



Defence Construction Canada
ATTN: Cameron Chadwick
8 Wing
CFB Trenton
Astra ON KOK 3W0

Date Received: 10-JUL-21
Report Date: 23-JUL-21 16:58 (MT)
Version: FINAL

Client Phone: 613-392-2811

Certificate of Analysis

Lab Work Order #: L2612264
Project P.O. #: SC75765
Job Reference: TR21ENV4
C of C Numbers:
Legal Site Desc:

Nellie Gudzak
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612264-1 ALT 2 03-07-21 Sampled By: CLIENT on 03-JUL-21 @ 13:10 Matrix: WATER							
Physical Tests							
Conductivity	551		1.0	umhos/cm		10-JUL-21	R5517261
Hardness (as CaCO ₃), from total Ca/Mg	121		1.3	mg/L		13-JUL-21	
pH	7.83	PEHR	0.10	pH units		10-JUL-21	R5517261
Total Suspended Solids	41.7	PEHT	6.0	mg/L	11-JUL-21	12-JUL-21	R5517394
Anions and Nutrients							
Alkalinity, Total (as CaCO ₃)	200		1.0	mg/L		10-JUL-21	R5517261
Ammonia, Total (as N)	33.0	DLHC	1.0	mg/L		20-JUL-21	R5525505
Chloride (Cl)	41.7	PEHT	0.50	mg/L		12-JUL-21	R5519798
Nitrate and Nitrite as N	<0.022		0.022	mg/L		13-JUL-21	
Nitrate (as N)	<0.020	PEHT	0.020	mg/L		12-JUL-21	R5519798
Nitrite (as N)	<0.010	PEHT	0.010	mg/L		12-JUL-21	R5519798
Sulfate (SO ₄)	8.85	PEHT	0.30	mg/L		12-JUL-21	R5519798
Organic / Inorganic Carbon							
Total Organic Carbon	21.5		0.50	mg/L		21-JUL-21	R5527122
Total Metals							
Aluminum (Al)-Total	0.0762		0.0050	mg/L	12-JUL-21	12-JUL-21	R5517782
Antimony (Sb)-Total	0.00016		0.00010	mg/L	12-JUL-21	12-JUL-21	R5517782
Arsenic (As)-Total	0.00068		0.00010	mg/L	12-JUL-21	12-JUL-21	R5517782
Cadmium (Cd)-Total	0.0000398		0.0000050	mg/L	12-JUL-21	12-JUL-21	R5517782
Calcium (Ca)-Total	38.5		0.50	mg/L	12-JUL-21	12-JUL-21	R5517782
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	12-JUL-21	12-JUL-21	R5517782
Copper (Cu)-Total	0.187		0.0010	mg/L	12-JUL-21	12-JUL-21	R5517782
Iron (Fe)-Total	0.120		0.010	mg/L	12-JUL-21	12-JUL-21	R5517782
Lead (Pb)-Total	1.14		0.050	ug/L	12-JUL-21	12-JUL-21	R5517782
Magnesium (Mg)-Total	6.08		0.050	mg/L	12-JUL-21	12-JUL-21	R5517782
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		19-JUL-21	R5525047
Nickel (Ni)-Total	0.00129		0.00050	mg/L	12-JUL-21	12-JUL-21	R5517782
Potassium (K)-Total	16.4		0.050	mg/L	12-JUL-21	12-JUL-21	R5517782
Sodium (Na)-Total	34.8		0.050	mg/L	12-JUL-21	12-JUL-21	R5517782
Zinc (Zn)-Total	0.0505		0.0030	mg/L	12-JUL-21	12-JUL-21	R5517782
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		14-JUL-21	R5522336
Aggregate Organics							
BOD	54.0	PEHR	2.0	mg/L		13-JUL-21	R5525189
Oil and Grease, Total	14.4		5.0	mg/L	19-JUL-21	19-JUL-21	R5525282
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							
L2612264-2 ALT 3 03-07-21 Sampled By: CLIENT on 03-JUL-21 @ 13:30 Matrix: WATER							
Physical Tests							
Conductivity	510		1.0	umhos/cm		10-JUL-21	R5517261
Hardness (as CaCO ₃), from total Ca/Mg	161		1.3	mg/L		13-JUL-21	
pH	7.94	PEHR	0.10	pH units		10-JUL-21	R5517261

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612264-2 ALT 3 03-07-21							
Sampled By: CLIENT on 03-JUL-21 @ 13:30							
Matrix: WATER							
Physical Tests							
Total Suspended Solids	21.0	PEHT	6.0	mg/L	11-JUL-21	12-JUL-21	R5517394
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	195		1.0	mg/L		10-JUL-21	R5517261
Ammonia, Total (as N)	7.11	DLHC	0.20	mg/L		20-JUL-21	R5525505
Chloride (Cl)	40.5	PEHT	0.50	mg/L		12-JUL-21	R5519798
Nitrate and Nitrite as N	0.193		0.022	mg/L		13-JUL-21	
Nitrate (as N)	0.151	PEHT	0.020	mg/L		12-JUL-21	R5519798
Nitrite (as N)	0.042	PEHT	0.010	mg/L		12-JUL-21	R5519798
Sulfate (SO4)	5.57	PEHT	0.30	mg/L		12-JUL-21	R5519798
Organic / Inorganic Carbon							
Total Organic Carbon	19.1		0.50	mg/L		21-JUL-21	R5527122
Total Metals							
Aluminum (Al)-Total	0.0868		0.0050	mg/L	12-JUL-21	12-JUL-21	R5517782
Antimony (Sb)-Total	0.00031		0.00010	mg/L	12-JUL-21	12-JUL-21	R5517782
Arsenic (As)-Total	0.00911		0.00010	mg/L	12-JUL-21	12-JUL-21	R5517782
Cadmium (Cd)-Total	0.0000508		0.0000050	mg/L	12-JUL-21	12-JUL-21	R5517782
Calcium (Ca)-Total	45.4		0.50	mg/L	12-JUL-21	12-JUL-21	R5517782
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	12-JUL-21	12-JUL-21	R5517782
Copper (Cu)-Total	0.0353		0.0010	mg/L	12-JUL-21	12-JUL-21	R5517782
Iron (Fe)-Total	1.51		0.010	mg/L	12-JUL-21	12-JUL-21	R5517782
Lead (Pb)-Total	2.02		0.050	ug/L	12-JUL-21	12-JUL-21	R5517782
Magnesium (Mg)-Total	11.6		0.050	mg/L	12-JUL-21	12-JUL-21	R5517782
Mercury (Hg)-Total	0.0000052		0.0000050	mg/L		19-JUL-21	R5525047
Nickel (Ni)-Total	0.0332		0.00050	mg/L	12-JUL-21	12-JUL-21	R5517782
Potassium (K)-Total	9.05		0.050	mg/L	12-JUL-21	12-JUL-21	R5517782
Sodium (Na)-Total	35.8		0.050	mg/L	12-JUL-21	12-JUL-21	R5517782
Zinc (Zn)-Total	0.0101		0.0030	mg/L	12-JUL-21	12-JUL-21	R5517782
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		14-JUL-21	R5522336
Aggregate Organics							
BOD	7.3	PEHR	2.0	mg/L		13-JUL-21	R5525189
Oil and Grease, Total	<5.0		5.0	mg/L	19-JUL-21	19-JUL-21	R5525282
Report Remarks : Cr6: Sample received unpreserved.	Parameter exceeded hold time prior to analysis.						

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Total	MS-B	L2612264-1, -2
Matrix Spike	Iron (Fe)-Total	MS-B	L2612264-1, -2
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2612264-1, -2
Matrix Spike	Sodium (Na)-Total	MS-B	L2612264-1, -2
Matrix Spike	Ammonia, Total (as N)	MS-B	L2612264-1, -2

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-WT	Water	Alkalinity, Total (as CaCO ₃)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BOD-WT	Water	BOD	APHA 5210 B
--------	-------	-----	-------------

This analysis is carried out using procedures adapted from APHA Method 5210B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
------------	-------	----------------	-----------------

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
--------------	-------	-------------	----------

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510
--------------	-------	---	-----------

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B
-------	-------	--------------	-------------

Water samples can be measured directly by immersing the conductivity cell into the sample.

ETL-N2N3-WT	Water	Calculate from NO ₂ + NO ₃	APHA 4110 B
-------------	-------	--	-------------

HARDNESS-T-CALC-WT	Water	Hardness (as CaCO ₃), from total Ca/Mg	APHA 2340B
--------------------	-------	--	------------

"Hardness (as CaCO₃), from total Ca/Mg" is calculated from the sum of total (acid digested) Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.

Reference Information

HG-T-CVAA-WT Water Total Mercury in Water by CVAAS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-T-CCMS-WT Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT Water Nitrite in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-IC-WT Water Nitrate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

OGG-TOT-WT Water Oil and Grease, Total APHA 5520 B

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

PH-WT Water pH APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

SO4-IC-N-WT Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

SOLIDS-TSS-WT Water Suspended solids APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–110°C for a minimum of four hours or until a constant weight is achieved.

TOC-WT Water Total Organic Carbon APHA 5310B

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic carbon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid weight of sample

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2612264

Report Date: 23-JUL-21

Page 1 of 6

Client: Defence Construction Canada
8 Wing CFB Trenton
Astra ON K0K 3W0
Contact: Cameron Chadwick

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-WT	Water							
Batch	R5517261							
WG3573350-2	LCS							
Alkalinity, Total (as CaCO ₃)			100.8		%		85-115	10-JUL-21
WG3573350-1	MB							
Alkalinity, Total (as CaCO ₃)			<1.0		mg/L		1	10-JUL-21
BOD-WT	Water							
Batch	R5525189							
WG3575049-3	LCS							
BOD			101.0		%		85-115	13-JUL-21
WG3575049-1	MB							
BOD			<2.0		mg/L		2	13-JUL-21
CL-IC-N-WT	Water							
Batch	R5519798							
WG3574269-17	LCS							
Chloride (Cl)			101.3		%		90-110	12-JUL-21
WG3574269-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-JUL-21
CR-CR6-IC-WT	Water							
Batch	R5522336							
WG3575930-2	LCS							
Chromium, Hexavalent			100.9		%		80-120	14-JUL-21
WG3575930-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	14-JUL-21
EC-WT	Water							
Batch	R5517261							
WG3573350-2	LCS							
Conductivity			97.9		%		90-110	10-JUL-21
WG3573350-1	MB							
Conductivity			<1.0		umhos/cm		1	10-JUL-21
HG-T-CVAA-WT	Water							
Batch	R5525047							
WG3578585-4	DUP	L2612264-1						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	19-JUL-21
WG3578585-2	LCS							
Mercury (Hg)-Total			110.0		%		80-120	19-JUL-21
WG3578585-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-JUL-21
WG3578585-6	MS	L2612264-2						

Quality Control Report

Workorder: L2612264

Report Date: 23-JUL-21

Page 2 of 6

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WT	Water							
Batch	R5525047							
WG3578585-6 MS		L2612264-2						
Mercury (Hg)-Total			112.8		%		70-130	19-JUL-21
MET-T-CCMS-WT	Water							
Batch	R5517782							
WG3573650-2 LCS								
Aluminum (Al)-Total			103.9		%		80-120	13-JUL-21
Antimony (Sb)-Total			101.9		%		80-120	13-JUL-21
Arsenic (As)-Total			103.3		%		80-120	13-JUL-21
Cadmium (Cd)-Total			103.9		%		80-120	13-JUL-21
Calcium (Ca)-Total			101.3		%		80-120	13-JUL-21
Chromium (Cr)-Total			101.1		%		80-120	13-JUL-21
Copper (Cu)-Total			101.8		%		80-120	13-JUL-21
Iron (Fe)-Total			105.8		%		80-120	13-JUL-21
Lead (Pb)-Total			101.7		%		80-120	13-JUL-21
Magnesium (Mg)-Total			104.2		%		80-120	13-JUL-21
Nickel (Ni)-Total			103.2		%		80-120	13-JUL-21
Potassium (K)-Total			102.5		%		80-120	13-JUL-21
Sodium (Na)-Total			102.2		%		80-120	13-JUL-21
Zinc (Zn)-Total			119.0		%		80-120	13-JUL-21
WG3573650-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	13-JUL-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	13-JUL-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	13-JUL-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	13-JUL-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	13-JUL-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Iron (Fe)-Total			<0.010		mg/L		0.01	13-JUL-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	13-JUL-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	13-JUL-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Potassium (K)-Total			<0.050		mg/L		0.05	13-JUL-21
Sodium (Na)-Total			<0.050		mg/L		0.05	13-JUL-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	13-JUL-21
NH3-F-WT	Water							

Quality Control Report

Workorder: L2612264

Report Date: 23-JUL-21

Page 3 of 6

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-F-WT	Water							
Batch R5525505								
WG3577835-2 LCS								
Ammonia, Total (as N)			104.3		%		85-115	19-JUL-21
WG3577835-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	19-JUL-21
NO2-IC-WT	Water							
Batch R5519798								
WG3574269-17 LCS								
Nitrite (as N)			100.6		%		90-110	12-JUL-21
WG3574269-16 MB								
Nitrite (as N)			<0.010		mg/L		0.01	12-JUL-21
NO3-IC-WT	Water							
Batch R5519798								
WG3574269-17 LCS								
Nitrate (as N)			100.2		%		90-110	12-JUL-21
WG3574269-16 MB								
Nitrate (as N)			<0.020		mg/L		0.02	12-JUL-21
OGG-TOT-WT	Water							
Batch R5525282								
WG3578478-2 LCS								
Oil and Grease, Total			88.6		%		70-130	19-JUL-21
WG3578478-1 MB								
Oil and Grease, Total			<5.0		mg/L		5	19-JUL-21
PH-WT	Water							
Batch R5517261								
WG3573350-2 LCS								
pH			7.00		pH units		6.9-7.1	10-JUL-21
SO4-IC-N-WT	Water							
Batch R5519798								
WG3574269-17 LCS								
Sulfate (SO4)			102.0		%		90-110	12-JUL-21
WG3574269-16 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	12-JUL-21
SOLIDS-TSS-WT	Water							



Quality Control Report

Workorder: L2612264

Report Date: 23-JUL-21

Page 4 of 6

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TSS-WT	Water							
Batch	R5517394							
WG3573482-2	LCS							
Total Suspended Solids			101.0		%		85-115	12-JUL-21
WG3573482-1	MB							
Total Suspended Solids			<3.0		mg/L		3	12-JUL-21
TOC-WT	Water							
Batch	R5527122							
WG3575440-2	LCS							
Total Organic Carbon			105.0		%		80-120	21-JUL-21
WG3575440-1	MB							
Total Organic Carbon			<0.50		mg/L		0.5	21-JUL-21

Quality Control Report

Workorder: L2612264

Report Date: 23-JUL-21

Page 5 of 6

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2612264

Report Date: 23-JUL-21

Page 6 of 6

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Suspended solids	1	03-JUL-21 13:10	12-JUL-21 00:00	7	8	days	EHTL
	2	03-JUL-21 13:30	12-JUL-21 00:00	7	8	days	EHTL
pH	1	03-JUL-21 13:10	10-JUL-21 00:00	4	6	days	EHTR
	2	03-JUL-21 13:30	10-JUL-21 00:00	4	6	days	EHTR
Leachable Anions & Nutrients							
Nitrate in Water by IC	1	03-JUL-21 13:10	12-JUL-21 16:24	7	9	days	EHTL
	2	03-JUL-21 13:30	12-JUL-21 16:24	7	9	days	EHTL
Nitrite in Water by IC	1	03-JUL-21 13:10	12-JUL-21 16:24	7	9	days	EHTL
	2	03-JUL-21 13:30	12-JUL-21 16:24	7	9	days	EHTL
Aggregate Organics							
BOD	1	03-JUL-21 13:10	13-JUL-21 00:00	4	9	days	EHTR
	2	03-JUL-21 13:30	13-JUL-21 00:00	4	9	days	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
 EHT: Exceeded ALS recommended hold time prior to analysis.
 Rec. HT: ALS recommended hold time (see units).

Notes*:
 Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2612264 were received on 10-JUL-21 10:30.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



ALS Environmental

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Contact and company name below will appear on the final report

Company:	Defence Construction Canada
Contact:	Cameron Chadwick
Phone:	613-392-2811 x5491 Cell 613-243-4807
Company address below will appear on the final report	

Street:	8 Wing / CFB Trenton
City/Province:	Astria, ON
Postal Code:	K0K 3W0
Invoice To:	Same as Report To ☒ YES ☐ NO
Copy of Invoice with Report:	☒ YES ☐ NO
Company:	
Contact:	

Project Information	
ALS Account # / Quote #:	
Job #:	
PO / AFE:	
LSD:	

ALS Lab Work Order # (lab use only):	12612264
Sample Identification and/or Coordinates (This description will appear on the report)	4012 4013

ALS Contact:		Date (dd-mm-yy)	03-07-21	Time (hh:mm)	13:10	Sample Type	WATER
Sampler:			11	12:30	11		
Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)							

Drinking Water (DW) Samples (client use)	
Are samples taken from a Regulated DW System?	☐ YES ☐ NO
Are samples for human consumption use?	☐ YES ☐ NO
SHIPPING RELEASE (client use)	
Released by:	
Date:	
Time:	
Received by:	
Date:	
Time:	

SHIPPING RELEASE (client use)	
Released by:	
Date:	
Time:	
Received by:	
Date:	
Time:	

Report Format / Distribution	
Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report	☒ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:	Cameron.Chadwick@dcc-cdc.gc.ca
Email 2:	
Email 3:	

Invoice Distribution	☒ EMAIL ☐ MAIL ☐ FAX
Select Invoice Distribution:	Cameron.Chadwick@dcc-cdc.gc.ca
Email 1 or Fax:	Cameron.Chadwick@dcc-cdc.gc.ca
Email 2:	

Oil and Gas Required Fields (client use)	
AFE/Coast Center	PO#
Major/Minor Code	Routing Code
Requisitioner	
Location:	

NUMBER OF CONTAINERS	
Total Metals ICP + Hg + Cr6	2
pH Conductivity TSS NO2 + NO3	2
Chloride Sulphate BOD Alkalinity	2
Total Hardness	2
NH3 Total Phenols TOC	2
Faecal Coliforms (FC)	2
Oil and Grease	2

SAMPLE CONDITION AS RECEIVED (lab use only)	
Frozen	☐ Yes ☐ No
Ice Packs	☒ Yes ☐ No
Cooling Initiated	☐ Yes ☐ No
Initial Cooler Temperatures °C	9.6
Final Cooler Temperatures °C	

FINAL SHIPMENT RECEPTION (lab use only)	
Received by:	
Date:	21/07/21
Time:	13:30

WHITE - LABORATORY COPY YELLOW - CLIENT COPY	
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION	
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.	
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.	



L2612264-COFC



Defence Construction Canada
ATTN: Cameron Chadwick
8 Wing
CFB Trenton
Astra ON KOK 3W0

Date Received: 10-JUL-21
Report Date: 23-JUL-21 17:09 (MT)
Version: FINAL

Client Phone: 613-392-2811

Certificate of Analysis

Lab Work Order #: L2612266

Project P.O. #: SC75765

Job Reference: TR21ENV4

C of C Numbers:

Legal Site Desc:

Nellie Gudzak
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612266-1 ALT 2 Sampled By: CLIENT on 30-JUN-21 @ 20:00 Matrix: WATER							
Physical Tests							
Conductivity	1140		1.0	umhos/cm		13-JUL-21	R5520816
Hardness (as CaCO3)	124	HTC	1.3	mg/L		14-JUL-21	
pH	8.38	PEHR	0.10	pH units		13-JUL-21	R5520816
Total Suspended Solids	138	DLHC	6.0	mg/L	15-JUL-21	16-JUL-21	R5524931
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	405	PEHT	1.0	mg/L		21-JUL-21	R5527008
Ammonia, Total (as N)	36.9	DLHC	1.0	mg/L		21-JUL-21	R5526560
Chloride (Cl)	72.2	PEHR	0.50	mg/L		12-JUL-21	R5519798
Nitrate and Nitrite as N	<0.022		0.022	mg/L		13-JUL-21	
Nitrate (as N)	<0.020	PEHR	0.020	mg/L		12-JUL-21	R5519798
Nitrite (as N)	<0.010	PEHR	0.010	mg/L		12-JUL-21	R5519798
Sulfate (SO4)	23.3	PEHR	0.30	mg/L		12-JUL-21	R5519798
Organic / Inorganic Carbon							
Total Organic Carbon	127	DLM	5.0	mg/L		21-JUL-21	R5527122
Bacteriological Tests							
Fecal Coliforms	17000	PEHR	1000	CFU/100mL		10-JUL-21	R5517543
Total Metals							
Aluminum (Al)-Total	0.338	DLHC	0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Antimony (Sb)-Total	<0.0010	DLHC	0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Arsenic (As)-Total	<0.0010	DLHC	0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Cadmium (Cd)-Total	0.000116	DLHC	0.000050	mg/L	12-JUL-21	13-JUL-21	R5520798
Calcium (Ca)-Total	39.6	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Chromium (Cr)-Total	<0.0050	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Copper (Cu)-Total	0.583	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Iron (Fe)-Total	0.24	DLHC	0.10	mg/L	12-JUL-21	13-JUL-21	R5520798
Lead (Pb)-Total	2.87	DLHC	0.50	ug/L	12-JUL-21	13-JUL-21	R5520798
Magnesium (Mg)-Total	6.05	DLHC	0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Mercury (Hg)-Total	0.0000138		0.0000050	mg/L		19-JUL-21	R5525047
Nickel (Ni)-Total	<0.0050	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Potassium (K)-Total	15.4	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Sodium (Na)-Total	49.1	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Zinc (Zn)-Total	0.183	DLHC	0.030	mg/L	12-JUL-21	13-JUL-21	R5520798
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		14-JUL-21	R5522336
Aggregate Organics							
BOD	247	PEHR	2.0	mg/L		13-JUL-21	R5525189
Oil and Grease, Total	46.8		5.0	mg/L	19-JUL-21	19-JUL-21	R5525282
Phenols (4AAP)	38.7	DLM	5.0	ug/L		16-JUL-21	R5525055
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							
L2612266-2 ALT 3 Sampled By: CLIENT on 30-JUN-21 @ 20:30 Matrix: WATER							
Physical Tests							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612266-2 ALT 3 Sampled By: CLIENT on 30-JUN-21 @ 20:30 Matrix: WATER							
Physical Tests							
Conductivity	576		1.0	umhos/cm		13-JUL-21	R5520816
Hardness (as CaCO3)	170	HTC	1.3	mg/L		14-JUL-21	
pH	8.04	PEHR	0.10	pH units		13-JUL-21	R5520816
Total Suspended Solids	5.4		3.0	mg/L	15-JUL-21	16-JUL-21	R5524931
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	204	PEHT	1.0	mg/L		21-JUL-21	R5527008
Ammonia, Total (as N)	5.7	DLHC	1.0	mg/L		21-JUL-21	R5526560
Chloride (Cl)	46.6	PEHR	0.50	mg/L		12-JUL-21	R5519798
Nitrate and Nitrite as N	0.557		0.022	mg/L		13-JUL-21	
Nitrate (as N)	0.526	PEHR	0.020	mg/L		12-JUL-21	R5519798
Nitrite (as N)	0.031	PEHR	0.010	mg/L		12-JUL-21	R5519798
Sulfate (SO4)	8.64	PEHR	0.30	mg/L		12-JUL-21	R5519798
Organic / Inorganic Carbon							
Total Organic Carbon	24.6		0.50	mg/L		21-JUL-21	R5527122
Bacteriological Tests							
Fecal Coliforms	25	PEHR	0	CFU/100mL		10-JUL-21	R5517543
Total Metals							
Aluminum (Al)-Total	0.081	DLHC	0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Antimony (Sb)-Total	<0.0010	DLHC	0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Arsenic (As)-Total	0.0080	DLHC	0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Cadmium (Cd)-Total	0.000062	DLHC	0.000050	mg/L	12-JUL-21	13-JUL-21	R5520798
Calcium (Ca)-Total	49.3	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Chromium (Cr)-Total	<0.0050	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Copper (Cu)-Total	0.0346	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Iron (Fe)-Total	0.94	DLHC	0.10	mg/L	12-JUL-21	13-JUL-21	R5520798
Lead (Pb)-Total	2.00	DLHC	0.50	ug/L	12-JUL-21	13-JUL-21	R5520798
Magnesium (Mg)-Total	11.4	DLHC	0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		19-JUL-21	R5525047
Nickel (Ni)-Total	0.0315	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Potassium (K)-Total	8.76	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Sodium (Na)-Total	34.7	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Zinc (Zn)-Total	<0.030	DLHC	0.030	mg/L	12-JUL-21	13-JUL-21	R5520798
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		14-JUL-21	R5522336
Aggregate Organics							
BOD	5.5	PEHR	2.0	mg/L		13-JUL-21	R5525189
Oil and Grease, Total	<5.0		5.0	mg/L	19-JUL-21	19-JUL-21	R5525282
Phenols (4AAP)	5.5		1.0	ug/L		16-JUL-21	R5525055
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							
L2612266-3 ALT 4 Sampled By: CLIENT on 30-JUN-21 @ 17:35 Matrix: WATER							
Physical Tests							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612266-3 ALT 4 Sampled By: CLIENT on 30-JUN-21 @ 17:35 Matrix: WATER							
Physical Tests							
Conductivity	170		1.0	umhos/cm		13-JUL-21	R5520816
Hardness (as CaCO3)	101	HTC	1.3	mg/L		14-JUL-21	
pH	8.16	PEHR	0.10	pH units		13-JUL-21	R5520816
Total Suspended Solids	127	DLHC	6.0	mg/L	15-JUL-21	16-JUL-21	R5524931
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	71.1	PEHT	1.0	mg/L		21-JUL-21	R5527008
Ammonia, Total (as N)	<0.010		0.010	mg/L		22-JUL-21	R5526560
Chloride (Cl)	5.04	PEHR	0.50	mg/L		12-JUL-21	R5519798
Nitrate and Nitrite as N	0.079		0.022	mg/L		13-JUL-21	
Nitrate (as N)	0.079	PEHR	0.020	mg/L		12-JUL-21	R5519798
Nitrite (as N)	<0.010	PEHR	0.010	mg/L		12-JUL-21	R5519798
Sulfate (SO4)	8.14	PEHR	0.30	mg/L		12-JUL-21	R5519798
Organic / Inorganic Carbon							
Total Organic Carbon	2.55		0.50	mg/L		22-JUL-21	R5527122
Bacteriological Tests							
Fecal Coliforms	1	PEHR	0	CFU/100mL		10-JUL-21	R5517543
Total Metals							
Aluminum (Al)-Total	3.49	DLHC	0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Antimony (Sb)-Total	0.0018	DLHC	0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Arsenic (As)-Total	0.0069	DLHC	0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Cadmium (Cd)-Total	<0.000050	DLHC	0.000050	mg/L	12-JUL-21	13-JUL-21	R5520798
Calcium (Ca)-Total	30.8	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Chromium (Cr)-Total	0.0063	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Copper (Cu)-Total	0.0111	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Iron (Fe)-Total	5.92	DLHC	0.10	mg/L	12-JUL-21	13-JUL-21	R5520798
Lead (Pb)-Total	5.99	DLHC	0.50	ug/L	12-JUL-21	13-JUL-21	R5520798
Magnesium (Mg)-Total	5.77	DLHC	0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Mercury (Hg)-Total	0.0000076		0.0000050	mg/L		19-JUL-21	R5525047
Nickel (Ni)-Total	0.0154	DLHC	0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Potassium (K)-Total	1.74	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Sodium (Na)-Total	4.32	DLHC	0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Zinc (Zn)-Total	<0.030	DLHC	0.030	mg/L	12-JUL-21	13-JUL-21	R5520798
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		14-JUL-21	R5522336
Aggregate Organics							
BOD	<3.0	RRR	3.0	mg/L		13-JUL-21	R5525189
Oil and Grease, Total	<5.0		5.0	mg/L	19-JUL-21	19-JUL-21	R5525282
Phenols (4AAP)	<1.0		1.0	ug/L		16-JUL-21	R5525055
Volatile Organic Compounds							
Benzene	<0.50	OWP	0.50	ug/L		13-JUL-21	R5518217
Ethylbenzene	<0.50	OWP	0.50	ug/L		13-JUL-21	R5518217
Toluene	<0.50	OWP	0.50	ug/L		13-JUL-21	R5518217

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612266-3 ALT 4							
Sampled By: CLIENT on 30-JUN-21 @ 17:35							
Matrix: WATER							
Volatile Organic Compounds							
o-Xylene	<0.30	OWP	0.30	ug/L		13-JUL-21	R5518217
m+p-Xylenes	<0.40	OWP	0.40	ug/L		13-JUL-21	R5518217
Xylenes (Total)	<0.50		0.50	ug/L		13-JUL-21	
Surrogate: 4-Bromofluorobenzene	103.3		70-130	%		13-JUL-21	R5518217
Surrogate: 1,4-Difluorobenzene	99.7		70-130	%		13-JUL-21	R5518217
Hydrocarbons							
F1 (C6-C10)	<25	OWP	25	ug/L		13-JUL-21	R5518217
F1-BTEX	<25		25	ug/L		13-JUL-21	
F2 (C10-C16)	<100		100	ug/L	12-JUL-21	13-JUL-21	R5520486
F3 (C16-C34)	<250		250	ug/L	12-JUL-21	13-JUL-21	R5520486
F4 (C34-C50)	<250		250	ug/L	12-JUL-21	13-JUL-21	R5520486
Total Hydrocarbons (C6-C50)	<370		370	ug/L		13-JUL-21	
Chrom. to baseline at nC50	YES				12-JUL-21	13-JUL-21	R5520486
Surrogate: 2-Bromobenzotrifluoride	92.1		60-140	%	12-JUL-21	13-JUL-21	R5520486
Surrogate: 3,4-Dichlorotoluene	117.0		60-140	%		13-JUL-21	R5518217
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							
Report Remarks : BODL: Limit of reporting for BOD was increased to account for the largest volume of sample tested							
PEHR: Parameter exceeded recommended holding time on receipt: Proceed with analysis as requested							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Total	MS-B	L2612266-1, -2, -3
Matrix Spike	Iron (Fe)-Total	MS-B	L2612266-1, -2, -3
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2612266-1, -2, -3
Matrix Spike	Potassium (K)-Total	MS-B	L2612266-1, -2, -3
Matrix Spike	Sodium (Na)-Total	MS-B	L2612266-1, -2, -3

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
OWP	Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-WT	Water	Alkalinity, Total (as CaCO ₃)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BOD-WT	Water	BOD	APHA 5210 B
--------	-------	-----	-------------

This analysis is carried out using procedures adapted from APHA Method 5210B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

BTX-511-HS-WT	Water	BTEX by Headspace	SW846 8260 (511)
---------------	-------	-------------------	------------------

BTX is determined by analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
------------	-------	----------------	-----------------

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
--------------	-------	-------------	----------

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510
--------------	-------	---	-----------

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B
-------	-------	--------------	-------------

Water samples can be measured directly by immersing the conductivity cell into the sample.

ETL-N2N3-WT	Water	Calculate from NO ₂ + NO ₃	APHA 4110 B
-------------	-------	--	-------------

Reference Information

F1-F4-511-CALC-WT Water F1-F4 Hydrocarbon Calculated Parameters CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Water F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Water F2-F4-O.Reg 153/04 (July 2011) EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011 and as of November 30, 2020), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

FC-MF-WT Water Fecal Coliforms SM 9222D

A 100mL volume of sample is filtered through a membrane, the membrane is placed on mFC agar and incubated at 24–26°C. Method ID: WT-TM-1200

HARDNESS-CALC-WT Water Hardness APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-CVAA-WT Water Total Mercury in Water by CVAAS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-T-CCMS-WT Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT Water Nitrite in Water by IC EPA 300.1 (mod)

Reference Information

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)
-----------	-------	------------------------	-----------------

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

OGG-TOT-WT	Water	Oil and Grease, Total	APHA 5520 B
------------	-------	-----------------------	-------------

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

PH-WT	Water	pH	APHA 4500 H-Electrode
-------	-------	----	-----------------------

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
-----------------	-------	---------------	----------

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SO4-IC-N-WT	Water	Sulfate in Water by IC	EPA 300.1 (mod)
-------------	-------	------------------------	-----------------

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric
---------------	-------	------------------	-------------------------

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–110°C for a minimum of four hours or until a constant weight is achieved.

TOC-WT	Water	Total Organic Carbon	APHA 5310B
--------	-------	----------------------	------------

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic carbon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION
---------------------	-------	-------------------------------------	-------------

Total xylenes represents the sum of o-xylene and m&p-xylene.

**** ALS test methods may incorporate modifications from specified reference methods to improve performance.**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid weight of sample

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 1 of 8

Client: Defence Construction Canada
8 Wing CFB Trenton
Astra ON K0K 3W0
Contact: Cameron Chadwick

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-WT	Water							
Batch	R5527008							
WG3580456-2	LCS							
Alkalinity, Total (as CaCO ₃)			99.9		%		85-115	21-JUL-21
WG3580456-1	MB							
Alkalinity, Total (as CaCO ₃)			<1.0		mg/L		1	21-JUL-21
BOD-WT	Water							
Batch	R5525189							
WG3575049-3	LCS							
BOD			101.0		%		85-115	13-JUL-21
WG3575049-1	MB							
BOD			<2.0		mg/L		2	13-JUL-21
BTX-511-HS-WT	Water							
Batch	R5518217							
WG3574206-1	LCS							
Benzene			99.4		%		70-130	13-JUL-21
Ethylbenzene			94.7		%		70-130	13-JUL-21
m+p-Xylenes			96.5		%		70-130	13-JUL-21
o-Xylene			94.2		%		70-130	13-JUL-21
Toluene			96.4		%		70-130	13-JUL-21
WG3574206-2	MB							
Benzene			<0.50		ug/L		0.5	13-JUL-21
Ethylbenzene			<0.50		ug/L		0.5	13-JUL-21
m+p-Xylenes			<0.40		ug/L		0.4	13-JUL-21
o-Xylene			<0.30		ug/L		0.3	13-JUL-21
Toluene			<0.50		ug/L		0.5	13-JUL-21
Surrogate: 1,4-Difluorobenzene			100.4		%		70-130	13-JUL-21
Surrogate: 4-Bromofluorobenzene			102.2		%		70-130	13-JUL-21
CL-IC-N-WT	Water							
Batch	R5519798							
WG3574269-17	LCS							
Chloride (Cl)			101.3		%		90-110	12-JUL-21
WG3574269-16	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-JUL-21
CR-CR6-IC-WT	Water							

Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 2 of 8

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	Water							
Batch	R5522336							
WG3575930-2	LCS							
Chromium, Hexavalent			100.9		%		80-120	14-JUL-21
WG3575930-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	14-JUL-21
EC-WT	Water							
Batch	R5520816							
WG3574955-2	LCS							
Conductivity			101.8		%		90-110	13-JUL-21
WG3574955-1	MB							
Conductivity			<1.0		umhos/cm		1	13-JUL-21
F1-HS-511-WT	Water							
Batch	R5518217							
WG3574206-1	LCS							
F1 (C6-C10)			90.3		%		80-120	13-JUL-21
WG3574206-2	MB							
F1 (C6-C10)			<25		ug/L		25	13-JUL-21
Surrogate: 3,4-Dichlorotoluene			102.7		%		60-140	13-JUL-21
F2-F4-511-WT	Water							
Batch	R5520486							
WG3573634-2	LCS							
F2 (C10-C16)			98.9		%		70-130	13-JUL-21
F3 (C16-C34)			94.6		%		70-130	13-JUL-21
F4 (C34-C50)			116.3		%		70-130	13-JUL-21
WG3573634-1	MB							
F2 (C10-C16)			<100		ug/L		100	13-JUL-21
F3 (C16-C34)			<250		ug/L		250	13-JUL-21
F4 (C34-C50)			<250		ug/L		250	13-JUL-21
Surrogate: 2-Bromobenzotrifluoride			86.2		%		60-140	13-JUL-21
FC-MF-WT	Water							
Batch	R5517543							
WG3573266-1	MB							
Fecal Coliforms			0		CFU/100mL		1	10-JUL-21
HG-T-CVAA-WT	Water							

Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 3 of 8

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WT Water								
Batch R5525047								
WG3578585-2 LCS								
Mercury (Hg)-Total			110.0		%		80-120	19-JUL-21
WG3578585-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-JUL-21
MET-T-CCMS-WT Water								
Batch R5520798								
WG3573653-2 LCS								
Aluminum (Al)-Total			98.0		%		80-120	13-JUL-21
Antimony (Sb)-Total			108.3		%		80-120	13-JUL-21
Arsenic (As)-Total			99.8		%		80-120	13-JUL-21
Cadmium (Cd)-Total			99.1		%		80-120	13-JUL-21
Calcium (Ca)-Total			98.7		%		80-120	13-JUL-21
Chromium (Cr)-Total			97.5		%		80-120	13-JUL-21
Copper (Cu)-Total			96.7		%		80-120	13-JUL-21
Iron (Fe)-Total			95.2		%		80-120	13-JUL-21
Lead (Pb)-Total			95.3		%		80-120	13-JUL-21
Magnesium (Mg)-Total			95.5		%		80-120	13-JUL-21
Nickel (Ni)-Total			95.7		%		80-120	13-JUL-21
Potassium (K)-Total			95.8		%		80-120	13-JUL-21
Sodium (Na)-Total			97.2		%		80-120	13-JUL-21
Zinc (Zn)-Total			100.3		%		80-120	13-JUL-21
WG3573653-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	13-JUL-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	13-JUL-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	13-JUL-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	13-JUL-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	13-JUL-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Iron (Fe)-Total			<0.010		mg/L		0.01	13-JUL-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	13-JUL-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	14-JUL-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Potassium (K)-Total			<0.050		mg/L		0.05	13-JUL-21
Sodium (Na)-Total			<0.050		mg/L		0.05	13-JUL-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	13-JUL-21

Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 4 of 8

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-F-WT	Water							
Batch	R5526560							
WG3576196-2	LCS							
Ammonia, Total (as N)			105.6		%		85-115	21-JUL-21
WG3576196-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	21-JUL-21
NO2-IC-WT	Water							
Batch	R5519798							
WG3574269-17	LCS							
Nitrite (as N)			100.6		%		90-110	12-JUL-21
WG3574269-16	MB							
Nitrite (as N)			<0.010		mg/L		0.01	12-JUL-21
NO3-IC-WT	Water							
Batch	R5519798							
WG3574269-17	LCS							
Nitrate (as N)			100.2		%		90-110	12-JUL-21
WG3574269-16	MB							
Nitrate (as N)			<0.020		mg/L		0.02	12-JUL-21
OGG-TOT-WT	Water							
Batch	R5525282							
WG3578478-2	LCS							
Oil and Grease, Total			88.6		%		70-130	19-JUL-21
WG3578478-1	MB							
Oil and Grease, Total			<5.0		mg/L		5	19-JUL-21
PH-WT	Water							
Batch	R5520816							
WG3574955-2	LCS							
pH			6.98		pH units		6.9-7.1	13-JUL-21
PHENOLS-4AAP-WT	Water							
Batch	R5525055							
WG3577558-2	LCS							
Phenols (4AAP)			108.5		%		85-115	16-JUL-21
WG3577558-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	16-JUL-21
SO4-IC-N-WT	Water							



Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 5 of 8

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WT	Water							
Batch	R5519798							
WG3574269-17 LCS								
Sulfate (SO4)			102.0		%		90-110	12-JUL-21
WG3574269-16 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	12-JUL-21
SOLIDS-TSS-WT	Water							
Batch	R5524931							
WG3576630-2 LCS								
Total Suspended Solids			96.7		%		85-115	16-JUL-21
WG3576630-1 MB								
Total Suspended Solids			<3.0		mg/L		3	16-JUL-21
TOC-WT	Water							
Batch	R5527122							
WG3575440-2 LCS								
Total Organic Carbon			105.0		%		80-120	21-JUL-21
WG3575440-1 MB								
Total Organic Carbon			<0.50		mg/L		0.5	21-JUL-21

Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 6 of 8

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 7 of 8

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Suspended solids							
	1	30-JUN-21 20:00	16-JUL-21 00:00	7	15	days	EHTR
	2	30-JUN-21 20:30	16-JUL-21 00:00	7	15	days	EHTR
	3	30-JUN-21 17:35	16-JUL-21 00:00	7	15	days	EHTR
pH							
	1	30-JUN-21 20:00	13-JUL-21 00:00	4	12	days	EHTR
	2	30-JUN-21 20:30	13-JUL-21 00:00	4	12	days	EHTR
	3	30-JUN-21 17:35	13-JUL-21 00:00	4	12	days	EHTR
Leachable Anions & Nutrients							
Nitrate in Water by IC							
	1	30-JUN-21 20:00	12-JUL-21 16:24	7	12	days	EHTR
	2	30-JUN-21 20:30	12-JUL-21 16:24	7	12	days	EHTR
	3	30-JUN-21 17:35	12-JUL-21 16:24	7	12	days	EHTR
Nitrite in Water by IC							
	1	30-JUN-21 20:00	12-JUL-21 16:24	7	12	days	EHTR
	2	30-JUN-21 20:30	12-JUL-21 16:24	7	12	days	EHTR
	3	30-JUN-21 17:35	12-JUL-21 16:24	7	12	days	EHTR
Anions and Nutrients							
Alkalinity, Total (as CaCO3)							
	1	30-JUN-21 20:00	21-JUL-21 00:00	14	20	days	EHT
	2	30-JUN-21 20:30	21-JUL-21 00:00	14	20	days	EHT
	3	30-JUN-21 17:35	21-JUL-21 00:00	14	20	days	EHT
Bacteriological Tests							
Fecal Coliforms							
	1	30-JUN-21 20:00	10-JUL-21 11:45	48	232	hours	EHTR
	2	30-JUN-21 20:30	10-JUL-21 11:45	48	231	hours	EHTR
	3	30-JUN-21 17:35	10-JUL-21 11:45	48	234	hours	EHTR
Aggregate Organics							
BOD							
	1	30-JUN-21 20:00	13-JUL-21 00:00	4	12	days	EHTR
	2	30-JUN-21 20:30	13-JUL-21 00:00	4	12	days	EHTR
	3	30-JUN-21 17:35	13-JUL-21 00:00	4	12	days	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
 EHT: Exceeded ALS recommended hold time prior to analysis.
 Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2612266 were received on 10-JUL-21 10:30.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

Quality Control Report

Workorder: L2612266

Report Date: 23-JUL-21

Page 8 of 8

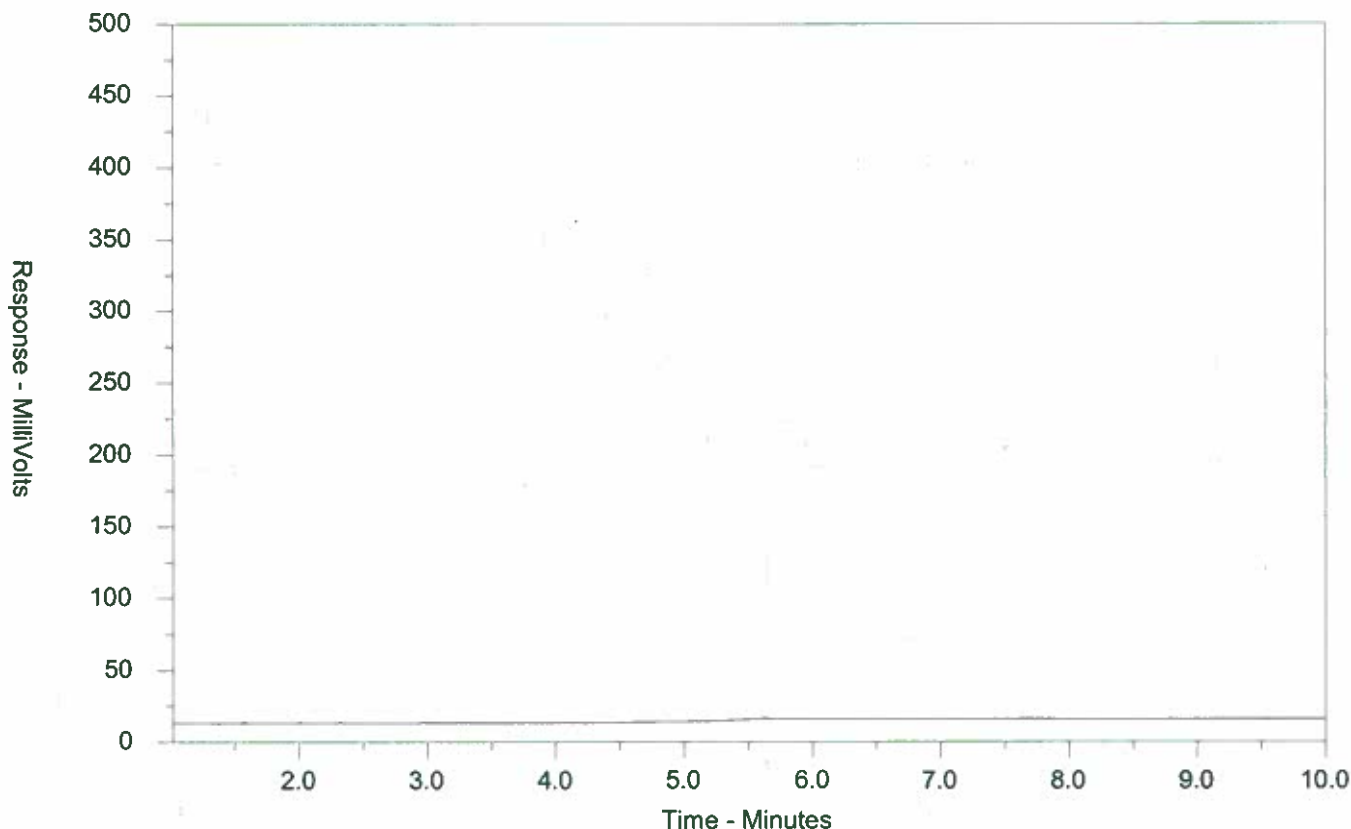
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2612266-3
Client Sample ID: ALT 4



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2612266-COCF

COC Number: 17 -

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL) Quality Control (QC) Report with Report ☒ YES ☐ NO ☐ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Company: Defence Construction Canada		Email 1 or Fax: Cameron Chadwick@ddcc-ddc.gc.ca	
Contact: Cameron Chadwick		Email 2	
Phone: 613-392-2811 x5491 Cell: 613-243-4807		Email 3	
Company address below will appear on the final report		Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Street: 8 Wing / CFB Trenton		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
City/Province: Astra, ON		Email 1 or Fax: Cameron Chadwick@ddcc-ddc.gc.ca	
Postal Code: K0K 3W0		Email 2	
Invoice To: Same as Report To ☒ YES ☐ NO		Routing Code:	
Copy of Invoice with Report ☒ YES ☐ NO		Requisitioner:	
Company:		Location:	
Contact:		ALS Contact:	
Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFECost Center	
Job #:		Major/Minor Code	
PO / AFE:		Routing Code:	
LSD:		ALS Lab Work Order # (lab use only): 12612266	
Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	
ALT 2		2015-02-21	
ALT 3		2015-02-21	
ALT 4		17:35	
Sample Type		WATER	
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO			
Are samples for human consumption/ use? ☐ YES ☐ NO			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)	
Released by:		Received by:	
Date:		Date:	
Time:		Time:	
SHIPMENT RELEASE (client use)		FINAL SHIPMENT RECEPTION (lab use only)	
Date:		Date:	
Time:		Time:	

Select Service Level Below - Contact your AM to confirm all EAP TATs (surcharges may apply)	
Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	Emergency [E] ☐ Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply) []
4 day [P4-20%] ☐ 1 Business day [E - 100%]	3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 - 200%]
2 day [P2-50%] ☐ (Laboratory opening fees may apply) []	
Date and Time Required for all EAP TATs: dd-mm-yy hh:mm	
For tests that can not be performed according to the service level selected, you will be contacted.	

Analysis Request	
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Oil and Grease	
Faecal Coliforms (FC)	
NH3, Total Phosphorus, TOC	
Total Hardness	
Chloride Sulphate BOD, Alkalinity	
pH, Conductivity, TSS, NO2 + NO3	
Total Metals ICP + Hg + Cr6	
SUSPECTED HAZARD (see Special Instructions)	

SAMPLE CONDITION AS RECEIVED (lab use only)	
Frozen ☐ SIF Observations Yes ☐ No ☐	Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐	
INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C

WHITE - LABORATORY COPY YELLOW - CLIENT COPY	
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION	
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.	
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.	



Defence Construction Canada
ATTN: Cameron Chadwick
8 Wing
CFB Trenton
Astra ON K0K 3W0

Date Received: 10-JUL-21
Report Date: 19-JUL-21 13:16 (MT)
Version: FINAL

Client Phone: 613-392-2811

Certificate of Analysis

Lab Work Order #: L2612270
Project P.O. #: SC75765
Job Reference: TR21ENV4
C of C Numbers:
Legal Site Desc:

Nellie Gudzak
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612270-1	END RUNWAY SOUTH							
Sampled By:	CLIENT on 07-JUL-21 @ 13:47							
Matrix:	WATER							
Glycols								
Diethylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229
Ethylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229
Propylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229
Triethylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229
L2612270-2	WEST ALT-8.1							
Sampled By:	CLIENT on 07-JUL-21 @ 13:57							
Matrix:	WATER							
Glycols								
Diethylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229
Ethylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229
Propylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229
Triethylene Glycol		<5.0		5.0	mg/L	13-JUL-21	14-JUL-21	R5521229

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
GLYCOL-CL	Water	Glycol Screen	ASTM D2908-91
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 8015D and 3550C, published by the United States Environmental Protection Agency (EPA). Water samples are bath ultra-sonicated and analyzed by GC-FID direct aqueous injection.			
GLYCOL-CL	Water	Glycol Screen	EPA 3550C, EPA 8015D
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 8015D and 3550C, published by the United States Environmental Protection Agency (EPA). Water samples are bath ultra-sonicated and analyzed by GC-FID direct aqueous injection.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid weight of sample

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2612270

Report Date: 19-JUL-21

Page 1 of 2

Client: Defence Construction Canada
8 Wing CFB Trenton
Astra ON K0K 3W0
Contact: Cameron Chadwick

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
GLYCOL-CL	Water							
Batch	R5521229							
WG3575418-9 DUP		L2612270-1						
Diethylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	14-JUL-21
Ethylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	14-JUL-21
Propylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	14-JUL-21
Triethylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	14-JUL-21
WG3575418-2 LCS								
Diethylene Glycol			90.7		%		70-130	14-JUL-21
Ethylene Glycol			85.9		%		70-130	14-JUL-21
Propylene Glycol			90.9		%		70-130	14-JUL-21
Triethylene Glycol			90.0		%		70-130	14-JUL-21
WG3575418-6 LCS								
Diethylene Glycol			95.1		%		70-130	14-JUL-21
Ethylene Glycol			84.0		%		70-130	14-JUL-21
Propylene Glycol			90.5		%		70-130	14-JUL-21
Triethylene Glycol			95.6		%		70-130	14-JUL-21
WG3575418-1 MB								
Diethylene Glycol			<5.0		mg/L		5	14-JUL-21
Ethylene Glycol			<5.0		mg/L		5	14-JUL-21
Propylene Glycol			<5.0		mg/L		5	14-JUL-21
Triethylene Glycol			<5.0		mg/L		5	14-JUL-21
WG3575418-5 MB								
Diethylene Glycol			<5.0		mg/L		5	14-JUL-21
Ethylene Glycol			<5.0		mg/L		5	14-JUL-21
Propylene Glycol			<5.0		mg/L		5	14-JUL-21
Triethylene Glycol			<5.0		mg/L		5	14-JUL-21
WG3575418-10 MS		L2612270-2						
Diethylene Glycol			89.9		%		50-150	14-JUL-21
Ethylene Glycol			85.4		%		50-150	14-JUL-21
Propylene Glycol			86.1		%		50-150	14-JUL-21
Triethylene Glycol			89.7		%		50-150	14-JUL-21

Quality Control Report

Workorder: L2612270

Report Date: 19-JUL-21

Page 2 of 2

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Chain of Custody (COC) / Analytical Request Form

COC Number: 17 -

Page of



L2612270-COCF

Canada Toll Free: 1 800 688 9878

www.alsglobal.com

Report To		Contact and company name below will appear on the final report	
Company:	Defence Construction Canada	Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	
Contact:	Cameron Chadwick	Quality Control (QC) Report with Report ☒ YES ☐ NO	
Phone:	613-392-2811 x5491 Cell: 613-243-4807	☐ Compare Results to Criteria on Report - provide details below if box checked	
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Street:	8 Wing / CFB Trenton	Email 1 or Fax: Cameron Chadwick@cdc-cdc.gc.ca	
City/Province:	Astra, ON	Email 2	
Postal Code:	K0K 3W0	Email 3	
Invoice To:	Same as Report To ☒ YES ☐ NO	Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Copy of Invoice with Report:	☒ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax: Cameron Chadwick@cdc-cdc.gc.ca	
Contact:		Email 2	
Project Information			
ALS Account # / Quote #:	Oil and Gas Required Fields (client use)		
Job #:	PO#		
PO / AFE:	Major/Minor Code:		
LSD:	Requisitioner:		
Location:			
ALS Lab Work Order # (lab use only):		Sampler:	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)
	END RUNWAY SOUTH	02-07-21	1:47
	WEST ALT-811	11	1:57
Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			
NOT FIELD FILTERED			
Drinking Water (DW) Samples ¹ (client use)		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples taken from a Regulated DW System?		Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
Are samples for human consumption/ use?		Cooling Initiated ☐	
Released by:		INITIAL COOLER TEMPERATURES °C	
Date:		INITIAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		FINAL SHIPMENT RECEPTION (lab use only)	
Date:		Received by:	
Time:		Date:	
Time:		Time:	
WHITE - LABORATORY COPY YELLOW - CLIENT COPY			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Defence Construction Canada
ATTN: Cameron Chadwick
8 Wing
CFB Trenton
Astra ON K0K 3W0

Date Received: 10-JUL-21
Report Date: 23-JUL-21 17:12 (MT)
Version: FINAL

Client Phone: 613-392-2811

Certificate of Analysis

Lab Work Order #: L2612271

Project P.O. #: SC75765

Job Reference: TR21ENV4

C of C Numbers:

Legal Site Desc:

Nellie Gudzak
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612271-1 ALT 2 Sampled By: CLIENT on 07-JUL-21 @ 18:30 Matrix: WATER							
Physical Tests							
Conductivity	522		1.0	umhos/cm		10-JUL-21	R5517260
Hardness (as CaCO3)	99.0	HTC	1.3	mg/L		14-JUL-21	
pH	6.83		0.10	pH units		10-JUL-21	R5517260
Total Suspended Solids	128	DLHC	6.0	mg/L	13-JUL-21	14-JUL-21	R5521180
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	100		1.0	mg/L		17-JUL-21	R5524804
Ammonia, Total (as N)	0.026		0.010	mg/L		20-JUL-21	R5525505
Chloride (Cl)	48.8		0.50	mg/L		19-JUL-21	R5525839
Nitrate and Nitrite as N	<0.22		0.22	mg/L		13-JUL-21	
Nitrate (as N)	<0.20	DLM	0.20	mg/L		12-JUL-21	R5519798
Nitrite (as N)	<0.10	DLM	0.10	mg/L		12-JUL-21	R5519798
Sulfate (SO4)	7.26		0.30	mg/L		19-JUL-21	R5525839
Organic / Inorganic Carbon							
Total Organic Carbon	225	DLM	5.0	mg/L		21-JUL-21	R5527122
Bacteriological Tests							
Fecal Coliforms	78000000	PEHR	1000000	CFU/100mL		10-JUL-21	R5517543
Total Metals							
Aluminum (Al)-Total	0.0825		0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Antimony (Sb)-Total	0.00026		0.00010	mg/L	12-JUL-21	13-JUL-21	R5520798
Arsenic (As)-Total	0.00054		0.00010	mg/L	12-JUL-21	13-JUL-21	R5520798
Cadmium (Cd)-Total	0.000134		0.0000050	mg/L	12-JUL-21	13-JUL-21	R5520798
Calcium (Ca)-Total	30.9		0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Chromium (Cr)-Total	0.00115		0.00050	mg/L	12-JUL-21	13-JUL-21	R5520798
Copper (Cu)-Total	0.190		0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Iron (Fe)-Total	0.190		0.010	mg/L	12-JUL-21	13-JUL-21	R5520798
Lead (Pb)-Total	2.31		0.050	ug/L	12-JUL-21	13-JUL-21	R5520798
Magnesium (Mg)-Total	5.30		0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		19-JUL-21	R5525047
Nickel (Ni)-Total	0.00426		0.00050	mg/L	12-JUL-21	13-JUL-21	R5520798
Potassium (K)-Total	7.68		0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Sodium (Na)-Total	58.8		0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Zinc (Zn)-Total	0.0579		0.0030	mg/L	12-JUL-21	13-JUL-21	R5520798
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		14-JUL-21	R5522336
Aggregate Organics							
BOD	833	PEHT	2.0	mg/L		13-JUL-21	R5525189
Oil and Grease, Total	90.3		5.0	mg/L	19-JUL-21	19-JUL-21	R5525282
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							
L2612271-2 ALT 3 Sampled By: CLIENT on 07-JUL-21 @ 19:00 Matrix: WATER							
Physical Tests							
Conductivity	680		1.0	umhos/cm		10-JUL-21	R5517260

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2612271-2 ALT 3 Sampled By: CLIENT on 07-JUL-21 @ 19:00 Matrix: WATER							
Physical Tests							
Hardness (as CaCO ₃)	179	HTC	1.3	mg/L		14-JUL-21	
pH	7.41		0.10	pH units		10-JUL-21	R5517260
Total Suspended Solids	112		3.0	mg/L	13-JUL-21	14-JUL-21	R5521180
Anions and Nutrients							
Alkalinity, Total (as CaCO ₃)	255		1.0	mg/L		21-JUL-21	R5527008
Ammonia, Total (as N)	16.9	DLHC	1.0	mg/L		20-JUL-21	R5525505
Chloride (Cl)	56.2		0.50	mg/L		13-JUL-21	R5521474
Nitrate and Nitrite as N	<0.022		0.022	mg/L		13-JUL-21	
Nitrate (as N)	<0.020		0.020	mg/L		12-JUL-21	R5519798
Nitrite (as N)	<0.010		0.010	mg/L		12-JUL-21	R5519798
Sulfate (SO ₄)	11.1		0.30	mg/L		13-JUL-21	R5521474
Organic / Inorganic Carbon							
Total Organic Carbon	43.0	DLM	5.0	mg/L		21-JUL-21	R5527122
Bacteriological Tests							
Fecal Coliforms	191000	PEHR	1000	CFU/100mL		10-JUL-21	R5517543
Total Metals							
Aluminum (Al)-Total	0.245		0.0050	mg/L	12-JUL-21	13-JUL-21	R5520798
Antimony (Sb)-Total	0.00036		0.00010	mg/L	12-JUL-21	13-JUL-21	R5520798
Arsenic (As)-Total	0.00979		0.00010	mg/L	12-JUL-21	13-JUL-21	R5520798
Cadmium (Cd)-Total	0.000120		0.0000050	mg/L	12-JUL-21	13-JUL-21	R5520798
Calcium (Ca)-Total	54.2		0.50	mg/L	12-JUL-21	13-JUL-21	R5520798
Chromium (Cr)-Total	0.00085		0.00050	mg/L	12-JUL-21	13-JUL-21	R5520798
Copper (Cu)-Total	0.0727		0.0010	mg/L	12-JUL-21	13-JUL-21	R5520798
Iron (Fe)-Total	1.68		0.010	mg/L	12-JUL-21	13-JUL-21	R5520798
Lead (Pb)-Total	2.40		0.050	ug/L	12-JUL-21	13-JUL-21	R5520798
Magnesium (Mg)-Total	10.6		0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Mercury (Hg)-Total	0.0000081		0.0000050	mg/L		19-JUL-21	R5525047
Nickel (Ni)-Total	0.0284		0.00050	mg/L	12-JUL-21	13-JUL-21	R5520798
Potassium (K)-Total	11.4		0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Sodium (Na)-Total	40.2		0.050	mg/L	12-JUL-21	13-JUL-21	R5520798
Zinc (Zn)-Total	0.0319		0.0030	mg/L	12-JUL-21	13-JUL-21	R5520798
Speciated Metals							
Chromium, Hexavalent	<0.00050		0.00050	mg/L		15-JUL-21	R5523859
Aggregate Organics							
BOD	58.8	PEHT	2.0	mg/L		14-JUL-21	R5525697
Oil and Grease, Total	13.6		5.0	mg/L	19-JUL-21	19-JUL-21	R5525282
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Chromium, Hexavalent	MS-B	L2612271-2
Matrix Spike	Calcium (Ca)-Total	MS-B	L2612271-1, -2
Matrix Spike	Iron (Fe)-Total	MS-B	L2612271-1, -2
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2612271-1, -2
Matrix Spike	Potassium (K)-Total	MS-B	L2612271-1, -2
Matrix Spike	Sodium (Na)-Total	MS-B	L2612271-1, -2
Matrix Spike	Ammonia, Total (as N)	MS-B	L2612271-1, -2

Qualifiers for Sample Submission Listed:

Qualifier	Description
EHR	Exceeded Recommended Holding Time prior to receipt at the lab.

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-WT	Water	Alkalinity, Total (as CaCO ₃)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BOD-WT	Water	BOD	APHA 5210 B
--------	-------	-----	-------------

This analysis is carried out using procedures adapted from APHA Method 5210B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
------------	-------	----------------	-----------------

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
--------------	-------	-------------	----------

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510
--------------	-------	---	-----------

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B
-------	-------	--------------	-------------

Water samples can be measured directly by immersing the conductivity cell into the sample.

ETL-N2N3-WT	Water	Calculate from NO ₂ + NO ₃	APHA 4110 B
-------------	-------	--	-------------

	Fecal Coliforms	SM 9222D
--	-----------------	----------

Reference Information

FC-MF-WT Water

A 100mL volume of sample is filtered through a membrane, the membrane is placed on mFC agar and incubated at 24–2h@44.5–0.2°C. Method ID: WT-TM-1200

HARDNESS-CALC-WT Water Hardness APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-CVAA-WT Water Total Mercury in Water by CVAAS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-T-CCMS-WT Water Total Metals in Water by CRC EPA 200.2/6020A (mod) ICPMS

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT Water Nitrite in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-IC-WT Water Nitrate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

OGG-TOT-WT Water Oil and Grease, Total APHA 5520 B

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

PH-WT Water pH APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

SO4-IC-N-WT Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

SOLIDS-TSS-WT Water Suspended solids APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

TOC-WT Water Total Organic Carbon APHA 5310B

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic carbon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
----------------------------	---------------------

WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
----	---

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid weight of sample

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2612271

Report Date: 23-JUL-21

Page 1 of 7

Client: Defence Construction Canada
8 Wing CFB Trenton
Astra ON K0K 3W0

Contact: Cameron Chadwick

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-WT Water								
Batch R5524804								
WG3578092-2 LCS								
Alkalinity, Total (as CaCO ₃)			99.2		%		85-115	17-JUL-21
WG3578092-1 MB								
Alkalinity, Total (as CaCO ₃)			<1.0		mg/L		1	17-JUL-21
Batch R5527008								
WG3580456-2 LCS								
Alkalinity, Total (as CaCO ₃)			99.9		%		85-115	21-JUL-21
WG3580456-1 MB								
Alkalinity, Total (as CaCO ₃)			<1.0		mg/L		1	21-JUL-21
BOD-WT Water								
Batch R5525189								
WG3575049-3 LCS								
BOD			101.0		%		85-115	13-JUL-21
WG3575049-1 MB								
BOD			<2.0		mg/L		2	13-JUL-21
Batch R5525697								
WG3576014-3 LCS								
BOD			90.9		%		85-115	14-JUL-21
WG3576014-1 MB								
BOD			<2.0		mg/L		2	14-JUL-21
CL-IC-N-WT Water								
Batch R5521474								
WG3575144-12 LCS								
Chloride (Cl)			100.5		%		90-110	13-JUL-21
WG3575144-11 MB								
Chloride (Cl)			<0.50		mg/L		0.5	13-JUL-21
Batch R5525839								
WG3579108-7 LCS								
Chloride (Cl)			102.0		%		90-110	19-JUL-21
WG3579108-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	19-JUL-21
CR-CR6-IC-WT Water								
Batch R5522336								
WG3575930-2 LCS								
Chromium, Hexavalent			100.9		%		80-120	14-JUL-21
WG3575930-1 MB								
Chromium, Hexavalent			<0.00050		mg/L		0.0005	14-JUL-21

Quality Control Report

Workorder: L2612271

Report Date: 23-JUL-21

Page 2 of 7

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	Water							
Batch R5523859								
WG3576893-2 LCS								
Chromium, Hexavalent			102.5		%		80-120	15-JUL-21
WG3576893-1 MB								
Chromium, Hexavalent			<0.00050		mg/L		0.0005	15-JUL-21
EC-WT	Water							
Batch R5517260								
WG3573349-2 LCS								
Conductivity			99.2		%		90-110	10-JUL-21
WG3573349-1 MB								
Conductivity			<1.0		umhos/cm		1	10-JUL-21
FC-MF-WT	Water							
Batch R5517543								
WG3573266-1 MB								
Fecal Coliforms			0		CFU/100mL		1	10-JUL-21
HG-T-CVAA-WT	Water							
Batch R5525047								
WG3578585-2 LCS								
Mercury (Hg)-Total			110.0		%		80-120	19-JUL-21
WG3578585-1 MB								
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	19-JUL-21
MET-T-CCMS-WT	Water							
Batch R5520798								
WG3573653-2 LCS								
Aluminum (Al)-Total			98.0		%		80-120	13-JUL-21
Antimony (Sb)-Total			108.3		%		80-120	13-JUL-21
Arsenic (As)-Total			99.8		%		80-120	13-JUL-21
Cadmium (Cd)-Total			99.1		%		80-120	13-JUL-21
Calcium (Ca)-Total			98.7		%		80-120	13-JUL-21
Chromium (Cr)-Total			97.5		%		80-120	13-JUL-21
Copper (Cu)-Total			96.7		%		80-120	13-JUL-21
Iron (Fe)-Total			95.2		%		80-120	13-JUL-21
Lead (Pb)-Total			95.3		%		80-120	13-JUL-21
Magnesium (Mg)-Total			95.5		%		80-120	13-JUL-21
Nickel (Ni)-Total			95.7		%		80-120	13-JUL-21
Potassium (K)-Total			95.8		%		80-120	13-JUL-21



Quality Control Report

Workorder: L2612271

Report Date: 23-JUL-21

Page 3 of 7

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	Water							
Batch	R5520798							
WG3573653-2	LCS							
Sodium (Na)-Total			97.2		%		80-120	13-JUL-21
Zinc (Zn)-Total			100.3		%		80-120	13-JUL-21
WG3573653-1	MB							
Aluminum (Al)-Total			<0.0050		mg/L		0.005	13-JUL-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	13-JUL-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	13-JUL-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	13-JUL-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	13-JUL-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Iron (Fe)-Total			<0.010		mg/L		0.01	13-JUL-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	13-JUL-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	14-JUL-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	13-JUL-21
Potassium (K)-Total			<0.050		mg/L		0.05	13-JUL-21
Sodium (Na)-Total			<0.050		mg/L		0.05	13-JUL-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	13-JUL-21
NH3-F-WT	Water							
Batch	R5525505							
WG3577835-2	LCS							
Ammonia, Total (as N)			104.3		%		85-115	19-JUL-21
WG3577835-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	19-JUL-21
NO2-IC-WT	Water							
Batch	R5519798							
WG3574269-17	LCS							
Nitrite (as N)			100.6		%		90-110	12-JUL-21
WG3574269-22	LCS							
Nitrite (as N)			100.6		%		90-110	12-JUL-21
WG3574269-16	MB							
Nitrite (as N)			<0.010		mg/L		0.01	12-JUL-21
WG3574269-21	MB							
Nitrite (as N)			<0.010		mg/L		0.01	12-JUL-21
NO3-IC-WT	Water							



Environmental

Quality Control Report

Workorder: L2612271

Report Date: 23-JUL-21

Page 5 of 7

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TOC-WT	Water							
Batch	R5527122							
WG3575440-2	LCS							
Total Organic Carbon			105.0		%		80-120	21-JUL-21
WG3575440-1	MB							
Total Organic Carbon			<0.50		mg/L		0.5	21-JUL-21

Quality Control Report

Workorder: L2612271

Report Date: 23-JUL-21

Page 6 of 7

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Quality Control Report

Workorder: L2612271

Report Date: 23-JUL-21

Page 7 of 7

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Bacteriological Tests							
Fecal Coliforms	1	07-JUL-21 18:30	10-JUL-21 11:45	48	65	hours	EHTR
	2	07-JUL-21 19:00	10-JUL-21 11:45	48	65	hours	EHTR
Aggregate Organics							
BOD	1	07-JUL-21 18:30	13-JUL-21 00:00	4	5	days	EHT
	2	07-JUL-21 19:00	14-JUL-21 00:00	4	6	days	EHT

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.

Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2612271 were received on 10-JUL-21 10:30.

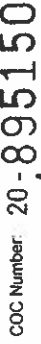
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



L2612271-COFC



Page 1

10

Report To Contact and company name below will appear on the final report Company: <u>DCC</u> Contact: <u>Camaron Chadwick</u> Phone: <u>613-992-7811 x1544</u> Company address below will appear on the final report Street: <u>8 Wms London</u> City/Province: <u>Ontario</u> Postal Code: <u>L6K 3Z6</u>		Report Recipients Select Report Format: ☒ PDF ☐ EXCEL ☐ BDD (DIGITAL) Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A ☐ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: <u>Camaron Chadwick</u> Email 2: Email 3:		Turnaround Time (TAT) Requested ☒ Routine (R) If received by 3pm M-F - no surcharges apply ☐ 4 day (P4) If received by 3pm M-F - 20% rush surcharge minimum ☐ 3 day (P3) If received by 3pm M-F - 50% rush surcharge minimum ☐ 2 day (P2) If received by 3pm M-F - 50% rush surcharge minimum ☐ 1 day (P1) If received by 3pm M-F - 100% rush surcharge minimum ☐ Same day (P0) If received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests Date and Time Requested for all EAP TATs:	
Invoice To Same as Report To ☒ YES ☐ NO Copy of Invoice with Report ☒ YES ☐ NO		Invoice Recipients Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: Email 2: Email 3:			
Company: Contact:		Project Information ALS Account # / Quote #: <u>2261227</u> Job #: <u>ART 2</u> PO / AFE: <u>ART 3</u> LSD:			
ALS Lab Work Order # (ALS use only): <u>2261227</u> Sample Identification and/or Coordinates (This description will appear on the report) <u>not field filtered</u>		Sampler: ALS Contact: Date (dd-mm-yy): <u>07/09/21</u> Time (hh:mm): <u>18:30</u> Sample Type: <u>water</u> <u>07/09/21</u> <u>19:00</u> <u>water</u>			
Drinking Water (DW) Samples (client use) Are samples taken from a Regulated DW System? ☐ YES ☐ NO Are samples for human consumption use? ☐ YES ☐ NO		Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only) 			
SHIPPING RELEASE (client use) Released by: _____ Date: _____		INITIAL SHIPMENT RECEPTION (ALS use only) Received by: _____ Date: _____			

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (RDW) System, please submit using an Authorized DW COC form.



Defence Construction Canada
ATTN: Cameron Chadwick
8 Wing
CFB Trenton
Astra ON K0K 3W0

Date Received: 16-JUL-21
Report Date: 26-JUL-21 14:54 (MT)
Version: FINAL

Client Phone: 613-392-2811

Certificate of Analysis

Lab Work Order #: L2614879
Project P.O. #: SC75756
Job Reference: TR21ENV14
C of C Numbers: 20-895153
Legal Site Desc:

Nellie Gudzak
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614879-1 ALT 2 Sampled By: CLIENT on 13-JUL-21 @ 20:10 Matrix: WATER							
Physical Tests							
Conductivity	509		1.0	umhos/cm		17-JUL-21	R5524804
Hardness (as CaCO3)	116	HTC	1.3	mg/L		20-JUL-21	
pH	7.66		0.10	pH units		17-JUL-21	R5524804
Total Suspended Solids	45.6		3.0	mg/L	20-JUL-21	21-JUL-21	R5526231
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	188		1.0	mg/L		17-JUL-21	R5524804
Ammonia, Total (as N)	12.2	DLHC	1.0	mg/L		23-JUL-21	R5528108
Chloride (Cl)	28.7		0.50	mg/L		19-JUL-21	R5525961
Nitrate and Nitrite as N	<0.022		0.022	mg/L		20-JUL-21	
Nitrate (as N)	<0.020		0.020	mg/L		19-JUL-21	R5525961
Nitrite (as N)	<0.010		0.010	mg/L		19-JUL-21	R5525961
Sulfate (SO4)	7.80		0.30	mg/L		19-JUL-21	R5525961
Organic / Inorganic Carbon							
Total Organic Carbon	44.6	DLM	2.5	mg/L		22-JUL-21	R5527874
Bacteriological Tests							
Fecal Coliforms	6900000	PEHR	100000	CFU/100mL		17-JUL-21	R5524636
Total Metals							
Aluminum (Al)-Total	0.153		0.0050	mg/L	18-JUL-21	19-JUL-21	R5525456
Arsenic (As)-Total	0.00038		0.00010	mg/L	18-JUL-21	19-JUL-21	R5525456
Cadmium (Cd)-Total	0.000129		0.0000050	mg/L	18-JUL-21	19-JUL-21	R5525456
Calcium (Ca)-Total	37.0		0.50	mg/L	18-JUL-21	19-JUL-21	R5525456
Chromium (Cr)-Total	0.00084		0.00050	mg/L	18-JUL-21	19-JUL-21	R5525456
Copper (Cu)-Total	0.112		0.0010	mg/L	18-JUL-21	19-JUL-21	R5525456
Iron (Fe)-Total	0.189		0.010	mg/L	18-JUL-21	19-JUL-21	R5525456
Lead (Pb)-Total	1.32		0.050	ug/L	18-JUL-21	19-JUL-21	R5525456
Magnesium (Mg)-Total	5.79		0.050	mg/L	18-JUL-21	19-JUL-21	R5525456
Mercury (Hg)-Total	<0.0000050	SRU	0.0000050	mg/L		21-JUL-21	R5526499
Nickel (Ni)-Total	0.00134		0.00050	mg/L	18-JUL-21	19-JUL-21	R5525456
Potassium (K)-Total	6.67		0.050	mg/L	18-JUL-21	19-JUL-21	R5525456
Sodium (Na)-Total	22.5		0.050	mg/L	18-JUL-21	19-JUL-21	R5525456
Zinc (Zn)-Total	0.0345		0.0030	mg/L	18-JUL-21	19-JUL-21	R5525456
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		19-JUL-21	R5525865
Aggregate Organics							
BOD	48.3		2.0	mg/L		16-JUL-21	R5526785
Oil and Grease, Total	17.5		5.0	mg/L	21-JUL-21	21-JUL-21	R5527872
Phenols (4AAP)	14	DLM	10	ug/L		20-JUL-21	R5526455
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							
L2614879-2 ALT 3 Sampled By: CLIENT on 13-JUL-21 @ 20:30 Matrix: WATER							
Physical Tests							
Conductivity	654		1.0	umhos/cm		17-JUL-21	R5524804

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2614879-2 ALT 3							
Sampled By: CLIENT on 13-JUL-21 @ 20:30							
Matrix: WATER							
Physical Tests							
Hardness (as CaCO ₃)	158	HTC	1.3	mg/L		20-JUL-21	
pH	7.47		0.10	pH units		17-JUL-21	R5524804
Total Suspended Solids	39.0		3.0	mg/L	20-JUL-21	21-JUL-21	R5526231
Anions and Nutrients							
Alkalinity, Total (as CaCO ₃)	212		1.0	mg/L		17-JUL-21	R5524804
Ammonia, Total (as N)	7.1	DLHC	1.0	mg/L		23-JUL-21	R5528108
Chloride (Cl)	65.3		0.50	mg/L		19-JUL-21	R5525961
Nitrate and Nitrite as N	0.076		0.022	mg/L		20-JUL-21	
Nitrate (as N)	<0.020		0.020	mg/L		19-JUL-21	R5525961
Nitrite (as N)	0.076		0.010	mg/L		19-JUL-21	R5525961
Sulfate (SO ₄)	<0.30		0.30	mg/L		19-JUL-21	R5525961
Organic / Inorganic Carbon							
Total Organic Carbon	54.0	DLM	2.5	mg/L		22-JUL-21	R5527874
Bacteriological Tests							
Fecal Coliforms	420	PEHR	10	CFU/100mL		17-JUL-21	R5524636
Total Metals							
Aluminum (Al)-Total	0.211		0.0050	mg/L	18-JUL-21	19-JUL-21	R5525456
Arsenic (As)-Total	0.00938		0.00010	mg/L	18-JUL-21	19-JUL-21	R5525456
Cadmium (Cd)-Total	0.0000774		0.0000050	mg/L	18-JUL-21	19-JUL-21	R5525456
Calcium (Ca)-Total	42.9		0.50	mg/L	18-JUL-21	19-JUL-21	R5525456
Chromium (Cr)-Total	0.00074		0.00050	mg/L	18-JUL-21	19-JUL-21	R5525456
Copper (Cu)-Total	0.0625		0.0010	mg/L	18-JUL-21	19-JUL-21	R5525456
Iron (Fe)-Total	1.81		0.010	mg/L	18-JUL-21	19-JUL-21	R5525456
Lead (Pb)-Total	2.74		0.050	ug/L	18-JUL-21	19-JUL-21	R5525456
Magnesium (Mg)-Total	12.3		0.050	mg/L	18-JUL-21	19-JUL-21	R5525456
Mercury (Hg)-Total	<0.0000050		0.0000050	mg/L		21-JUL-21	R5526499
Nickel (Ni)-Total	0.0323		0.00050	mg/L	18-JUL-21	19-JUL-21	R5525456
Potassium (K)-Total	11.2		0.050	mg/L	18-JUL-21	19-JUL-21	R5525456
Sodium (Na)-Total	53.0		0.050	mg/L	18-JUL-21	19-JUL-21	R5525456
Zinc (Zn)-Total	0.0204		0.0030	mg/L	18-JUL-21	19-JUL-21	R5525456
Speciated Metals							
Chromium, Hexavalent	<0.00050	RRR	0.00050	mg/L		19-JUL-21	R5525865
Aggregate Organics							
BOD	56.0		2.0	mg/L		16-JUL-21	R5526785
Oil and Grease, Total	6.2		5.0	mg/L	21-JUL-21	21-JUL-21	R5527872
Phenols (4AAP)	<10	DLM	10	ug/L		20-JUL-21	R5526455
Report Remarks : Cr6: Sample received unpreserved. Parameter exceeded hold time prior to analysis.							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Aluminum (Al)-Total	MS-B	L2614879-1, -2
Matrix Spike	Calcium (Ca)-Total	MS-B	L2614879-1, -2
Matrix Spike	Copper (Cu)-Total	MS-B	L2614879-1, -2
Matrix Spike	Iron (Fe)-Total	MS-B	L2614879-1, -2
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2614879-1, -2
Matrix Spike	Potassium (K)-Total	MS-B	L2614879-1, -2
Matrix Spike	Sodium (Na)-Total	MS-B	L2614879-1, -2
Matrix Spike	Zinc (Zn)-Total	MS-B	L2614879-1, -2
Matrix Spike	Ammonia, Total (as N)	MS-B	L2614879-1, -2
Matrix Spike	Nitrate (as N)	MS-B	L2614879-1, -2
Matrix Spike	Total Organic Carbon	MS-B	L2614879-1, -2

Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
RRR	Refer to Report Remarks for issues regarding this analysis
SRU	Sample Received Unpreserved. Results may be biased low for indicated parameter(s)

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-WT	Water	Alkalinity, Total (as CaCO ₃)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BOD-WT	Water	BOD	APHA 5210 B
--------	-------	-----	-------------

This analysis is carried out using procedures adapted from APHA Method 5210B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
------------	-------	----------------	-----------------

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
--------------	-------	-------------	----------

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510
--------------	-------	---	-----------

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B
-------	-------	--------------	-------------

Water samples can be measured directly by immersing the conductivity cell into the sample.

ETL-N2N3-WT	Water	Calculate from NO ₂ + NO ₃	APHA 4110 B
-------------	-------	--	-------------

FC-MF-WT	Water	Fecal Coliforms	SM 9222D
----------	-------	-----------------	----------

Reference Information

A 100mL volume of sample is filtered through a membrane, the membrane is placed on mFC agar and incubated at 24–2h@44.5–0.2°C. Method ID: WT-TM-1200

HARDNESS-CALC-WT Water Hardness APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-CVAA-WT Water Total Mercury in Water by CVAAS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-T-CCMS-WT Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT Water Nitrite in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-IC-WT Water Nitrate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

OGG-TOT-WT Water Oil and Grease, Total APHA 5520 B

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

PH-WT Water pH APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

PHENOLS-4AAP-WT Water Phenol (4AAP) EPA 9066

An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.

SO4-IC-N-WT Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

SOLIDS-TSS-WT Water Suspended solids APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

TOC-WT Water Total Organic Carbon APHA 5310B

Sample is injected into a heated reaction chamber which is packed with an oxidative catalyst. The water is vaporized and the organic carbon is oxidized to carbon dioxide. The carbon dioxide is transported in a carrier gas and is measured by a non-dispersive infrared detector.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

20-895153

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid weight of sample

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2614879

Report Date: 26-JUL-21

Page 1 of 6

Client: Defence Construction Canada
8 Wing CFB Trenton
Astra ON K0K 3W0

Contact: Cameron Chadwick

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-WT	Water							
Batch	R5524804							
WG3578092-2	LCS							
Alkalinity, Total (as CaCO ₃)			99.2		%		85-115	17-JUL-21
WG3578092-1	MB							
Alkalinity, Total (as CaCO ₃)			<1.0		mg/L		1	17-JUL-21
BOD-WT	Water							
Batch	R5526785							
WG3577496-15	LCS							
BOD			90.4		%		85-115	16-JUL-21
WG3577496-13	MB							
BOD			<2.0		mg/L		2	16-JUL-21
CL-IC-N-WT	Water							
Batch	R5525961							
WG3579106-2	LCS							
Chloride (Cl)			100.1		%		90-110	19-JUL-21
WG3579106-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	19-JUL-21
CR-CR6-IC-WT	Water							
Batch	R5525865							
WG3578950-2	LCS							
Chromium, Hexavalent			101.3		%		80-120	19-JUL-21
WG3578950-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	19-JUL-21
EC-WT	Water							
Batch	R5524804							
WG3578092-2	LCS							
Conductivity			100.4		%		90-110	17-JUL-21
WG3578092-1	MB							
Conductivity			<1.0		umhos/cm		1	17-JUL-21
FC-MF-WT	Water							
Batch	R5524636							
WG3578046-1	MB							
Fecal Coliforms			0		CFU/100mL		1	17-JUL-21
HG-T-CVAA-WT	Water							

Quality Control Report

Workorder: L2614879

Report Date: 26-JUL-21

Page 2 of 6

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WT	Water							
Batch	R5526499							
WG3579983-2	LCS							
Mercury (Hg)-Total			101.0		%		80-120	21-JUL-21
WG3579983-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	21-JUL-21
MET-T-CCMS-WT	Water							
Batch	R5525456							
WG3578388-2	LCS							
Aluminum (Al)-Total			100.3		%		80-120	19-JUL-21
Arsenic (As)-Total			100.8		%		80-120	19-JUL-21
Cadmium (Cd)-Total			98.8		%		80-120	19-JUL-21
Calcium (Ca)-Total			95.4		%		80-120	19-JUL-21
Chromium (Cr)-Total			99.5		%		80-120	19-JUL-21
Copper (Cu)-Total			98.8		%		80-120	19-JUL-21
Iron (Fe)-Total			93.4		%		80-120	19-JUL-21
Lead (Pb)-Total			103.1		%		80-120	19-JUL-21
Magnesium (Mg)-Total			106.3		%		80-120	19-JUL-21
Nickel (Ni)-Total			97.9		%		80-120	19-JUL-21
Potassium (K)-Total			94.7		%		80-120	19-JUL-21
Sodium (Na)-Total			96.0		%		80-120	19-JUL-21
Zinc (Zn)-Total			95.3		%		80-120	19-JUL-21
WG3578388-1	MB							
Aluminum (Al)-Total			<0.0050		mg/L		0.005	19-JUL-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	19-JUL-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	19-JUL-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	19-JUL-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	19-JUL-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	19-JUL-21
Iron (Fe)-Total			<0.010		mg/L		0.01	19-JUL-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	19-JUL-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	19-JUL-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	19-JUL-21
Potassium (K)-Total			<0.050		mg/L		0.05	19-JUL-21
Sodium (Na)-Total			<0.050		mg/L		0.05	19-JUL-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	19-JUL-21
NH3-F-WT	Water							

Quality Control Report

Workorder: L2614879

Report Date: 26-JUL-21

Page 3 of 6

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-F-WT	Water							
Batch R5528108								
WG3578501-2 LCS								
Ammonia, Total (as N)			103.6		%		85-115	23-JUL-21
WG3578501-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	23-JUL-21
NO2-IC-WT	Water							
Batch R5525961								
WG3579106-2 LCS								
Nitrite (as N)			99.95		%		90-110	19-JUL-21
WG3579106-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	19-JUL-21
NO3-IC-WT	Water							
Batch R5525961								
WG3579106-2 LCS								
Nitrate (as N)			99.6		%		90-110	19-JUL-21
WG3579106-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	19-JUL-21
OGG-TOT-WT	Water							
Batch R5527872								
WG3580648-2 LCS								
Oil and Grease, Total			91.7		%		70-130	21-JUL-21
WG3580648-1 MB								
Oil and Grease, Total			<5.0		mg/L		5	21-JUL-21
PH-WT	Water							
Batch R5524804								
WG3578092-2 LCS								
pH			7.00		pH units		6.9-7.1	17-JUL-21
PHENOLS-4AAP-WT	Water							
Batch R5526455								
WG3578575-2 LCS								
Phenols (4AAP)			100.2		%		85-115	20-JUL-21
WG3578575-1 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	20-JUL-21
SO4-IC-N-WT	Water							



Quality Control Report

Workorder: L2614879

Report Date: 26-JUL-21

Page 4 of 6

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WT	Water							
Batch	R5525961							
WG3579106-2	LCS							
Sulfate (SO4)			100.8		%		90-110	19-JUL-21
WG3579106-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	19-JUL-21
SOLIDS-TSS-WT	Water							
Batch	R5526231							
WG3579259-2	LCS							
Total Suspended Solids			102.0		%		85-115	21-JUL-21
WG3579259-1	MB							
Total Suspended Solids			<3.0		mg/L		3	21-JUL-21
TOC-WT	Water							
Batch	R5527874							
WG3578651-2	LCS							
Total Organic Carbon			101.2		%		80-120	22-JUL-21
WG3578651-1	MB							
Total Organic Carbon			<0.50		mg/L		0.5	22-JUL-21

Quality Control Report

Workorder: L2614879

Report Date: 26-JUL-21

Page 5 of 6

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Quality Control Report

Workorder: L2614879

Report Date: 26-JUL-21

Page 6 of 6

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Bacteriological Tests							
Fecal Coliforms	1	13-JUL-21 20:10	17-JUL-21 08:00	48	84	hours	EHTR
	2	13-JUL-21 20:30	17-JUL-21 08:00	48	84	hours	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2614879 were received on 16-JUL-21 09:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Study (COC) / Analytical Request Form

COC Number: 20-895153

Page 1 of 1

Canada Toll Free: 1 800 668 9878

L2614879-COFC

www.alsglobal.ca

Report To		Contact and company name below will appear on the final report	
Company:	BCCL	Select Report Format: ☒ PDF ☐ EXCEL ☐ BOD (DIGITAL)	
Contact:	Carveron Chabouch	Merge QC/QCI Reports with COA ☒ YES ☐ NO ☐ N/A	
Phone:	613 271-7907	☐ Compare Results to Criteria on Report - provide details below if box checked	
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX	
Street:	2010 Trenton	Email 1 or Fax	
City/Province:	OTTAWA ON	Email 2	
Postal Code:	K1H 3N9	Email 3	
Invoice To	Same as Report To	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	
Copy of Invoice with Report		Email 1 or Fax	
Company:		Email 2	
Contact:		Oil and Gas Required Fields (client use)	
Project Information		AFECost Center	
ALS Account # / Quote #		Major/Minor Code	
Job #		Requisitioner	
PO / AFE		Location:	
LSD:		ALS Contact:	
ALS Lab Work Order # (ALS use only)		Date (dd-mm-yy)	
Sample Identification and/or Coordinates (This description will appear on the report)		Time (hh:mm)	
AUT 2		20:10	
AUT 3		20:30	
Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)		Sampler:	
Drinking Water (DW) Samples (client use)		Sample Type	
Are samples taken from a Regulated DW System?		water	
☐ YES ☐ NO			
Are samples for human consumption use?			
☐ YES ☐ NO			
SHIPMENT RELEASE (client use)		Date:	
Released by:		Date:	
Initial Shipment Reception (ALS use only)		Date:	
Revised by:		Date:	
Time		Time	
WHITE - LABORATORY COPY		YELLOW - CLIENT COPY	

Turnaround Time (TAT) Requested		Analysis Request	
☒ Routine (R) if received by 3pm M-F - no surcharges apply		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below	
☐ 4 day (M) if received by 3pm M-F - 20% rush surcharge minimum			
☐ 3 day (P) if received by 3pm M-F - 25% rush surcharge minimum			
☐ 2 day (P) if received by 3pm M-F - 50% rush surcharge minimum			
☐ 1 day (E) if received by 3pm M-F - 100% rush surcharge minimum			
☐ Same day (E) if received by 10am M-F - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests			
For all tests with rush TATs requested, please contact your AM to confirm availability.			

SUSPECTED HAZARD (see notes)		EXTENDED STORAGE REQUIRED	
SAMPLES ON HOLD			
NUMBER OF CONTAINERS			
XX Can Chain TSS			
XX Thermal			
XX fecal coliforms			
XX nitrates			
XX BOD			
XX Oil + Grease			

SAMPLE RECEIPT DETAILS (ALS use only)		COOLING INITIATED	
Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACK ☐ FROZEN		☐ YES ☐ NO	
Submission Comments: identified on Sample Receipt Notification			
Cooler Custody: Seals Intact ☐ YES ☐ NO		Sample Custody: Seals Intact ☐ YES ☐ NO	
INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
38		38	
Date: 11/19/21		Time: 11:00	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

