

CERTIFICATE OF ANALYSIS

Work Order	: FC2502157	Laboratory	: ALS Environmental - Fort McMurray
Client	: Regional Municipality of Wood Buffalo	Account Manager	: Megha Walia
Contact	: Water Treatment Plant	Address	: #4, 340 Macalpine Crescent
Address	: 1 Silin Forest Road Fort McMurray Alberta Canada T9H 5A1		: Fort McMurray AB Canada T9H 4A8
Telephone	: 780-762-5863	E-mail	: Megha.Walia@alsglobal.com
Project	: Fort Chipewyan Table 1	Telephone	: +1 780 791 1524
PO	: 4500060925	Date Samples Received	: 05-Aug-2025 16:30
C-O-C number	: ----	Date Analysis Commenced	: 06-Aug-2025
Sampler	: DF	Issue Date	: 18-Aug-2025 17:59
Site	: FT Chip W.T.P		
Quote number	: Water Treatment Plant		
No. of samples received	: 2		
No. of samples analysed	: 2		

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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alastair McGibbon		Inorganics, Edmonton, Alberta
Alex Drake		Inorganics, Edmonton, Alberta
Anthony Calero		Inorganics, Calgary, Alberta
Dan Nguyen		Metals, Edmonton, Alberta
Daniel Nguyen		Metals, Edmonton, Alberta
Kari Mulroy		Organics, Edmonton, Alberta
Nik Perkio		Inorganics, Waterloo, Ontario
Shruti Mudliar		Metals, Edmonton, Alberta
Yan Zhang		Organics, Edmonton, Alberta



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
-	no units
%	percent
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.



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	Treated Water ----	Raw Water Chamber Tap ----	----	----	----
					Client sampling date / time	05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----	----
					Result	Result	----	----	----	----
Physical Tests										
Alkalinity, bicarbonate (as HCO ₃)	71-52-3	E290/EO	1.2	mg/L	63.0	56.4	----	----	----	----
Alkalinity, carbonate (as CO ₃)	3812-32-6	E290/EO	1.0	mg/L	<0.6	<0.6	----	----	----	----
Alkalinity, hydroxide (as OH)	14280-30-9	E290/EO	1.0	mg/L	<0.3	<0.3	----	----	----	----
Alkalinity, total (as CaCO ₃)	----	E290/EO	1.0	mg/L	51.6	46.2	----	----	----	----
Conductivity	----	E100/EO	1.0	µS/cm	162	114	----	----	----	----
Hardness (as CaCO ₃), dissolved	----	EC100/EO	0.50	mg/L	51.0	47.8	----	----	----	----
pH	----	E108/EO	0.10	pH units	8.15	8.09	----	----	----	----
Solids, total dissolved [TDS], calculated	----	EC103/EO	1.0	mg/L	89.6	65.0	----	----	----	----
Anions and Nutrients										
Chloride	16887-00-6	E235.Cl/EO	0.50	mg/L	17.0	4.45	----	----	----	----
Fluoride	16984-48-8	E235.F/EO	0.020	mg/L	0.034	0.071	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO ₃ /EO	0.020	mg/L	<0.020	<0.020	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/EO	0.0032	mg/L	<0.0224	<0.0224	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO ₂ /EO	0.010	mg/L	<0.010	<0.010	----	----	----	----
Sulfate (as SO ₄)	14808-79-8	E235.SO ₄ /EO	0.30	mg/L	6.64	6.89	----	----	----	----
Total Sulfides										
Sulfide, total (as S)	18496-25-8	E395/CG	0.0015	mg/L	<0.0015	<0.0015	----	----	----	----
Sulfide, total (as H ₂ S)	7783-06-4	E395/CG	0.0016	mg/L	<0.0016	<0.0016	----	----	----	----
Metals										
Sodium adsorption ratio [SAR]	----	EC102A/EO	0.10	-	0.78	0.30	----	----	----	----



Analytical Results

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 (Matrix: Water)

Client sample ID					Treated Water ----	Raw Water Chamber Tap ----	----	----	----
Client sampling date / time					05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----
					Result	Result	----	----	----
Ion Balance									
Ion balance (cations/anions)	----	EC101/EO	0.010	%	97.6	99.2	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/EO	0.0030	mg/L	0.0540	0.0375	----	----	----
Antimony, total	7440-36-0	E420/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Arsenic, total	7440-38-2	E420/EO	0.00010	mg/L	0.00035	0.00053	----	----	----
Barium, total	7440-39-3	E420/EO	0.00010	mg/L	0.0232	0.0228	----	----	----
Beryllium, total	7440-41-7	E420/EO	0.000020	mg/L	<0.000020	<0.000020	----	----	----
Bismuth, total	7440-69-9	E420/EO	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Boron, total	7440-42-8	E420/EO	0.010	mg/L	0.015	0.015	----	----	----
Cadmium, total	7440-43-9	E420/EO	0.0000050	mg/L	<0.0000050	0.0000066	----	----	----
Calcium, total	7440-70-2	E420/EO	0.050	mg/L	14.6	13.0	----	----	----
Cesium, total	7440-46-2	E420/EO	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Chromium, total	7440-47-3	E420/EO	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Cobalt, total	7440-48-4	E420/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Copper, total	7440-50-8	E420/EO	0.00050	mg/L	0.00092	0.00118	----	----	----
Iron, total	7439-89-6	E420/EO	0.010	mg/L	<0.010	0.070	----	----	----
Lead, total	7439-92-1	E420/EO	0.050	µg/L	<0.050	<0.050	----	----	----
Lithium, total	7439-93-2	E420/EO	0.0010	mg/L	0.0037	0.0037	----	----	----
Magnesium, total	7439-95-4	E420/EO	0.0050	mg/L	3.70	3.67	----	----	----
Manganese, total	7439-96-5	E420/EO	0.00010	mg/L	0.00107	0.00816	----	----	----
Molybdenum, total	7439-98-7	E420/EO	0.000050	mg/L	0.000322	0.000321	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	Treated Water ----	Raw Water Chamber Tap ----	----	----	----
Client sampling date / time						05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----	----
					Result	Result	----	----	----	----
Total Metals										
Nickel, total	7440-02-0	E420/EO	0.00050	mg/L	0.00071	0.00092	----	----	----	----
Phosphorus, total	7723-14-0	E420/EO	0.050	mg/L	<0.050	<0.050	----	----	----	----
Potassium, total	7440-09-7	E420/EO	0.050	mg/L	1.05	1.07	----	----	----	----
Rubidium, total	7440-17-7	E420/EO	0.00020	mg/L	0.00118	0.00120	----	----	----	----
Selenium, total	7782-49-2	E420/EO	0.000050	mg/L	<0.000050	0.000086	----	----	----	----
Silicon, total	7440-21-3	E420/EO	0.10	mg/L	1.41	1.36	----	----	----	----
Silver, total	7440-22-4	E420/EO	0.000010	mg/L	<0.000010	<0.000010	----	----	----	----
Sodium, total	7440-23-5	E420/EO	0.050	mg/L	12.5	4.59	----	----	----	----
Strontium, total	7440-24-6	E420/EO	0.00020	mg/L	0.0939	0.0891	----	----	----	----
Sulfur, total	7704-34-9	E420/EO	0.50	mg/L	2.83	2.77	----	----	----	----
Tellurium, total	13494-80-9	E420/EO	0.00020	mg/L	<0.00020	<0.00020	----	----	----	----
Thallium, total	7440-28-0	E420/EO	0.000010	mg/L	<0.000010	<0.000010	----	----	----	----
Thorium, total	7440-29-1	E420/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----	----
Tin, total	7440-31-5	E420/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----	----
Titanium, total	7440-32-6	E420/EO	0.00030	mg/L	<0.00030	0.00051	----	----	----	----
Tungsten, total	7440-33-7	E420/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----	----
Uranium, total	7440-61-1	E420/EO	0.000010	mg/L	<0.000010	0.000113	----	----	----	----
Vanadium, total	7440-62-2	E420/EO	0.00050	mg/L	0.00050	0.00064	----	----	----	----
Zinc, total	7440-66-6	E420/EO	0.0030	mg/L	<0.0030	0.0104	----	----	----	----
Zirconium, total	7440-67-7	E420/EO	0.00020	mg/L	<0.00020	<0.00020	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					Treated Water ----	Raw Water Chamber Tap ----	----	----	----
Client sampling date / time					05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/EO	0.0010	mg/L	0.0531	0.0104	----	----	----
Antimony, dissolved	7440-36-0	E421/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Arsenic, dissolved	7440-38-2	E421/EO	0.00010	mg/L	0.00033	0.00044	----	----	----
Barium, dissolved	7440-39-3	E421/EO	0.00010	mg/L	0.0234	0.0227	----	----	----
Beryllium, dissolved	7440-41-7	E421/EO	0.000020	mg/L	<0.000020	<0.000020	----	----	----
Bismuth, dissolved	7440-69-9	E421/EO	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Boron, dissolved	7440-42-8	E421/EO	0.010	mg/L	0.015	0.014	----	----	----
Cadmium, dissolved	7440-43-9	E421/EO	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/EO	0.050	mg/L	14.0	12.8	----	----	----
Cesium, dissolved	7440-46-2	E421/EO	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Chromium, dissolved	7440-47-3	E421/EO	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Cobalt, dissolved	7440-48-4	E421/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Copper, dissolved	7440-50-8	E421/EO	0.00020	mg/L	0.00078	0.00095	----	----	----
Iron, dissolved	7439-89-6	E421/EO	0.010	mg/L	<0.010	0.017	----	----	----
Lead, dissolved	7439-92-1	E421/EO	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Lithium, dissolved	7439-93-2	E421/EO	0.0010	mg/L	0.0037	0.0034	----	----	----
Magnesium, dissolved	7439-95-4	E421/EO	0.0050	mg/L	3.90	3.86	----	----	----
Manganese, dissolved	7439-96-5	E421/EO	0.00010	mg/L	<0.00010	0.00035	----	----	----
Molybdenum, dissolved	7439-98-7	E421/EO	0.000050	mg/L	0.000312	0.000327	----	----	----
Nickel, dissolved	7440-02-0	E421/EO	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Phosphorus, dissolved	7723-14-0	E421/EO	0.050	mg/L	<0.050	<0.050	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					Treated Water ----	Raw Water Chamber Tap ----	----	----	----
Client sampling date / time					05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----
					Result	Result	----	----	----
Dissolved Metals									
Potassium, dissolved	7440-09-7	E421/EO	0.050	mg/L	1.07	1.06	----	----	----
Rubidium, dissolved	7440-17-7	E421/EO	0.00020	mg/L	0.00119	0.00117	----	----	----
Selenium, dissolved	7782-49-2	E421/EO	0.000050	mg/L	<0.000050	0.000074	----	----	----
Silicon, dissolved	7440-21-3	E421/EO	0.050	mg/L	1.18	1.25	----	----	----
Silver, dissolved	7440-22-4	E421/EO	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Sodium, dissolved	7440-23-5	E421/EO	0.050	mg/L	12.8	4.79	----	----	----
Strontium, dissolved	7440-24-6	E421/EO	0.00020	mg/L	0.0828	0.0828	----	----	----
Sulfur, dissolved	7704-34-9	E421/EO	0.50	mg/L	2.38	2.37	----	----	----
Tellurium, dissolved	13494-80-9	E421/EO	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Thallium, dissolved	7440-28-0	E421/EO	0.000010	mg/L	<0.000010	<0.000010	----	----	----
Thorium, dissolved	7440-29-1	E421/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Tin, dissolved	7440-31-5	E421/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Titanium, dissolved	7440-32-6	E421/EO	0.00030	mg/L	<0.00030	<0.00030	----	----	----
Tungsten, dissolved	7440-33-7	E421/EO	0.00010	mg/L	<0.00010	<0.00010	----	----	----
Uranium, dissolved	7440-61-1	E421/EO	0.000010	mg/L	<0.000010	0.000109	----	----	----
Vanadium, dissolved	7440-62-2	E421/EO	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Zinc, dissolved	7440-66-6	E421/EO	0.0010	mg/L	<0.0010	<0.0010	----	----	----
Zirconium, dissolved	7440-67-7	E421/EO	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Dissolved metals filtration location	----	EP421/EO	-	-	Field	Field	----	----	----
Aggregate Organics									
Naphthenic acids	----	E565/EO	1.0	mg/L	<1.0	<1.0	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

Client sample ID					Treated Water ----	Raw Water Chamber Tap ----	----	----	----
Client sampling date / time					05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----
					Result	Result	----	----	----
Volatile Organic Compounds [Fuels]									
Benzene	71-43-2	E611A/EO	0.50	µg/L	<0.50	<0.50	----	----	----
Ethylbenzene	100-41-4	E611A/EO	0.50	µg/L	<0.50	<0.50	----	----	----
Styrene	100-42-5	E611A/EO	0.50	µg/L	<0.50	<0.50	----	----	----
Toluene	108-88-3	E611A/EO	0.50	µg/L	<0.50	<0.50	----	----	----
Xylene, m+p-	179601-23-1	E611A/EO	0.40	µg/L	<0.40	<0.40	----	----	----
Xylene, o-	95-47-6	E611A/EO	0.30	µg/L	<0.30	<0.30	----	----	----
Xylenes, total	1330-20-7	E611A/EO	0.50	µg/L	<0.50	<0.50	----	----	----
BTEX, total	----	E611A/EO	1.0	µg/L	<1.0	<1.0	----	----	----
Hydrocarbons									
F1 (C6-C10)	----	E581.F1/EO	100	µg/L	<100	<100	----	----	----
F1-BTEX	----	EC580/EO	25	µg/L	<100	<100	----	----	----
F2 (C10-C16)	----	E601/EO	100	µg/L	<100	<100	----	----	----
F3 (C16-C34)	----	E601/EO	250	µg/L	<250	<250	----	----	----
F4 (C34-C50)	----	E601/EO	250	µg/L	<250	<250	----	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/EO	370	µg/L	<380	<380	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601/EO	1.0	%	98.2	96.8	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.F1/EO	1.0	%	107	109	----	----	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611A/EO	1.0	%	99.2	99.1	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611A/EO	1.0	%	105	93.7	----	----	----



Analytical Results

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 (Matrix: Water)

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Client sampling date / time					05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----
					Result	Result	----	----	----
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	83-32-9	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Acenaphthylene	208-96-8	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Acridine	260-94-6	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Anthracene	120-12-7	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Benz(a)anthracene	56-55-3	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Benzo(a)pyrene	50-32-8	E641A/EO	0.0050	µg/L	<0.0050	<0.0050	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/EO	0.015	µg/L	<0.015	<0.015	----	----	----
Benzo(e)pyrene	192-97-2	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Chrysene	218-01-9	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/EO	0.0050	µg/L	<0.0050	<0.0050	----	----	----
Fluoranthene	206-44-0	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Fluorene	86-73-7	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Methylnaphthalene, 1+2-	----	E641A/EO	0.015	µg/L	<0.015	<0.015	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----
Naphthalene	91-20-3	E641A/EO	0.050	µg/L	<0.050	<0.050	----	----	----
Perylene	198-55-0	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----



Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	Treated Water ----	Raw Water Chamber Tap ----	----	----	----
Client sampling date / time						05-Aug-2025 08:25	05-Aug-2025 08:35	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	FC2502157-001	FC2502157-002	----	----	----	----
					Result	Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Phenanthrene	85-01-8	E641A/EO	0.020	µg/L	<0.020	<0.020	----	----	----	----
Pyrene	129-00-0	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----	----
Quinoline	91-22-5	E641A/EO	0.050	µg/L	<0.050	<0.050	----	----	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A/EO	0.010	µg/L	<0.010	<0.010	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/EO	0.1	%	82.8	75.1	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/EO	0.1	%	84.7	71.2	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/EO	0.1	%	84.6	79.0	----	----	----	----
Disinfectant By-Products										
Chlorate	14866-68-3	E409.CLO3/WT	0.010	mg/L	0.096	<0.010	----	----	----	----
Chlorite	14998-27-7	E409.CLO2/WT	0.010	mg/L	----	<0.010	----	----	----	----

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

CERTIFICATE OF ANALYSIS

Work Order	: FC2502157	Page	: 1 of 10
Client	: Regional Municipality of Wood Buffalo	Laboratory	: ALS Environmental - Fort McMurray
Contact	: Water Treatment Plant	Account Manager	: Megha Walia
Address	: 1 Silin Forest Road Fort McMurray AB Canada T9H 5A1	Address	: #4, 340 Macalpine Crescent Fort McMurray AB Canada T9H 4A8
Telephone	: 780-762-5863	Telephone	: +1 780 791 1524
Project	: Fort Chipewyan Table 1	Date Samples Received	: 05-Aug-2025 16:30
PO	: 4500060925	Date Analysis	: 06-Aug-2025
		Commenced	
		Issue Date	: 18-Aug-2025 17:59
C-O-C number	: ----		
Sampler	: DF		
Site	: FT Chip W.T.P		
Quote number	: Water Treatment Plant		
No. of samples received	: 2		
No. of samples analysed	: 2		

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
Alastair McGibbon	Laboratory Analyst	Inorganics, Edmonton, Alberta
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Dan Nguyen	Team Leader - Inorganics	Metals, Edmonton, Alberta
Daniel Nguyen	Laboratory Analyst	Metals, Edmonton, Alberta
Kari Mulroy	Lab Supervisor - Environmental	Organics, Edmonton, Alberta
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Shruti Mudliar	Lab Analyst	Metals, Edmonton, Alberta
Yan Zhang	Team Leader - Organics	Organics, Edmonton, Alberta



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).
Measurement Uncertainty: The reported uncertainties in this report are expanded uncertainties calculated using a coverage factor of 2, which gives a level of confidence of approximately 95%.
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.

<i>Unit</i>	<i>Description</i>
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

>: greater than.

<: less than.

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.



Analytical Results

FC2502157-001

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Treated Water

Client sampling date / time: 05-Aug-2025 08:25

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
Physical Tests								
Alkalinity, bicarbonate (as HCO ₃)	71-52-3	63.0	1.2	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Alkalinity, carbonate (as CO ₃)	3812-32-6	<0.6	0.6	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Alkalinity, hydroxide (as OH)	14280-30-9	<0.3	0.3	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Alkalinity, total (as CaCO ₃)	----	51.6	1.0	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Conductivity	----	162	1.0	µS/cm	E100/EO	06-Aug-2025	06-Aug-2025	2146413
Hardness (as CaCO ₃), dissolved	----	51.0	0.50	mg/L	EC100/EO	-	11-Aug-2025	-
pH	----	8.15	0.10	pH units	E108/EO	06-Aug-2025	06-Aug-2025	2146412
Solids, total dissolved [TDS], calculated	----	89.6	1.0	mg/L	EC103/EO	-	07-Aug-2025	-
Anions and Nutrients								
Chloride	16887-00-6	17.0	0.50	mg/L	E235.Cl/EO	06-Aug-2025	06-Aug-2025	2145818
Fluoride	16984-48-8	0.034	0.020	mg/L	E235.F/EO	06-Aug-2025	06-Aug-2025	2145819
Nitrate (as N)	14797-55-8	<0.020	0.020	mg/L	E235.NO ₃ /EO	06-Aug-2025	06-Aug-2025	2145820
Nitrate + Nitrite (as N)	----	<0.0224	0.0224	mg/L	EC235.N+N/EO	-	07-Aug-2025	-
Nitrite (as N)	14797-65-0	<0.010	0.010	mg/L	E235.NO ₂ /EO	06-Aug-2025	06-Aug-2025	2145822
Sulfate (as SO ₄)	14808-79-8	6.64	0.30	mg/L	E235.SO ₄ /EO	06-Aug-2025	06-Aug-2025	2145821
Total Sulfides								
Sulfide, total (as S)	18496-25-8	<0.0015	0.0015	mg/L	E395/CG	-	06-Aug-2025	2146514
Sulfide, total (as H ₂ S)	7783-06-4	<0.0016	0.0016	mg/L	E395/CG	-	06-Aug-2025	2146514
Metals								
Sodium adsorption ratio [SAR]	----	0.78	0.10	-	EC102A/EO	-	11-Aug-2025	-
Ion Balance								
Ion balance (cations/anions)	----	97.6	0.010	%	EC101/EO	-	07-Aug-2025	-
Total Metals								
Aluminum, total	7429-90-5	0.0540	0.0030	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Antimony, total	7440-36-0	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Arsenic, total	7440-38-2	0.00035	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Barium, total	7440-39-3	0.0232	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Beryllium, total	7440-41-7	<0.000020	0.000020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Bismuth, total	7440-69-9	<0.000050	0.000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Boron, total	7440-42-8	0.015	0.010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Cadmium, total	7440-43-9	<0.0000050	0.0000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Calcium, total	7440-70-2	14.6	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Cesium, total	7440-46-2	<0.000010	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Chromium, total	7440-47-3	<0.00050	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Cobalt, total	7440-48-4	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Copper, total	7440-50-8	0.00092	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Iron, total	7439-89-6	<0.010	0.010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Lead, total	7439-92-1	<0.050	0.050	µg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Lithium, total	7439-93-2	0.0037	0.0010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Magnesium, total	7439-95-4	3.70	0.0050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Manganese, total	7439-96-5	0.00107	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Molybdenum, total	7439-98-7	0.000322	0.000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Nickel, total	7440-02-0	0.00071	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Phosphorus, total	7723-14-0	<0.050	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Potassium, total	7440-09-7	1.05	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403



Analytical Results

FC2502157-001

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Treated Water

Client sampling date / time: 05-Aug-2025 08:25

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QC/Lot
Total Metals								
Rubidium, total	7440-17-7	0.00118	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Selenium, total	7782-49-2	<0.000050	0.000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Silicon, total	7440-21-3	1.41	0.10	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Silver, total	7440-22-4	<0.000010	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Sodium, total	7440-23-5	12.5	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Strontium, total	7440-24-6	0.0939	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Sulfur, total	7704-34-9	2.83	0.50	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Tellurium, total	13494-80-9	<0.00020	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Thallium, total	7440-28-0	<0.000010	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Thorium, total	7440-29-1	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Tin, total	7440-31-5	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Titanium, total	7440-32-6	<0.00030	0.00030	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Tungsten, total	7440-33-7	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Uranium, total	7440-61-1	<0.000010	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Vanadium, total	7440-62-2	0.00050	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Zinc, total	7440-66-6	<0.0030	0.0030	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Zirconium, total	7440-67-7	<0.00020	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Dissolved Metals								
Aluminum, dissolved	7429-90-5	0.0531	0.0010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Antimony, dissolved	7440-36-0	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Arsenic, dissolved	7440-38-2	0.00033	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Barium, dissolved	7440-39-3	0.0234	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Beryllium, dissolved	7440-41-7	<0.000020	0.000020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Bismuth, dissolved	7440-69-9	<0.000050	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Boron, dissolved	7440-42-8	0.015	0.010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Cadmium, dissolved	7440-43-9	<0.0000050	0.0000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Calcium, dissolved	7440-70-2	14.0	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Cesium, dissolved	7440-46-2	<0.000010	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Chromium, dissolved	7440-47-3	<0.00050	0.00050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Cobalt, dissolved	7440-48-4	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Copper, dissolved	7440-50-8	0.00078	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Iron, dissolved	7439-89-6	<0.010	0.010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Lead, dissolved	7439-92-1	<0.000050	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Lithium, dissolved	7439-93-2	0.0037	0.0010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Magnesium, dissolved	7439-95-4	3.90	0.0050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Manganese, dissolved	7439-96-5	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Molybdenum, dissolved	7439-98-7	0.000312	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Nickel, dissolved	7440-02-0	<0.00050	0.00050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Phosphorus, dissolved	7723-14-0	<0.050	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Potassium, dissolved	7440-09-7	1.07	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Rubidium, dissolved	7440-17-7	0.00119	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Selenium, dissolved	7782-49-2	<0.000050	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Silicon, dissolved	7440-21-3	1.18	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Silver, dissolved	7440-22-4	<0.000010	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Sodium, dissolved	7440-23-5	12.8	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631



Analytical Results

FC2502157-001

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Treated Water

Client sampling date / time: 05-Aug-2025 08:25

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QC/Lot
Dissolved Metals								
Strontium, dissolved	7440-24-6	0.0828	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Sulfur, dissolved	7704-34-9	2.38	0.50	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Tellurium, dissolved	13494-80-9	<0.00020	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Thallium, dissolved	7440-28-0	<0.000010	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Thorium, dissolved	7440-29-1	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Tin, dissolved	7440-31-5	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Titanium, dissolved	7440-32-6	<0.00030	0.00030	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Tungsten, dissolved	7440-33-7	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Uranium, dissolved	7440-61-1	<0.000010	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Vanadium, dissolved	7440-62-2	<0.00050	0.00050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Zinc, dissolved	7440-66-6	<0.0010	0.0010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Zirconium, dissolved	7440-67-7	<0.00020	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Dissolved metals filtration location	----	Field	-	-	EP421/EO	-	09-Aug-2025	2151631
Aggregate Organics								
Naphthenic acids	----	<1.0	1.0	mg/L	E565/EO	11-Aug-2025	18-Aug-2025	2153430
Volatile Organic Compounds [Fuels]								
Benzene	71-43-2	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Ethylbenzene	100-41-4	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Styrene	100-42-5	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Toluene	108-88-3	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Xylene, m+p-	179601-23-1	<0.40	0.40	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Xylene, o-	95-47-6	<0.30	0.30	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Xylenes, total	1330-20-7	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
BTEX, total	----	<1.0	1.0	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Hydrocarbons								
F1 (C6-C10)	----	<100	100	µg/L	E581.F1/EO	07-Aug-2025	07-Aug-2025	2148189
F1-BTEX	----	<100	100	µg/L	EC580/EO	-	08-Aug-2025	-
F2 (C10-C16)	----	<100	100	µg/L	E601/EO	11-Aug-2025	11-Aug-2025	2152774
F3 (C16-C34)	----	<250	250	µg/L	E601/EO	11-Aug-2025	11-Aug-2025	2152774
F4 (C34-C50)	----	<250	250	µg/L	E601/EO	11-Aug-2025	11-Aug-2025	2152774
Hydrocarbons, total (C6-C50)	n/a	<380	380	µg/L	EC581/EO	-	08-Aug-2025	-
Hydrocarbons Surrogates								
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	98.2	1.0	%	E601/EO	11-Aug-2025	11-Aug-2025	2152774
Dichlorotoluene, 3,4-	95-75-0	107	1.0	%	E581.F1/EO	07-Aug-2025	07-Aug-2025	2148189
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	99.2	1.0	%	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Difluorobenzene, 1,4-	540-36-3	105	1.0	%	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	83-32-9	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Acenaphthylene	208-96-8	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Acridine	260-94-6	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Anthracene	120-12-7	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benz(a)anthracene	56-55-3	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(a)pyrene	50-32-8	<0.0050	0.0050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(b+j)fluoranthene	n/a	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773



Analytical Results

FC2502157-001

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Treated Water

Client sampling date / time: 05-Aug-2025 08:25

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
Polycyclic Aromatic Hydrocarbons								
Benzo(b+j+k)fluoranthene	n/a	<0.015	0.015	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(e)pyrene	192-97-2	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(g,h,i)perylene	191-24-2	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(k)fluoranthene	207-08-9	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Chrysene	218-01-9	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Dibenz(a,h)anthracene	53-70-3	<0.0050	0.0050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Fluoranthene	206-44-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Fluorene	86-73-7	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Indeno(1,2,3-c,d)pyrene	193-39-5	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Methylnaphthalene, 1-	90-12-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Methylnaphthalene, 1+2-	----	<0.015	0.015	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Methylnaphthalene, 2-	91-57-6	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Naphthalene	91-20-3	<0.050	0.050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Perylene	198-55-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Phenanthrene	85-01-8	<0.020	0.020	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Pyrene	129-00-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Quinoline	91-22-5	<0.050	0.050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
B(a)P total potency equivalents [B(a)P TPE]	----	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Polycyclic Aromatic Hydrocarbons Surrogates								
Chrysene-d12	1719-03-5	82.8	0.1	%	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Naphthalene-d8	1146-65-2	84.7	0.1	%	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Phenanthrene-d10	1517-22-2	84.6	0.1	%	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Disinfectant By-Products								
Chlorate	14866-68-3	0.096	0.010	mg/L	E409.CLO3/WT	08-Aug-2025	08-Aug-2025	2149637

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

Analytical Results

FC2502157-002

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Raw Water Chamber Tap

Client sampling date / time: 05-Aug-2025 08:35

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
Physical Tests								
Alkalinity, bicarbonate (as HCO ₃)	71-52-3	56.4	1.2	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Alkalinity, carbonate (as CO ₃)	3812-32-6	<0.6	0.6	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Alkalinity, hydroxide (as OH)	14280-30-9	<0.3	0.3	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Alkalinity, total (as CaCO ₃)	----	46.2	1.0	mg/L	E290/EO	06-Aug-2025	06-Aug-2025	2146411
Conductivity	----	114	1.0	µS/cm	E100/EO	06-Aug-2025	06-Aug-2025	2146413
Hardness (as CaCO ₃), dissolved	----	47.8	0.50	mg/L	EC100/EO	-	11-Aug-2025	-
pH	----	8.09	0.10	pH units	E108/EO	06-Aug-2025	06-Aug-2025	2146412
Solids, total dissolved [TDS], calculated	----	65.0	1.0	mg/L	EC103/EO	-	07-Aug-2025	-
Anions and Nutrients								
Chloride	16887-00-6	4.45	0.50	mg/L	E235.Cl/EO	06-Aug-2025	06-Aug-2025	2145818
Fluoride	16984-48-8	0.071	0.020	mg/L	E235.F/EO	06-Aug-2025	06-Aug-2025	2145819



Analytical Results

FC2502157-002

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Raw Water Chamber Tap
Client sampling date / time: 05-Aug-2025 08:35

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
Anions and Nutrients								
Nitrate (as N)	14797-55-8	<0.020	0.020	mg/L	E235.NO3/EO	06-Aug-2025	06-Aug-2025	2145820
Nitrate + Nitrite (as N)	----	<0.0224	0.0224	mg/L	EC235.N+N/EO	-	07-Aug-2025	-
Nitrite (as N)	14797-65-0	<0.010	0.010	mg/L	E235.NO2/EO	06-Aug-2025	06-Aug-2025	2145822
Sulfate (as SO4)	14808-79-8	6.89	0.30	mg/L	E235.SO4/EO	06-Aug-2025	06-Aug-2025	2145821
Total Sulfides								
Sulfide, total (as S)	18496-25-8	<0.0015	0.0015	mg/L	E395/CG	-	06-Aug-2025	2146514
Sulfide, total (as H2S)	7783-06-4	<0.0016	0.0016	mg/L	E395/CG	-	06-Aug-2025	2146514
Metals								
Sodium adsorption ratio [SAR]	----	0.30	0.10	-	EC102A/EO	-	11-Aug-2025	-
Ion Balance								
Ion balance (cations/anions)	----	99.2	0.010	%	EC101/EO	-	07-Aug-2025	-
Total Metals								
Aluminum, total	7429-90-5	0.0375	0.0030	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Antimony, total	7440-36-0	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Arsenic, total	7440-38-2	0.00053	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Barium, total	7440-39-3	0.0228	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Beryllium, total	7440-41-7	<0.000020	0.000020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Bismuth, total	7440-69-9	<0.000050	0.000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Boron, total	7440-42-8	0.015	0.010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Cadmium, total	7440-43-9	0.0000066	0.0000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Calcium, total	7440-70-2	13.0	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Cesium, total	7440-46-2	<0.000010	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Chromium, total	7440-47-3	<0.00050	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Cobalt, total	7440-48-4	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Copper, total	7440-50-8	0.00118	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Iron, total	7439-89-6	0.070	0.010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Lead, total	7439-92-1	<0.050	0.050	µg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Lithium, total	7439-93-2	0.0037	0.0010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Magnesium, total	7439-95-4	3.67	0.0050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Manganese, total	7439-96-5	0.00816	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Molybdenum, total	7439-98-7	0.000321	0.000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Nickel, total	7440-02-0	0.00092	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Phosphorus, total	7723-14-0	<0.050	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Potassium, total	7440-09-7	1.07	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Rubidium, total	7440-17-7	0.00120	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Selenium, total	7782-49-2	0.000086	0.000050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Silicon, total	7440-21-3	1.36	0.10	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Silver, total	7440-22-4	<0.000010	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Sodium, total	7440-23-5	4.59	0.050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Strontium, total	7440-24-6	0.0891	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Sulfur, total	7704-34-9	2.77	0.50	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Tellurium, total	13494-80-9	<0.00020	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Thallium, total	7440-28-0	<0.000010	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Thorium, total	7440-29-1	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Tin, total	7440-31-5	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403



Analytical Results

FC2502157-002

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Raw Water Chamber Tap

Client sampling date / time: 05-Aug-2025 08:35

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QC/Lot
Total Metals								
Titanium, total	7440-32-6	0.00051	0.00030	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Tungsten, total	7440-33-7	<0.00010	0.00010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Uranium, total	7440-61-1	0.000113	0.000010	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Vanadium, total	7440-62-2	0.00064	0.00050	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Zinc, total	7440-66-6	0.0104	0.0030	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Zirconium, total	7440-67-7	<0.00020	0.00020	mg/L	E420/EO	07-Aug-2025	07-Aug-2025	2147403
Dissolved Metals								
Aluminum, dissolved	7429-90-5	0.0104	0.0010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Antimony, dissolved	7440-36-0	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Arsenic, dissolved	7440-38-2	0.00044	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Barium, dissolved	7440-39-3	0.0227	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Beryllium, dissolved	7440-41-7	<0.000020	0.000020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Bismuth, dissolved	7440-69-9	<0.000050	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Boron, dissolved	7440-42-8	0.014	0.010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Cadmium, dissolved	7440-43-9	<0.0000050	0.0000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Calcium, dissolved	7440-70-2	12.8	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Cesium, dissolved	7440-46-2	<0.000010	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Chromium, dissolved	7440-47-3	<0.00050	0.00050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Cobalt, dissolved	7440-48-4	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Copper, dissolved	7440-50-8	0.00095	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Iron, dissolved	7439-89-6	0.017	0.010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Lead, dissolved	7439-92-1	<0.000050	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Lithium, dissolved	7439-93-2	0.0034	0.0010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Magnesium, dissolved	7439-95-4	3.86	0.0050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Manganese, dissolved	7439-96-5	0.00035	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Molybdenum, dissolved	7439-98-7	0.000327	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Nickel, dissolved	7440-02-0	<0.00050	0.00050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Phosphorus, dissolved	7723-14-0	<0.050	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Potassium, dissolved	7440-09-7	1.06	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Rubidium, dissolved	7440-17-7	0.00117	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Selenium, dissolved	7782-49-2	0.000074	0.000050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Silicon, dissolved	7440-21-3	1.25	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Silver, dissolved	7440-22-4	<0.000010	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Sodium, dissolved	7440-23-5	4.79	0.050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Strontium, dissolved	7440-24-6	0.0828	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Sulfur, dissolved	7704-34-9	2.37	0.50	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Tellurium, dissolved	13494-80-9	<0.00020	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Thallium, dissolved	7440-28-0	<0.000010	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Thorium, dissolved	7440-29-1	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Tin, dissolved	7440-31-5	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Titanium, dissolved	7440-32-6	<0.00030	0.00030	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Tungsten, dissolved	7440-33-7	<0.00010	0.00010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Uranium, dissolved	7440-61-1	0.000109	0.000010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Vanadium, dissolved	7440-62-2	<0.00050	0.00050	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Zinc, dissolved	7440-66-6	<0.0010	0.0010	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631



Analytical Results

FC2502157-002

Sub-Matrix: Water

(Matrix: Water)

Client sample ID: Raw Water Chamber Tap

Client sampling date / time: 05-Aug-2025 08:35

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QC/Lot
Dissolved Metals								
Zirconium, dissolved	7440-67-7	<0.00020	0.00020	mg/L	E421/EO	09-Aug-2025	11-Aug-2025	2151631
Dissolved metals filtration location	----	Field	-	-	EP421/EO	-	09-Aug-2025	2151631
Aggregate Organics								
Naphthenic acids	----	<1.0	1.0	mg/L	E565/EO	11-Aug-2025	18-Aug-2025	2153430
Volatile Organic Compounds [Fuels]								
Benzene	71-43-2	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Ethylbenzene	100-41-4	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Styrene	100-42-5	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Toluene	108-88-3	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Xylene, m+p-	179601-23-1	<0.40	0.40	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Xylene, o-	95-47-6	<0.30	0.30	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Xylenes, total	1330-20-7	<0.50	0.50	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
BTEX, total	----	<1.0	1.0	µg/L	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Hydrocarbons								
F1 (C6-C10)	----	<100	100	µg/L	E581.F1/EO	07-Aug-2025	07-Aug-2025	2148189
F1-BTEX	----	<100	100	µg/L	EC580/EO	-	08-Aug-2025	-
F2 (C10-C16)	----	<100	100	µg/L	E601/EO	11-Aug-2025	11-Aug-2025	2152774
F3 (C16-C34)	----	<250	250	µg/L	E601/EO	11-Aug-2025	11-Aug-2025	2152774
F4 (C34-C50)	----	<250	250	µg/L	E601/EO	11-Aug-2025	11-Aug-2025	2152774
Hydrocarbons, total (C6-C50)	n/a	<380	380	µg/L	EC581/EO	-	08-Aug-2025	-
Hydrocarbons Surrogates								
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	96.8	1.0	%	E601/EO	11-Aug-2025	11-Aug-2025	2152774
Dichlorotoluene, 3,4-	95-75-0	109	1.0	%	E581.F1/EO	07-Aug-2025	07-Aug-2025	2148189
Volatile Organic Compounds Surrogates								
Bromofluorobenzene, 4-	460-00-4	99.1	1.0	%	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Difluorobenzene, 1,4-	540-36-3	93.7	1.0	%	E611A/EO	07-Aug-2025	07-Aug-2025	2148188
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	83-32-9	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Acenaphthylene	208-96-8	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Acridine	260-94-6	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Anthracene	120-12-7	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(a)anthracene	56-55-3	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(a)pyrene	50-32-8	<0.0050	0.0050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(b+j)fluoranthene	n/a	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(b+j+k)fluoranthene	n/a	<0.015	0.015	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(e)pyrene	192-97-2	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(g,h,i)perylene	191-24-2	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Benzo(k)fluoranthene	207-08-9	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Chrysene	218-01-9	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Dibenz(a,h)anthracene	53-70-3	<0.0050	0.0050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Fluoranthene	206-44-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Fluorene	86-73-7	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Indeno(1,2,3-c,d)pyrene	193-39-5	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Methylnaphthalene, 1-	90-12-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Methylnaphthalene, 1+2-	----	<0.015	0.015	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773



Analytical Results

FC2502157-002

Sub-Matrix: **Water**

(Matrix: **Water**)

Client sample ID: Raw Water Chamber Tap

Client sampling date / time: 05-Aug-2025 08:35

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
Polycyclic Aromatic Hydrocarbons								
Methylnaphthalene, 2-	91-57-6	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Naphthalene	91-20-3	<0.050	0.050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Perylene	198-55-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Phenanthrene	85-01-8	<0.020	0.020	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Pyrene	129-00-0	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Quinoline	91-22-5	<0.050	0.050	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
B(a)P total potency equivalents [B(a)P TPE]	----	<0.010	0.010	µg/L	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Polycyclic Aromatic Hydrocarbons Surrogates								
Chrysene-d12	1719-03-5	75.1	0.1	%	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Naphthalene-d8	1146-65-2	71.2	0.1	%	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Phenanthrene-d10	1517-22-2	79.0	0.1	%	E641A/EO	11-Aug-2025	11-Aug-2025	2152773
Disinfectant By-Products								
Chlorate	14866-68-3	<0.010	0.010	mg/L	E409.CLO3/WT	08-Aug-2025	08-Aug-2025	2149637
Chlorite	14998-27-7	<0.010	0.010	mg/L	E409.CLO2/WT	08-Aug-2025	08-Aug-2025	2149636

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