

Client: Defence Construction Canada (Trenton)
Box 1000 Bldg 155 CFB Trenton
Astra, ON
K0K 3W0
Attention: Cameron Chadwick
PO#: TR14ENV5
Invoice to: Defence Construction Canada

Report Number: 1417492
Date Submitted: 2014-08-19
Date Reported: 2014-08-26
Project: Alert
COC #: 176358

Page 1 of 10

Dear Cameron Chadwick:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Nadine Pinsonneault
Team Leader, Inorganics

APPROVAL: _____

Krista Quantrill
Laboratory Supervisor, Microbiology

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is accredited for specific parameters by:

SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Guideline values listed on this report are provided for ease of use (informational purposes) only. Exova recommends consulting the official provincial or federal guideline as required.

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1127207 Groundwater - 2014-08-15 ALT - 4
Group	Analyte	MRL	Units	Guideline	
Calculations	Hardness as CaCO ₃	1	mg/L		92
General Chemistry	Alkalinity as CaCO ₃	5	mg/L		66
	Conductivity	5	uS/cm		211
	N-NO ₂	0.10	mg/L		<0.10
	N-NO ₃	0.10	mg/L		0.18
	pH	1.00			7.90
	SO ₄	1	mg/L		14
	Total Suspended Solids	2	mg/L		36
Hydrocarbons	F1 (C6-C10)	100	ug/L		<100
	F1-BTEX (C6-C10)	100	ug/L		<100
	F2 (C10-C16)	100	ug/L		<100
	F3 (C16-C34)	200	ug/L		<200
	F4 (C34-C50)	200	ug/L		<200
Mercury	Hg	0.0001	mg/L		<0.0001
Metals	As	0.1	ug/L		1.2
	Ca	0.05	mg/L		29.3
	Cd	0.01	ug/L		0.03
	Cr	0.5	ug/L		<0.5
	Cu	0.5	ug/L		3.3
	Fe	30	ug/L		210
	K	0.2	mg/L		1.8
	Mg	0.05	mg/L		4.45
	Na	0.05	mg/L		7.22
	Ni	0.5	ug/L		1.5
	Pb	0.05	ug/L		1.18
Microbiology	Faecal Coliforms	0	ct/100mL		3

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1127207 Groundwater - 2014-08-15 ALT - 4
Group	Analyte	MRL	Units	Guideline	
Nutrients	BOD5	1	mg/L		1
	COD	5	mg/L		<5
	N-NH3	0.02	mg/L		0.07
	Phenols	0.001	mg/L		<0.001
Oil & Grease	Oil & Grease - Mineral	1	mg/L		<1
	Oil & Grease - Non-mineral	1	mg/L		<1
	Oil & Grease - Total	1	mg/L		<1
Semi-Volatiles	1-methylnaphthalene	0.2	ug/L		<0.2
	2-methylnaphthalene	0.2	ug/L		<0.2
	Acenaphthene	0.2	ug/L		<0.2
	Acenaphthylene	0.2	ug/L		<0.2
	Anthracene	0.2	ug/L		<0.2
	Benzo(a)anthracene	0.2	ug/L		<0.2
	Benzo(a)pyrene	0.01	ug/L		<0.01
	Benzo(b)fluoranthene	0.2	ug/L		<0.2
	Benzo(g,h,i)perylene	0.2	ug/L		<0.2
	Benzo(k)fluoranthene	0.2	ug/L		<0.2
	Chrysene	0.2	ug/L		<0.2
	Dibenzo(a,h)anthracene	0.2	ug/L		<0.2
	Fluoranthene	0.2	ug/L		<0.2
	Fluorene	0.2	ug/L		<0.2
	Indeno(1,2,3-c,d)pyrene	0.2	ug/L		<0.2
	Naphthalene	0.2	ug/L		<0.2
	Phenanthrene	0.2	ug/L		<0.2
	Pyrene	0.2	ug/L		<0.2
VOCs	Benzene	0.5	ug/L		<0.5

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1127207 Groundwater - 2014-08-15 ALT - 4
Group	Analyte	MRL	Units	Guideline	
VOCs	Ethylbenzene	0.5	ug/L		<0.5
	m/p-xylene	0.5	ug/L		<0.5
	o-xylene	0.5	ug/L		<0.5
	Toluene	0.5	ug/L		<0.5
VOCs Surrogates (%)	Toluene-d8	0	%		112

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 0 Analysis Date 2014-08-26 Method C SM2340B			
Hardness as CaCO ₃			
Run No 274714 Analysis Date 2014-08-20 Method SM 9222B			
Faecal Coliforms			
Run No 274726 Analysis Date 2014-08-19 Method C SM4500-NH3D			
N-NH ₃	<0.02 mg/L	98	85-115
Run No 274730 Analysis Date 2014-08-24 Method SM 5210B			
BOD ₅	<1 mg/L	98	75-125
Run No 274763 Analysis Date 2014-08-20 Method C SM5530D			
Phenols	<0.001 mg/L	87	73-127
Run No 274778 Analysis Date 2014-08-20 Method C SM2540			
Total Suspended Solids	<2 mg/L	101	90-110
Run No 274781 Analysis Date 2014-08-19 Method SM 2320B			
Alkalinity as CaCO ₃	<5 mg/L	97	95-105
Conductivity	<5 uS/cm	101	95-105

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

QC Summary

Analyte	Blank	QC % Rec	QC Limits
pH	6.01	99	90-110
Run No 274788 Analysis Date 2014-08-20 Method EPA 200.8			
As	<0.1 ug/L	99	93-106
Cd	<0.01 ug/L	99	93-107
Cr	<0.5 ug/L	99	94-106
Cu	<0.5 ug/L	99	93-106
Fe	<30 ug/L	96	92-107
Ni	<0.5 ug/L	99	94-106
Pb	<0.05 ug/L	102	70-130
Run No 274800 Analysis Date 2014-08-20 Method EPA 200.8			
Ca	<0.05 mg/L	101	80-120
K	<0.2 mg/L	107	80-120
Mg	<0.05 mg/L	100	80-120
Na	<0.05 mg/L	100	80-120
Run No 274818 Analysis Date 2014-08-20 Method C SM4500-NO3-F			
N-NO2	<0.10 mg/L	83	80-120
N-NO3	<0.10 mg/L	103	80-120

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 274834 Analysis Date 2014-08-20 Method SM 4110C			
SO4	<1 mg/L	107	90-110
Run No 274899 Analysis Date 2014-08-21 Method B 8270C			
1-methylnaphthalene	<0.2 ug/L	68	20-140
2-methylnaphthalene	<0.2 ug/L	66	20-140
Acenaphthene	<0.2 ug/L	72	20-140
Acenaphthylene	<0.2 ug/L	70	20-140
Anthracene	<0.2 ug/L	80	20-140
Benzo(a)anthracene	<0.2 ug/L	84	20-140
Benzo(a)pyrene	<0.01 ug/L	84	20-140
Benzo(b)fluoranthene	<0.2 ug/L	86	20-140
Benzo(g,h,i)perylene	<0.2 ug/L	96	20-140
Benzo(k)fluoranthene	<0.2 ug/L	104	20-140
Chrysene	<0.2 ug/L	84	20-140
Dibenzo(a,h)anthracene	<0.2 ug/L	92	20-140
Fluoranthene	<0.2 ug/L	84	20-140
Fluorene	<0.2 ug/L	74	20-140

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Indeno(1,2,3-c,d)pyrene	<0.2 ug/L	90	20-140
Naphthalene	<0.2 ug/L	64	20-140
Phenanthrene	<0.2 ug/L	80	20-140
Pyrene	<0.2 ug/L	86	20-140
Run No 274931 Analysis Date 2014-08-22 Method C SM5220C			
COD	<5 mg/L	98	80-120
Run No 274966 Analysis Date 2014-08-22 Method M SM3112B-3500B			
Hg	<0.0001 mg/L	105	70-130
Run No 275001 Analysis Date 2014-08-21 Method O CCME Reg 153			
F1 (C6-C10)	<100 ug/L	103	80-120
Run No 275008 Analysis Date 2014-08-23 Method O CCME Reg 153			
F2 (C10-C16)	<100 ug/L	62	50-120
F3 (C16-C34)	<200 ug/L	62	50-120
F4 (C34-C50)	<200 ug/L	61	50-120
Run No 275022 Analysis Date 2014-08-21 Method V 8260B			
Benzene	<0.5 ug/L	111	80-120
Ethylbenzene	<0.5 ug/L	101	80-120

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
 Box 1000 Bldg 155 CFB Trenton
 Astra, ON
 K0K 3W0
 Attention: Cameron Chadwick
 PO#: TR14ENV5
 Invoice to: Defence Construction Canada

Report Number: 1417492
 Date Submitted: 2014-08-19
 Date Reported: 2014-08-26
 Project: Alert
 COC #: 176358

QC Summary

Analyte	Blank	QC % Rec	QC Limits
F1-BTEX (C6-C10)			
m/p-xylene	<0.5 ug/L	107	80-120
o-xylene	<0.5 ug/L	106	80-120
Toluene	<0.5 ug/L	106	80-120
Toluene-d8	118 %	97	80-120
Run No 275031 Analysis Date 2014-08-25 Method C SM5520B			
Oil & Grease - Mineral	<1 mg/L	80	60-120
Oil & Grease - Non-mineral			
Oil & Grease - Total	<1 mg/L	95	60-120

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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

Client: Defence Construction Canada (Trenton)
Box 1000 Bldg 155 CFB Trenton
Astra, ON
K0K 3W0
Attention: Cameron Chadwick
PO#: TR14ENV5
Invoice to: Defence Construction Canada

Report Number: 1417492
Date Submitted: 2014-08-19
Date Reported: 2014-08-26
Project: Alert
COC #: 176358

Sample Comment Summary

Sample ID: 1127207 ALT - 4 Bacteria analysis completed past hold time as per client.
--

Guideline = * = **Guideline Exceedence**

** = Analysis completed at Mississauga, Ontario.

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

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

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