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CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	:	**KS2602787**		
Client	:	**City of Merritt**	Laboratory	: ALS Environmental - Kamloops
Contact	:	Kevin Vilac	Account Manager	: Gulraj Dhanaua
Address	:	City Hall 2185 Voght Street, PO Box 189 Merritt British Columbia Canada V1K 1B8	Address	: 1445 McGill Road, Unit 2B Kamloops BC Canada V2C 6K7
Telephone	:	250 315 1360	Telephone	: +1 250 372 3588
Project	:	City of Merrit 9158 Weekly Drinking Water	Date Samples Received	: 21-Jul-2026 12:42
PO	:	----	Date Analysis Commenced	: 22-Jul-2026
C-O-C number	:	----	Issue Date	: 27-Jul-2026 08:39
Sampler	:	Dick Curnow		
Site	:	City of Merritt		
Quote number	:	KS23-GMMT100-002		
No. of samples received	:	7		
No. of samples analysed	:	7		

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.

Signatories	*Position*	*Laboratory Department*
Aman Galymov	Analyst	Microbiology, Kamloops, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
Kengard Pump House ----	Water	Manganese, total	Based on taste and staining of laundry and plumbing fixtures.	CDWG	AO	0.126 mg/L	0.02 mg/L
	Water	Manganese, total	Health Basis of MAC: Effects on neurological development and behaviour; deficits in memory, attention, and motor skills. Other: Formula-fed infants (where water containing manganese at levels above the MAC is used to prepare formula) may be especially at risk.	CDWG	MAC	0.126 mg/L	0.12 mg/L

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).

Unit	*Description*
mg/L	milligrams per litre
MPN/100mL	most probable number per hundred millilitres

>: 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	Collettville Pump House ----	Public Works Yard Sink ----	Tennis Court Fountain ----	Game On Pub ----	Merritt Civic Centre ----	Emcon Services ----	Kengard Pump House ----
			Client sampling date / time	21-Jul-2026 08:30	21-Jul-2026 08:05	21-Jul-2026 10:20	21-Jul-2026 10:50	21-Jul-2026 09:55	21-Jul-2026 09:00	21-Jul-2026 09:30
			Sub-Matrix	Water	Water	Water	Water	Water	Water	Water
Analyte	CAS Number	Method/Lab	Unit	KS2602787-001	KS2602787-002	KS2602787-003	KS2602787-004	KS2602787-005	KS2602787-006	KS2602787-007
				Result	Result	Result	Result	Result	Result	Result
Microbiological Tests										
Coliforms, total	----	E010/KS	MPN/100mL	<1	<1	<1	<1	<1	<1	<1
Coliforms, Escherichia coli [E. coli]	----	E010/KS	MPN/100mL	<1	<1	<1	<1	<1	<1	<1
Total Metals										
Manganese, total	7439-96-5	E420/VA	mg/L	0.00498	0.00233	<0.00010	0.0140	0.00038	0.00050	0.126

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

Summary of Guideline Limits

Analyte	CAS Number	Unit	CDWG AO	CDWG MAC					
Microbiological Tests									
Coliforms, total		MPN/100mL	----	**1 MPN/100mL**	----	----	----	----	----
Coliforms, Escherichia coli [E. coli]		MPN/100mL	----	**1 MPN/100mL**	----	----	----	----	----
Total Metals									
Manganese, total	7439-96-5	mg/L	**0.02 mg/L**	**0.12 mg/L**	----	----	----	----	----

Key:

CDWG — Canada Guidelines for Canadian Drinking Water Quality (JAN, 2023)

AO — Aesthetic Objective

MAC — Maximum Acceptable Concentrations

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Quality Control Interpretive Report

Work Order	:	**KS2602787**		
Client	:	City of Merritt	Laboratory	: ALS Environmental - Kamloops
Contact	:	Kevin Vilac	Account Manager	: Gulraj Dhanaua
Address	:	City Hall 2185 Voght Street, PO Box 189 Merritt BC Canada V1K 1B8	Address	: 1445 McGill Road, Unit 2B Kamloops British Columbia Canada V2C 6K7
Telephone	:	250 315 1360	Telephone	: +1 250 372 3588
Project	:	City of Merrit 9158 Weekly Drinking Water	Date Samples Received	: 21-Jul-2026 12:42
PO	:	----	Issue Date	: 27-Jul-2026 08:39
C-O-C number	:	----		
Sampler	:	Dick Curnow		
Site	:	City of Merritt		
Quote number	:	KS23-GMMT100-002		
No. of samples received	:	7		
No. of samples analysed	:	7		

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 Services 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 Laboratory Control Sample Duplicate (LCSD) outliers occur
- No Matrix Spike outliers occur.
- No Matrix Spike Duplicate (MSD) outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: Water

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

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Microbiological Tests : Total Coliforms and E. coli (Enzyme Substrate)												
Sterile HDPE (sodium thiosulfate)												
Collettville Pump House	001	2727436	E010	21-Jul-2026	----	----	----		22-Jul-2026	30 hrs	27 hrs	✓
Public Works Yard Sink	002	2727436	E010	21-Jul-2026	----	----	----		22-Jul-2026	30 hrs	28 hrs	✓
Tennis Court Fountain	003	2727436	E010	21-Jul-2026	----	----	----		22-Jul-2026	30 hrs	26 hrs	✓
Game On Pub	004	2727436	E010	21-Jul-2026	----	----	----		22-Jul-2026	30 hrs	25 hrs	✓
Merritt Civic Centre	005	2727436	E010	21-Jul-2026	----	----	----		22-Jul-2026	30 hrs	26 hrs	✓
Emcon Services	006	2727436	E010	21-Jul-2026	----	----	----		22-Jul-2026	30 hrs	27 hrs	✓
Kengard Pump House	007	2727436	E010	21-Jul-2026	----	----	----		22-Jul-2026	30 hrs	26 hrs	✓
Total Metals : Total Metals in Water by CRC ICPMS												
HDPE - total (lab preserved)												
Collettville Pump House	001	2726243	E420	21-Jul-2026	24-Jul-2026	180 days	3 days	✓	26-Jul-2026	180 days	5 days	✓
Public Works Yard Sink	002	2726243	E420	21-Jul-2026	24-Jul-2026	180 days	3 days	✓	26-Jul-2026	180 days	5 days	✓
Tennis Court Fountain	003	2726243	E420	21-Jul-2026	24-Jul-2026	180 days	3 days	✓	26-Jul-2026	180 days	5 days	✓
Game On Pub	004	2726243	E420	21-Jul-2026	24-Jul-2026	180 days	3 days	✓	26-Jul-2026	180 days	5 days	✓

Matrix: Water

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

Analyte Group : Analytical Method / Container / Client sample ID	ALS Sample ID	QC Lot	Method	Sampling Date	Extraction / Preparation				Analysis			
					Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
						Rec	Actual			Rec	Actual	
Total Metals : Total Metals in Water by CRC ICPMS												
HDPE - total (lab preserved)												
Merritt Civic Centre	005	2726243	E420	21-Jul-2026	24-Jul-2026	180 days	3 days	✓	26-Jul-2026	180 days	5 days	✓
Emcon Services	006	2726243	E420	21-Jul-2026	24-Jul-2026	180 days	3 days	✓	26-Jul-2026	180 days	5 days	✓
Kengard Pump House	007	2726243	E420	21-Jul-2026	24-Jul-2026	180 days	3 days	✓	26-Jul-2026	180 days	5 days	✓

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

Quality Control Parameter Frequency Compliance

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

Matrix: Water

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method / Lab	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Total Coliforms and E. coli (Enzyme Substrate)	E010 / KS	2727436	2	20	10.0	10.0	✓
Total Metals in Water by CRC ICPMS	E420 / VA	2726243	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Total Metals in Water by CRC ICPMS	E420 / VA	2726243	1	20	5.0	5.0	✓
Method Blanks (MB)							
Total Coliforms and E. coli (Enzyme Substrate)	E010 / KS	2727436	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420 / VA	2726243	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Total Metals in Water by CRC ICPMS	E420 / VA	2726243	1	20	5.0	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Coliforms and E. coli (Enzyme Substrate)	E010 ALS Environmental - Kamloops	Water	APHA 9223 (mod)	The enzyme substrate test simultaneously detects Total Coliforms and E. coli in a 100 mL sample after incubation at 35.0 ±0.5°C for either 18 or 24 hours (dependent on reagent used).
Total Metals in Water by CRC ICPMS	E420 ALS Environmental - Vancouver	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Preparation Methods	**Method / Lab**	**Matrix**	**Method Reference**	**Method Descriptions**
Total Metals Water Digestion	EP420 ALS Environmental - Vancouver	Water	EPA 200.2 (mod)	Water samples are digested with HNO3 and HCl to liberate "total recoverable" metals.

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QUALITY CONTROL REPORT

Work Order	:	**KS2602787**			
Client	:	City of Merritt	Laboratory	:	ALS Environmental - Kamloops
Contact	:	Kevin Vilac	Account Manager	:	Gulraj Dhanaua
Address	:	City Hall 2185 Voght Street, PO Box 189 Merritt BC Canada V1K 1B8	Address	:	1445 McGill Road, Unit 2B Kamloops British Columbia Canada V2C 6K7
Telephone	:	250 315 1360	Telephone	:	+1 250 372 3588
Project	:	City of Merrit 9158 Weekly Drinking Water	Date Samples Received	:	21-Jul-2026 12:42
PO	:	----	Date Analysis Commenced	:	22-Jul-2026
C-O-C number	:	----	Issue Date	:	27-Jul-2026 08:39
Sampler	:	Dick Curnow			
Site	:	City of Merritt			
Quote number	:	KS23-GMMT100-002			
No. of samples received	:	7			
No. of samples analysed	:	7			

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Aman Galymov	Analyst	Kamloops Microbiology, Kamloops, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key:

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

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: Effluent

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals(QC Lot: 2726243)											
FJ2601993-001	Anonymous	Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0254	0.0251	1.15 %	20%	---

Sub-Matrix: Water

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Microbiological Tests(QC Lot: 2727436)											
KS2602814-001	Anonymous	Coliforms, Escherichia coli [E. coli]	----	E010	1	MPN/100mL	<1	<1	0	Diff <2x LOR	---
KS2602787-006	Emcon Services	Coliforms, Escherichia coli [E. coli]	----	E010	1	MPN/100mL	<1	<1	0	Diff <2x LOR	---
		Coliforms, total	----	E010	1	MPN/100mL	1	<1	0	Diff <2x LOR	---
		Coliforms, total	----	E010	1	MPN/100mL	<1	<1	0	Diff <2x LOR	---

Method Blank (MB) Report

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

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Microbiological Tests(QC Lot: 2727436)						
Coliforms, Escherichia coli [E. coli]	----	E010	1	MPN/100mL	<1	----
Coliforms, total	----	E010	1	MPN/100mL	<1	----
Total Metals(QC Lot: 2726243)						
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Total Metals(QC Lot: 2726243)									
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for

Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery (%)		Qualifier
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	
Total Metals(QC Lot: 2726243)										
KS2602773-001	Anonymous	Manganese, total	7439-96-5	E420	ND	----	ND	70.0	130	---