



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: CORR 141 FS

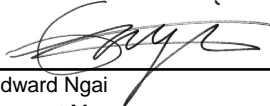
Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-1

Matrix: Water

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	0.000259		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 117 BUB

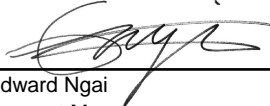
Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-2

Matrix: Water

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		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 118 BUB

Sampled By: Robin Lemay

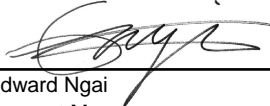
Date Collected: 11-SEP-19

Lab Sample ID: L2345647-3

Matrix: Water

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

PAGE 3 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000457		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700

ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 114 BUB

Sampled By: Robin Lemay

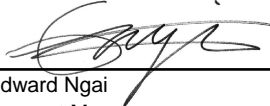
Date Collected: 11-SEP-19

Lab Sample ID: L2345647-4

Matrix: Water

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

PAGE 4 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000277		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						

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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 113 BUB

Sampled By: Robin Lemay

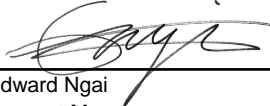
Date Collected: 11-SEP-19

Lab Sample ID: L2345647-5

Matrix: Water

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

PAGE 5 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000408		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						

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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 112 BUB

Sampled By: Robin Lemay

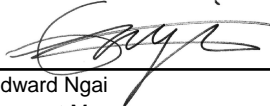
Date Collected: 11-SEP-19

Lab Sample ID: L2345647-6

Matrix: Water

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

PAGE 6 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000868		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						

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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 126 BUB

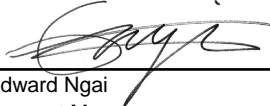
Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-7

Matrix: Water

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	0.000335		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 111 BUB

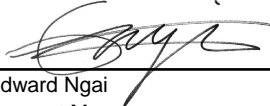
Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-8

Matrix: Water

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	0.000378		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 108 BUB

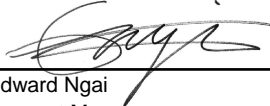
Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-9

Matrix: Water

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	0.000383		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai Account Manager</p>						



Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: CORR 100 SSDF

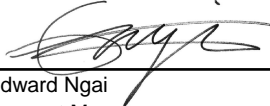
Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-10

Matrix: Water

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	0.000351		mg/L	0.005		13-SEP-19
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</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  Edward Ngai 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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ratiating 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.
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.



L2345647-COFC

COC Number: 17 - 763421

Page of

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		EMERGENCY										
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		4 day [P4-20%] <input type="checkbox"/>		1 Business day [E - 100%] <input type="checkbox"/>										
Phone: <u>604-713-5637</u>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] <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		Date and Time Required for all E&P TATs:		dd-mmm-yy hh:mm										
Street: <u>1549 Clark Drive</u>		Email 1 or Fax: <u>ssthomas@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.												
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>rlamay@vsb.bc.ca</u>		Analysis Request												
Postal Code:		Email 3:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
Invoice To		Invoice Distribution		NUMBER OF CONTAINERS	SAMPLES ON HOLD											
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							SUSPECTED HAZARD (see Special Instructions)							
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: <u>rlamay@vsb.bc.ca</u>														
Contact:		Oil and Gas Required Fields (client use)														
Project Information		AFE/Cost Center:											PO#			
ALS Account # / Quote #:		Major/Minor Code:											Routing Code:			
Job #: <u>Britannia Elem</u>		Requisitioner:											Location:			
PO / AFE:		ALS Lab Work Order # (lab use only):											ALS Contact:		Sampler: <u>Robin Lemay</u>	
LSD:																
ALS Samples # (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>Corr 141 FS</u>		<u>11-09-19</u>		<u>7:44am</u>		<u>water</u>								
		<u>Rm 117 Bub</u>		<u>11-09-19</u>		<u>8:19am</u>		<u>water</u>								
		<u>Rm 118 Bub</u>		<u>11-09-19</u>		<u>8:23am</u>		<u>water</u>								
		<u>Rm 114 Bub</u>		<u>11-09-19</u>		<u>8:28am</u>		<u>water</u>								
		<u>Rm 113 Bub</u>		<u>11-09-19</u>		<u>8:32am</u>		<u>water</u>								
		<u>Rm 112 Bub</u>		<u>11-09-19</u>		<u>8:35am</u>		<u>water</u>								
		<u>Rm 126 SSDF</u>		<u>11-09-19</u>		<u>8:41am</u>		<u>water</u>								
		<u>Rm 111 Bub</u>		<u>11-09-19</u>		<u>8:45am</u>		<u>water</u>								
		<u>Rm 108 Bub</u>		<u>11-09-19</u>		<u>8:49am</u>		<u>water</u>								
		<u>Corr 100 SSDF</u>		<u>11-09-19</u>		<u>8:53am</u>		<u>water</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 type="checkbox"/> Ice Cubes <input type="checkbox"/>		Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>										
				Cooling initiated <input type="checkbox"/>		INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C								
								<u>10</u>								
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)										
Released by:		Date:		Time:		Received by: <u>PAUL</u>		Date: <u>SEP 11</u>								
								Time: <u>15:20</u>								

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