

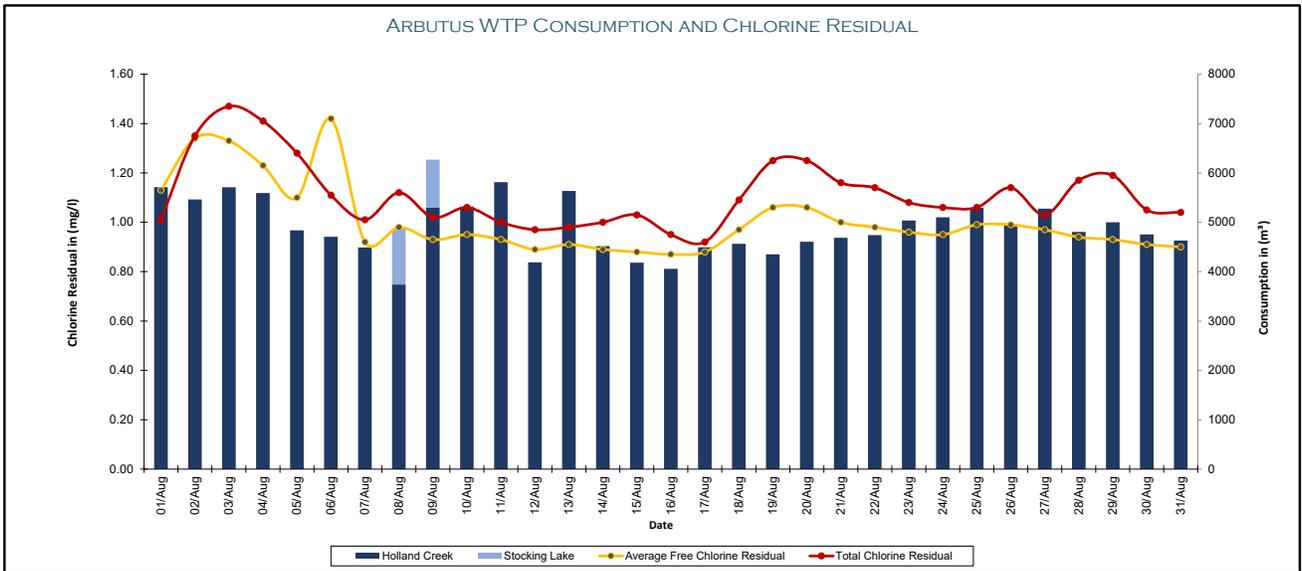
TOWN OF LADYSMITH - ARBUTUS WATER TREATMENT PLANT

AUGUST 2025 - MONTHLY REPORT

Date	Daily Flow			Chlorine Residual				CT*	External Lab Testing					
	Stocking Lake	Holland Creek	Combined Flow	Free Min	Free Max	Free Avg	Total		HPC	E.coli	Total Coliforms	Aluminum	THM	HAA
	m³	m³	m³	mg/l	mg/l	mg/l	mg/l		CFU	MPN	MPN	mg/l	mg/l	mg/l
01-Aug	0	5713	5713	0.89	1.13	1.13	1.01	262						
02-Aug	0	5462	5462	1.13	1.35	1.34	1.35	243						
03-Aug	0	5710	5710	1.33	1.38	1.33	1.47	242						
04-Aug	0	5593	5593	1.23	1.33	1.23	1.41	218						
05-Aug	0	4838	4838	1.10	1.23	1.10	1.28	189						
06-Aug	0	4708	4708	0.95	2.57	1.42	1.11	188	< 1	< 1	< 1	0.0201	0.0388	0.0124
07-Aug	0	4490	4490	0.88	0.96	0.92	1.01	157						
08-Aug	1134	3739	4873	0.83	0.99	0.98	1.12	163						
09-Aug	967	5304	6271	0.92	1.00	0.93	1.02	172						
10-Aug	0	5317	5317	0.93	0.96	0.95	1.06	202						
11-Aug	0	5814	5814	0.93	0.96	0.93	1.00	204						
12-Aug	0	4188	4188	0.85	0.94	0.89	0.97	211						
13-Aug	0	5634	5634	0.87	0.91	0.91	0.98	176						
14-Aug	0	4516	4516	0.89	0.93	0.89	1.00	193	< 1	< 1	< 1			
15-Aug	0	4181	4181	0.88	0.90	0.88	1.03	156						
16-Aug	0	4057	4057	0.86	0.88	0.87	0.95	204						
17-Aug	0	4492	4492	0.81	0.88	0.88	0.92	218						
18-Aug	0	4564	4564	0.87	0.97	0.97	1.09	230						
19-Aug	0	4352	4352	1.06	1.07	1.06	1.25	274	< 1	< 1	< 1			
20-Aug	0	4607	4607	1.06	1.14	1.06	1.25	245						
21-Aug	0	4687	4687	1.00	1.06	1.00	1.16	204						
22-Aug	0	4740	4740	0.98	1.00	0.98	1.14	212						
23-Aug	0	5035	5035	0.96	0.98	0.96	1.08	198						
24-Aug	0	5102	5102	0.94	0.96	0.95	1.06	200						
25-Aug	0	5296	5296	0.94	0.99	0.99	1.06	215						
26-Aug	0	4961	4961	0.97	0.99	0.99	1.14	181						
27-Aug	0	5275	5275	0.97	1.00	0.97	1.03	196	< 1	< 1	< 1			
28-Aug	0	4806	4806	0.94	0.97	0.94	1.17	220						
29-Aug	0	5000	5000	0.93	0.95	0.93	1.19	207						
30-Aug	0	4755	4755	0.91	0.93	0.91	1.05	191						
31-Aug	0	4630	4630	0.90	0.92	0.90	1.04	222						

*CT - Recorded as the minimum value at the highest daily flow ** Manual Residual were not taken

Total	2101	151566	153667											
Average	68	4889	4957	0.96	1.07	1.01	1.11	206	< 1	< 1	< 1	0.0201	0.0388	0.01240



Town of Ladysmith Arbutus DWTP

Monthly LRV and Turbidity Report

08/01/2025 - 09/01/2025

LRV Monthly Average

Asset	Parameter	Health	Avg	Std. Dev	Points	LL	L	%In	% between L and LL	% < LL	Unit
UF 1	LRV	●	5.0	0.0	32	4.25	4.5	100 %	0 %	0 %	#
UF 2	LRV	●	5.0	0.0	32	4.25	4.5	100 %	0 %	0 %	#
UF 3	LRV	●	5.0	0.0	32	4.25	4.5	100 %	0 %	0 %	#

LRV Daily Values

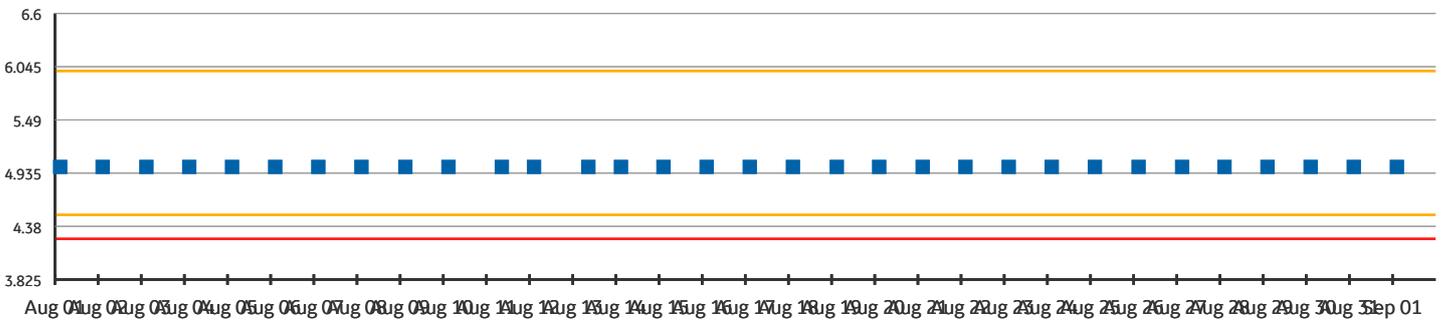
Asset	Parameter	Aug 0 1	Aug 0 2	Aug 0 3	Aug 0 4	Aug 0 5	Aug 0 6	Aug 0 7	Aug 0 8	Aug 0 9	Aug 1 0	Aug 1 1	Aug 1 2
UF 1	LRV	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
UF 2	LRV	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
UF 3	LRV	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

Asset	Aug 1 3	Aug 1 4	Aug 1 5	Aug 1 6	Aug 1 7	Aug 1 8	Aug 1 9	Aug 2 0	Aug 2 1	Aug 2 2	Aug 2 3	Aug 2 4	Aug 2 5	Aug 2 6	Aug 2 7	Aug 2 8
UF 1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
UF 2	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
UF 3	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

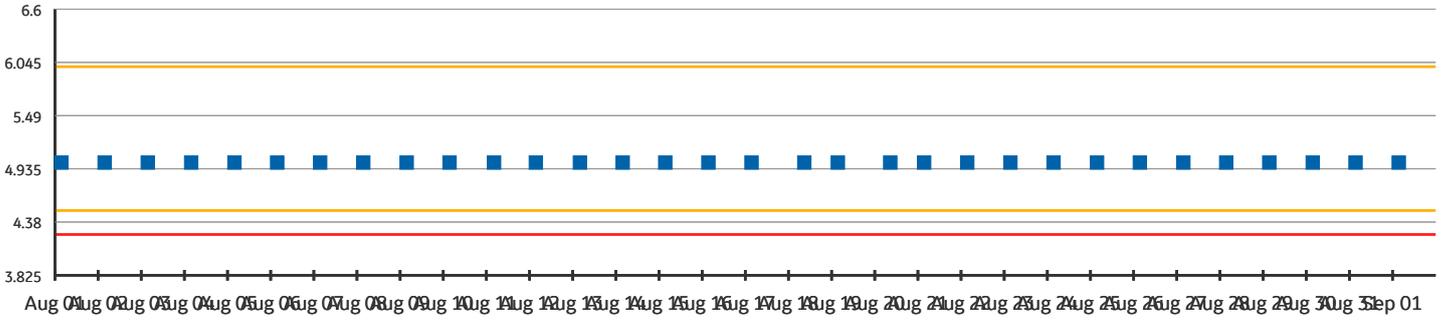
Asset	Aug 2 9	Aug 3 0	Aug 3 1	Sep 0 1
UF 1	5.0	5.0	5.0	5.0
UF 2	5.0	5.0	5.0	5.0
UF 3	5.0	5.0	5.0	5.0

LRV Raw Data

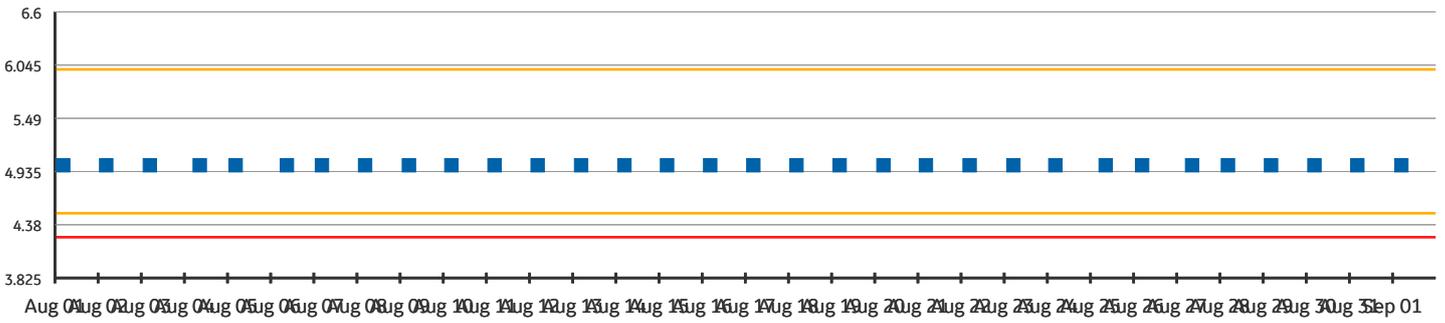
UF 1 - LRV (#)



UF 2 - LRV (#)



UF 3 - LRV (#)



Turbidity Monthly Average

Asset	Parameter	Health	Avg	Std. Dev	Points	H	HH	%In	% between H and HH	% > HH	Unit
UF 1	PermeateTurbidity		0.021	0.0	45182	--	--	100 %	0 %	0 %	NTU
UF 2	PermeateTurbidity		0.015	0.0	45182	--	--	100 %	0 %	0 %	NTU
UF 3	PermeateTurbidity		0.02	0.0	45182	--	--	100 %	0 %	0 %	NTU
UF 1	PermeateTurbidityAfterBP	●	0.02	0.0	572	0.1	0.3	100 %	0 %	0 %	NTU
UF 2	PermeateTurbidityAfterBP	●	0.015	0.0	589	0.1	0.3	100 %	0 %	0 %	NTU
UF 3	PermeateTurbidityAfterBP	●	0.02	0.0	580	0.1	0.3	100 %	0 %	0 %	NTU

Turbidity Daily Averages

Asset	Parameter	Aug 01	Aug 02	Aug 03	Aug 04	Aug 05	Aug 06	Aug 07	Aug 08	Aug 09	Aug 10	Aug 11
UF 1	PermeateTurbidity	0.015	0.015	0.015	0.015	0.015	0.017	0.017	0.018	0.017	0.018	0.02
UF 2	PermeateTurbidity	0.014	0.014	0.015	0.015	0.015	0.015	0.014	0.014	0.013	0.013	0.013
UF 3	PermeateTurbidity	0.015	0.015	0.015	0.015	0.015	0.016	0.015	0.017	0.017	0.017	0.017

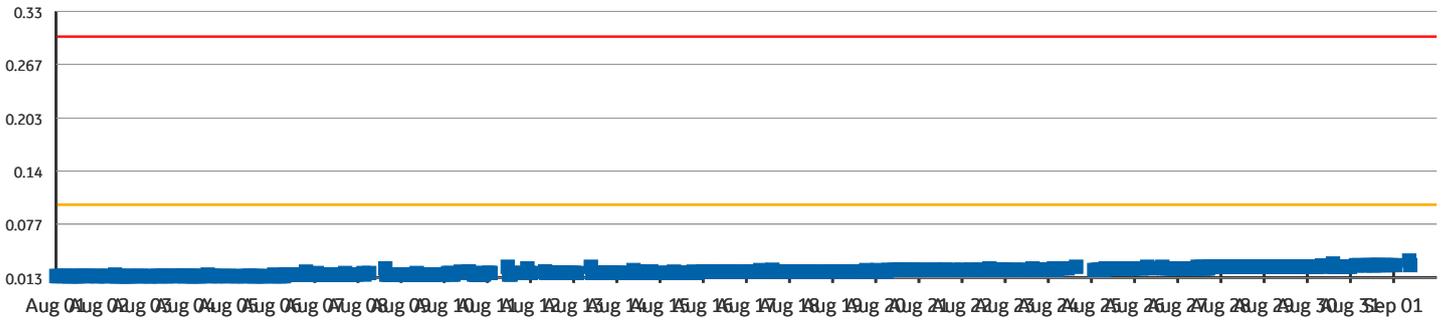
Asset	Parameter	Aug 01	Aug 02	Aug 03	Aug 04	Aug 05	Aug 06	Aug 07	Aug 08	Aug 09	Aug 10	Aug 11
UF 1	PermeateTurbidityAfterBP	0.015	0.015	0.015	0.015	0.015	0.017	0.017	0.018	0.017	0.018	0.02
UF 2	PermeateTurbidityAfterBP	0.014	0.013	0.015	0.015	0.015	0.015	0.014	0.014	0.013	0.013	0.013
UF 3	PermeateTurbidityAfterBP	0.014	0.015	0.015	0.015	0.015	0.016	0.016	0.016	0.016	0.017	0.017

Asset	Aug 12	Aug 13	Aug 14	Aug 15	Aug 16	Aug 17	Aug 18	Aug 19	Aug 20	Aug 21	Aug 22	Aug 23	Aug 24	Aug 25	Aug 26
UF 1	0.019	0.02	0.02	0.02	0.021	0.021	0.021	0.021	0.022	0.022	0.022	0.023	0.024	0.024	0.024
UF 2	0.014	0.014	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
UF 3	0.018	0.019	0.019	0.019	0.019	0.02	0.021	0.021	0.021	0.022	0.023	0.022	0.023	0.024	0.024
UF 1	0.019	0.019	0.019	0.019	0.021	0.021	0.02	0.021	0.022	0.022	0.023	0.023	0.024	0.024	0.025
UF 2	0.013	0.013	0.014	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
UF 3	0.017	0.018	0.019	0.019	0.019	0.02	0.021	0.021	0.021	0.023	0.023	0.023	0.023	0.024	0.024

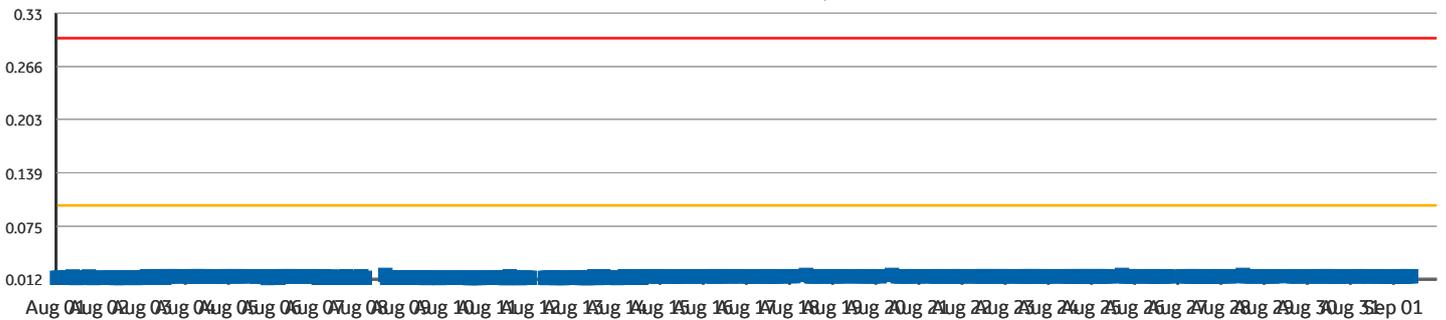
Asset	Aug 27	Aug 28	Aug 29	Aug 30	Aug 31	Sep 01
UF 1	0.025	0.026	0.026	0.027	0.028	0.029
UF 2	0.015	0.015	0.015	0.015	0.015	0.015
UF 3	0.026	0.024	0.024	0.024	0.024	0.024
UF 1	0.025	0.026	0.026	0.027	0.028	0.03
UF 2	0.015	0.015	0.015	0.015	0.015	0.015
UF 3	0.026	0.023	0.024	0.024	0.024	0.024

Turbidity Raw Data

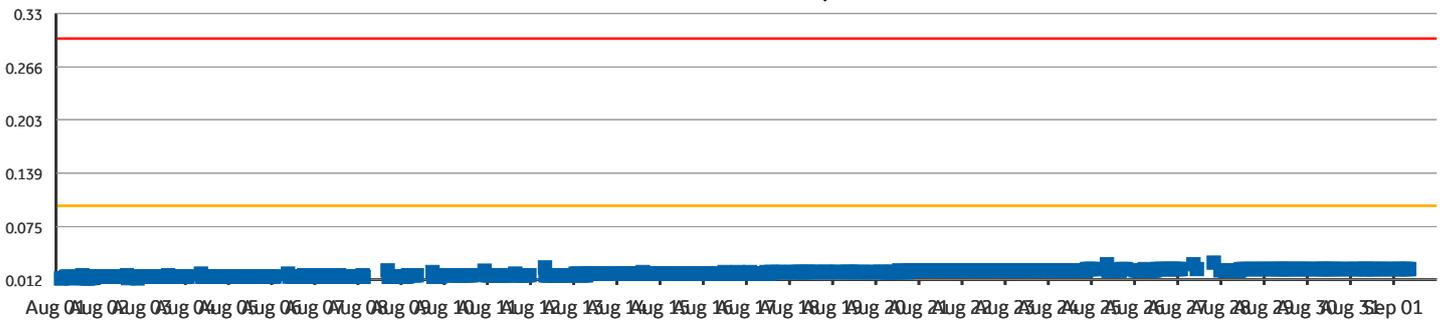
UF 1 - PermeateTurbidityAfterBP (NTU)



UF 2 - PermeateTurbidityAfterBP (NTU)



UF 3 - PermeateTurbidityAfterBP (NTU)



CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: VA25B9558		
Client	: Town of Ladysmith	Laboratory	: ALS Environmental - Vancouver
Contact	: Shawn Baker	Account Manager	: Kevin Bhikadia
Address	: 410 Esplanade PO Box 220 Ladysmith British Columbia Canada V9G 1A2	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: Arbutus Water Treatment Plant - Monthly Sampling	Date Samples Received	: 07-Aug-2025 11:45
PO	: 10940	Date Analysis Commenced	: 11-Aug-2025
C-O-C number	: ----	Issue Date	: 14-Aug-2025 17:33
Sampler	: ----		
Site	: Town of Ladysmith		
Quote number	: Town of Ladysmith Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

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
- Guideline Comparison

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>
Catherine DeMone		LCMS, Waterloo, Ontario
Janice Leung		Organics, Burnaby, British Columbia
Kim Jensen		Metals, Burnaby, British Columbia



No Breaches Found

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.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key: LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
mg/L	milligrams per litre
µg/L	micrograms per litre

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).
For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.



Analytical Results Evaluation

Matrix: Water

				Client sample ID	Treated Water (post reservoir)	----	----	----	----	----	----
				Client sampling date / time	06-Aug-2025 10:30	----	----	----	----	----	----
				Sub-Matrix	Water	----	----	----	----	----	----
Analyte	CAS Number	Method/Lab	Unit	VA25B9558-001	----	----	----	----	----	----	----
				Result	----	----	----	----	----	----	----
Total Metals											
Aluminum, total	7429-90-5	E420/VA	mg/L	0.0201	----	----	----	----	----	----	----
Volatile Organic Compounds [THMs]											
Bromodichloromethane	75-27-4	E611B/VA	µg/L	4.3	----	----	----	----	----	----	----
Bromoform	75-25-2	E611B/VA	µg/L	<1.0	----	----	----	----	----	----	----
Chloroform	67-66-3	E611B/VA	µg/L	34.5	----	----	----	----	----	----	----
Dibromochloromethane	124-48-1	E611B/VA	µg/L	<1.0	----	----	----	----	----	----	----
Trihalomethanes [THMs], total	----	E611B/VA	µg/L	38.8	----	----	----	----	----	----	----
Volatile Organic Compounds [THMs] Surrogates											
Bromofluorobenzene, 4-	460-00-4	E611B/VA	%	92.5	----	----	----	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611B/VA	%	98.7	----	----	----	----	----	----	----
Haloacetic Acids											
Bromochloroacetic acid	5589-96-8	E750/WT	µg/L	<1.00	----	----	----	----	----	----	----
Dibromoacetic acid	631-64-1	E750/WT	µg/L	<1.00	----	----	----	----	----	----	----
Dichloroacetic acid	79-43-6	E750/WT	µg/L	6.55	----	----	----	----	----	----	----
Monobromoacetic acid	79-08-3	E750/WT	µg/L	<1.00	----	----	----	----	----	----	----
Monochloroacetic acid	79-11-8	E750/WT	µg/L	<1.00	----	----	----	----	----	----	----
Trichloroacetic acid	76-03-9	E750/WT	µg/L	5.89	----	----	----	----	----	----	----
Haloacetic acids, total [HAA5]	n/a	E750/WT	µg/L	12.4	----	----	----	----	----	----	----

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



CERTIFICATE OF ANALYSIS

Work Order	: VA25B9558	Laboratory	: ALS Environmental - Vancouver
Client	: Town of Ladysmith	Account Manager	: Kevin Bhikadia
Contact	: Shawn Baker	Address	: 8081 Lougheed Highway
Address	: 410 Esplanade PO Box 220 Ladysmith British Columbia Canada V9G 1A2		: Burnaby BC Canada V5A 1W9
Telephone	: ----	E-mail	: Kevin.Bhikadia@alsglobal.com
Project	: Arbutus Water Treatment Plant - Monthly Sampling	Telephone	: +1 604 253 4188
PO	: 10940	Date Samples Received	: 07-Aug-2025 11:45
C-O-C number	: ----	Date Analysis Commenced	: 11-Aug-2025
Sampler	: ----	Issue Date	: 14-Aug-2025 17:33
Site	: Town of Ladysmith		
Quote number	: Town of Ladysmith Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

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>
Catherine DeMone		LCMS, Waterloo, Ontario
Janice Leung		Organics, Burnaby, British Columbia
Kim Jensen		Metals, Burnaby, British Columbia



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).

<i>Unit</i>	<i>Description</i>
mg/L	milligrams per litre
µg/L	micrograms per litre

<: 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 (post reservoir)	----	----	----	----
					Client sampling date / time	06-Aug-2025 10:30	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B9558-001	----	----	----	----	----
						Result	----	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0201	----	----	----	----	----
Volatile Organic Compounds [THMs]										
Bromodichloromethane	75-27-4	E611B/VA	1.0	µg/L	4.3	----	----	----	----	----
Bromoform	75-25-2	E611B/VA	1.0	µg/L	<1.0	----	----	----	----	----
Chloroform	67-66-3	E611B/VA	1.0	µg/L	34.5	----	----	----	----	----
Dibromochloromethane	124-48-1	E611B/VA	1.0	µg/L	<1.0	----	----	----	----	----
Trihalomethanes [THMs], total	----	E611B/VA	2.0	µg/L	38.8	----	----	----	----	----
Volatile Organic Compounds [THMs] Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611B/VA	1.0	%	92.5	----	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611B/VA	1.0	%	98.7	----	----	----	----	----
Haloacetic Acids										
Bromochloroacetic acid	5589-96-8	E750/WT	1.00	µg/L	<1.00	----	----	----	----	----
Dibromoacetic acid	631-64-1	E750/WT	1.00	µg/L	<1.00	----	----	----	----	----
Dichloroacetic acid	79-43-6	E750/WT	1.00	µg/L	6.55	----	----	----	----	----
Monobromoacetic acid	79-08-3	E750/WT	1.00	µg/L	<1.00	----	----	----	----	----
Monochloroacetic acid	79-11-8	E750/WT	1.00	µg/L	<1.00	----	----	----	----	----
Trichloroacetic acid	76-03-9	E750/WT	1.00	µg/L	5.89	----	----	----	----	----
Haloacetic acids, total [HAA5]	n/a	E750/WT	5.00	µg/L	12.4	----	----	----	----	----

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA25B9558</p> <p>Client : Town of Ladysmith</p> <p>Contact : Shawn Baker</p> <p>Address : 410 Esplanade PO Box 220 Ladysmith BC Canada V9G 1A2</p> <p>Telephone : ----</p> <p>Project : Arbutus Water Treatment Plant - Monthly Sampling</p> <p>PO : 10940</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Town of Ladysmith</p> <p>Quote number : Town of Ladysmith Standing Offer_V2</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 5</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Kevin Bhikadia</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 07-Aug-2025 11:45</p> <p>Issue Date : 14-Aug-2025 17:33</p>
--	---

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 Matrix Spike Duplicate (MSD) outliers occur - please see following pages for full details.
- 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.



CERTIFICATE OF ANALYSIS

Work Order	: VA25B9541		
Client	: Town of Ladysmith	Laboratory	: ALS Environmental - Vancouver
Contact	: Shawn Baker	Account Manager	: Kevin Bhikadia
Address	: 410 Esplanade PO Box 220 Ladysmith British Columbia Canada V9G 1A2	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: ----	E-mail	: Kevin.Bhikadia@alsglobal.com
Project	: Arbutus Water Treatment Plant - Weekly Sampling	Telephone	: +1 604 253 4188
PO	: 10940	Date Samples Received	: 07-Aug-2025 11:45
C-O-C number	: ----	Date Analysis Commenced	: 07-Aug-2025
Sampler	: ----	Issue Date	: 14-Aug-2025 09:49
Site	: Town of Ladysmith		
Quote number	: Town of Ladysmith Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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>
Anita Chuang		Inorganics, Burnaby, British Columbia
Lindsay Gung		Microbiology, Burnaby, British Columbia
Monica Ko		Inorganics, Burnaby, British Columbia



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).

<i>Unit</i>	<i>Description</i>
-	no units
CFU/mL	colony forming units per millilitre
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
NTU	nephelometric turbidity units
pH units	pH units
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.

Workorder Comments

All Samples: HPC Exceeded Recommended Holding Time prior to receipt at the lab for Microbiology analysis. Testing will proceed unless notified otherwise.

Work Order : VA25B9541
Client : Town of Ladysmith
Project : Arbutus Water Treatment Plant - Weekly Sampling





Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Raw Water ----	DAF Effluent ----	UF Effluent ----	Treated Water (post reservoir) ----	----
					Client sample ID				
					Client sampling date / time				
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B9541-001	VA25B9541-002	VA25B9541-003	VA25B9541-004	----
					Result	Result	Result	Result	----
Sample Preparation									
Dissolved carbon filtration location	----	EP358/VA	-	-	lab	lab	lab	----	----
Physical Tests									
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	----	----	----	11.3	----
Colour, true	----	E329/VA	5.0	CU	----	----	----	<5.0	----
Conductivity	----	E100/VA	2.0	µS/cm	----	----	----	55.7	----
pH	----	E108/VA	0.10	pH units	----	----	----	7.39	----
Turbidity	----	E121/VA	0.10	NTU	----	----	----	<0.10	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	3.43	1.55	1.94	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	3.09	1.74	2.54	----	----
Microbiological Tests									
Heterotrophic plate count [HPC]	----	E020/VA	1	CFU/mL	----	----	----	<1	----
Coliforms, Escherichia coli [E. coli]	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----
Coliforms, total	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA25B9541</p> <p>Client : Town of Ladysmith</p> <p>Contact : Shawn Baker</p> <p>Address : 410 Esplanade PO Box 220 Ladysmith BC Canada V9G 1A2</p> <p>Telephone : ----</p> <p>Project : Arbutus Water Treatment Plant - Weekly Sampling</p> <p>PO : 10940</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Town of Ladysmith</p> <p>Quote number : Town of Ladysmith Standing Offer_V2</p> <p>No. of samples received : 4</p> <p>No. of samples analysed : 4</p>	<p>Page : 1 of 7</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Kevin Bhikadia</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 07-Aug-2025 11:45</p> <p>Issue Date : 14-Aug-2025 09:48</p>
---	---

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)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

CERTIFICATE OF ANALYSIS

Work Order : **VA25C0498**
Client : **Town of Ladysmith**
Contact : Shawn Baker
Address : 410 Esplanade PO Box 220
 Ladysmith British Columbia Canada V9G 1A2
Telephone : ----
Project : Arbutus Water Treatment - Weekly Sampling
PO : 10940
C-O-C number : ----
Sampler : ----
Site : RFP Tender No. 2022-IS-20 Extension
Quote number : Town of Ladysmith Standing Offer
No. of samples received : 4
No. of samples analysed : 4

Laboratory : ALS Environmental - Vancouver
Account Manager : Kevin Bhikadia
Address : 8081 Lougheed Highway
 Burnaby BC Canada V5A 1W9
E-mail : Kevin.Bhikadia@alsglobal.com
Telephone : +1 604 253 4188
Date Samples Received : 15-Aug-2025 23:40
Date Analysis Commenced : 15-Aug-2025
Issue Date : 21-Aug-2025 12:25

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

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>
Claire Yang		Inorganics, Burnaby, British Columbia
Lindsay Gung		Microbiology, Burnaby, British Columbia
Miles Gropen		Inorganics, Burnaby, British Columbia
Monica Ko		Inorganics, Burnaby, British Columbia



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).

<i>Unit</i>	<i>Description</i>
-	no units
CFU/mL	colony forming units per millilitre
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
NTU	nephelometric turbidity units
pH units	pH units
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.

Work Order : VA25C0498
Client : Town of Ladysmith
Project : Arbutus Water Treatment - Weekly Sampling





Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Raw Water ----	DAF Effluent ----	UF Effluent ----	Treated Water (post reservoir) ----	----
					Client sample ID				
					Client sampling date / time				
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C0498-001	VA25C0498-002	VA25C0498-003	VA25C0498-004	----
					Result	Result	Result	Result	----
Sample Preparation									
Dissolved carbon filtration location	----	EP358/VA	-	-	lab	lab	lab	----	----
Physical Tests									
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	----	----	----	12.5	----
Colour, true	----	E329/VA	5.0	CU	----	----	----	<5.0	----
Conductivity	----	E100/VA	2.0	µS/cm	----	----	----	54.6	----
pH	----	E108/VA	0.10	pH units	----	----	----	7.38	----
Turbidity	----	E121/VA	0.10	NTU	----	----	----	<0.10	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.12	1.08	0.92	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.16	1.09	0.82	----	----
Microbiological Tests									
Heterotrophic plate count [HPC]	----	E020/VA	1	CFU/mL	----	----	----	<1	----
Coliforms, Escherichia coli [E. coli]	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----
Coliforms, total	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA25C0498</p> <p>Client : Town of Ladysmith</p> <p>Contact : Shawn Baker</p> <p>Address : 410 Esplanade PO Box 220 Ladysmith BC Canada V9G 1A2</p> <p>Telephone : ----</p> <p>Project : Arbutus Water Treatment - Weekly Sampling</p> <p>PO : 10940</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : RFP Tender No. 2022-IS-20 Extension</p> <p>Quote number : Town of Ladysmith Standing Offer_V2</p> <p>No. of samples received : 4</p> <p>No. of samples analysed : 4</p>	<p>Page : 1 of 7</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Kevin Bhikadia</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 15-Aug-2025 23:40</p> <p>Issue Date : 21-Aug-2025 12:24</p>
---	---

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)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



CERTIFICATE OF ANALYSIS

Work Order	: VA25C0959	Laboratory	: ALS Environmental - Vancouver
Client	: Town of Ladysmith	Account Manager	: Kevin Bhikadia
Contact	: Shawn Baker	Address	: 8081 Lougheed Highway
Address	: 410 Esplanade PO Box 220 Ladysmith British Columbia Canada V9G 1A2		: Burnaby BC Canada V5A 1W9
Telephone	: ----	E-mail	: Kevin.Bhikadia@alsglobal.com
Project	: Arbutus Water Treatment Plant - Weekly Sampling	Telephone	: +1 604 253 4188
PO	: 10940	Date Samples Received	: 20-Aug-2025 10:30
C-O-C number	: ----	Date Analysis Commenced	: 20-Aug-2025
Sampler	: ----	Issue Date	: 26-Aug-2025 08:57
Site	: Town of Ladysmith		
Quote number	: Town of Ladysmith Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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>
Lindsay Gung		Inorganics, Burnaby, British Columbia
Lindsay Gung		Microbiology, Burnaby, British Columbia



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).

<i>Unit</i>	<i>Description</i>
-	no units
CFU/mL	colony forming units per millilitre
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
NTU	nephelometric turbidity units
pH units	pH units
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.

Workorder Comments

Sample : HPC Exceeded Recommended Holding Time & testing will proceed unless notified otherwise.

Work Order : VA25C0959
Client : Town of Ladysmith
Project : Arbutus Water Treatment Plant - Weekly Sampling





Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Raw Water ----	DAF Effluent ----	UF Effluent ----	Treated Water (post reservoir) ----	----
					Client sample ID				
					Client sampling date / time				
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C0959-001	VA25C0959-002	VA25C0959-003	VA25C0959-004	----
					Result	Result	Result	Result	----
Sample Preparation									
Dissolved carbon filtration location	----	EP358/VA	-	-	lab	lab	lab	----	----
Physical Tests									
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	----	----	----	12.1	----
Colour, true	----	E329/VA	5.0	CU	----	----	----	<5.0	----
Conductivity	----	E100/VA	2.0	µS/cm	----	----	----	55.1	----
pH	----	E108/VA	0.10	pH units	----	----	----	7.33	----
Turbidity	----	E121/VA	0.10	NTU	----	----	----	<0.10	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.45	1.13	1.13	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.41	1.25	1.00	----	----
Microbiological Tests									
Heterotrophic plate count [HPC]	----	E020/VA	1	CFU/mL	----	----	----	<1	----
Coliforms, Escherichia coli [E. coli]	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----
Coliforms, total	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA25C0959</p> <p>Client : Town of Ladysmith</p> <p>Contact : Shawn Baker</p> <p>Address : 410 Esplanade PO Box 220 Ladysmith BC Canada V9G 1A2</p> <p>Telephone : ----</p> <p>Project : Arbutus Water Treatment Plant - Weekly Sampling</p> <p>PO : 10940</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Town of Ladysmith</p> <p>Quote number : Town of Ladysmith Standing Offer_V2</p> <p>No. of samples received : 4</p> <p>No. of samples analysed : 4</p>	<p>Page : 1 of 7</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Kevin Bhikadia</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 20-Aug-2025 10:30</p> <p>Issue Date : 26-Aug-2025 08:49</p>
---	---

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)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



CERTIFICATE OF ANALYSIS

Work Order	: VA25C2000	Laboratory	: ALS Environmental - Vancouver
Client	: Town of Ladysmith	Account Manager	: Kevin Bhikadia
Contact	: Shawn Baker	Address	: 8081 Lougheed Highway
Address	: 410 Esplanade PO Box 220 Ladysmith British Columbia Canada V9G 1A2		: Burnaby BC Canada V5A 1W9
Telephone	: ----	E-mail	: Kevin.Bhikadia@alsglobal.com
Project	: Arbutus Water Treatment Plant - Quarterly Lake Sampling	Telephone	: +1 604 253 4188
PO	: 10940	Date Samples Received	: 28-Aug-2025 11:40
C-O-C number	: ----	Date Analysis Commenced	: 28-Aug-2025
Sampler	: ----	Issue Date	: 08-Sep-2025 07:42
Site	: RFP Tender No. 2022-IS-20 Extension		
Quote number	: Town of Ladysmith Standing Offer		
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>
Anita Chuang		Inorganics, Burnaby, British Columbia
Caitlin Macey		Microbiology, Burnaby, British Columbia
Chau Tran		Metals, Burnaby, British Columbia
Kevin Duarte		Metals, Burnaby, British Columbia
Monica Ko		Inorganics, Burnaby, British Columbia
Ophelia Chiu		Organics, Burnaby, British Columbia



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).

<i>Unit</i>	<i>Description</i>
-	no units
% T/cm	% transmittance per centimetre
AU/cm	absorbance units per centimetre
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
NTU	nephelometric turbidity units
pH units	pH units
µg/L	micrograms per litre

<: 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.

Work Order : VA25C2000
Client : Town of Ladysmith
Project : Arbutus Water Treatment Plant - Quarterly Lake Sampling





Analytical Results

Sub-Matrix: Water (Matrix: Water)					Stocking Lake ----	Holland Lake ----	----	----	----
Client sample ID									
Client sampling date / time					27-Aug-2025 08:21	27-Aug-2025 09:22	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C2000-001	VA25C2000-002	----	----	----
					Result	Result	----	----	----
Sample Preparation									
Dissolved carbon filtration location	----	EP358/VA	-	-	lab	lab	----	----	----
Physical Tests									
Absorbance, UV (@ 254nm)	----	E404/VA	0.0050	AU/cm	0.0580	0.0700	----	----	----
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	9.9	4.2	----	----	----
Colour, true	----	E329/VA	5.0	CU	6.2	7.4	----	----	----
Hardness (as CaCO3), from total Ca/Mg	----	EC100A/VA	0.60	mg/L	10.0	4.54	----	----	----
pH	----	E108/VA	0.10	pH units	7.28	6.78	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	30	19	----	----	----
Turbidity	----	E121/VA	0.10	NTU	0.61	0.56	----	----	----
Transmittance, UV (@ 254nm)	----	E404/VA	1.0	% T/cm	87.5	85.1	----	----	----
Anions and Nutrients									
Bromide	24959-67-9	E235.Br-L/VA	0.050	mg/L	<0.050	<0.050	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.71	3.47	----	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	3.18	3.71	----	----	----
Microbiological Tests									
Coliforms, Escherichia coli [E. coli]	----	E010/VA	1	MPN/100 mL	1	<1	----	----	----
Coliforms, total	----	E010/VA	1	MPN/100 mL	>200	>200	----	----	----
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0175	0.0272	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	Stocking Lake	Holland Lake	----	----	----
					Client sampling date / time	27-Aug-2025 08:21	27-Aug-2025 09:22	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C2000-001	VA25C2000-002	----	----	----	
					Result	Result	----	----	----	
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00013	<0.00010	----	----	----	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.00300	0.00425	----	----	----	
Beryllium, total	7440-41-7	E420/VA	0.000100	mg/L	<0.000100	<0.000100	----	----	----	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	0.021	<0.010	----	----	----	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	0.0000168	<0.0000050	----	----	----	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	3.25	1.42	----	----	----	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	0.000011	<0.000010	----	----	----	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	0.00088	0.00061	----	----	----	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.024	0.181	----	----	----	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.471	0.242	----	----	----	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.00264	0.0210	----	----	----	
Mercury, total	7439-97-6	E508/VA	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000239	<0.000050	----	----	----	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	<0.050	----	----	----	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.233	0.126	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	Stocking Lake	Holland Lake	----	----	----
					Client sampling date / time	27-Aug-2025 08:21	27-Aug-2025 09:22	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C2000-001	VA25C2000-002	----	----	----	
					Result	Result	----	----	----	
Total Metals										
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00059	0.00050	----	----	----	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	1.23	0.71	----	----	----	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	1.13	0.693	----	----	----	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0118	0.00764	----	----	----	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	<0.50	<0.50	----	----	----	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	<0.00030	0.00042	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	0.000016	<0.000010	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	<0.00050	----	----	----	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	----	----	----	
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	250	µg/L	<250	<250	----	----	----	
EPH (C10-C32)	----	E601A/VA	400	µg/L	<400	<400	----	----	----	
EPH (C19-C32)	----	E601A/VA	250	µg/L	<250	<250	----	----	----	



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	Stocking Lake	Holland Lake	----	----	----
					Client sampling date / time	27-Aug-2025 08:21	27-Aug-2025 09:22	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C2000-001	VA25C2000-002	----	----	----	----
					Result	Result	----	----	----	----
Hydrocarbons										
TEH (C10-C30), BC	----	E601A/VA	250	µg/L	<250	<250	----	----	----	----
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	82.0	91.7	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Acenaphthylene	208-96-8	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Acridine	260-94-6	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Anthracene	120-12-7	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.0050	µg/L	<0.0050	<0.0050	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.015	µg/L	<0.015	<0.015	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Chrysene	218-01-9	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.0050	µg/L	<0.0050	<0.0050	----	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Fluorene	86-73-7	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Methylnaphthalene, 1+2-	----	E641A/VA	0.015	µg/L	<0.015	<0.015	----	----	----	----



Analytical Results

Sub-Matrix: Water
 (Matrix: Water)

					Client sample ID	Stocking Lake	Holland Lake	----	----	----
					Client sampling date / time	27-Aug-2025 08:21	27-Aug-2025 09:22	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C2000-001	VA25C2000-002	----	----	----	----
					Result	Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons										
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/L	<0.050	<0.050	----	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.020	µg/L	<0.020	<0.020	----	----	----	----
Pyrene	129-00-0	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/L	<0.050	<0.050	----	----	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A/VA	0.010	µg/L	<0.010	<0.010	----	----	----	----
PAHs, high molecular weight (BC AWQ)	n/a	E641A/VA	0.030	µg/L	<0.030	<0.030	----	----	----	----
PAHs, low molecular weight (BC AWQ)	n/a	E641A/VA	0.060	µg/L	<0.060	<0.060	----	----	----	----
PAHs, total (EPA 16)	n/a	E641A/VA	0.065	µg/L	<0.065	<0.065	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Chrysene-d12	1719-03-5	E641A/VA	0.1	%	113	115	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%	104	109	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%	109	112	----	----	----	----

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA25C2000</p> <p>Client : Town of Ladysmith</p> <p>Contact : Shawn Baker</p> <p>Address : 410 Esplanade PO Box 220 Ladysmith BC Canada V9G 1A2</p> <p>Telephone : ----</p> <p>Project : Arbutus Water Treatment Plant - Quarterly Lake Sampling</p> <p>PO : 10940</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : RFP Tender No. 2022-IS-20 Extension</p> <p>Quote number : Town of Ladysmith Standing Offer_V2</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</p>	<p>Page : 1 of 12</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Kevin Bhikadia</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 28-Aug-2025 11:40</p> <p>Issue Date : 08-Sep-2025 07:41</p>
---	--

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 Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- 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)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



CERTIFICATE OF ANALYSIS

Work Order	: VA25C1999	Laboratory	: ALS Environmental - Vancouver
Client	: Town of Ladysmith	Account Manager	: Kevin Bhikadia
Contact	: Shawn Baker	Address	: 8081 Lougheed Highway
Address	: 410 Esplanade PO Box 220 Ladysmith British Columbia Canada V9G 1A2		: Burnaby BC Canada V5A 1W9
Telephone	: ----	E-mail	: Kevin.Bhikadia@alsglobal.com
Project	: Arbutus Water Treatment Plant - Weekly Sampling	Telephone	: +1 604 253 4188
PO	: 10940	Date Samples Received	: 28-Aug-2025 11:40
C-O-C number	: ----	Date Analysis Commenced	: 28-Aug-2025
Sampler	: ----	Issue Date	: 04-Sep-2025 10:11
Site	: Town of Ladysmith		
Quote number	: Town of Ladysmith Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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>
Anita Chuang		Inorganics, Burnaby, British Columbia
Caitlin Macey		Microbiology, Burnaby, British Columbia
Miles Gropen		Microbiology, Burnaby, British Columbia
Monica Ko		Inorganics, Burnaby, British Columbia



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).

<i>Unit</i>	<i>Description</i>
-	no units
CFU/mL	colony forming units per millilitre
CU	colour units (1 cu = 1 mg/l pt)
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres
NTU	nephelometric turbidity units
pH units	pH units
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.

Workorder Comments

Exceeded Recommended Holding Time prior to receipt at the lab for HPC analysis.

Work Order : VA25C1999
Client : Town of Ladysmith
Project : Arbutus Water Treatment Plant - Weekly Sampling





Analytical Results

Sub-Matrix: Drinking Water
 (Matrix: Water)

					Raw Water ----	DAF Effluent ----	UF Effluent ----	Treated Water (post reservoir) ----	----
					Client sample ID				
					Client sampling date / time				
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25C1999-001	VA25C1999-002	VA25C1999-003	VA25C1999-004	----
					Result	Result	Result	Result	----
Sample Preparation									
Dissolved carbon filtration location	----	EP358/VA	-	-	lab	lab	lab	----	----
Physical Tests									
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	----	----	----	12.1	----
Colour, true	----	E329/VA	5.0	CU	----	----	----	<5.0	----
Conductivity	----	E100/VA	2.0	µS/cm	----	----	----	53.7	----
pH	----	E108/VA	0.10	pH units	----	----	----	7.37	----
Turbidity	----	E121/VA	0.10	NTU	----	----	----	<0.10	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	2.25	1.09	1.48	----	----
Carbon, total organic [TOC]	----	E355-L/VA	0.50	mg/L	2.08	1.75	1.70	----	----
Microbiological Tests									
Heterotrophic plate count [HPC]	----	E020/VA	1	CFU/mL	----	----	----	<1	----
Coliforms, Escherichia coli [E. coli]	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----
Coliforms, total	----	E010/VA	1	MPN/100 mL	----	----	----	<1	----

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



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA25C1999</p> <p>Client : Town of Ladysmith</p> <p>Contact : Shawn Baker</p> <p>Address : 410 Esplanade PO Box 220 Ladysmith BC Canada V9G 1A2</p> <p>Telephone : ----</p> <p>Project : Arbutus Water Treatment Plant - Weekly Sampling</p> <p>PO : 10940</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Town of Ladysmith</p> <p>Quote number : Town of Ladysmith Standing Offer_V2</p> <p>No. of samples received : 4</p> <p>No. of samples analysed : 4</p>	<p>Page : 1 of 8</p> <p>Laboratory : ALS Environmental - Vancouver</p> <p>Account Manager : Kevin Bhikadia</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 28-Aug-2025 11:40</p> <p>Issue Date : 04-Sep-2025 10:11</p>
---	---

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 Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- 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)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.