	ii, C = Concrete, PC = P	aint Unip	, 5vv = 5wab , P =	Plant, VV = VVater	

ESG				ASG Login No:	21013
12 Verite	Ave			Site:	Fox-2
Dept. of C	hem. / Chem. Eng	ı., RMC		Client No:	10-365
P.O. Box	17000, Stn. Force	S		Samples Received:	3-Sep-10
Kingston,	Ontario K7K 7B4			Date of analysis:	
(613) 541-	6000 ext 6567				8-Sep-10
Fax: (613)	541-6596			Method No:	ASG 014
				Date Reported:	7-Sep-10
				Sheet:	1 of 1
	RESU	LTS OF MERCUR	Y IN WATER A	NALYSIS	
		Sample	Mercury <sup>^</sup>		
		ID.	mg/L		
		16557*	< 0.0004		
		16558	< 0.0004		
		*Average result of dupli			
		^ Acid digestion perform			
		# Reported at 0.0004 m	ng/L detection limit.		
		LABORAT	ORY QA/QC		
		Sample	Mercury <sup>^</sup>		
		ID	mg/L		
		Duplicate; 16557*	< 0.0004 ; < 0.0004		
		Duplicate; 16558*	< 0.0004 ; < 0.0004		
		Blank	< 0.0004		
		Blank	< 0.0004		
		Control Target	0.0040		
		Control Target Control Sample Control Sample	0.0040 0.0041 0.0042		

ASU#	13178	Report ID:	Fox-2 W30
Client:	ESG	Date Submitted:	3-Sep-10
		Date tested:	3-Sep-10
Site:	Fox-2	Date:	3-Sep-10
	10-365	Matrix:	water
Report of Analysis	3		
Sample	Oil & Grease		
	mg/L		
10-16557	91.0		
10-16558	**		
Blank	<2.0		
Control	17.7		
Control Target	15.7		
Results relate only	to the items tested		
** sample was pre	edominantly free pro	duct, bottle exploded and whole sample l	ost

ESG					ASG Login No:	21013
12 Verite Ave					Site:	Fox-2
Dept. of Chem. / Che	m. Eng., RN	<b>ЛС</b>			Client No:	10-365
P.O. Box 17000, Stn	. Forces				Samples Received:	
Kingston, Ontario K7	K 7B4				Date of analysis:	3-Sep-10
(613) 541-6000 ext 65	567				Method No:	ASG 015
Fax: (613) 541-6596					Date Reported:	7-Sep-10
					Sheet No:	1 of 1
	R	ESULTS OF PC	B IN W	ATER ANAL	/SIS	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	W	16557	mg/L	< 0.003	< 0.003	
			/I	< 0.003	< 0.003	
	W	~16558	mg/L	V 0.000	V 0.000	
		~16558 /alues in PPM**	mg/L	V 0.000	× 0.000	
	**Report \\ * Average	/alues in PPM** Result of Duplicate				
	**Report \\ * Average	/alues in PPM**				nase
	**Report \\ * Average	/alues in PPM** Result of Duplicate	d organic	phases. Analysis d		nase
	**Report \\ * Average	/alues in PPM** Result of Duplicate received with aqueous an	d organic	phases. Analysis d		nase
	**Report \\ * Average	/alues in PPM** Result of Duplicate received with aqueous an	d organic	phases. Analysis d	one on only aqueous pl	nase

ESG			ASC	Login No:	21013
12 Verite Ave					Fox-2
Dept. of Chem. / Che	m. Eng., RMC			Client No:	10-365
P.O. Box 17000, Stn.	Forces		Samples Received: 3-Sep-		3-Sep-10
Kingston, Ontario K7l	K 7B4		Date of analysis: 7-Sep-1		7-Sep-10
(613) 541-6000 ext 65	567		Method No: ASG 03		ASG 037
Fax: (613) 541-6596			Date Reported: 7-Se		7-Sep-10
				Page:	1 of 1
	RESULTS OF pH ANALYSIS				
	Sample I.D.	рН			
	16557*	6.95			
	16558	6.73			
	* Averaged result of duplicates				
	LABORATORY QA/QC				
	Sample I.D.	рН			
	16557*; Duplicate	6.95 ; 6.95			
	Control	7.00			
	Control Target	7.00			

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4 TAL SCIENCES GROWNOWN CONTROL OF THE PROPERTY OF THE PROPERTY

Tamara Van Dyck Environmental Officer Defence Construction Canada DEW Line Cleanup PMO 101 Colonel By Drive Ottawa ON K1A 0K2

March 15, 2011

### RE: September 2010 Monthly Report for Water Use License Number: 1BR-LON0813

The following results of the Monitoring Program (MP) and/or Water Use License are provided by the Environmental Sciences Group to meet the requirements of the above-noted license for FOX-2 (*Longstaff Bluff*).

### 1. CAMP SEWAGE LAGOON

A 2 cell sewage lagoon was constructed to service the FOX-2 construction camp in 2009. The sewage lagoon is located approximately 100 m from the contractor's camp, 100 m away from drainage channels, and away from water bodies supporting aquatic life. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 0491084E 7646024N.

### 2. SEWAGE EFFLUENT SAMPLES

The Water Use License and MP require that samples from treated sewage lagoon effluent at the point of discharge to the receiving water be collected prior to each discharge event.

No sampling was required in September of 2010.

Please contact the undersigned if you have any questions or concerns. Sincerely,

Candice Casucci

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King, Ryan Adams (ESG)

Candice Casucci Environmental Sciences Group The Royal Military College of Canada PO Box 17000 Stn. Forces Kingston, ON K7K 7B4

Tamara Van Dyck Environmental Officer Defence Construction Canada DEW Line Cleanup PMO 101 Colonel By Drive Ottawa ON K1A 0K2 ON LESG - dico

Monday, March 21, 2011

### RE: Analytical Results for Wastewater Samples Collected at FOX-2 in September, 2010

The following report summarizes results of the analysis of wastewater samples as per the FOX-2 (Longstaff Bluff) DEW Line Cleanup Project (DLCU) Specifications.

The FOX-2 specifications require that "wash water, melt water collection and rinse water resulting from the cleaning of fuel tanks and pipelines, and/or any other liquid effluent stream" meet the following guidelines prior to their discharge to land (01560.4.1):

Parameter	Maximum Allowable Concentration	Units
pН	6-9	pH units
Total arsenic (As)	0.100	mg/L
Dissolved cadmium (Cd)	0.010	mg/L
Dissolved chromium (Cr)	0.100	mg/L
Dissolved cobalt (Co)	0.050	mg/L
Dissolved copper (Cu)	0.200	mg/L
Dissolved lead (Pb)	0.050	mg/L
Total mercury (Hg)	0.0006	mg/L
Dissolved nickel (Ni)	0.200	mg/L
Total zinc (Zn)	0.5	mg/L
Oil & grease	5	mg/L
PCBs	1	mg/L
Phenols	-	-

### Phenols

The wastewater samples collected by ESG at FOX-2 in September, 2010 were not analyzed for phenols but they were analyzed for oil and grease. Research conducted by ESG<sup>1</sup> has determined that a) no federal, territorial or provincial criteria exist for the discharge of wastewater containing phenols to land at a minimum distance of 30-m from natural drainage courses b) the maximum concentration of phenols in DLCU wastewater to date

<sup>&</sup>lt;sup>1</sup> Environmental Sciences Group. DEW Line Clean Up Project – Phenols in Wastewater. June, 2007.

(2.44 mg/L) is below the  $LC_{50}$  for freshwater fish and crustaceans and below the oral and dermal  $LD_{50}$ s for rats and rodents and c) phenols in excess of the maximum allowable concentration (MAC) have historically co-occurred with a visible oil & grease sheen and/or with an exceedance of the MAC for oil & grease. This information, and a subsequent decision to not test for phenols, has been presented to the NWB. To date, verbal agreement from the NWB has been received, but the project is awaiting written confirmation of the decision to suspend testing for phenols.

### WASTEWATER SAMPLES

Four wastewater samples were collected at FOX-2 and analyzed in September 2010. A summary of the details of these results follows. Laboratory results are provided in Appendix A.

LOCATION: TREATED WATER FROM CUBE STORAGE TANK IN THE TEMPORARY

TANK STORAGE AREA

**GPS** COORDINATES: 18W 0491620 7643590

**SAMPLE:** 10-20197

**DATE: SEPTEMBER 4, 2010** 

Parameter	Maximum Allowable Concentration Units		Sample # 10-20197	
pН	6-9	pH units	9.06	
Total arsenic (As)	0.100	mg/L	0.003	
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001	
Dissolved chromium (Cr)	0.100	mg/L	< 0.005	
Dissolved cobalt (Co)	0.050	mg/L	< 0.003	
Dissolved copper (Cu)	0.200	mg/L	< 0.005	
Dissolved lead (Pb)	0.050	mg/L	0.010	
Total mercury (Hg)	0.0006	mg/L	< 0.0004	
Dissolved nickel (Ni)	0.200	mg/L	0.016	
Total zinc (Zn)	0.5	mg/L	0.436	
Oil & grease	5	mg/L	69.8	
PCBs	1	mg/L	< 0.003	
Phenols	-	-	N/A	



Photo 1 (IMG 2609) Sample 10-20197 Fox-2: Sampling treated water in the cube storage tank within the Temporary Tank Storage Area.

Wastewater from the Cube Storage Tank was above criteria for pH and oil and grease and was not discharged. An additional wastewater sample was collected on Sept 9<sup>th</sup> (10-20335).

LOCATION: TREATED WATER FROM CUBE STORAGE TANK IN THE TEMPORARY

TANK STORAGE AREA

**GPS** COORDINATES: 18W 0491620 7643590

**SAMPLE:** 10-20335 **DATE:** SEPTEMBER 9, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-20335
pН	6-9	pH units	9.22
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	< 0.005
Total zinc (Zn)	0.5	mg/L	0.023
Oil & grease	5	mg/L	6.2
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

Wastewater from the Cube Storage Tank was above criteria for pH and oil and grease and was not discharged in 2010. The water from this tank was consolidated into tank W19F for further treatment in 2011.

LOCATION: TREATED WATER FROM LARGE POLY STORAGE TANK IN THE

TEMPORARY TANK STORAGE AREA

**GPS** COORDINATES: 18W 0491620 7643590

**SAMPLE:** 10-20198

**DATE:** SEPTEMBER 4, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-20198
pН	6-9	pH units	7.24
Total arsenic (As)	0.100	mg/L	0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	< 0.0004
Dissolved nickel (Ni)	0.200	mg/L	0.014
Total zinc (Zn)	0.5	mg/L	1.18
Oil & grease	5	mg/L	33.9
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A



Photo 2 (IMG 2610) - Sample 10-20198: Sampling treated water in the large poly tank within the Temporary Tank Storage Area.

Wastewater from the large Poly Storage Tank was above criteria oil and grease and was not discharged in 2010. An additional sample was collected on Sept 9<sup>th</sup> (10-20334).

LOCATION: TREATED WATER FROM LARGE POLY STORAGE TANK IN THE

TEMPORARY TANK STORAGE AREA

**GPS** COORDINATES: 18W 0491620 7643590

**SAMPLE:** 10-20334

**DATE:** SEPTEMBER 9, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-20334
pН	6-9	pH units	7.68
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.005
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	0.009
Dissolved nickel (Ni)	0.200	mg/L	0.007
Total zinc (Zn)	0.5	mg/L	0.547
Oil & grease	5	mg/L	51.7
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

Wastewater from the large Poly Storage Tank was above criteria for Hg and oil and grease and was not discharged in 2010. The water from this tank was consolidated into tank W19F for further treatment in 2011.

LOCATION: TANK W19F FROM THE TEMPORARY TANK STORAGE AREA

**GPS** COORDINATES: 18W 0491620 7643590

**SAMPLE:** 10-20333

**DATE:** SEPTEMBER 9, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-20198
pН	6-9	pH units	8.92
Total arsenic (As)	0.100	mg/L	< 0.003
Dissolved cadmium (Cd)	0.010	mg/L	< 0.001
Dissolved chromium (Cr)	0.100	mg/L	< 0.005
Dissolved cobalt (Co)	0.050	mg/L	< 0.003
Dissolved copper (Cu)	0.200	mg/L	< 0.005
Dissolved lead (Pb)	0.050	mg/L	< 0.010
Total mercury (Hg)	0.0006	mg/L	0.0013
Dissolved nickel (Ni)	0.200	mg/L	0.017
Total zinc (Zn)	0.5	mg/L	< 0.010
Oil & grease	5	mg/L	84.0
PCBs	1	mg/L	< 0.003
Phenols	-	-	N/A

Wastewater from Tank W19F was above criteria for Hg and oil and grease and was not discharged in 2010. Additional treatment will be required in 2011.

We trust that the information provided meets current requirements. Please contact the undersigned if you have any questions or concerns.

Sincerely,

Candice Casucci

**Environmental Sciences Group** 

cc: Eva Schulz (UMA)

Daniela Loock, Kat White, Darren White, Cameron King, Ryan Adams (ESG)

# APPENDIX A LABORATORY RESULTS

ASU#	13190	Report ID:	Fox-2 W31
Client:	ESG	Date Submitted:	7-Sep-10
		Date tested:	7-Sep-10
Site:	Fox-2	Date:	8-Sep-10
	10-399	Matrix:	water
Report of Analysis			
Sample	Oil & Grease		
-	mg/L		
10-20197	69.8		
10-20198	33.9		
10-20202**	<10.0		
Blank	<2.0		
Control	14.4		
Control Target	15.7		
Results relate only	to the items tested		
** sample 10-202	02-nonconformance	, detection limit raised due to insufficient	sample volume

ESG					ASG	Login No:	21030
12 Verite	Ave						Fox-2
Dept. of 0	Chem. / Cl	hem. Eng.,	RMC			Client No:	10-399
P.O. Box	17000, S	tn. Forces			Samples	Received:	7-Sep-10
Kingston	, Ontario k	(7K 7B4			Date of	of analysis:	9-Sep-10
(613) 541	-6000 ext	6567			N	/lethod No:	ASG 021
Fax: (613	3) 541-659	6			Date	Reported:	9-Sep-10
						Sheet:	1 of 1
						_	
		RESUL	TS OF MERCUR	Y IN WATER A	NALYSI	S	
			Sample	Mercury <sup>^</sup>			
			ID	mg/L			
			10-20197*	< 0.0004			
			10-20198	< 0.0004			
			10-20202	< 0.0004			
			*Average result of duplic	rates			
			^ Acid digestion perform				
			# Reported at 0.0004 m				
			1, 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u> </u>			
			LABORAT	ORY QA/QC			
			Sample	Mercury <sup>^</sup>			
			ID	mg/L			
			Duplicate; 10-20197*	< 0.004 ; < 0.0004			
			Blank	< 0.0004			
			Control Target	0.0040			
			Control Sample	0.0052			

					ASG Login No:	21030
2 Verite Ave						Fox-2
ept. of Chem. / Chen	n. Eng., RN	MC			Client No:	10-399
O. Box 17000, Stn.	Forces				Samples Received:	7-Sep-10
ingston, Ontario K7K	7B4				Date of analysis:	9-Sep-10
13) 541-6000 ext 656	67				Method No:	ASG 015
ax: (613) 541-6596					Date Reported:	9-Sep-10
					Sheet No:	1 of 1
	F	RESULTS OF PCI	B IN V	VATER ANALY	'SIS	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
	W	20197*	mg/L	< 0.003	< 0.003	
	W	20198	mg/L	< 0.003	< 0.003	
	W	20202	mg/L	< 0.003	< 0.003	
	**Report \	/alues in PPM**				
		Values in PPM** Result of Duplicate				
		Result of Duplicate	\TOR'	Y QA/QC		
		Result of Duplicate			< 0.003	
		Result of Duplicate  LABORA  Blank	mg/L	< 0.003	< 0.003 < 0.003 : < 0.003	
		Result of Duplicate			< 0.003 < 0.003 ; < 0.003 0.014	

ASU#	13190		Report ID:	Fox-2 W32					
Client:	ESG		Date Submitted:	7-Sep-10					
			Date tested:	9-Sep-10					
Site:	Fox-2		Date:	10-Sep-10					
	10-399		Matrix:	Water					
Report of Analysis									
Total Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
10-20197	-	_	_	-		0.436	_	0.003	*
10-20197	-		-	-	-	1.18	-	< 0.003	
10-20202	-	_	_	-	-	< 0.010	-	< 0.003	
10 20202						10.010		10.005	
Blank	-	-	-	-	-	< 0.010	-	< 0.003	
Control	-	-	-	-	-	2.85	-	0.72	
Control Target	-	-	-	-	-	3.00	-	0.80	
10-20197	-	-	-	-	-	0.436	-	0.003	
10-20197	-	-	-	-	-	0.435	-	0.003	
Dissolved Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
10-20197	<0.005	0.016	< 0.003	< 0.001	0.010	-	< 0.005	_	*
10-20198	< 0.005	0.014	< 0.003	< 0.001	< 0.010	-	< 0.005	-	
10-20202	<0.005	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-	
Blank	< 0.005	< 0.005	<0.003	< 0.001	< 0.010	-	< 0.005	-	
Control	1.41	1.53	1.53	0.76	7.61		0.78		
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.78	-	
Connor rarget	1.00	1.00	1.00	0.00	0.00	-	0.00	-	
10-20197	< 0.005	0.016	< 0.003	< 0.001	0.010	-	< 0.005	-	
10-20197	< 0.005	0.015	< 0.003	< 0.001	0.010	-	< 0.005	-	

ESG			ASC	Login No:	21030
12 Verite Ave				Site:	Fox-2
Dept. of Chem. / Che	m. Eng., RMC			Client No:	10-399
P.O. Box 17000, Stn.			Samples	Received:	7-Sep-10
Kingston, Ontario K7	K 7B4		Date of	of analysis:	9-Sep-10
(613) 541-6000 ext 65	567		N	Method No:	ASG 037
Fax: (613) 541-6596			Date	Reported:	9-Sep-10
				Page:	1 of 1
	DECLUITO OF				
	RESULTS OF	PH ANALYSIS			
	Sample I.D.	pH			
	10-20197*	9.06			
	10-20198	7.24			
	10-20202	7.57			
	* Averaged result of dupl	icates			
	LABORAT	ORY QA/QC			
	Sample I.D.	рН			
	10-20197*; Duplicate	9.06 ; 9.06			
	Control	7.00			
	Control Target	7.00			

	G	ROUP DES	SCIENCES ANALYTIQUES	S ET FACILITÉ SLOWPO	OKE-2 AU CMF	ł	
		Dept. of	Chem. and Chem. Eng Dé	ot, de chimie et de génie	chimique		
			lilitary College of Canada -				
			P.O. Box 17000 Stn. Forces				
			Tel: 613-541-6000 x6684				
Client:	ESG				ASC	Login No:	21059
	12 Verite	Ave					Fox-2
	Dept. of C	hem. / Cher	m. Eng., RMC			Client No:	10-413
		17000, Stn.			Samples	Received:	14-Sep-1
		Ontario K7				f analysis:	
		-6000 ext 6				Method No:	
		541-6596			Date	Reported:	16-Sep-1
	(2.12)						1 of 1
						. age	
			RESULTS OF	OH ANALYSIS			
			Sample I.D.	pH			
			20333*	8.92			
			20334	7.68			
			20335	9.22			
			* Averaged result of dup	icates			
			Aroragoa rooak or dap	outoo			
			LABORATO	DRY ONOC			
			LABORAT	JKT QA/QC			
			Sample I.D.	pH			
			20333* ; Duplicate	8.92 ; 8.92			
			Control	7.01			
			Control Target	7.00			

ASU#	13218	Report ID:	Fox-2 W34
Client:	ESG	Date Submitted:	14-Sep-10
		Date tested:	14-Sep-10
Site:	Fox-2	Date:	14-Sep-10
	10-413	Matrix:	water
Report of Analysis			
Sample	Oil & Grease		
	mg/L		
10-20333	84.0		
10-20334	51.7		
10-20335	6.2		
Blank	<2.0		
Control	14.8		
Control Target	15.7		
Results relate only	to the items tested		

			NCES GROUP AND ES ANALYTIQUES E			R
			m. and Chem. Eng Dépt.			•
		Royal Milit	ary College of Canada - Col	lège militaire royal du (	Canada	
		<b>℃</b> P.O	. Box 17000 Stn. Forces, k	Kingston, ON, K7K 7B4	ļ	
			Tel: 613-541-6000 x6684 /			
						04050
Client :	ESG				ASG Login No	
	12 Verite A		DIAG			: Fox-2
		hem. / Chem. En			Client No	
		17000, Stn. Force			Samples Received	
		Ontario K7K 7B4			Date of analysis	
		6000 ext 6567				: ASG 021
	Fax: (613)	541-6596			Date Reported	
					Sheet	: 1 of 1
		DEOU	L TO OF MEDOUR	V IN MATERIA	NAL VOIO	
		RESU	LTS OF MERCUR	Y IN WATER A	NALYSIS	
			Sample	Mercury^		
			ID	mg/L		
			20333*	0.0013		
			20334	0.0009		
			20335	< 0.0004		
			*Average result of dupli			
			^ Acid digestion perforn			
			# Reported at 0.0004 m	ng/L detection limit.		
			LABORAT	ORY QA/QC		
			Sample	Mercury^		
			ID	mg/L		
			Duplicate; 20333*	0.0012 ; 0.0014		
			Blank	< 0.0004		
			Control Target	0.0040		

ASU #	13218		Report ID:	Fox-2 W35					
Client:	ESG		Date Submitted:	14-Sep-10					
			Date tested:	14-Sep-10					
Site:	Fox-2		Date:	15-Sep-10					
	10-413		Matrix:	Water					
eport of Analysis									
Total Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
40.00000						.0.010		-0.000	
10-20333	-	-	-	-	-	<0.010	-	<0.003	
10-20334	-	-	-	-	-	0.547	-	< 0.003	
10-20335	-	-	-	-	-	0.023	-	<0.003	
Blank	-	-	-	-	-	<0.010	-	<0.003	
Control	_		_	_	_	2.98	_	0.75	
Control Target	-	-	-	-	-	3.00	-	0.80	
10-20335	-	-	-	-	-	0.022	-	< 0.003	
10-20335	-	-	-	-	-	0.023	-	< 0.003	
Dissolved Metals	Results in mg/L								
SAMPLE	Cu	Ni	Co	Cđ	Pb	Zn	Cr	As	
10-20333	<0.005	0.017	<0.003	<0.001	<0.010	_	<0.005	_	
10-20334	<0.005	0.017	<0.003	<0.001	<0.010	-	<0.005	-	
10-20334	<0.005	<0.007	<0.003	<0.001	<0.010	-	<0.005	-	
10-20333	<0.003	N.003	~0.00J	~U.UU1	~U.UIU	-	~U.UUJ	-	
Blank	<0.005	<0.005	< 0.003	<0.001	<0.010	-	<0.005	-	
Control	1.51	1.60	1.60	0.80	8.12	-	0.82	_	
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.82	-	
10.00005		0.005					.0.005		
10-20335	<0.005	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	
10-20335	<0.005	<0.005	< 0.003	<0.001	<0.010	-	<0.005	-	
sults relate only to th	a itama taatad								

			ES SCIENCES ANALYTI						
			of Chem. and Chem. Eng						
		Royal Military College of Canada - Collège militaire royal du Canada							
			P.O. Box 17000 Stn. I			34			
			Tel: 613-541-6000	x6684 /	Fax: 613-545-8341				
Client:	ESG					ASG Login No:	21059		
ciieii.	12 Verite Ave						Fox-2		
	Dept. of Chem. / Cher	m Eng Di	AC			Client No:			
	P.O. Box 17000, Stn.		110			Samples Received:			
	Kingston, Ontario K7					Date of analysis:			
	(613) 541-6000 ext 65					Method No:			
	Fax: (613) 541-6596	101				Date Reported:			
	an. (013) 541-0530					Sheet No:			
		R	ESULTS OF PC	B IN V	VATER ANALY	rsis			
		Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260			
		W	20333*	mg/L	< 0.003	< 0.003			
		W	20334	mg/L	< 0.003	< 0.003	-		
		W	20335	mg/L	< 0.003	< 0.003	-		
			20333	mg/L	4 0.003	V 0.003			
		**Report \	/alues in PPM**						
			Result of Duplicate						
			LABORA	ATOR	Y QA/QC				
			Blank	mg/L	< 0.003	< 0.003	1		
			Duplicate ; 20333*		< 0.003	< 0.003			
		$\vdash$		mg/L					
		$\vdash$	Control Sample	mg/L	< 0.003 < 0.003	0.012	-		
			Control Sample Target	mg/L	< 0.003	0.015	J		
		** S = Soi	I , C = Concrete , PC = F	aint Chip	, SW = Swab , P =	Plant , W = Water			
			I, C = Concrete, PC = F	·					

**AECOM** 

Site Name:

FOX-2, Longstaff Bluff

Site Location:

Nunavut

**Project No.** 60153669

Photo No.

Date:

**Direction Photo** 

Taken:

**Description:**Start of Fuel Tank
Demolition



Photo No.

Date:

**Direction Photo** 

Taken:

Description:

Fuel Tank Demoltion





Site Name:

FOX-2, Longstaff Bluff

Site Location: Nunavut

**Project No.** 60153669

Photo No.

Date:

Direction Photo Taken:

**Description:**Non-Hazardous Waste Landfill - June 2010



Photo No.

Date:

**Direction Photo** Taken:

**Description:** 

Non-Hazardous Waste Landfill – September 2010



**AECOM** 

Site Name:

FOX-2, Longstaff Bluff

Site Location: Nunavut

**Project No.** 60153669

Photo No.

Date:

**Direction Photo** 

Taken:

**Description:** Tier II Facility – June 2010



Photo No. 6

Date:

**Direction Photo** 

Taken:

Description:

Tier II Facility – September 2010



**AECOM** 

Site Name:

FOX-2, Longstaff Bluff

Site Location: Nunavut

**Project No.** 60153669

Photo No. 7

Date:

**Direction Photo** 

Taken:

**Description:**Upper Site Landfill –
July 2010



Photo No.

**Direction Photo** 

Date:

Taken:

Description:

Upper Site Landfill – September 2010





Site Name:

FOX-2, Longstaff Bluff

Site Location: Nunavut

**Project No.** 60153669

Photo No.

Date:

Direction Photo

Taken:

**Description:** Landfarm – July 2010



Photo No. 10

Date:

**Direction Photo** Taken:

Description:

Landfarm – September 2010

