ALS Canada Ltd.



CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

: VA22C9405 **Work Order** Page : 1 of 3

Client Laboratory : Vancouver - Environmental : Vancouver School Board

Contact : Stephen Thomas **Account Manager** : Tasnia Tarannum Address

: 1549 Clark Drive Address : 8081 Lougheed Highway

Vancouver BC Canada V5L 3L4 Burnaby, British Columbia Canada V5A 1W9

Telephone Telephone : +1 604 253 4188 : ----Project : Ideal Mini School **Date Samples Received** : 02-Dec-2022 14:15

Date Analysis Commenced : 04-Dec-2022 PO

: 06-Dec-2022 16:21 C-O-C number : 20-1039081 Issue Date

Sampler : KM Site : ----Quote number 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
- 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

Kim Jensen Department Manager - Metals Metals, Burnaby, British Columbia Page : 2 of 3 Work Order · VA22C9405

Client : Vancouver School Board

Project : Ideal Mini School



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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

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

>: greater than.

Red shading is applied where the result is greater than the Guideline Upper Limit or the result is lower than the Guideline Lower Limit.

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.

<: less than.

Page

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Client Vancouver School Board

Ideal Mini School Project



Analytical Results Evaluation

Matrix:	Client sample ID						 	
	Sampling date/time						 	
Analyte	CAS Number	Unit					 	
		-						
Please refer to the General Comments section	n for an explanation of any	qualifiers dete	ected.			_		
lead, total		7439-92-1	mg/L					



QUALITY CONTROL INTERPRETIVE REPORT

Work Order :VA22C9405 Page : 1 of 5

Client : Vancouver School Board Laboratory : Vancouver - Environmental

Contact Stephen Thomas **Account Manager** : Tasnia Tarannum

Address Address : 1549 Clark Drive : 8081 Lougheed Highway

> Vancouver BC Canada V5L 3L4 Burnaby, British Columbia Canada V5A 1W9

> > Telephone

: +1 604 253 4188 Project : Ideal Mini School **Date Samples Received** : 02-Dec-2022 14:15

PO Issue Date : 06-Dec-2022 16:20

C-O-C number :20-1039081

Sampler :KM Site Quote number No. of samples received :2 No. of samples analysed :2

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

Telephone

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

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

Summary of Outliers

Outliers: Quality Control Samples

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

Outliers: Reference Material (RM) Samples

No Reference Material (RM) Sample outliers occur.

Outliers: Analysis Holding Time Compliance (Breaches) ■ No Analysis Holding Time Outliers exist.

Outliers: Frequency of Quality Control Samples • No Quality Control Sample Frequency Outliers occur.

Page : 3 of 5 Work Order · VA22C9405

Client : Vancouver School Board

Project : Ideal Mini School



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

Evaluation. ~ - Holding time exceedance; v = within Holding Time											
Analyte Group	Method	Sampling Date	Ext	raction / Pı	reparation			Analys	sis		
Container / Client Sample ID(s)			Preparation	Holdin	g Times	Eval	Eval Analysis Date		Holding Times		
			Date	Rec	Actual			Rec	Actual		
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) Corr 100 RM 114 Bottle Filter	E420	02-Dec-2022	04-Dec-2022				06-Dec-2022	180 days	4 days	√	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE - total (lab preserved) RM 117 Sink	E420	02-Dec-2022	04-Dec-2022				06-Dec-2022	180 days	4 days	✓	

Legend & Qualifier Definitions

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

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Client : Vancouver School Board

Project : Ideal Mini School



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		Co	unt										
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation						
Laboratory Duplicates (DUP)													
Total metals in Water by CRC ICPMS	E420	766303	1	16	6.2	5.0	✓						
Laboratory Control Samples (LCS)													
Total metals in Water by CRC ICPMS	E420	766303	1	16	6.2	5.0	✓						
Method Blanks (MB)													
Total metals in Water by CRC ICPMS	E420	766303	1	16	6.2	5.0	✓						
Matrix Spikes (MS)													
Total metals in Water by CRC ICPMS	E420	766303	1	16	6.2	5.0	✓						

Page : 5 of 5 Work Order : VA22C9405

Client : Vancouver School Board

Project : Ideal Mini School



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 metals in Water by CRC ICPMS	E420	Water	EPA 200.2/6020B	Water samples are digested with nitric and hydrochloric acids, and analyzed by
			(mod)	Collision/Reaction Cell ICPMS.
	Vancouver -			
	Environmental			Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered
				by this method.

ALS Canada Ltd.



QUALITY CONTROL REPORT

Work Order :VA22C9405

Client : Vancouver School Board

Contact : Stephen Thomas

Address : 1549 Clark Drive

Vancouver BC Canada V5L 3L4

Telephone

Project : Ideal Mini School

PO :----

C-O-C number : 20-1039081

Sampler : KM

Site :--Quote number :--No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 3

Laboratory : Vancouver - Environmental

Account Manager : Tasnia Tarannum

Address : 8081 Lougheed Highway

Burnaby, British Columbia Canada V5A 1W9

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Date Samples Received :02-Dec-2022 14:15

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Issue Date : 06-Dec-2022 16:20

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

Kim Jensen Department Manager - Metals Vancouver Metals, Burnaby, British Columbia

Page : 2 of 3 Work Order : VA22C9405

Client : Vancouver School Board

Project : Ideal Mini School

ALS

General Comments

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

Key:

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: Water						Laboratory Duplicate (DUP) Report									
Laboratory sample ID	mple ID Client sample ID Analyte CAS Number Method					Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier				
Total Metals (QC Lo	t: 766303)														
VA22C9047-001	Anonymous	lead, total	7439-92-1	E420	0.000500	mg/L	0.000652	0.000672	0.000020	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
Total Metals (QCLot: 766303)						
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	

Page : 3 of 3 Work Order : VA22C9405

Client : Vancouver School Board

Project : Ideal Mini School



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	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 766303)									
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	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 the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

	1 \	1 / 3	,	, 3						
Sub-Matrix: Water					Matrix Spike (MS) Report					
					Sp	Spike Recovery (%) Recovery Limits		Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QC	Lot: 766303)									
VA22C9047-002	Anonymous	lead, total	7439-92-1	E420	0.0868 mg/L	0.1 mg/L	86.8	70.0	130	

Chain of Custody (COC) / Analytical Request Form



Canada Toll Free: 1 800 668 9878

COC Number: 20 - 1039081

Page

of

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

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

Results Summary VA22C9405

Project Ideal Mini School

Report To Stephen Thomas, Vancouver School Board

Date Received 02-Dec-2022 14:15 **Issue Date** 06-Dec-2022 16:21

Amendment 0

Corr 100 RM 114 RM 117 Sink Client Sample ID

Bottle Filter

Date Sampled 02-Dec-2022 02-Dec-2022 Time Sampled 07:45 07:50

ALS Sample ID VA22C9405-001 VA22C9405-002

Lowest Sub-Matrix: Sub-Matrix: Units Analyte **Detection Limit** Water Water

Total Metals (Matrix: Water)

lead, total mg/L 0.000050 0.000397 0.000982