

Date: 15-MAY-19 PO No.: 1517879 WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 109
Sampled By: Chris Carrell
Date Collected: 08-MAY-19
Lab Sample ID: L2269901-5

Matrix: Water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00139		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated	MAY 2018					

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.

* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality

- A blank entry designates no known limit.

- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Joanne Lee Account Manager





ATTN: Stephen Thomas

Date: 15-MAY-19 PO No.: 1517879 WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 126 Sampled By: Chris Carrell Date Collected: 08-MAY-19 Lab Sample ID: L2269901-3 Matrix: Water

PAGE 3 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.0710		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated	MAY 2018					

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.

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Approved by

Joanne Lee Account Manager





Date: 15-MAY-19 PO No.: 1517879 WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 116
Sampled By: Chris Carrell
Date Collected: 08-MAY-19
Lab Sample ID: L2269901-1

Matrix: Water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00103		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated	MAY 2018					

- * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.
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Approved by

Joanne Lee Account Manager





Date: 15-MAY-19 PO No.: 1517879 WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 212 Sampled By: Chris Carrell Date Collected: 08-MAY-19 Lab Sample ID: L2269901-6

Matrix: Water

PAGE 6 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000635		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated	MAY 2018					

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.

* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality

- A blank entry designates no known limit.

- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Joanne Lee Account Manager





Date: 15-MAY-19 PO No.: 1517879 WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 113 Sampled By: Chris Carrell Date Collected: 08-MAY-19 Lab Sample ID: L2269901-4

Matrix: Water

PAGE 4 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000498		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated	MAY 2018					

- * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.

 * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality
- A blank entry designates no known limit.
- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Joanne Lee Account Manager







Vancouver BC V5L 3L4

VANCOUVER SCHOOL BOARD Maintenance and Construction 1549 Clark Drive

Sampled By: Chris Carrell Date Collected: 08-MAY-19 Lab Sample ID: L2269901-2 Matrix: Water

Sample ID: RM 120

Date: 15-MAY-19 PO No.: 1517879 WO No.: L2269901 LSD:

Project Ref: DR. R.E. MCKECHNIE

ATTN: Stephen Thomas

PAGE 2 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.0179		mg/L	0.005		11-MAY-1
CDWQG = Health Canada Guideline Limits updated	MAY 2018	_				

* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit.

* Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality

- A blank entry designates no known limit.

- A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.

Approved by

Joanne Lee Account Manager





Date: 14-JUN-19 PO No.: 1517879 WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 116
Sampled By: Chris Carrell
Date Collected: 07-JUN-19
Lab Sample ID: L2287859-1

Matrix: Water

Vancouver BC V5L 3L4 ATTN: Stephen Thomas			watrix: wate	er	PAGE	1 of 8
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00182		mg/L	0.005		13-JUN-19
* CDWQG = Health Canada Guideline Limits updated * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only * Turbidity guideline based on membrane filtration. For Summary Table of Guidelines for Canadian Drinking Wa - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQ Approved by Edward Ngai	guidelines on con ter Quality	ventional treatm	ent and slow sand			ase see

Account Manager





Date: 14-JUN-19 PO No.: 1517879 WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 004
Sampled By: Chris Carrell
Date Collected: 07-JUN-19
Lab Sample ID: L2287859-2

Matrix: Water

Vancouver BC V5L 3L4 ATTN: Stephen Thomas			watrix: wate	er	PAGE	2 of 8
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000622		mg/L	0.005		13-JUN-19
* CDWQG = Health Canada Guideline Limits updated * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only * Turbidity guideline based on membrane filtration. For a Summary Table of Guidelines for Canadian Drinking Wa - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQ Approved by Edward Ngai	guidelines on con ter Quality	ventional treatm	ent and slow sand			ase see

Account Manager





Date: 14-JUN-19 PO No.: 1517879 WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 006 L
Sampled By: Chris Carrell
Date Collected: 07-JUN-19
Lab Sample ID: L2287859-3

Matrix: Water

Vancouver BC V5L 3L4 ATTN: Stephen Thomas			Matrix: Wate	er	PAGE	3 of 8
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000267		mg/L	0.005		13-JUN-19
* CDWQG = Health Canada Guideline Limits updated * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only * Turbidity guideline based on membrane filtration. For Summary Table of Guidelines for Canadian Drinking Wa - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQ Approved by Edward Ngai	guidelines on con ter Quality	ventional treatm	ent and slow sand			ase see

Account Manager





Date: 14-JUN-19 PO No.: 1517879 WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 006 R
Sampled By: Chris Carrell
Date Collected: 07-JUN-19
Lab Sample ID: L2287859-4

Matrix: Water

Vancouver BC V5L 3L4 ATTN: Stephen Thomas			Matrix: Wate	9 F	PAGE	4 of 8
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000715		mg/L	0.005		13-JUN-19
* CDWQG = Health Canada Guideline Limits updated * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only * Turbidity guideline based on membrane filtration. For commany Table of Guidelines for Canadian Drinking War - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQ	guidelines on con ter Quality	ventional treatm	ent and slow sand			ase see

Account Manager





Date: 14-JUN-19 PO No.: 1517879 WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 005
Sampled By: Chris Carrell
Date Collected: 07-JUN-19
Lab Sample ID: L2287859-5

Vancouver BC V5L 3L4 ATTN: Stephen Thomas			Matrix: Wate	er	PAGE	5 of 8
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00530		mg/L	0.005		13-JUN-19
* CDWQG = Health Canada Guideline Limits updated * CDWQG for Nitrate+Nitrite-N is the limit for nitrate onl * Turbidity guideline based on membrane filtration. For Summary Table of Guidelines for Canadian Drinking W - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWC	guidelines on cor ater Quality	ventional treatm	ent and slow sand	N.D. = less than de or diatomaceous e	tection limit. arth filtration plea	se see
Approved by Edward Ngai Account Manager	_					





Date: 14-JUN-19 PO No.: 1517879 WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 112
Sampled By: Chris Carrell
Date Collected: 07-JUN-19
Lab Sample ID: L2287859-6

Matrix: Water

Vancouver BC V5L 3L4 ATTN: Stephen Thomas			Matrix: Wate	er	PAGE	6 of 8
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00108		mg/L	0.005		13-JUN-19
* CDWQG = Health Canada Guideline Limits updated * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only * Turbidity guideline based on membrane filtration. For commany Table of Guidelines for Canadian Drinking War - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQC	guidelines on con ter Quality	ventional treatm	ent and slow sand			ase see

Account Manager





Date: 14-JUN-19 PO No.: 1517879 WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 222
Sampled By: Chris Carrell
Date Collected: 07-JUN-19
Lab Sample ID: L2287859-7

Matrix: Water

Vancouver BC V5L 3L4 ATTN: Stephen Thomas			Matrix: Wate	er	PAGE	7 of 8
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000864		mg/L	0.005		13-JUN-19
* CDWQG = Health Canada Guideline Limits updated * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only * Turbidity guideline based on membrane filtration. For Summary Table of Guidelines for Canadian Drinking Wa - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQ Approved by Edward Ngai	guidelines on cor ter Quality	ventional treatm	ent and slow sand			ase see

Account Manager



Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N* Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.

Lead* A cumulative body poison, uncommon in naturally occurring hard waters.

Fluoride* Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).

Total Coliforms* Criteria is 0 CFU/100mL. Adverse health effects.

E. Coli* Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.

Balance Quality control parameter ratioing cations to anions
Bicarbonate See Alkalinity. Report as the anion HCO3-1
Carbonate See Alkalinity. Reported at the anion CO3-2

Calcium See Hardness. Common major cation of water chemistry.

Chloride Common major anion of water chemistry.

Conductance Physical test measuring water salinity (dissolved ions or solids)

Hardness Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in

water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.

Hydroxide See alkalinity

Magnesium See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.

Measure of water acidity/alkalinity. Normal range is 7.0-8.5.

Potassium Common major cation of water chemistry.

Sodium Common major cation of water chemistry. Measure of salinity (saltiness).

Sulphate Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.

Total Dissolved Solids A measure of water salinity.

Iron Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.

Manganese Elevated levels may cause staining of laundry and porcelain.

Heterotrophic

рΗ

Plate Count Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample mg/kg wwt - milligrams per kilogram based on wet weight of sample mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

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

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Environmental

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2287859-COFC

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ALS Lab Wor	rk Order # (lab use only):		ALS Contact:		Sampler: 🗘	is Carrell	NUMBER										AMPL	SUSPECTED HAZARD (see Special Instructions)			
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Drinking Water (DW) Samples¹ (client use) Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)				Frozen																	
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