403 270 9200 tel 403 270 0399 fax

# RECEIVED By clerk at 9:46 am, Apr 18, 2011

March 23, 2011

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

Dear Phyllis:

Project No: Water Use Licence No.: 1BR-CAP0914 2010 Annual Report

Regarding: PIN-2, Cape Young 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.

The following is a summary of the work completed in 2010:

**Non-Hazardous Waste Landfill (NHWLF):** The Non-Hazardous Waste Landfill was constructed and landfilling of non-hazardous site debris was started. The landfill was capped for the winter.

**Tier II Disposal Facility:** Construction activities at the 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 monitoring instrument installation. The Tier II Disposal Facility was capped for the winter.

Debris Removal: On-going.

**Demolition:** Demolition of the module train, warehouse, communication dishes, fuel tanks and water tanks was completed.

Landfill/Buried Debris Area Remediation: Remediation, consisting of partial excavation and/or regrading, was completed at the following areas: Tower Buried Debris Area, South Borrow Area, Pallet Line West Landfill, Debris Area 7, Old Camp Buried Debris Area, USAF Landfill, Station West Landfill, Hangar South Buried Debris Area, Station POL East Buried Debris Area, Buried Debris Area 14, Airstrip South Landfill, Buried Debris Area 9, East Twin Buried Debris Areas 2, 8 and 11, Southwest Buried Debris Area, South Landfill-East, North Borrow Area buried Debris, South Borrow Landfill, South Borrow Buried Debris Area, Harding Road North and South Buried Debris Areas.

**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: None.

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; Selected Site Photos; Monitoring Reports

NWB Annual Report	Year being reported: 2010 ▼
License No: 1BR-CAP0914	Issued Date: May 29, 2009 Expiry Date: May 31, 2014
Project Name:	PIN-2, Cape Young
Licensee: Defe	nce Construction Canada
Mailing Address:	Defence Construction Canada DGME 101 Colonel By Drive, Ottawa, Ontario, Canada K1A 0K2
	filing Annual Report (if different from Name of Licensee please clarify to two entities, if applicable):
AECOM Canada Lto	d Engineering Consultant
General Background Information	n on the Project (*optional):
Part B Part B A summary report of water use a	Item 1
solid and hazardous waste mana	
Water Source(s): Water Quantity:	Un-named River  65 for all Quantity Allowable Domestic (cu.m) purposes
	13 per day/119 Actual Quantity Used Domestic (cu.m) days
	n/a Quantity Allowable Drilling (cu.m)  Total Quantity Used Drilling (cu.m)
Waste Management  ✓ Solid Waste Dis	
✓ Sewage ☐ Drill Waste ✓ Greywater ✓ Hazardous ☐ Other:	684 cu.m of sewage and greywater were discharged to the sewage lagoon.
Additional Details:	
Details of the waste	e management and disposal were provided in the application.
	s and a summary of follow-up actions taken.
Spill No.:  Date of Spill:	(as reported to the Spill Hot-line)

	Date of Notification to an Inspector:  Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)	
Revision	s to the Spill Contingency Plan	
	SCP submitted and approved - no revision required or proposed	
	Additional Details:	
Revision	s to the Abandonment and Restoration Plan	
	N/A - not applicable   ▼	
	Additional Details:	
	The entire project is an abandonment and restoration program.	
Progress	ive Reclamation Work Undertaken	
	Additional Details (i.e., work completed and future works proposed)	1
	L	
		÷
Results	of the Monitoring Program including:	
Results	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached  Additional Details:	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached  Additional Details:  The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are	
Results	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached  Additional Details:  The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are Details attached	
Results (	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached  Additional Details:  The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are Details attached	
Results	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached  Additional Details:  The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are Details attached  Additional Details:  Results of any additional sampling and/or analysis that was requested by an	
Results	The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;  Details attached  Additional Details:  The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are Details attached  Additional Details:  Results of any additional sampling and/or analysis that was requested by an Inspector	

the year being re		waste disposal requested by the Board by Nov	ember 1 of
No a	dditional sampling req	uested by an Inspector or the Board	_
Add	itional Details: (Att	tached or provided below)	
Any responses o	r follow-up action	ns on inspection/compliance reports	,
		bliance report issued by INAC	
NO II	ispection and/or comp	mance report issued by INAC	• ,
Add	itional Details: (Da	ates of Report, Follow-up by the Licensee)	
	,	, ,	
Any additional co	omments or infor	mation for the Board to consider	
Date Submitted:	March 3	31, 2011	
Submitted/Prepa		,	$\neg$
Contact Informat	,	403-270-9220	-
Jonada iniorina	Fax:	403-270-0399	$\dashv$
		eva.schulz@aecom.com	$\dashv$
	Cilian.	O VALOUTALE GROODITIOOTII	

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

	UTM Zone 11N, NAD83		
Source Description	Northing	Easting	
Un-Named River	68° 56'	116° 56'	

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

Location Description (type)	UTM Zone 11N, NAD83		
[			
	Northing	Easting	
Tier II Disposal Facility	7646295.4	502420.1	
Tier II Disposal Facility	7646332.4	502457	
Tier II Disposal Facility	7646288.3	502501.1	
Tier II Disposal Facility	7646251.4	502464.1	
Non-Hazardous Waste Landfill	7645247.2	503027.9	
Non-Hazardous Waste Landfill	7645297.4	503052.7	
Non-Hazardous Waste Landfill	7645272.6	503102.9	
Non-Hazardous Waste Landfill	7645222.4	503078.1	
sewage lagoon-7110	7646704.278	502812.961	
sewage lagoon-7111	7646683.040	502840.537	
sewage lagoon-7112	7646658.024	502820.094	
sewage lagoon-7113	7646680.089	502793.685	

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

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

Tuesday, March 22, 2011

#### RE: June 2010 Monthly Report for Water Use License Number: 1BR-CAP0914

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 *PIN-2* (*Cape Young*)

#### 1. CAMP SEWAGE LAGOON

A sewage lagoon was constructed to service the PIN-2 construction camp in September 2009. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 7646646.0 N, 11W 0502873.

#### 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 of the PIN-2 sewage lagoon. A summary of the details of these results follows.

Sample Number	Sample Location	GPS Coordinates	Sampling Date
10-4800	Sewage Lagoon - West corner of Sewage Lagoon Cell #1	W0502804 N7646680	June 24, 2010
10-4801	Sewage Lagoon - West corner of Sewage Lagoon Cell #1	W0502804 N7646680	June 24, 2010
10-4805	North corner of Sewage Lagoon Cell #2.	W0502796 N7646671	June 24, 2010
10-4810	Sewage Lagoon - South corner of Sewage Lagoon Cell #1	W0502817 N7646668	June 28, 2010
10-4811	East corner of Sewage Lagoon Cell #2.	W0502807 N7646661	June 28, 2010
10-4812	East corner of Sewage Lagoon Cell #2.	W0502807 N7646661	June 28, 2010

A summary of the results for the parameters tested is provided below. Laboratory results and photographs are provided in Appendices A and B, respectively.

# ${\bf Location:\ Sewage\ Lagoon-West\ corner\ of\ Sewage\ Lagoon\ Cell\ \#1}$

GPS COORDINATES: W0502804 N7646680

Parameter	Allowable Maximum Average Concentration	Units	Sample Date June 24, 2010
pН	6.0 to 9.0	pH units	7.30
Oil & Grease	None Visible	-	None Visible
Total Suspended Solids (TSS)	180	mg/L	38
BOD	120	mg/L	N/A
Faecal Coliforms	100,000	CFU/100 mL	N/A
Total Coliforms	-	-	N/A

# ${\bf Location:\ Sewage\ Lagoon-West\ corner\ of\ Sewage\ Lagoon\ Cell\ \#1}$

GPS COORDINATES: W0502804 N7646680

Parameter	Allowable Maximum Average Concentration	Units	Sample Date June 24, 2010
pН	6.0 to 9.0	pH units	7.28
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	38
BOD	120	mg/L	N/A
Faecal Coliforms	100,000	CFU/100 mL	N/A
Total Coliforms	-	-	N/A

#### LOCATION: NORTH CORNER OF SEWAGE LAGOON CELL #2

GPS COORDINATES: W0502796 N7646671

Parameter	Allowable Maximum Average Concentration	Units	Sample Date June 24, 2010
pН	6.0 to 9.0	pH units	7.89
Oil & Grease	None Visible	-	N/A
Total Suspended Solids (TSS)	180	mg/L	<5
BOD	120	mg/L	N/A
Faecal Coliforms	100,000	CFU/mL	N/A
Total Coliforms	-	-	N/A

# ${\bf Location: \ Sewage \ Lagoon \ -South \ corner \ of \ Sewage \ Lagoon \ Cell \ \#1}$

GPS COORDINATES: W0502817 N7646668

Parameter	Allowable Maximum Average Concentration	Units	Sample Date June 24, 2010
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	<2
Faecal Coliforms	100,000	CFU/100 mL	<1
Total Coliforms	-	-	127

#### LOCATION: EAST CORNER OF SEWAGE LAGOON CELL #2

GPS COORDINATES: W0502807 N7646661

Parameter	Allowable Maximum Average Concentration	Units	Sample Date June 24, 2010
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	<2
Faecal Coliforms	100,000	CFU/100 mL	<2
Total Coliforms	-	-	124

#### LOCATION: EAST CORNER OF SEWAGE LAGOON CELL #2

GPS COORDINATES: W0502807 N7646661

Parameter	Allowable Maximum Average Concentration	Units	Sample Date June 24, 2010
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	89
Faecal Coliforms	100,000	CFU/100 mL	<1
<b>Total Coliforms</b>	-	-	>2419.2



Photo 1 (IMG 4555) Sample 10-4800/01 Pin-2 Wide angle of the sewage sample collected from the west corner of the sewage lagoon, cell #1, facing east.



Photo 2 (IMG 4558) Sample 10-4805 Pin-2 Wide angle of sewage sample collected from the north corner of the sewage lagoon, cell #2, facing south.

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, Tom Partridge, Kat Eagles (ESG)

# APPENDIX A LABORATORY RESULTS

ESG						ASC	3 Login No:	20677	
12 Verite A	ve							Pin-2	
		n. Eng., RMC					Client No:		
	7000, Stn.				Sa	mnlas	Received:		
Kingston, (						of analysis:			
	5000 ext 656						Method No:		
		01							
Fax: (613)	541-6596					Date	e Reported:		
							Page:	1 of 1	
		RESULTS OF	pH AN	IALY	SIS				
		Sample I.D.		рН					
		10-4800*		7.30					
	-	10-4801		7.28					
		10-4805		7.89					
		* Averaged result of dup	licates						
		LABORAT	ORY (	Q/A/Q	C				
		Sample I.D.		рН					
		10-4800 ; 10-4800	7.3	30 ; 7.3	0				
		Control		7.01					
		Control Target		7.00					
SG	-						P	SG Login No:	20677
2 Verite Ave		5110							Pin-2
	. / Chem. Eng.							lient Login No:	
	00, Stn. Forces ario K7K 7B4							oles Received: te of analysis:	
613) 541-600								Method No:	
ax: (613) 541							Г	Date Reported:	29-Jun-10
								Sheet:	1 of 1
		RESULTS OF TOT	TAL SUS	PEND	ED SOLIDS A	NAL'	YSIS		
		Sample I.D.	Sample	Unit	Total	1			
		34	Type^		Suspended Solids				
		10-4800*	SE	mg/L	38				
		10-4801	SE	mg/L	38				
		10-4805	SE	mg/L	< 5	-			
		LA	BORAT	ORY (	QA/QC				
		Duplicate ; 10-4800°	* SE;SE	mg/L	37 ; 38				
		Control	Control	mg/L	180				
		Control Target	Control	mg/L	200	-			
		Blank	Control	mg/L	< 1	_			
		^SW =Surface Water,	SI = Sewage	e Influent	SE = Sewage Effluent				
		* Averaged result of d	uplicates						



## Taiga Environmental Laboratory

Taiga Batch No.: 100326

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

#### - CERTIFICATE OF ANALYSIS -

Client Sample ID: 4810

Taiga Sample ID: 001

Client Project: ESG Request No. 10-068

Sample Type: Wastewater Received Date: 29-Jun-10 Sampling Date: 28-Jun-10

Sampling Time:

Location: PIN-2-Conf-DLCU

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	< 2	2	mg/L	30-Jun-10	SM5210:B	
Micro bio logy						
Coliforms, Fecal	<1	1	CFU/100mL	29-Jun-10	SM9222:D	
Coliforms, Total	127	1.0	MPN/100mL	29-Jun-10	SM9223:B	

ReportDate: Tuesday, July 06, 2010
Print Date: Tuesday, July 06, 2010

Page 2 of 5





#### Taiga Environmental Laboratory

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

#### - CERTIFICATE OF ANALYSIS -

Client Sample ID: 4811 Taiga Sample ID: 002

Client Project: ESG Request No. 10-068

Sample Type: Wastewater Received Date: 29-Jun-10 Sampling Date: 28-Jun-10

Sampling Time:

Location: PIN-2-Conf-DLCU

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	< 2	2	mg/L	30-Jun-10	SM5210:B	
Micro bio logy						
Coliforms, Fecal	< 2	2	CFU/100mL	29-Jun-10	SM9222:D	22
Coliforms, Total	124	1.0	MPN/100mL	29-Jun-10	SM9223:B	

ReportDate: Tuesday, July 06, 2010
Print Date: Tuesday, July 06, 2010

Page 3 of 5





#### Taiga Environmental Laboratory

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

#### - CERTIFICATE OF ANALYSIS -

Client Sample ID: 4812 Taiga Sample ID: 003

Client Project: ESG Request No. 10-068

Sample Type: Wastewater Received Date: 29-Jun-10 Sampling Date: 28-Jun-10

Sampling Time:

Location: PIN-2-Conf-DLCU

Report Status: Final

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Nutrients						
Biochemical Oxygen Demand	89	2	mg/L	30-Jun-10	SM5210:B	
Micro bio logy						
Coliforms, Fecal	<1	1	CFU/100mL	29-Jun-10	SM9222:D	
Coliforms, Total	>2419.2	1.0	MPN/100mL	29-Jun-10	SM9223:B	

ReportDate: Tuesday, July 06, 2010
Print Date: Tuesday, July 06, 2010

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

Tuesday, March 22, 2011

#### RE: July-September 2010 Report for Water Use License Number: 1BR-CAP0914

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 *PIN-2* (*Cape Young*)

#### 1. CAMP SEWAGE LAGOON

A sewage lagoon was constructed to service the PIN-2 construction camp in September 2009. The GPS coordinates that are required by the Water Use License for the sewage lagoon location are 7646646.0 N, 11W 0502873.

#### 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 sewage effluent samples were collected from the PIN-2 sewage lagoons from July-September. The level of liquid in the lagoons did not increase significantly, and no discharge events were required.

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, Tom Partridge, Kat Eagles (ESG)

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

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

Tuesday, March 22, 2011

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

The PIN-2 specifications require that "wash water, melt water collection, 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
pH	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	1.0	mg/L
Phenols	ı	ı
Benzene	0.370	mg/L
Toluene	0.002	mg/L
Ethylbenzene	0.090	mg/L

#### Phenols

The wastewater samples collected by ESG at PIN-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

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

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 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**

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

LOCATION: SOUTHEAST CORNER OF NHWL BESIDE ENTRY POINT

**GPS coordinates:** 11W 0503079 7645270

**SAMPLE:** 10-4808 **DATE:** JUNE 27, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-4808
pН	6-9	pH units	7.45
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	0.014
Oil & grease	5	mg/L	< 2.0
PCBs	1.0	mg/L	< 0.003
Phenols	-	-	N/A
Benzene	0.370	mg/L	< 0.002
Toluene	0.002	mg/L	< 0.002
Ethylbenzene	0.090	mg/L	< 0.002



**Photo 1 (DSC02617): Sample 10-4808 Pin-2:** Close angle of NHWL sample collected from the southeast corner, facing west.

LOCATION: NORTH SIDE OF NHWL BESIDE DEBRIS PILE

**GPS** COORDINATES: 11W 0503045 7645252

**SAMPLE:** 10-4809 **DATE:** JUNE 27, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-4809
pН	6-9	pH units	7.54
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	0.015
Oil & grease	5	mg/L	<2.0
PCBs	1.0	mg/L	< 0.00
Phenols	-	-	N/A
Benzene	0.370	mg/L	< 0.002
Toluene	0.002	mg/L	< 0.002
Ethylbenzene	0.090	mg/L	< 0.002

The water from the NHWL (10-4808/09) was discharged to land between the dates of July 8-14, 2010. The water was discharged to an area greater than 30m from natural drainage courses (11 W 0503021 7645179).

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, Shari Reed, Tom Partridge, Kat Eagles (ESG)

# APPENDIX A LABORATORY RESULTS

ASU#	12838	Report ID:	PIN-2 W4
Client:	ESG	Date Submitted:	2-Jul-10
		Date tested:	2-Jul-10
Site:	PIN-2	Date:	5-Jul-10
	10-067	Matrix:	water
Report of Analysis	S		
Sample	Oil & Grease		
	mg/L		
10-04808	<2.0		
10-04809	<2.0		
Blank	<2.0		
Control	16.0		
Control Target	15.7		

ESG			ASC Login No	20602
			ASG Login No	
12 Verite Ave	DMO			: Pin-2
Dept. of Chem. / Chem. Eng.,	RIVIC		Client No	
P.O. Box 17000, Stn. Forces			Samples Received	
Kingston, Ontario K7K 7B4			Date of analysis	
(613) 541-6000 ext 6567			Method No	
Fax: (613) 541-6596			Date Reported	
			Sheet	: 1 of 1
			1010	
RI	ESULTS OF MER	RCURY ANALY	SIS	
	Sample	Mercury <sup>^</sup>		
	ID	mg/L		
	10-4808	< 0.0004		
	10-4809*	< 0.0004		
	10-4003	₹ 0.0004		
	*Results of duplicate an	nalysis.		
	^ Acid digestion perform	ned.		
	# Reported at 0.0004 m			
	LABORAT	ORY QA/QC		
	Sample	Mercury <sup>^</sup>		
	ID	mg/L		
	Duplicate ; 10-4809*	< 0.0004 ; < 0.0004		
	Blank	< 0.0004		
	Control Target	0.0040		
	Control Sample	0.0041		
	-			

SG							ASG Login No:	20692	
2 Verite Ave							Site:	Pin-2	
Dept. of Chem. / Che	m. Eng., R	RMC					Client No:	10-067	
P.O. Box 17000, Stn						San	nples Received:	1-Jul-10	
Kingston, Ontario K7							ate of analysis:		
613) 541-6000 ext 6							Method No:		
ax: (613) 541-6596	501						Date Reported:		
ax. (013) 341-0330		-					Sheet No:		
							Sheet No.	1 01 1	
	I	RESU	JLTS OF P	CB IN W	ATER ANA	ALYSIS			
	Sample Type **		Sample I.D.	Unit	Aroclor 1254	4 Arc	oclor 1260		
	W	<del></del>	4808	mg/L	< 0.003	<u> </u>	< 0.003	1	
	W		4809	mg/L	< 0.003		< 0.003		
			of duplicate in PPM**						
			LABOR	DATORY	0.000				
					' QA/QC				
		<u> </u>	Blank	mg/L	< 0.003		< 0.003	<b>!</b>	
			ontrol Sample	mg/L	< 0.003	_	0.018		
		Contr	ol Sample Targe	t mg/L	< 0.003		0.016		
	** S = S0	oil , C =	Concrete , PC =	Paint Chip	, SW = Swab ,	P = Plant ,	W = Water		
ASU#	12838	3		Report ID:	PIN-2 W3				
Client:	ESG	r		Oate Submitte					
				Date tested:	5-Jul-10				
Site:	PIN-2			Date:	6-Jul-10				
	10-06	7	n	Matrix:	Water				
Report of Analysis									
Total Metals	Results in mg	z/L							
SAMPLE	Cu		Ni	Co	Cd	Pb	Zn	Cr	As
10-04808	-		-	-	-	-	0.014	-	< 0.003
10-04809	-		-	-	-	-	0.015	-	< 0.003
Blank	-		-	-	-	-	< 0.010	-	< 0.003
Control	-		-	-	-	-	2.9	-	0.80
Control Target	-		-	-	-	-	3.0	-	0.80
10.04900							0.015		-0.002
10-04809 10-04809	-		-	-		-	0.015	-	<0.003 <0.003
Dissolved Metals	Results in mg	ţ/L							
SAMPLE	Cu		Ni	Co	Cd	Pb	Zn	Cr	As
10-04808	< 0.00		< 0.005	< 0.003	< 0.001	< 0.010		< 0.005	-
10-04809	< 0.00	5	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
Blank	< 0.00	5	< 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	-
Comoi raigo	1.50	$\overline{}$	1.00	1.00	0.00	5.00		3.00	
10-04809	< 0.00	5	< 0.005	< 0.003	< 0.001	< 0.010	-	< 0.005	-
								< 0.005	
10-04809	< 0.00	5	< 0.005	< 0.003	< 0.001	< 0.010	-	<0.000	-

ESG				ASG	Login No:	20692
12 Verite	Äve				Site:	Pin-2
Dept. of Cl	hem. / Cher	m. Eng., RMC			Client No:	10-067
P.O. Box	17000, Stn.	Forces		Samples	Received:	1-Jul-10
Kingston,	Ontario K7	< 7B4		Date of	of analysis:	7-Jul-10
(613) 541-	6000 ext 65	67		N	Method No:	ASG 037
Fax: (613)	541-6596			Date	Reported:	
					Page:	1 of 1
		DECLII TO OF	MILANAL VOIC			
		RESULTS OF	pH ANALYSIS			
				1		
		Sample I.D.	рН			
		10-4808	7.45			
		10-4809*	7.54			
		* Averaged result of dup	licates			
		I ABORAT	ORY QA/QC			
		LABORAT	OILI GAGO			
		Sample I.D.	Hq			
		10-4809*; Duplicate	7.54 ; 7.54			
		Control	7.00			
		Control Target	7.00			

	ANALY	TICAL SCIENCES (	GROUP AND SLOW	POKE-2 FACILITY AT RN	IC			
	GROUP DES SCIENCES ANALYTIQUES ET FACILITÉ SLOWPOKE-2 AU CMR							
¢	Dept.	of Chem. and Chen	n. Eng Dépt. de ch	imie et de génie chimique				
	Roy	al Military College o	of Canada - Collège r	nilitaire royal du Canada				
		P.O. Box 17000	Stn. Forces, Kingst	on, ON, K7K 7B4				
		Tel: 613-541	-6000 x6684 / Fax: (	613-545-8341				
ESG					ASG Login No:	20692		
12 Verite Ave					Site	Pin-2		
Dept. of Chem. / Chem. I	Eng., RMC				Client Login No:	10-067		
P.O. Box 17000, Stn. Fo	rces				Samples Received:	1-Jul-10		
Kingston, Ontario K7K 7l	B4				Date of analysis:	6-Jul-10		
(613) 541-6000 ext 6567					Method No:	ASG 023		
Fax: (613) 541-6596					Date Reported:	7-Jul-10		
					Page:	1 of 1		
		DECLUITO O	E BETY IN W	ATED ANAL VOIC				

#### RESULTS OF BETX IN WATER ANALYSIS

Compound	4808*	4809	Blank	Duplicate ; 4808*	Control Sample	Control Target
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Benzene	< 0.002	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010
Toluene	< 0.002	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010
Ethylbenzene	< 0.002	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010
m+p-Xylene	< 0.002	< 0.002	< 0.002	< 0.002 ; < 0.002	0.019	0.020
o-Xylene	< 0.002	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010

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

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

Tuesday, March 22, 2011

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

The PIN-2 specifications require that "wash water, melt water collection, 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	1.0	mg/L
Phenols	-	-
Benzene	0.370	mg/L
Toluene	0.002	mg/L
Ethylbenzene	0.090	mg/L

#### Phenols

The wastewater samples collected by ESG at PIN-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

One wastewater sample was collected at PIN-2 and analyzed in July 2010. A summary of the details of the sample follows. Laboratory results are provided in Appendix A.

LOCATION: BARREL HOLDING AREA- SOUTHEAST OF HANGAR

**GPS** coordinates: 11 W 0502857 7646814

**SAMPLE:** 10-4948 **DATE:** JULY 21, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-4948
pН	6-9	pH units	7.28
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	0.013
Total zinc (Zn)	0.5	mg/L	0.239
Oil & grease	5	mg/L	6.6
PCBs	1.0	mg/L	< 0.003
Phenols	-	-	N/A
Benzene	0.370	mg/L	< 0.002
Toluene	0.002	mg/L	< 0.002
Ethylbenzene	0.090	mg/L	< 0.002



Photo 1 (DSCN4938) Sample 10-4948 Pin-2 Sampling water collected in Barrel Holding Area, Southeast of Hangar

Waste water from the Barrel Holding Area (10-4948) was over criteria for Oil and Grease and was not discharged to land in July.

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, Shari Reed, Tom Partridge, Kat Eagles (ESG)

## APPENDIX A LABORATORY RESULTS

ASU#	12942		Donort ID.	PIN-2 W6				
			Report ID:					
Client:	ESG		Date Submitted:	26-Jul-10				
			Date tested:	27-Jul-10				
Site:	PIN-2		Date:	27-Jul-10				
	10-154		Matrix:	Water				
Report of Analysis								
Total Metals	Results in mg/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-04948	-	-	-	-	-	0.239	-	< 0.003
Blank	-	-	-	-	-	< 0.010	-	< 0.003
Control	-	-	-	-	-	3.0	-	0.76
Control Target	-	-	-	-	-	3.0	-	0.80
10-04948	-	-	-	-	-	0.234	-	< 0.003
10-04948	-	-	-	-	-	0.244	-	< 0.003
Dissolved Metals	Results in mg/L							
Dissolved Metals	Results in rig/L							
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As
10-04948	<0.005	0.013	<0.003	< 0.001	< 0.010	-	< 0.005	-
Blank	<0.005	< 0.005	<0.003	< 0.001	< 0.010	-	< 0.005	-
Control	1.54	1.62	1.62	0.80	8.12	-	0.82	-
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-
10-04948	<0.005	0.013	<0.003	< 0.001	< 0.010	-	< 0.005	-
10-04948	< 0.005	0.013	< 0.003	< 0.001	< 0.010	_	< 0.005	-

	**Report	Values in PPM**				
	W	4948	mg/L	< 0.003	< 0.003	
	Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260	
		RESULTS OF PC	B IN W	ATER ANAL	YSIS	
					0.100.110.	
Fax: (613) 541-6596					Date Reported: Sheet No:	
(613) 541-6000 ext 65	67				Method No:	
Kingston, Ontario K7I	K 7B4				Date of analysis:	27-Jul-10
P.O. Box 17000, Stn.					Samples Received:	
Dept. of Chem. / Che	m Fna F	MC			Client No:	
ESG 12 Verite Ave					ASG Login No:	20814 Pin-2

ESG					ASG	Login No:	20814
12 Verite A	Ave					Site:	Pin-2
Dept. of Ch	hem. / Ch	em. Eng.,	RMC			Client No:	10-154
P.O. Box	17000, St	n. Forces			Samples	Received:	26-Jul-10
Kingston,	Ontario K	7K 7B4			Date of	of analysis:	27-Jul-10
(613) 541-6	6000 ext	6567			N	Nethod No:	ASG 021
Fax: (613)	541-6596	<b>i</b>			Date	Reported:	28-Jul-10
						Sheet:	1 of 1
		RE	SULTS OF ME	RCURY ANALY	SIS		
			Sample	Mercury^			
			ID	mg/L			
			4948	< 0.0004			
			*Results of duplicate ar	nalysis.			
			^ Acid digestion perform	ned.			
			# Reported at 0.0004 m	g/L detection limit.			
			LABORAT	ORY QA/QC			
			Sample	Mercury <sup>^</sup>			
			ID	mg/L			
			Duplicate ; 4948*	< 0.0004 ; < 0.0004			
			Blank	< 0.0004			
			Control Target	0.0040			
			Control Sample	0.0041			

ASU#	12942	Report ID:	PIN-2 W8
Client:	ESG	Date Submitted:	27-Jul-10
		Date tested:	30-Jul-10
Site:	PIN-2	Date:	30-Jul-10
	10-154	Matrix:	water
Report of Analysis			
Sample	Oil & Grease		
	mg/L		
10-04948	6.6		
Blank	<2.0		
Control	14.1		
Control Target	15.9		
Results relate only	to the items tested		

	ANALY	TICAL SCIENCES G	ROUP AND SLOV	NPOKE-2 FACILITY AT RI	<b>IC</b>		
	GROUP D	ES SCIENCES ANA	LYTIQUES ET FA	CILITÉ SLOWPOKE-2 AU	CMR		
	Dept.	of Chem. and Chem	. Eng Dépt. de c	chimie et de génie chimique			
	Roy			militaire royal du Canada			
		P.O. Box 17000	Stn. Forces, Kings	ston, ON, K7K 7B4			
		Tel: 613-541-	6000 x6684 / Fax:	613-545-8341			
Client :	ESG					ASG Login No:	20814
	12 Verite Ave						Pin-2
	Dept. of Chem. / Chem.	Eng., RMC				Client Login No:	10-154
	P.O. Box 17000, Stn. F					Samples Received:	
	Kingston, Ontario K7K 7					Date of analysis:	
	(613) 541-6000 ext 6567	7				Method No:	ASG 023
	Fax: (613) 541-6596					Date Reported:	28-Jul-10
						Page:	1 of 1
		RESUL	TS OF BET	X IN WATER ANA	LYSIS		
	Compound	4948*	Blank	Duplicate ; 4948*	Control Sample	Control Target	
		mg/L	mg/L	mg/L	mg/L	mg/L	
	Benzene	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010	
	Toluene	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010	
	Ethylbenzene	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010	
	m+p-Xylene	< 0.002	< 0.002	< 0.002 ; < 0.002	0.020	0.020	
	o-Xylene	< 0.002	< 0.002	< 0.002 ; < 0.002	0.010	0.010	
							Ji

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

Tuesday, March 22, 2011



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

The PIN-2 specifications require that "wash water, melt water collection, 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	1.0	mg/L
Phenols	-	ı
Benzene	0.370	mg/L
Toluene	0.002	mg/L
Ethylbenzene	0.090	mg/L

#### Phenols

The wastewater samples collected by ESG at PIN-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

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

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 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

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

LOCATION: SOUTH BORROW DEBRIS AREA – SW CORNER OF THE EXCAVATION

**GPS** COORDINATES: 11 W 0504121 7643188

**SAMPLE:** 10-05022 **DATE:** AUGUST 25, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-05022
pН	6-9	pH units	7.78
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	0.012
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	0.020
Oil & grease	5	mg/L	*<2
PCBs	1.0	mg/L	< 0.003
Phenols	1	-	N/A
Benzene	0.370	mg/L	< 0.002
Toluene	0.002	mg/L	< 0.002
Ethylbenzene	0.090	mg/L	< 0.002

<sup>\*</sup>Oil and grease result was provided by the site contractor. ESG sample bottle broke in transit.



Photo 1 (DSCNo3358) Sample 10-05022 Pin-2 Sampling water collected at South Borrow Buried Debris Area.

Waste water from the South Borrow Debris Area was below criteria for all parameters, and was discharged to ground on Sept 8. (11W 0504200 7643282).

LOCATION: AIRSTRIP LANDFILL LOBE N – SE CORNER OF EXCAVATION

**GPS** coordinates: 11 W 0502900 7647400

**SAMPLE:** 10-5255 **DATE:** AUGUST 29, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-05255
pН	6-9	pH units	7.81
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	< 0.010
Oil & grease	5	mg/L	< 2.0
PCBs	1.0	mg/L	< 0.003
Phenols	-		N/A
Benzene	0.370	mg/L	< 0.002
Toluene	0.002	mg/L	< 0.002
Ethylbenzene	0.090	mg/L	< 0.002



**Photo 2 (DSCO3463) Sample 10-05255 Pin-2** Sampling water collected at Lobe N excavation at the Airstrip Landfill.

Waste water from Airstrip Landfill Lobe N was discharged to ground on Sept 11, 2010.

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, Shari Reed, Tom Partridge, Kat Eagles(ESG)

#### APPENDIX A LABORATORY RESULTS

	ANAL							
	GROUP	DES S	CIENCE	S ANALYTIQUES E	T FACILITÉ SLO	WPOKE-2	AU CMR	2
				and Chem. Eng Dépt.				
		Roy		College of Canada - Col				
			P.O <sub>.</sub> B	ox 17000 Stn. Forces, K	lingston, ON, K7K 7B4	1		
			k/§I	: 613-541-6000 x6684 / I	-ax: 613-545-8341			
Client :	ESG					ASG	Login No:	20983
Ollolle !	12 Verite A	Ave				,,,,,,		Pin-2
	Dept. of Cl		em. Eng	RMC			Client No:	=
	P.O. Box					Samples	Received:	30-Aug-10
	Kingston,	Ontario K	7K 7B4				f analysis:	
	(613) 541-						/lethod No:	
	Fax: (613)	541-6596				Date	Reported:	2-Sep-10
							Sheet:	1 of 1
		R	ESUL	TS OF MERCUR	Y IN WATER A	NALYSI	3	
		R	ESUL			NALYSI	3	
		R	ESUL	Sample	Mercury^	NALYSI	3	
		R	ESUL			NALYSIS	\$	
		R	ESUL	Sample ID	Mercury^ mg/L	NALYSI	8	
		R	ESUL	Sample ID 5022	Mercury^ mg/L < 0.0004	NALYSIS	3	
		R	ESUL	Sample ID	Mercury^ mg/L < 0.0004	NALYSIS	3	
		R	ESUL	Sample ID 5022 Sample received frozen	Mercury^ mg/L < 0.0004	NALYSI	3	
		R	ESUL	Sample ID 5022  Sample received frozen Acid digestion perform Reported at 0.0004 m	Mercury^ mg/L < 0.0004  ned. g/L detection limit.	NALYSI	3	
		R	ESUL	Sample ID 5022  Sample received frozen Acid digestion perform Reported at 0.0004 m	Mercury^ mg/L < 0.0004	NALYSIS	3	
		R	RESUL	Sample ID 5022  Sample received frozen Acid digestion perform Reported at 0.0004 m	Mercury^ mg/L < 0.0004  ned. g/L detection limit.	NALYSIS	3	
		R	RESUL	Sample ID 5022  Sample received frozen Acid digestion perform # Reported at 0.0004 m	Mercury^ mg/L < 0.0004	NALYSIS	3	
		R	RESUL	Sample ID 5022  Sample received frozen Acid digestion perform # Reported at 0.0004 m  LABORAT	Mercury^ mg/L < 0.0004  ed. g/L detection limit.  ORY QA/QC  Mercury^	NALYSIS	3	
		R	RESUL	Sample ID 5022  Sample received frozen Acid digestion perform # Reported at 0.0004 m  LABORAT  Sample ID	Mercury^ mg/L < 0.0004	NALYSI	3	

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E. GRUBEN'S TRANSPORT

Maxxam Job #: B078538 Report Date: 2010/09/04

#### RESULTS OF CHEMICAL ANALYSES OF WATER

	Units	SBDB-W-1	RDL	QC Batch
COC Number		78355	11	
Sampling Date		2010/08/26 10:50		
Maxxam ID		W60759		

Misc. Inorganics				
pН	N/A	7.90	N/A	4226111
Misc. Organics				
Oil and grease	mg/L	<2	2	4226047

RDL = Reportable Detection Limit

				ral Military College of Ca	Fores - 12	Speeden ON 1/71/ 7	D.4		
				P.O. Box 17000 Stn. Tel: 613-541-600		ungston, ON, K/K /t Fax: 613-545-8341	54		
				. 5 515 541 000	2 7.00047	5.5 545 6641			
liont	ESG						4001	ogin No:	20002
lient:	12 Verite	Δνο					ASGI	ogin No: Site:	
		hem. / Chen	n. Ena Ri	ИC			C	Client No:	
		17000, Stn.					Samples F	Received:	30-Aug-10
	Kingston, Ontario K7K 7B4						analysis:		
	(613) 541-6000 ext 6567					Method No:			
	Fax: (613) 541-6596							Reported:	
							3	Sheet No:	1 01 1
			F	RESUNTS OF PO	BINV	ATER ANAL	YSIS		
			Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor	1260	
			W	5022	mg/L	< 0.003	< 0.00	3	
			**D ' '	/aluga in DDM**					
				/alues in PPM** Result of Duplicate					
				eceived frozen					
					ATOR'	Y QA/QC			
				Blank	mg/L	< 0.003	< 0.00	)3	
				Control Sample	mg/L	< 0.003	0.011		
				Control Sample Target	mg/L	< 0.003	0.015	5	
	1.			corrected for the recove			-		
		(	ANALYT GROUP DE	corrected for the recove ICAL SCIENCES GROU S SCIENCES ANALYTION of Chem. and Chem. Eng.	P AND SL	OWPOKE-2 FACILI FACILITÉ SLOWPO	TY AT RMC KE-2 AU CMR		
		(	ANALYT GROUP DE Dept. o	ICAL SCIENCES GROU S SCIENCES ANALYTION f Chem. and Chem. Eng. Military College of Cana	P.AND SL Ques ET I - Dépt. de da - Collèg	OWPOKE-2 FACILI FACILITÉ SLOWPO e chimie et de génie ge militaire royal du C	TY AT RMC KE-2 AU CMR chimique	l .	
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		(	ANALYT GROUP DE Dept. o	ICAL SCIENCES GROU S SCIENCES ANALYTION of Chem. and Chem. Eng. Military College of Cana	PAND SL Que'S ET I - Dépt. de da - Collèg rces, King	OWPOKE-2 FACILITÉ FACILITÉ SLOWPO e chimie et de génie ge militaire royal du C gston, ON, K7K 7B4	TY AT RMC KE-2 AU CMR chimique	1	
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	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston,	ANALYT GROUP DE Dept. o Royal	ICAL SCIENCES GROU S SCIENCES ANALYTION of Chem. and Chem. Eng. Military College of Canal P.O. Box 17000 Stn. Fo Tel: 613-541-6000 x	PAND SL Que'S ET I - Dépt. de da - Collèg rces, King	OWPOKE-2 FACILITÉ FACILITÉ SLOWPO e chimie et de génie ge militaire royal du C gston, ON, K7K 7B4	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date of	S Login No Site Client No Received f analysis	Pin-2 10-340
	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K	ICAL SCIENCES GROU S SCIENCES ANALYTION of Chem. and Chem. Eng. Military College of Canal P.O. Box 17000 Stn. Fo Tel: 613-541-6000 x	PAND SL Que'S ET I - Dépt. de da - Collèg rces, King	OWPOKE-2 FACILITÉ FACILITÉ SLOWPO e chimie et de génie ge militaire royal du C gston, ON, K7K 7B4	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received If analysis	e: Pin-2 : 10-340 d: 30-Aug-10 s: 1-Sep-10
	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K' -6000 ext	ICAL SCIENCES GROU S SCIENCES ANALYTION of Chem. and Chem. Eng. Military College of Canal P.O. Box 17000 Stn. Fo Tel: 613-541-6000 x	PAND SL Que'S ET I - Dépt. de da - Collèg rces, King	OWPOKE-2 FACILITÉ FACILITÉ SLOWPO e chimie et de génie ge militaire royal du C gston, ON, K7K 7B4	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received of analysis Method No: Reported	e: Pin-2 : 10-340 d: 30-Aug-10 e: 1-Sep-10 o: ASG 037
	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K' -6000 ext	ICAL SCIENCES GROUS SCIENCES ANALYTIC Chem. and Chem. Eng. Military College of Canar P.O. Box 17000 Stn. Fo Tel: 613-541-6000 x	PAND SL SET I - Dépt. de da - Collèg croes, King 6684 / Fa	OWPOKE-2 FACILI FACILITÉ SLOWPO e chimie et de génie de pe militaire royal du C gston, ON, K7K 7B4 x: 613-545-8341	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received of analysis Method No: Reported	e: Pin-2 : 10-340 i: 30-Aug-10 i: 1-Sep-10 i: ASG 037 i: 1-Sep-10
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	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K' -6000 ext	ICAL SCIENCES GROUS SCIENCES ANALYTIC Chem. and Chem. Eng. Military College of Canar P.O. Box 17000 Stn. Fo Tet: 613-541-6000 x  Em. Eng., RMC I. Forces TK 7B4 6567 S RESULTS C	PAND SL SET I - Dépt. de da - Collèg croes, King 6684 / Fa	OWPOKE-2 FACILI FACILITÉ SLOWPO e chimie et de génie e pe militaire royal du C gston, ON, K7K 7B4 x: 613-545-8341	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received of analysis Method No: Reported	e: Pin-2 : 10-340 i: 30-Aug-10 i: 1-Sep-10 i: ASG 037 i: 1-Sep-10
	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K' -6000 ext	ICAL SCIENCES GROUS SCIENCES ANALYTIC Chem. and Chem. Eng. Military College of Canar P.O. Box 17000 Stn. Fo Tel: 613-541-6000 x	PAND SL SET I - Dépt. de da - Collèg croes, King 6684 / Fa	OWPOKE-2 FACILI FACILITÉ SLOWPO e chimie et de génie e pe militaire royal du C pston, ON, K7K 7B4 x: 613-545-8341	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received of analysis Method No: Reported	e: Pin-2 : 10-340 i: 30-Aug-10 i: 1-Sep-10 i: ASG 037 i: 1-Sep-10
	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K' -6000 ext	ICAL SCIENCES GROUS SCIENCES ANALYTIC Chem. and Chem. Eng. Military College of Cana. P.O. Box 17000 Stn. Fo. Tel: 613-541-6000 x  Em. Eng., RMC I. Forces RESULTS C  Sample I.D. 5022	PAND SL SET I - Dépt. de - Dépt. de - Collègres King (6684 / Fa.	OWPOKE-2 FACILI FACILITÉ SLOWPO c chimie et de génie e pe militaire royal du C pston, ON, K7K 7B4 x: 613-545-8341  ANALYSIS  PH 7.78	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received of analysis Method No: Reported	e: Pin-2 : 10-340 i: 30-Aug-10 i: 1-Sep-10 i: ASG 037 i: 1-Sep-10
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	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K' -6000 ext	ICAL SCIENCES GROUS SCIENCES ANALYTIC CHEM. and Chem. Eng. Military College of Canar P.O. Box 17000 Stn. Fo Tel: 613-541-6000 x  Em. Eng., RMC 1. Forces 7K 7B4 6567 6  RESULTS C  Sample I.D. 5022	PAND SL DES ET I - Dépt. de da - Collègres, King 6684 / Fa	OWPOKE-2 FACILI FACILITÉ SLOWPO e chimie et de génie e pe militaire royal du C gston, ON, K7K 7B4 x: 613-545-8341  ANALYSIS  PH 7.78	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received of analysis Method No: Reported	e: Pin-2 : 10-340 i: 30-Aug-10 i: 1-Sep-10 i: ASG 037 i: 1-Sep-10
	Client:	ESG 12 Verite Dept. of C P.O. Box Kingston, (613) 541	ANALYT GROUP DE Dept. o Royal Ave Chem. / Che 17000, Str Ontario K' -6000 ext	ICAL SCIENCES GROUS SCIENCES ANALYTIC SCIENCES ANALYTIC Chem. and Chem. Eng. Military College of Canal P.O. Box 17000 Stn. Fo. Tel: 613-541-6000 x  Em. Eng., RMC I. Forces  RESULTS C  Sample I.D.  5022  * Averaged result of Sample received froz	PAND SL SET I - Dépt. de da - Collègres, King 6684 / Fa	OWPOKE-2 FACILI FACILITÉ SLOWPO e chimie et de génie e ge militaire royal du C gston, ON, K7K 7B4 x: 613-545-8341  ANALYSIS  pH 7.78	TY AT RMC KE-2 AU CMR chimique canada  ASC  Samples Date o	G Login No Site Client No: Received of analysis Method No: Reported	e: Pin-2 : 10-340 i: 30-Aug-10 i: 1-Sep-10 i: ASG 037 i: 1-Sep-10
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A	SU#	13143		Report ID:	PIN-2 W12						
C	lient:	ESG		Date Submitted:	30-Aug-10						
				Date tested:	1-Sep-10						
S	Site:	PIN-2		Date:	2-Sep-10						
		10-340		Matrix:	Water						
leport of	Analysis										
		D 1: 1 /									
Lotai	l Metals	Results in mg/L									
SA	MPLE	Cu	Ni	Со	Cd	Pb	Zn	Cr	As		
10-	05022	-	-	-	-	-	0.020	-	<0.003		
В	Blank	-	-	-	-	-	<0.010	-	<0.003		
							2.0		0.72		
	ontrol	-	-	-	-	-	2.9	-	0.73		
Contr	ol Target	-	-	-	-	-	3.0	-	0.80		
Dissolv	ed Metals	Results in mg/L									
SA	MPLE	Cu	Ni	Со	Cd	Pb	Zn	Cr	As		
10-	05022	0.012	<0.005	<0.003	<0.001	<0.010	-	<0.005	-	*	
В	Blank	< 0.005	< 0.005	< 0.003	<0.001	<0.010	-	< 0.005	-		
Co	ontrol	1.44	1.55	1.54	0.77	7.66	-	0.78	-		
	ol Target	1.60 items tested	1.60	1.60	0.80	8.00	-	0.80	-		
		items tested  ANALYTICA GROUP DES S  Dept. of C  Royal N	AL SCIENCES G SCIENCES ANAI them. and Chem filitary College of P.O. Box 17000 S	ROUP AND SLOW LYTIQUES ET FAC . Eng Dépt. de ch Canada - Collège r Stn. Forces, Kingsto	POKE-2 FACII ILITÉ SLOWP imie et de gén nilitaire royal d on, ON, K7K 7	LITY AT RM POKE-2 AU ( iie chimique lu Canada	С	0.80	-		
		items tested  ANALYTICA GROUP DES S  Dept. of C  Royal N	AL SCIENCES G SCIENCES ANAI them. and Chem filitary College of P.O. Box 17000 S	ROUP AND SLOW LYTIQUES ET FAC . Eng Dépt. de ch Canada - Collège r	POKE-2 FACII ILITÉ SLOWP imie et de gén nilitaire royal d on, ON, K7K 7	LITY AT RM POKE-2 AU ( iie chimique lu Canada	С	0.80	-		
esults rela		items tested  ANALYTICA GROUP DES S  Dept. of C  Royal N	AL SCIENCES G SCIENCES ANAI them. and Chem filitary College of P.O. Box 17000 S Tel: 613-541-	ROUP AND SLOW LYTIQUES ET FAC . Eng Dépt. de ch Canada - Collège r Stn. Forces, Kingsto	POKE-2 FACII ILITÉ SLOWP imie et de gén nilitaire royal d on, ON, K7K 7	LITY AT RM POKE-2 AU ( iie chimique lu Canada	С	0.80	ASG Lo		
esults rela	ESG	items tested  ANALYTICA GROUP DES S  Dept. of C  Royal N  F	AL SCIENCES G SCIENCES ANAI them. and Chem filitary College of P.O. Box 17000 \$ Tel: 613-541-	ROUP AND SLOW LYTIQUES ET FAC . Eng Dépt. de ch Canada - Collège r Stn. Forces, Kingsto	POKE-2 FACII ILITÉ SLOWP imie et de gén nilitaire royal d on, ON, K7K 7	LITY AT RM POKE-2 AU ( iie chimique lu Canada	С	0.80	ASG Lo	Site:	Pin-2
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	ESG 12 Verite / Dept. of C P.O. Box Kingston, (613) 541-	ANALYTICA GROUP DES S Dept. of C Royal N F  Ave hem. / Chem. Eng 17000, Stn. Force Ontario K7K 7B4 6000 ext 6567	AL SCIENCES G SCIENCES ANAI Chem. and Chem filitary College of P.O. Box 17000 S Tel: 613-541-	ROUP AND SLOW LYTIQUES ET FAC . Eng Dépt. de ch Canada - Collège r Stn. Forces, Kingsto	POKE-2 FACII ILITÉ SLOWP imie et de gén nilitaire royal d on, ON, K7K 7	LITY AT RM POKE-2 AU ( iie chimique lu Canada	С		ASG Lo Client Lo Samples Re Date of an	Site: gin No: ceived: alysis: od No: ported:	Pin-2 10-340 30-Aug-1 2-Sep-10 ASG 023
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				and Chem. Eng Dépt.				
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			Tel	I: 613-541-6000 x6684 / I	Fax: 613-545-8341			
Client :	ESG					400	Lauda Nas	00007
lient :	12 Verite	1.00				ASG	Login No:	20997 Pin-2
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	Kingston.						f analysis:	
	(613) 541-						lethod No:	
	Fax: (613)						Reported:	
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		R	ESUL	TS OF MERCUR	Y IN WATER A	NALYSIS	3	
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		R	ESUL			NALYSIS	3	
		R	ESUL	Sample	Mercury^	NALYSIS	3	
		R	ESUL	Sample ID	Mercury^ mg/L	NALYSIS	3	
		R	ESUL	Sample ID	Mercury^ mg/L	NALYSIS	3	
		R	ESUL	Sample ID	Mercury^ mg/L < 0.0004	NALYSIS	3	
		R	ESUL	Sample ID 5255	Mercury^ mg/L < 0.0004	NALYSIS	3	
		R	ESUL <sup>*</sup>	Sample ID 5255  Acid digestion perform	Mercury^ mg/L < 0.0004	NALYSIS	3	
		R	ESUL	Sample ID 5255  Acid digestion perform Reported at 0.0004 m	Mercury^ mg/L < 0.0004	NALYSIS	3	
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	Dept. of Chem. and Chem. Eng Dépt. de chimie et de génie chimique Royal Military College of Canada - Collège militaire royal du Canada							
		Ro	yal Military College of Can P.O. Box 17000 Stn.	ada - Co	llége militaire royal d	u Canada		
					ingston, ON, K/K // Fax: 613-545-8341	<b>34</b>		
			Tel. 613-541-6000	X0004 /	Fax. 013-545-0341			
Client:	FSG					ASG Login No:	20997	
Cilcin.	12 Verite Ave						Pin-2	
	Dept. of Chem. / Cher	n. Ena R	MC			Client No:		
	P.O. Box 17000, Stn.					Samples Received:	1-Sep-10	
	Kingston, Ontario K7k					Date of analysis:		
	(613) 541-6000 ext 65					Method No:		
	Fax: (613) 541-6596					Date Reported:		
	, ,					Sheet No:	1 of 1	
		F	RESULTS OF PC	B IN V	VATER ANAL	YSIS		
		Sample Type **	Sample I.D.	Unit	Aroclor 1254	Aroclor 1260		
		W	5255	mg/L	< 0.003	< 0.003		
		**Report '	Values in PPM**					
			Result of Duplicate					
			LABOR	ATOR	Y QA/QC			
			Blank	mg/L	< 0.003	< 0.003		
			Control Sample	mg/L	< 0.003	0.011	Ĭ	
			Control Sample Target	mg/L	< 0.003	0.015		
		** S = So	oil , C = Concrete , PC = F	Paint Chip	, SW = Swab , P =	Plant , W = Water		
				<u> </u>				
		All results	s corrected for the recover	y of the s	urrogate decachlorol	piphenyl		

	<b>₽</b>			AND SLOWPOKE-2 FACIL			
	_ G			JES ET FACILITÉ SLOWPO		R	
				Dépt. de chimie et de génie - Collège militaire royal du			
				i - College militaire royal du ces, Kingston, ON, K7K 7B4			
				684 / Fax: 613-545-8341	•		
			Tel. 013-341-0000 X0	004 / Fax. 013-343-0341			
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			n. Eng., RMC			Client No:	
		17000, Stn.			Samples	s Received:	
		Ontario K7K				of analysis:	
		-6000 ext 6				Method No:	
	Fax: (613)	) 541-6596			Date	e Reported:	3-Sep-1
						Page:	1 of 1
			RESULTS OF	E nH ANAI YSIS			
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			Sample I.D. 5255 LABORA	pH 7.81			
			Sample I.D. 5255	pH 7.81			

ASU#	13162		Report ID:	PIN-2 W13					
Client:	ESG		Date Submitted	: 1-Sep-10					
			Date tested:	3-Sep-10					
Site:	PIN-2		Date:	3-Sep-10					
	10-359		Matrix:	Water					
Report of Analysis									#
Total Metals	Results in mg/L								#
SAMPLE	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	
10-05255	-	-	-	-	-	<0.010	-	<0.003	
Blank	-	-	-	-	-	<0.010	-	<0.003	+
Control	_		-	_	-	3.04	_	0.76	+
Control Target	-	-	-	-	-	3.00	-	0.80	
Dissolved Metals	Results in mg/L								+
Dissolved Metals	restats in mg/L								
SAMPLE	Cu	Ni	Со	Cd	Pb	Zn	Cr	As	
10-05255	<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	1.46	1.61	1.59	0.81	8.00	-	0.83	-	
Control Target	1.60	1.60	1.60	0.80	8.00	-	0.80	-	
Results relate only to the	items tested								
ASU#	13162		Repo	ort ID:	PIN-2 W	714			
Client:	ESG		Date	Submitted:	1-Sep-1	10			
				tested:	1-Sep-1				
Site:	PIN-2		Date	-	1-Sep-1	10			
	10-359		Mati	ix:	water				
Report of Analysis									
Sample	Oil & Grease								
Sample	mg/L								
	- 0								

<2.0

<2.0

15.0

15.7

10-05255

Blank

Control Control Target

Results relate only to the items tested

	ANALYT	ICAL SCIENCES G	ROUP AND SLOW	VPOKE-2 FACILITY AT RI	<b>ИС</b>		
	GROUP DE						
	Dept.						
	Roya	al Military College o	f Canada - Collège	militaire royal du Canada			
		P.O. Oox 17000	Stn. Forces, Kingst	ton, ON, K7K 7B4			
		Tel: 613-541-	-6000 x6684 / Fax:	613-545-8341			
Client :	ESG					ASG Login No:	20997
	12 Verite Ave						Pin-2
	Dept. of Chem. / Chem.	Eng., RMC				Client Login No:	
	P.O. Box 17000, Stn. Fo					Samples Received:	
	Kingston, Ontario K7K 7					Date of analysis:	
	(613) 541-6000 ext 6567					Method No:	
	Fax: (613) 541-6596					Date Reported:	3-Sep-10
						Page:	1 of 1
		RESUL	TS OF BTE	X IN WATER ANA	LYSIS		
	Compound	5255	Blank	Control Sample	Control Target		
		mg/L	mg/L	mg/L	mg/L		
	Benzene	< 0.002	< 0.002	0.010	0.010		
	Toluene	< 0.002	< 0.002	0.010	0.010		
	Ethylbenzene	< 0.002	< 0.002	0.010	0.010		
	m+p-Xylene	< 0.002	< 0.002	0.020	0.020		
	o-Xylene	< 0.002	< 0.002	0.010	0.010		

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

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

Tuesday, March 22, 2011

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

The PIN-2 specifications require that "wash water, melt water collection, 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	1.0	mg/L
Phenols	-	-
Benzene	0.370	mg/L
Toluene	0.002	mg/L
Ethylbenzene	0.090	mg/L

#### Phenols

The wastewater samples collected by ESG at PIN-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

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

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 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

One wastewater sample was collected at PIN-2 and analyzed in September 2010. A summary of the details of the sample follows. Laboratory results are provided in Appendix A.

LOCATION: BARREL HOLDING AREA- SOUTHEAST OF HANGAR

GPS COORDINATES: 11 W 0502857 7646814

**SAMPLE:** 10-05819 **DATE:** SEPTEMBER 5, 2010

Parameter	Maximum Allowable Concentration	Units	Sample # 10-05819
pН	6-9	pH units	N/A
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	N/A
Dissolved nickel (Ni)	0.200	mg/L	N/A
Total zinc (Zn)	0.5	mg/L	N/A
Oil & grease	5	mg/L	3.4
PCBs	1.0	mg/L	N/A
Phenols	-	-	N/A
Benzene	0.370	mg/L	N/A
Toluene	0.002	mg/L	N/A
Ethylbenzene	0.090	mg/L	N/A

Waste water from the Barrel Holding Area was analyzed for oil and grease only as a previous sample collected in July (10-04948) was below criteria for all other parameters. Sample 10-05819 was below criteria for oil and grease and was discharged to ground on September 11, 2010. (11 W 0502904 7646794)

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, Shari Reed, Tom Partridge, Kat Eagles (ESG)

### APPENDIX A LABORATORY RESULTS

ASU#	13204	Report ID:	PIN-2 W15
Client:	ESG	Date Submitted:	9-Sep-10
		Date tested:	9-Sep-10
Site:	PIN-2	Date:	10-Sep-10
	10-401	Matrix:	water
Report of Analysis			
Sample	Oil & Grease		
	mg/L		
10-05819	3.4		
Blank	<2.0		
Control	14.1		
Control Target	15.7		
Results relate only	to the items tested		

#### **PHOTOGRAPHIC LOG**



Site Name:

PIN-2, Cape Young

Site Location: Nunavut

Project No. 60153669

Photo No.

Date: 25-sep-2010

**Direction Photo** Taken:

**Description:**Winterization of Tier II Facility at the end of the 2010 construction season.



Photo No.

2

Date: 20-sep-2010

**Direction Photo** Taken:

**Description:** 

Winterization of the Non-Hazardous Waste Landfill.



#### **PHOTOGRAPHIC LOG**

**AECOM** 

Site Name:

PIN-2, Cape Young

Site Location: Nunavut

Project No. 60153669

Photo No.

3

Date: 19-sep-2010

**Direction Photo** 

Taken:

**Description:**Demolition of the radome.



Photo No.

Date: 29-sep-2010

**Direction Photo** Taken:

Description:

Backfill of former contaminated soil area in Hangar.



## **PHOTOGRAPHIC LOG**

**AECOM** 

Site Name: PIN-2, Cape Young Site Location: Nunavut

Project No. 60153669

Photo No. 5

Date: 22-sep-2010

**Direction Photo** Taken:

**Description:**Backfilled former Airstrip Landfill.



Photo No. 6

Date: 25-sep-2010

Direction Photo Taken:

Description: Regrade area.

