CERTIFICATE OF ANALYSIS

Work Order	:	**WT2517876**		
Client	:	**Defence Construction Canada**	Laboratory	: ALS Environmental - Waterloo
Contact	:	Cameron Chadwick	Account Manager	: Andrew Martin
Address	:	8 Wing / CFB Trenton 14 Alert Boulevard Astra Ontario Canada K0K 3W0	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	:	613 392 2811 ext 5491	E-mail	: andrew.martin@alsglobal.com
Project	:	TR23ENV9 SC80739	Telephone	: +1 519 886 6910
PO	:	----	Date Samples Received	: 05-Jul-2025 10:30
C-O-C number	:	----	Date Analysis Commenced	: 07-Jul-2025
Sampler	:	client	Issue Date	: 11-Jul-2025 11:56
Site	:	CFS Alert		
Quote number	:	WT23-DOND200-3		
No. of samples received	:	3		
No. of samples analysed	:	3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
David Tremblett		VOC, Waterloo, Ontario
Jeremy Gingras		Organics, Waterloo, Ontario
Rachel Cameron		Organics, Waterloo, Ontario
Walt Kippenhuck		Metals, Waterloo, Ontario
Walt Kippenhuck		Inorganics, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	*Description*
mg/L	milligrams per litre
pH units	pH units
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre

<: less than.
>: greater than.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	ALT-8 ----	ALT-8.1 ----	ALT-9 ----	----	----
					Client sampling date / time	01-Jul-2025 08:35	01-Jul-2025 08:42	01-Jul-2025 09:00	----	----
						WT2517876-001	WT2517876-002	WT2517876-003	----	----
						Result	Result	Result	----	----
Physical Tests										
Conductivity	----	E100/WT	2.0	µS/cm		135	154	146	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/WT	0.50	mg/L		60.3	73.4	66.0	----	----
pH	----	E108/WT	0.10	pH units		8.01	8.12	8.06	----	----
Solids, total suspended [TSS]	----	E160/WT	3.0	mg/L		<3.0	<3.0	<3.0	----	----
Alkalinity, total (as CaCO3)	----	E290/WT	2.0	mg/L		60.2	65.4	60.6	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		<0.0050	<0.0050	<0.0050	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		<0.020	<0.020	<0.020	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.010	<0.010	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		3.28	4.17	5.78	----	----
Organic / Inorganic Carbon										
Carbon, total organic [TOC]	----	E355-L/WT	0.50	mg/L		2.26	3.08	2.10	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L		0.0763	0.0837	0.0851	----	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L		0.00240	0.00228	0.00223	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		0.0000074	0.0000062	<0.0000050	----	----
Calcium, total	7440-70-2	E420/WT	0.050	mg/L		17.5	22.8	20.1	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		0.00114	<0.00050	<0.00050	----	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		0.00240	0.00255	0.00334	----	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L		0.094	0.100	0.096	----	----
Lead, total	7439-92-1	E420/WT	0.050	µg/L		2.76	0.317	0.194	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: ALT-8 ----	ALT-8.1 ----	ALT-9 ----	----	----
					Client sampling date / time: 01-Jul-2025 08:35	01-Jul-2025 08:42	01-Jul-2025 09:00	----	----
					WT2517876-001	WT2517876-002	WT2517876-003	----	----
					Result	Result	Result	----	----
Total Metals									
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L	4.04	4.01	3.84	----	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L	0.00142	0.00205	0.00179	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L	2.01	1.28	1.14	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L	3.21	1.68	2.97	----	----
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L	0.0097	0.0041	<0.0030	----	----
Aggregate Organics									
Oil & grease (gravimetric)	----	E567/WT	5.0	mg/L	<5.0	<5.0	<5.0	----	----
Oil & grease, animal/vegetable (gravimetric)	----	EC567A.SG/WT	5.0	mg/L	<5.0	<5.0	<5.0	----	----
Oil & grease, mineral (gravimetric)	----	E567SG/WT	5.0	mg/L	<5.0	<5.0	<5.0	----	----
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L	0.0019	0.0062	0.0034	----	----
Volatile Organic Compounds									
Benzene	71-43-2	E611A/WT	0.50	µg/L	<0.50	<0.50	<0.50	----	----
Ethylbenzene	100-41-4	E611A/WT	0.50	µg/L	<0.50	<0.50	<0.50	----	----
Toluene	108-88-3	E611A/WT	0.50	µg/L	<0.50	<0.50	<0.50	----	----
Xylene, m+p-	179601-23-1	E611A/WT	0.40	µg/L	<0.40	<0.40	<0.40	----	----
Xylene, o-	95-47-6	E611A/WT	0.30	µg/L	<0.30	<0.30	<0.30	----	----
Xylenes, total	1330-20-7	E611A/WT	0.50	µg/L	<0.50	<0.50	<0.50	----	----
BTEX, total	----	E611A/WT	1.0	µg/L	<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	ALT-8 ----	ALT-8.1 ----	ALT-9 ----	----	----
					Client sampling date / time	01-Jul-2025 08:35	01-Jul-2025 08:42	01-Jul-2025 09:00	----	----
						WT2517876-001	WT2517876-002	WT2517876-003	----	----
						Result	Result	Result	----	----
Hydrocarbons										
F1 (C6-C10)	----	E581.F1-L/WT	25	µg/L		<25	<25	<25	----	----
F2 (C10-C16)	----	E601/WT	100	µg/L		<100	<100	<100	----	----
F3 (C16-C34)	----	E601/WT	250	µg/L		<250	<250	<250	----	----
F4 (C34-C50)	----	E601/WT	250	µg/L		<250	<250	<250	----	----
F1-BTEX	----	EC580/WT	25	µg/L		<25	<25	<25	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/WT	370	µg/L		<370	<370	<370	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601/WT	1.0	%		91.8	97.2	86.7	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.F1-L/WT	1.0	%		85.0	93.5	83.1	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611A/WT	1.0	%		93.3	100	97.3	----	----
Difluorobenzene, 1,4-	540-36-3	E611A/WT	1.0	%		98.2	99.5	99.7	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Acenaphthylene	208-96-8	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Acridine	260-94-6	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Anthracene	120-12-7	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Benz(a)anthracene	56-55-3	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Benzo(a)pyrene	50-32-8	E641A-L/WT	0.0050	µg/L		<0.0050	<0.0050	<0.0050	----	----
Benzo(b+j)fluoranthene	n/a	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A-L/WT	0.015	µg/L		<0.015	<0.015	<0.015	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	ALT-8 ----	ALT-8.1 ----	ALT-9 ----	----	----
					Client sampling date / time	01-Jul-2025 08:35	01-Jul-2025 08:42	01-Jul-2025 09:00	----	----
						WT2517876-001	WT2517876-002	WT2517876-003	----	----
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons										
Benzo(e)pyrene	192-97-2	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Benzo(g,h,i)perylene	191-24-2	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Benzo(k)fluoranthene	207-08-9	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Chrysene	218-01-9	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Dibenz(a,h)anthracene	53-70-3	E641A-L/WT	0.0050	µg/L		<0.0050	<0.0050	<0.0050	----	----
Fluoranthene	206-44-0	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Fluorene	86-73-7	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Methylnaphthalene, 1-	90-12-0	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Methylnaphthalene, 1+2-	----	E641A-L/WT	0.015	µg/L		<0.015	<0.015	<0.015	----	----
Methylnaphthalene, 2-	91-57-6	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Naphthalene	91-20-3	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Perylene	198-55-0	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Phenanthrene	85-01-8	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Pyrene	129-00-0	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Quinoline	91-22-5	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.014 DLM	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L/WT	0.010	µg/L		<0.010	<0.010	<0.010	----	----
PAHs, high molecular weight (BC AWQ)	n/a	E641A-L/WT	0.030	µg/L		<0.030	<0.030	<0.030	----	----
PAHs, low molecular weight (BC AWQ)	n/a	E641A-L/WT	0.030	µg/L		<0.030	<0.030	<0.030	----	----
PAHs, total (CCME sewer 18)	n/a	E641A-L/WT	0.045	µg/L		<0.045	<0.045	<0.045	----	----
PAHs, total (EPA 16)	n/a	E641A-L/WT	0.040	µg/L		<0.040	<0.040	<0.040	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	ALT-8 ----	ALT-8.1 ----	ALT-9 ----	----	----
					Client sampling date / time	01-Jul-2025 08:35	01-Jul-2025 08:42	01-Jul-2025 09:00	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		WT2517876-001	WT2517876-002	WT2517876-003	----	----
						Result	Result	Result	----	----
Polycyclic Aromatic Hydrocarbons										
PAHs, total (P2MMP)	n/a	E641A-L/WT	0.040	µg/L		<0.040	<0.040	<0.040	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A-L/WT	0.1	%		91.4	96.0	89.4	----	----
Naphthalene-d8	1146-65-2	E641A-L/WT	0.1	%		94.1	98.0	89.6	----	----
Phenanthrene-d10	1517-22-2	E641A-L/WT	0.1	%		100.0	104	96.0	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS Canada Ltd.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2517876**	Page	: 1 of 15
Client	: **Defence Construction Canada**	Laboratory	: ALS Environmental - Waterloo
Contact	: Cameron Chadwick	Account Manager	: Andrew Martin
Address	: 8 Wing / CFB Trenton 14 Alert Boulevard Astra ON Canada K0K 3W0	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 613 392 2811 ext 5491	Telephone	: +1 519 886 6910
Project	: TR23ENV9 SC80739	Date Samples Received	: 05-Jul-2025 10:30
PO	: ----	Issue Date	: 11-Jul-2025 11:57
C-O-C number	: ----		
Sampler	: client		
Site	: CFS Alert		
Quote number	: WT23-DOND200-3		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
ALT-8	E567SG	01-Jul-2025	08-Jul-2025	28 days	7 days	✓	10-Jul-2025	28 days	7 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
ALT-8.1	E567SG	01-Jul-2025	08-Jul-2025	28 days	7 days	✓	10-Jul-2025	28 days	7 days	✓
Aggregate Organics : Mineral Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
ALT-9	E567SG	01-Jul-2025	08-Jul-2025	28 days	7 days	✓	10-Jul-2025	28 days	7 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
ALT-8	E567	01-Jul-2025	08-Jul-2025	28 days	7 days	✓	10-Jul-2025	28 days	7 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
ALT-8.1	E567	01-Jul-2025	08-Jul-2025	28 days	7 days	✓	10-Jul-2025	28 days	7 days	✓
Aggregate Organics : Oil & Grease by Gravimetry										
Amber glass (hydrochloric acid)										
ALT-9	E567	01-Jul-2025	08-Jul-2025	28 days	7 days	✓	10-Jul-2025	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-8	E562	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	08-Jul-2025	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-8.1	E562	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	08-Jul-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-9	E562	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	08-Jul-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-8	E298	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	07-Jul-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-8.1	E298	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	07-Jul-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-9	E298	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	07-Jul-2025	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
ALT-8	E235.NO3	01-Jul-2025	05-Jul-2025	7 days	4 days	✓	08-Jul-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
ALT-8.1	E235.NO3	01-Jul-2025	05-Jul-2025	7 days	4 days	✓	08-Jul-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
ALT-9	E235.NO3	01-Jul-2025	05-Jul-2025	7 days	4 days	✓	08-Jul-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
ALT-8	E235.NO2	01-Jul-2025	05-Jul-2025	7 days	4 days	✓	08-Jul-2025	7 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
ALT-8.1	E235.NO2	01-Jul-2025	05-Jul-2025	7 days	4 days	✓	08-Jul-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
ALT-9	E235.NO2	01-Jul-2025	05-Jul-2025	7 days	4 days	✓	08-Jul-2025	7 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
ALT-8	E235.SO4	01-Jul-2025	05-Jul-2025	28 days	4 days	✓	08-Jul-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
ALT-8.1	E235.SO4	01-Jul-2025	05-Jul-2025	28 days	4 days	✓	08-Jul-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
ALT-9	E235.SO4	01-Jul-2025	05-Jul-2025	28 days	4 days	✓	08-Jul-2025	28 days	4 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate)										
ALT-8	E581.F1-L	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	07-Jul-2025	14 days	6 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate)										
ALT-8.1	E581.F1-L	01-Jul-2025	08-Jul-2025	14 days	7 days	✓	08-Jul-2025	14 days	7 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID (Low Level)										
Glass vial (sodium bisulfate)										
ALT-9	E581.F1-L	01-Jul-2025	08-Jul-2025	14 days	7 days	✓	08-Jul-2025	14 days	7 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
ALT-8	E601	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	08-Jul-2025	40 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
ALT-8.1	E601	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	08-Jul-2025	40 days	1 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID										
Amber glass/Teflon lined cap (sodium bisulfate)										
ALT-9	E601	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	08-Jul-2025	40 days	1 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-8	E355-L	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	10-Jul-2025	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-8.1	E355-L	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	10-Jul-2025	28 days	6 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
ALT-9	E355-L	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	10-Jul-2025	28 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
ALT-8	E290	01-Jul-2025	05-Jul-2025	14 days	4 days	✓	08-Jul-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
ALT-8.1	E290	01-Jul-2025	05-Jul-2025	14 days	4 days	✓	08-Jul-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
ALT-9	E290	01-Jul-2025	05-Jul-2025	14 days	4 days	✓	08-Jul-2025	14 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
ALT-8	E100	01-Jul-2025	05-Jul-2025	28 days	4 days	✓	08-Jul-2025	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
ALT-8.1	E100	01-Jul-2025	05-Jul-2025	28 days	4 days	✓	08-Jul-2025	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
ALT-9	E100	01-Jul-2025	05-Jul-2025	28 days	4 days	✓	08-Jul-2025	28 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP]										
ALT-8	E108	01-Jul-2025	05-Jul-2025	14 days	4 days	✓	08-Jul-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP]										
ALT-8.1	E108	01-Jul-2025	05-Jul-2025	14 days	4 days	✓	08-Jul-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP]										
ALT-9	E108	01-Jul-2025	05-Jul-2025	14 days	4 days	✓	08-Jul-2025	14 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
ALT-8	E160	01-Jul-2025	----	----	----		07-Jul-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
ALT-8.1	E160	01-Jul-2025	----	----	----		07-Jul-2025	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
ALT-9	E160	01-Jul-2025	----	----	----		07-Jul-2025	7 days	6 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS (Low Level)										
Amber glass/Teflon lined cap (sodium bisulfate)										
ALT-8	E641A-L	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	08-Jul-2025	40 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS (Low Level)										
Amber glass/Teflon lined cap (sodium bisulfate)										
ALT-8.1	E641A-L	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	08-Jul-2025	40 days	1 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Water by Hexane LVI GC-MS (Low Level)										
Amber glass/Teflon lined cap (sodium bisulfate)										
ALT-9	E641A-L	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	08-Jul-2025	40 days	1 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP]										
ALT-8	E508	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	08-Jul-2025	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP]										
ALT-8.1	E508	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	08-Jul-2025	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP]										
ALT-9	E508	01-Jul-2025	07-Jul-2025	28 days	6 days	✓	08-Jul-2025	28 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
ALT-8	E420	01-Jul-2025	07-Jul-2025	180 days	6 days	✓	07-Jul-2025	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
ALT-8.1	E420	01-Jul-2025	07-Jul-2025	180 days	6 days	✓	07-Jul-2025	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
ALT-9	E420	01-Jul-2025	07-Jul-2025	180 days	6 days	✓	07-Jul-2025	180 days	6 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
ALT-8	E611A	01-Jul-2025	07-Jul-2025	14 days	6 days	✓	07-Jul-2025	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group : Analytical Method / **Container / Client Sample ID(s)**	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
ALT-8.1	E611A	01-Jul-2025	08-Jul-2025	14 days	7 days	✓	08-Jul-2025	14 days	7 days	✓
Volatile Organic Compounds : BTEX by Headspace GC-MS										
Glass vial (sodium bisulfate)										
ALT-9	E611A	01-Jul-2025	08-Jul-2025	14 days	7 days	✓	08-Jul-2025	14 days	7 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Conductivity in Water	E100	2091442	2	29	6.9	5.0	✓
pH by Meter	E108	2091444	2	31	6.4	5.0	✓
TSS by Gravimetry	E160	2092785	1	20	5.0	4.7	✓
Nitrite in Water by IC	E235.NO2	2091439	2	29	6.9	5.0	✓
Nitrate in Water by IC	E235.NO3	2091438	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	2091441	2	40	5.0	5.0	✓
Alkalinity Species by Titration	E290	2091443	2	38	5.2	5.0	✓
Ammonia by Fluorescence	E298	2092405	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	2092404	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2092251	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	2092488	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2092406	1	20	5.0	5.0	✓
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	2092244	2	40	5.0	5.0	✓
BTEX by Headspace GC-MS	E611A	2092245	2	40	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Conductivity in Water	E100	2091442	2	29	6.9	5.0	✓
pH by Meter	E108	2091444	2	31	6.4	5.0	✓
TSS by Gravimetry	E160	2092785	1	20	5.0	4.7	✓
Nitrite in Water by IC	E235.NO2	2091439	2	29	6.9	5.0	✓
Nitrate in Water by IC	E235.NO3	2091438	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	2091441	2	40	5.0	5.0	✓
Alkalinity Species by Titration	E290	2091443	2	38	5.2	5.0	✓
Ammonia by Fluorescence	E298	2092405	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	2092404	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2092251	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	2092488	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2092406	1	20	5.0	5.0	✓
Oil & Grease by Gravimetry	E567	2094126	1	16	6.2	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	2094125	1	15	6.6	5.0	✓
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	2092244	2	40	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	2093161	1	6	16.6	5.0	✓
BTEX by Headspace GC-MS	E611A	2092245	2	40	5.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS (Low Level)	E641A-L	2093158	1	13	7.6	5.0	✓
Method Blanks (MB)							
Conductivity in Water	E100	2091442	2	29	6.9	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
TSS by Gravimetry	E160	2092785	1	20	5.0	4.7	✓
Nitrite in Water by IC	E235.NO2	2091439	2	29	6.9	5.0	✓
Nitrate in Water by IC	E235.NO3	2091438	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	2091441	2	40	5.0	5.0	✓
Alkalinity Species by Titration	E290	2091443	2	38	5.2	5.0	✓
Ammonia by Fluorescence	E298	2092405	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	2092404	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2092251	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	2092488	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2092406	1	20	5.0	5.0	✓
Oil & Grease by Gravimetry	E567	2094126	1	16	6.2	5.0	✓
Mineral Oil & Grease by Gravimetry	E567SG	2094125	1	15	6.6	5.0	✓
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	2092244	2	40	5.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID	E601	2093161	1	6	16.6	5.0	✓
BTEX by Headspace GC-MS	E611A	2092245	2	40	5.0	5.0	✓
PAHs in Water by Hexane LVI GC-MS (Low Level)	E641A-L	2093158	1	13	7.6	5.0	✓
Matrix Spikes (MS)							
Nitrite in Water by IC	E235.NO2	2091439	2	29	6.9	5.0	✓
Nitrate in Water by IC	E235.NO3	2091438	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	2091441	2	40	5.0	5.0	✓
Ammonia by Fluorescence	E298	2092405	1	20	5.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	2092404	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	2092251	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	2092488	1	20	5.0	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2092406	1	20	5.0	5.0	✓
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L	2092244	2	40	5.0	5.0	✓
BTEX by Headspace GC-MS	E611A	2092245	2	40	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Waterloo	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Nitrite in Water by IC	E235.NO2 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove carbonate-based Inorganic Carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. Forms of carbon associated with inorganic or organic molecules (e.g. SCN and CN) are included in NPOC if they are not removed by purging under acidic conditions. Notably, NPOC excludes most volatile organic compounds and free cyanide. For samples where the majority of Total Carbon is inorganic, this method provides greater accuracy and reliability versus the TOC by subtraction method (TC minus TIC).
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 ALS Environmental - Waterloo	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Waterloo	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K3Fe(CN)6) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
Oil & Grease by Gravimetry	E567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane and the extract is evaporated to dryness. The residue is then weighed to determine Oil and Grease.
Mineral Oil & Grease by Gravimetry	E567SG ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane, followed by silica gel treatment after which the extract is evaporated to dryness. The residue is then weighed to determine Mineral Oil and Grease.
CCME PHC - F1 by Headspace GC-FID (Low Level)	E581.F1-L ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1 (mod)	CCME Fraction 1 (F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
CCME PHCs - F2-F4 by GC-FID	E601 ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1	Sample extracts are analyzed by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
BTEX by Headspace GC-MS	E611A ALS Environmental - Waterloo	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PAHs in Water by Hexane LVI GC-MS (Low Level)	E641A-L ALS Environmental - Waterloo	Water	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by large volume injection (LVI) GC-MS.
Hardness (Calculated) from Total Ca/Mg	EC100A ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed as $CaCO_3$ 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 hardness is a property of water due to dissolved divalent cations. In non-turbid waters, Hardness from total Ca/Mg is normally comparable to Dissolved Hardness, but may be biased high if particulate forms of Ca or Mg are present.
Animal & Vegetable Oil & Grease by Gravimetry	EC567A.SG ALS Environmental - Waterloo	Water	APHA 5520 (mod)	Animal & vegetable oil and grease is calculated as follows: Oil & Grease (gravimetric) minus Mineral Oil & Grease (gravimetric)
F1-BTEX	EC580 ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Waterloo	Water	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Waterloo	Water		Preparation for Total Organic Carbon by Combustion
Oil & Grease Extraction for Gravimetry	EP567 ALS Environmental - Waterloo	Water	BC MOE Lab Manual (Oil & Grease) (mod)	The entire water sample is extracted with hexane by liquid-liquid extraction.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Waterloo	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
PHCs and PAHs Hexane Extraction	EP601 ALS Environmental - Waterloo	Water	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.

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QUALITY CONTROL REPORT

Work Order	: **WT2517876**	Page	: 1 of 12
Client	: Defence Construction Canada	Laboratory	: ALS Environmental - Waterloo
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Project	: TR23ENV9 SC80739	Date Samples Received	: 05-Jul-2025 10:30
PO	: ----	Date Analysis Commenced	: 05-Jul-2025
C-O-C number	: ----	Issue Date	: 11-Jul-2025 11:55
Sampler	: client		
Site	: CFS Alert		
Quote number	: WT23-DOND200-3		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
David Tremblett	VOC Section Supervisor	Waterloo VOC, Waterloo, Ontario
Jeremy Gingras	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include 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 predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 2091442)											
HA2502191-002	Anonymous	Conductivity	----	E100	1.0	µS/cm	132	131	0.0761%	10%	----
Physical Tests (QC Lot: 2091443)											
HA2502191-002	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	59.5	59.3	0.337%	20%	----
Physical Tests (QC Lot: 2091444)											
HA2502191-002	Anonymous	pH	----	E108	0.10	pH units	7.22	7.14	1.11%	4%	----
Physical Tests (QC Lot: 2091449)											
WT2517762-001	Anonymous	pH	----	E108	0.10	pH units	8.49	8.30	2.26%	4%	----
Physical Tests (QC Lot: 2091450)											
WT2517762-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	869	876	0.802%	10%	----
Physical Tests (QC Lot: 2091451)											
WT2517762-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	335	334	0.251%	20%	----
Physical Tests (QC Lot: 2092785)											
WT2517714-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	13.7	16.7	3.0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2091438)											
HA2502191-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2091439)											
HA2502191-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2091441)											
HA2502191-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	1.95	1.90	0.04	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2091452)											
WT2517762-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	26.1	26.0	0.0840%	20%	----
Anions and Nutrients (QC Lot: 2091453)											
WT2517762-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	1.75	1.76	0.190%	20%	----
Anions and Nutrients (QC Lot: 2091454)											
WT2517762-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2092405)											
HA2502191-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0067	0.0063	0.0004	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 2092404)											
HA2502191-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	10.0	mg/L	<10.0	<10.0	0	Diff <2x LOR	----
Total Metals (QC Lot: 2092251)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 2092251) - continued											
WT2517873-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.434	0.444	2.11%	20%	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00220	0.00220	0.254%	20%	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000162	0.0000160	0.0000002	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	24.2	24.4	0.522%	20%	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.00110	0.00116	0.00006	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00311	0.00310	0.000010	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.738	0.760	2.84%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	1.17 µg/L	0.00118	1.46%	20%	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	4.72	4.74	0.299%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00320	0.00326	0.00007	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	3.04	3.05	0.314%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	11.3	11.3	0.401%	20%	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0065	0.0066	0.0001	Diff <2x LOR	----
Total Metals (QC Lot: 2092488)											
BF2500117-013	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 2092406)											
TY2506928-009	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 2092245)											
WT2517747-001	Anonymous	Benzene	71-43-2	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611A	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611A	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 2095158)											
WT2517239-012	Anonymous	Benzene	71-43-2	E611A	0.50	µg/L	9.98	9.94	0.402%	30%	----
		Ethylbenzene	100-41-4	E611A	0.50	µg/L	39.7	40.2	1.20%	30%	----
		Toluene	108-88-3	E611A	0.50	µg/L	2.45	2.41	0.04	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.40	µg/L	50.5	51.0	1.06%	30%	----
		Xylene, o-	95-47-6	E611A	0.30	µg/L	3.65	3.66	0.274%	30%	----
Hydrocarbons (QC Lot: 2092244)											
WT2517747-001	Anonymous	F1 (C6-C10)	----	E581.F1-L	25	µg/L	26	<25	0.8	Diff <2x LOR	----
Hydrocarbons (QC Lot: 2095157)											
WT2517239-012	Anonymous	F1 (C6-C10)	----	E581.F1-L	25	µg/L	1780	1900	6.49%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 2091442)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 2091443)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 2091450)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 2091451)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 2092785)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 2091438)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2091439)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2091441)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2091452)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2091453)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2091454)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2092405)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 2092404)						
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 2092251)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 2092251) - continued						
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Total Metals (QCLot: 2092488)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Aggregate Organics (QCLot: 2092406)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Aggregate Organics (QCLot: 2094125)						
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	<5.0	----
Aggregate Organics (QCLot: 2094126)						
Oil & grease (gravimetric)	----	E567	5	mg/L	<5.0	----
Volatile Organic Compounds (QCLot: 2092245)						
Benzene	71-43-2	E611A	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611A	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611A	0.3	µg/L	<0.30	----
Volatile Organic Compounds (QCLot: 2095158)						
Benzene	71-43-2	E611A	0.5	µg/L	<0.50	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611A	0.5	µg/L	<0.50	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611A	0.3	µg/L	<0.30	----
Hydrocarbons (QCLot: 2092244)						
F1 (C6-C10)	----	E581.F1-L	25	µg/L	<25	----
Hydrocarbons (QCLot: 2093161)						
F2 (C10-C16)	----	E601	100	µg/L	<100	----
F3 (C16-C34)	----	E601	250	µg/L	<250	----
F4 (C34-C50)	----	E601	250	µg/L	<250	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Hydrocarbons (QCLot: 2095157)						
F1 (C6-C10)	----	E581.F1-L	25	µg/L	<25	----
Polycyclic Aromatic Hydrocarbons (QCLot: 2093158)						
Acenaphthene	83-32-9	E641A-L	0.01	µg/L	<0.010	----
Acenaphthylene	208-96-8	E641A-L	0.01	µg/L	<0.010	----
Acridine	260-94-6	E641A-L	0.01	µg/L	<0.010	----
Anthracene	120-12-7	E641A-L	0.01	µg/L	<0.010	----
Benz(a)anthracene	56-55-3	E641A-L	0.01	µg/L	<0.010	----
Benzo(a)pyrene	50-32-8	E641A-L	0.005	µg/L	<0.0050	----
Benzo(b+j)fluoranthene	n/a	E641A-L	0.01	µg/L	<0.010	----
Benzo(e)pyrene	192-97-2	E641A-L	0.01	µg/L	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	µg/L	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A-L	0.01	µg/L	<0.010	----
Chrysene	218-01-9	E641A-L	0.01	µg/L	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	µg/L	<0.0050	----
Fluoranthene	206-44-0	E641A-L	0.01	µg/L	<0.010	----
Fluorene	86-73-7	E641A-L	0.01	µg/L	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	µg/L	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A-L	0.01	µg/L	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A-L	0.01	µg/L	<0.010	----
Naphthalene	91-20-3	E641A-L	0.01	µg/L	<0.010	----
Perylene	198-55-0	E641A-L	0.01	µg/L	<0.010	----
Phenanthrene	85-01-8	E641A-L	0.01	µg/L	<0.010	----
Pyrene	129-00-0	E641A-L	0.01	µg/L	<0.010	----
Quinoline	91-22-5	E641A-L	0.01	µg/L	<0.010	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 2091442)									
Conductivity	----	E100	1	µS/cm	1410 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 2091443)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	99.1	85.0	115	----
Physical Tests (QCLot: 2091444)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2091449)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2091450)									
Conductivity	----	E100	1	µS/cm	1410 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 2091451)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	99.1	85.0	115	----
Physical Tests (QCLot: 2092785)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	93.8	85.0	115	----
Anions and Nutrients (QCLot: 2091438)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 2091439)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 2091441)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 2091452)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 2091453)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 2091454)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 2092405)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.2	85.0	115	----
Organic / Inorganic Carbon (QCLot: 2092404)									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	96.2	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 2092251)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	102	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	105	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	106	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	99.7	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.012 mg/L	104	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.012 mg/L	102	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	102	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	102	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	111	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	101	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	98.8	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	95.0	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	105	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	101	80.0	120	----
Total Metals (QCLot: 2092488)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0 mg/L	102	80.0	120	----
Aggregate Organics (QCLot: 2092406)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	101	85.0	115	----
Aggregate Organics (QCLot: 2094125)									
Oil & grease, mineral (gravimetric)	----	E567SG	5	mg/L	100 mg/L	84.1	70.0	130	----
Aggregate Organics (QCLot: 2094126)									
Oil & grease (gravimetric)	----	E567	5	mg/L	200 mg/L	95.6	70.0	130	----
Volatile Organic Compounds (QCLot: 2092245)									
Benzene	71-43-2	E611A	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	100 µg/L	90.5	70.0	130	----
Toluene	108-88-3	E611A	0.5	µg/L	100 µg/L	100	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	200 µg/L	92.6	70.0	130	----
Xylene, o-	95-47-6	E611A	0.3	µg/L	100 µg/L	91.9	70.0	130	----
Volatile Organic Compounds (QCLot: 2095158)									
Benzene	71-43-2	E611A	0.5	µg/L	100 µg/L	98.9	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.5	µg/L	100 µg/L	94.8	70.0	130	----
Toluene	108-88-3	E611A	0.5	µg/L	100 µg/L	101	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.4	µg/L	200 µg/L	95.1	70.0	130	----
Xylene, o-	95-47-6	E611A	0.3	µg/L	100 µg/L	97.2	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Hydrocarbons (QCLot: 2092244)									
F1 (C6-C10)	----	E581.F1-L	25	µg/L	2000 µg/L	82.5	80.0	120	----
Hydrocarbons (QCLot: 2093161)									
F2 (C10-C16)	----	E601	100	µg/L	3770 µg/L	90.1	70.0	130	----
F3 (C16-C34)	----	E601	250	µg/L	7760 µg/L	99.1	70.0	130	----
F4 (C34-C50)	----	E601	250	µg/L	4200 µg/L	106	70.0	130	----
Hydrocarbons (QCLot: 2095157)									
F1 (C6-C10)	----	E581.F1-L	25	µg/L	2000 µg/L	83.9	80.0	120	----
Polycyclic Aromatic Hydrocarbons (QCLot: 2093158)									
Acenaphthene	83-32-9	E641A-L	0.01	µg/L	0.526 µg/L	102	50.0	140	----
Acenaphthylene	208-96-8	E641A-L	0.01	µg/L	0.526 µg/L	94.2	50.0	140	----
Acridine	260-94-6	E641A-L	0.01	µg/L	0.526 µg/L	102	50.0	140	----
Anthracene	120-12-7	E641A-L	0.01	µg/L	0.526 µg/L	92.7	50.0	140	----
Benz(a)anthracene	56-55-3	E641A-L	0.01	µg/L	0.526 µg/L	106	50.0	140	----
Benzo(a)pyrene	50-32-8	E641A-L	0.005	µg/L	0.526 µg/L	101	50.0	140	----
Benzo(b+j)fluoranthene	n/a	E641A-L	0.01	µg/L	0.526 µg/L	110	50.0	140	----
Benzo(e)pyrene	192-97-2	E641A-L	0.01	µg/L	0.526 µg/L	122	50.0	140	----
Benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	µg/L	0.526 µg/L	119	50.0	140	----
Benzo(k)fluoranthene	207-08-9	E641A-L	0.01	µg/L	0.526 µg/L	120	50.0	140	----
Chrysene	218-01-9	E641A-L	0.01	µg/L	0.526 µg/L	114	50.0	140	----
Dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	µg/L	0.526 µg/L	105	50.0	140	----
Fluoranthene	206-44-0	E641A-L	0.01	µg/L	0.526 µg/L	110	50.0	140	----
Fluorene	86-73-7	E641A-L	0.01	µg/L	0.526 µg/L	103	50.0	140	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	µg/L	0.526 µg/L	119	50.0	140	----
Methylnaphthalene, 1-	90-12-0	E641A-L	0.01	µg/L	0.526 µg/L	96.9	50.0	140	----
Methylnaphthalene, 2-	91-57-6	E641A-L	0.01	µg/L	0.526 µg/L	99.9	50.0	140	----
Naphthalene	91-20-3	E641A-L	0.01	µg/L	0.526 µg/L	93.5	50.0	140	----
Perylene	198-55-0	E641A-L	0.01	µg/L	0.526 µg/L	115	50.0	140	----
Phenanthrene	85-01-8	E641A-L	0.01	µg/L	0.526 µg/L	109	50.0	140	----
Pyrene	129-00-0	E641A-L	0.01	µg/L	0.526 µg/L	111	50.0	140	----
Quinoline	91-22-5	E641A-L	0.01	µg/L	0.526 µg/L	113	50.0	140	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 2091438)										
HA2502191-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.42 mg/L	2.5 mg/L	96.7	75.0	125	----
Anions and Nutrients (QCLot: 2091439)										
HA2502191-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.492 mg/L	0.5 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 2091441)										
HA2502191-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	97.8 mg/L	100 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 2091452)										
WT2517762-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	96.1 mg/L	100 mg/L	96.1	75.0	125	----
Anions and Nutrients (QCLot: 2091453)										
WT2517762-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.47 mg/L	2.5 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 2091454)										
WT2517762-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.487 mg/L	0.5 mg/L	97.5	75.0	125	----
Anions and Nutrients (QCLot: 2092405)										
HA2502191-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
Organic / Inorganic Carbon (QCLot: 2092404)										
HA2502191-002	Anonymous	Carbon, total organic [TOC]	----	E355-L	110 mg/L	100 mg/L	110	70.0	130	----
Total Metals (QCLot: 2092251)										
WT2517873-002	Anonymous	Aluminum, total	7429-90-5	E420	ND mg/L	----	ND	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0517 mg/L	0.05 mg/L	103	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00530 mg/L	0.005 mg/L	106	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	----	ND	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0129 mg/L	0.012 mg/L	103	70.0	130	----
		Copper, total	7440-50-8	E420	0.0126 mg/L	0.012 mg/L	101	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	----	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0249 mg/L	0.025 mg/L	99.6	70.0	130	----
		Magnesium, total	7439-95-4	E420	2.76 mg/L	2.5 mg/L	110	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0241 mg/L	0.025 mg/L	96.4	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	----	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00466 mg/L	0.005 mg/L	93.2	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	----	ND	70.0	130	----
		Zinc, total	7440-66-6	E420	0.0247 mg/L	0.025 mg/L	98.9	70.0	130	----
Total Metals (QCLot: 2092488)										
BF2500117-014	Anonymous	Mercury, total	7439-97-6	E508	0.0000993 mg/L	0 mg/L	99.3	70.0	130	----
Aggregate Organics (QCLot: 2092406)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Aggregate Organics (QCLot: 2092406) - continued										
TY2506928-009	Anonymous	Phenols, total (4AAP)	----	E562	0.0217 mg/L	0.02 mg/L	108	75.0	125	----
Volatile Organic Compounds (QCLot: 2092245)										
WT2517747-001	Anonymous	Benzene	71-43-2	E611A	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Ethylbenzene	100-41-4	E611A	84.9 µg/L	100 µg/L	84.9	60.0	140	----
		Toluene	108-88-3	E611A	94.1 µg/L	100 µg/L	94.1	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	174 µg/L	200 µg/L	86.8	60.0	140	----
		Xylene, o-	95-47-6	E611A	86.6 µg/L	100 µg/L	86.6	60.0	140	----
Volatile Organic Compounds (QCLot: 2095158)										
WT2517239-012	Anonymous	Benzene	71-43-2	E611A	96.0 µg/L	100 µg/L	96.0	60.0	140	----
		Ethylbenzene	100-41-4	E611A	94.5 µg/L	100 µg/L	94.5	60.0	140	----
		Toluene	108-88-3	E611A	103 µg/L	100 µg/L	103	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	186 µg/L	200 µg/L	93.0	60.0	140	----
		Xylene, o-	95-47-6	E611A	97.0 µg/L	100 µg/L	97.0	60.0	140	----
Hydrocarbons (QCLot: 2092244)										
WT2517747-001	Anonymous	F1 (C6-C10)	----	E581.F1-L	1440 µg/L	2000 µg/L	71.8	60.0	140	----
Hydrocarbons (QCLot: 2095157)										
WT2517239-012	Anonymous	F1 (C6-C10)	----	E581.F1-L	1690 µg/L	2000 µg/L	84.4	60.0	140	----

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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: **22 -**

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Environmental Division
Waterloo
Work Order Reference
WT2517876

Telephone : + 1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	Defence Construction Canada
Contact:	Cameron Chadwick
Phone:	613-392-2811 ext 5491/4851
	Company address below will appear on the final report
Street:	5 Greenwood Road
City/Province:	Astra / Ontario
Postal Code:	
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (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: cameron.chadwick@dcc-cdc.gc.ca
Email 2: bilal.siddiqui@dcc-cdc.gc.ca
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: cameron.chadwick@dcc-cdc.gc.ca
Email 2:

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 mi
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge n
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge r
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge r
☐ Same day [E2] if received by 10am M-S - 200% rush surc

Additional fees may apply to rush requests on wee

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, pl

Project Information

ALS Client Code / QUOTE #: DOND200 / WT23-DOND200-3
Job / Project #: TR23ENV9 SC80739
PO / AFE:
LSD: CFS Alert

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (ALS use only): JD

ALS Contact: Andrew Martin Sampler:

Analysis — Indicate Filtered (F), Preserved (P) or Filtered and Preserved

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Number of Containers	Water General "G":	TSS, pH, EC, Alk, NO3, NO2, SO4	Oil & Grease	Phenols, TOC, NH3	Total Metals, Hg and Hardness "M"	Water Sewage "S":	BOD, Fecal Coliforms, Chloride	CCME BTEX/F1-F4+PAHs "H"	Samples on Hold	Extended Storage Requir	Suspected Hazard (see notes)
	ALT-8	01-Jul-25	08:35	Water	10	✓	✓	✓	✓	✓			✓			
	ALT-8.1	01-Jul-25	08:42	W	10	✓	✓	✓	✓	✓			✓			
	ALT-9	01-Jul-25	09:00	W	10	✓	✓	✓	✓	✓			✓			

Drinking Water (DW) Samples[1] (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)

- RUN ANALYSIS REGARDLESS OF HOLD TIMES
- ~~O.REG 153/04 TABLE 1 + CCME PUR~~

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A
INITIAL COOLER TEMPERATURES °C FINAL COOLER TEMPERATURES °C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: [signature]	Date: 01 Jul 2025	Time: 21:00	Received by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

MAY 2023 FRONT

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**.