



Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 127A

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-1

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000420		mg/L	0.005		03-JUN-19
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* 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.</p>						
<p>Approved by  _____ Joanne Lee Account Manager</p>						



Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 129

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-2

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000778		mg/L	0.005		03-JUN-19
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* 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.</p>						
<p>Approved by  _____ Joanne Lee Account Manager</p>						



Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 119

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-3

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
 1549 Clark Drive
 Vancouver BC V5L 3L4
 ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000460		mg/L	0.005		03-JUN-19
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* 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.</p>						
<p>Approved by  _____ Joanne Lee Account Manager</p>						



Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 109

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-4

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00111		mg/L	0.005		03-JUN-19
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* 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.</p>						
<p>Approved by  _____ Joanne Lee Account Manager</p>						



Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 124

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-5

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
 1549 Clark Drive
 Vancouver BC V5L 3L4
 ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000704		mg/L	0.005		03-JUN-19
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* 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.</p>						
<p>Approved by  _____ Joanne Lee Account Manager</p>						



Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 213


Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-6

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00113		mg/L	0.005		03-JUN-19
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* 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.</p>						
<p>Approved by  _____ Joanne Lee Account Manager</p>						



Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 215

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-7

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
 1549 Clark Drive
 Vancouver BC V5L 3L4
 ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000533		mg/L	0.005		03-JUN-19
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* 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.</p>						
<p>Approved by  _____ Joanne Lee Account Manager</p>						

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 HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.
pH	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 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2282546-COFC

COC Number: 17 - 765038

Page of

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Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)															
Company: <u>Vancouver School Board</u>		Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply															
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		PRIORITY (Business Days)		EMERGENCY													
Phone: <u>604 713 5637</u>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		4 day [P4-20%] <input type="checkbox"/>		1 Business day [E - 100%] <input type="checkbox"/>													
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		3 day [P3-25%] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] <input type="checkbox"/>													
Street: <u>1549 Clark Dr</u>		Email 1 or Fax: <u>SSThomas@Vsb.BC.ca</u>		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm															
City/Province: <u>Vancouver BC</u>		Email 2		For tests that can not be performed according to the service level selected, you will be contacted.															
Postal Code:		Email 3		Analysis Request															
Invoice To		Invoice Distribution		<table border="1"> <tr> <td colspan="4">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td> </tr> <tr> <td colspan="4" style="text-align: center;"> <div style="display: flex; justify-content: space-between;"> NUMBER OF CONTAINERS Lead SAMPLES ON HOLD </div> </td> </tr> <tr> <td colspan="4" style="text-align: center;">SUSPECTED HAZARD (see Special Instructions)</td> </tr> </table>				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below				<div style="display: flex; justify-content: space-between;"> NUMBER OF CONTAINERS Lead SAMPLES ON HOLD </div>				SUSPECTED HAZARD (see Special Instructions)			
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																			
<div style="display: flex; justify-content: space-between;"> NUMBER OF CONTAINERS Lead SAMPLES ON HOLD </div>																			
SUSPECTED HAZARD (see Special Instructions)																			
Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																	
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax: <u>SSThomas@Vsb.BC.ca</u>																	
Company:		Email 2																	
Contact:		Oil and Gas Required Fields (client use)																	
Project Information		AFECost Center: PO#																	
ALS Account # / Quote #:		Major/Minor Code: Routing Code:																	
Job #: <u>Sir William Osler Elementary</u>		Requisitioner:																	
PO / AFE:		Location:																	
LSD:		ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler: <u>Chris Carrel</u>													
ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mmm-yy)		Time (hh:mm)		Sample Type											
		<u>RM 127A</u>		<u>30 May 19</u>		<u>1056</u>													
		<u>RM 129</u>		<u>30 May 19</u>		<u>1121</u>													
		<u>RM 119</u>		<u>30 May 19</u>		<u>1110</u>													
		<u>RM 109</u>		<u>30 May 19</u>		<u>1104</u>													
		<u>RM 124</u>		<u>30 May 19</u>		<u>1113</u>													
		<u>RM 213</u>		<u>30 May 19</u>		<u>1129</u>													
		<u>RM 215</u>		<u>30 May 19</u>		<u>1127</u>													
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)		SAMPLE CONDITION AS RECEIVED (lab use only)															
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		<u>NO Preservatives added.</u>		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>															
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO				Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>															
		Cooling Initiated <input checked="" type="checkbox"/>																	
		INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C														
								<u>19</u>											
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)															
Released by:		Received by:		Received by: <u>HA</u>		Date: <u>5/30</u>		Time: <u>2:30p</u>											

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

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